## APPENDIX 3.5

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# APPENDIX C

Revised Level of Service Calculations

Scenario Report

| | |
|---|---|
| Scenario: | Existing AM |
| Command: | Existing_2009_AM |
| Volume: | AM_2009 |
| Geometry: | AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Existing AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Existing_AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 21.5 | 0.738 | C | 21.5 | 0.738 | + 0.000 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 15.6 | 0.614 | B | 15.6 | 0.614 | + 0.000 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 20.0 | 0.828 | C | 20.0 | 0.828 | + 0.000 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 24.1 | 0.790 | C | 21.8 | 0.790 | -2.367 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 26.7 | 0.655 | B | 15.7 | 0.655 | -10.993 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 16.2 | 0.564 | B | 15.9 | 0.564 | -0.290 D/V |
| # 7 Middlefield at Marsh (Town of | C | 25.3 | 0.587 | C | 22.6 | 0.587 | -2.617 D/V |
| # 8 Bayfront Exp. & Willow Rd. | C | 27.2 | 0.586 | C | 27.2 | 0.586 | + 0.000 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.6 | 0.537 | C | 22.6 | 0.537 | + 0.000 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 17.7 | 0.498 | B | 17.7 | 0.498 | + 0.000 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 14.8 | 0.446 | B | 14.8 | 0.446 | + 0.000 D/V |
| # 12 Newbridge St. & Willow Rd. | D | 45.9 | 0.868 | D | 45.9 | 0.868 | + 0.000 D/V |
| # 13 Bay Rd. & Willow Rd. | B | 19.5 | 0.667 | B | 19.5 | 0.667 | + 0.000 D/V |
| # 14 Durham St. & Willow Rd. | C | 22.2 | 0.686 | B | 12.1 | 0.686 | -10.090 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 12.3 | 0.687 | B | 12.3 | 0.687 | + 0.054 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 13.5 | 0.637 | B | 12.9 | 0.637 | -0.583 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 96.4 | 0.911 | E | 56.8 | 0.906 | -39.536 D/V |
| # 18 Bayfront Exp. & University Ave | C | 28.3 | 0.774 | C | 28.3 | 0.774 | + 0.000 D/V |
| # 19 O'Brien Dr. & University Ave. | A | 6.2 | 0.527 | A | 6.2 | 0.527 | + 0.000 D/V |
| # 20 University & Kavanaugh | B | 13.6 | 0.542 | B | 13.6 | 0.542 | + 0.000 D/V |
| # 21 University & Bay | C | 26.8 | 0.616 | C | 26.8 | 0.616 | + 0.000 D/V |
| # 22 University & Runnymede | B | 19.9 | 0.603 | B | 19.9 | 0.603 | + 0.000 D/V |
| # 23 University & Bell | A | 8.1 | 0.236 | A | 8.1 | 0.236 | + 0.000 D/V |
| # 24 University & Donohoe | D | 36.5 | 0.890 | D | 36.5 | 0.890 | + 0.000 D/V |
| # 25 NB 101 & Donohoe St | B | 13.5 | 0.358 | B | 13.5 | 0.358 | + 0.000 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 16.8 | 0.618 | B | 16.8 | 0.618 | + 0.000 D/V |
| # 27 University Ave. & Woodland | D | 36.0 | 0.857 | D | 36.0 | 0.857 | + 0.000 D/V |
| # 28 Middlefield Rd. & University A | C | 33.2 | 0.706 | C | 33.2 | 0.706 | + 0.000 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.2 | 0.562 | A | 7.2 | 0.562 | + 0.000 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 16.8 | 0.570 | B | 16.8 | 0.570 | + 0.000 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 21.5 | 0.583 | C | 21.5 | 0.583 | -0.000 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.2 | 0.452 | C | 25.6 | 0.452 | -2.650 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 29.6 | 0.572 | C | 29.6 | 0.572 | + 0.000 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.1 | 0.495 | A | 1.1 | 0.495 | + 0.000 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.738
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 69 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.45 | 0.12 | 0.12 | | 0.02 | 0.02 | 0.09 | | 0.11 | 0.11 | 0.36 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green Time: | 77.2 | 77.2 | 77.2 | | 16.2 | 16.2 | 16.2 | | 19.6 | 19.6 | 96.8 | | 5.0 | 5.0 | 5.0 | |
| Volume/Cap: | 0.75 | 0.19 | 0.19 | | 0.15 | 0.15 | 0.75 | | 0.75 | 0.75 | 0.48 | | 0.45 | 0.45 | 0.45 | |
| Uniform Del: | 19.4 | 12.1 | 12.1 | | 50.8 | 50.8 | 55.0 | | 52.9 | 52.9 | 6.6 | | 61.1 | 61.1 | 61.1 | |
| IncremntDel: | 1.1 | 0.1 | 0.1 | | 0.2 | 0.2 | 14.9 | | 11.2 | 11.2 | 0.2 | | 4.5 | 4.5 | 4.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 20.4 | 12.2 | 12.2 | | 50.9 | 50.9 | 69.9 | | 64.1 | 64.1 | 6.8 | | 65.7 | 65.7 | 65.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 20.4 | 12.2 | 12.2 | | 50.9 | 50.9 | 69.9 | | 64.1 | 64.1 | 6.8 | | 65.7 | 65.7 | 65.7 | |
| LOS by Move: | C | B | B | | D | D | E | | E | E | A | | E | E | E | |
| HCM2kAvgQ: | 23 | 4 | 4 | | 1 | 1 | 7 | | 8 | 8 | 9 | | 2 | 2 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.614
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 36 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 0 | | 0 | 821 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 0 | | 0 | 821 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 0 | | 0 | 821 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.32 | 0.00 | | 0.00 | 0.23 | 0.00 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green Time: | 31.1 | 0.0 | 31.1 | | 0.0 | 0.0 | 0.0 | | 0.0 | 41.9 | 0.0 | | 0.0 | 41.9 | 0.0 | |
| Volume/Cap: | 0.61 | 0.00 | 0.47 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.61 | 0.00 | | 0.00 | 0.44 | 0.00 | |
| Uniform Del: | 19.6 | 0.0 | 18.3 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.4 | 0.0 | | 0.0 | 11.8 | 0.0 | |
| IncremntDel: | 0.9 | 0.0 | 0.6 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.6 | 0.0 | | 0.0 | 0.2 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 20.5 | 0.0 | 18.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 14.0 | 0.0 | | 0.0 | 12.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 20.5 | 0.0 | 18.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 14.0 | 0.0 | | 0.0 | 12.0 | 0.0 | |
| LOS by Move: | C | A | B | | A | A | A | | A | B | A | | A | B | A | |
| HCM2kAvgQ: | 9 | 0 | 6 | | 0 | 0 | 0 | | 0 | 11 | 0 | | 0 | 6 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.828
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 65 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 0 | | 0 | 1426 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 0 | | 0 | 1426 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 0 | | 0 | 1426 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.26 | 0.00 | 0.35 | | 0.00 | 0.24 | 0.00 | | 0.00 | 0.40 | 0.00 | |
| Crit Moves: | | | | | | | **** | | | | | | | **** | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 34.1 | 0.0 | 34.1 | | 0.0 | 38.9 | 0.0 | | 0.0 | 38.9 | 0.0 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.60 | 0.00 | 0.83 | | 0.00 | 0.48 | 0.00 | | 0.00 | 0.83 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 17.7 | 0.0 | 20.4 | | 0.0 | 13.8 | 0.0 | | 0.0 | 17.7 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 0.7 | 0.0 | 8.4 | | 0.0 | 0.2 | 0.0 | | 0.0 | 3.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 18.4 | 0.0 | 28.8 | | 0.0 | 14.0 | 0.0 | | 0.0 | 21.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 18.4 | 0.0 | 28.8 | | 0.0 | 14.0 | 0.0 | | 0.0 | 21.1 | 0.0 | |
| LOS by Move: | A | A | A | | B | A | C | | A | B | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 9 | 0 | 15 | | 0 | 7 | 0 | | 0 | 18 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.790
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 74 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 1 | 1 | 0 | 2 | 1 0 | 2 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.92 | 0.08 | 1.00 | | 1.00 | 2.92 | 0.08 | | 2.00 | 1.67 | 0.33 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4936 | 127 | | 3432 | 2880 | 569 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.13 | 0.13 | 0.00 | | 0.01 | 0.23 | 0.23 | | 0.08 | 0.49 | 0.49 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green Time: | 4.0 | 4.0 | 4.0 | | 12.5 | 12.5 | 12.5 | | 4.0 | 36.9 | 36.9 | | 12.6 | 45.5 | 45.5 | |
| Volume/Cap: | 0.34 | 0.34 | 0.35 | | 0.86 | 0.86 | 0.01 | | 0.17 | 0.50 | 0.50 | | 0.50 | 0.86 | 0.86 | |
| Uniform Del: | 36.7 | 36.7 | 36.7 | | 32.9 | 32.9 | 28.5 | | 36.4 | 15.0 | 15.0 | | 30.8 | 14.6 | 14.6 | |
| IncremntDel: | 2.2 | 2.2 | 1.5 | | 23.3 | 23.3 | 0.0 | | 0.9 | 0.2 | 0.2 | | 0.7 | 4.3 | 4.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.0 | 39.0 | 38.3 | | 56.3 | 56.3 | 28.6 | | 37.3 | 15.2 | 15.2 | | 31.5 | 18.9 | 18.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.0 | 39.0 | 38.3 | | 56.3 | 56.3 | 28.6 | | 37.3 | 15.2 | 15.2 | | 31.5 | 18.9 | 18.9 | |
| LOS by Move: | D | D | D | | E | E | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 9 | 9 | 0 | | 0 | 7 | 7 | | 3 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.655
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 31 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 1 | 0 | 0 1 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.90 | 0.90 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.86 | 0.14 | | 1.00 | 1.56 | 0.44 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3265 | 238 | | 1769 | 2666 | 755 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.12 | 0.12 | 0.06 | | 0.07 | 0.24 | 0.24 | | 0.03 | 0.43 | 0.43 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green Time: | 4.0 | 4.0 | 4.0 | | 13.9 | 13.9 | 13.9 | | 7.8 | 48.2 | 48.2 | | 9.9 | 50.3 | 50.3 | |
| Volume/Cap: | 0.17 | 0.20 | 0.20 | | 0.68 | 0.68 | 0.33 | | 0.68 | 0.40 | 0.40 | | 0.21 | 0.68 | 0.68 | |
| Uniform Del: | 36.4 | 36.5 | 36.5 | | 31.0 | 31.0 | 29.0 | | 34.9 | 8.3 | 8.3 | | 31.5 | 9.6 | 9.6 | |
| IncremntDel: | 0.9 | 1.1 | 1.1 | | 3.1 | 3.1 | 0.7 | | 10.5 | 0.1 | 0.1 | | 0.5 | 0.9 | 0.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.3 | 37.6 | 37.6 | | 34.1 | 34.1 | 29.7 | | 45.4 | 8.5 | 8.5 | | 32.0 | 10.5 | 10.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.3 | 37.6 | 37.6 | | 34.1 | 34.1 | 29.7 | | 45.4 | 8.5 | 8.5 | | 32.0 | 10.5 | 10.5 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | C | B | B | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 2 | | 3 | 6 | 6 | | 1 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.564
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.9
Optimal Cycle: 25 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.79 | 0.79 | 0.79 | | 0.59 | 0.59 | 0.59 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.28 | 0.01 | 0.71 | | 0.78 | 0.19 | 0.03 | | 0.01 | 1.81 | 0.18 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 423 | 18 | 1069 | | 873 | 218 | 39 | | 9 | 3016 | 299 | | 1769 | 3450 | 77 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.13 | 0.13 | 0.13 | | 0.22 | 0.22 | 0.22 | | 0.15 | 0.28 | 0.28 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green Time: | 23.5 | 23.5 | 23.5 | | 23.5 | 23.5 | 23.5 | | 31.3 | 31.3 | 31.3 | | 21.2 | 52.5 | 52.5 | |
| Volume/Cap: | 0.56 | 0.56 | 0.56 | | 0.44 | 0.44 | 0.44 | | 0.56 | 0.56 | 0.56 | | 0.56 | 0.43 | 0.43 | |
| Uniform Del: | 23.9 | 23.9 | 23.9 | | 22.9 | 22.9 | 22.9 | | 19.0 | 19.0 | 19.0 | | 25.4 | 6.6 | 6.6 | |
| IncremntDel: | 1.7 | 1.7 | 1.7 | | 0.9 | 0.9 | 0.9 | | 0.6 | 0.6 | 0.6 | | 1.6 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 25.6 | 25.6 | 25.6 | | 23.8 | 23.8 | 23.8 | | 19.6 | 19.6 | 19.6 | | 27.0 | 6.7 | 6.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 25.6 | 25.6 | 25.6 | | 23.8 | 23.8 | 23.8 | | 19.6 | 19.6 | 19.6 | | 27.0 | 6.7 | 6.7 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 3 | 3 | 3 | | 7 | 7 | 7 | | 5 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.587
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 43 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 0 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.09 | 0.25 | | 0.19 | 0.19 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.26 | 0.00 | 0.10 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green Time: | 0.0 | 16.4 | 64.5 | | 35.5 | 51.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 48.1 | 0.0 | 83.6 | |
| Volume/Cap: | 0.00 | 0.59 | 0.42 | | 0.59 | 0.41 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.59 | 0.00 | 0.14 | |
| Uniform Del: | 0.0 | 43.7 | 12.5 | | 31.1 | 19.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 23.4 | 0.0 | 3.5 | |
| IncremntDel: | 0.0 | 3.2 | 0.3 | | 1.6 | 0.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 1.2 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 46.8 | 12.8 | | 32.7 | 19.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 24.6 | 0.0 | 3.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 46.8 | 12.8 | | 32.7 | 19.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 24.6 | 0.0 | 3.6 | |
| LOS by Move: | A | D | B | | C | B | A | | A | A | A | | C | A | A | |
| HCM2kAvgQ: | 0 | 5 | 7 | | 10 | 8 | 0 | | 0 | 0 | 0 | | 12 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.586 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 27.2 |
| Optimal Cycle: | 49 | Level Of Service: | C |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |

Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Vol: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |

Saturation Flow Module:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.90 | 0.90 | 0.88 | 0.93 | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 1.00 | 2.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 3418 | 1709 | 3343 | 1769 | 3538 | 1583 |

Capacity Analysis Module:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol/Sat: | 0.30 | 0.36 | 0.00 | 0.00 | 0.12 | 0.06 | 0.02 | 0.02 | 0.11 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | | | **** | | **** | |
| Green Time: | 64.2 | 80.3 | 85.3 | 8.6 | 24.7 | 24.7 | 24.2 | 24.2 | 24.2 | 5.0 | 5.0 | 5.0 |
| Volume/Cap: | 0.61 | 0.58 | 0.01 | 0.06 | 0.61 | 0.31 | 0.13 | 0.11 | 0.61 | 0.04 | 0.04 | 0.08 |
| Uniform Del: | 23.8 | 14.9 | 7.7 | 56.9 | 48.3 | 45.3 | 44.2 | 44.0 | 48.6 | 60.2 | 60.2 | 60.3 |
| IncremntDel: | 0.7 | 0.2 | 0.0 | 0.1 | 1.0 | 0.6 | 0.1 | 0.0 | 1.8 | 0.3 | 0.1 | 0.6 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 24.5 | 15.1 | 7.7 | 57.0 | 49.3 | 45.9 | 44.2 | 44.0 | 50.4 | 60.5 | 60.3 | 60.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 24.5 | 15.1 | 7.7 | 57.0 | 49.3 | 45.9 | 44.2 | 44.0 | 50.4 | 60.5 | 60.3 | 60.9 |
| LOS by Move: | C | B | A | E | D | D | D | D | D | E | E | E |
| HCM2kAvgQ: | 15 | 18 | 0 | 0 | 9 | 3 | 1 | 1 | 8 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.537 |
| Loss Time (sec): | 11 (Y+R=3.0 sec) | Average Delay (sec/veh): | 22.6 |
| Optimal Cycle: | 42 | Level Of Service: | C |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |

Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Vol: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |

Saturation Flow Module:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.93 | 0.92 | 0.92 | 0.93 | 0.92 | 0.92 |
| Lanes: | 0.31 | 0.23 | 0.46 | 0.44 | 0.12 | 0.44 | 1.00 | 1.78 | 0.22 | 1.00 | 1.87 | 0.13 |
| Final Sat.: | 498 | 360 | 719 | 648 | 173 | 657 | 1769 | 3090 | 387 | 1769 | 3269 | 233 |

Capacity Analysis Module:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol/Sat: | 0.04 | 0.04 | 0.04 | 0.11 | 0.11 | 0.11 | 0.07 | 0.13 | 0.13 | 0.03 | 0.32 | 0.32 |
| Crit Moves: | | | | | **** | | **** | | | | **** | |
| Green Time: | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 15.7 | 71.9 | 71.9 | 20.6 | 76.8 | 76.8 |
| Volume/Cap: | 0.18 | 0.18 | 0.18 | 0.54 | 0.54 | 0.54 | 0.54 | 0.24 | 0.24 | 0.20 | 0.54 | 0.54 |
| Uniform Del: | 42.7 | 42.7 | 42.7 | 46.3 | 46.3 | 46.3 | 53.7 | 15.0 | 15.0 | 47.5 | 16.0 | 16.0 |
| IncremntDel: | 0.3 | 0.3 | 0.3 | 1.9 | 1.9 | 1.9 | 2.7 | 0.1 | 0.1 | 0.4 | 0.3 | 0.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 43.0 | 43.0 | 43.0 | 48.2 | 48.2 | 48.2 | 56.4 | 15.1 | 15.1 | 47.9 | 16.2 | 16.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 43.0 | 43.0 | 43.0 | 48.2 | 48.2 | 48.2 | 56.4 | 15.1 | 15.1 | 47.9 | 16.2 | 16.2 |
| LOS by Move: | D | D | D | D | D | D | E | B | B | D | B | B |
| HCM2kAvgQ: | 2 | 2 | 2 | 6 | 6 | 6 | 5 | 5 | 5 | 2 | 14 | 14 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.498
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 17.7
Optimal Cycle: 39 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 0 | 1 | 0 | | 186 | 82 | 652 | | 0 | 0 | 1021 | | 14 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | | | 14 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | | | 14 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | | | 14 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | | | 14 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | | | 14 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.85 | 1.00 | 0.85 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.01 | 0.00 | 0.99 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.97 | 0.03 | | | |
| Final Sat.: | 0 | 0 | 0 | | 9 | 0 | 1604 | | 1769 | 3538 | 0 | | 0 | 3483 | | | 48 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.12 | 0.00 | 0.12 | | 0.05 | 0.18 | 0.00 | | 0.00 | 0.29 | 0.29 | | | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 30.3 | 0.0 | 30.3 | | 12.1 | 88.7 | 0.0 | | 0.0 | 76.6 | 76.6 | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.50 | 0.00 | 0.50 | | 0.50 | 0.27 | 0.00 | | 0.00 | 0.50 | 0.50 | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 43.2 | 0.0 | 43.2 | | 56.1 | 8.0 | 0.0 | | 0.0 | 15.5 | 15.5 | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 1.0 | 0.0 | 1.0 | | 2.4 | 0.1 | 0.0 | | 0.0 | 0.2 | 0.2 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 44.3 | 0.0 | 44.3 | | 58.4 | 8.1 | 0.0 | | 0.0 | 15.7 | 15.7 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 44.3 | 0.0 | 44.3 | | 58.4 | 8.1 | 0.0 | | 0.0 | 15.7 | 15.7 | | | |
| LOS by Move: | A | A | A | | D | A | D | | E | A | A | | A | B | B | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 7 | 0 | 7 | | 4 | 5 | 0 | | 0 | 12 | 12 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.446
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 36 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| Initial Bse: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| Initial Fut: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| Reduced Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | | | |
| Lanes: | 1.49 | 0.00 | 0.51 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | | |
| Final Sat.: | 2553 | 0 | 868 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | | | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.08 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.20 | 0.16 | | 0.06 | 0.33 | 0.00 | | | |
| Crit Moves: | | | **** | | | | | | **** | | | | | **** | | | | |
| Green Time: | 22.5 | 0.0 | 22.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 74.7 | 74.7 | | 21.8 | 96.5 | 0.0 | | | |
| Volume/Cap: | 0.29 | 0.00 | 0.45 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.34 | 0.28 | | 0.34 | 0.45 | 0.00 | | | |
| Uniform Del: | 46.8 | 0.0 | 48.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 14.7 | 14.0 | | 47.7 | 6.5 | 0.0 | | | |
| IncremntDel: | 0.2 | 0.0 | 0.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.1 | 0.2 | | 0.7 | 0.1 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | | |
| Delay/Veh: | 47.1 | 0.0 | 48.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 14.8 | 14.2 | | 48.4 | 6.6 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 47.1 | 0.0 | 48.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 14.8 | 14.2 | | 48.4 | 6.6 | 0.0 | | | |
| LOS by Move: | D | A | D | | A | A | A | | A | B | B | | D | A | A | | | |
| HCM2kAvgQ: | 3 | 0 | 5 | | 0 | 0 | 0 | | 0 | 7 | 5 | | 3 | 9 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 45.9
Optimal Cycle: 114 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.53 | 0.47 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4177 | 784 | | 1769 | 3526 | 12 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.10 | 0.06 | 0.02 | | 0.02 | 0.10 | 0.24 | | 0.08 | 0.20 | 0.20 | | 0.02 | 0.35 | 0.35 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green Time: | 15.3 | 15.3 | 15.3 | | 36.3 | 36.3 | 36.3 | | 12.5 | 53.9 | 53.9 | | 10.5 | 51.9 | 51.9 | |
| Volume/Cap: | 0.87 | 0.51 | 0.19 | | 0.06 | 0.34 | 0.87 | | 0.87 | 0.48 | 0.48 | | 0.20 | 0.87 | 0.87 | |
| Uniform Del: | 56.4 | 53.8 | 51.8 | | 34.3 | 37.3 | 44.6 | | 57.9 | 27.8 | 27.8 | | 55.8 | 35.9 | 35.9 | |
| IncremntDel: | 17.8 | 1.9 | 0.5 | | 0.0 | 0.4 | 16.5 | | 34.6 | 0.2 | 0.2 | | 0.7 | 6.0 | 6.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 74.2 | 55.8 | 52.3 | | 34.3 | 37.7 | 61.1 | | 92.5 | 27.9 | 27.9 | | 56.5 | 41.9 | 41.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 74.2 | 55.8 | 52.3 | | 34.3 | 37.7 | 61.1 | | 92.5 | 27.9 | 27.9 | | 56.5 | 41.9 | 41.9 | |
| LOS by Move: | E | E | D | | C | D | E | | F | C | C | | E | D | D | |
| HCM2kAvgQ: | 10 | 5 | 1 | | 1 | 6 | 17 | | 8 | 10 | 10 | | 1 | 25 | 25 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 19.5
Optimal Cycle: 53 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.20 | 0.00 | 0.05 | | 0.04 | 0.39 | 0.00 | | 0.00 | 0.31 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 30.6 | 0.0 | 30.6 | | 8.0 | 58.4 | 0.0 | | 0.0 | 50.4 | 0.0 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.67 | 0.00 | 0.15 | | 0.45 | 0.67 | 0.00 | | 0.00 | 0.62 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 30.3 | 0.0 | 25.3 | | 43.9 | 14.2 | 0.0 | | 0.0 | 18.0 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.2 | 0.0 | 0.1 | | 2.3 | 0.8 | 0.0 | | 0.0 | 0.7 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 33.4 | 0.0 | 25.4 | | 46.2 | 15.0 | 0.0 | | 0.0 | 18.7 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 33.4 | 0.0 | 25.4 | | 46.2 | 15.0 | 0.0 | | 0.0 | 18.7 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 11 | 0 | 2 | | 2 | 16 | 0 | | 0 | 13 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.1
Optimal Cycle: 44 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 0 | 1 | 0 0 | 1 | 1 | 0 1 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.55 | 0.55 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.86 | 0.14 | |
| Final Sat.: | 1369 | 183 | 1431 | | 987 | 52 | 1583 | | 1769 | 3503 | 31 | | 1769 | 1562 | 261 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.09 | 0.09 | | 0.04 | 0.04 | 0.00 | | 0.01 | 0.29 | 0.29 | | 0.02 | 0.54 | 0.54 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green Time: | 12.3 | 12.3 | 12.3 | | 12.3 | 12.3 | 12.3 | | 4.0 | 70.8 | 70.8 | | 9.9 | 76.7 | 76.7 | |
| Volume/Cap: | 0.37 | 0.71 | 0.71 | | 0.31 | 0.31 | 0.01 | | 0.17 | 0.40 | 0.40 | | 0.23 | 0.71 | 0.71 | |
| Uniform Del: | 40.3 | 42.1 | 42.1 | | 40.0 | 40.0 | 38.5 | | 46.4 | 6.0 | 6.0 | | 41.5 | 6.0 | 6.0 | |
| IncremntDel: | 1.4 | 11.3 | 11.3 | | 1.4 | 1.4 | 0.0 | | 1.1 | 0.1 | 0.1 | | 0.7 | 1.7 | 1.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 41.6 | 53.4 | 53.4 | | 41.4 | 41.4 | 38.5 | | 47.5 | 6.1 | 6.1 | | 42.2 | 7.7 | 7.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.6 | 53.4 | 53.4 | | 41.4 | 41.4 | 38.5 | | 47.5 | 6.1 | 6.1 | | 42.2 | 7.7 | 7.7 | |
| LOS by Move: | D | D | D | | D | D | D | | D | A | A | | D | A | A | |
| HCM2kAvgQ: | 2 | 6 | 6 | | 1 | 1 | 0 | | 1 | 7 | 7 | | 1 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.3
Optimal Cycle: 44 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 1! | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.87 | 0.87 | 0.87 | | 0.73 | 0.73 | 0.73 | | 0.21 | 0.98 | 0.98 | | 0.22 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.93 | 0.07 | |
| Final Sat.: | 353 | 353 | 942 | | 999 | 42 | 338 | | 393 | 1850 | 10 | | 410 | 1719 | 125 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.14 | 0.14 | 0.14 | | 0.04 | 0.48 | 0.48 | | 0.01 | 0.50 | 0.50 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green Time: | 20.7 | 20.7 | 20.7 | | 20.7 | 20.7 | 20.7 | | 72.3 | 72.3 | 72.3 | | 72.3 | 72.3 | 72.3 | |
| Volume/Cap: | 0.04 | 0.04 | 0.04 | | 0.69 | 0.69 | 0.69 | | 0.06 | 0.67 | 0.67 | | 0.02 | 0.69 | 0.69 | |
| Uniform Del: | 31.7 | 31.7 | 31.7 | | 36.7 | 36.7 | 36.7 | | 4.0 | 7.4 | 7.4 | | 3.9 | 7.6 | 7.6 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 6.9 | 6.9 | 6.9 | | 0.1 | 1.3 | 1.3 | | 0.0 | 1.5 | 1.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 31.8 | 31.8 | 31.8 | | 43.5 | 43.5 | 43.5 | | 4.1 | 8.7 | 8.7 | | 3.9 | 9.1 | 9.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.8 | 31.8 | 31.8 | | 43.5 | 43.5 | 43.5 | | 4.1 | 8.7 | 8.7 | | 3.9 | 9.1 | 9.1 | |
| LOS by Move: | C | C | C | | D | D | D | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 7 | 7 | 7 | | 0 | 15 | 15 | | 0 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.637
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 39 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.71 | 0.89 | 0.89 | | 0.39 | 0.96 | 0.96 | | 0.23 | 0.97 | 0.97 | | 0.24 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.41 | 0.59 | | 1.00 | 0.85 | 0.15 | | 1.00 | 0.92 | 0.08 | | 1.00 | 0.99 | 0.01 | |
| Final Sat.: | 1357 | 697 | 1001 | | 732 | 1555 | 266 | | 445 | 1687 | 153 | | 452 | 1849 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.12 | 0.12 | | 0.04 | 0.03 | 0.03 | | 0.01 | 0.47 | 0.47 | | 0.09 | 0.47 | 0.47 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green Time: | 19.1 | 19.1 | 19.1 | | 19.1 | 19.1 | 19.1 | | 73.9 | 73.9 | 73.9 | | 73.9 | 73.9 | 73.9 | |
| Volume/Cap: | 0.39 | 0.64 | 0.64 | | 0.22 | 0.14 | 0.14 | | 0.01 | 0.64 | 0.64 | | 0.12 | 0.64 | 0.64 | |
| Uniform Del: | 35.3 | 37.2 | 37.2 | | 34.1 | 33.6 | 33.6 | | 3.4 | 6.4 | 6.4 | | 3.8 | 6.4 | 6.4 | |
| IncremntDel: | 1.0 | 4.2 | 4.2 | | 0.8 | 0.2 | 0.2 | | 0.0 | 1.0 | 1.0 | | 0.2 | 1.0 | 1.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.3 | 41.4 | 41.4 | | 35.0 | 33.8 | 33.8 | | 3.5 | 7.5 | 7.5 | | 3.9 | 7.4 | 7.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.3 | 41.4 | 41.4 | | 35.0 | 33.8 | 33.8 | | 3.5 | 7.5 | 7.5 | | 3.9 | 7.4 | 7.4 | |
| LOS by Move: | D | D | D | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 3 | 7 | 7 | | 1 | 1 | 1 | | 0 | 14 | 14 | | 0 | 14 | 14 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.906
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 56.8
Optimal Cycle: 115 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 2 | 0 | 1 | 1 | 1 0 | 1 | 0 | 1 | 0 1 | 0 | 1 | 1 | 1 0 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 67 | 342 | 242 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 67 | 342 | 242 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.65 | 1.31 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.74 | 0.26 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2841 | 2242 | 70 | | 1769 | 1862 | 1583 | | 3096 | 472 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.10 | 0.31 | | 0.14 | 0.14 | 0.14 | | 0.01 | 0.09 | 0.07 | | 0.14 | 0.14 | 0.31 | |
| Crit Moves: | | | **** | | | | **** | | | **** | | | | | **** | |
| Green Time: | 43.9 | 43.9 | 43.9 | | 20.6 | 20.6 | 20.6 | | 12.8 | 12.8 | 12.8 | | 44.8 | 44.8 | 44.8 | |
| Volume/Cap: | 0.11 | 0.29 | 0.91 | | 0.91 | 0.91 | 0.91 | | 0.09 | 0.91 | 0.75 | | 0.39 | 0.39 | 0.91 | |
| Uniform Del: | 29.7 | 31.6 | 41.1 | | 53.8 | 53.8 | 53.8 | | 53.3 | 58.0 | 57.1 | | 32.3 | 32.3 | 40.6 | |
| IncremntDel: | 0.1 | 0.1 | 31.7 | | 13.7 | 13.7 | 13.7 | | 0.2 | 41.0 | 18.4 | | 0.2 | 0.2 | 18.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 29.7 | 31.7 | 72.8 | | 67.5 | 67.5 | 67.5 | | 53.6 | 99.0 | 75.5 | | 32.5 | 32.5 | 59.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 29.7 | 31.7 | 72.8 | | 67.5 | 67.5 | 67.5 | | 53.6 | 99.0 | 75.5 | | 32.5 | 32.5 | 59.4 | |
| LOS by Move: | C | C | E | | E | E | E | | D | F | E | | C | C | E | |
| HCM2kAvgQ: | 2 | 5 | 12 | | 13 | 13 | 13 | | 1 | 10 | 6 | | 7 | 7 | 22 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 28.3
Optimal Cycle: 73 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | 179 | | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 1541 | 2882 | 0 | | 0 | 884 | 188 | 179 | | 0 | 429 | | 0 | 0 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1541 | 2882 | 0 | | 0 | 884 | 188 | 179 | | 0 | 429 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1541 | 2882 | 0 | | 0 | 884 | 188 | 179 | | 0 | 429 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | 179 | | 0 | 429 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1541 | 2882 | 0 | | 0 | 884 | 188 | 179 | | 0 | 429 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.90 | | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 2.00 | | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | 3432 | | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.45 | 0.57 | 0.00 | | 0.00 | 0.17 | 0.12 | 0.05 | | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green Time: | 92.8 | 129 | 0.0 | | 0.0 | 35.9 | 35.9 | 21.2 | | 0.0 | 21.2 | | 0.0 | 0.0 | 0.0 | |
| Volume/Cap: | 0.77 | 0.70 | 0.00 | | 0.00 | 0.77 | 0.53 | 0.39 | | 0.00 | 0.77 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 25.6 | 7.0 | 0.0 | | 0.0 | 58.2 | 54.6 | 63.5 | | 0.0 | 67.1 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 2.0 | 0.6 | 0.0 | | 0.0 | 3.4 | 1.5 | 0.6 | | 0.0 | 6.7 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 27.5 | 7.6 | 0.0 | | 0.0 | 61.6 | 56.1 | 64.1 | | 0.0 | 73.8 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 27.5 | 7.6 | 0.0 | | 0.0 | 61.6 | 56.1 | 64.1 | | 0.0 | 73.8 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | E | E | E | | A | E | | A | A | A | |
| HCM2kAvgQ: | 30 | 23 | 0 | | 0 | 16 | 8 | 4 | | 0 | 9 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.527
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.2
Optimal Cycle: 40 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 0 | 1! | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.50 | 0.00 | 0.50 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.93 | 0.07 | |
| Final Sat.: | 0 | 0 | 0 | | 848 | 0 | 848 | | 1769 | 3538 | 0 | | 0 | 3403 | 117 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.15 | 0.00 | | 0.00 | 0.39 | 0.39 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 5.0 | 0.0 | 5.0 | | 6.1 | 69.0 | 0.0 | | 0.0 | 62.9 | 62.9 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.44 | 0.00 | 0.44 | | 0.53 | 0.18 | 0.00 | | 0.00 | 0.53 | 0.53 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.7 | 0.0 | 38.7 | | 38.1 | 1.8 | 0.0 | | 0.0 | 4.8 | 4.8 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.1 | 0.0 | 3.1 | | 4.3 | 0.0 | 0.0 | | 0.0 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 41.7 | 0.0 | 41.7 | | 42.3 | 1.8 | 0.0 | | 0.0 | 5.0 | 5.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 41.7 | 0.0 | 41.7 | | 42.3 | 1.8 | 0.0 | | 0.0 | 5.0 | 5.0 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 2 | 2 | 0 | | 0 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.542
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.95 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.36 | 0.42 | 0.22 | 0.11 | 0.29 | 0.60 | 1.00 | 1.86 | 0.14 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 651 | 752 | 407 | 190 | 500 | 1047 | 1805 | 3328 | 246 | 1805 | 3531 | 68 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.02 | 0.17 | 0.17 | 0.01 | 0.37 | 0.37 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green Time: | 9.0 | 8.3 | 8.3 | 8.3 | 7.7 | 7.7 | 5.0 | 56.3 | 56.3 | 16.1 | 67.3 | 67.3 |
| Volume/Cap: | 0.55 | 0.59 | 0.59 | 0.50 | 0.55 | 0.55 | 0.44 | 0.31 | 0.31 | 0.09 | 0.55 | 0.55 |
| Uniform Del: | 43.6 | 44.2 | 44.2 | 43.9 | 44.5 | 44.5 | 46.1 | 11.6 | 11.6 | 35.7 | 8.4 | 8.4 |
| IncremntDel: | 3.9 | 6.1 | 6.1 | 2.8 | 4.7 | 4.7 | 3.4 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 47.5 | 50.3 | 50.3 | 46.7 | 49.2 | 49.2 | 49.6 | 11.7 | 11.7 | 35.8 | 8.7 | 8.7 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 47.5 | 50.3 | 50.3 | 46.7 | 49.2 | 49.2 | 49.6 | 11.7 | 11.7 | 35.8 | 8.7 | 8.7 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | A | A |
| HCM2kAvgQ: | 3 | 4 | 4 | 3 | 3 | 3 | 1 | 5 | 5 | 1 | 11 | 11 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.616
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 26.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.93 | 0.93 | 0.95 | 0.94 | 0.94 |
| Lanes: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.73 | 0.27 | 1.00 | 1.92 | 0.08 |
| Final Sat.: | 1805 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3058 | 480 | 1805 | 3437 | 151 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.12 | 0.07 | 0.03 | 0.10 | 0.05 | 0.08 | 0.16 | 0.16 | 0.05 | 0.32 | 0.32 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green Time: | 8.8 | 19.1 | 19.1 | 5.0 | 15.3 | 15.3 | 12.6 | 48.8 | 48.8 | 16.1 | 52.3 | 52.3 |
| Volume/Cap: | 0.68 | 0.62 | 0.37 | 0.55 | 0.68 | 0.35 | 0.62 | 0.33 | 0.33 | 0.33 | 0.62 | 0.62 |
| Uniform Del: | 44.2 | 37.1 | 35.2 | 46.4 | 40.0 | 37.9 | 41.4 | 15.7 | 15.7 | 37.2 | 16.8 | 16.8 |
| IncremntDel: | 11.0 | 3.3 | 0.7 | 7.3 | 6.3 | 0.9 | 5.2 | 0.1 | 0.1 | 0.7 | 0.6 | 0.6 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 55.2 | 40.4 | 35.9 | 53.7 | 46.3 | 38.8 | 46.6 | 15.8 | 15.8 | 37.8 | 17.5 | 17.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 55.2 | 40.4 | 35.9 | 53.7 | 46.3 | 38.8 | 46.6 | 15.8 | 15.8 | 37.8 | 17.5 | 17.5 |
| LOS by Move: | E | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 5 | 7 | 3 | 2 | 7 | 3 | 4 | 5 | 5 | 3 | 13 | 13 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.603
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 0.29 | 0.64 | 0.07 | 0.12 | 0.45 | 0.43 | 1.00 | 1.86 | 0.14 | 1.00 | 1.91 | 0.09 |
| Final Sat.: | 532 | 1187 | 136 | 217 | 801 | 761 | 1805 | 3316 | 254 | 1805 | 3417 | 167 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.09 | 0.09 | 0.07 | 0.07 | 0.07 | 0.01 | 0.19 | 0.19 | 0.05 | 0.36 | 0.36 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green Time: | 14.1 | 14.1 | 14.1 | 11.7 | 11.7 | 11.7 | 5.0 | 49.9 | 49.9 | 13.2 | 58.2 | 58.2 |
| Volume/Cap: | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.20 | 0.38 | 0.38 | 0.37 | 0.63 | 0.63 |
| Uniform Del: | 40.5 | 40.5 | 40.5 | 42.0 | 42.0 | 42.0 | 45.6 | 15.5 | 15.5 | 39.6 | 13.8 | 13.8 |
| IncremntDel: | 4.8 | 4.8 | 4.8 | 5.9 | 5.9 | 5.9 | 1.1 | 0.1 | 0.1 | 1.0 | 0.6 | 0.6 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 45.2 | 45.2 | 45.2 | 48.0 | 48.0 | 48.0 | 46.7 | 15.6 | 15.6 | 40.5 | 14.4 | 14.4 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 45.2 | 45.2 | 45.2 | 48.0 | 48.0 | 48.0 | 46.7 | 15.6 | 15.6 | 40.5 | 14.4 | 14.4 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 6 | 6 | 6 | 5 | 5 | 5 | 1 | 7 | 7 | 2 | 14 | 14 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 100 Critical Vol./Cap.(X): 0.236
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 8.1
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Permitted | | | Permitted | | | Permitted | | | Permitted | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 14 | 14 | 14 | 14 | 14 | 14 | 73 | 73 | 73 | 73 | 73 | 73 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.65 | 0.94 | 0.94 | 0.38 | 0.93 | 0.93 |
| Lanes: | 0.21 | 0.69 | 0.10 | 0.11 | 0.71 | 0.18 | 1.00 | 1.92 | 0.08 | 1.00 | 1.67 | 0.33 |
| Final Sat.: | 371 | 1216 | 185 | 207 | 1275 | 326 | 1241 | 3453 | 135 | 730 | 2948 | 575 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.03 | 0.01 | 0.18 | 0.18 | 0.02 | 0.04 | 0.04 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green Time: | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 | 75.4 | 75.4 | 75.4 | 75.4 | 75.4 | 75.4 |
| Volume/Cap: | 0.24 | 0.24 | 0.24 | 0.16 | 0.16 | 0.16 | 0.02 | 0.24 | 0.24 | 0.03 | 0.06 | 0.06 |
| Uniform Del: | 33.1 | 33.1 | 33.1 | 32.6 | 32.6 | 32.6 | 3.1 | 3.7 | 3.7 | 3.1 | 3.2 | 3.2 |
| IncremntDel: | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 33.5 | 33.5 | 33.5 | 32.8 | 32.8 | 32.8 | 3.1 | 3.7 | 3.7 | 3.1 | 3.2 | 3.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 33.5 | 33.5 | 33.5 | 32.8 | 32.8 | 32.8 | 3.1 | 3.7 | 3.7 | 3.1 | 3.2 | 3.2 |
| LOS by Move: | C | C | C | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | 3 | 0 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.890
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 36.5
Optimal Cycle: 103 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.28 | 1.56 | 1.16 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2182 | 2634 | 1977 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3390 | 191 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.01 | 0.07 | 0.24 | | 0.03 | 0.10 | 0.18 | | 0.03 | 0.36 | 0.36 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green Time: | 18.4 | 34.3 | 34.3 | | 10.3 | 26.3 | 26.3 | | 5.0 | 34.5 | 34.5 | | 9.8 | 39.4 | 39.4 | |
| Volume/Cap: | 0.90 | 0.48 | 0.48 | | 0.06 | 0.25 | 0.90 | | 0.67 | 0.28 | 0.51 | | 0.28 | 0.90 | 0.90 | |
| Uniform Del: | 39.9 | 25.9 | 25.9 | | 40.4 | 29.1 | 35.6 | | 46.7 | 23.8 | 26.0 | | 41.8 | 28.5 | 28.5 | |
| IncremntDel: | 9.3 | 0.2 | 0.2 | | 0.1 | 0.3 | 22.2 | | 9.5 | 0.1 | 0.8 | | 0.8 | 8.4 | 8.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 49.3 | 26.0 | 26.0 | | 40.6 | 29.3 | 57.8 | | 56.2 | 23.9 | 26.8 | | 42.6 | 36.9 | 36.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 49.3 | 26.0 | 26.0 | | 40.6 | 29.3 | 57.8 | | 56.2 | 23.9 | 26.8 | | 42.6 | 36.9 | 36.9 | |
| LOS by Move: | D | C | C | | D | C | E | | E | C | C | | D | D | D | |
| HCM2kAvgQ: | 10 | 7 | 7 | | 0 | 3 | 15 | | 3 | 4 | 7 | | 1 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.358
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 13.5
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 0.91 | 0.91 | | 1.00 | 0.95 | 1.00 | | 0.92 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.87 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5133 | 49 | | 0 | 3610 | 0 | | 3502 | 0 | 1615 | | 0 | 0 | 1644 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.16 | 0.16 | | 0.00 | 0.12 | 0.00 | | 0.10 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.07 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green Time: | 0.0 | 28.8 | 28.8 | | 0.0 | 28.8 | 0.0 | | 20.0 | 0.0 | 32.2 | | 0.0 | 0.0 | 12.2 | |
| Volume/Cap: | 0.00 | 0.37 | 0.37 | | 0.00 | 0.28 | 0.00 | | 0.34 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.37 | |
| Uniform Del: | 0.0 | 12.0 | 12.0 | | 0.0 | 11.5 | 0.0 | | 17.4 | 0.0 | 9.1 | | 0.0 | 0.0 | 23.1 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.1 | 0.0 | | 0.2 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 12.1 | 12.1 | | 0.0 | 11.6 | 0.0 | | 17.6 | 0.0 | 9.2 | | 0.0 | 0.0 | 23.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 12.1 | 12.1 | | 0.0 | 11.6 | 0.0 | | 17.6 | 0.0 | 9.2 | | 0.0 | 0.0 | 23.8 | |
| LOS by Move: | A | B | B | | A | B | A | | B | A | A | | A | A | C | |
| HCM2kAvgQ: | 0 | 4 | 4 | | 0 | 3 | 0 | | 3 | 0 | 2 | | 0 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 16.8
Optimal Cycle: 81 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Permitted | | | Protected | | | Permitted | | | Protected | | |
| Rights: | Include | | | Include | | | Ovl | | | Include | | |
| Min. Green: | 16 | 16 | 16 | 0 | 0 | 0 | 0 | 29 | 45 | 28 | 61 | 0 |
| Lanes: | 1 0 | 1! 0 | 1 | 0 0 | 0 0 | 0 | 0 0 | 2 0 | 2 | 2 0 | 2 0 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 317 | 1 | 220 | 0 | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 317 | 1 | 220 | 0 | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | 0 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 317 | 1 | 220 | 0 | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 317 | 1 | 220 | 0 | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 317 | 1 | 220 | 0 | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 317 | 1 | 220 | 0 | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.86 | 0.86 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | 1.00 |
| Lanes: | 1.58 | 0.01 | 1.41 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| Final Sat.: | 2584 | 6 | 2291 | 0 | 0 | 0 | 0 | 3610 | 2842 | 3502 | 3610 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.17 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.13 | 0.23 | 0.42 | 0.00 |
| Crit Moves: | | **** | | | | | | | | | **** | |
| Green Time: | 16.0 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 29.0 | 29.0 | 36.0 | 65.0 | 0.0 |
| Volume/Cap: | 0.65 | 0.88 | 0.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.67 | 0.39 | 0.54 | 0.55 | 0.00 |
| Uniform Del: | 31.9 | 33.6 | 31.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.9 | 21.3 | 18.3 | 4.1 | 0.0 |
| IncremntDel: | 1.9 | 13.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 0.3 | 0.4 | 0.2 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Delay/Veh: | 33.8 | 47.5 | 31.4 | 0.0 | 0.0 | 0.0 | 0.0 | 25.4 | 21.5 | 18.7 | 4.3 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 33.8 | 47.5 | 31.4 | 0.0 | 0.0 | 0.0 | 0.0 | 25.4 | 21.5 | 18.7 | 4.3 | 0.0 |
| LOS by Move: | C | D | C | A | A | A | A | C | C | B | A | A |
| HCM2kAvgQ: | 6 | 10 | 4 | 0 | 0 | 0 | 0 | 10 | 4 | 8 | 9 | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.857
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 36.0
Optimal Cycle: 90 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 2 0 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 2 0 | 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 14 | 78 | 250 | 410 | 115 | 41 | 51 | 538 | 13 | 238 | 1506 | 420 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 14 | 78 | 250 | 410 | 115 | 41 | 51 | 538 | 13 | 238 | 1506 | 420 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 14 | 78 | 250 | 410 | 115 | 41 | 51 | 538 | 13 | 238 | 1506 | 420 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 14 | 78 | 250 | 410 | 115 | 41 | 51 | 538 | 13 | 238 | 1506 | 420 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 14 | 78 | 250 | 410 | 115 | 41 | 51 | 538 | 13 | 238 | 1506 | 420 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 14 | 78 | 250 | 410 | 115 | 41 | 51 | 538 | 13 | 238 | 1506 | 420 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 0.90 | 0.90 | 0.92 | 0.96 | 0.96 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.85 |
| Lanes: | 0.04 | 0.23 | 0.73 | 2.00 | 0.74 | 0.26 | 1.00 | 1.95 | 0.05 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 70 | 390 | 1249 | 3502 | 1346 | 480 | 1805 | 3511 | 85 | 1805 | 3610 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.20 | 0.20 | 0.12 | 0.09 | 0.09 | 0.03 | 0.15 | 0.15 | 0.13 | 0.42 | 0.26 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green Time: | 25.4 | 22.9 | 22.9 | 13.4 | 10.9 | 10.9 | 5.0 | 28.3 | 28.3 | 24.4 | 47.7 | 47.7 |
| Volume/Cap: | 0.79 | 0.87 | 0.87 | 0.87 | 0.79 | 0.79 | 0.57 | 0.54 | 0.54 | 0.54 | 0.87 | 0.55 |
| Uniform Del: | 34.8 | 37.2 | 37.2 | 42.5 | 43.4 | 43.4 | 46.4 | 30.3 | 30.3 | 32.9 | 23.5 | 18.5 |
| IncremntDel: | 9.2 | 19.1 | 19.1 | 16.5 | 18.6 | 18.6 | 8.1 | 0.6 | 0.6 | 1.4 | 5.3 | 0.8 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 44.0 | 56.3 | 56.3 | 59.0 | 62.1 | 62.1 | 54.5 | 30.9 | 30.9 | 34.3 | 28.8 | 19.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 44.0 | 56.3 | 56.3 | 59.0 | 62.1 | 62.1 | 54.5 | 30.9 | 30.9 | 34.3 | 28.8 | 19.3 |
| LOS by Move: | D | E | E | E | E | E | D | C | C | C | C | B |
| HCM2kAvgQ: | 12 | 13 | 13 | 9 | 7 | 7 | 2 | 8 | 8 | 6 | 23 | 9 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 33.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 0 1 | 0 | 1 0 | 0 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 | 0.95 | 0.99 | 0.99 | 0.95 | 0.98 | 0.98 |
| Lanes: | 0.21 | 1.50 | 0.29 | 0.34 | 1.43 | 0.23 | 1.00 | 0.90 | 0.10 | 1.00 | 0.86 | 0.14 |
| Final Sat.: | 369 | 2635 | 509 | 594 | 2526 | 400 | 1805 | 1695 | 178 | 1805 | 1600 | 260 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.10 | 0.10 | 0.10 | 0.15 | 0.15 | 0.15 | 0.01 | 0.13 | 0.13 | 0.04 | 0.37 | 0.37 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green Time: | 13.6 | 13.6 | 13.6 | 21.0 | 21.0 | 21.0 | 5.0 | 39.7 | 39.7 | 14.8 | 49.5 | 49.5 |
| Volume/Cap: | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.17 | 0.34 | 0.34 | 0.27 | 0.74 | 0.74 |
| Uniform Del: | 41.5 | 41.5 | 41.5 | 36.9 | 36.9 | 36.9 | 45.5 | 21.0 | 21.0 | 37.9 | 20.1 | 20.1 |
| IncremntDel: | 6.0 | 6.0 | 6.0 | 3.9 | 3.9 | 3.9 | 0.9 | 0.3 | 0.3 | 0.6 | 3.2 | 3.2 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 47.5 | 47.5 | 47.5 | 40.9 | 40.9 | 40.9 | 46.4 | 21.3 | 21.3 | 38.4 | 23.3 | 23.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 47.5 | 47.5 | 47.5 | 40.9 | 40.9 | 40.9 | 46.4 | 21.3 | 21.3 | 38.4 | 23.3 | 23.3 |
| LOS by Move: | D | D | D | D | D | D | D | C | C | D | C | C |
| HCM2kAvgQ: | 7 | 7 | 7 | 8 | 8 | 8 | 1 | 5 | 5 | 2 | 17 | 17 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.562
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 7.2
Optimal Cycle: 39 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.46 | 0.00 | 0.00 | 0.20 | 0.02 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | **** | | | | | |
| Green Time: | 17.1 | 108 | 0.0 | 0.0 | 90.4 | 90.4 | 13.5 | 0.0 | 13.5 | 0.0 | 0.0 | 0.0 |
| Volume/Cap: | 0.19 | 0.56 | 0.00 | 0.00 | 0.29 | 0.03 | 0.56 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 50.3 | 3.6 | 0.0 | 0.0 | 7.6 | 6.1 | 55.5 | 0.0 | 52.4 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 3.9 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 50.7 | 3.8 | 0.0 | 0.0 | 7.6 | 6.2 | 59.4 | 0.0 | 52.5 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 50.7 | 3.8 | 0.0 | 0.0 | 7.6 | 6.2 | 59.4 | 0.0 | 52.5 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | D | A | A | A | A | A | E | A | D | A | A | A |
| HCM2kAvgQ: | 2 | 11 | 0 | 0 | 6 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.570
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.8
Optimal Cycle: 40 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.41 | 0.00 | | 0.00 | 0.17 | 0.12 | | 0.12 | 0.00 | 0.02 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | | |
| Green Time: | 30.7 | 92.9 | 0.0 | | 0.0 | 62.2 | 62.2 | | 28.1 | 0.0 | 28.1 | | 0.0 | 0.0 | 0.0 | |
| Volume/Cap: | 0.35 | 0.57 | 0.00 | | 0.00 | 0.35 | 0.26 | | 0.57 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 41.4 | 8.9 | 0.0 | | 0.0 | 21.2 | 20.2 | | 45.5 | 0.0 | 40.7 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 0.5 | 0.2 | 0.0 | | 0.0 | 0.1 | 0.2 | | 2.0 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 41.9 | 9.2 | 0.0 | | 0.0 | 21.3 | 20.4 | | 47.6 | 0.0 | 40.8 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.9 | 9.2 | 0.0 | | 0.0 | 21.3 | 20.4 | | 47.6 | 0.0 | 40.8 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | A | A | | A | C | C | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 5 | 14 | 0 | | 0 | 7 | 4 | | 8 | 0 | 1 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.583
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 27 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 561 | | 0 | 0 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 561 | | 0 | 0 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 561 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | | 0.93 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.86 | 0.14 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1567 | 260 | | 1769 | 0 | 1900 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.26 | 0.20 | 0.00 | | 0.00 | 0.25 | 0.25 | | 0.05 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green Time: | 54.0 | 106 | 0.0 | | 0.0 | 52.3 | 52.3 | | 9.7 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Volume/Cap: | 0.58 | 0.22 | 0.00 | | 0.00 | 0.58 | 0.58 | | 0.58 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 24.6 | 1.0 | 0.0 | | 0.0 | 25.6 | 25.6 | | 53.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.1 | 0.1 | 0.0 | | 0.0 | 1.1 | 1.1 | | 6.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 25.7 | 1.0 | 0.0 | | 0.0 | 26.7 | 26.7 | | 59.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 25.7 | 1.0 | 0.0 | | 0.0 | 26.7 | 26.7 | | 59.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | C | C | | E | A | A | | A | A | A | |
| HCM2kAvgQ: | 12 | 2 | 0 | | 0 | 12 | 12 | | 4 | 0 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.452
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 22 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.51 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 976 | 861 | 861 | | 1027 | 442 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.18 | 0.03 | | 0.11 | 0.20 | 0.04 | | 0.00 | 0.00 | 0.00 | | 0.12 | 0.12 | 0.15 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green Time: | 10.8 | 46.8 | 46.8 | | 28.8 | 64.8 | 64.8 | | 40.4 | 40.4 | 40.4 | | 40.4 | 40.4 | 40.4 | |
| Volume/Cap: | 0.36 | 0.45 | 0.08 | | 0.45 | 0.37 | 0.08 | | 0.01 | 0.01 | 0.01 | | 0.36 | 0.36 | 0.45 | |
| Uniform Del: | 51.4 | 27.1 | 23.1 | | 38.9 | 15.9 | 13.3 | | 26.5 | 26.5 | 26.5 | | 30.0 | 30.0 | 31.1 | |
| IncremntDel: | 1.4 | 0.2 | 0.1 | | 0.8 | 0.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.4 | 0.4 | 0.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.7 | 27.4 | 23.1 | | 39.6 | 16.0 | 13.3 | | 26.5 | 26.5 | 26.5 | | 30.4 | 30.4 | 31.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.7 | 27.4 | 23.1 | | 39.6 | 16.0 | 13.3 | | 26.5 | 26.5 | 26.5 | | 30.4 | 30.4 | 31.7 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 2 | 9 | 1 | | 6 | 8 | 1 | | 0 | 0 | 0 | | 5 | 5 | 7 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.572
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 29.6
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.93 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.52 | 1.44 | 0.04 | | 0.02 | 1.15 | 0.83 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 935 | 2553 | 65 | | 28 | 1945 | 1409 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.12 | 0.12 | | 0.25 | 0.25 | 0.25 | | 0.05 | 0.08 | 0.08 | | 0.06 | 0.06 | 0.06 | |
| Crit Moves: | | | **** | | | | **** | | | **** | | | | **** | | |
| Green Time: | 21.5 | 21.5 | 21.5 | | 44.1 | 44.1 | 44.1 | | 13.4 | 13.4 | 13.4 | | 10.0 | 10.0 | 10.0 | |
| Volume/Cap: | 0.57 | 0.57 | 0.57 | | 0.57 | 0.57 | 0.57 | | 0.34 | 0.57 | 0.57 | | 0.57 | 0.57 | 0.57 | |
| Uniform Del: | 35.1 | 35.1 | 35.1 | | 20.9 | 20.9 | 20.9 | | 39.3 | 40.6 | 40.6 | | 42.9 | 42.9 | 42.9 | |
| IncremntDel: | 1.0 | 1.0 | 1.0 | | 0.5 | 0.5 | 0.5 | | 0.4 | 2.3 | 2.3 | | 4.2 | 4.2 | 4.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.2 | 36.2 | 36.2 | | 21.4 | 21.4 | 21.4 | | 39.7 | 43.0 | 43.0 | | 47.1 | 47.1 | 47.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.2 | 36.2 | 36.2 | | 21.4 | 21.4 | 21.4 | | 39.7 | 43.0 | 43.0 | | 47.1 | 47.1 | 47.1 | |
| LOS by Move: | D | D | D | | C | C | C | | D | D | D | | D | D | D | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 11 | 11 | 11 | | 3 | 5 | 5 | | 4 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.495 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.1 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Initial Fut: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | |
| PHF Volume: | 0 | 2313 | 0 | 0 | 823 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 2313 | 0 | 0 | 823 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 2313 | 0 | 0 | 823 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.45 | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | **** | | | | | | | | | | | | |
| Green Time: | 0.0 | 108 | 0.0 | 0.0 | 108 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Volume/Cap: | 0.00 | 0.50 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 0.0 | 1.1 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 0.0 | 1.2 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 1.2 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | |
| HCM2kAvgQ: | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Existing PM |
| Command: | Existing_2009_PM |
| Volume: | PM_2009 |
| Geometry: | PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Existing PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Existing_PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | D | 45.4 | 0.943 | D | 45.4 | 0.943 | + 0.000 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 12.9 | 0.815 | B | 12.9 | 0.815 | + 0.000 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | B | 17.8 | 0.817 | B | 17.8 | 0.817 | + 0.000 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | B | 19.4 | 0.685 | B | 18.5 | 0.685 | -0.907 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | D | 51.4 | 0.691 | C | 21.3 | 0.691 | -30.036 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 14.7 | 0.576 | B | 14.5 | 0.576 | -0.201 D/V |
| # 7 Middlefield at Marsh (Town of | C | 29.7 | 0.809 | C | 28.3 | 0.809 | -1.462 D/V |
| # 8 Bayfront Exp. & Willow Rd. | D | 43.1 | 0.916 | D | 43.1 | 0.916 | + 0.000 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 21.8 | 0.604 | C | 21.8 | 0.604 | + 0.000 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 11.9 | 0.543 | B | 11.9 | 0.543 | + 0.000 D/V |
| # 11 O'Brien Dr. & Willow Rd. | A | 9.7 | 0.546 | A | 9.7 | 0.546 | + 0.000 D/V |
| # 12 Newbridge St. & Willow Rd. | C | 32.7 | 0.735 | C | 32.7 | 0.735 | + 0.000 D/V |
| # 13 Bay Rd. & Willow Rd. | B | 19.5 | 0.730 | B | 19.5 | 0.730 | + 0.000 D/V |
| # 14 Durham St. & Willow Rd. | D | 47.1 | 0.632 | B | 14.9 | 0.638 | -32.204 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 10.7 | 0.731 | A | 9.5 | 0.730 | -1.143 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 11.7 | 0.653 | A | 9.5 | 0.653 | -2.144 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 126.0 | 1.232 | F | 126.8 | 1.232 | + 0.822 D/V |
| # 18 Bayfront Exp. & University Ave | F | 146.2 | 1.280 | F | 146.2 | 1.280 | + 0.000 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 12.7 | 0.667 | B | 12.7 | 0.667 | + 0.000 D/V |
| # 20 University & Kavanaugh | B | 15.8 | 0.642 | B | 15.8 | 0.642 | + 0.000 D/V |
| # 21 University & Bay | C | 32.5 | 0.805 | C | 32.5 | 0.805 | + 0.000 D/V |
| # 22 University & Runnymede | C | 22.3 | 0.675 | C | 22.3 | 0.675 | + 0.000 D/V |
| # 23 University & Bell | A | 7.5 | 0.528 | A | 7.5 | 0.528 | + 0.000 D/V |
| # 24 University & Donohoe | C | 34.9 | 0.843 | C | 34.9 | 0.843 | + 0.000 D/V |
| # 25 NB 101 & Donohoe St | C | 21.0 | 0.466 | C | 21.0 | 0.466 | + 0.000 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 21.3 | 0.509 | C | 21.3 | 0.509 | + 0.000 D/V |
| # 27 University Ave. & Woodland | D | 44.4 | 0.860 | D | 44.4 | 0.860 | + 0.000 D/V |
| # 28 Middlefield Rd. & University A | C | 32.6 | 0.537 | C | 32.6 | 0.537 | + 0.000 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 18.4 | 0.681 | B | 18.4 | 0.681 | + 0.000 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 13.7 | 0.584 | B | 13.7 | 0.584 | + 0.000 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 25.5 | 0.717 | C | 25.1 | 0.717 | -0.374 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 27.9 | 0.605 | C | 28.8 | 0.605 | + 0.857 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 38.0 | 0.704 | D | 38.0 | 0.704 | + 0.000 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.3 | 0.505 | A | 1.3 | 0.505 | + 0.000 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 0.943
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 45.4
Optimal Cycle: 165 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.88 | 0.12 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.03 | 0.03 | | 0.00 | 0.10 | 0.12 | | 0.10 | 0.10 | 0.70 | | 0.06 | 0.06 | 0.06 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green Time: | 34.2 | 34.2 | 34.2 | | 0.0 | 14.5 | 84.4 | | 69.9 | 69.9 | 104.1 | | 9.4 | 9.4 | 9.4 | |
| Volume/Cap: | 0.94 | 0.13 | 0.13 | | 0.00 | 0.94 | 0.19 | | 0.20 | 0.20 | 0.94 | | 0.94 | 0.94 | 0.94 | |
| Uniform Del: | 52.0 | 41.3 | 41.3 | | 0.0 | 62.3 | 12.5 | | 19.5 | 19.5 | 15.4 | | 65.0 | 65.0 | 65.0 | |
| IncremntDel: | 13.9 | 0.1 | 0.1 | | 0.0 | 32.5 | 0.1 | | 0.1 | 0.1 | 9.5 | | 63.6 | 63.6 | 63.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 65.9 | 41.4 | 41.4 | | 0.0 | 94.8 | 12.6 | | 19.6 | 19.6 | 24.9 | | 128.7 | 129 | 128.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 65.9 | 41.4 | 41.4 | | 0.0 | 94.8 | 12.6 | | 19.6 | 19.6 | 24.9 | | 128.7 | 129 | 128.7 | |
| LOS by Move: | E | D | D | | A | F | B | | B | B | C | | F | F | F | |
| HCM2kAvgQ: | 19 | 2 | 2 | | 0 | 11 | 3 | | 4 | 4 | 42 | | 8 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 58 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 0 | 0 | 0 | 1 | 0 0 | 0 | 0 | 0 | 0 0 | 2 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 0 | | 0 | 682 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 0 | | 0 | 682 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 0 | | 0 | 682 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.58 | 0.00 | | 0.00 | 0.19 | 0.00 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green Time: | 11.5 | 0.0 | 11.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 46.5 | 0.0 | | 0.0 | 46.5 | 0.0 | |
| Volume/Cap: | 0.81 | 0.00 | 0.76 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.81 | 0.00 | | 0.00 | 0.27 | 0.00 | |
| Uniform Del: | 25.7 | 0.0 | 25.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 6.3 | 0.0 | | 0.0 | 3.2 | 0.0 | |
| IncremntDel: | 8.3 | 0.0 | 11.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 2.1 | 0.0 | | 0.0 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 34.1 | 0.0 | 37.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 8.4 | 0.0 | | 0.0 | 3.3 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.1 | 0.0 | 37.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 8.4 | 0.0 | | 0.0 | 3.3 | 0.0 | |
| LOS by Move: | C | A | D | | A | A | A | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 7 | 0 | 6 | | 0 | 0 | 0 | | 0 | 17 | 0 | | 0 | 2 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.817
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 58 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 0 | 0 | 0 | 0 | 2 0 | 0 | 0 | 1 | 0 0 | 2 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 0 | | 0 | 940 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 0 | | 0 | 940 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 0 | | 0 | 940 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.39 | 0.00 | 0.29 | | 0.00 | 0.33 | 0.00 | | 0.00 | 0.27 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 31.4 | 0.0 | 31.4 | | 0.0 | 26.6 | 0.0 | | 0.0 | 26.6 | 0.0 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.82 | 0.00 | 0.59 | | 0.00 | 0.82 | 0.00 | | 0.00 | 0.65 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 14.3 | 0.0 | 12.1 | | 0.0 | 17.1 | 0.0 | | 0.0 | 15.5 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.3 | 0.0 | 1.2 | | 0.0 | 3.7 | 0.0 | | 0.0 | 1.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 17.6 | 0.0 | 13.4 | | 0.0 | 20.8 | 0.0 | | 0.0 | 16.5 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 17.6 | 0.0 | 13.4 | | 0.0 | 20.8 | 0.0 | | 0.0 | 16.5 | 0.0 | |
| LOS by Move: | A | A | A | | B | A | B | | A | C | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 15 | 0 | 7 | | 0 | 14 | 0 | | 0 | 9 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.685
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 33 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 1 0 | 0 | 2 | 0 | 1 0 | 0 | 1 | 1 | 0 2 | 1 | 0 | 2 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | 254 | 9 | 2 | 42 | 1314 | 17 | 78 | 1109 | 214 | | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Initial Bse: | 28 | 15 | 267 | 254 | 9 | 2 | 42 | 1314 | 17 | 78 | 1109 | 214 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 28 | 15 | 267 | 254 | 9 | 2 | 42 | 1314 | 17 | 78 | 1109 | 214 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 28 | 15 | 267 | 254 | 9 | 2 | 42 | 1314 | 17 | 78 | 1109 | 214 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 28 | 15 | 267 | 254 | 9 | 2 | 42 | 1314 | 17 | 78 | 1109 | 214 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 28 | 15 | 267 | 254 | 9 | 2 | 42 | 1314 | 17 | 78 | 1109 | 214 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.95 | 0.95 | 0.73 | 0.93 | 0.93 | 0.83 | 0.93 | 0.89 | 0.89 | 0.90 | 0.91 | 0.91 | | | | |
| Lanes: | 0.65 | 0.35 | 2.00 | 0.97 | 0.03 | 1.00 | 1.00 | 2.96 | 0.04 | 2.00 | 1.68 | 0.32 | | | | |
| Final Sat.: | 1174 | 629 | 2786 | 1716 | 61 | 1583 | 1769 | 5008 | 65 | 3432 | 2894 | 559 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.10 | 0.15 | 0.15 | 0.00 | 0.02 | 0.26 | 0.26 | 0.02 | 0.38 | 0.38 | | | | |
| Crit Moves: | | | **** | | **** | | **** | | | | **** | | | | | |
| Green Time: | 11.0 | 11.0 | 11.0 | 17.0 | 17.0 | 17.0 | 4.0 | 40.3 | 40.3 | 7.7 | 44.0 | 44.0 | | | | |
| Volume/Cap: | 0.17 | 0.17 | 0.70 | 0.70 | 0.70 | 0.01 | 0.47 | 0.52 | 0.52 | 0.24 | 0.70 | 0.70 | | | | |
| Uniform Del: | 30.5 | 30.5 | 32.9 | 29.1 | 29.1 | 24.8 | 37.0 | 13.3 | 13.3 | 33.4 | 13.1 | 13.1 | | | | |
| IncremntDel: | 0.3 | 0.3 | 5.5 | 5.6 | 5.6 | 0.0 | 4.0 | 0.2 | 0.2 | 0.4 | 1.2 | 1.2 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 30.8 | 30.8 | 38.5 | 34.7 | 34.7 | 24.8 | 41.0 | 13.5 | 13.5 | 33.8 | 14.3 | 14.3 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 30.8 | 30.8 | 38.5 | 34.7 | 34.7 | 24.8 | 41.0 | 13.5 | 13.5 | 33.8 | 14.3 | 14.3 | | | | |
| LOS by Move: | C | C | D | C | C | C | D | B | B | C | B | B | | | | |
| HCM2kAvgQ: | 1 | 1 | 5 | 7 | 7 | 0 | 1 | 8 | 8 | 1 | 12 | 12 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 34 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 1 | 1 0 | 0 | 1 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | 428 | 30 | 128 | 239 | 885 | 55 | 26 | 833 | 316 | | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Initial Bse: | 95 | 32 | 58 | 428 | 30 | 128 | 239 | 885 | 55 | 26 | 833 | 316 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 95 | 32 | 58 | 428 | 30 | 128 | 239 | 885 | 55 | 26 | 833 | 316 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 95 | 32 | 58 | 428 | 30 | 128 | 239 | 885 | 55 | 26 | 833 | 316 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 95 | 32 | 58 | 428 | 30 | 128 | 239 | 885 | 55 | 26 | 833 | 316 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 95 | 32 | 58 | 428 | 30 | 128 | 239 | 885 | 55 | 26 | 833 | 316 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.88 | 0.88 | 0.94 | 0.94 | 0.83 | 0.93 | 0.92 | 0.92 | 0.93 | 0.89 | 0.89 | | | | |
| Lanes: | 1.00 | 0.36 | 0.64 | 1.87 | 0.13 | 1.00 | 1.00 | 1.88 | 0.12 | 1.00 | 1.45 | 0.55 | | | | |
| Final Sat.: | 1769 | 598 | 1084 | 3323 | 233 | 1583 | 1769 | 3301 | 205 | 1769 | 2460 | 933 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.13 | 0.13 | 0.08 | 0.14 | 0.27 | 0.27 | 0.01 | 0.34 | 0.34 | | | | |
| Crit Moves: | **** | | | **** | | | **** | | | | **** | | | | | |
| Green Time: | 6.2 | 6.2 | 6.2 | 14.9 | 14.9 | 14.9 | 15.6 | 46.2 | 46.2 | 8.6 | 39.2 | 39.2 | | | | |
| Volume/Cap: | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.43 | 0.69 | 0.46 | 0.46 | 0.14 | 0.69 | 0.69 | | | | |
| Uniform Del: | 36.0 | 35.9 | 35.9 | 30.4 | 30.4 | 28.8 | 29.9 | 9.7 | 9.7 | 32.3 | 15.7 | 15.7 | | | | |
| IncremntDel: | 14.0 | 14.4 | 14.4 | 3.1 | 3.1 | 1.0 | 5.9 | 0.2 | 0.2 | 0.3 | 1.3 | 1.3 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 49.9 | 50.3 | 50.3 | 33.5 | 33.5 | 29.8 | 35.8 | 9.9 | 9.9 | 32.6 | 17.0 | 17.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 49.9 | 50.3 | 50.3 | 33.5 | 33.5 | 29.8 | 35.8 | 9.9 | 9.9 | 32.6 | 17.0 | 17.0 | | | | |
| LOS by Move: | D | D | D | C | C | C | D | A | A | C | B | B | | | | |
| HCM2kAvgQ: | 4 | 4 | 4 | 7 | 7 | 3 | 6 | 7 | 7 | 1 | 11 | 11 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.576
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 26 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! 0 | 0 | 0 | 0 | 1! 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.72 | 0.72 | 0.72 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.92 | 0.92 | |
| Lanes: | 0.23 | 0.03 | 0.74 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.79 | 0.20 | | 1.00 | 1.90 | 0.10 | |
| Final Sat.: | 359 | 50 | 1133 | | 843 | 475 | 46 | | 18 | 2973 | 327 | | 1769 | 3337 | 176 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.07 | 0.07 | 0.07 | | 0.28 | 0.28 | 0.28 | | 0.11 | 0.27 | 0.27 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green Time: | 22.1 | 22.1 | 22.1 | | 22.1 | 22.1 | 22.1 | | 38.2 | 38.2 | 38.2 | | 15.7 | 53.9 | 53.9 | |
| Volume/Cap: | 0.58 | 0.58 | 0.58 | | 0.24 | 0.24 | 0.24 | | 0.58 | 0.58 | 0.58 | | 0.58 | 0.40 | 0.40 | |
| Uniform Del: | 24.9 | 24.9 | 24.9 | | 22.4 | 22.4 | 22.4 | | 15.0 | 15.0 | 15.0 | | 29.1 | 5.8 | 5.8 | |
| IncremntDel: | 1.9 | 1.9 | 1.9 | | 0.3 | 0.3 | 0.3 | | 0.5 | 0.5 | 0.5 | | 2.4 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 26.9 | 26.9 | 26.9 | | 22.8 | 22.8 | 22.8 | | 15.6 | 15.6 | 15.6 | | 31.5 | 5.9 | 5.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.9 | 26.9 | 26.9 | | 22.8 | 22.8 | 22.8 | | 15.6 | 15.6 | 15.6 | | 31.5 | 5.9 | 5.9 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 2 | 2 | 2 | | 8 | 8 | 8 | | 4 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.809
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 28.3
Optimal Cycle: 76 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.22 | 0.34 | | 0.23 | 0.14 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.28 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green Time: | 0.0 | 30.5 | 69.3 | | 30.7 | 61.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 38.8 | 0.0 | 69.5 | |
| Volume/Cap: | 0.00 | 0.81 | 0.54 | | 0.81 | 0.25 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.81 | 0.00 | 0.44 | |
| Uniform Del: | 0.0 | 37.0 | 11.4 | | 36.9 | 12.6 | 0.0 | | 0.0 | 0.0 | 0.0 | | 32.3 | 0.0 | 10.3 | |
| IncremntDel: | 0.0 | 9.1 | 0.6 | | 9.5 | 0.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 7.6 | 0.0 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 46.2 | 12.0 | | 46.4 | 12.7 | 0.0 | | 0.0 | 0.0 | 0.0 | | 39.9 | 0.0 | 10.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 46.2 | 12.0 | | 46.4 | 12.7 | 0.0 | | 0.0 | 0.0 | 0.0 | | 39.9 | 0.0 | 10.6 | |
| LOS by Move: | A | D | B | | D | B | A | | A | A | A | | D | A | B | |
| HCM2kAvgQ: | 0 | 14 | 10 | | 15 | 5 | 0 | | 0 | 0 | 0 | | 16 | 0 | 8 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.916
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 43.1
Optimal Cycle: 136 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 3 | 0 | 1 | 2 | 0 3 | 0 | 1 | 1 | 1 1 | 0 | 2 | 1 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Initial Bse: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.97 | 1.03 | 0.83 | 0.90 | 0.90 | 0.88 | 0.93 | 0.93 | 0.83 | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 1.00 | 2.00 | 1.00 | 2.00 | 1.00 | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | 3686 | 5846 | 1583 | 3414 | 1707 | 3343 | 1769 | 3538 | 1583 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.11 | 0.00 | 0.00 | 0.38 | 0.07 | 0.01 | 0.01 | 0.43 | 0.02 | 0.03 | 0.01 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | **** | | | | | |
| Green Time: | 14.9 | 67.8 | 72.8 | 0.0 | 53.0 | 53.0 | 45.2 | 45.2 | 60.0 | 5.0 | 5.0 | 5.0 | | | | |
| Volume/Cap: | 0.92 | 0.22 | 0.00 | 0.00 | 0.92 | 0.17 | 0.03 | 0.02 | 0.92 | 0.65 | 0.77 | 0.13 | | | | |
| Uniform Del: | 57.0 | 16.8 | 12.6 | 0.0 | 36.6 | 24.5 | 28.0 | 27.9 | 32.8 | 61.6 | 61.9 | 60.4 | | | | |
| IncremntDel: | 27.0 | 0.0 | 0.0 | 0.0 | 6.6 | 0.1 | 0.0 | 0.0 | 9.6 | 19.6 | 23.3 | 1.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 84.1 | 16.8 | 12.6 | 0.0 | 43.2 | 24.6 | 28.0 | 27.9 | 42.4 | 81.2 | 85.3 | 61.4 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 84.1 | 16.8 | 12.6 | 0.0 | 43.2 | 24.6 | 28.0 | 27.9 | 42.4 | 81.2 | 85.3 | 61.4 | | | | |
| LOS by Move: | F | B | B | A | D | C | C | C | D | F | F | E | | | | |
| HCM2kAvgQ: | 11 | 5 | 0 | 0 | 33 | 3 | 0 | 0 | 32 | 3 | 4 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.604
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 47 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 1! | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Initial Bse: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.63 | 0.63 | 0.63 | 0.73 | 0.73 | 0.73 | 0.93 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | 0.49 | 0.03 | 0.48 | 1.00 | 1.99 | 0.01 | 1.00 | 1.78 | 0.22 | | | | |
| Final Sat.: | 838 | 39 | 318 | 673 | 46 | 673 | 1769 | 3521 | 13 | 1769 | 3105 | 376 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | 0.11 | 0.11 | 0.11 | 0.07 | 0.38 | 0.38 | 0.01 | 0.18 | 0.18 | | | | |
| Crit Moves: | | **** | | | | | | **** | | **** | | | | | | |
| Green Time: | 29.8 | 29.8 | 29.8 | 29.8 | 29.8 | 29.8 | 23.1 | 74.2 | 74.2 | 5.0 | 56.1 | 56.1 | | | | |
| Volume/Cap: | 0.62 | 0.62 | 0.62 | 0.44 | 0.44 | 0.44 | 0.38 | 0.62 | 0.62 | 0.27 | 0.38 | 0.38 | | | | |
| Uniform Del: | 40.1 | 40.1 | 40.1 | 38.0 | 38.0 | 38.0 | 42.2 | 14.2 | 14.2 | 55.7 | 20.7 | 20.7 | | | | |
| IncremntDel: | 4.0 | 4.0 | 4.0 | 0.9 | 0.9 | 0.9 | 0.7 | 0.6 | 0.6 | 2.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 44.1 | 44.1 | 44.1 | 38.9 | 38.9 | 38.9 | 42.9 | 14.7 | 14.7 | 57.7 | 20.9 | 20.9 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 44.1 | 44.1 | 44.1 | 38.9 | 38.9 | 38.9 | 42.9 | 14.7 | 14.7 | 57.7 | 20.9 | 20.9 | | | | |
| LOS by Move: | D | D | D | D | D | D | D | B | B | E | C | C | | | | |
| HCM2kAvgQ: | 7 | 7 | 7 | 5 | 5 | 5 | 4 | 16 | 16 | 1 | 7 | 7 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.543
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 42 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 0 | 0 0 | 0 | | 0 0 | 1! 0 | 0 | | 1 0 | 2 0 | 0 | | 0 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.85 | 1.00 | 0.85 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.08 | 0.00 | 0.92 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.95 | 0.05 | |
| Final Sat.: | 0 | 0 | 0 | | 123 | 0 | 1500 | | 1769 | 3538 | 0 | | 0 | 3429 | 94 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.08 | 0.00 | 0.08 | | 0.06 | 0.41 | 0.00 | | 0.00 | 0.23 | 0.23 | |
| Crit Moves: | | | | | | | **** | | | **** | | | **** | | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 18.0 | 0.0 | 18.0 | | 17.5 | 91.0 | 0.0 | | 0.0 | 73.6 | 73.6 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.54 | 0.00 | 0.54 | | 0.38 | 0.54 | 0.00 | | 0.00 | 0.38 | 0.38 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 47.2 | 0.0 | 47.2 | | 46.4 | 5.9 | 0.0 | | 0.0 | 11.7 | 11.7 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 2.5 | 0.0 | 2.5 | | 0.9 | 0.2 | 0.0 | | 0.0 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 49.7 | 0.0 | 49.7 | | 47.3 | 6.2 | 0.0 | | 0.0 | 11.8 | 11.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 49.7 | 0.0 | 49.7 | | 47.3 | 6.2 | 0.0 | | 0.0 | 11.8 | 11.8 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 5 | 0 | 5 | | 4 | 12 | 0 | | 0 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.546
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 42 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | | 0 0 | 2 0 | 1 | | 1 0 | 2 0 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.63 | 0.00 | 0.37 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2826 | 0 | 638 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.00 | 0.05 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.40 | 0.13 | | 0.04 | 0.25 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | | **** | | **** | | | |
| Green Time: | 12.1 | 0.0 | 12.1 | | 0.0 | 0.0 | 0.0 | | 0.0 | 87.9 | 87.9 | | 9.1 | 96.9 | 0.0 | |
| Volume/Cap: | 0.42 | 0.00 | 0.55 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.55 | 0.18 | | 0.55 | 0.31 | 0.00 | |
| Uniform Del: | 50.7 | 0.0 | 51.4 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.2 | 4.9 | | 53.5 | 3.0 | 0.0 | |
| IncremntDel: | 0.8 | 0.0 | 2.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.2 | 0.1 | | 4.6 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 51.5 | 0.0 | 53.6 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.4 | 5.0 | | 58.1 | 3.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.5 | 0.0 | 53.6 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.4 | 5.0 | | 58.1 | 3.0 | 0.0 | |
| LOS by Move: | D | A | D | | A | A | A | | A | A | A | | E | A | A | |
| HCM2kAvgQ: | 3 | 0 | 4 | | 0 | 0 | 0 | | 0 | 12 | 2 | | 3 | 4 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 32.7
Optimal Cycle: 73 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.43 | 0.57 | | 1.00 | 1.93 | 0.07 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 3993 | 943 | | 1769 | 3401 | 119 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.09 | 0.03 | | 0.02 | 0.09 | 0.14 | | 0.18 | 0.36 | 0.36 | | 0.06 | 0.29 | 0.29 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green Time: | 14.9 | 14.9 | 25.5 | | 14.5 | 14.5 | 44.3 | | 29.8 | 66.0 | 66.0 | | 10.6 | 46.8 | 46.8 | |
| Volume/Cap: | 0.58 | 0.74 | 0.16 | | 0.18 | 0.74 | 0.37 | | 0.74 | 0.65 | 0.65 | | 0.65 | 0.74 | 0.74 | |
| Uniform Del: | 49.6 | 50.7 | 38.6 | | 47.4 | 50.9 | 27.7 | | 41.5 | 19.0 | 19.0 | | 52.9 | 31.3 | 31.3 | |
| IncremntDel: | 2.0 | 11.6 | 0.2 | | 0.4 | 11.9 | 0.4 | | 6.4 | 0.6 | 0.6 | | 9.6 | 2.1 | 2.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 51.7 | 62.3 | 38.8 | | 47.8 | 62.8 | 28.1 | | 47.9 | 19.6 | 19.6 | | 62.5 | 33.4 | 33.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.7 | 62.3 | 38.8 | | 47.8 | 62.8 | 28.1 | | 47.9 | 19.6 | 19.6 | | 62.5 | 33.4 | 33.4 | |
| LOS by Move: | D | E | D | | D | E | C | | D | B | B | | E | C | C | |
| HCM2kAvgQ: | 5 | 8 | 2 | | 1 | 7 | 6 | | 12 | 17 | 17 | | 4 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 19.5
Optimal Cycle: 60 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.24 | 0.00 | 0.03 | | 0.02 | 0.41 | 0.00 | | 0.00 | 0.30 | 0.16 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green Time: | 0.0 | 0.0 | 0.0 | | 29.0 | 0.0 | 29.0 | | 7.8 | 50.0 | 0.0 | | 0.0 | 42.2 | 42.2 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.73 | 0.00 | 0.11 | | 0.26 | 0.73 | 0.00 | | 0.00 | 0.64 | 0.34 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 27.0 | 0.0 | 21.4 | | 38.4 | 14.9 | 0.0 | | 0.0 | 18.1 | 15.1 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 4.8 | 0.0 | 0.1 | | 0.9 | 1.4 | 0.0 | | 0.0 | 0.8 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 31.8 | 0.0 | 21.5 | | 39.3 | 16.4 | 0.0 | | 0.0 | 19.0 | 15.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 31.8 | 0.0 | 21.5 | | 39.3 | 16.4 | 0.0 | | 0.0 | 19.0 | 15.4 | |
| LOS by Move: | A | A | A | | C | A | C | | D | B | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 12 | 0 | 1 | | 1 | 17 | 0 | | 0 | 12 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.638
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 39 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.51 | 0.84 | 0.84 | | 0.57 | 0.57 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.97 | 0.97 | |
| Lanes: | 1.00 | 0.08 | 0.92 | | 0.96 | 0.04 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 970 | 122 | 1481 | | 1034 | 42 | 1583 | | 1769 | 3503 | 31 | | 1769 | 1737 | 108 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.06 | 0.06 | | 0.12 | 0.12 | 0.02 | | 0.01 | 0.32 | 0.32 | | 0.05 | 0.47 | 0.47 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green Time: | 18.8 | 18.8 | 18.8 | | 18.8 | 18.8 | 18.8 | | 4.0 | 68.3 | 68.3 | | 10.8 | 75.2 | 75.2 | |
| Volume/Cap: | 0.19 | 0.32 | 0.32 | | 0.66 | 0.66 | 0.11 | | 0.16 | 0.49 | 0.49 | | 0.49 | 0.66 | 0.66 | |
| Uniform Del: | 36.6 | 37.5 | 37.5 | | 40.1 | 40.1 | 36.1 | | 48.9 | 9.4 | 9.4 | | 44.5 | 8.0 | 8.0 | |
| IncremntDel: | 0.5 | 0.6 | 0.6 | | 8.1 | 8.1 | 0.2 | | 1.1 | 0.2 | 0.2 | | 2.1 | 1.2 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.1 | 38.2 | 38.2 | | 48.1 | 48.1 | 36.2 | | 50.0 | 9.6 | 9.6 | | 46.6 | 9.2 | 9.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.1 | 38.2 | 38.2 | | 48.1 | 48.1 | 36.2 | | 50.0 | 9.6 | 9.6 | | 46.6 | 9.2 | 9.2 | |
| LOS by Move: | D | D | D | | D | D | D | | D | A | A | | D | A | A | |
| HCM2kAvgQ: | 1 | 3 | 3 | | 5 | 5 | 1 | | 1 | 10 | 10 | | 3 | 15 | 15 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 50 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.87 | 0.87 | 0.87 | | 0.73 | 0.73 | 0.73 | | 0.25 | 0.98 | 0.98 | | 0.18 | 0.96 | 0.96 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.88 | 0.12 | |
| Final Sat.: | 659 | 604 | 384 | | 956 | 62 | 364 | | 482 | 1850 | 10 | | 341 | 1608 | 220 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.10 | 0.10 | 0.10 | | 0.05 | 0.59 | 0.59 | | 0.01 | 0.49 | 0.49 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green Time: | 13.8 | 13.8 | 13.8 | | 13.8 | 13.8 | 13.8 | | 84.2 | 84.2 | 84.2 | | 84.2 | 84.2 | 84.2 | |
| Volume/Cap: | 0.14 | 0.14 | 0.14 | | 0.73 | 0.73 | 0.73 | | 0.06 | 0.73 | 0.73 | | 0.02 | 0.62 | 0.62 | |
| Uniform Del: | 40.3 | 40.3 | 40.3 | | 43.8 | 43.8 | 43.8 | | 2.2 | 5.0 | 5.0 | | 2.1 | 4.1 | 4.1 | |
| IncremntDel: | 0.3 | 0.3 | 0.3 | | 14.0 | 14.0 | 14.0 | | 0.1 | 1.9 | 1.9 | | 0.0 | 0.8 | 0.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 40.6 | 40.6 | 40.6 | | 57.8 | 57.8 | 57.8 | | 2.2 | 6.9 | 6.9 | | 2.1 | 4.9 | 4.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 40.6 | 40.6 | 40.6 | | 57.8 | 57.8 | 57.8 | | 2.2 | 6.9 | 6.9 | | 2.1 | 4.9 | 4.9 | |
| LOS by Move: | D | D | D | | E | E | E | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 6 | | 0 | 18 | 18 | | 0 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.653
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 40 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.73 | 0.88 | 0.88 | | 0.52 | 0.96 | 0.96 | | 0.29 | 0.98 | 0.98 | | 0.23 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.29 | 0.71 | | 1.00 | 0.88 | 0.12 | | 1.00 | 0.96 | 0.04 | | 1.00 | 0.98 | 0.02 | |
| Final Sat.: | 1378 | 487 | 1178 | | 991 | 1613 | 215 | | 547 | 1786 | 66 | | 439 | 1819 | 37 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.06 | 0.06 | | 0.03 | 0.02 | 0.02 | | 0.01 | 0.54 | 0.54 | | 0.08 | 0.46 | 0.46 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green Time: | 10.7 | 10.7 | 10.7 | | 10.7 | 10.7 | 10.7 | | 87.3 | 87.3 | 87.3 | | 87.3 | 87.3 | 87.3 | |
| Volume/Cap: | 0.65 | 0.62 | 0.62 | | 0.29 | 0.18 | 0.18 | | 0.01 | 0.65 | 0.65 | | 0.10 | 0.55 | 0.55 | |
| Uniform Del: | 45.3 | 45.2 | 45.2 | | 43.6 | 43.1 | 43.1 | | 1.5 | 3.3 | 3.3 | | 1.6 | 2.8 | 2.8 | |
| IncremntDel: | 10.4 | 7.0 | 7.0 | | 1.6 | 0.5 | 0.5 | | 0.0 | 1.0 | 1.0 | | 0.1 | 0.4 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 55.8 | 52.2 | 52.2 | | 45.1 | 43.6 | 43.6 | | 1.5 | 4.3 | 4.3 | | 1.8 | 3.2 | 3.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 55.8 | 52.2 | 52.2 | | 45.1 | 43.6 | 43.6 | | 1.5 | 4.3 | 4.3 | | 1.8 | 3.2 | 3.2 | |
| LOS by Move: | E | D | D | | D | D | D | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 1 | 1 | 1 | | 0 | 13 | 13 | | 0 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.232
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 126.8
Optimal Cycle: 200 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 2 | 0 | 1 | 1 | 1 0 | 1 | 0 | 1 | 0 1 | 0 | 1 | 1 | 1 0 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.58 | 1.36 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.60 | 0.40 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2704 | 2341 | 108 | | 1769 | 1862 | 1583 | | 2866 | 713 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.12 | 0.62 | | 0.18 | 0.18 | 0.18 | | 0.02 | 0.09 | 0.10 | | 0.13 | 0.13 | 0.26 | |
| Crit Moves: | | | **** | | | | **** | | | | **** | | | | **** | |
| Green Time: | 65.5 | 65.5 | 65.5 | | 18.6 | 18.6 | 18.6 | | 10.5 | 10.5 | 10.5 | | 27.3 | 27.3 | 27.3 | |
| Volume/Cap: | 0.11 | 0.25 | 1.23 | | 1.23 | 1.23 | 1.23 | | 0.25 | 1.13 | 1.23 | | 0.63 | 0.63 | 1.23 | |
| Uniform Del: | 16.9 | 18.3 | 32.3 | | 55.7 | 55.7 | 55.7 | | 56.0 | 59.7 | 59.7 | | 46.8 | 46.8 | 51.3 | |
| IncremntDel: | 0.1 | 0.1 | 124.3 | | 115.8 | 116 | 115.8 | | 0.9 | 111 | 154.5 | | 1.8 | 1.8 | 127.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 17.0 | 18.3 | 156.6 | | 171.5 | 172 | 171.5 | | 57.0 | 171 | 214.2 | | 48.5 | 48.5 | 179.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 17.0 | 18.3 | 156.6 | | 171.5 | 172 | 171.5 | | 57.0 | 171 | 214.2 | | 48.5 | 48.5 | 179.0 | |
| LOS by Move: | B | B | F | | F | F | F | | E | F | F | | D | D | F | |
| HCM2kAvgQ: | 2 | 5 | 33 | | 23 | 23 | 23 | | 2 | 12 | 12 | | 9 | 9 | 28 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.280
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 146.2
Optimal Cycle: 200 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Initial Bse: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.19 | 0.00 | 0.00 | 0.69 | 0.08 | 0.02 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green Time: | 12.9 | 93.3 | 0.0 | 0.0 | 80.4 | 80.4 | 46.7 | 0.0 | 46.7 | 0.0 | 0.0 | 0.0 | | | | |
| Volume/Cap: | 1.28 | 0.31 | 0.00 | 0.00 | 1.28 | 0.15 | 0.06 | 0.00 | 1.28 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 68.6 | 13.3 | 0.0 | 0.0 | 34.8 | 17.6 | 36.2 | 0.0 | 51.6 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 149.7 | 0.1 | 0.0 | 0.0 | 129 | 0.1 | 0.0 | 0.0 | 132.2 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 218.3 | 13.3 | 0.0 | 0.0 | 164 | 17.6 | 36.2 | 0.0 | 183.8 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 218.3 | 13.3 | 0.0 | 0.0 | 164 | 17.6 | 36.2 | 0.0 | 183.8 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 16 | 7 | 0 | 0 | 92 | 3 | 1 | 0 | 47 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Initial Bse: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.55 | 0.00 | 0.45 | 1.00 | 2.00 | 0.00 | 0.00 | 1.93 | 0.07 | | | | |
| Final Sat.: | 0 | 0 | 0 | 932 | 0 | 769 | 1769 | 3538 | 0 | 0 | 3400 | 120 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.13 | 0.01 | 0.45 | 0.00 | 0.00 | 0.13 | 0.13 | | | | |
| Crit Moves: | | | | **** | | | | **** | | **** | | | | | | |
| Green Time: | 0.0 | 0.0 | 0.0 | 16.4 | 0.0 | 16.4 | 17.6 | 57.6 | 0.0 | 0.0 | 40.0 | 40.0 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.67 | 0.00 | 0.67 | 0.05 | 0.67 | 0.00 | 0.00 | 0.28 | 0.28 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 31.8 | 0.0 | 31.8 | 27.0 | 8.1 | 0.0 | 0.0 | 13.8 | 13.8 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 5.2 | 0.0 | 5.2 | 0.1 | 0.7 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 36.9 | 0.0 | 36.9 | 27.1 | 8.8 | 0.0 | 0.0 | 13.9 | 13.9 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 36.9 | 0.0 | 36.9 | 27.1 | 8.8 | 0.0 | 0.0 | 13.9 | 13.9 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | A | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 13 | 0 | 0 | 4 | 4 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.642
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.96 | 0.96 | 0.96 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.45 | 0.40 | 0.15 | | 0.15 | 0.22 | 0.63 | | 1.00 | 1.98 | 0.02 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 816 | 723 | 280 | | 252 | 385 | 1089 | | 1805 | 3560 | 43 | | 1805 | 3509 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | | 0.08 | 0.08 | 0.08 | | 0.01 | 0.44 | 0.44 | | 0.01 | 0.15 | 0.15 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green Time: | 7.1 | 6.4 | 6.4 | | 11.3 | 10.6 | 10.6 | | 17.8 | 66.3 | 66.3 | | 5.0 | 53.5 | 53.5 | |
| Volume/Cap: | 0.61 | 0.67 | 0.67 | | 0.67 | 0.71 | 0.71 | | 0.08 | 0.67 | 0.67 | | 0.20 | 0.28 | 0.28 | |
| Uniform Del: | 45.1 | 45.8 | 45.8 | | 42.6 | 43.2 | 43.2 | | 34.3 | 10.2 | 10.2 | | 45.6 | 12.7 | 12.7 | |
| IncremntDel: | 8.2 | 14.0 | 14.0 | | 8.7 | 12.1 | 12.1 | | 0.1 | 0.7 | 0.7 | | 1.1 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 53.3 | 59.7 | 59.7 | | 51.2 | 55.3 | 55.3 | | 34.4 | 10.9 | 10.9 | | 46.7 | 12.8 | 12.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 53.3 | 59.7 | 59.7 | | 51.2 | 55.3 | 55.3 | | 34.4 | 10.9 | 10.9 | | 46.7 | 12.8 | 12.8 | |
| LOS by Move: | D | E | E | | D | E | E | | C | B | B | | D | B | B | |
| HCM2kAvgQ: | 3 | 4 | 4 | | 5 | 5 | 5 | | 1 | 15 | 15 | | 1 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.805
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 32.5
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.98 | 0.98 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.87 | 0.13 | | 1.00 | 1.83 | 0.17 | |
| Final Sat.: | 1862 | 1862 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3352 | 226 | | 1805 | 3270 | 297 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.12 | 0.21 | | 0.05 | 0.14 | 0.07 | | 0.05 | 0.39 | 0.39 | | 0.07 | 0.17 | 0.17 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | **** | | | |
| Green Time: | 12.2 | 26.5 | 26.5 | | 6.5 | 20.8 | 20.8 | | 13.3 | 47.8 | 47.8 | | 8.2 | 42.7 | 42.7 | |
| Volume/Cap: | 0.66 | 0.44 | 0.81 | | 0.81 | 0.66 | 0.33 | | 0.39 | 0.81 | 0.81 | | 0.81 | 0.39 | 0.39 | |
| Uniform Del: | 42.0 | 30.6 | 34.3 | | 46.1 | 36.4 | 33.6 | | 39.6 | 22.1 | 22.1 | | 45.1 | 19.7 | 19.7 | |
| IncremntDel: | 3.0 | 0.4 | 10.7 | | 32.2 | 4.2 | 0.6 | | 1.0 | 2.9 | 2.9 | | 26.6 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 44.9 | 31.0 | 45.0 | | 78.3 | 40.5 | 34.2 | | 40.6 | 25.0 | 25.0 | | 71.8 | 19.8 | 19.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 44.9 | 31.0 | 45.0 | | 78.3 | 40.5 | 34.2 | | 40.6 | 25.0 | 25.0 | | 71.8 | 19.8 | 19.8 | |
| LOS by Move: | D | C | D | | E | D | C | | D | C | C | | E | B | B | |
| HCM2kAvgQ: | 6 | 6 | 12 | | 5 | 8 | 3 | | 2 | 19 | 19 | | 4 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.3
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.96 | 0.96 | 0.96 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.32 | 0.44 | 0.24 | | 0.14 | 0.64 | 0.22 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 574 | 802 | 434 | | 259 | 1159 | 412 | | 1805 | 3370 | 208 | | 1805 | 3524 | 76 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.14 | 0.14 | | 0.07 | 0.07 | 0.07 | | 0.02 | 0.38 | 0.38 | | 0.02 | 0.23 | 0.23 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | **** | | | |
| Green Time: | 19.8 | 19.8 | 19.8 | | 9.6 | 9.6 | 9.6 | | 10.8 | 54.6 | 54.6 | | 5.0 | 48.8 | 48.8 | |
| Volume/Cap: | 0.69 | 0.69 | 0.69 | | 0.69 | 0.69 | 0.69 | | 0.15 | 0.69 | 0.69 | | 0.49 | 0.46 | 0.46 | |
| Uniform Del: | 37.2 | 37.2 | 37.2 | | 43.8 | 43.8 | 43.8 | | 40.4 | 16.5 | 16.5 | | 46.3 | 16.9 | 16.9 | |
| IncremntDel: | 5.5 | 5.5 | 5.5 | | 10.9 | 10.9 | 10.9 | | 0.4 | 1.0 | 1.0 | | 4.1 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.7 | 42.7 | 42.7 | | 54.6 | 54.6 | 54.6 | | 40.7 | 17.5 | 17.5 | | 50.4 | 17.1 | 17.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.7 | 42.7 | 42.7 | | 54.6 | 54.6 | 54.6 | | 40.7 | 17.5 | 17.5 | | 50.4 | 17.1 | 17.1 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 5 | 5 | 5 | | 1 | 16 | 16 | | 1 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.528
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.94 | 0.94 | 0.94 | | 0.32 | 0.94 | 0.94 | | 0.15 | 0.95 | 0.95 | |
| Lanes: | 0.33 | 0.46 | 0.21 | | 0.11 | 0.67 | 0.22 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 544 | 752 | 344 | | 195 | 1204 | 389 | | 600 | 3357 | 221 | | 287 | 3498 | 98 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.11 | 0.11 | | 0.06 | 0.06 | 0.06 | | 0.07 | 0.39 | 0.39 | | 0.13 | 0.22 | 0.22 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green Time: | 18.8 | 18.8 | 18.8 | | 18.8 | 18.8 | 18.8 | | 67.2 | 67.2 | 67.2 | | 67.2 | 67.2 | 67.2 | |
| Volume/Cap: | 0.53 | 0.53 | 0.53 | | 0.27 | 0.27 | 0.27 | | 0.09 | 0.53 | 0.53 | | 0.17 | 0.30 | 0.30 | |
| Uniform Del: | 31.6 | 31.6 | 31.6 | | 29.8 | 29.8 | 29.8 | | 3.1 | 4.8 | 4.8 | | 3.3 | 3.7 | 3.7 | |
| IncremntDel: | 1.5 | 1.5 | 1.5 | | 0.4 | 0.4 | 0.4 | | 0.1 | 0.2 | 0.2 | | 0.4 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.2 | 33.2 | 33.2 | | 30.2 | 30.2 | 30.2 | | 3.2 | 5.0 | 5.0 | | 3.7 | 3.8 | 3.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.2 | 33.2 | 33.2 | | 30.2 | 30.2 | 30.2 | | 3.2 | 5.0 | 5.0 | | 3.7 | 3.8 | 3.8 | |
| LOS by Move: | C | C | C | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 5 | 5 | 5 | | 2 | 2 | 2 | | 0 | 8 | 8 | | 0 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.843
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 34.9
Optimal Cycle: 86 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 1 | 0 1 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 1 | 0 | 2 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.88 | 0.88 | 0.88 | 0.95 | 1.00 | 0.85 | 0.95 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Lanes: | 1.00 | 1.34 | 1.66 | 1.00 | 1.00 | 1.00 | 1.00 | 1.18 | 0.82 | 2.00 | 1.59 | 0.41 |
| Final Sat.: | 1671 | 2243 | 2770 | 1805 | 1900 | 1615 | 1805 | 2007 | 1383 | 3502 | 2774 | 724 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.22 | 0.22 | 0.02 | 0.09 | 0.14 | 0.12 | 0.39 | 0.39 | 0.03 | 0.24 | 0.24 |
| Crit Moves: | **** | | | | | **** | | **** | | **** | | |
| Green Time: | 22.1 | 31.1 | 31.1 | 7.2 | 16.2 | 16.2 | 17.0 | 45.7 | 45.7 | 5.0 | 33.7 | 33.7 |
| Volume/Cap: | 0.85 | 0.70 | 0.70 | 0.25 | 0.57 | 0.85 | 0.71 | 0.85 | 0.85 | 0.66 | 0.71 | 0.71 |
| Uniform Del: | 37.4 | 30.3 | 30.3 | 43.8 | 38.6 | 40.7 | 39.2 | 24.2 | 24.2 | 46.7 | 28.8 | 28.8 |
| IncremntDel: | 4.6 | 1.1 | 1.1 | 1.0 | 2.5 | 22.9 | 7.5 | 4.9 | 4.9 | 8.8 | 2.0 | 2.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 42.1 | 31.4 | 31.4 | 44.8 | 41.1 | 63.7 | 46.6 | 29.1 | 29.1 | 55.4 | 30.9 | 30.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 42.1 | 31.4 | 31.4 | 44.8 | 41.1 | 63.7 | 46.6 | 29.1 | 29.1 | 55.4 | 30.9 | 30.9 |
| LOS by Move: | D | C | C | D | D | E | D | C | C | E | C | C |
| HCM2kAvgQ: | 11 | 10 | 10 | 1 | 6 | 9 | 8 | 22 | 22 | 2 | 12 | 12 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 82 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 32 | 32 | 0 | 32 | 0 | 28 | 0 | 28 | 0 | 0 | 18 |
| Lanes: | 0 0 | 2 1 | 0 | 0 0 | 2 0 | 0 | 2 0 | 0 0 | 1 | 0 0 | 0 0 | 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 0.91 | 1.00 | 0.95 | 1.00 | 0.92 | 1.00 | 0.85 | 1.00 | 1.00 | 0.87 |
| Lanes: | 0.00 | 2.93 | 0.07 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 5052 | 120 | 0 | 3610 | 0 | 3502 | 0 | 1615 | 0 | 0 | 1644 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.16 | 0.16 | 0.00 | 0.22 | 0.00 | 0.22 | 0.00 | 0.17 | 0.00 | 0.00 | 0.01 |
| Crit Moves: | **** | | | | **** | | **** | | | | | **** |
| Green Time: | 0.0 | 33.9 | 33.9 | 0.0 | 33.9 | 0.0 | 34.1 | 0.0 | 52.1 | 0.0 | 0.0 | 18.0 |
| Volume/Cap: | 0.00 | 0.42 | 0.42 | 0.00 | 0.58 | 0.00 | 0.58 | 0.00 | 0.30 | 0.00 | 0.00 | 0.05 |
| Uniform Del: | 0.0 | 20.8 | 20.8 | 0.0 | 22.3 | 0.0 | 22.2 | 0.0 | 9.6 | 0.0 | 0.0 | 29.1 |
| IncremntDel: | 0.0 | 0.1 | 0.1 | 0.0 | 0.6 | 0.0 | 0.6 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Delay/Veh: | 0.0 | 20.9 | 20.9 | 0.0 | 23.0 | 0.0 | 22.8 | 0.0 | 9.8 | 0.0 | 0.0 | 29.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 20.9 | 20.9 | 0.0 | 23.0 | 0.0 | 22.8 | 0.0 | 9.8 | 0.0 | 0.0 | 29.1 |
| LOS by Move: | A | C | C | A | C | A | C | A | A | A | A | C |
| HCM2kAvgQ: | 0 | 6 | 6 | 0 | 9 | 0 | 9 | 0 | 4 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.509
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 86 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | | 18 | 18 | 0 | | 0 | 0 | 0 | | 39 | 57 | 21 | | 64 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| Growth Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Initial Bse: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.95 | | 0.75 | 0.92 | 0.95 | | 1.00 |
| Lanes: | 1.41 | 0.01 | | 1.58 | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 2.00 | 2.00 | 2.00 | | 0.00 |
| Final Sat.: | 2292 | | 4 | 2585 | 0 | | 0 | 0 | 0 | 3610 | | 2842 | 3502 | 3610 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.23 | | 0.17 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.39 | | 0.14 | 0.14 | 0.26 | | 0.00 |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green Time: | 22.0 | 22.0 | | 22.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 41.6 | | 41.6 | 22.4 | 64.0 | | 0.0 |
| Volume/Cap: | 0.54 | 0.94 | | 0.69 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.83 | | 0.30 | 0.56 | 0.36 | | 0.00 |
| Uniform Del: | 29.6 | 33.3 | | 30.9 | 0.0 | 0.0 | | 0.0 | 0.0 | 21.2 | | 15.1 | 29.5 | 5.1 | | 0.0 |
| IncremntDel: | 0.5 | 18.5 | | 2.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 3.8 | | 0.1 | 0.8 | 0.1 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 |
| Delay/Veh: | 30.1 | 51.9 | | 33.0 | 0.0 | 0.0 | | 0.0 | 25.0 | 15.2 | | 30.3 | 5.1 | | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 30.1 | 51.9 | | 33.0 | 0.0 | 0.0 | | 0.0 | 25.0 | 15.2 | | 30.3 | 5.1 | | | 0.0 |
| LOS by Move: | C | D | | C | A | A | | A | A | C | | B | C | A | | A |
| HCM2kAvgQ: | 6 | 15 | | 8 | 0 | 0 | | 0 | 17 | 4 | | 7 | 5 | | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.860
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 44.4
Optimal Cycle: 95 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Growth Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Initial Bse: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.97 | | 0.97 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | | 0.85 |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.78 | | 0.22 | 1.00 | 1.98 | | 0.02 | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 73 | 395 | | 1243 | 3502 | 1429 | | 408 | 1805 | 3563 | | 40 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.22 | | 0.22 | 0.17 | 0.08 | | 0.08 | 0.02 | 0.23 | | 0.23 | 0.15 | 0.22 | | 0.20 |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green Time: | 36.7 | 28.2 | | 28.2 | 22.4 | 13.9 | | 13.9 | 8.2 | 29.0 | | 29.0 | 19.4 | 40.2 | | 40.2 |
| Volume/Cap: | 0.66 | 0.86 | | 0.86 | 0.86 | 0.66 | | 0.66 | 0.21 | 0.86 | | 0.86 | 0.86 | 0.61 | | 0.55 |
| Uniform Del: | 31.3 | 39.0 | | 39.0 | 42.3 | 45.8 | | 45.8 | 47.8 | 38.5 | | 38.5 | 44.0 | 28.4 | | 27.8 |
| IncremntDel: | 2.9 | 15.7 | | 15.7 | 10.4 | 6.9 | | 6.9 | 0.8 | 8.0 | | 8.0 | 20.4 | 0.8 | | 1.2 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 34.2 | 54.7 | | 54.7 | 52.7 | 52.8 | | 52.8 | 48.6 | 46.6 | | 46.6 | 64.3 | 29.3 | | 28.9 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 34.2 | 54.7 | | 54.7 | 52.7 | 52.8 | | 52.8 | 48.6 | 46.6 | | 46.6 | 64.3 | 29.3 | | 28.9 |
| LOS by Move: | C | D | | D | D | D | | D | D | D | | D | E | C | | C |
| HCM2kAvgQ: | 12 | 15 | | 15 | 13 | 6 | | 6 | 1 | 17 | | 17 | 10 | 11 | | 9 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 32.6
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.94 | 0.94 | 0.95 | 0.93 | 0.93 |
| Lanes: | 0.12 | 1.53 | 0.35 | 0.30 | 1.42 | 0.28 | 1.00 | 1.87 | 0.13 | 1.00 | 1.67 | 0.33 |
| Final Sat.: | 213 | 2681 | 612 | 531 | 2486 | 492 | 1805 | 3340 | 234 | 1805 | 2935 | 584 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.14 | 0.14 | 0.15 | 0.15 | 0.15 | 0.03 | 0.10 | 0.10 | 0.04 | 0.15 | 0.15 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green Time: | 26.2 | 26.2 | 26.2 | 28.7 | 28.7 | 28.7 | 6.1 | 22.6 | 22.6 | 11.5 | 28.0 | 28.0 |
| Volume/Cap: | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.43 | 0.43 | 0.34 | 0.54 | 0.54 |
| Uniform Del: | 31.7 | 31.7 | 31.7 | 30.0 | 30.0 | 30.0 | 45.6 | 33.2 | 33.2 | 40.8 | 30.5 | 30.5 |
| IncremntDel: | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 5.2 | 0.4 | 0.4 | 1.0 | 0.6 | 0.6 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 32.4 | 32.4 | 32.4 | 30.6 | 30.6 | 30.6 | 50.8 | 33.6 | 33.6 | 41.7 | 31.1 | 31.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 32.4 | 32.4 | 32.4 | 30.6 | 30.6 | 30.6 | 50.8 | 33.6 | 33.6 | 41.7 | 31.1 | 31.1 |
| LOS by Move: | C | C | C | C | C | C | D | C | C | D | C | C |
| HCM2kAvgQ: | 7 | 7 | 7 | 7 | 7 | 7 | 3 | 5 | 5 | 2 | 7 | 7 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.681
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.18 | 0.00 | 0.00 | 0.44 | 0.01 | 0.19 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | **** | | | | | |
| Green Time: | 5.0 | 86.2 | 0.0 | 0.0 | 81.2 | 81.2 | 34.8 | 0.0 | 34.8 | 0.0 | 0.0 | 0.0 |
| Volume/Cap: | 0.15 | 0.28 | 0.00 | 0.00 | 0.70 | 0.02 | 0.70 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 60.4 | 9.1 | 0.0 | 0.0 | 16.4 | 9.3 | 42.9 | 0.0 | 36.6 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 1.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 4.8 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 61.4 | 9.1 | 0.0 | 0.0 | 17.1 | 9.3 | 47.7 | 0.0 | 36.8 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 61.4 | 9.1 | 0.0 | 0.0 | 17.1 | 9.3 | 47.7 | 0.0 | 36.8 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | E | A | A | A | B | A | D | A | D | A | A | A |
| HCM2kAvgQ: | 0 | 5 | 0 | 0 | 20 | 0 | 13 | 0 | 2 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.584
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 41 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | | 0 | 186 | | 0 | 0 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | | 0 | 186 | | 0 | 0 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | | 0 | 186 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | | 0 | 186 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | | 0 | 186 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | | 0 | 186 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.15 | 0.00 | | 0.00 | 0.42 | 0.10 | 0.11 | | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green Time: | 5.0 | 95.6 | 0.0 | | 0.0 | 90.6 | 90.6 | 25.4 | | 0.0 | 25.4 | | 0.0 | 0.0 | 0.0 | |
| Volume/Cap: | 0.21 | 0.21 | 0.00 | | 0.00 | 0.60 | 0.15 | 0.55 | | 0.00 | 0.60 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 60.6 | 5.4 | 0.0 | | 0.0 | 10.3 | 6.7 | 47.1 | | 0.0 | 47.6 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.5 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.1 | 1.9 | | 0.0 | 3.3 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 62.1 | 5.4 | 0.0 | | 0.0 | 10.6 | 6.7 | 49.0 | | 0.0 | 50.9 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 62.1 | 5.4 | 0.0 | | 0.0 | 10.6 | 6.7 | 49.0 | | 0.0 | 50.9 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | E | A | A | | A | B | A | D | | A | D | | A | A | A | |
| HCM2kAvgQ: | 1 | 4 | 0 | | 0 | 16 | 2 | 7 | | 0 | 8 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.717
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 25.1
Optimal Cycle: 38 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | | 0 | 705 | | 0 | 0 | 0 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | | 0 | 705 | | 0 | 0 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | | 0 | 705 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | | 0 | 705 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | | 0 | 705 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | | 0 | 705 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.80 | 0.20 | 1.00 | | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1439 | 371 | 1769 | | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.28 | 0.30 | 0.00 | | 0.00 | 0.25 | 0.25 | 0.15 | | 0.00 | 0.45 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green Time: | 46.0 | 87.5 | 0.0 | | 0.0 | 41.5 | 41.5 | 28.5 | | 0.0 | 74.5 | | 0.0 | 0.0 | 0.0 | |
| Volume/Cap: | 0.72 | 0.42 | 0.00 | | 0.00 | 0.72 | 0.72 | 0.61 | | 0.00 | 0.72 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 31.4 | 6.3 | 0.0 | | 0.0 | 34.2 | 34.2 | 40.9 | | 0.0 | 15.6 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.7 | 0.2 | 0.0 | | 0.0 | 4.0 | 4.0 | 2.7 | | 0.0 | 2.6 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 35.1 | 6.5 | 0.0 | | 0.0 | 38.1 | 38.1 | 43.5 | | 0.0 | 18.1 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.1 | 6.5 | 0.0 | | 0.0 | 38.1 | 38.1 | 43.5 | | 0.0 | 18.1 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | A | A | | A | D | D | D | | A | B | | A | A | A | |
| HCM2kAvgQ: | 15 | 8 | 0 | | 0 | 14 | 14 | 9 | | 0 | 18 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 28.8
Optimal Cycle: 28 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 0 | 2 | 0 1 | 1 | 0 | 0 | 1 0 | 0 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.63 | 0.91 | 0.91 | | 0.66 | 0.66 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1201 | 957 | 781 | | 1128 | 124 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.22 | 0.08 | | 0.20 | 0.18 | 0.02 | | 0.06 | 0.08 | 0.08 | | 0.06 | 0.06 | 0.17 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green Time: | 13.1 | 42.7 | 42.7 | | 39.9 | 69.6 | 69.6 | | 33.4 | 33.4 | 33.4 | | 33.4 | 33.4 | 33.4 | |
| Volume/Cap: | 0.25 | 0.60 | 0.23 | | 0.60 | 0.31 | 0.04 | | 0.22 | 0.29 | 0.29 | | 0.23 | 0.23 | 0.60 | |
| Uniform Del: | 49.0 | 31.7 | 27.1 | | 33.4 | 12.9 | 10.8 | | 33.4 | 34.0 | 34.0 | | 33.4 | 33.4 | 37.6 | |
| IncremntDel: | 0.7 | 0.8 | 0.2 | | 1.8 | 0.1 | 0.0 | | 0.3 | 0.3 | 0.3 | | 0.3 | 0.3 | 2.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 49.7 | 32.6 | 27.3 | | 35.2 | 13.0 | 10.9 | | 33.7 | 34.3 | 34.3 | | 33.8 | 33.8 | 40.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 49.7 | 32.6 | 27.3 | | 35.2 | 13.0 | 10.9 | | 33.7 | 34.3 | 34.3 | | 33.8 | 33.8 | 40.0 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | D | |
| HCM2kAvgQ: | 2 | 12 | 3 | | 10 | 6 | 1 | | 2 | 4 | 4 | | 2 | 2 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.704
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 38.0
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 1 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Initial Bse: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.31 | 1.61 | 0.08 | | 0.07 | 1.46 | 0.47 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 556 | 2854 | 150 | | 120 | 2541 | 815 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.20 | 0.20 | 0.20 | | 0.16 | 0.23 | 0.23 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | | **** | | | | **** | | | | | **** | | | **** | | |
| Green Time: | 25.0 | 25.0 | 25.0 | | 31.2 | 31.2 | 31.2 | | 36.5 | 36.5 | 36.5 | | 6.2 | 6.2 | 6.2 | |
| Volume/Cap: | 0.70 | 0.70 | 0.70 | | 0.70 | 0.70 | 0.70 | | 0.47 | 0.70 | 0.70 | | 0.70 | 0.70 | 0.70 | |
| Uniform Del: | 39.1 | 39.1 | 39.1 | | 35.3 | 35.3 | 35.3 | | 29.0 | 32.0 | 32.0 | | 51.0 | 51.0 | 51.0 | |
| IncremntDel: | 2.8 | 2.8 | 2.8 | | 2.3 | 2.3 | 2.3 | | 0.3 | 2.6 | 2.6 | | 19.5 | 19.5 | 19.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 41.9 | 41.9 | 41.9 | | 37.6 | 37.6 | 37.6 | | 29.3 | 34.6 | 34.6 | | 70.4 | 70.4 | 70.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.9 | 41.9 | 41.9 | | 37.6 | 37.6 | 37.6 | | 29.3 | 34.6 | 34.6 | | 70.4 | 70.4 | 70.4 | |
| LOS by Move: | D | D | D | | D | D | D | | C | C | C | | E | E | E | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 12 | 12 | 12 | | 8 | 13 | 13 | | 4 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.505 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.3 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.14 | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | | | | | | | | | | |
| Green Time: | 0.0 | 88.0 | 0.0 | 0.0 | 88.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Volume/Cap: | 0.00 | 0.16 | 0.00 | 0.00 | 0.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 0.0 | 0.8 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 0.8 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 0.8 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2015 AM |
| Command: | Near Term I No Project AM "B" |
| Volume: | Near Term I No Project AM "B" |
| Geometry: | Near Term I No Project AM "B" |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term I No Project AM "B" |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term I No Project AM "B" |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 22.3 | 0.768 | C | 22.5 | 0.804 | + 0.145 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.0 | 0.638 | C | 33.3 | 0.997 | +17.311 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 21.3 | 0.861 | C | 23.1 | 0.883 | + 1.775 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 27.4 | 0.822 | C | 24.4 | 0.843 | -2.972 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | B | 19.5 | 0.565 | B | 15.0 | 0.584 | -4.586 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 16.5 | 0.586 | B | 16.2 | 0.646 | -0.306 D/V |
| # 7 Middlefield at Marsh (Town of | C | 26.2 | 0.610 | C | 24.8 | 0.691 | -1.420 D/V |
| # 8 Bayfront Exp. & Willow Rd. | C | 27.5 | 0.610 | C | 34.4 | 0.708 | + 6.851 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.9 | 0.559 | C | 21.1 | 0.577 | -1.786 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 18.0 | 0.517 | C | 20.7 | 0.581 | + 2.709 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.0 | 0.464 | B | 14.1 | 0.512 | -0.910 D/V |
| # 12 Newbridge St. & Willow Rd. | D | 48.5 | 0.903 | D | 49.0 | 0.929 | + 0.500 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 20.0 | 0.694 | B | 20.0 | 0.744 | -0.069 D/V |
| # 14 Durham St. & Willow Rd. | C | 24.8 | 0.714 | B | 12.5 | 0.740 | -12.311 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 13.0 | 0.715 | B | 14.1 | 0.787 | + 1.087 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.0 | 0.663 | B | 14.9 | 0.759 | + 0.877 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 101.2 | 0.947 | F | 89.2 | 1.088 | -11.990 D/V |
| # 18 Bayfront Exp. & University Ave | C | 29.2 | 0.805 | C | 30.2 | 0.814 | + 0.980 D/V |
| # 19 O'Brien Dr. & University Ave. | A | 6.4 | 0.548 | A | 6.3 | 0.554 | -0.060 D/V |
| # 20 University & Kavanaugh | B | 13.8 | 0.563 | B | 13.7 | 0.565 | -0.157 D/V |
| # 21 University & Bay | C | 27.7 | 0.661 | C | 27.4 | 0.662 | -0.274 D/V |
| # 22 University & Runnymede | C | 20.3 | 0.627 | C | 20.2 | 0.628 | -0.142 D/V |
| # 23 University & Bell | A | 7.6 | 0.246 | A | 7.4 | 0.264 | -0.231 D/V |
| # 24 University & Donohoe | D | 39.3 | 0.925 | D | 39.8 | 0.933 | + 0.560 D/V |
| # 25 NB 101 & Donohoe St | B | 13.6 | 0.372 | B | 13.7 | 0.383 | + 0.129 D/V |

| Intersection | Base LOS | Base Del/Veh | Base V/C | Future LOS | Future Del/Veh | Future V/C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 17.1 | 0.642 | B | 17.3 | 0.645 | + 0.176 D/V |
| # 27 University Ave. & Woodland | D | 38.7 | 0.891 | D | 38.9 | 0.894 | + 0.182 D/V |
| # 28 Middlefield Rd. & University A | C | 34.3 | 0.734 | D | 38.1 | 0.796 | + 3.762 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.3 | 0.584 | B | 17.1 | 0.681 | + 9.818 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.0 | 0.593 | B | 19.2 | 0.617 | + 2.144 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 22.0 | 0.606 | C | 22.8 | 0.639 | + 0.800 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.5 | 0.470 | C | 25.4 | 0.478 | -3.077 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 30.0 | 0.594 | C | 31.2 | 0.638 | + 1.129 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.2 | 0.501 | A | 1.3 | 0.545 | + 0.101 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 84 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 2389 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1037 | | 7 | 20 | 5 | |
| Added Vol: | 170 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 255 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2559 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1292 | | 7 | 20 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2559 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1292 | | 7 | 20 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2559 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1292 | | 7 | 20 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2559 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1292 | | 7 | 20 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.50 | 0.12 | 0.12 | | 0.02 | 0.02 | 0.10 | | 0.12 | 0.12 | 0.46 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.61 | 0.61 | 0.61 | | 0.12 | 0.12 | 0.12 | | 0.14 | 0.14 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.82 | 0.20 | 0.20 | | 0.16 | 0.16 | 0.82 | | 0.82 | 0.82 | 0.62 | | 0.47 | 0.47 | 0.47 | |
| Uniform Del: | 20.0 | 11.4 | 11.4 | | 51.5 | 51.5 | 55.9 | | 54.0 | 54.0 | 7.5 | | 61.2 | 61.2 | 61.2 | |
| IncremntDel: | 1.8 | 0.1 | 0.1 | | 0.2 | 0.2 | 23.9 | | 18.5 | 18.5 | 0.6 | | 4.9 | 4.9 | 4.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 21.8 | 11.5 | 11.5 | | 51.7 | 51.7 | 79.8 | | 72.5 | 72.5 | 8.1 | | 66.1 | 66.1 | 66.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 21.8 | 11.5 | 11.5 | | 51.7 | 51.7 | 79.8 | | 72.5 | 72.5 | 8.1 | | 66.1 | 66.1 | 66.1 | |
| LOS by Move: | C | B | B | | D | D | E | | E | E | A | | E | E | E | |
| HCM2kAvgQ: | 29 | 4 | 4 | | 1 | 1 | 8 | | 10 | 10 | 14 | | 2 | 2 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.997
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 33.3
Optimal Cycle: 175 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 | 0 | 1 1 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 851 | 0 | 301 | | 0 | 0 | 0 | | 0 | 1184 | 526 | | 0 | 854 | 1767 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 406 | 0 | | 0 | 141 | 29 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1590 | 526 | | 0 | 995 | 1796 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1590 | 0 | | 0 | 995 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1590 | 0 | | 0 | 995 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1590 | 0 | | 0 | 995 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3374 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.25 | 0.00 | 0.44 | | 0.00 | 0.00 | 0.00 | | 0.47 | 0.47 | 0.00 | | 0.00 | 0.28 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.44 | 0.00 | 0.44 | | 0.00 | 0.00 | 0.00 | | 0.47 | 0.47 | 0.00 | | 0.00 | 0.47 | 0.00 | |
| Volume/Cap: | 0.56 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.60 | 0.00 | |
| Uniform Del: | 16.7 | 0.0 | 22.3 | | 0.0 | 0.0 | 0.0 | | 21.1 | 21.1 | 0.0 | | 0.0 | 15.5 | 0.0 | |
| IncremntDel: | 0.5 | 0.0 | 33.3 | | 0.0 | 0.0 | 0.0 | | 21.8 | 21.8 | 0.0 | | 0.0 | 0.6 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 17.2 | 0.0 | 55.7 | | 0.0 | 0.0 | 0.0 | | 42.9 | 42.9 | 0.0 | | 0.0 | 16.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 17.2 | 0.0 | 55.7 | | 0.0 | 0.0 | 0.0 | | 42.9 | 42.9 | 0.0 | | 0.0 | 16.1 | 0.0 | |
| LOS by Move: | B | A | E | | A | A | A | | D | D | A | | A | B | A | |
| HCM2kAvgQ: | 9 | 0 | 25 | | 0 | 0 | 0 | | 29 | 29 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.883
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 81 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 914 | 0 | 580 | | 0 | 867 | 606 | | 0 | 1483 | 89 | |
| Added Vol: | 0 | 0 | 0 | | 221 | 0 | 7 | | 0 | 189 | 0 | | 0 | 55 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1135 | 0 | 587 | | 0 | 1056 | 606 | | 0 | 1538 | 89 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1135 | 0 | 587 | | 0 | 1056 | 0 | | 0 | 1538 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1135 | 0 | 587 | | 0 | 1056 | 0 | | 0 | 1538 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1135 | 0 | 587 | | 0 | 1056 | 0 | | 0 | 1538 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.33 | 0.00 | 0.37 | | 0.00 | 0.30 | 0.00 | | 0.00 | 0.43 | 0.00 | |
| Crit Moves: | | | | | | | **** | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.42 | 0.00 | 0.42 | | 0.00 | 0.49 | 0.00 | | 0.00 | 0.49 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.79 | 0.00 | 0.88 | | 0.00 | 0.61 | 0.00 | | 0.00 | 0.88 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 20.1 | 0.0 | 21.4 | | 0.0 | 14.7 | 0.0 | | 0.0 | 18.2 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.0 | 0.0 | 13.3 | | 0.0 | 0.6 | 0.0 | | 0.0 | 5.7 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 23.1 | 0.0 | 34.7 | | 0.0 | 15.3 | 0.0 | | 0.0 | 24.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 23.1 | 0.0 | 34.7 | | 0.0 | 15.3 | 0.0 | | 0.0 | 24.0 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | C | | A | B | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 14 | 0 | 17 | | 0 | 10 | 0 | | 0 | 22 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.843
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 24.4
Optimal Cycle: 84 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1176 | 30 | | 279 | 1473 | 291 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 189 | 0 | | 0 | 62 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1365 | 30 | | 279 | 1535 | 291 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1365 | 30 | | 279 | 1535 | 291 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1365 | 30 | | 279 | 1535 | 291 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1365 | 30 | | 279 | 1535 | 291 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.93 | 0.07 | 1.00 | | 1.00 | 2.94 | 0.06 | | 2.00 | 1.68 | 0.32 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4958 | 110 | | 3432 | 2902 | 551 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.14 | 0.14 | 0.00 | | 0.01 | 0.28 | 0.28 | | 0.08 | 0.53 | 0.53 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.48 | 0.48 | | 0.14 | 0.57 | 0.57 | |
| Volume/Cap: | 0.35 | 0.35 | 0.37 | | 0.92 | 0.92 | 0.01 | | 0.18 | 0.57 | 0.57 | | 0.57 | 0.92 | 0.92 | |
| Uniform Del: | 36.7 | 36.7 | 36.8 | | 33.5 | 33.5 | 28.8 | | 36.4 | 14.9 | 14.9 | | 32.1 | 15.5 | 15.5 | |
| IncremntDel: | 2.4 | 2.4 | 1.6 | | 34.8 | 34.8 | 0.0 | | 1.0 | 0.3 | 0.3 | | 1.6 | 7.8 | 7.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.1 | 39.1 | 38.4 | | 68.3 | 68.3 | 28.8 | | 37.4 | 15.2 | 15.2 | | 33.7 | 23.3 | 23.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.1 | 39.1 | 38.4 | | 68.3 | 68.3 | 28.8 | | 37.4 | 15.2 | 15.2 | | 33.7 | 23.3 | 23.3 | |
| LOS by Move: | D | D | D | | E | E | C | | D | B | B | | C | C | C | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 10 | 10 | 0 | | 1 | 9 | 9 | | 4 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.584
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 26 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 828 | 60 | | 48 | 1187 | 336 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 189 | 0 | | 0 | 62 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1017 | 60 | | 48 | 1249 | 336 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1017 | 60 | | 48 | 1249 | 336 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1017 | 60 | | 48 | 1249 | 336 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1017 | 60 | | 48 | 1249 | 336 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3313 | 197 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.12 | 0.12 | 0.06 | | 0.07 | 0.31 | 0.31 | | 0.03 | 0.35 | 0.21 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.60 | 0.60 | | 0.10 | 0.58 | 0.58 | |
| Volume/Cap: | 0.18 | 0.20 | 0.20 | | 0.60 | 0.60 | 0.29 | | 0.60 | 0.51 | 0.51 | | 0.28 | 0.60 | 0.36 | |
| Uniform Del: | 36.4 | 36.5 | 36.5 | | 29.0 | 29.0 | 27.0 | | 33.7 | 9.3 | 9.3 | | 33.5 | 10.7 | 8.8 | |
| IncremntDel: | 1.0 | 1.2 | 1.2 | | 1.5 | 1.5 | 0.5 | | 5.2 | 0.2 | 0.2 | | 0.9 | 0.5 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.4 | 37.6 | 37.6 | | 30.4 | 30.4 | 27.6 | | 38.9 | 9.5 | 9.5 | | 34.3 | 11.2 | 9.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.4 | 37.6 | 37.6 | | 30.4 | 30.4 | 27.6 | | 38.9 | 9.5 | 9.5 | | 34.3 | 11.2 | 9.1 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | C | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 2 | | 4 | 8 | 8 | | 1 | 11 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.646
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 16.2
Optimal Cycle: 30 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! 0 | 0 | 0 | 0 | 1! 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | 112 | 28 | 5 | 2 | 665 | 66 | 264 | 982 | 22 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 73 | 3 | 184 | 116 | 29 | 5 | 2 | 692 | 69 | 275 | 1021 | 23 | | | | |
| Added Vol: | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 189 | 2 | 0 | 62 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 74 | 3 | 184 | 116 | 29 | 5 | 2 | 881 | 71 | 275 | 1083 | 23 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 74 | 3 | 184 | 116 | 29 | 5 | 2 | 881 | 71 | 275 | 1083 | 23 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 74 | 3 | 184 | 116 | 29 | 5 | 2 | 881 | 71 | 275 | 1083 | 23 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 74 | 3 | 184 | 116 | 29 | 5 | 2 | 881 | 71 | 275 | 1083 | 23 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.79 | 0.79 | 0.79 | 0.56 | 0.56 | 0.56 | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | | | | |
| Lanes: | 0.28 | 0.01 | 0.71 | 0.78 | 0.19 | 0.03 | 0.01 | 1.84 | 0.15 | 1.00 | 1.96 | 0.04 | | | | |
| Final Sat.: | 427 | 18 | 1065 | 816 | 204 | 36 | 7 | 3087 | 248 | 1769 | 3454 | 73 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | 0.14 | 0.14 | 0.14 | 0.29 | 0.29 | 0.29 | 0.16 | 0.31 | 0.31 | | | | |
| Crit Moves: | | **** | | | | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.44 | 0.44 | 0.44 | 0.24 | 0.68 | 0.68 | | | | |
| Volume/Cap: | 0.65 | 0.65 | 0.65 | 0.54 | 0.54 | 0.54 | 0.64 | 0.64 | 0.64 | 0.64 | 0.46 | 0.46 | | | | |
| Uniform Del: | 26.0 | 26.0 | 26.0 | 25.1 | 25.1 | 25.1 | 17.4 | 17.4 | 17.4 | 27.3 | 5.9 | 5.9 | | | | |
| IncremntDel: | 3.7 | 3.7 | 3.7 | 2.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 3.4 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 29.7 | 29.7 | 29.7 | 27.1 | 27.1 | 27.1 | 18.4 | 18.4 | 18.4 | 30.7 | 6.0 | 6.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 29.7 | 29.7 | 29.7 | 27.1 | 27.1 | 27.1 | 18.4 | 18.4 | 18.4 | 30.7 | 6.0 | 6.0 | | | | |
| LOS by Move: | C | C | C | C | C | C | B | B | B | C | A | A | | | | |
| HCM2kAvgQ: | 7 | 7 | 7 | 4 | 4 | 4 | 10 | 10 | 10 | 7 | 7 | 7 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 24.8
Optimal Cycle: 54 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | 342 | 367 | 0 | 0 | 0 | 0 | 463 | 0 | 169 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 0 | 173 | 413 | 356 | 382 | 0 | 0 | 0 | 0 | 482 | 0 | 176 | | | | |
| Added Vol: | 0 | 7 | 90 | 101 | 40 | 0 | 0 | 0 | 0 | 25 | 0 | 39 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 180 | 503 | 457 | 422 | 0 | 0 | 0 | 0 | 507 | 0 | 215 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 180 | 503 | 457 | 422 | 0 | 0 | 0 | 0 | 507 | 0 | 215 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 180 | 503 | 457 | 422 | 0 | 0 | 0 | 0 | 507 | 0 | 215 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 180 | 503 | 457 | 422 | 0 | 0 | 0 | 0 | 507 | 0 | 215 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 0.85 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 | | | | |
| Lanes: | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | | |
| Final Sat.: | 0 | 1900 | 1615 | 1805 | 1900 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.09 | 0.31 | 0.25 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.28 | 0.00 | 0.13 | | | | |
| Crit Moves: | | **** | | **** | | | | | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.14 | 0.54 | 0.37 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.00 | 0.77 | | | | |
| Volume/Cap: | 0.00 | 0.69 | 0.57 | 0.69 | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.69 | 0.00 | 0.17 | | | | |
| Uniform Del: | 0.0 | 45.3 | 16.7 | 29.6 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 27.0 | 0.0 | 3.3 | | | | |
| IncremntDel: | 0.0 | 7.7 | 0.9 | 3.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 53.0 | 17.6 | 32.7 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 29.8 | 0.0 | 3.4 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 53.0 | 17.6 | 32.7 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 29.8 | 0.0 | 3.4 | | | | |
| LOS by Move: | A | D | B | C | B | A | A | A | A | C | A | A | | | | |
| HCM2kAvgQ: | 0 | 7 | 12 | 14 | 9 | 0 | 0 | 0 | 0 | 15 | 0 | 2 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.708
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 34.4
Optimal Cycle: 64 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | | 6 | 13 | 677 | | 92 | 84 | 34 | | 379 | 3 | | 6 | 5 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 1075 | 2192 | | 6 | 14 | 704 | | 96 | 87 | 35 | | 394 | 3 | | 6 | 5 |
| Added Vol: | 22 | 195 | | 14 | 254 | 42 | | 0 | 0 | 483 | | 2 | 13 | | 16 | 7 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 1097 | 2387 | | 20 | 268 | 746 | | 96 | 87 | 518 | | 396 | 16 | | 22 | 12 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 1097 | 2387 | | 20 | 268 | 746 | | 96 | 87 | 518 | | 396 | 16 | | 22 | 12 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 1097 | 2387 | | 20 | 268 | 746 | | 96 | 87 | 518 | | 396 | 16 | | 22 | 12 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1097 | 2387 | | 20 | 268 | 746 | | 96 | 87 | 518 | | 396 | 16 | | 22 | 12 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.92 | 0.92 | 0.88 | 0.93 | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 1757 | 3513 | 3343 | 1769 | 3538 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.32 | 0.41 | 0.01 | 0.08 | 0.13 | 0.06 | 0.05 | 0.15 | 0.12 | 0.01 | 0.01 | 0.01 |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.48 | 0.56 | 0.60 | 0.11 | 0.19 | 0.19 | 0.20 | 0.20 | 0.20 | 0.04 | 0.04 | 0.04 |
| Volume/Cap: | 0.67 | 0.73 | 0.02 | 0.73 | 0.67 | 0.32 | 0.25 | 0.73 | 0.59 | 0.24 | 0.16 | 0.20 |
| Uniform Del: | 26.2 | 21.3 | 10.6 | 56.2 | 48.9 | 45.4 | 43.5 | 48.5 | 46.9 | 60.6 | 60.5 | 60.6 |
| IncremntDel: | 1.1 | 0.9 | 0.0 | 7.2 | 1.6 | 0.6 | 0.1 | 3.3 | 1.3 | 1.8 | 0.6 | 1.6 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 27.3 | 22.1 | 10.6 | 63.5 | 50.5 | 46.0 | 43.6 | 51.8 | 48.3 | 62.4 | 61.0 | 62.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 27.3 | 22.1 | 10.6 | 63.5 | 50.5 | 46.0 | 43.6 | 51.8 | 48.3 | 62.4 | 61.0 | 62.2 |
| LOS by Move: | C | C | B | E | D | D | D | D | D | E | E | E |
| HCM2kAvgQ: | 18 | 26 | 0 | 7 | 11 | 3 | 3 | 12 | 9 | 1 | 1 | 1 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.577
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.1
Optimal Cycle: 45 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | | 26 | 71 | 19 | | 72 | 115 | 415 | | 52 | 56 | 1037 | | 74 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 19 | 14 | | 27 | 74 | 20 | | 75 | 120 | 432 | | 54 | 58 | 1078 | | 77 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 8 | 2 | 484 | | 0 | 0 | 38 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 19 | 14 | | 27 | 74 | 20 | | 83 | 122 | 916 | | 54 | 58 | 1116 | | 77 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 19 | 14 | | 27 | 74 | 20 | | 83 | 122 | 916 | | 54 | 58 | 1116 | | 77 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 19 | 14 | | 27 | 74 | 20 | | 83 | 122 | 916 | | 54 | 58 | 1116 | | 77 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 19 | 14 | | 27 | 74 | 20 | | 83 | 122 | 916 | | 54 | 58 | 1116 | | 77 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.93 | 0.92 | 0.92 | 0.93 | 0.92 | 0.92 |
| Lanes: | 0.31 | 0.23 | 0.46 | 0.42 | 0.11 | 0.47 | 1.00 | 1.89 | 0.11 | 1.00 | 1.87 | 0.13 |
| Final Sat.: | 499 | 360 | 721 | 621 | 166 | 697 | 1769 | 3314 | 196 | 1769 | 3277 | 226 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | 0.12 | 0.12 | 0.12 | 0.07 | 0.28 | 0.28 | 0.03 | 0.34 | 0.34 |
| Crit Moves: | | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.12 | 0.62 | 0.62 | 0.09 | 0.59 | 0.59 |
| Volume/Cap: | 0.18 | 0.18 | 0.18 | 0.58 | 0.58 | 0.58 | 0.58 | 0.44 | 0.44 | 0.38 | 0.58 | 0.58 |
| Uniform Del: | 42.6 | 42.6 | 42.6 | 46.5 | 46.5 | 46.5 | 54.2 | 12.8 | 12.8 | 56.1 | 16.5 | 16.5 |
| IncremntDel: | 0.3 | 0.3 | 0.3 | 2.7 | 2.7 | 2.7 | 3.9 | 0.1 | 0.1 | 1.6 | 0.4 | 0.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 42.9 | 42.9 | 42.9 | 49.2 | 49.2 | 49.2 | 58.1 | 12.9 | 12.9 | 57.6 | 17.0 | 17.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 42.9 | 42.9 | 42.9 | 49.2 | 49.2 | 49.2 | 58.1 | 12.9 | 12.9 | 57.6 | 17.0 | 17.0 |
| LOS by Move: | D | D | D | D | D | D | E | B | B | E | B | B |
| HCM2kAvgQ: | 2 | 2 | 2 | 7 | 7 | 7 | 5 | 10 | 10 | 3 | 15 | 15 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.7
Optimal Cycle: 46 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | 14 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 193 | | 85 | 678 | 0 | | 0 | 1062 | 15 | |
| Added Vol: | 0 | 0 | 0 | | 67 | 0 | 6 | | 7 | 420 | 0 | | 0 | 41 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 68 | 0 | 199 | | 92 | 1098 | 0 | | 0 | 1103 | 20 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 68 | 0 | 199 | | 92 | 1098 | 0 | | 0 | 1103 | 20 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 68 | 0 | 199 | | 92 | 1098 | 0 | | 0 | 1103 | 20 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 68 | 0 | 199 | | 92 | 1098 | 0 | | 0 | 1103 | 20 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.87 | 1.00 | 0.87 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.25 | 0.00 | 0.75 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.97 | 0.03 | |
| Final Sat.: | 0 | 0 | 0 | | 420 | 0 | 1232 | | 1769 | 3538 | 0 | | 0 | 3466 | 61 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.16 | 0.00 | 0.16 | | 0.05 | 0.31 | 0.00 | | 0.00 | 0.32 | 0.32 | |
| Crit Moves: | | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.28 | | 0.09 | 0.64 | 0.00 | | 0.00 | 0.55 | 0.55 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.58 | 0.00 | 0.58 | | 0.58 | 0.49 | 0.00 | | 0.00 | 0.58 | 0.58 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 40.4 | 0.0 | 40.4 | | 56.8 | 12.4 | 0.0 | | 0.0 | 19.5 | 19.5 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 1.9 | 0.0 | 1.9 | | 5.4 | 0.2 | 0.0 | | 0.0 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.3 | 0.0 | 42.3 | | 62.2 | 12.6 | 0.0 | | 0.0 | 20.0 | 20.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.3 | 0.0 | 42.3 | | 62.2 | 12.6 | 0.0 | | 0.0 | 20.0 | 20.0 | |
| LOS by Move: | A | A | A | | D | A | D | | E | B | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 10 | 0 | 10 | | 4 | 12 | 0 | | 0 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.512
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 40 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 135 | 0 | 70 | | 0 | 0 | 0 | | 0 | 725 | 260 | | 106 | 1218 | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 427 | 2 | | 0 | 46 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1152 | 262 | | 106 | 1264 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1152 | 262 | | 106 | 1264 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1152 | 262 | | 106 | 1264 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1152 | 262 | | 106 | 1264 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2586 | 0 | 839 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.08 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.33 | 0.17 | | 0.06 | 0.36 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.16 | 0.00 | 0.16 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.64 | 0.64 | | 0.12 | 0.75 | 0.00 | |
| Volume/Cap: | 0.35 | 0.00 | 0.51 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.51 | 0.26 | | 0.51 | 0.47 | 0.00 | |
| Uniform Del: | 48.3 | 0.0 | 49.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.8 | 10.3 | | 53.9 | 6.2 | 0.0 | |
| IncremntDel: | 0.3 | 0.0 | 1.1 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.2 | 0.1 | | 2.2 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 48.7 | 0.0 | 50.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.0 | 10.5 | | 56.1 | 6.3 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.7 | 0.0 | 50.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.0 | 10.5 | | 56.1 | 6.3 | 0.0 | |
| LOS by Move: | D | A | D | | A | A | A | | A | B | B | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 6 | | 0 | 0 | 0 | | 0 | 13 | 4 | | 5 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 49.0
Optimal Cycle: 150 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 364 | 115 | 37 | | 29 | 185 | 399 | | 154 | 859 | 161 | | 29 | 1270 | 4 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 3 | | 10 | 429 | 0 | | 0 | 56 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1288 | 161 | | 29 | 1326 | 4 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1288 | 161 | | 29 | 1326 | 4 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1288 | 161 | | 29 | 1326 | 4 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1288 | 161 | | 29 | 1326 | 4 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.67 | 0.33 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4441 | 556 | | 1769 | 3527 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.06 | 0.02 | | 0.02 | 0.10 | 0.25 | | 0.09 | 0.29 | 0.29 | | 0.02 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.45 | 0.45 | | 0.06 | 0.40 | 0.40 | |
| Volume/Cap: | 0.93 | 0.54 | 0.21 | | 0.06 | 0.36 | 0.93 | | 0.93 | 0.65 | 0.65 | | 0.28 | 0.93 | 0.93 | |
| Uniform Del: | 57.1 | 54.4 | 52.2 | | 34.9 | 38.1 | 46.0 | | 58.1 | 28.2 | 28.2 | | 58.5 | 36.9 | 36.9 | |
| IncremntDel: | 28.3 | 2.9 | 0.6 | | 0.1 | 0.4 | 26.4 | | 47.5 | 0.7 | 0.7 | | 1.5 | 10.9 | 10.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 85.3 | 57.2 | 52.8 | | 34.9 | 38.5 | 72.4 | | 105.6 | 28.9 | 28.9 | | 60.0 | 47.8 | 47.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 85.3 | 57.2 | 52.8 | | 34.9 | 38.5 | 72.4 | | 105.6 | 28.9 | 28.9 | | 60.0 | 47.8 | 47.8 | |
| LOS by Move: | F | E | D | | C | D | E | | F | C | C | | E | D | D | |
| HCM2kAvgQ: | 11 | 5 | 1 | | 1 | 6 | 20 | | 10 | 17 | 17 | | 1 | 31 | 31 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.744
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 63 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 375 | 0 | 78 | | 67 | 1433 | 0 | | 0 | 1159 | 332 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 154 | 0 | | 0 | 45 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1587 | 0 | | 0 | 1204 | 335 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1587 | 0 | | 0 | 1204 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1587 | 0 | | 0 | 1204 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1587 | 0 | | 0 | 1204 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.21 | 0.00 | 0.05 | | 0.04 | 0.45 | 0.00 | | 0.00 | 0.34 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.29 | | 0.08 | 0.60 | 0.00 | | 0.00 | 0.53 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.74 | 0.00 | 0.17 | | 0.49 | 0.74 | 0.00 | | 0.00 | 0.65 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 32.3 | 0.0 | 26.7 | | 44.2 | 14.3 | 0.0 | | 0.0 | 17.0 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 5.9 | 0.0 | 0.2 | | 2.7 | 1.5 | 0.0 | | 0.0 | 0.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 38.2 | 0.0 | 26.9 | | 47.0 | 15.7 | 0.0 | | 0.0 | 17.8 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 38.2 | 0.0 | 26.9 | | 47.0 | 15.7 | 0.0 | | 0.0 | 17.8 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 12 | 0 | 2 | | 3 | 19 | 0 | | 0 | 14 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1041 | 9 | | 43 | 884 | 148 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 154 | 0 | | 0 | 45 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1195 | 9 | | 43 | 929 | 148 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1195 | 9 | | 43 | 929 | 148 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1195 | 9 | | 43 | 929 | 148 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1195 | 9 | | 43 | 929 | 148 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.50 | 0.50 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.86 | 0.14 | |
| Final Sat.: | 1367 | 183 | 1431 | | 900 | 47 | 1583 | | 1769 | 3507 | 27 | | 1769 | 1573 | 250 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.09 | 0.09 | | 0.04 | 0.04 | 0.00 | | 0.01 | 0.34 | 0.34 | | 0.02 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.04 | 0.73 | 0.73 | | 0.09 | 0.77 | 0.77 | |
| Volume/Cap: | 0.40 | 0.77 | 0.77 | | 0.37 | 0.37 | 0.01 | | 0.18 | 0.47 | 0.47 | | 0.28 | 0.77 | 0.77 | |
| Uniform Del: | 40.8 | 42.7 | 42.7 | | 40.6 | 40.6 | 38.9 | | 46.4 | 5.7 | 5.7 | | 42.9 | 6.4 | 6.4 | |
| IncremntDel: | 1.6 | 16.8 | 16.8 | | 2.1 | 2.1 | 0.0 | | 1.2 | 0.1 | 0.1 | | 1.0 | 2.6 | 2.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.4 | 59.5 | 59.5 | | 42.7 | 42.7 | 38.9 | | 47.6 | 5.8 | 5.8 | | 43.9 | 9.0 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.4 | 59.5 | 59.5 | | 42.7 | 42.7 | 38.9 | | 47.6 | 5.8 | 5.8 | | 43.9 | 9.0 | 9.0 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | A | A | |
| HCM2kAvgQ: | 2 | 6 | 6 | | 2 | 2 | 0 | | 1 | 8 | 8 | | 1 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 59 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 928 | 5 | | 6 | 888 | 64 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 154 | 0 | | 0 | 45 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1082 | 5 | | 6 | 933 | 64 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1082 | 5 | | 6 | 933 | 64 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1082 | 5 | | 6 | 933 | 64 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1082 | 5 | | 6 | 933 | 64 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.18 | 0.98 | 0.98 | | 0.14 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 352 | 352 | 939 | | 999 | 42 | 338 | | 348 | 1851 | 9 | | 268 | 1724 | 119 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.58 | 0.58 | | 0.02 | 0.54 | 0.54 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.19 | 0.19 | 0.19 | | 0.74 | 0.74 | 0.74 | | 0.74 | 0.74 | 0.74 | |
| Volume/Cap: | 0.05 | 0.05 | 0.05 | | 0.79 | 0.79 | 0.79 | | 0.07 | 0.79 | 0.79 | | 0.03 | 0.73 | 0.73 | |
| Uniform Del: | 33.3 | 33.3 | 33.3 | | 38.7 | 38.7 | 38.7 | | 3.5 | 8.0 | 8.0 | | 3.4 | 7.2 | 7.2 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 14.8 | 14.8 | 14.8 | | 0.1 | 3.1 | 3.1 | | 0.1 | 2.0 | 2.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.3 | 33.3 | 33.3 | | 53.5 | 53.5 | 53.5 | | 3.6 | 11.1 | 11.1 | | 3.5 | 9.3 | 9.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.3 | 33.3 | 33.3 | | 53.5 | 53.5 | 53.5 | | 3.6 | 11.1 | 11.1 | | 3.5 | 9.3 | 9.3 | |
| LOS by Move: | C | C | C | | D | D | D | | A | B | B | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 8 | 8 | 8 | | 0 | 22 | 22 | | 0 | 18 | 18 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.759
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 54 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 105 | 88 | 127 | | 32 | 43 | 7 | | 4 | 826 | 75 | | 43 | 904 | 5 | |
| Added Vol: | 11 | 0 | 19 | | 0 | 0 | 0 | | 0 | 135 | 8 | | 4 | 41 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 116 | 88 | 146 | | 32 | 43 | 7 | | 4 | 961 | 83 | | 47 | 945 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 116 | 88 | 146 | | 32 | 43 | 7 | | 4 | 961 | 83 | | 47 | 945 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 116 | 88 | 146 | | 32 | 43 | 7 | | 4 | 961 | 83 | | 47 | 945 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 116 | 88 | 146 | | 32 | 43 | 7 | | 4 | 961 | 83 | | 47 | 945 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.71 | 0.89 | 0.89 | | 0.31 | 0.96 | 0.96 | | 0.21 | 0.97 | 0.97 | | 0.16 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.38 | 0.62 | | 1.00 | 0.85 | 0.15 | | 1.00 | 0.92 | 0.08 | | 1.00 | 0.99 | 0.01 | |
| Final Sat.: | 1354 | 637 | 1052 | | 590 | 1555 | 266 | | 393 | 1694 | 146 | | 313 | 1850 | 10 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.14 | 0.14 | | 0.05 | 0.03 | 0.03 | | 0.01 | 0.57 | 0.57 | | 0.15 | 0.51 | 0.51 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.47 | 0.76 | 0.76 | | 0.30 | 0.15 | 0.15 | | 0.01 | 0.76 | 0.76 | | 0.20 | 0.68 | 0.68 | |
| Uniform Del: | 36.5 | 38.8 | 38.8 | | 35.3 | 34.3 | 34.3 | | 3.2 | 7.4 | 7.4 | | 3.8 | 6.5 | 6.5 | |
| IncremntDel: | 1.4 | 10.4 | 10.4 | | 1.6 | 0.2 | 0.2 | | 0.0 | 2.5 | 2.5 | | 0.4 | 1.4 | 1.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.9 | 49.2 | 49.2 | | 36.9 | 34.5 | 34.5 | | 3.2 | 9.9 | 9.9 | | 4.2 | 7.9 | 7.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.9 | 49.2 | 49.2 | | 36.9 | 34.5 | 34.5 | | 3.2 | 9.9 | 9.9 | | 4.2 | 7.9 | 7.9 | |
| LOS by Move: | D | D | D | | D | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 4 | 9 | 9 | | 1 | 1 | 1 | | 0 | 20 | 20 | | 1 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.088
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 89.2
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 70 | 356 | 255 | | 424 | 335 | 10 | | 17 | 173 | 122 | | 437 | 67 | 514 | |
| Added Vol: | 15 | 9 | 86 | | 48 | 7 | 0 | | 0 | 8 | 10 | | 16 | 18 | 19 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 85 | 365 | 341 | | 472 | 342 | 10 | | 17 | 181 | 132 | | 453 | 85 | 533 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 85 | 365 | 341 | | 472 | 342 | 10 | | 17 | 181 | 132 | | 453 | 85 | 533 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 85 | 365 | 338 | | 472 | 342 | 10 | | 17 | 181 | 132 | | 453 | 85 | 533 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 85 | 365 | 338 | | 472 | 342 | 10 | | 17 | 181 | 132 | | 453 | 85 | 533 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.72 | 1.24 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.69 | 0.31 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2949 | 2134 | 65 | | 1769 | 1862 | 1583 | | 3012 | 563 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.10 | 0.43 | | 0.16 | 0.16 | 0.16 | | 0.01 | 0.10 | 0.08 | | 0.15 | 0.15 | 0.34 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | | | **** | |
| Green/Cycle: | 0.39 | 0.39 | 0.39 | | 0.15 | 0.15 | 0.15 | | 0.09 | 0.09 | 0.09 | | 0.31 | 0.31 | 0.31 | |
| Volume/Cap: | 0.12 | 0.26 | 1.09 | | 1.09 | 1.09 | 1.09 | | 0.11 | 1.09 | 0.93 | | 0.49 | 0.49 | 1.09 | |
| Uniform Del: | 25.2 | 26.7 | 39.5 | | 55.4 | 55.4 | 55.4 | | 54.4 | 59.2 | 58.8 | | 36.5 | 36.5 | 44.9 | |
| IncremntDel: | 0.1 | 0.1 | 76.5 | | 59.1 | 59.1 | 59.1 | | 0.3 | 95.2 | 55.6 | | 0.3 | 0.3 | 66.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 25.3 | 26.8 | 116.0 | | 114.5 | 115 | 114.5 | | 54.7 | 154 | 114.4 | | 36.8 | 36.8 | 111.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 25.3 | 26.8 | 116.0 | | 114.5 | 115 | 114.5 | | 54.7 | 154 | 114.4 | | 36.8 | 36.8 | 111.4 | |
| LOS by Move: | C | C | F | | F | F | F | | D | F | F | | D | D | F | |
| HCM2kAvgQ: | 2 | 5 | 21 | | 18 | 18 | 18 | | 1 | 12 | 8 | | 9 | 9 | 31 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.814
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 30.2
Optimal Cycle: 84 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 1603 | 2997 | 0 | | 0 | 919 | 196 | | 186 | 0 | 446 | | 0 | 0 | 0 | |
| Added Vol: | 10 | 335 | 0 | | 0 | 53 | 4 | | 63 | 0 | 2 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1613 | 3332 | 0 | | 0 | 972 | 200 | | 249 | 0 | 448 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1613 | 3332 | 0 | | 0 | 972 | 200 | | 249 | 0 | 448 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1613 | 3332 | 0 | | 0 | 972 | 200 | | 249 | 0 | 448 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1613 | 3332 | 0 | | 0 | 972 | 200 | | 249 | 0 | 448 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.47 | 0.66 | 0.00 | | 0.00 | 0.19 | 0.13 | | 0.07 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.57 | 0.81 | 0.00 | | 0.00 | 0.23 | 0.23 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.82 | 0.81 | 0.00 | | 0.00 | 0.82 | 0.54 | | 0.55 | 0.00 | 0.81 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 27.6 | 8.8 | 0.0 | | 0.0 | 58.2 | 53.8 | | 65.0 | 0.0 | 67.5 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 2.9 | 1.3 | 0.0 | | 0.0 | 4.7 | 1.6 | | 1.5 | 0.0 | 9.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 30.5 | 10.1 | 0.0 | | 0.0 | 62.9 | 55.5 | | 66.5 | 0.0 | 76.6 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 30.5 | 10.1 | 0.0 | | 0.0 | 62.9 | 55.5 | | 66.5 | 0.0 | 76.6 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | E | A | E | | A | A | A | |
| HCM2kAvgQ: | 34 | 35 | 0 | | 0 | 18 | 9 | | 6 | 0 | 10 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.554
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 41 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 0 | 1! | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 23 | 0 | 23 | | 71 | 547 | 0 | | 0 | 1395 | 48 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 63 | 0 | | 0 | 4 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 610 | 0 | | 0 | 1399 | 58 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 610 | 0 | | 0 | 1399 | 58 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 610 | 0 | | 0 | 1399 | 58 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 610 | 0 | | 0 | 1399 | 58 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 884 | 0 | 813 | | 1769 | 3538 | 0 | | 0 | 3377 | 140 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.17 | 0.00 | | 0.00 | 0.41 | 0.41 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.48 | 0.00 | 0.48 | | 0.56 | 0.21 | 0.00 | | 0.00 | 0.56 | 0.56 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.7 | 0.0 | 38.7 | | 38.2 | 1.8 | 0.0 | | 0.0 | 4.9 | 4.9 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.6 | 0.0 | 3.6 | | 5.5 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.3 | 0.0 | 42.3 | | 43.7 | 1.9 | 0.0 | | 0.0 | 5.2 | 5.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.3 | 0.0 | 42.3 | | 43.7 | 1.9 | 0.0 | | 0.0 | 5.2 | 5.2 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 2 | 0 | | 0 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | | 8 | 21 | 44 | | 40 | 582 | 43 | | 25 | 1302 | 25 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 605 | 45 | | 26 | 1354 | 26 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 0 | | 0 | 4 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 668 | 45 | | 26 | 1358 | 26 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 668 | 45 | | 26 | 1358 | 26 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 668 | 45 | | 26 | 1358 | 26 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 668 | 45 | | 26 | 1358 | 26 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.36 | 0.42 | 0.22 | | 0.11 | 0.29 | 0.60 | | 1.00 | 1.87 | 0.13 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 651 | 752 | 407 | | 190 | 500 | 1047 | | 1805 | 3353 | 224 | | 1805 | 3532 | 68 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.04 | 0.04 | 0.04 | | 0.02 | 0.20 | 0.20 | | 0.01 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.08 | 0.08 | | 0.08 | 0.08 | 0.08 | | 0.05 | 0.58 | 0.58 | | 0.15 | 0.67 | 0.67 | |
| Volume/Cap: | 0.57 | 0.61 | 0.61 | | 0.53 | 0.57 | 0.57 | | 0.46 | 0.34 | 0.34 | | 0.10 | 0.57 | 0.57 | |
| Uniform Del: | 43.7 | 44.2 | 44.2 | | 44.0 | 44.6 | 44.6 | | 46.2 | 11.1 | 11.1 | | 37.1 | 8.6 | 8.6 | |
| IncremntDel: | 4.8 | 7.0 | 7.0 | | 3.8 | 5.8 | 5.8 | | 3.7 | 0.1 | 0.1 | | 0.2 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.5 | 51.2 | 51.2 | | 47.9 | 50.4 | 50.4 | | 49.9 | 11.2 | 11.2 | | 37.2 | 9.0 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.5 | 51.2 | 51.2 | | 47.9 | 50.4 | 50.4 | | 49.9 | 11.2 | 11.2 | | 37.2 | 9.0 | 9.0 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | A | A | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 3 | 3 | 3 | | 2 | 6 | 6 | | 1 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.662
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 27.4
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | | 50 | 196 | 86 | | 141 | 497 | 78 | | 97 | 1115 | 49 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 517 | 81 | | 101 | 1160 | 51 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 0 | | 0 | 4 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 580 | 81 | | 101 | 1164 | 51 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 580 | 81 | | 101 | 1164 | 51 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 580 | 81 | | 101 | 1164 | 51 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 580 | 81 | | 101 | 1164 | 51 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 1.00 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.93 | 0.93 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.75 | 0.25 | | 1.00 | 1.92 | 0.08 | |
| Final Sat.: | 1805 | 1900 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3110 | 435 | | 1805 | 3438 | 151 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.12 | 0.07 | | 0.03 | 0.11 | 0.06 | | 0.08 | 0.19 | 0.19 | | 0.06 | 0.34 | 0.34 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.18 | 0.18 | | 0.07 | 0.16 | 0.16 | | 0.12 | 0.49 | 0.49 | | 0.15 | 0.51 | 0.51 | |
| Volume/Cap: | 0.66 | 0.68 | 0.40 | | 0.39 | 0.66 | 0.34 | | 0.66 | 0.38 | 0.38 | | 0.38 | 0.66 | 0.66 | |
| Uniform Del: | 43.8 | 38.1 | 36.1 | | 44.2 | 39.3 | 37.2 | | 41.9 | 16.1 | 16.1 | | 38.6 | 18.1 | 18.1 | |
| IncremntDel: | 9.4 | 5.3 | 0.9 | | 1.9 | 5.3 | 0.8 | | 7.3 | 0.1 | 0.1 | | 0.9 | 0.9 | 0.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 53.1 | 43.4 | 37.0 | | 46.0 | 44.6 | 38.0 | | 49.2 | 16.3 | 16.3 | | 39.5 | 19.0 | 19.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 53.1 | 43.4 | 37.0 | | 46.0 | 44.6 | 38.0 | | 49.2 | 16.3 | 16.3 | | 39.5 | 19.0 | 19.0 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 5 | 8 | 4 | | 2 | 7 | 3 | | 6 | 7 | 7 | | 3 | 15 | 15 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.628
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | | 16 | 59 | 56 | | 18 | 626 | 48 | | 88 | 1246 | 61 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 49 | 109 | 12 | | 17 | 61 | 58 | | 19 | 651 | 50 | | 92 | 1296 | 63 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 0 | | 0 | 4 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 49 | 109 | 12 | | 17 | 61 | 58 | | 19 | 714 | 50 | | 92 | 1300 | 63 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 49 | 109 | 12 | | 17 | 61 | 58 | | 19 | 714 | 50 | | 92 | 1300 | 63 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 49 | 109 | 12 | | 17 | 61 | 58 | | 19 | 714 | 50 | | 92 | 1300 | 63 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 49 | 109 | 12 | | 17 | 61 | 58 | | 19 | 714 | 50 | | 92 | 1300 | 63 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.98 | 0.98 | 0.98 | | 0.94 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 0.29 | 0.64 | 0.07 | | 0.12 | 0.45 | 0.43 | | 1.00 | 1.87 | 0.13 | | 1.00 | 1.91 | 0.09 | |
| Final Sat.: | 532 | 1187 | 136 | | 217 | 801 | 761 | | 1805 | 3340 | 234 | | 1805 | 3418 | 167 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.09 | 0.09 | | 0.08 | 0.08 | 0.08 | | 0.01 | 0.21 | 0.21 | | 0.05 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.14 | 0.14 | 0.14 | | 0.12 | 0.12 | 0.12 | | 0.05 | 0.51 | 0.51 | | 0.12 | 0.58 | 0.58 | |
| Volume/Cap: | 0.65 | 0.65 | 0.65 | | 0.65 | 0.65 | 0.65 | | 0.21 | 0.42 | 0.42 | | 0.42 | 0.65 | 0.65 | |
| Uniform Del: | 40.7 | 40.7 | 40.7 | | 42.2 | 42.2 | 42.2 | | 45.6 | 15.2 | 15.2 | | 40.7 | 14.1 | 14.1 | |
| IncremntDel: | 5.8 | 5.8 | 5.8 | | 7.2 | 7.2 | 7.2 | | 1.1 | 0.2 | 0.2 | | 1.3 | 0.8 | 0.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 46.5 | 46.5 | 46.5 | | 49.4 | 49.4 | 49.4 | | 46.7 | 15.4 | 15.4 | | 42.0 | 14.8 | 14.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 46.5 | 46.5 | 46.5 | | 49.4 | 49.4 | 49.4 | | 46.7 | 15.4 | 15.4 | | 42.0 | 14.8 | 14.8 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 5 | 5 | 5 | | 1 | 8 | 8 | | 3 | 15 | 15 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.264
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.4
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 14 | 14 | 14 | | 14 | 14 | 14 | | 73 | 73 | 73 | | 73 | 73 | 73 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | | 7 | 43 | 11 | | 15 | 614 | 24 | | 15 | 123 | 24 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 19 | 61 | 9 | | 7 | 45 | 11 | | 16 | 639 | 25 | | 16 | 128 | 25 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 0 | | 0 | 4 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 19 | 61 | 9 | | 7 | 45 | 11 | | 16 | 702 | 25 | | 16 | 132 | 25 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 19 | 61 | 9 | | 7 | 45 | 11 | | 16 | 702 | 25 | | 16 | 132 | 25 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 19 | 61 | 9 | | 7 | 45 | 11 | | 16 | 702 | 25 | | 16 | 132 | 25 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 19 | 61 | 9 | | 7 | 45 | 11 | | 16 | 702 | 25 | | 16 | 132 | 25 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.93 | | 0.95 | 0.95 | 0.95 | | 0.65 | 0.95 | 0.95 | | 0.35 | 0.93 | 0.93 | |
| Lanes: | 0.21 | 0.69 | 0.10 | | 0.11 | 0.71 | 0.18 | | 1.00 | 1.93 | 0.07 | | 1.00 | 1.68 | 0.32 | |
| Final Sat.: | 370 | 1213 | 185 | | 207 | 1273 | 326 | | 1227 | 3469 | 123 | | 663 | 2963 | 561 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.04 | 0.04 | 0.04 | | 0.01 | 0.20 | 0.20 | | 0.02 | 0.04 | 0.04 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.19 | 0.19 | 0.19 | | 0.77 | 0.77 | 0.77 | | 0.77 | 0.77 | 0.77 | |
| Volume/Cap: | 0.27 | 0.27 | 0.27 | | 0.19 | 0.19 | 0.19 | | 0.02 | 0.26 | 0.26 | | 0.03 | 0.06 | 0.06 | |
| Uniform Del: | 32.9 | 32.9 | 32.9 | | 32.3 | 32.3 | 32.3 | | 2.6 | 3.2 | 3.2 | | 2.6 | 2.7 | 2.7 | |
| IncremntDel: | 0.4 | 0.4 | 0.4 | | 0.3 | 0.3 | 0.3 | | 0.0 | 0.1 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.3 | 33.3 | 33.3 | | 32.6 | 32.6 | 32.6 | | 2.6 | 3.2 | 3.2 | | 2.6 | 2.7 | 2.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.3 | 33.3 | 33.3 | | 32.6 | 32.6 | 32.6 | | 2.6 | 3.2 | 3.2 | | 2.6 | 2.7 | 2.7 | |
| LOS by Move: | C | C | C | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 2 | 2 | 2 | | 2 | 2 | 2 | | 0 | 3 | 3 | | 0 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.933
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.8
Optimal Cycle: 126 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 376 | 454 | 341 | | 11 | 129 | 398 | | 122 | 366 | 294 | | 51 | 1253 | 71 | |
| Added Vol: | 0 | 0 | 35 | | 0 | 0 | 0 | | 0 | 28 | 0 | | 0 | 4 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 376 | 454 | 376 | | 11 | 129 | 398 | | 122 | 394 | 294 | | 51 | 1257 | 71 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 376 | 454 | 376 | | 11 | 129 | 398 | | 122 | 394 | 294 | | 51 | 1257 | 71 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 376 | 454 | 376 | | 11 | 129 | 398 | | 122 | 394 | 294 | | 51 | 1257 | 71 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 376 | 454 | 376 | | 11 | 129 | 398 | | 122 | 394 | 294 | | 51 | 1257 | 71 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.25 | 1.50 | 1.25 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2114 | 2552 | 2112 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3390 | 191 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.01 | 0.07 | 0.25 | | 0.03 | 0.11 | 0.18 | | 0.03 | 0.37 | 0.37 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.35 | 0.35 | | 0.10 | 0.26 | 0.26 | | 0.05 | 0.35 | 0.35 | | 0.10 | 0.39 | 0.39 | |
| Volume/Cap: | 0.95 | 0.51 | 0.51 | | 0.06 | 0.26 | 0.95 | | 0.69 | 0.32 | 0.53 | | 0.30 | 0.95 | 0.95 | |
| Uniform Del: | 40.1 | 25.7 | 25.7 | | 40.9 | 29.3 | 36.3 | | 46.7 | 24.0 | 26.1 | | 42.1 | 29.4 | 29.4 | |
| IncremntDel: | 14.4 | 0.2 | 0.2 | | 0.2 | 0.3 | 30.7 | | 11.5 | 0.1 | 0.9 | | 1.0 | 13.4 | 13.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.5 | 25.9 | 25.9 | | 41.1 | 29.6 | 67.0 | | 58.2 | 24.1 | 27.0 | | 43.1 | 42.9 | 42.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.5 | 25.9 | 25.9 | | 41.1 | 29.6 | 67.0 | | 58.2 | 24.1 | 27.0 | | 43.1 | 42.9 | 42.9 | |
| LOS by Move: | D | C | C | | D | C | E | | E | C | C | | D | D | D | |
| HCM2kAvgQ: | 14 | 8 | 8 | | 0 | 3 | 17 | | 3 | 5 | 8 | | 2 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.383
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 870 | 8 | | 0 | 469 | 0 | | 380 | 0 | 146 | | 0 | 0 | 118 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 35 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 870 | 8 | | 0 | 469 | 0 | | 415 | 0 | 146 | | 0 | 0 | 118 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 870 | 8 | | 0 | 469 | 0 | | 415 | 0 | 146 | | 0 | 0 | 118 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 870 | 8 | | 0 | 469 | 0 | | 415 | 0 | 146 | | 0 | 0 | 118 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 870 | 8 | | 0 | 469 | 0 | | 415 | 0 | 146 | | 0 | 0 | 118 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 0.91 | 0.91 | | 1.00 | 0.95 | 1.00 | | 0.92 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.87 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5133 | 49 | | 0 | 3610 | 0 | | 3502 | 0 | 1615 | | 0 | 0 | 1644 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | | 0.00 | 0.13 | 0.00 | | 0.12 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.07 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.44 | 0.44 | | 0.00 | 0.44 | 0.00 | | 0.31 | 0.00 | 0.50 | | 0.00 | 0.00 | 0.19 | |
| Volume/Cap: | 0.00 | 0.38 | 0.38 | | 0.00 | 0.29 | 0.00 | | 0.38 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.38 | |
| Uniform Del: | 0.0 | 12.2 | 12.2 | | 0.0 | 11.6 | 0.0 | | 17.6 | 0.0 | 9.1 | | 0.0 | 0.0 | 23.2 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.1 | 0.0 | | 0.2 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 12.3 | 12.3 | | 0.0 | 11.7 | 0.0 | | 17.8 | 0.0 | 9.2 | | 0.0 | 0.0 | 24.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 12.3 | 12.3 | | 0.0 | 11.7 | 0.0 | | 17.8 | 0.0 | 9.2 | | 0.0 | 0.0 | 24.0 | |
| LOS by Move: | A | B | B | | A | B | A | | B | A | A | | A | A | C | |
| HCM2kAvgQ: | 0 | 5 | 5 | | 0 | 3 | 0 | | 4 | 0 | 2 | | 0 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.645
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 84 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | | 16 | 16 | 0 | | 0 | 0 | 0 | | 29 | 45 | 28 | | 61 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | 1 | 220 | | 0 | | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | | | 0 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | 1.04 |
| Initial Bse: | 330 | 1 | 229 | | 0 | | 0 | 0 | 861 | 394 | 830 | 1588 | | | | 0 |
| Added Vol: | 0 | 0 | 0 | | 0 | | 0 | 0 | 28 | 6 | 2 | 10 | | | | 0 |
| PasserByVol: | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Initial Fut: | 330 | 1 | 229 | | 0 | | 0 | 0 | 889 | 400 | 832 | 1598 | | | | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 330 | 1 | 229 | | 0 | | 0 | 0 | 889 | 400 | 832 | 1598 | | | | 0 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Reduced Vol: | 330 | 1 | 229 | | 0 | | 0 | 0 | 889 | 400 | 832 | 1598 | | | | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 330 | 1 | 229 | | 0 | | 0 | 0 | 889 | 400 | 832 | 1598 | | | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | 1.00 | | | |
| Lanes: | 1.58 | 0.01 | 1.41 | | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | | | |
| Final Sat.: | 2584 | 6 | 2291 | | 0 | | 0 | 0 | 3610 | 2842 | 3502 | 3610 | | | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.17 | 0.10 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.14 | 0.24 | 0.44 | 0.00 | | | |
| Crit Moves: | | **** | | | | | | | | | | **** | | | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.34 | 0.34 | 0.42 | 0.76 | 0.00 | | | |
| Volume/Cap: | 0.68 | 0.92 | 0.53 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.72 | 0.41 | 0.56 | 0.58 | 0.00 | | | |
| Uniform Del: | 32.1 | 33.8 | 31.1 | | 0.0 | 0.0 | 0.0 | 0.0 | 24.5 | 21.5 | 18.5 | 4.2 | 0.0 | | | |
| IncremntDel: | 2.3 | 18.5 | 0.5 | | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 0.3 | 0.5 | 0.3 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | |
| Delay/Veh: | 34.4 | 52.3 | 31.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 26.6 | 21.8 | 19.0 | 4.5 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 34.4 | 52.3 | 31.6 | | 0.0 | 0.0 | 0.0 | 0.0 | 26.6 | 21.8 | 19.0 | 4.5 | 0.0 | | | |
| LOS by Move: | C | D | C | | A | A | A | A | C | C | B | A | A | | | |
| HCM2kAvgQ: | 6 | 11 | 5 | | 0 | 0 | 0 | 0 | 12 | 5 | 9 | 10 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.894
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 38.9
Optimal Cycle: 105 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 78 | 250 | | 410 | 115 | 41 | | 51 | 538 | 13 | | 238 | 1506 | 420 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 15 | 81 | 260 | | 426 | 120 | 43 | | 53 | 560 | 14 | | 248 | 1566 | 437 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 35 | 0 | | 0 | 10 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 15 | 81 | 260 | | 426 | 120 | 43 | | 53 | 595 | 14 | | 248 | 1576 | 437 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 15 | 81 | 260 | | 426 | 120 | 43 | | 53 | 595 | 14 | | 248 | 1576 | 437 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 15 | 81 | 260 | | 426 | 120 | 43 | | 53 | 595 | 14 | | 248 | 1576 | 437 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 15 | 81 | 260 | | 426 | 120 | 43 | | 53 | 595 | 14 | | 248 | 1576 | 437 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.90 | 0.90 | | 0.92 | 0.96 | 0.96 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.85 | |
| Lanes: | 0.04 | 0.23 | 0.73 | | 2.00 | 0.74 | 0.26 | | 1.00 | 1.96 | 0.04 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 70 | 390 | 1249 | | 3502 | 1346 | 480 | | 1805 | 3519 | 80 | | 1805 | 3610 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.21 | 0.21 | 0.21 | | 0.12 | 0.09 | 0.09 | | 0.03 | 0.17 | 0.17 | | 0.14 | 0.44 | 0.27 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | 0.23 | | 0.13 | 0.11 | 0.11 | | 0.05 | 0.29 | 0.29 | | 0.24 | 0.48 | 0.48 | |
| Volume/Cap: | 0.82 | 0.91 | 0.91 | | 0.91 | 0.82 | 0.82 | | 0.59 | 0.58 | 0.58 | | 0.58 | 0.91 | 0.57 | |
| Uniform Del: | 35.2 | 37.6 | 37.6 | | 42.8 | 43.6 | 43.6 | | 46.5 | 30.2 | 30.2 | | 33.8 | 24.1 | 18.6 | |
| IncremntDel: | 11.9 | 25.3 | 25.3 | | 22.1 | 23.3 | 23.3 | | 9.7 | 0.8 | 0.8 | | 2.0 | 7.8 | 1.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 47.1 | 62.9 | 62.9 | | 64.9 | 66.9 | 66.9 | | 56.2 | 31.0 | 31.0 | | 35.7 | 32.0 | 19.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 47.1 | 62.9 | 62.9 | | 64.9 | 66.9 | 66.9 | | 56.2 | 31.0 | 31.0 | | 35.7 | 32.0 | 19.6 | |
| LOS by Move: | D | E | E | | E | E | E | | E | C | C | | D | C | B | |
| HCM2kAvgQ: | 13 | 15 | 15 | | 10 | 7 | 7 | | 3 | 9 | 9 | | 7 | 28 | 10 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.796
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 38.1
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | | 92 | 391 | 62 | | 15 | 228 | 24 | | 73 | 584 | 95 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 38 | 275 | 53 | | 96 | 407 | 64 | | 16 | 237 | 25 | | 76 | 607 | 99 | |
| Added Vol: | 0 | 87 | 24 | | 6 | 26 | 1 | | 15 | 5 | 0 | | 2 | 0 | 9 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 38 | 362 | 77 | | 102 | 433 | 65 | | 31 | 242 | 25 | | 78 | 607 | 108 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 38 | 362 | 77 | | 102 | 433 | 65 | | 31 | 242 | 25 | | 78 | 607 | 108 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 38 | 362 | 77 | | 102 | 433 | 65 | | 31 | 242 | 25 | | 78 | 607 | 108 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 38 | 362 | 77 | | 102 | 433 | 65 | | 31 | 242 | 25 | | 78 | 607 | 108 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.93 | | 0.95 | 0.99 | 0.99 | | 0.95 | 0.98 | 0.98 | |
| Lanes: | 0.16 | 1.52 | 0.32 | | 0.34 | 1.44 | 0.22 | | 1.00 | 0.91 | 0.09 | | 1.00 | 0.85 | 0.15 | |
| Final Sat.: | 283 | 2660 | 567 | | 597 | 2542 | 385 | | 1805 | 1698 | 175 | | 1805 | 1576 | 280 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.14 | 0.14 | | 0.17 | 0.17 | 0.17 | | 0.02 | 0.14 | 0.14 | | 0.04 | 0.39 | 0.39 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | | 0.21 | 0.21 | 0.21 | | 0.05 | 0.38 | 0.38 | | 0.13 | 0.47 | 0.47 | |
| Volume/Cap: | 0.82 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 | | 0.34 | 0.37 | 0.37 | | 0.32 | 0.82 | 0.82 | |
| Uniform Del: | 40.3 | 40.3 | 40.3 | | 37.9 | 37.9 | 37.9 | | 45.9 | 22.2 | 22.2 | | 39.1 | 23.0 | 23.0 | |
| IncremntDel: | 9.3 | 9.3 | 9.3 | | 7.5 | 7.5 | 7.5 | | 2.2 | 0.3 | 0.3 | | 0.8 | 6.4 | 6.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 49.6 | 49.6 | 49.6 | | 45.4 | 45.4 | 45.4 | | 48.1 | 22.5 | 22.5 | | 39.9 | 29.4 | 29.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 49.6 | 49.6 | 49.6 | | 45.4 | 45.4 | 45.4 | | 48.1 | 22.5 | 22.5 | | 39.9 | 29.4 | 29.4 | |
| LOS by Move: | D | D | D | | D | D | D | | D | C | C | | D | C | C | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 12 | 12 | 12 | | 1 | 6 | 6 | | 2 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.681
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 1 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | | 0 | 1034 | 31 | | 103 | 0 | 6 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 47 | 2456 | 0 | | 0 | 1075 | 32 | | 107 | 0 | 6 | | 0 | 0 | 0 | |
| Added Vol: | 94 | 17 | 0 | | 0 | 255 | 0 | | 153 | 0 | 21 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 141 | 2473 | 0 | | 0 | 1330 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 141 | 2473 | 0 | | 0 | 1330 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 141 | 2473 | 0 | | 0 | 1330 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 141 | 2473 | 0 | | 0 | 1330 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.49 | 0.00 | | 0.00 | 0.26 | 0.02 | | 0.15 | 0.00 | 0.02 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.17 | 0.71 | 0.00 | | 0.00 | 0.55 | 0.55 | | 0.22 | 0.00 | 0.22 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.48 | 0.68 | 0.00 | | 0.00 | 0.48 | 0.04 | | 0.68 | 0.00 | 0.08 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 49.0 | 10.3 | 0.0 | | 0.0 | 18.0 | 13.6 | | 46.8 | 0.0 | 40.7 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.2 | 0.5 | 0.0 | | 0.0 | 0.1 | 0.0 | | 4.9 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 50.3 | 10.8 | 0.0 | | 0.0 | 18.1 | 13.6 | | 51.8 | 0.0 | 40.8 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.3 | 10.8 | 0.0 | | 0.0 | 18.1 | 13.6 | | 51.8 | 0.0 | 40.8 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | B | A | | A | B | B | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 5 | 20 | 0 | | 0 | 12 | 1 | | 11 | 0 | 1 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 44 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | | 218 | 0 | 31 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 152 | 2153 | 0 | | 0 | 885 | 204 | | 227 | 0 | 32 | | 0 | 0 | 0 | |
| Added Vol: | 94 | 109 | 0 | | 0 | 275 | 1 | | 2 | 0 | 21 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 246 | 2262 | 0 | | 0 | 1160 | 205 | | 229 | 0 | 53 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 246 | 2262 | 0 | | 0 | 1160 | 205 | | 229 | 0 | 53 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 246 | 2262 | 0 | | 0 | 1160 | 205 | | 229 | 0 | 53 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 246 | 2262 | 0 | | 0 | 1160 | 205 | | 229 | 0 | 53 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.44 | 0.00 | | 0.00 | 0.23 | 0.13 | | 0.13 | 0.00 | 0.03 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.27 | 0.72 | 0.00 | | 0.00 | 0.45 | 0.45 | | 0.21 | 0.00 | 0.21 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.51 | 0.62 | 0.00 | | 0.00 | 0.51 | 0.29 | | 0.62 | 0.00 | 0.16 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 39.9 | 9.1 | 0.0 | | 0.0 | 25.6 | 22.7 | | 46.6 | 0.0 | 42.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 0.9 | 0.3 | 0.0 | | 0.0 | 0.2 | 0.2 | | 3.1 | 0.0 | 0.2 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 40.8 | 9.4 | 0.0 | | 0.0 | 25.8 | 23.0 | | 49.8 | 0.0 | 42.3 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 40.8 | 9.4 | 0.0 | | 0.0 | 25.8 | 23.0 | | 49.8 | 0.0 | 42.3 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | A | A | | A | C | C | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 8 | 17 | 0 | | 0 | 12 | 5 | | 9 | 0 | 2 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.639
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 22.8
Optimal Cycle: 30 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 561 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 483 | 381 | 0 | | 0 | 414 | 69 | | 86 | 0 | 583 | | 0 | 0 | 0 | |
| Added Vol: | 2 | 22 | 0 | | 0 | 47 | 2 | | 7 | 0 | 7 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 485 | 403 | 0 | | 0 | 461 | 71 | | 93 | 0 | 590 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 485 | 403 | 0 | | 0 | 461 | 71 | | 93 | 0 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 485 | 403 | 0 | | 0 | 461 | 71 | | 93 | 0 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 485 | 403 | 0 | | 0 | 461 | 71 | | 93 | 0 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | | 0.93 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1585 | 243 | | 1769 | 0 | 1900 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.22 | 0.00 | | 0.00 | 0.29 | 0.29 | | 0.05 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.43 | 0.88 | 0.00 | | 0.00 | 0.46 | 0.46 | | 0.08 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.64 | 0.24 | 0.00 | | 0.00 | 0.64 | 0.64 | | 0.64 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 27.0 | 1.0 | 0.0 | | 0.0 | 25.1 | 25.1 | | 53.3 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.8 | 0.1 | 0.0 | | 0.0 | 1.7 | 1.7 | | 9.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 28.8 | 1.1 | 0.0 | | 0.0 | 26.8 | 26.8 | | 62.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 28.8 | 1.1 | 0.0 | | 0.0 | 26.8 | 26.8 | | 62.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | C | C | | E | A | A | | A | A | A | |
| HCM2kAvgQ: | 14 | 2 | 0 | | 0 | 15 | 15 | | 4 | 0 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.478
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 22 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 59 | 648 | 51 | | 200 | 737 | 71 | | 3 | 3 | 3 | | 128 | 55 | 251 | |
| Added Vol: | 0 | 23 | 0 | | 1 | 53 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 59 | 671 | 51 | | 201 | 790 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 59 | 671 | 51 | | 201 | 790 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 59 | 671 | 51 | | 201 | 790 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 59 | 671 | 51 | | 201 | 790 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.50 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 953 | 861 | 861 | | 1025 | 442 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.19 | 0.03 | | 0.11 | 0.22 | 0.04 | | 0.00 | 0.00 | 0.00 | | 0.12 | 0.12 | 0.16 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.40 | 0.40 | | 0.24 | 0.55 | 0.55 | | 0.33 | 0.33 | 0.33 | | 0.33 | 0.33 | 0.33 | |
| Volume/Cap: | 0.41 | 0.48 | 0.08 | | 0.48 | 0.41 | 0.08 | | 0.01 | 0.01 | 0.01 | | 0.38 | 0.38 | 0.48 | |
| Uniform Del: | 52.2 | 26.9 | 22.6 | | 39.4 | 15.6 | 12.6 | | 26.8 | 26.8 | 26.8 | | 30.5 | 30.5 | 31.8 | |
| IncremntDel: | 1.8 | 0.3 | 0.1 | | 0.9 | 0.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.5 | 0.5 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.1 | 27.2 | 22.6 | | 40.2 | 15.7 | 12.7 | | 26.8 | 26.8 | 26.8 | | 31.0 | 31.0 | 32.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.1 | 27.2 | 22.6 | | 40.2 | 15.7 | 12.7 | | 26.8 | 26.8 | 26.8 | | 31.0 | 31.0 | 32.5 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 10 | 1 | | 7 | 9 | 1 | | 0 | 0 | 0 | | 5 | 5 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.638
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 31.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 120 | 327 | 8 | | 7 | 510 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| Added Vol: | 0 | 110 | 0 | | 0 | 33 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 120 | 437 | 8 | | 7 | 543 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 120 | 437 | 8 | | 7 | 543 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 120 | 437 | 8 | | 7 | 543 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 120 | 437 | 8 | | 7 | 543 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.42 | 1.55 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 756 | 2758 | 53 | | 27 | 2003 | 1363 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.27 | 0.27 | 0.27 | | 0.05 | 0.08 | 0.08 | | 0.06 | 0.06 | 0.06 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.42 | 0.42 | 0.42 | | 0.12 | 0.12 | 0.12 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.64 | 0.64 | 0.64 | | 0.64 | 0.64 | 0.64 | | 0.38 | 0.64 | 0.64 | | 0.64 | 0.64 | 0.64 | |
| Uniform Del: | 33.6 | 33.6 | 33.6 | | 22.7 | 22.7 | 22.7 | | 40.2 | 41.6 | 41.6 | | 43.7 | 43.7 | 43.7 | |
| IncremntDel: | 1.6 | 1.6 | 1.6 | | 1.0 | 1.0 | 1.0 | | 0.4 | 4.3 | 4.3 | | 7.6 | 7.6 | 7.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.2 | 35.2 | 35.2 | | 23.7 | 23.7 | 23.7 | | 40.7 | 46.0 | 46.0 | | 51.3 | 51.3 | 51.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.2 | 35.2 | 35.2 | | 23.7 | 23.7 | 23.7 | | 40.7 | 46.0 | 46.0 | | 51.3 | 51.3 | 51.3 | |
| LOS by Move: | D | D | D | | C | C | C | | D | D | D | | D | D | D | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 12 | 12 | 12 | | 3 | 5 | 5 | | 4 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.545 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.3 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 0 | 2285 | 0 | 0 | 813 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 203 | 0 | 0 | 296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 2488 | 0 | 0 | 1109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 2488 | 0 | 0 | 1109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 2488 | 0 | 0 | 1109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 2488 | 0 | 0 | 1109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.48 | 0.00 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.55 | 0.00 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 0.0 | 1.4 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 1.5 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 1.5 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2015 PM |
| Command: | Near Term I No Project PM "B" |
| Volume: | Near Term I No Project PM "B" |
| Geometry: | Near Term I No Project PM "B" |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term I No Project PM "B" |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term I No Project PM "B" |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | D | 52.4 | 0.980 | D | 52.1 | 0.990 | -0.301 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 14.1 | 0.847 | C | 27.7 | 1.011 | +13.608 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | B | 19.0 | 0.849 | C | 21.5 | 0.880 | + 2.533 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 20.5 | 0.712 | B | 19.4 | 0.788 | -1.121 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 26.5 | 0.605 | C | 20.8 | 0.681 | -5.722 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 15.0 | 0.600 | B | 14.4 | 0.618 | -0.668 D/V |
| # 7 Middlefield at Marsh (Town of | C | 31.8 | 0.841 | C | 34.0 | 0.910 | + 2.148 D/V |
| # 8 Bayfront Exp. & Willow Rd. | D | 47.7 | 0.953 | E | 72.1 | 1.057 | +24.433 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.3 | 0.630 | C | 22.2 | 0.645 | -0.087 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 12.2 | 0.565 | B | 13.2 | 0.588 | + 1.022 D/V |
| # 11 O'Brien Dr. & Willow Rd. | A | 9.9 | 0.567 | A | 9.5 | 0.584 | -0.385 D/V |
| # 12 Newbridge St. & Willow Rd. | C | 33.7 | 0.765 | D | 35.5 | 0.858 | + 1.825 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 20.1 | 0.760 | C | 20.5 | 0.779 | + 0.395 D/V |
| # 14 Durham St. & Willow Rd. | D | 49.4 | 0.660 | B | 15.8 | 0.731 | -33.633 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 11.5 | 0.760 | B | 11.0 | 0.790 | -0.464 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 12.2 | 0.675 | B | 11.1 | 0.735 | -1.150 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 133.4 | 1.281 | F | 160.0 | 1.352 | +26.554 D/V |
| # 18 Bayfront Exp. & University Ave | F | 164.8 | 1.332 | F | 184.1 | 1.391 | +19.224 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 13.0 | 0.694 | B | 13.4 | 0.702 | + 0.368 D/V |
| # 20 University & Kavanaugh | B | 16.2 | 0.668 | B | 16.1 | 0.670 | -0.105 D/V |
| # 21 University & Bay | C | 34.0 | 0.838 | C | 33.9 | 0.839 | -0.102 D/V |
| # 22 University & Runnymede | C | 22.9 | 0.702 | C | 22.8 | 0.704 | -0.076 D/V |
| # 23 University & Bell | A | 7.7 | 0.550 | A | 7.7 | 0.551 | -0.040 D/V |
| # 24 University & Donohoe | D | 36.6 | 0.877 | D | 36.7 | 0.878 | + 0.162 D/V |
| # 25 NB 101 & Donohoe St | C | 21.3 | 0.484 | C | 21.3 | 0.485 | + 0.025 D/V |

| Intersection | Base LOS | Base Del/Veh | Base V/C | Future LOS | Future Del/Veh | Future V/C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 25.4 | 0.529 | C | 25.3 | 0.537 | -0.081 D/V |
| # 27 University Ave. & Woodland | D | 47.1 | 0.894 | D | 47.4 | 0.900 | + 0.303 D/V |
| # 28 Middlefield Rd. & University A | C | 32.9 | 0.559 | C | 33.8 | 0.608 | + 0.887 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 19.0 | 0.709 | F | 81.8 | 1.111 | +62.851 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 14.0 | 0.607 | B | 18.6 | 0.711 | + 4.510 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 26.6 | 0.746 | C | 26.7 | 0.761 | + 0.072 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.3 | 0.629 | C | 29.2 | 0.641 | + 0.842 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 38.9 | 0.733 | D | 40.5 | 0.778 | + 1.612 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.3 | 0.526 | A | 1.4 | 0.567 | + 0.106 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 0.990
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 52.1
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 1231 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2030 | | 32 | 76 | 11 | |
| Added Vol: | 757 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 23 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1988 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2053 | | 32 | 76 | 11 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1988 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2053 | | 32 | 76 | 11 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1988 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2053 | | 32 | 76 | 11 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1988 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2053 | | 32 | 76 | 11 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.39 | 0.03 | 0.03 | | 0.00 | 0.10 | 0.12 | | 0.10 | 0.10 | 0.74 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.39 | 0.39 | 0.39 | | 0.00 | 0.10 | 0.46 | | 0.35 | 0.35 | 0.74 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 0.99 | 0.08 | 0.08 | | 0.00 | 0.99 | 0.27 | | 0.29 | 0.29 | 0.99 | | 0.99 | 0.99 | 0.99 | |
| Uniform Del: | 42.4 | 26.9 | 26.9 | | 0.0 | 62.7 | 23.5 | | 32.5 | 32.5 | 17.3 | | 65.3 | 65.3 | 65.3 | |
| IncremntDel: | 17.6 | 0.0 | 0.0 | | 0.0 | 44.3 | 0.2 | | 0.3 | 0.3 | 17.3 | | 78.4 | 78.4 | 78.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 60.0 | 26.9 | 26.9 | | 0.0 | 107 | 23.7 | | 32.8 | 32.8 | 34.6 | | 143.7 | 144 | 143.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 60.0 | 26.9 | 26.9 | | 0.0 | 107 | 23.7 | | 32.8 | 32.8 | 34.6 | | 143.7 | 144 | 143.7 | |
| LOS by Move: | E | C | C | | A | F | C | | C | C | C | | F | F | F | |
| HCM2kAvgQ: | 35 | 2 | 2 | | 0 | 12 | 5 | | 6 | 6 | 55 | | 8 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.011
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 27.7
Optimal Cycle: 161 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 513 | 0 | 222 | | 0 | 0 | 0 | | 0 | 2146 | 527 | | 0 | 709 | 823 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 85 | 0 | | 0 | 607 | 149 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2231 | 527 | | 0 | 1316 | 972 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2231 | 0 | | 0 | 1316 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2231 | 0 | | 0 | 1316 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2231 | 0 | | 0 | 1316 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 5 | 3374 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.00 | 0.24 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.37 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.24 | 0.00 | 0.24 | | 0.00 | 0.00 | 0.00 | | 0.65 | 0.65 | 0.00 | | 0.00 | 0.65 | 0.00 | |
| Volume/Cap: | 0.63 | 0.00 | 1.01 | | 0.00 | 0.00 | 0.00 | | 1.01 | 1.01 | 0.00 | | 0.00 | 0.57 | 0.00 | |
| Uniform Del: | 22.2 | 0.0 | 24.8 | | 0.0 | 0.0 | 0.0 | | 11.2 | 11.2 | 0.0 | | 0.0 | 6.2 | 0.0 | |
| IncremntDel: | 1.5 | 0.0 | 49.1 | | 0.0 | 0.0 | 0.0 | | 21.9 | 21.9 | 0.0 | | 0.0 | 0.3 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 23.7 | 0.0 | 73.9 | | 0.0 | 0.0 | 0.0 | | 33.1 | 33.1 | 0.0 | | 0.0 | 6.5 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 23.7 | 0.0 | 73.9 | | 0.0 | 0.0 | 0.0 | | 33.1 | 33.1 | 0.0 | | 0.0 | 6.5 | 0.0 | |
| LOS by Move: | C | A | E | | A | A | A | | C | C | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 0 | 14 | | 0 | 0 | 0 | | 34 | 34 | 0 | | 0 | 8 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.880
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 74 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 1409 | 0 | 471 | | 0 | 1228 | 677 | | 0 | 978 | 293 | |
| Added Vol: | 0 | 0 | 0 | | 49 | 0 | 8 | | 0 | 46 | 0 | | 0 | 248 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1458 | 0 | 479 | | 0 | 1274 | 677 | | 0 | 1226 | 293 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1458 | 0 | 479 | | 0 | 1274 | 0 | | 0 | 1226 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1458 | 0 | 479 | | 0 | 1274 | 0 | | 0 | 1226 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1458 | 0 | 479 | | 0 | 1274 | 0 | | 0 | 1226 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.42 | 0.00 | 0.30 | | 0.00 | 0.36 | 0.00 | | 0.00 | 0.35 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.48 | 0.00 | 0.48 | | 0.00 | 0.41 | 0.00 | | 0.00 | 0.41 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.88 | 0.00 | 0.63 | | 0.00 | 0.88 | 0.00 | | 0.00 | 0.85 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 15.1 | 0.0 | 12.5 | | 0.0 | 17.7 | 0.0 | | 0.0 | 17.3 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 5.8 | 0.0 | 1.7 | | 0.0 | 6.6 | 0.0 | | 0.0 | 4.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 20.9 | 0.0 | 14.1 | | 0.0 | 24.3 | 0.0 | | 0.0 | 22.2 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 20.9 | 0.0 | 14.1 | | 0.0 | 24.3 | 0.0 | | 0.0 | 22.2 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | B | | A | C | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 17 | 0 | 8 | | 0 | 16 | 0 | | 0 | 15 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.788
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 19.4
Optimal Cycle: 46 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | | 254 | 9 | 2 | | 42 | 1314 | 17 | | 78 | 1109 | 214 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1367 | 18 | | 81 | 1153 | 223 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 48 | 0 | | 0 | 255 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1415 | 18 | | 81 | 1408 | 223 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1415 | 18 | | 81 | 1408 | 223 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1415 | 18 | | 81 | 1408 | 223 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1415 | 18 | | 81 | 1408 | 223 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.65 | 0.35 | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | 2.96 | 0.04 | | 2.00 | 1.73 | 0.27 | |
| Final Sat.: | 1174 | 629 | 2786 | | 1716 | 61 | 1583 | | 1769 | 5010 | 63 | | 3432 | 2994 | 473 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.10 | | 0.15 | 0.15 | 0.00 | | 0.02 | 0.28 | 0.28 | | 0.02 | 0.47 | 0.47 | |
| Crit Moves: | | | **** | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.19 | 0.19 | 0.19 | | 0.05 | 0.54 | 0.54 | | 0.10 | 0.58 | 0.58 | |
| Volume/Cap: | 0.20 | 0.20 | 0.80 | | 0.80 | 0.80 | 0.01 | | 0.49 | 0.52 | 0.52 | | 0.25 | 0.80 | 0.80 | |
| Uniform Del: | 31.5 | 31.5 | 34.1 | | 30.9 | 30.9 | 26.2 | | 37.0 | 11.8 | 11.8 | | 33.5 | 13.0 | 13.0 | |
| IncremntDel: | 0.4 | 0.4 | 12.9 | | 13.0 | 13.0 | 0.0 | | 4.3 | 0.2 | 0.2 | | 0.4 | 2.4 | 2.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 31.9 | 31.9 | 47.0 | | 44.0 | 44.0 | 26.2 | | 41.3 | 12.0 | 12.0 | | 33.9 | 15.5 | 15.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.9 | 31.9 | 47.0 | | 44.0 | 44.0 | 26.2 | | 41.3 | 12.0 | 12.0 | | 33.9 | 15.5 | 15.5 | |
| LOS by Move: | C | C | D | | D | D | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 1 | 1 | 6 | | 9 | 9 | 0 | | 2 | 9 | 9 | | 1 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.681
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 20.8
Optimal Cycle: 33 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | | 428 | 30 | 128 | | 239 | 885 | 55 | | 26 | 833 | 316 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 920 | 57 | | 27 | 866 | 329 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 48 | 0 | | 0 | 255 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 968 | 57 | | 27 | 1121 | 329 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 968 | 57 | | 27 | 1121 | 329 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 968 | 57 | | 27 | 1121 | 329 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 968 | 57 | | 27 | 1121 | 329 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.88 | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.36 | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 598 | 1084 | | 3323 | 233 | 1583 | | 1769 | 3314 | 196 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.13 | 0.13 | 0.08 | | 0.14 | 0.29 | 0.29 | | 0.02 | 0.32 | 0.21 | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.08 | 0.08 | 0.08 | | 0.20 | 0.20 | 0.20 | | 0.21 | 0.57 | 0.57 | | 0.10 | 0.47 | 0.47 | |
| Volume/Cap: | 0.68 | 0.68 | 0.68 | | 0.68 | 0.68 | 0.43 | | 0.68 | 0.51 | 0.51 | | 0.16 | 0.68 | 0.45 | |
| Uniform Del: | 35.7 | 35.7 | 35.7 | | 29.8 | 29.8 | 28.2 | | 29.3 | 10.3 | 10.3 | | 33.0 | 16.7 | 14.4 | |
| IncremntDel: | 12.5 | 12.9 | 12.9 | | 2.8 | 2.8 | 0.9 | | 5.2 | 0.2 | 0.2 | | 0.4 | 1.2 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.2 | 48.5 | 48.5 | | 32.6 | 32.6 | 29.1 | | 34.5 | 10.5 | 10.5 | | 33.5 | 17.9 | 14.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.2 | 48.5 | 48.5 | | 32.6 | 32.6 | 29.1 | | 34.5 | 10.5 | 10.5 | | 33.5 | 17.9 | 14.9 | |
| LOS by Move: | D | D | D | | C | C | C | | C | B | B | | C | B | B | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 7 | 7 | 3 | | 7 | 8 | 8 | | 1 | 12 | 6 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 28 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 59 | 8 | 187 | | 57 | 32 | 3 | | 5 | 852 | 94 | | 208 | 927 | 49 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 48 | 2 | | 0 | 255 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 900 | 96 | | 208 | 1182 | 49 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 900 | 96 | | 208 | 1182 | 49 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 900 | 96 | | 208 | 1182 | 49 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 900 | 96 | | 208 | 1182 | 49 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.70 | 0.70 | 0.70 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.80 | 0.19 | | 1.00 | 1.92 | 0.08 | |
| Final Sat.: | 366 | 50 | 1119 | | 817 | 461 | 45 | | 17 | 2980 | 317 | | 1769 | 3377 | 140 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.07 | 0.07 | 0.07 | | 0.30 | 0.30 | 0.30 | | 0.12 | 0.35 | 0.35 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | | 0.49 | 0.49 | 0.49 | | 0.19 | 0.68 | 0.68 | |
| Volume/Cap: | 0.62 | 0.62 | 0.62 | | 0.26 | 0.26 | 0.26 | | 0.62 | 0.62 | 0.62 | | 0.62 | 0.52 | 0.52 | |
| Uniform Del: | 25.5 | 25.5 | 25.5 | | 22.9 | 22.9 | 22.9 | | 15.0 | 15.0 | 15.0 | | 29.7 | 6.3 | 6.3 | |
| IncremntDel: | 2.8 | 2.8 | 2.8 | | 0.4 | 0.4 | 0.4 | | 0.7 | 0.7 | 0.7 | | 3.4 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 28.3 | 28.3 | 28.3 | | 23.2 | 23.2 | 23.2 | | 15.7 | 15.7 | 15.7 | | 33.1 | 6.5 | 6.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 28.3 | 28.3 | 28.3 | | 23.2 | 23.2 | 23.2 | | 15.7 | 15.7 | 15.7 | | 33.1 | 6.5 | 6.5 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 2 | 2 | 2 | | 10 | 10 | 10 | | 6 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.910
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 34.0
Optimal Cycle: 116 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 443 | 570 | | 424 | 280 | 0 | | 0 | 0 | 0 | | 536 | 0 | 465 | |
| Added Vol: | 0 | 26 | 39 | | 11 | 7 | 0 | | 0 | 0 | 0 | | 76 | 0 | 182 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 469 | 609 | | 435 | 287 | 0 | | 0 | 0 | 0 | | 612 | 0 | 647 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 469 | 609 | | 435 | 287 | 0 | | 0 | 0 | 0 | | 612 | 0 | 647 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 469 | 609 | | 435 | 287 | 0 | | 0 | 0 | 0 | | 612 | 0 | 647 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 469 | 609 | | 435 | 287 | 0 | | 0 | 0 | 0 | | 612 | 0 | 647 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.25 | 0.38 | | 0.24 | 0.15 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.34 | 0.00 | 0.40 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.27 | 0.64 | | 0.27 | 0.54 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.64 | |
| Volume/Cap: | 0.00 | 0.91 | 0.59 | | 0.91 | 0.28 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.91 | 0.00 | 0.63 | |
| Uniform Del: | 0.0 | 38.8 | 11.2 | | 39.1 | 13.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 32.8 | 0.0 | 12.0 | |
| IncremntDel: | 0.0 | 20.1 | 0.9 | | 21.3 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 16.4 | 0.0 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 58.9 | 12.1 | | 60.4 | 14.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 49.2 | 0.0 | 13.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 58.9 | 12.1 | | 60.4 | 14.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 49.2 | 0.0 | 13.3 | |
| LOS by Move: | A | E | B | | E | B | A | | A | A | A | | D | A | B | |
| HCM2kAvgQ: | 0 | 19 | 12 | | 18 | 5 | 0 | | 0 | 0 | 0 | | 23 | 0 | 14 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.057
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 72.1
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | | 8 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | | 1.04 | | | | |
| Initial Bse: | 376 | 691 | 1 | | 0 | 2287 | 112 | | 37 | 14 | 1481 | | 46 | 109 | | 8 | | | | |
| Added Vol: | 151 | 145 | 1 | | 19 | 171 | 0 | | 0 | 37 | 5 | | 122 | 150 | | 69 | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | | | | |
| Initial Fut: | 527 | 836 | 2 | | 19 | 2458 | 112 | | 37 | 51 | 1486 | | 168 | 259 | | 77 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| PHF Volume: | 527 | 836 | 2 | | 19 | 2458 | 112 | | 37 | 51 | 1486 | | 168 | 259 | | 77 | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | | | | |
| Reduced Vol: | 527 | 836 | 2 | | 19 | 2458 | 112 | | 37 | 51 | 1486 | | 168 | 259 | | 77 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| FinalVolume: | 527 | 836 | 2 | | 19 | 2458 | 112 | | 37 | 51 | 1486 | | 168 | 259 | | 77 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.91 | 0.91 | 0.88 | | 0.93 | 0.93 | | 0.83 | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.28 | 1.72 | 2.00 | | 1.00 | 2.00 | | 1.00 | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 2211 | 2984 | 3343 | | 1769 | 3538 | | 1583 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.14 | 0.00 | | 0.01 | 0.42 | 0.07 | | 0.02 | 0.02 | 0.44 | | 0.09 | 0.07 | | 0.05 | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | | | | | |
| Green/Cycle: | 0.15 | 0.43 | 0.52 | | 0.12 | 0.40 | 0.40 | | 0.28 | 0.28 | 0.42 | | 0.09 | 0.09 | | 0.20 | | | | |
| Volume/Cap: | 1.06 | 0.33 | 0.00 | | 0.05 | 1.06 | 0.18 | | 0.06 | 0.06 | 1.06 | | 1.06 | 0.82 | | 0.24 | | | | |
| Uniform Del: | 55.6 | 24.8 | 15.1 | | 51.2 | 39.2 | 25.4 | | 34.8 | 34.8 | 37.7 | | 59.2 | 58.1 | | 43.2 | | | | |
| IncremntDel: | 56.3 | 0.1 | 0.0 | | 0.1 | 36.1 | 0.1 | | 0.0 | 0.0 | 40.8 | | 87.5 | 15.1 | | 0.4 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| Delay/Veh: | 111.9 | 24.9 | 15.2 | | 51.2 | 75.2 | 25.5 | | 34.8 | 34.8 | 78.5 | | 146.7 | 73.2 | | 43.6 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| AdjDel/Veh: | 111.9 | 24.9 | 15.2 | | 51.2 | 75.2 | 25.5 | | 34.8 | 34.8 | 78.5 | | 146.7 | 73.2 | | 43.6 | | | | |
| LOS by Move: | F | C | B | | D | E | C | | C | C | E | | F | E | | D | | | | |
| HCM2kAvgQ: | 17 | 8 | 0 | | 0 | 47 | 3 | | 1 | 1 | 44 | | 11 | 7 | | 3 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.645
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: 52 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | | 73 | 5 | 73 | | 130 | 1351 | 5 | | 20 | 553 | | 67 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | | 1.04 | | | | |
| Initial Bse: | 134 | 6 | 51 | | 76 | 5 | 76 | | 135 | 1405 | 5 | | 21 | 575 | | 70 | | | | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 6 | 42 | 0 | | 0 | 301 | | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | | | | |
| Initial Fut: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1447 | 5 | | 21 | 876 | | 70 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| PHF Volume: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1447 | 5 | | 21 | 876 | | 70 | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | | | | |
| Reduced Vol: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1447 | 5 | | 21 | 876 | | 70 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| FinalVolume: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1447 | 5 | | 21 | 876 | | 70 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | | | | |
| Adjustment: | 0.62 | 0.62 | 0.62 | | 0.73 | 0.73 | 0.73 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | | 0.92 | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | | 0.47 | 0.03 | 0.50 | | 1.00 | 1.99 | 0.01 | | 1.00 | 1.85 | | 0.15 | | | | |
| Final Sat.: | 824 | 38 | 313 | | 657 | 45 | 691 | | 1769 | 3522 | 13 | | 1769 | 3241 | | 258 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.12 | 0.12 | 0.12 | | 0.08 | 0.41 | 0.41 | | 0.01 | 0.27 | | 0.27 | | | | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.25 | 0.25 | 0.25 | | 0.15 | 0.62 | 0.62 | | 0.04 | 0.51 | | 0.51 | | | | |
| Volume/Cap: | 0.66 | 0.66 | 0.66 | | 0.47 | 0.47 | 0.47 | | 0.53 | 0.66 | 0.66 | | 0.28 | 0.53 | | 0.53 | | | | |
| Uniform Del: | 40.8 | 40.8 | 40.8 | | 38.6 | 38.6 | 38.6 | | 47.0 | 14.6 | 14.6 | | 55.8 | 19.6 | | 19.6 | | | | |
| IncremntDel: | 5.6 | 5.6 | 5.6 | | 1.0 | 1.0 | 1.0 | | 2.0 | 0.8 | 0.8 | | 2.1 | 0.3 | | 0.3 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| Delay/Veh: | 46.4 | 46.4 | 46.4 | | 39.6 | 39.6 | 39.6 | | 49.0 | 15.4 | 15.4 | | 57.9 | 19.9 | | 19.9 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | | | | |
| AdjDel/Veh: | 46.4 | 46.4 | 46.4 | | 39.6 | 39.6 | 39.6 | | 49.0 | 15.4 | 15.4 | | 57.9 | 19.9 | | 19.9 | | | | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | E | B | | B | | | | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 5 | 5 | 5 | | 5 | 18 | 18 | | 1 | 12 | | 12 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 46 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 0 | 0 0 | 0 | | 0 0 | 1! 0 | 0 | | 1 0 | 2 0 | 0 | | 0 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 10 | 0 | 127 | | 102 | 1515 | 0 | | 0 | 832 | 23 | |
| Added Vol: | 0 | 0 | 0 | | 6 | 0 | 10 | | 10 | 42 | 0 | | 0 | 264 | 41 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 16 | 0 | 137 | | 112 | 1557 | 0 | | 0 | 1096 | 64 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 16 | 0 | 137 | | 112 | 1557 | 0 | | 0 | 1096 | 64 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 16 | 0 | 137 | | 112 | 1557 | 0 | | 0 | 1096 | 64 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 16 | 0 | 137 | | 112 | 1557 | 0 | | 0 | 1096 | 64 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | 0.86 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.92 | 0.92 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.11 | 0.00 | 0.89 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.89 | 0.11 | |
| Final Sat.: | 0 | 0 | 0 | | 174 | 0 | 1454 | | 1769 | 3538 | 0 | | 0 | 3316 | 193 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.09 | 0.00 | 0.09 | | 0.06 | 0.44 | 0.00 | | 0.00 | 0.33 | 0.33 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.16 | 0.00 | 0.16 | | 0.12 | 0.75 | 0.00 | | 0.00 | 0.63 | 0.63 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.59 | 0.00 | 0.59 | | 0.53 | 0.59 | 0.00 | | 0.00 | 0.53 | 0.53 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 46.7 | 0.0 | 46.7 | | 49.6 | 6.8 | 0.0 | | 0.0 | 12.4 | 12.4 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.5 | 0.0 | 3.5 | | 2.4 | 0.4 | 0.0 | | 0.0 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 50.2 | 0.0 | 50.2 | | 52.0 | 7.1 | 0.0 | | 0.0 | 12.6 | 12.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 50.2 | 0.0 | 50.2 | | 52.0 | 7.1 | 0.0 | | 0.0 | 12.6 | 12.6 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 6 | 0 | 6 | | 5 | 14 | 0 | | 0 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.584
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 46 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | | 0 0 | 2 0 | 1 | | 1 0 | 2 0 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 125 | 0 | 36 | | 0 | 0 | 0 | | 0 | 1470 | 212 | | 76 | 924 | 0 | |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 51 | 11 | | 0 | 274 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 129 | 0 | 36 | | 0 | 0 | 0 | | 0 | 1521 | 223 | | 76 | 1198 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 129 | 0 | 36 | | 0 | 0 | 0 | | 0 | 1521 | 223 | | 76 | 1198 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 129 | 0 | 36 | | 0 | 0 | 0 | | 0 | 1521 | 223 | | 76 | 1198 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 129 | 0 | 36 | | 0 | 0 | 0 | | 0 | 1521 | 223 | | 76 | 1198 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2839 | 0 | 625 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.43 | 0.14 | | 0.04 | 0.34 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.74 | 0.74 | | 0.07 | 0.81 | 0.00 | |
| Volume/Cap: | 0.46 | 0.00 | 0.58 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.58 | 0.19 | | 0.58 | 0.42 | 0.00 | |
| Uniform Del: | 51.0 | 0.0 | 51.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.4 | 4.9 | | 53.8 | 3.3 | 0.0 | |
| IncremntDel: | 0.9 | 0.0 | 3.1 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.1 | | 6.7 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 51.9 | 0.0 | 54.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.7 | 5.0 | | 60.5 | 3.4 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.9 | 0.0 | 54.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.7 | 5.0 | | 60.5 | 3.4 | 0.0 | |
| LOS by Move: | D | A | D | | A | A | A | | A | A | A | | E | A | A | |
| HCM2kAvgQ: | 3 | 0 | 4 | | 0 | 0 | 0 | | 0 | 14 | 3 | | 4 | 7 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.858
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 35.5
Optimal Cycle: 106 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 1 | 0 | 1 | 1 | 0 1 | 0 | 1 | 1 | 0 2 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 258 | 177 | 57 | | 40 | 173 | 228 | | 336 | 1493 | 353 | | 106 | 1014 | 35 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 6 | 62 | 0 | | 0 | 279 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1555 | 353 | | 106 | 1293 | 35 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1555 | 353 | | 106 | 1293 | 35 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1555 | 353 | | 106 | 1293 | 35 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1555 | 353 | | 106 | 1293 | 35 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.45 | 0.55 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4028 | 913 | | 1769 | 3430 | 94 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.09 | 0.04 | | 0.02 | 0.09 | 0.15 | | 0.19 | 0.39 | 0.39 | | 0.06 | 0.38 | 0.38 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.20 | | 0.11 | 0.11 | 0.33 | | 0.23 | 0.58 | 0.58 | | 0.09 | 0.44 | 0.44 | |
| Volume/Cap: | 0.68 | 0.86 | 0.18 | | 0.21 | 0.86 | 0.45 | | 0.86 | 0.67 | 0.67 | | 0.67 | 0.86 | 0.86 | |
| Uniform Del: | 51.3 | 52.4 | 39.8 | | 48.8 | 52.6 | 31.4 | | 44.6 | 17.6 | 17.6 | | 52.9 | 30.3 | 30.3 | |
| IncremntDel: | 4.9 | 28.3 | 0.3 | | 0.5 | 28.8 | 0.6 | | 16.7 | 0.6 | 0.6 | | 10.7 | 5.0 | 5.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 56.2 | 80.7 | 40.1 | | 49.4 | 81.4 | 32.0 | | 61.4 | 18.3 | 18.3 | | 63.6 | 35.3 | 35.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 56.2 | 80.7 | 40.1 | | 49.4 | 81.4 | 32.0 | | 61.4 | 18.3 | 18.3 | | 63.6 | 35.3 | 35.3 | |
| LOS by Move: | E | F | D | | D | F | C | | E | B | B | | E | D | D | |
| HCM2kAvgQ: | 6 | 9 | 2 | | 1 | 9 | 7 | | 15 | 18 | 18 | | 5 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 68 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 1 | 0 0 | 0 | 1 | 1 | 0 2 | 0 | 0 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 433 | 0 | 56 | | 42 | 1493 | 0 | | 0 | 1103 | 265 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 53 | 0 | | 0 | 111 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1546 | 0 | | 0 | 1214 | 272 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1546 | 0 | | 0 | 1214 | 272 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1546 | 0 | | 0 | 1214 | 272 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1546 | 0 | | 0 | 1214 | 272 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.25 | 0.00 | 0.04 | | 0.02 | 0.44 | 0.00 | | 0.00 | 0.34 | 0.17 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.32 | 0.00 | 0.32 | | 0.08 | 0.56 | 0.00 | | 0.00 | 0.48 | 0.48 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.78 | 0.00 | 0.11 | | 0.30 | 0.78 | 0.00 | | 0.00 | 0.71 | 0.36 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 27.9 | 0.0 | 21.8 | | 39.2 | 15.4 | 0.0 | | 0.0 | 18.3 | 14.5 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 6.9 | 0.0 | 0.1 | | 1.2 | 2.0 | 0.0 | | 0.0 | 1.4 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 34.8 | 0.0 | 21.9 | | 40.4 | 17.4 | 0.0 | | 0.0 | 19.7 | 14.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 34.8 | 0.0 | 21.9 | | 40.4 | 17.4 | 0.0 | | 0.0 | 19.7 | 14.8 | |
| LOS by Move: | A | A | A | | C | A | C | | D | B | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 13 | 0 | 1 | | 1 | 19 | 0 | | 0 | 15 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.731
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 50 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 0 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 34 | 7 | 88 | | 127 | 5 | 32 | | 11 | 1170 | 10 | | 94 | 851 | 53 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 53 | 0 | | 0 | 111 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 34 | 7 | 88 | | 127 | 5 | 32 | | 11 | 1223 | 10 | | 94 | 962 | 53 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 34 | 7 | 88 | | 127 | 5 | 32 | | 11 | 1223 | 10 | | 94 | 962 | 53 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 34 | 7 | 88 | | 127 | 5 | 32 | | 11 | 1223 | 10 | | 94 | 962 | 53 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 34 | 7 | 88 | | 127 | 5 | 32 | | 11 | 1223 | 10 | | 94 | 962 | 53 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.48 | 0.84 | 0.84 | | 0.55 | 0.55 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.97 | 0.97 | |
| Lanes: | 1.00 | 0.08 | 0.92 | | 0.96 | 0.04 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.95 | 0.05 | |
| Final Sat.: | 920 | 122 | 1481 | | 1002 | 41 | 1583 | | 1769 | 3504 | 30 | | 1769 | 1751 | 97 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.06 | 0.06 | | 0.13 | 0.13 | 0.02 | | 0.01 | 0.35 | 0.35 | | 0.05 | 0.55 | 0.55 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | | 0.17 | 0.17 | 0.17 | | 0.04 | 0.66 | 0.66 | | 0.10 | 0.73 | 0.73 | |
| Volume/Cap: | 0.22 | 0.36 | 0.36 | | 0.76 | 0.76 | 0.12 | | 0.17 | 0.52 | 0.52 | | 0.52 | 0.76 | 0.76 | |
| Uniform Del: | 37.8 | 38.7 | 38.7 | | 41.6 | 41.6 | 37.1 | | 48.9 | 9.1 | 9.1 | | 44.8 | 8.7 | 8.7 | |
| IncremntDel: | 0.7 | 0.8 | 0.8 | | 17.0 | 17.0 | 0.2 | | 1.2 | 0.2 | 0.2 | | 2.9 | 2.5 | 2.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 38.5 | 39.5 | 39.5 | | 58.6 | 58.6 | 37.3 | | 50.1 | 9.3 | 9.3 | | 47.7 | 11.1 | 11.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 38.5 | 39.5 | 39.5 | | 58.6 | 58.6 | 37.3 | | 50.1 | 9.3 | 9.3 | | 47.7 | 11.1 | 11.1 | |
| LOS by Move: | D | D | D | | E | E | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 1 | 3 | 3 | | 6 | 6 | 1 | | 1 | 11 | 11 | | 4 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.790
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 60 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 0 | 1! | 0 | 0 | 0 0 | 1! | 0 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1126 | 6 | | 5 | 827 | 113 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 53 | 0 | | 0 | 111 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1179 | 6 | | 5 | 938 | 113 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1179 | 6 | | 5 | 938 | 113 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1179 | 6 | | 5 | 938 | 113 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1179 | 6 | | 5 | 938 | 113 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.20 | 0.98 | 0.98 | | 0.14 | 0.96 | 0.96 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.89 | 0.11 | |
| Final Sat.: | 655 | 601 | 382 | | 959 | 63 | 365 | | 378 | 1850 | 10 | | 274 | 1635 | 198 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.10 | 0.10 | 0.10 | | 0.07 | 0.64 | 0.64 | | 0.02 | 0.57 | 0.57 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.13 | 0.13 | 0.13 | | 0.13 | 0.13 | 0.13 | | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Volume/Cap: | 0.15 | 0.15 | 0.15 | | 0.79 | 0.79 | 0.79 | | 0.08 | 0.79 | 0.79 | | 0.02 | 0.71 | 0.71 | |
| Uniform Del: | 40.8 | 40.8 | 40.8 | | 44.5 | 44.5 | 44.5 | | 2.1 | 5.4 | 5.4 | | 2.0 | 4.6 | 4.6 | |
| IncremntDel: | 0.3 | 0.3 | 0.3 | | 21.0 | 21.0 | 21.0 | | 0.1 | 2.9 | 2.9 | | 0.0 | 1.6 | 1.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 41.2 | 41.2 | 41.2 | | 65.5 | 65.5 | 65.5 | | 2.2 | 8.3 | 8.3 | | 2.0 | 6.2 | 6.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.2 | 41.2 | 41.2 | | 65.5 | 65.5 | 65.5 | | 2.2 | 8.3 | 8.3 | | 2.0 | 6.2 | 6.2 | |
| LOS by Move: | D | D | D | | E | E | E | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 6 | | 0 | 22 | 22 | | 0 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 50 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | | 31 | 75 | 29 | | 30 | 4 | 4 | | 969 | 36 | 37 | | 832 | 17 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 96 | | 32 | 78 | 30 | | 31 | 4 | 4 | | 1008 | 37 | 38 | | 865 | 18 |
| Added Vol: | 18 | | 0 | 5 | 0 | | 0 | 0 | 0 | | 48 | 22 | 15 | | 96 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 114 | | 32 | 83 | 30 | | 31 | 4 | 4 | | 1056 | 59 | 53 | | 961 | 18 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 114 | | 32 | 83 | 30 | | 31 | 4 | 4 | | 1056 | 59 | 53 | | 961 | 18 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 114 | | 32 | 83 | 30 | | 31 | 4 | 4 | | 1056 | 59 | 53 | | 961 | 18 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 114 | | 32 | 83 | 30 | | 31 | 4 | 4 | | 1056 | 59 | 53 | | 961 | 18 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.72 | 0.87 | | 0.87 | 0.50 | 0.96 | | 0.96 | 0.24 | 0.97 | | 0.97 | 0.18 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.28 | | 0.72 | 1.00 | 0.88 | | 0.12 | 1.00 | 0.95 | | 0.05 | 1.00 | 0.98 | | 0.02 |
| Final Sat.: | 1376 | 465 | | 1196 | 957 | 1613 | | 215 | 447 | 1749 | | 98 | 344 | 1823 | | 34 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.07 | | 0.07 | 0.03 | 0.02 | | 0.02 | 0.01 | 0.60 | | 0.60 | 0.16 | 0.53 | | 0.53 |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.11 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 | | 0.82 |
| Volume/Cap: | 0.74 | 0.62 | | 0.62 | 0.28 | 0.17 | | 0.17 | 0.01 | 0.74 | | 0.74 | 0.19 | 0.64 | | 0.64 |
| Uniform Del: | 45.1 | 44.5 | | 44.5 | 42.7 | 42.2 | | 42.2 | 1.7 | 4.2 | | 4.2 | 2.0 | 3.6 | | 3.6 |
| IncremntDel: | 16.7 | 6.1 | | 6.1 | 1.4 | 0.4 | | 0.4 | 0.0 | 1.9 | | 1.9 | 0.3 | 0.9 | | 0.9 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 61.8 | 50.6 | | 50.6 | 44.1 | 42.6 | | 42.6 | 1.7 | 6.2 | | 6.2 | 2.3 | 4.5 | | 4.5 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 61.8 | 50.6 | | 50.6 | 44.1 | 42.6 | | 42.6 | 1.7 | 6.2 | | 6.2 | 2.3 | 4.5 | | 4.5 |
| LOS by Move: | E | D | | D | D | D | | D | A | A | | A | A | A | | A |
| HCM2kAvgQ: | 5 | 5 | | 5 | 1 | 1 | | 1 | 0 | 17 | | 17 | 1 | 13 | | 13 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.352
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 160.0
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | | 491 | 477 | 413 | | 19 | 36 | | 170 | 158 | 382 | | 95 | 410 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 101 | 456 | | 511 | 496 | 430 | | 20 | 37 | | 177 | 164 | 397 | | 99 | 426 |
| Added Vol: | 15 | 8 | | 25 | 13 | 8 | | 0 | 0 | | 32 | 24 | 67 | | 21 | 25 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 116 | 464 | | 536 | 509 | 438 | | 20 | 37 | | 209 | 188 | 464 | | 120 | 451 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 116 | 464 | | 536 | 509 | 438 | | 20 | 37 | | 209 | 188 | 464 | | 120 | 451 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 116 | 464 | | 536 | 509 | 438 | | 20 | 37 | | 209 | 188 | 464 | | 120 | 451 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 116 | 464 | | 536 | 509 | 438 | | 20 | 37 | | 209 | 188 | 464 | | 120 | 451 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.58 | 1.36 | | 0.06 | 1.00 | 1.00 | | 1.00 | 1.59 | 0.41 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 2715 | 2333 | | 105 | 1769 | 1862 | | 1583 | 2848 | 735 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.13 | | 0.68 | 0.19 | 0.19 | | 0.19 | 0.02 | 0.11 | | 0.12 | 0.16 | 0.16 | | 0.29 |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | | | **** |
| Green/Cycle: | 0.50 | 0.50 | | 0.50 | 0.14 | 0.14 | | 0.14 | 0.09 | 0.09 | | 0.09 | 0.21 | 0.21 | | 0.21 |
| Volume/Cap: | 0.13 | 0.26 | | 1.35 | 1.35 | 1.35 | | 1.35 | 0.24 | 1.27 | | 1.35 | 0.77 | 0.77 | | 1.35 |
| Uniform Del: | 17.3 | 18.6 | | 32.5 | 56.0 | 56.0 | | 56.0 | 55.2 | 59.3 | | 59.3 | 48.3 | 48.3 | | 51.3 |
| IncremntDel: | 0.1 | 0.1 | | 174.2 | 167.4 | 167 | | 167.4 | 0.8 | 162 | | 198.0 | 5.0 | 5.0 | | 176.8 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 17.4 | 18.7 | | 206.6 | 223.4 | 223 | | 223.4 | 56.0 | 221 | | 257.3 | 53.3 | 53.3 | | 228.1 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 17.4 | 18.7 | | 206.6 | 223.4 | 223 | | 223.4 | 56.0 | 221 | | 257.3 | 53.3 | 53.3 | | 228.1 |
| LOS by Move: | B | B | | F | F | F | | F | E | F | | F | D | D | | F |
| HCM2kAvgQ: | 2 | 5 | | 40 | 26 | 26 | | 26 | 2 | 16 | | 16 | 13 | 13 | | 34 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.391
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 184.1
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | | 0 | 3488 | 127 | | 60 | 0 | 1667 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 392 | 1007 | 0 | | 0 | 3628 | 132 | | 62 | 0 | 1734 | | 0 | 0 | 0 | |
| Added Vol: | 4 | 88 | 0 | | 0 | 261 | 38 | | 5 | 0 | 11 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 396 | 1095 | 0 | | 0 | 3889 | 170 | | 67 | 0 | 1745 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 396 | 1095 | 0 | | 0 | 3889 | 170 | | 67 | 0 | 1745 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 396 | 1095 | 0 | | 0 | 3889 | 170 | | 67 | 0 | 1745 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 396 | 1095 | 0 | | 0 | 3889 | 170 | | 67 | 0 | 1745 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.22 | 0.00 | | 0.00 | 0.76 | 0.11 | | 0.02 | 0.00 | 0.42 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.08 | 0.63 | 0.00 | | 0.00 | 0.55 | 0.55 | | 0.30 | 0.00 | 0.30 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 1.39 | 0.34 | 0.00 | | 0.00 | 1.39 | 0.20 | | 0.07 | 0.00 | 1.39 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 68.8 | 12.9 | 0.0 | | 0.0 | 33.7 | 17.0 | | 37.5 | 0.0 | 52.5 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 196.0 | 0.1 | 0.0 | | 0.0 | 178 | 0.1 | | 0.0 | 0.0 | 180.8 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 264.7 | 12.9 | 0.0 | | 0.0 | 212 | 17.1 | | 37.5 | 0.0 | 233.2 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 264.7 | 12.9 | 0.0 | | 0.0 | 212 | 17.1 | | 37.5 | 0.0 | 233.2 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | B | A | | A | F | B | | D | A | F | | A | A | A | |
| HCM2kAvgQ: | 18 | 8 | 0 | | 0 | 113 | 4 | | 1 | 0 | 54 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.702
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.4
Optimal Cycle: 55 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 | 1! | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 120 | 0 | 99 | | 20 | 1599 | 0 | | 0 | 454 | 16 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 125 | 0 | 103 | | 21 | 1663 | 0 | | 0 | 472 | 17 | |
| Added Vol: | 0 | 0 | 0 | | 11 | 0 | 0 | | 0 | 5 | 0 | | 0 | 38 | 4 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 136 | 0 | 103 | | 21 | 1668 | 0 | | 0 | 510 | 21 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 136 | 0 | 103 | | 21 | 1668 | 0 | | 0 | 510 | 21 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 136 | 0 | 103 | | 21 | 1668 | 0 | | 0 | 510 | 21 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 136 | 0 | 103 | | 21 | 1668 | 0 | | 0 | 510 | 21 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.90 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.57 | 0.00 | 0.43 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 970 | 0 | 735 | | 1769 | 3538 | 0 | | 0 | 3380 | 137 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.14 | 0.00 | 0.14 | | 0.01 | 0.47 | 0.00 | | 0.00 | 0.15 | 0.15 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.20 | 0.00 | 0.20 | | 0.19 | 0.67 | 0.00 | | 0.00 | 0.48 | 0.48 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.70 | 0.00 | 0.70 | | 0.06 | 0.70 | 0.00 | | 0.00 | 0.31 | 0.31 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 31.7 | 0.0 | 31.7 | | 28.3 | 8.7 | 0.0 | | 0.0 | 13.4 | 13.4 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 6.5 | 0.0 | 6.5 | | 0.1 | 1.0 | 0.0 | | 0.0 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 38.2 | 0.0 | 38.2 | | 28.4 | 9.7 | 0.0 | | 0.0 | 13.5 | 13.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 38.2 | 0.0 | 38.2 | | 28.4 | 9.7 | 0.0 | | 0.0 | 13.5 | 13.5 | |
| LOS by Move: | A | A | A | | D | A | D | | C | A | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 7 | 0 | 7 | | 0 | 15 | 0 | | 0 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.670
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | 19 | 29 | 82 | 26 | 1579 | 19 | 18 | 527 | 13 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1642 | 20 | 19 | 548 | 14 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 38 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1647 | 20 | 19 | 586 | 14 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1647 | 20 | 19 | 586 | 14 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1647 | 20 | 19 | 586 | 14 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1647 | 20 | 19 | 586 | 14 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.96 | 0.96 | 0.96 | 0.91 | 0.91 | 0.91 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.45 | 0.40 | 0.15 | 0.15 | 0.22 | 0.63 | 1.00 | 1.98 | 0.02 | 1.00 | 1.95 | 0.05 |
| Final Sat.: | 816 | 723 | 280 | 252 | 385 | 1089 | 1805 | 3560 | 43 | 1805 | 3518 | 81 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | 0.08 | 0.08 | 0.08 | 0.01 | 0.46 | 0.46 | 0.01 | 0.17 | 0.17 |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.07 | 0.06 | 0.06 | 0.11 | 0.11 | 0.11 | 0.16 | 0.66 | 0.66 | 0.05 | 0.55 | 0.55 |
| Volume/Cap: | 0.65 | 0.70 | 0.70 | 0.70 | 0.73 | 0.73 | 0.09 | 0.70 | 0.70 | 0.21 | 0.30 | 0.30 |
| Uniform Del: | 45.4 | 45.9 | 45.9 | 42.7 | 43.2 | 43.2 | 35.4 | 10.5 | 10.5 | 45.6 | 12.2 | 12.2 |
| IncremntDel: | 11.4 | 17.0 | 17.0 | 10.6 | 13.5 | 13.5 | 0.1 | 0.9 | 0.9 | 1.1 | 0.1 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 56.8 | 62.8 | 62.8 | 53.4 | 56.7 | 56.7 | 35.5 | 11.4 | 11.4 | 46.7 | 12.3 | 12.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 56.8 | 62.8 | 62.8 | 53.4 | 56.7 | 56.7 | 35.5 | 11.4 | 11.4 | 46.7 | 12.3 | 12.3 |
| LOS by Move: | E | E | E | D | E | E | D | B | B | D | B | B |
| HCM2kAvgQ: | 4 | 4 | 4 | 5 | 6 | 6 | 1 | 17 | 17 | 1 | 5 | 5 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.839
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 33.9
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 1 | 0 0 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | 94 | 262 | 110 | 93 | 1291 | 87 | 119 | 540 | 49 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1343 | 90 | 124 | 562 | 51 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 38 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1348 | 90 | 124 | 600 | 51 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1348 | 90 | 124 | 600 | 51 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1348 | 90 | 124 | 600 | 51 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1348 | 90 | 124 | 600 | 51 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.87 | 0.13 | 1.00 | 1.84 | 0.16 |
| Final Sat.: | 1862 | 1862 | 1615 | 1805 | 1900 | 1615 | 1805 | 3352 | 225 | 1805 | 3287 | 279 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.12 | 0.22 | 0.05 | 0.14 | 0.07 | 0.05 | 0.40 | 0.40 | 0.07 | 0.18 | 0.18 |
| Crit Moves: | | | **** | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | 0.06 | 0.21 | 0.21 | 0.13 | 0.48 | 0.48 | 0.08 | 0.43 | 0.43 |
| Volume/Cap: | 0.69 | 0.46 | 0.84 | 0.84 | 0.69 | 0.34 | 0.42 | 0.84 | 0.84 | 0.84 | 0.42 | 0.42 |
| Uniform Del: | 42.1 | 30.8 | 34.8 | 46.3 | 36.6 | 33.8 | 40.2 | 22.7 | 22.7 | 45.3 | 19.6 | 19.6 |
| IncremntDel: | 3.7 | 0.4 | 13.7 | 38.9 | 5.1 | 0.6 | 1.2 | 3.9 | 3.9 | 32.6 | 0.2 | 0.2 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 45.8 | 31.2 | 48.5 | 85.2 | 41.8 | 34.4 | 41.5 | 26.6 | 26.6 | 77.9 | 19.8 | 19.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 45.8 | 31.2 | 48.5 | 85.2 | 41.8 | 34.4 | 41.5 | 26.6 | 26.6 | 77.9 | 19.8 | 19.8 |
| LOS by Move: | D | C | D | F | D | C | D | C | C | E | B | B |
| HCM2kAvgQ: | 6 | 6 | 13 | 5 | 9 | 3 | 3 | 23 | 23 | 6 | 7 | 7 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.704
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 81 | 113 | 61 | | 18 | 79 | 28 | | 30 | 1315 | 81 | | 46 | 825 | 18 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 38 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 81 | 113 | 61 | | 18 | 79 | 28 | | 30 | 1320 | 81 | | 46 | 863 | 18 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 81 | 113 | 61 | | 18 | 79 | 28 | | 30 | 1320 | 81 | | 46 | 863 | 18 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 81 | 113 | 61 | | 18 | 79 | 28 | | 30 | 1320 | 81 | | 46 | 863 | 18 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 81 | 113 | 61 | | 18 | 79 | 28 | | 30 | 1320 | 81 | | 46 | 863 | 18 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.96 | 0.96 | 0.96 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.32 | 0.44 | 0.24 | | 0.14 | 0.63 | 0.23 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 574 | 802 | 434 | | 259 | 1159 | 412 | | 1805 | 3370 | 207 | | 1805 | 3527 | 72 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.14 | 0.14 | | 0.07 | 0.07 | 0.07 | | 0.02 | 0.39 | 0.39 | | 0.03 | 0.24 | 0.24 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | **** | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.10 | 0.10 | 0.10 | | 0.10 | 0.55 | 0.55 | | 0.05 | 0.50 | 0.50 | |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | | 0.72 | 0.72 | 0.72 | | 0.16 | 0.72 | 0.72 | | 0.51 | 0.49 | 0.49 | |
| Uniform Del: | 37.5 | 37.5 | 37.5 | | 43.9 | 43.9 | 43.9 | | 41.1 | 16.9 | 16.9 | | 46.3 | 16.8 | 16.8 | |
| IncremntDel: | 6.8 | 6.8 | 6.8 | | 13.2 | 13.2 | 13.2 | | 0.4 | 1.3 | 1.3 | | 4.6 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 44.3 | 44.3 | 44.3 | | 57.1 | 57.1 | 57.1 | | 41.5 | 18.1 | 18.1 | | 50.9 | 17.0 | 17.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 44.3 | 44.3 | 44.3 | | 57.1 | 57.1 | 57.1 | | 41.5 | 18.1 | 18.1 | | 50.9 | 17.0 | 17.0 | |
| LOS by Move: | D | D | D | | E | E | E | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 5 | 5 | 5 | | 1 | 18 | 18 | | 2 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.7
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 62 | 86 | 40 | | 11 | 71 | 23 | | 44 | 1375 | 90 | | 38 | 818 | 23 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 38 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 62 | 86 | 40 | | 11 | 71 | 23 | | 44 | 1380 | 90 | | 38 | 856 | 23 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 62 | 86 | 40 | | 11 | 71 | 23 | | 44 | 1380 | 90 | | 38 | 856 | 23 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 62 | 86 | 40 | | 11 | 71 | 23 | | 44 | 1380 | 90 | | 38 | 856 | 23 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 62 | 86 | 40 | | 11 | 71 | 23 | | 44 | 1380 | 90 | | 38 | 856 | 23 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.94 | 0.94 | 0.94 | | 0.29 | 0.94 | 0.94 | | 0.14 | 0.95 | 0.95 | |
| Lanes: | 0.33 | 0.46 | 0.21 | | 0.11 | 0.67 | 0.22 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 540 | 747 | 342 | | 195 | 1204 | 389 | | 557 | 3357 | 220 | | 262 | 3502 | 94 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.12 | 0.12 | | 0.06 | 0.06 | 0.06 | | 0.08 | 0.41 | 0.41 | | 0.15 | 0.24 | 0.24 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.55 | 0.55 | 0.55 | | 0.28 | 0.28 | 0.28 | | 0.11 | 0.55 | 0.55 | | 0.20 | 0.33 | 0.33 | |
| Uniform Del: | 31.8 | 31.8 | 31.8 | | 29.9 | 29.9 | 29.9 | | 3.2 | 4.9 | 4.9 | | 3.4 | 3.8 | 3.8 | |
| IncremntDel: | 1.9 | 1.9 | 1.9 | | 0.4 | 0.4 | 0.4 | | 0.1 | 0.2 | 0.2 | | 0.5 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.7 | 33.7 | 33.7 | | 30.3 | 30.3 | 30.3 | | 3.3 | 5.2 | 5.2 | | 3.9 | 3.9 | 3.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.7 | 33.7 | 33.7 | | 30.3 | 30.3 | 30.3 | | 3.3 | 5.2 | 5.2 | | 3.9 | 3.9 | 3.9 | |
| LOS by Move: | C | C | C | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 5 | 5 | 5 | | 3 | 3 | 3 | | 0 | 10 | 10 | | 1 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.878
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 36.7
Optimal Cycle: 98 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 1 | 0 | 1 | 1 0 | 2 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | | 32 | 175 | 224 | | 217 | 784 | 540 | | 115 | 663 | 173 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 328 | 504 | 623 | | 33 | 182 | 233 | | 226 | 815 | 562 | | 120 | 690 | 180 | |
| Added Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 2 | 0 | | 0 | 38 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 328 | 504 | 626 | | 33 | 182 | 233 | | 226 | 817 | 562 | | 120 | 728 | 180 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 328 | 504 | 626 | | 33 | 182 | 233 | | 226 | 817 | 562 | | 120 | 728 | 180 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 328 | 504 | 626 | | 33 | 182 | 233 | | 226 | 817 | 562 | | 120 | 728 | 180 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 328 | 504 | 626 | | 33 | 182 | 233 | | 226 | 817 | 562 | | 120 | 728 | 180 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.88 | 0.88 | 0.88 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.89 | 0.89 | | 0.92 | 0.92 | 0.92 | |
| Lanes: | 1.00 | 1.34 | 1.66 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.19 | 0.81 | | 2.00 | 1.60 | 0.40 | |
| Final Sat.: | 1671 | 2237 | 2776 | | 1805 | 1900 | 1615 | | 1805 | 2009 | 1381 | | 3502 | 2807 | 694 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.23 | 0.23 | | 0.02 | 0.10 | 0.14 | | 0.13 | 0.41 | 0.41 | | 0.03 | 0.26 | 0.26 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.22 | 0.31 | 0.31 | | 0.07 | 0.16 | 0.16 | | 0.17 | 0.46 | 0.46 | | 0.05 | 0.34 | 0.34 | |
| Volume/Cap: | 0.89 | 0.72 | 0.72 | | 0.27 | 0.59 | 0.89 | | 0.76 | 0.89 | 0.89 | | 0.68 | 0.76 | 0.76 | |
| Uniform Del: | 37.8 | 30.5 | 30.5 | | 44.1 | 38.8 | 41.0 | | 39.8 | 24.8 | 24.8 | | 46.7 | 29.2 | 29.2 | |
| IncremntDel: | 6.4 | 1.3 | 1.3 | | 1.1 | 3.0 | 28.8 | | 10.6 | 6.8 | 6.8 | | 10.6 | 2.8 | 2.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 44.2 | 31.7 | 31.7 | | 45.2 | 41.8 | 69.8 | | 50.5 | 31.6 | 31.6 | | 57.3 | 32.0 | 32.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 44.2 | 31.7 | 31.7 | | 45.2 | 41.8 | 69.8 | | 50.5 | 31.6 | 31.6 | | 57.3 | 32.0 | 32.0 | |
| LOS by Move: | D | C | C | | D | D | E | | D | C | C | | E | C | C | |
| HCM2kAvgQ: | 14 | 12 | 12 | | 1 | 6 | 10 | | 8 | 24 | 24 | | 3 | 15 | 15 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.485
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 82 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 32 | 32 | | 0 | 32 | 0 | | 28 | 0 | 28 | | 0 | 0 | 18 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | | 0 | 783 | 0 | | 765 | 0 | 277 | | 0 | 0 | 16 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 834 | 20 | | 0 | 814 | 0 | | 796 | 0 | 288 | | 0 | 0 | 17 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 3 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 834 | 20 | | 0 | 814 | 0 | | 799 | 0 | 288 | | 0 | 0 | 17 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 834 | 20 | | 0 | 814 | 0 | | 799 | 0 | 288 | | 0 | 0 | 17 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 834 | 20 | | 0 | 814 | 0 | | 799 | 0 | 288 | | 0 | 0 | 17 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 834 | 20 | | 0 | 814 | 0 | | 799 | 0 | 288 | | 0 | 0 | 17 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 0.91 | 0.91 | | 1.00 | 0.95 | 1.00 | | 0.92 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.87 | |
| Lanes: | 0.00 | 2.93 | 0.07 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5052 | 120 | | 0 | 3610 | 0 | | 3502 | 0 | 1615 | | 0 | 0 | 1644 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | | 0.00 | 0.23 | 0.00 | | 0.23 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.01 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.38 | 0.38 | | 0.00 | 0.38 | 0.00 | | 0.38 | 0.00 | 0.58 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.44 | 0.44 | | 0.00 | 0.60 | 0.00 | | 0.60 | 0.00 | 0.31 | | 0.00 | 0.00 | 0.05 | |
| Uniform Del: | 0.0 | 21.0 | 21.0 | | 0.0 | 22.6 | 0.0 | | 22.4 | 0.0 | 9.7 | | 0.0 | 0.0 | 29.1 | |
| IncremntDel: | 0.0 | 0.2 | 0.2 | | 0.0 | 0.8 | 0.0 | | 0.8 | 0.0 | 0.2 | | 0.0 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 21.2 | 21.2 | | 0.0 | 23.4 | 0.0 | | 23.2 | 0.0 | 9.9 | | 0.0 | 0.0 | 29.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 21.2 | 21.2 | | 0.0 | 23.4 | 0.0 | | 23.2 | 0.0 | 9.9 | | 0.0 | 0.0 | 29.2 | |
| LOS by Move: | A | C | C | | A | C | A | | C | A | A | | A | A | C | |
| HCM2kAvgQ: | 0 | 7 | 7 | | 0 | 10 | 0 | | 10 | 0 | 4 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 136 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 0 | 0 | 0 | | 0 | 39 | 57 | | 21 | 64 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | 1 | 439 | | 0 | 0 | 0 | | 0 | 1391 | 388 | | 487 | 927 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 317 | 1 | 457 | | 0 | 0 | 0 | | 0 | 1447 | 404 | | 506 | 964 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 2 | 16 | | 21 | 29 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 317 | 1 | 457 | | 0 | 0 | 0 | | 0 | 1449 | 420 | | 527 | 993 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 317 | 1 | 457 | | 0 | 0 | 0 | | 0 | 1449 | 420 | | 527 | 993 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 317 | 1 | 457 | | 0 | 0 | 0 | | 0 | 1449 | 420 | | 527 | 993 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 317 | 1 | 457 | | 0 | 0 | 0 | | 0 | 1449 | 420 | | 527 | 993 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | | 0.92 | 0.95 | 1.00 | |
| Lanes: | 1.41 | 0.01 | 1.58 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | | 2.00 | 2.00 | 0.00 | |
| Final Sat.: | 2292 | 4 | 2585 | | 0 | 0 | 0 | | 0 | 3610 | 2842 | | 3502 | 3610 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.24 | 0.18 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.40 | 0.15 | | 0.15 | 0.28 | 0.00 | |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.43 | 0.43 | | 0.32 | 0.76 | 0.00 | |
| Volume/Cap: | 0.69 | 1.19 | 0.88 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.93 | 0.34 | | 0.47 | 0.36 | 0.00 | |
| Uniform Del: | 33.4 | 36.0 | 35.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 24.1 | 17.0 | | 24.3 | 3.7 | 0.0 | |
| IncremntDel: | 1.9 | 101 | 10.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 9.8 | 0.2 | | 0.3 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 35.3 | 137 | 45.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 34.0 | 17.1 | | 24.6 | 3.8 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.3 | 137 | 45.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 34.0 | 17.1 | | 24.6 | 3.8 | 0.0 | |
| LOS by Move: | D | F | D | | A | A | A | | A | C | B | | C | A | A | |
| HCM2kAvgQ: | 7 | 22 | 11 | | 0 | 0 | 0 | | 0 | 25 | 4 | | 6 | 5 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.900
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 47.4
Optimal Cycle: 113 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | 87 | 274 | | 612 | 119 | 34 | | 28 | 809 | 9 | | 274 | 800 | 327 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 17 | 90 | 285 | | 636 | 124 | 35 | | 29 | 841 | 9 | | 285 | 832 | 340 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 19 | 0 | | 0 | 29 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 17 | 90 | 285 | | 636 | 124 | 35 | | 29 | 860 | 9 | | 285 | 861 | 340 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 17 | 90 | 285 | | 636 | 124 | 35 | | 29 | 860 | 9 | | 285 | 861 | 340 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 17 | 90 | 285 | | 636 | 124 | 35 | | 29 | 860 | 9 | | 285 | 861 | 340 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 17 | 90 | 285 | | 636 | 124 | 35 | | 29 | 860 | 9 | | 285 | 861 | 340 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.90 | 0.90 | | 0.92 | 0.97 | 0.97 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.85 | |
| Lanes: | 0.04 | 0.23 | 0.73 | | 2.00 | 0.78 | 0.22 | | 1.00 | 1.98 | 0.02 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 73 | 395 | 1243 | | 3502 | 1429 | 408 | | 1805 | 3564 | 39 | | 1805 | 3610 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.23 | 0.23 | | 0.18 | 0.09 | 0.09 | | 0.02 | 0.24 | 0.24 | | 0.16 | 0.24 | 0.21 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.33 | 0.25 | 0.25 | | 0.20 | 0.13 | 0.13 | | 0.07 | 0.27 | 0.27 | | 0.18 | 0.37 | 0.37 | |
| Volume/Cap: | 0.69 | 0.90 | 0.90 | | 0.90 | 0.69 | 0.69 | | 0.23 | 0.90 | 0.90 | | 0.90 | 0.64 | 0.57 | |
| Uniform Del: | 31.9 | 39.6 | 39.6 | | 42.8 | 46.1 | 46.1 | | 48.2 | 38.8 | 38.8 | | 44.4 | 28.4 | 27.4 | |
| IncremntDel: | 3.7 | 21.3 | 21.3 | | 14.6 | 8.7 | 8.7 | | 0.9 | 11.3 | 11.3 | | 27.0 | 1.1 | 1.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.6 | 60.9 | 60.9 | | 57.4 | 54.8 | 54.8 | | 49.2 | 50.1 | 50.1 | | 71.4 | 29.5 | 28.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.6 | 60.9 | 60.9 | | 57.4 | 54.8 | 54.8 | | 49.2 | 50.1 | 50.1 | | 71.4 | 29.5 | 28.7 | |
| LOS by Move: | D | E | E | | E | D | D | | D | D | D | | E | C | C | |
| HCM2kAvgQ: | 12 | 16 | 16 | | 14 | 7 | 7 | | 1 | 19 | 19 | | 13 | 13 | 10 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 33.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | | 82 | 384 | 76 | | 59 | 328 | 23 | | 71 | 442 | 88 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 31 | 392 | 89 | | 85 | 399 | 79 | | 61 | 341 | 24 | | 74 | 460 | 92 | |
| Added Vol: | 0 | 34 | 2 | | 16 | 74 | 9 | | 1 | 0 | 0 | | 14 | 3 | 12 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 31 | 426 | 91 | | 101 | 473 | 88 | | 62 | 341 | 24 | | 88 | 463 | 104 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 31 | 426 | 91 | | 101 | 473 | 88 | | 62 | 341 | 24 | | 88 | 463 | 104 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 31 | 426 | 91 | | 101 | 473 | 88 | | 62 | 341 | 24 | | 88 | 463 | 104 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 31 | 426 | 91 | | 101 | 473 | 88 | | 62 | 341 | 24 | | 88 | 463 | 104 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.92 | 0.92 | |
| Lanes: | 0.11 | 1.56 | 0.33 | | 0.30 | 1.43 | 0.27 | | 1.00 | 1.87 | 0.13 | | 1.00 | 1.63 | 0.37 | |
| Final Sat.: | 200 | 2725 | 585 | | 536 | 2507 | 466 | | 1805 | 3340 | 234 | | 1805 | 2870 | 642 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.19 | 0.19 | 0.19 | | 0.03 | 0.10 | 0.10 | | 0.05 | 0.16 | 0.16 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.31 | 0.31 | 0.31 | | 0.06 | 0.22 | 0.22 | | 0.11 | 0.27 | 0.27 | |
| Volume/Cap: | 0.61 | 0.61 | 0.61 | | 0.61 | 0.61 | 0.61 | | 0.61 | 0.47 | 0.47 | | 0.46 | 0.61 | 0.61 | |
| Uniform Del: | 32.7 | 32.7 | 32.7 | | 29.3 | 29.3 | 29.3 | | 46.1 | 34.2 | 34.2 | | 42.0 | 32.2 | 32.2 | |
| IncremntDel: | 1.2 | 1.2 | 1.2 | | 1.0 | 1.0 | 1.0 | | 10.1 | 0.5 | 0.5 | | 1.8 | 1.2 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.9 | 33.9 | 33.9 | | 30.3 | 30.3 | 30.3 | | 56.2 | 34.7 | 34.7 | | 43.8 | 33.4 | 33.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.9 | 33.9 | 33.9 | | 30.3 | 30.3 | 30.3 | | 56.2 | 34.7 | 34.7 | | 43.8 | 33.4 | 33.4 | |
| LOS by Move: | C | C | C | | C | C | C | | E | C | C | | D | C | C | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 10 | 10 | 10 | | 3 | 6 | 6 | | 3 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.111
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 81.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | | 0 | 2235 | 16 | | 334 | 0 | 76 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 10 | 969 | 0 | | 0 | 2324 | 17 | | 347 | 0 | 79 | | 0 | 0 | 0 | |
| Added Vol: | 38 | 140 | 0 | | 0 | 23 | 0 | | 617 | 0 | 86 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 48 | 1109 | 0 | | 0 | 2347 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 48 | 1109 | 0 | | 0 | 2347 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 48 | 1109 | 0 | | 0 | 2347 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 48 | 1109 | 0 | | 0 | 2347 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.22 | 0.00 | | 0.00 | 0.46 | 0.01 | | 0.55 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.45 | 0.00 | | 0.00 | 0.41 | 0.41 | | 0.48 | 0.00 | 0.48 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.71 | 0.49 | 0.00 | | 0.00 | 1.13 | 0.03 | | 1.13 | 0.00 | 0.22 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 61.8 | 25.4 | 0.0 | | 0.0 | 38.4 | 22.9 | | 33.6 | 0.0 | 19.4 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 29.5 | 0.2 | 0.0 | | 0.0 | 64.6 | 0.0 | | 72.6 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 91.3 | 25.5 | 0.0 | | 0.0 | 103 | 22.9 | | 106.2 | 0.0 | 19.5 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 91.3 | 25.5 | 0.0 | | 0.0 | 103 | 22.9 | | 106.2 | 0.0 | 19.5 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | C | A | | A | F | C | | F | A | B | | A | A | A | |
| HCM2kAvgQ: | 3 | 11 | 0 | | 0 | 49 | 0 | | 55 | 0 | 4 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.711
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 55 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | |
| Initial Bse: | 15 | 814 | 0 | | 0 | 2211 | 166 | 198 | 0 | 193 | 0 | 0 | 0 | | | |
| Added Vol: | 38 | 177 | 0 | | 0 | 105 | 3 | 1 | 0 | 86 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 53 | 991 | 0 | | 0 | 2316 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 53 | 991 | 0 | | 0 | 2316 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 53 | 991 | 0 | | 0 | 2316 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 53 | 991 | 0 | | 0 | 2316 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.20 | 0.00 | | 0.00 | 0.46 | 0.11 | 0.11 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.04 | 0.68 | 0.00 | | 0.00 | 0.64 | 0.64 | 0.25 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.71 | 0.29 | 0.00 | | 0.00 | 0.71 | 0.17 | 0.45 | 0.00 | 0.71 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 61.5 | 8.1 | 0.0 | | 0.0 | 15.4 | 9.4 | 41.4 | 0.0 | 44.6 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 27.5 | 0.0 | 0.0 | | 0.0 | 0.8 | 0.1 | 0.7 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 89.0 | 8.2 | 0.0 | | 0.0 | 16.2 | 9.5 | 42.1 | 0.0 | 50.6 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 89.0 | 8.2 | 0.0 | | 0.0 | 16.2 | 9.5 | 42.1 | 0.0 | 50.6 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | F | A | A | | A | B | A | A | A | D | A | A | A | | | |
| HCM2kAvgQ: | 3 | 6 | 0 | | 0 | 23 | 3 | 7 | 0 | 11 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.761
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 26.7
Optimal Cycle: 44 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | |
| Initial Bse: | 506 | 589 | 0 | | 0 | 371 | 96 | 267 | 0 | 733 | 0 | 0 | 0 | | | |
| Added Vol: | 5 | 27 | 0 | | 0 | 17 | 6 | 3 | 0 | 2 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 511 | 616 | 0 | | 0 | 388 | 102 | 270 | 0 | 735 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 511 | 616 | 0 | | 0 | 388 | 102 | 270 | 0 | 735 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 511 | 616 | 0 | | 0 | 388 | 102 | 270 | 0 | 735 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 511 | 616 | 0 | | 0 | 388 | 102 | 270 | 0 | 735 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1434 | 376 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.29 | 0.33 | 0.00 | | 0.00 | 0.27 | 0.27 | 0.15 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.38 | 0.74 | 0.00 | | 0.00 | 0.36 | 0.36 | 0.23 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.76 | 0.45 | 0.00 | | 0.00 | 0.76 | 0.76 | 0.66 | 0.00 | 0.76 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 32.4 | 6.2 | 0.0 | | 0.0 | 34.1 | 34.1 | 41.9 | 0.0 | 17.0 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 5.1 | 0.2 | 0.0 | | 0.0 | 5.3 | 5.3 | 4.1 | 0.0 | 3.6 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 37.5 | 6.5 | 0.0 | | 0.0 | 39.4 | 39.4 | 46.0 | 0.0 | 20.6 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 37.5 | 6.5 | 0.0 | | 0.0 | 39.4 | 39.4 | 46.0 | 0.0 | 20.6 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | D | D | D | A | C | A | A | A | | | |
| HCM2kAvgQ: | 18 | 9 | 0 | | 0 | 17 | 17 | 10 | 0 | 21 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.641
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 29.2
Optimal Cycle: 31 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 0 | 2 0 | 1 | | 1 0 | 2 0 | 1 | | 1 0 | 0 1 | 0 | | 0 1 | 0 0 | 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 51 | 791 | 132 | | 370 | 653 | 37 | | 78 | 79 | 64 | | 76 | 8 | 277 | |
| Added Vol: | 0 | 28 | 0 | | 2 | 18 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 51 | 819 | 132 | | 372 | 671 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 51 | 819 | 132 | | 372 | 671 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 51 | 819 | 132 | | 372 | 671 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 51 | 819 | 132 | | 372 | 671 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.63 | 0.91 | 0.91 | | 0.64 | 0.64 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1192 | 957 | 781 | | 1097 | 120 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.23 | 0.08 | | 0.21 | 0.19 | 0.02 | | 0.07 | 0.08 | 0.08 | | 0.07 | 0.07 | 0.18 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.10 | 0.36 | 0.36 | | 0.33 | 0.59 | 0.59 | | 0.28 | 0.28 | 0.28 | | 0.28 | 0.28 | 0.28 | |
| Volume/Cap: | 0.28 | 0.64 | 0.23 | | 0.64 | 0.32 | 0.04 | | 0.24 | 0.30 | 0.30 | | 0.25 | 0.25 | 0.64 | |
| Uniform Del: | 49.7 | 31.9 | 26.7 | | 34.3 | 12.7 | 10.5 | | 33.5 | 34.1 | 34.1 | | 33.7 | 33.7 | 38.1 | |
| IncremntDel: | 0.8 | 1.1 | 0.2 | | 2.4 | 0.1 | 0.0 | | 0.4 | 0.3 | 0.3 | | 0.4 | 0.4 | 3.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.5 | 33.0 | 26.9 | | 36.7 | 12.8 | 10.5 | | 33.9 | 34.5 | 34.5 | | 34.0 | 34.0 | 41.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.5 | 33.0 | 26.9 | | 36.7 | 12.8 | 10.5 | | 33.9 | 34.5 | 34.5 | | 34.0 | 34.0 | 41.3 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | D | |
| HCM2kAvgQ: | 2 | 14 | 3 | | 12 | 6 | 1 | | 2 | 4 | 4 | | 3 | 3 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.778
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 40.5
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 1 | 0 1 | 0 | | 0 1 | 0 1 | 0 | | 1 0 | 1! 0 | 0 | | 0 0 | 1! 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 93 | 475 | 25 | | 25 | 528 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| Added Vol: | 0 | 48 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 93 | 523 | 25 | | 25 | 628 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 93 | 523 | 25 | | 25 | 628 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 93 | 523 | 25 | | 25 | 628 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 93 | 523 | 25 | | 25 | 628 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.53 | 0.41 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 515 | 2910 | 139 | | 106 | 2669 | 720 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.24 | 0.24 | 0.24 | | 0.16 | 0.24 | 0.24 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | **** | | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.30 | 0.30 | 0.30 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.78 | 0.78 | 0.78 | | 0.78 | 0.78 | 0.78 | | 0.52 | 0.78 | 0.78 | | 0.78 | 0.78 | 0.78 | |
| Uniform Del: | 39.6 | 39.6 | 39.6 | | 35.0 | 35.0 | 35.0 | | 31.0 | 34.3 | 34.3 | | 51.4 | 51.4 | 51.4 | |
| IncremntDel: | 4.7 | 4.7 | 4.7 | | 3.7 | 3.7 | 3.7 | | 0.4 | 4.6 | 4.6 | | 31.5 | 31.5 | 31.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 44.4 | 44.4 | 44.4 | | 38.7 | 38.7 | 38.7 | | 31.3 | 39.0 | 39.0 | | 82.9 | 82.9 | 82.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 44.4 | 44.4 | 44.4 | | 38.7 | 38.7 | 38.7 | | 31.3 | 39.0 | 39.0 | | 82.9 | 82.9 | 82.9 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 12 | 12 | 12 | | 15 | 15 | 15 | | 8 | 15 | 15 | | 4 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.567 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.4 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 0 | 3 0 | 0 | | 0 0 | 3 0 | 1 | | 2 0 | 0 0 | 1 | | 0 0 | 0 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 0 | 736 | 0 | 0 | 2399 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 214 | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 950 | 0 | 0 | 2590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 950 | 0 | 0 | 2590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 950 | 0 | 0 | 2590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 950 | 0 | 0 | 2590 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.18 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.21 | 0.00 | 0.00 | 0.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 0.0 | 0.9 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 0.9 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 0.9 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2015 East Campus Only AM |
| Command: | Near Term I Project AM |
| Volume: | Near Term I Project AM |
| Geometry: | Near Term I Project AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term I Project AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term I Project AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 22.3 | 0.768 | C | 22.5 | 0.807 | + 0.145 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.0 | 0.638 | D | 43.3 | 1.057 | +27.383 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 21.3 | 0.861 | C | 24.1 | 0.885 | + 2.776 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 27.4 | 0.822 | C | 24.4 | 0.845 | -2.921 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | B | 19.5 | 0.565 | B | 14.9 | 0.586 | -4.688 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 16.5 | 0.586 | B | 16.3 | 0.674 | -0.164 D/V |
| # 7 Middlefield at Marsh (Town of | C | 26.2 | 0.610 | C | 26.3 | 0.737 | + 0.100 D/V |
| # 8 Bayfront Exp. & Willow Rd. | C | 27.5 | 0.610 | D | 45.2 | 0.887 | +17.687 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.9 | 0.559 | C | 20.4 | 0.586 | -2.496 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 18.0 | 0.517 | C | 22.5 | 0.640 | + 4.585 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.0 | 0.464 | B | 13.2 | 0.606 | -1.775 D/V |
| # 12 Newbridge St. & Willow Rd. | D | 48.5 | 0.903 | D | 49.2 | 0.937 | + 0.641 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 20.0 | 0.694 | B | 20.0 | 0.765 | -0.052 D/V |
| # 14 Durham St. & Willow Rd. | C | 24.8 | 0.714 | B | 12.4 | 0.743 | -12.423 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 13.0 | 0.715 | B | 14.9 | 0.825 | + 1.872 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.0 | 0.663 | B | 15.8 | 0.798 | + 1.722 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 101.2 | 0.947 | F | 100.7 | 1.133 | -0.478 D/V |
| # 18 Bayfront Exp. & University Ave | C | 29.2 | 0.805 | C | 30.7 | 0.835 | + 1.450 D/V |
| # 19 O'Brien Dr. & University Ave. | A | 6.4 | 0.548 | A | 6.2 | 0.555 | -0.137 D/V |
| # 20 University & Kavanaugh | B | 13.8 | 0.563 | B | 13.6 | 0.566 | -0.266 D/V |
| # 21 University & Bay | C | 27.7 | 0.661 | C | 27.2 | 0.663 | -0.464 D/V |
| # 22 University & Runnymede | C | 20.3 | 0.627 | C | 20.1 | 0.630 | -0.237 D/V |
| # 23 University & Bell | A | 7.6 | 0.246 | A | 7.2 | 0.277 | -0.459 D/V |
| # 24 University & Donohoe | D | 39.3 | 0.925 | D | 40.3 | 0.939 | + 1.038 D/V |
| # 25 NB 101 & Donohoe St | B | 9.0 | 0.382 | B | 9.1 | 0.400 | + 0.160 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 17.1 | 0.642 | B | 17.5 | 0.646 | + 0.322 D/V |
| # 27 University Ave. & Woodland | D | 38.7 | 0.891 | D | 38.9 | 0.895 | + 0.208 D/V |
| # 28 Middlefield Rd. & University A | C | 34.3 | 0.734 | D | 39.2 | 0.815 | + 4.887 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.3 | 0.584 | B | 17.1 | 0.684 | + 9.800 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.0 | 0.593 | B | 19.2 | 0.620 | + 2.182 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 22.0 | 0.606 | C | 23.1 | 0.653 | + 1.131 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.5 | 0.470 | C | 25.3 | 0.479 | -3.218 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 30.0 | 0.594 | C | 31.5 | 0.648 | + 1.412 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.2 | 0.501 | A | 1.3 | 0.548 | + 0.106 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

Cycle (sec): 130 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 85 Level Of Service: C

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 2389 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1037 | | 7 | 20 | 5 | |
| Added Vol: | 183 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 442 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2572 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1479 | | 7 | 20 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2572 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1479 | | 7 | 20 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2572 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1479 | | 7 | 20 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2572 | 197 | 24 | | 7 | 60 | 154 | | 189 | 21 | 1479 | | 7 | 20 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.50 | 0.12 | 0.12 | | 0.02 | 0.02 | 0.10 | | 0.12 | 0.12 | 0.53 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.61 | 0.61 | 0.61 | | 0.12 | 0.12 | 0.12 | | 0.14 | 0.14 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.82 | 0.20 | 0.20 | | 0.16 | 0.16 | 0.82 | | 0.82 | 0.82 | 0.71 | | 0.47 | 0.47 | 0.47 | |
| Uniform Del: | 20.0 | 11.4 | 11.4 | | 51.5 | 51.5 | 56.0 | | 54.1 | 54.1 | 8.6 | | 61.2 | 61.2 | 61.2 | |
| IncremntDel: | 1.9 | 0.1 | 0.1 | | 0.2 | 0.2 | 24.4 | | 18.9 | 18.9 | 1.1 | | 4.9 | 4.9 | 4.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 21.9 | 11.5 | 11.5 | | 51.7 | 51.7 | 80.4 | | 73.0 | 73.0 | 9.7 | | 66.1 | 66.1 | 66.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 21.9 | 11.5 | 11.5 | | 51.7 | 51.7 | 80.4 | | 73.0 | 73.0 | 9.7 | | 66.1 | 66.1 | 66.1 | |
| LOS by Move: | C | B | B | | D | D | F | | E | E | A | | E | E | E | |
| HCM2kAvgQ: | 29 | 4 | 4 | | 1 | 1 | 8 | | 10 | 10 | 18 | | 2 | 2 | 2 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.057
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 43.3
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 0 | 0 | 0 | 1 | 0 0 | 0 | 0 | 0 | 0 1 | 1 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 851 | 0 | 301 | | 0 | 0 | 0 | | 0 | 1184 | 526 | | 0 | 854 | 1767 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 592 | 0 | | 0 | 148 | 35 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1776 | 526 | | 0 | 1002 | 1802 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1776 | 0 | | 0 | 1002 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1776 | 0 | | 0 | 1002 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 853 | 0 | 695 | | 0 | 0 | 0 | | 2 | 1776 | 0 | | 0 | 1002 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.25 | 0.00 | 0.44 | | 0.00 | 0.00 | 0.00 | | 0.53 | 0.53 | 0.00 | | 0.00 | 0.28 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.41 | 0.00 | 0.41 | | 0.00 | 0.00 | 0.00 | | 0.50 | 0.50 | 0.00 | | 0.00 | 0.50 | 0.00 | |
| Volume/Cap: | 0.60 | 0.00 | 1.06 | | 0.00 | 0.00 | 0.00 | | 1.06 | 1.06 | 0.00 | | 0.00 | 0.57 | 0.00 | |
| Uniform Del: | 18.2 | 0.0 | 23.4 | | 0.0 | 0.0 | 0.0 | | 20.1 | 20.1 | 0.0 | | 0.0 | 14.1 | 0.0 | |
| IncremntDel: | 0.7 | 0.0 | 51.3 | | 0.0 | 0.0 | 0.0 | | 39.0 | 39.0 | 0.0 | | 0.0 | 0.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 18.9 | 0.0 | 74.7 | | 0.0 | 0.0 | 0.0 | | 59.1 | 59.1 | 0.0 | | 0.0 | 14.5 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 18.9 | 0.0 | 74.7 | | 0.0 | 0.0 | 0.0 | | 59.1 | 59.1 | 0.0 | | 0.0 | 14.5 | 0.0 | |
| LOS by Move: | B | A | E | | A | A | A | | E | E | A | | A | B | A | |
| HCM2kAvgQ: | 9 | 0 | 27 | | 0 | 0 | 0 | | 35 | 35 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.885
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 24.1
Optimal Cycle: 82 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 0 | 0 | 0 | 0 | 2 0 | 0 | 0 | 1 | 0 0 | 2 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 914 | 0 | 580 | | 0 | 867 | 606 | | 0 | 1483 | 89 | |
| Added Vol: | 0 | 0 | 0 | | 315 | 0 | 7 | | 0 | 282 | 0 | | 0 | 62 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1229 | 0 | 587 | | 0 | 1149 | 606 | | 0 | 1545 | 89 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1229 | 0 | 587 | | 0 | 1149 | 0 | | 0 | 1545 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1229 | 0 | 587 | | 0 | 1149 | 0 | | 0 | 1545 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1229 | 0 | 587 | | 0 | 1149 | 0 | | 0 | 1545 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.36 | 0.00 | 0.37 | | 0.00 | 0.32 | 0.00 | | 0.00 | 0.44 | 0.00 | |
| Crit Moves: | | | | | | | **** | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.42 | 0.00 | 0.42 | | 0.00 | 0.49 | 0.00 | | 0.00 | 0.49 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.85 | 0.00 | 0.89 | | 0.00 | 0.66 | 0.00 | | 0.00 | 0.89 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 21.0 | 0.0 | 21.5 | | 0.0 | 15.2 | 0.0 | | 0.0 | 18.2 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 5.2 | 0.0 | 13.5 | | 0.0 | 0.9 | 0.0 | | 0.0 | 5.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 26.2 | 0.0 | 35.0 | | 0.0 | 16.1 | 0.0 | | 0.0 | 24.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 26.2 | 0.0 | 35.0 | | 0.0 | 16.1 | 0.0 | | 0.0 | 24.1 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | C | | A | B | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 17 | 0 | 17 | | 0 | 12 | 0 | | 0 | 22 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.845
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 24.4
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 1 | 1 | 0 | 2 | 1 0 | 2 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1176 | 30 | | 279 | 1473 | 291 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 282 | 0 | | 0 | 69 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1458 | 30 | | 279 | 1542 | 291 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1458 | 30 | | 279 | 1542 | 291 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1458 | 30 | | 279 | 1542 | 291 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 28 | 3 | 51 | | 231 | 19 | 3 | | 16 | 1458 | 30 | | 279 | 1542 | 291 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.93 | 0.07 | 1.00 | | 1.00 | 2.94 | 0.06 | | 2.00 | 1.68 | 0.32 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4965 | 103 | | 3432 | 2904 | 549 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.14 | 0.14 | 0.00 | | 0.01 | 0.29 | 0.29 | | 0.08 | 0.53 | 0.53 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.49 | 0.49 | | 0.14 | 0.57 | 0.57 | |
| Volume/Cap: | 0.35 | 0.35 | 0.37 | | 0.93 | 0.93 | 0.01 | | 0.18 | 0.60 | 0.60 | | 0.60 | 0.93 | 0.93 | |
| Uniform Del: | 36.7 | 36.7 | 36.8 | | 33.5 | 33.5 | 28.9 | | 36.4 | 14.8 | 14.8 | | 32.6 | 15.5 | 15.5 | |
| IncremntDel: | 2.4 | 2.4 | 1.6 | | 35.5 | 35.5 | 0.0 | | 1.0 | 0.4 | 0.4 | | 2.2 | 8.0 | 8.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.1 | 39.1 | 38.4 | | 69.0 | 69.0 | 28.9 | | 37.4 | 15.2 | 15.2 | | 34.8 | 23.5 | 23.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.1 | 39.1 | 38.4 | | 69.0 | 69.0 | 28.9 | | 37.4 | 15.2 | 15.2 | | 34.8 | 23.5 | 23.5 | |
| LOS by Move: | D | D | D | | E | E | C | | D | B | B | | C | C | C | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 10 | 10 | 0 | | 1 | 10 | 10 | | 4 | 27 | 27 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.586
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 26 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 1 | 0 | 0 1 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 828 | 60 | | 48 | 1187 | 336 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 282 | 0 | | 0 | 69 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1110 | 60 | | 48 | 1256 | 336 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1110 | 60 | | 48 | 1256 | 336 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1110 | 60 | | 48 | 1256 | 336 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 16 | 9 | 8 | | 406 | 31 | 95 | | 122 | 1110 | 60 | | 48 | 1256 | 336 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.90 | 0.10 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3329 | 181 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.12 | 0.12 | 0.06 | | 0.07 | 0.33 | 0.33 | | 0.03 | 0.35 | 0.21 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.61 | 0.61 | | 0.09 | 0.58 | 0.58 | |
| Volume/Cap: | 0.18 | 0.20 | 0.20 | | 0.61 | 0.61 | 0.30 | | 0.61 | 0.55 | 0.55 | | 0.30 | 0.61 | 0.36 | |
| Uniform Del: | 36.4 | 36.5 | 36.5 | | 29.0 | 29.0 | 27.1 | | 33.8 | 9.3 | 9.3 | | 34.0 | 10.7 | 8.8 | |
| IncremntDel: | 1.0 | 1.2 | 1.2 | | 1.5 | 1.5 | 0.5 | | 5.3 | 0.3 | 0.3 | | 1.0 | 0.5 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.4 | 37.6 | 37.6 | | 30.5 | 30.5 | 27.6 | | 39.0 | 9.6 | 9.6 | | 35.0 | 11.2 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.4 | 37.6 | 37.6 | | 30.5 | 30.5 | 27.6 | | 39.0 | 9.6 | 9.6 | | 35.0 | 11.2 | 9.0 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | D | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 2 | | 4 | 9 | 9 | | 1 | 11 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.674
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 32 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 73 | 3 | 184 | | 116 | 29 | 5 | | 2 | 692 | 69 | | 275 | 1021 | 23 | |
| Added Vol: | 1 | 0 | 0 | | 0 | 0 | 0 | | 0 | 282 | 2 | | 0 | 69 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 74 | 3 | 184 | | 116 | 29 | 5 | | 2 | 974 | 71 | | 275 | 1090 | 23 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 74 | 3 | 184 | | 116 | 29 | 5 | | 2 | 974 | 71 | | 275 | 1090 | 23 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 74 | 3 | 184 | | 116 | 29 | 5 | | 2 | 974 | 71 | | 275 | 1090 | 23 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 74 | 3 | 184 | | 116 | 29 | 5 | | 2 | 974 | 71 | | 275 | 1090 | 23 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.80 | 0.80 | 0.80 | | 0.54 | 0.54 | 0.54 | | 0.88 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.28 | 0.01 | 0.71 | | 0.78 | 0.19 | 0.03 | | 0.01 | 1.86 | 0.13 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 427 | 18 | 1066 | | 797 | 199 | 36 | | 7 | 3112 | 226 | | 1769 | 3455 | 72 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.15 | 0.15 | 0.15 | | 0.31 | 0.31 | 0.31 | | 0.16 | 0.32 | 0.32 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.26 | 0.26 | 0.26 | | 0.46 | 0.46 | 0.46 | | 0.23 | 0.69 | 0.69 | |
| Volume/Cap: | 0.68 | 0.68 | 0.68 | | 0.57 | 0.57 | 0.57 | | 0.67 | 0.67 | 0.67 | | 0.67 | 0.45 | 0.45 | |
| Uniform Del: | 26.8 | 26.8 | 26.8 | | 26.0 | 26.0 | 26.0 | | 16.7 | 16.7 | 16.7 | | 28.0 | 5.4 | 5.4 | |
| IncremntDel: | 4.8 | 4.8 | 4.8 | | 3.0 | 3.0 | 3.0 | | 1.2 | 1.2 | 1.2 | | 4.4 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 31.6 | 31.6 | 31.6 | | 29.0 | 29.0 | 29.0 | | 17.9 | 17.9 | 17.9 | | 32.4 | 5.6 | 5.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.6 | 31.6 | 31.6 | | 29.0 | 29.0 | 29.0 | | 17.9 | 17.9 | 17.9 | | 32.4 | 5.6 | 5.6 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 4 | 4 | 4 | | 11 | 11 | 11 | | 7 | 7 | 7 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.737
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 26.3
Optimal Cycle: 61 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 173 | 413 | | 356 | 382 | 0 | | 0 | 0 | 0 | | 482 | 0 | 176 | |
| Added Vol: | 0 | 8 | 110 | | 174 | 64 | 0 | | 0 | 0 | 0 | | 26 | 0 | 44 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 181 | 523 | | 530 | 446 | 0 | | 0 | 0 | 0 | | 508 | 0 | 220 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 181 | 523 | | 530 | 446 | 0 | | 0 | 0 | 0 | | 508 | 0 | 220 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 181 | 523 | | 530 | 446 | 0 | | 0 | 0 | 0 | | 508 | 0 | 220 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 181 | 523 | | 530 | 446 | 0 | | 0 | 0 | 0 | | 508 | 0 | 220 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.32 | | 0.29 | 0.23 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.14 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.13 | 0.51 | | 0.40 | 0.53 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.38 | 0.00 | 0.78 | |
| Volume/Cap: | 0.00 | 0.74 | 0.63 | | 0.74 | 0.44 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.74 | 0.00 | 0.17 | |
| Uniform Del: | 0.0 | 46.1 | 19.5 | | 28.2 | 16.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 29.3 | 0.0 | 3.1 | |
| IncremntDel: | 0.0 | 11.1 | 1.6 | | 4.0 | 0.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 4.2 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 57.2 | 21.1 | | 32.2 | 16.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 33.4 | 0.0 | 3.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 57.2 | 21.1 | | 32.2 | 16.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 33.4 | 0.0 | 3.1 | |
| LOS by Move: | A | E | C | | C | B | A | | A | A | A | | C | A | A | |
| HCM2kAvgQ: | 0 | 8 | 13 | | 16 | 9 | 0 | | 0 | 0 | 0 | | 16 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.887
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 45.2
Optimal Cycle: 117 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 3 | 0 | 1 | 2 | 0 3 | 0 | 1 | 1 | 1 1 | 0 | 2 | 1 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | | 13 | 677 | 92 | | 84 | 34 | 379 | | 3 | 6 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 1075 | 2192 | 6 | | 14 | 704 | 96 | | 87 | 35 | 394 | | 3 | 6 | 5 | |
| Added Vol: | 36 | 202 | 24 | | 441 | 42 | 0 | | 0 | 838 | 2 | | 24 | 30 | 14 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.93 | 0.93 | 0.88 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 2.00 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1760 | 3520 | 3343 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.32 | 0.41 | 0.02 | | 0.13 | 0.13 | 0.06 | | 0.05 | 0.25 | 0.12 | | 0.02 | 0.01 | 0.01 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.43 | 0.45 | 0.49 | | 0.15 | 0.17 | 0.17 | | 0.27 | 0.27 | 0.27 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.76 | 0.91 | 0.04 | | 0.91 | 0.76 | 0.36 | | 0.18 | 0.91 | 0.43 | | 0.40 | 0.27 | 0.32 | |
| Uniform Del: | 31.5 | 33.2 | 17.3 | | 54.7 | 51.5 | 47.8 | | 36.2 | 45.7 | 39.0 | | 61.0 | 60.7 | 60.8 | |
| IncremntDel: | 2.3 | 5.2 | 0.0 | | 20.5 | 3.4 | 0.8 | | 0.0 | 11.4 | 0.3 | | 3.8 | 1.1 | 3.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.8 | 38.4 | 17.3 | | 75.2 | 54.9 | 48.7 | | 36.2 | 57.1 | 39.3 | | 64.8 | 61.8 | 63.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.8 | 38.4 | 17.3 | | 75.2 | 54.9 | 48.7 | | 36.2 | 57.1 | 39.3 | | 64.8 | 61.8 | 63.8 | |
| LOS by Move: | C | D | B | | E | D | D | | D | E | D | | E | E | E | |
| HCM2kAvgQ: | 20 | 36 | 1 | | 12 | 12 | 4 | | 3 | 21 | 7 | | 2 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.586
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 46 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 1! | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | 26 | | 71 | 19 | 72 | | 115 | 415 | 52 | | 56 | 1037 | 74 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 19 | 14 | 27 | | 74 | 20 | 75 | | 120 | 432 | 54 | | 58 | 1078 | 77 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 8 | | 2 | 839 | 0 | | 0 | 66 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 19 | 14 | 27 | | 74 | 20 | 83 | | 122 | 1271 | 54 | | 58 | 1144 | 77 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 19 | 14 | 27 | | 74 | 20 | 83 | | 122 | 1271 | 54 | | 58 | 1144 | 77 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 19 | 14 | 27 | | 74 | 20 | 83 | | 122 | 1271 | 54 | | 58 | 1144 | 77 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 19 | 14 | 27 | | 74 | 20 | 83 | | 122 | 1271 | 54 | | 58 | 1144 | 77 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.83 | 0.83 | 0.83 | | 0.78 | 0.78 | 0.78 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | 0.92 | |
| Lanes: | 0.31 | 0.23 | 0.46 | | 0.42 | 0.11 | 0.47 | | 1.00 | 1.92 | 0.08 | | 1.00 | 1.87 | 0.13 | |
| Final Sat.: | 500 | 361 | 722 | | 621 | 166 | 697 | | 1769 | 3373 | 144 | | 1769 | 3285 | 221 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | | 0.12 | 0.12 | 0.12 | | 0.07 | 0.38 | 0.38 | | 0.03 | 0.35 | 0.35 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.20 | 0.20 | 0.20 | | 0.12 | 0.65 | 0.65 | | 0.07 | 0.59 | 0.59 | |
| Volume/Cap: | 0.18 | 0.18 | 0.18 | | 0.59 | 0.59 | 0.59 | | 0.59 | 0.58 | 0.58 | | 0.50 | 0.59 | 0.59 | |
| Uniform Del: | 42.9 | 42.9 | 42.9 | | 46.9 | 46.9 | 46.9 | | 54.4 | 13.0 | 13.0 | | 58.6 | 16.4 | 16.4 | |
| IncremntDel: | 0.3 | 0.3 | 0.3 | | 3.0 | 3.0 | 3.0 | | 4.3 | 0.4 | 0.4 | | 3.3 | 0.4 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 43.2 | 43.2 | 43.2 | | 49.8 | 49.8 | 49.8 | | 58.6 | 13.4 | 13.4 | | 62.0 | 16.8 | 16.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 43.2 | 43.2 | 43.2 | | 49.8 | 49.8 | 49.8 | | 58.6 | 13.4 | 13.4 | | 62.0 | 16.8 | 16.8 | |
| LOS by Move: | D | D | D | | D | D | D | | E | B | B | | E | B | B | |
| HCM2kAvgQ: | 2 | 2 | 2 | | 7 | 7 | 7 | | 5 | 16 | 16 | | 3 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.640
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 52 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | 14 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 193 | | 85 | 678 | 0 | | 0 | 1062 | 15 | |
| Added Vol: | 0 | 0 | 0 | | 115 | 0 | 6 | | 7 | 726 | 0 | | 0 | 65 | 9 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 116 | 0 | 199 | | 92 | 1404 | 0 | | 0 | 1127 | 24 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 116 | 0 | 199 | | 92 | 1404 | 0 | | 0 | 1127 | 24 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 116 | 0 | 199 | | 92 | 1404 | 0 | | 0 | 1127 | 24 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 116 | 0 | 199 | | 92 | 1404 | 0 | | 0 | 1127 | 24 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.88 | 1.00 | 0.88 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.63 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.96 | 0.04 | |
| Final Sat.: | 0 | 0 | 0 | | 615 | 0 | 1058 | | 1769 | 3538 | 0 | | 0 | 3455 | 72 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.19 | 0.00 | 0.19 | | 0.05 | 0.40 | 0.00 | | 0.00 | 0.33 | 0.33 | |
| Crit Moves: | | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.29 | | 0.09 | 0.62 | 0.00 | | 0.00 | 0.53 | 0.53 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.64 | 0.00 | 0.64 | | 0.61 | 0.64 | 0.00 | | 0.00 | 0.61 | 0.61 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 39.8 | 0.0 | 39.8 | | 57.3 | 15.5 | 0.0 | | 0.0 | 20.9 | 20.9 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 2.8 | 0.0 | 2.8 | | 7.1 | 0.6 | 0.0 | | 0.0 | 0.6 | 0.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.7 | 0.0 | 42.7 | | 64.4 | 16.2 | 0.0 | | 0.0 | 21.4 | 21.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.7 | 0.0 | 42.7 | | 64.4 | 16.2 | 0.0 | | 0.0 | 21.4 | 21.4 | |
| LOS by Move: | A | A | A | | D | A | D | | E | B | A | | A | C | C | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 12 | 0 | 12 | | 5 | 19 | 0 | | 0 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.606
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 48 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 135 | 0 | 70 | | 0 | 0 | 0 | | 0 | 725 | 260 | | 106 | 1218 | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 733 | 2 | | 0 | 71 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1458 | 262 | | 106 | 1289 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1458 | 262 | | 106 | 1289 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1458 | 262 | | 106 | 1289 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 145 | 0 | 70 | | 0 | 0 | 0 | | 0 | 1458 | 262 | | 106 | 1289 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2586 | 0 | 839 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.08 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.41 | 0.17 | | 0.06 | 0.36 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | | **** | | **** | | | |
| Green/Cycle: | 0.14 | 0.00 | 0.14 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.68 | 0.68 | | 0.10 | 0.78 | 0.00 | |
| Volume/Cap: | 0.41 | 0.00 | 0.61 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.61 | 0.24 | | 0.61 | 0.47 | 0.00 | |
| Uniform Del: | 51.3 | 0.0 | 52.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 11.4 | 8.0 | | 56.1 | 5.0 | 0.0 | |
| IncremntDel: | 0.5 | 0.0 | 3.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.4 | 0.1 | | 6.0 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 51.8 | 0.0 | 55.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 11.8 | 8.1 | | 62.1 | 5.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.8 | 0.0 | 55.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 11.8 | 8.1 | | 62.1 | 5.1 | 0.0 | |
| LOS by Move: | D | A | E | | A | A | A | | A | B | A | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 6 | | 0 | 0 | 0 | | 0 | 17 | 4 | | 5 | 9 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.937
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 49.2
Optimal Cycle: 156 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 1 | 0 1 | | 1 | 0 1 | 0 1 | | 1 | 0 2 | 1 0 | | 1 | 0 1 | 1 0 | |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 364 | 115 | 37 | | 29 | 185 | 399 | | 154 | 859 | 161 | | 29 | 1270 | 4 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 3 | | 10 | 735 | 0 | | 0 | 80 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1594 | 161 | | 29 | 1350 | 4 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1594 | 161 | | 29 | 1350 | 4 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1594 | 161 | | 29 | 1350 | 4 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 364 | 115 | 37 | | 29 | 185 | 402 | | 164 | 1594 | 161 | | 29 | 1350 | 4 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.72 | 0.28 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4552 | 460 | | 1769 | 3527 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.06 | 0.02 | | 0.02 | 0.10 | 0.25 | | 0.09 | 0.35 | 0.35 | | 0.02 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.46 | 0.46 | | 0.05 | 0.41 | 0.41 | |
| Volume/Cap: | 0.94 | 0.55 | 0.21 | | 0.06 | 0.37 | 0.94 | | 0.94 | 0.77 | 0.77 | | 0.33 | 0.94 | 0.94 | |
| Uniform Del: | 57.2 | 54.5 | 52.3 | | 35.1 | 38.3 | 46.3 | | 58.2 | 29.5 | 29.5 | | 59.6 | 36.8 | 36.8 | |
| IncremntDel: | 30.0 | 3.0 | 0.6 | | 0.1 | 0.5 | 28.0 | | 49.7 | 1.6 | 1.6 | | 2.2 | 11.7 | 11.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 87.1 | 57.5 | 52.9 | | 35.1 | 38.8 | 74.3 | | 107.9 | 31.1 | 31.1 | | 61.8 | 48.5 | 48.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 87.1 | 57.5 | 52.9 | | 35.1 | 38.8 | 74.3 | | 107.9 | 31.1 | 31.1 | | 61.8 | 48.5 | 48.5 | |
| LOS by Move: | F | E | D | | D | D | E | | F | C | C | | E | D | D | |
| HCM2kAvgQ: | 11 | 5 | 1 | | 1 | 6 | 20 | | 10 | 22 | 22 | | 1 | 32 | 32 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.765
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 67 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 0 | | 1 | 0 0 | 0 1 | | 1 | 0 2 | 0 0 | | 0 | 0 2 | 0 1 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 375 | 0 | 78 | | 67 | 1433 | 0 | | 0 | 1159 | 332 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 220 | 0 | | 0 | 50 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1653 | 0 | | 0 | 1209 | 335 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1653 | 0 | | 0 | 1209 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1653 | 0 | | 0 | 1209 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 377 | 0 | 78 | | 67 | 1653 | 0 | | 0 | 1209 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.21 | 0.00 | 0.05 | | 0.04 | 0.47 | 0.00 | | 0.00 | 0.34 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.28 | | 0.08 | 0.61 | 0.00 | | 0.00 | 0.53 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.76 | 0.00 | 0.18 | | 0.48 | 0.76 | 0.00 | | 0.00 | 0.64 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 33.0 | 0.0 | 27.3 | | 44.2 | 14.2 | 0.0 | | 0.0 | 16.6 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 7.0 | 0.0 | 0.2 | | 2.6 | 1.7 | 0.0 | | 0.0 | 0.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 40.1 | 0.0 | 27.5 | | 46.8 | 15.9 | 0.0 | | 0.0 | 17.3 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 40.1 | 0.0 | 27.5 | | 46.8 | 15.9 | 0.0 | | 0.0 | 17.3 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 12 | 0 | 2 | | 3 | 21 | 0 | | 0 | 14 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.743
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 0 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1041 | 9 | | 43 | 884 | 148 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 220 | 0 | | 0 | 50 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1261 | 9 | | 43 | 934 | 148 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1261 | 9 | | 43 | 934 | 148 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1261 | 9 | | 43 | 934 | 148 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 64 | 17 | 130 | | 40 | 2 | 2 | | 12 | 1261 | 9 | | 43 | 934 | 148 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.50 | 0.50 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.99 | 0.01 | | 1.00 | 0.86 | 0.14 | |
| Final Sat.: | 1367 | 183 | 1431 | | 895 | 47 | 1583 | | 1769 | 3508 | 26 | | 1769 | 1574 | 249 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.09 | 0.09 | | 0.04 | 0.04 | 0.00 | | 0.01 | 0.36 | 0.36 | | 0.02 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.04 | 0.73 | 0.73 | | 0.08 | 0.77 | 0.77 | |
| Volume/Cap: | 0.40 | 0.77 | 0.77 | | 0.37 | 0.37 | 0.01 | | 0.18 | 0.49 | 0.49 | | 0.30 | 0.77 | 0.77 | |
| Uniform Del: | 40.8 | 42.8 | 42.8 | | 40.7 | 40.7 | 38.9 | | 46.4 | 5.7 | 5.7 | | 43.2 | 6.4 | 6.4 | |
| IncremntDel: | 1.6 | 17.1 | 17.1 | | 2.1 | 2.1 | 0.0 | | 1.2 | 0.1 | 0.1 | | 1.2 | 2.6 | 2.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.4 | 59.9 | 59.9 | | 42.8 | 42.8 | 39.0 | | 47.6 | 5.8 | 5.8 | | 44.4 | 9.0 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.4 | 59.9 | 59.9 | | 42.8 | 42.8 | 39.0 | | 47.6 | 5.8 | 5.8 | | 44.4 | 9.0 | 9.0 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | A | A | |
| HCM2kAvgQ: | 2 | 6 | 6 | | 2 | 2 | 0 | | 1 | 9 | 9 | | 2 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 68 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 0 | 1! | 0 | 0 | 0 0 | 1! | 0 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 928 | 5 | | 6 | 888 | 64 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 220 | 0 | | 0 | 50 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1148 | 5 | | 6 | 938 | 64 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1148 | 5 | | 6 | 938 | 64 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1148 | 5 | | 6 | 938 | 64 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 8 | | 148 | 6 | 50 | | 18 | 1148 | 5 | | 6 | 938 | 64 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.19 | 0.98 | 0.98 | | 0.12 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 352 | 352 | 938 | | 999 | 42 | 338 | | 354 | 1852 | 8 | | 222 | 1725 | 119 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.62 | 0.62 | | 0.03 | 0.54 | 0.54 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.05 | 0.05 | 0.05 | | 0.83 | 0.83 | 0.83 | | 0.07 | 0.83 | 0.83 | | 0.04 | 0.72 | 0.72 | |
| Uniform Del: | 34.0 | 34.0 | 34.0 | | 39.5 | 39.5 | 39.5 | | 3.3 | 8.2 | 8.2 | | 3.2 | 6.8 | 6.8 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 19.8 | 19.8 | 19.8 | | 0.1 | 4.2 | 4.2 | | 0.1 | 1.9 | 1.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.1 | 34.1 | 34.1 | | 59.4 | 59.4 | 59.4 | | 3.4 | 12.3 | 12.3 | | 3.3 | 8.7 | 8.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.1 | 34.1 | 34.1 | | 59.4 | 59.4 | 59.4 | | 3.4 | 12.3 | 12.3 | | 3.3 | 8.7 | 8.7 | |
| LOS by Move: | C | C | C | | E | E | E | | A | B | B | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 8 | 8 | 8 | | 0 | 25 | 25 | | 0 | 18 | 18 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.798
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 61 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | | 85 | 122 | 31 | | 41 | 7 | 4 | | 794 | 72 | 41 | | 869 | 5 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 105 | | 88 | 127 | 32 | | 43 | 7 | 4 | | 826 | 75 | 43 | | 904 | 5 |
| Added Vol: | 11 | | 0 | 26 | 0 | | 0 | 0 | 0 | | 194 | 8 | 4 | | 46 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 116 | | 88 | 153 | 32 | | 43 | 7 | 4 | | 1020 | 83 | 47 | | 950 | 5 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 116 | | 88 | 153 | 32 | | 43 | 7 | 4 | | 1020 | 83 | 47 | | 950 | 5 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 116 | | 88 | 153 | 32 | | 43 | 7 | 4 | | 1020 | 83 | 47 | | 950 | 5 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 116 | | 88 | 153 | 32 | | 43 | 7 | 4 | | 1020 | 83 | 47 | | 950 | 5 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.71 | 0.89 | | 0.89 | 0.29 | 0.96 | | 0.96 | 0.21 | 0.97 | | 0.97 | 0.14 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.37 | | 0.63 | 1.00 | 0.85 | | 0.15 | 1.00 | 0.92 | | 0.08 | 1.00 | 0.99 | | 0.01 |
| Final Sat.: | 1354 | 617 | | 1068 | 547 | 1555 | | 266 | 393 | 1703 | | 138 | 264 | 1850 | | 10 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.14 | | 0.14 | 0.06 | 0.03 | | 0.03 | 0.01 | 0.60 | | 0.60 | 0.18 | 0.51 | | 0.51 |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.18 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | | 0.75 |
| Volume/Cap: | 0.48 | 0.80 | | 0.80 | 0.33 | 0.15 | | 0.15 | 0.01 | 0.80 | | 0.80 | 0.24 | 0.68 | | 0.68 |
| Uniform Del: | 36.8 | 39.3 | | 39.3 | 35.8 | 34.6 | | 34.6 | 3.1 | 7.8 | | 7.8 | 3.8 | 6.4 | | 6.4 |
| IncremntDel: | 1.5 | 13.8 | | 13.8 | 2.0 | 0.2 | | 0.2 | 0.0 | 3.4 | | 3.4 | 0.6 | 1.4 | | 1.4 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 38.3 | 53.1 | | 53.1 | 37.7 | 34.8 | | 34.8 | 3.2 | 11.1 | | 11.1 | 4.4 | 7.8 | | 7.8 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 38.3 | 53.1 | | 53.1 | 37.7 | 34.8 | | 34.8 | 3.2 | 11.1 | | 11.1 | 4.4 | 7.8 | | 7.8 |
| LOS by Move: | D | D | | D | D | C | | C | A | B | | B | A | A | | A |
| HCM2kAvgQ: | 4 | 9 | | 9 | 1 | 1 | | 1 | 0 | 23 | | 23 | 1 | 16 | | 16 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.133
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 100.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | | 342 | 245 | 408 | | 322 | 10 | 16 | | 166 | 117 | 420 | | 64 | 494 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 70 | | 356 | 255 | 424 | | 335 | 10 | 17 | | 173 | 122 | 437 | | 67 | 514 |
| Added Vol: | 15 | | 9 | 114 | 80 | | 7 | 0 | 0 | | 8 | 10 | 18 | | 18 | 21 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 85 | | 365 | 369 | 504 | | 342 | 10 | 17 | | 181 | 132 | 455 | | 85 | 535 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 85 | | 365 | 369 | 504 | | 342 | 10 | 17 | | 181 | 132 | 455 | | 85 | 535 |
| Reduct Vol: | 0 | | 0 | 3 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 85 | | 365 | 366 | 504 | | 342 | 10 | 17 | | 181 | 132 | 455 | | 85 | 535 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 85 | | 365 | 366 | 504 | | 342 | 10 | 17 | | 181 | 132 | 455 | | 85 | 535 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.76 | 1.20 | | 0.04 | 1.00 | 1.00 | | 1.00 | 1.69 | 0.31 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 3028 | 2052 | | 62 | 1769 | 1862 | | 1583 | 3015 | 560 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.10 | | 0.46 | 0.17 | 0.17 | | 0.17 | 0.01 | 0.10 | | 0.08 | 0.15 | 0.15 | | 0.34 |
| Crit Moves: | | | **** | | **** | | | | | **** | | | | | | **** |
| Green/Cycle: | 0.41 | 0.41 | | 0.41 | 0.15 | 0.15 | | 0.15 | 0.09 | 0.09 | | 0.09 | 0.30 | 0.30 | | 0.30 |
| Volume/Cap: | 0.12 | 0.25 | | 1.13 | 1.13 | 1.13 | | 1.13 | 0.11 | 1.13 | | 0.97 | 0.51 | 0.51 | | 1.13 |
| Uniform Del: | 23.9 | 25.4 | | 38.5 | 55.4 | 55.4 | | 55.4 | 54.9 | 59.4 | | 59.3 | 37.7 | 37.7 | | 45.6 |
| IncremntDel: | 0.1 | 0.1 | | 91.2 | 76.0 | 76.0 | | 76.0 | 0.3 | 112 | | 68.5 | 0.4 | 0.4 | | 83.4 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 24.0 | 25.5 | | 129.7 | 131.5 | 131 | | 131.5 | 55.2 | 171 | | 127.8 | 38.1 | 38.1 | | 129.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 24.0 | 25.5 | | 129.7 | 131.5 | 131 | | 131.5 | 55.2 | 171 | | 127.8 | 38.1 | 38.1 | | 129.0 |
| LOS by Move: | C | C | | F | F | F | | F | E | F | | F | D | D | | F |
| HCM2kAvgQ: | 2 | 5 | | 23 | 20 | 20 | | 20 | 1 | 13 | | 9 | 9 | 9 | | 32 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.835
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 30.7
Optimal Cycle: 92 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 1603 | 2997 | 0 | | 0 | 919 | 196 | | 186 | 0 | 446 | | 0 | 0 | 0 | |
| Added Vol: | 10 | 439 | 0 | | 0 | 61 | 8 | | 109 | 0 | 2 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1613 | 3436 | 0 | | 0 | 980 | 204 | | 295 | 0 | 448 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1613 | 3436 | 0 | | 0 | 980 | 204 | | 295 | 0 | 448 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1613 | 3436 | 0 | | 0 | 980 | 204 | | 295 | 0 | 448 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1613 | 3436 | 0 | | 0 | 980 | 204 | | 295 | 0 | 448 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.47 | 0.68 | 0.00 | | 0.00 | 0.19 | 0.13 | | 0.09 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.57 | 0.81 | 0.00 | | 0.00 | 0.24 | 0.24 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.82 | 0.84 | 0.00 | | 0.00 | 0.82 | 0.55 | | 0.67 | 0.00 | 0.84 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 27.4 | 9.0 | 0.0 | | 0.0 | 57.9 | 53.7 | | 66.5 | 0.0 | 68.1 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 2.8 | 1.6 | 0.0 | | 0.0 | 4.6 | 1.7 | | 4.0 | 0.0 | 10.9 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 30.3 | 10.6 | 0.0 | | 0.0 | 62.5 | 55.4 | | 70.5 | 0.0 | 79.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 30.3 | 10.6 | 0.0 | | 0.0 | 62.5 | 55.4 | | 70.5 | 0.0 | 79.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | E | A | E | | A | A | A | |
| HCM2kAvgQ: | 34 | 37 | 0 | | 0 | 18 | 9 | | 8 | 0 | 10 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.555
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.2
Optimal Cycle: 41 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 0 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 | 1! | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 23 | 0 | 23 | | 71 | 547 | 0 | | 0 | 1395 | 48 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 109 | 0 | | 0 | 8 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 656 | 0 | | 0 | 1403 | 58 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 656 | 0 | | 0 | 1403 | 58 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 656 | 0 | | 0 | 1403 | 58 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 25 | 0 | 23 | | 71 | 656 | 0 | | 0 | 1403 | 58 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 884 | 0 | 813 | | 1769 | 3538 | 0 | | 0 | 3377 | 139 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.19 | 0.00 | | 0.00 | 0.42 | 0.42 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.48 | 0.00 | 0.48 | | 0.56 | 0.23 | 0.00 | | 0.00 | 0.56 | 0.56 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.7 | 0.0 | 38.7 | | 38.2 | 1.8 | 0.0 | | 0.0 | 4.9 | 4.9 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.6 | 0.0 | 3.6 | | 5.6 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.3 | 0.0 | 42.3 | | 43.8 | 1.9 | 0.0 | | 0.0 | 5.2 | 5.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.3 | 0.0 | 42.3 | | 43.8 | 1.9 | 0.0 | | 0.0 | 5.2 | 5.2 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 2 | 0 | | 0 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.566
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | | 8 | 21 | 44 | | 40 | 582 | 43 | | 25 | 1302 | 25 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 605 | 45 | | 26 | 1354 | 26 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 109 | 0 | | 0 | 8 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 714 | 45 | | 26 | 1362 | 26 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 714 | 45 | | 26 | 1362 | 26 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 714 | 45 | | 26 | 1362 | 26 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 33 | 38 | 21 | | 8 | 22 | 46 | | 42 | 714 | 45 | | 26 | 1362 | 26 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.36 | 0.42 | 0.22 | | 0.11 | 0.29 | 0.60 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 651 | 752 | 407 | | 190 | 500 | 1047 | | 1805 | 3367 | 211 | | 1805 | 3532 | 67 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.04 | 0.04 | 0.04 | | 0.02 | 0.21 | 0.21 | | 0.01 | 0.39 | 0.39 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.08 | 0.08 | | 0.08 | 0.08 | 0.08 | | 0.05 | 0.59 | 0.59 | | 0.14 | 0.67 | 0.67 | |
| Volume/Cap: | 0.57 | 0.61 | 0.61 | | 0.53 | 0.57 | 0.57 | | 0.46 | 0.36 | 0.36 | | 0.10 | 0.57 | 0.57 | |
| Uniform Del: | 43.7 | 44.2 | 44.2 | | 44.1 | 44.6 | 44.6 | | 46.2 | 10.9 | 10.9 | | 37.7 | 8.6 | 8.6 | |
| IncremntDel: | 4.9 | 7.1 | 7.1 | | 3.9 | 5.9 | 5.9 | | 3.7 | 0.1 | 0.1 | | 0.2 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.6 | 51.3 | 51.3 | | 47.9 | 50.5 | 50.5 | | 49.9 | 11.0 | 11.0 | | 37.9 | 9.0 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.6 | 51.3 | 51.3 | | 47.9 | 50.5 | 50.5 | | 49.9 | 11.0 | 11.0 | | 37.9 | 9.0 | 9.0 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | A | A | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 3 | 3 | 3 | | 2 | 6 | 6 | | 1 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.663
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 27.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | | 50 | 196 | 86 | | 141 | 497 | 78 | | 97 | 1115 | 49 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 517 | 81 | | 101 | 1160 | 51 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 109 | 0 | | 0 | 8 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 626 | 81 | | 101 | 1168 | 51 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 626 | 81 | | 101 | 1168 | 51 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 626 | 81 | | 101 | 1168 | 51 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 112 | 234 | 118 | | 52 | 204 | 89 | | 147 | 626 | 81 | | 101 | 1168 | 51 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 1.00 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.93 | 0.93 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.77 | 0.23 | | 1.00 | 1.92 | 0.08 | |
| Final Sat.: | 1805 | 1900 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3141 | 407 | | 1805 | 3438 | 150 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.12 | 0.07 | | 0.03 | 0.11 | 0.06 | | 0.08 | 0.20 | 0.20 | | 0.06 | 0.34 | 0.34 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.18 | 0.18 | | 0.07 | 0.16 | 0.16 | | 0.12 | 0.50 | 0.50 | | 0.14 | 0.51 | 0.51 | |
| Volume/Cap: | 0.66 | 0.68 | 0.40 | | 0.39 | 0.66 | 0.34 | | 0.66 | 0.40 | 0.40 | | 0.40 | 0.66 | 0.66 | |
| Uniform Del: | 43.8 | 38.2 | 36.1 | | 44.2 | 39.4 | 37.2 | | 41.9 | 15.9 | 15.9 | | 39.3 | 18.0 | 18.0 | |
| IncremntDel: | 9.5 | 5.3 | 0.9 | | 1.9 | 5.4 | 0.8 | | 7.4 | 0.2 | 0.2 | | 1.1 | 0.9 | 0.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 53.3 | 43.5 | 37.0 | | 46.1 | 44.7 | 38.0 | | 49.3 | 16.0 | 16.0 | | 40.3 | 19.0 | 19.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 53.3 | 43.5 | 37.0 | | 46.1 | 44.7 | 38.0 | | 49.3 | 16.0 | 16.0 | | 40.3 | 19.0 | 19.0 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 5 | 8 | 4 | | 2 | 7 | 3 | | 6 | 7 | 7 | | 3 | 15 | 15 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.1
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 49 | 109 | 12 | 17 | 61 | 58 | 19 | 651 | 50 | 92 | 1296 | 63 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 8 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 49 | 109 | 12 | 17 | 61 | 58 | 19 | 760 | 50 | 92 | 1304 | 63 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 49 | 109 | 12 | 17 | 61 | 58 | 19 | 760 | 50 | 92 | 1304 | 63 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 49 | 109 | 12 | 17 | 61 | 58 | 19 | 760 | 50 | 92 | 1304 | 63 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 49 | 109 | 12 | 17 | 61 | 58 | 19 | 760 | 50 | 92 | 1304 | 63 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 0.29 | 0.64 | 0.07 | 0.12 | 0.45 | 0.43 | 1.00 | 1.88 | 0.12 | 1.00 | 1.91 | 0.09 |
| Final Sat.: | 532 | 1187 | 136 | 217 | 801 | 761 | 1805 | 3357 | 220 | 1805 | 3418 | 166 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.01 | 0.23 | 0.23 | 0.05 | 0.38 | 0.38 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.14 | 0.14 | 0.14 | 0.12 | 0.12 | 0.12 | 0.05 | 0.52 | 0.52 | 0.12 | 0.58 | 0.58 |
| Volume/Cap: | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.21 | 0.44 | 0.44 | 0.44 | 0.65 | 0.65 |
| Uniform Del: | 40.7 | 40.7 | 40.7 | 42.2 | 42.2 | 42.2 | 45.6 | 15.1 | 15.1 | 41.2 | 14.1 | 14.1 |
| IncremntDel: | 5.9 | 5.9 | 5.9 | 7.3 | 7.3 | 7.3 | 1.1 | 0.2 | 0.2 | 1.5 | 0.8 | 0.8 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 46.6 | 46.6 | 46.6 | 49.5 | 49.5 | 49.5 | 46.7 | 15.3 | 15.3 | 42.7 | 14.8 | 14.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 46.6 | 46.6 | 46.6 | 49.5 | 49.5 | 49.5 | 46.7 | 15.3 | 15.3 | 42.7 | 14.8 | 14.8 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 6 | 6 | 6 | 5 | 5 | 5 | 1 | 8 | 8 | 3 | 15 | 15 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.277
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.2
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Permitted | | | Permitted | | | Permitted | | | Permitted | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 14 | 14 | 14 | 14 | 14 | 14 | 73 | 73 | 73 | 73 | 73 | 73 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 19 | 61 | 9 | 7 | 45 | 11 | 16 | 639 | 25 | 16 | 128 | 25 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 8 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 19 | 61 | 9 | 7 | 45 | 11 | 16 | 748 | 25 | 16 | 136 | 25 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 19 | 61 | 9 | 7 | 45 | 11 | 16 | 748 | 25 | 16 | 136 | 25 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 19 | 61 | 9 | 7 | 45 | 11 | 16 | 748 | 25 | 16 | 136 | 25 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 19 | 61 | 9 | 7 | 45 | 11 | 16 | 748 | 25 | 16 | 136 | 25 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.64 | 0.95 | 0.95 | 0.33 | 0.93 | 0.93 |
| Lanes: | 0.21 | 0.69 | 0.10 | 0.11 | 0.71 | 0.18 | 1.00 | 1.94 | 0.06 | 1.00 | 1.69 | 0.31 |
| Final Sat.: | 370 | 1212 | 185 | 207 | 1272 | 325 | 1224 | 3476 | 116 | 631 | 2980 | 547 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.01 | 0.22 | 0.22 | 0.02 | 0.05 | 0.05 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Volume/Cap: | 0.28 | 0.28 | 0.28 | 0.19 | 0.19 | 0.19 | 0.02 | 0.28 | 0.28 | 0.03 | 0.06 | 0.06 |
| Uniform Del: | 33.4 | 33.4 | 33.4 | 32.9 | 32.9 | 32.9 | 2.4 | 3.1 | 3.1 | 2.5 | 2.5 | 2.5 |
| IncremntDel: | 0.5 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 33.9 | 33.9 | 33.9 | 33.2 | 33.2 | 33.2 | 2.4 | 3.1 | 3.1 | 2.5 | 2.5 | 2.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 33.9 | 33.9 | 33.9 | 33.2 | 33.2 | 33.2 | 2.4 | 3.1 | 3.1 | 2.5 | 2.5 | 2.5 |
| LOS by Move: | C | C | C | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | 3 | 0 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.939
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 40.3
Optimal Cycle: 130 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 376 | 454 | 341 | | 11 | 129 | 398 | | 122 | 366 | 294 | | 51 | 1253 | 71 | |
| Added Vol: | 0 | 0 | 60 | | 0 | 0 | 0 | | 0 | 49 | 0 | | 0 | 8 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 376 | 454 | 401 | | 11 | 129 | 398 | | 122 | 415 | 294 | | 51 | 1261 | 71 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 376 | 454 | 401 | | 11 | 129 | 398 | | 122 | 415 | 294 | | 51 | 1261 | 71 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 376 | 454 | 401 | | 11 | 129 | 398 | | 122 | 415 | 294 | | 51 | 1261 | 71 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 376 | 454 | 401 | | 11 | 129 | 398 | | 122 | 415 | 294 | | 51 | 1261 | 71 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.22 | 1.48 | 1.30 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2067 | 2495 | 2202 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3391 | 190 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.01 | 0.07 | 0.25 | | 0.03 | 0.11 | 0.18 | | 0.03 | 0.37 | 0.37 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.35 | 0.35 | | 0.10 | 0.26 | 0.26 | | 0.05 | 0.35 | 0.35 | | 0.09 | 0.39 | 0.39 | |
| Volume/Cap: | 0.95 | 0.52 | 0.52 | | 0.07 | 0.26 | 0.95 | | 0.69 | 0.33 | 0.53 | | 0.30 | 0.95 | 0.95 | |
| Uniform Del: | 40.0 | 25.6 | 25.6 | | 41.0 | 29.5 | 36.5 | | 46.7 | 24.2 | 26.2 | | 42.2 | 29.6 | 29.6 | |
| IncremntDel: | 15.2 | 0.2 | 0.2 | | 0.2 | 0.3 | 32.1 | | 11.5 | 0.2 | 0.9 | | 1.0 | 14.4 | 14.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 55.2 | 25.8 | 25.8 | | 41.2 | 29.8 | 68.6 | | 58.2 | 24.4 | 27.1 | | 43.1 | 44.0 | 44.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 55.2 | 25.8 | 25.8 | | 41.2 | 29.8 | 68.6 | | 58.2 | 24.4 | 27.1 | | 43.1 | 44.0 | 44.0 | |
| LOS by Move: | E | C | C | | D | C | E | | E | C | C | | D | D | D | |
| HCM2kAvgQ: | 14 | 8 | 8 | | 0 | 3 | 17 | | 3 | 5 | 8 | | 2 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.400
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 870 | 8 | | 0 | 469 | 0 | | 380 | 0 | 146 | | 0 | 0 | 118 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 60 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 870 | 8 | | 0 | 469 | 0 | | 440 | 0 | 146 | | 0 | 0 | 118 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 870 | 8 | | 0 | 469 | 0 | | 440 | 0 | 146 | | 0 | 0 | 118 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 870 | 8 | | 0 | 469 | 0 | | 440 | 0 | 146 | | 0 | 0 | 118 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 958 | 9 | | 0 | 492 | 0 | | 453 | 0 | 146 | | 0 | 0 | 118 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5646 | 54 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | | 0.00 | 0.13 | 0.00 | | 0.13 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.08 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.42 | 0.42 | | 0.00 | 0.42 | 0.00 | | 0.31 | 0.00 | 0.51 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.40 | 0.40 | | 0.00 | 0.31 | 0.00 | | 0.40 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.40 | |
| Uniform Del: | 0.0 | 9.9 | 9.9 | | 0.0 | 9.4 | 0.0 | | 13.3 | 0.0 | 6.4 | | 0.0 | 0.0 | 17.2 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.0 | 0.0 | | 0.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.5 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 8.4 | 8.4 | | 0.0 | 8.0 | 0.0 | | 11.4 | 0.0 | 5.5 | | 0.0 | 0.0 | 15.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 8.4 | 8.4 | | 0.0 | 8.0 | 0.0 | | 11.4 | 0.0 | 5.5 | | 0.0 | 0.0 | 15.1 | |
| DesignQueue: | 0 | 7 | 7 | | 0 | 5 | 0 | | 6 | 0 | 3 | | 0 | 0 | 3 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.646
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 88 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | | 16 | 16 | 0 | | 0 | 0 | 0 | | 29 | 45 | 28 | | 61 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | | 1 | 220 | 0 | | 0 | 0 | 0 | 828 | | 379 | 798 | 1527 | | 0 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 330 | | 1 | 229 | 0 | | 0 | 0 | 0 | 861 | | 394 | 830 | 1588 | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 49 | | 6 | 4 | 12 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 330 | | 1 | 229 | 0 | | 0 | 0 | 0 | 910 | | 400 | 834 | 1600 | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 330 | | 1 | 229 | 0 | | 0 | 0 | 0 | 910 | | 400 | 834 | 1600 | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 330 | | 1 | 229 | 0 | | 0 | 0 | 0 | 910 | | 400 | 834 | 1600 | | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 330 | | 1 | 229 | 0 | | 0 | 0 | 0 | 910 | | 400 | 834 | 1600 | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.95 | | 0.75 | 0.92 | 0.95 | | 1.00 |
| Lanes: | 1.58 | 0.01 | | 1.41 | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 2.00 | 2.00 | 2.00 | | 0.00 |
| Final Sat.: | 2584 | | 6 | 2291 | 0 | | 0 | 0 | 0 | 3610 | | 2842 | 3502 | 3610 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.17 | | 0.10 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.25 | | 0.14 | 0.24 | 0.44 | | 0.00 |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.19 | | 0.19 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.34 | | 0.34 | 0.42 | 0.76 | | 0.00 |
| Volume/Cap: | 0.68 | 0.92 | | 0.53 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.74 | | 0.41 | 0.56 | 0.58 | | 0.00 |
| Uniform Del: | 32.1 | 33.8 | | 31.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 24.7 | | 21.5 | 18.5 | 4.2 | | 0.0 |
| IncremntDel: | 2.3 | 18.5 | | 0.5 | 0.0 | 0.0 | | 0.0 | 0.0 | 2.4 | | 0.3 | 0.5 | 0.3 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.00 |
| Delay/Veh: | 34.4 | 52.3 | | 31.6 | 0.0 | 0.0 | | 0.0 | 0.0 | 27.1 | | 21.8 | 19.0 | 4.5 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 34.4 | 52.3 | | 31.6 | 0.0 | 0.0 | | 0.0 | 0.0 | 27.1 | | 21.8 | 19.0 | 4.5 | | 0.0 |
| LOS by Move: | C | D | | C | A | A | | A | A | C | | C | B | A | | A |
| HCM2kAvgQ: | 6 | 11 | | 5 | 0 | 0 | | 0 | 0 | 12 | | 5 | 9 | 10 | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.895
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 38.9
Optimal Cycle: 105 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | | 78 | 250 | 410 | | 115 | 41 | 51 | | 538 | 13 | 238 | 1506 | | 420 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 15 | | 81 | 260 | 426 | | 120 | 43 | 53 | | 560 | 14 | 248 | 1566 | | 437 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 55 | 0 | 0 | 12 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 |
| Initial Fut: | 15 | | 81 | 260 | 426 | | 120 | 43 | 53 | | 615 | 14 | 248 | 1578 | | 437 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 15 | | 81 | 260 | 426 | | 120 | 43 | 53 | | 615 | 14 | 248 | 1578 | | 437 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 15 | | 81 | 260 | 426 | | 120 | 43 | 53 | | 615 | 14 | 248 | 1578 | | 437 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 15 | | 81 | 260 | 426 | | 120 | 43 | 53 | | 615 | 14 | 248 | 1578 | | 437 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.96 | | 0.96 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | | 0.85 |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.74 | | 0.26 | 1.00 | 1.96 | | 0.04 | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 70 | | 390 | 1249 | 3502 | 1346 | | 480 | 1805 | 3522 | | 77 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.21 | 0.21 | | 0.21 | 0.12 | 0.09 | | 0.09 | 0.03 | 0.17 | | 0.17 | 0.14 | 0.44 | | 0.27 |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | | 0.23 | 0.13 | 0.11 | | 0.11 | 0.05 | 0.30 | | 0.30 | 0.23 | 0.48 | | 0.48 |
| Volume/Cap: | 0.82 | 0.91 | | 0.91 | 0.91 | 0.82 | | 0.82 | 0.59 | 0.59 | | 0.59 | 0.59 | 0.91 | | 0.56 |
| Uniform Del: | 35.2 | 37.6 | | 37.6 | 42.8 | 43.7 | | 43.7 | 46.5 | 30.0 | | 30.0 | 34.1 | 24.1 | | 18.6 |
| IncremntDel: | 12.0 | 25.4 | | 25.4 | 22.3 | 23.4 | | 23.4 | 9.7 | 0.9 | | 0.9 | 2.2 | 7.9 | | 1.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 47.2 | 63.0 | | 63.0 | 65.0 | 67.0 | | 67.0 | 56.2 | 30.9 | | 30.9 | 36.3 | 32.0 | | 19.6 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 47.2 | 63.0 | | 63.0 | 65.0 | 67.0 | | 67.0 | 56.2 | 30.9 | | 30.9 | 36.3 | 32.0 | | 19.6 |
| LOS by Move: | D | E | | E | E | E | | E | E | C | | C | D | C | | B |
| HCM2kAvgQ: | 13 | 15 | | 15 | 10 | 7 | | 7 | 3 | 9 | | 9 | 7 | 28 | | 10 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.2
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | | 92 | 391 | 62 | | 15 | 228 | 24 | | 73 | 584 | 95 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 38 | 275 | 53 | | 96 | 407 | 64 | | 16 | 237 | 25 | | 76 | 607 | 99 | |
| Added Vol: | 0 | 104 | 41 | | 6 | 27 | 2 | | 25 | 8 | 0 | | 3 | 1 | 9 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 38 | 379 | 94 | | 102 | 434 | 66 | | 41 | 245 | 25 | | 79 | 608 | 108 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 38 | 379 | 94 | | 102 | 434 | 66 | | 41 | 245 | 25 | | 79 | 608 | 108 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 38 | 379 | 94 | | 102 | 434 | 66 | | 41 | 245 | 25 | | 79 | 608 | 108 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 38 | 379 | 94 | | 102 | 434 | 66 | | 41 | 245 | 25 | | 79 | 608 | 108 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.93 | | 0.95 | 0.99 | 0.99 | | 0.95 | 0.98 | 0.98 | |
| Lanes: | 0.15 | 1.48 | 0.37 | | 0.34 | 1.44 | 0.22 | | 1.00 | 0.91 | 0.09 | | 1.00 | 0.85 | 0.15 | |
| Final Sat.: | 263 | 2589 | 643 | | 595 | 2539 | 389 | | 1805 | 1700 | 173 | | 1805 | 1577 | 279 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | | 0.17 | 0.17 | 0.17 | | 0.02 | 0.14 | 0.14 | | 0.04 | 0.39 | 0.39 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | | 0.20 | 0.20 | 0.20 | | 0.05 | 0.38 | 0.38 | | 0.13 | 0.46 | 0.46 | |
| Volume/Cap: | 0.84 | 0.84 | 0.84 | | 0.84 | 0.84 | 0.84 | | 0.45 | 0.38 | 0.38 | | 0.33 | 0.84 | 0.84 | |
| Uniform Del: | 39.9 | 39.9 | 39.9 | | 38.2 | 38.2 | 38.2 | | 46.2 | 22.5 | 22.5 | | 39.4 | 23.6 | 23.6 | |
| IncremntDel: | 9.8 | 9.8 | 9.8 | | 8.5 | 8.5 | 8.5 | | 3.5 | 0.3 | 0.3 | | 0.8 | 7.2 | 7.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 49.7 | 49.7 | 49.7 | | 46.7 | 46.7 | 46.7 | | 49.7 | 22.8 | 22.8 | | 40.3 | 30.9 | 30.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 49.7 | 49.7 | 49.7 | | 46.7 | 46.7 | 46.7 | | 49.7 | 22.8 | 22.8 | | 40.3 | 30.9 | 30.9 | |
| LOS by Move: | D | D | D | | D | D | D | | D | C | C | | D | C | C | |
| HCM2kAvgQ: | 11 | 11 | 11 | | 12 | 12 | 12 | | 2 | 6 | 6 | | 2 | 22 | 22 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.684
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | | 0 | 1034 | 31 | | 103 | 0 | 6 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 47 | 2456 | 0 | | 0 | 1075 | 32 | | 107 | 0 | 6 | | 0 | 0 | 0 | |
| Added Vol: | 94 | 30 | 0 | | 0 | 442 | 0 | | 153 | 0 | 21 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 141 | 2486 | 0 | | 0 | 1517 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 141 | 2486 | 0 | | 0 | 1517 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 141 | 2486 | 0 | | 0 | 1517 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 141 | 2486 | 0 | | 0 | 1517 | 32 | | 260 | 0 | 27 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.49 | 0.00 | | 0.00 | 0.30 | 0.02 | | 0.15 | 0.00 | 0.02 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.15 | 0.72 | 0.00 | | 0.00 | 0.56 | 0.56 | | 0.22 | 0.00 | 0.22 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.53 | 0.68 | 0.00 | | 0.00 | 0.53 | 0.04 | | 0.68 | 0.00 | 0.08 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 50.9 | 10.3 | 0.0 | | 0.0 | 17.5 | 12.6 | | 46.9 | 0.0 | 40.7 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 2.0 | 0.5 | 0.0 | | 0.0 | 0.2 | 0.0 | | 5.1 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 52.9 | 10.8 | 0.0 | | 0.0 | 17.7 | 12.6 | | 52.0 | 0.0 | 40.8 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.9 | 10.8 | 0.0 | | 0.0 | 17.7 | 12.6 | | 52.0 | 0.0 | 40.8 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | B | A | | A | B | B | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 6 | 20 | 0 | | 0 | 14 | 1 | | 11 | 0 | 1 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.620
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 44 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | 218 | 0 | 31 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | |
| Initial Bse: | 152 | 2153 | 0 | | 0 | 885 | 204 | 227 | 0 | 32 | 0 | 0 | 0 | | | |
| Added Vol: | 94 | 122 | 0 | | 0 | 462 | 1 | 2 | 0 | 21 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 246 | 2275 | 0 | | 0 | 1347 | 205 | 229 | 0 | 53 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 246 | 2275 | 0 | | 0 | 1347 | 205 | 229 | 0 | 53 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 246 | 2275 | 0 | | 0 | 1347 | 205 | 229 | 0 | 53 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 246 | 2275 | 0 | | 0 | 1347 | 205 | 229 | 0 | 53 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.45 | 0.00 | | 0.00 | 0.26 | 0.13 | 0.13 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | | **** | | | **** | | | **** | | | | | | | | |
| Green/Cycle: | 0.25 | 0.72 | 0.00 | | 0.00 | 0.47 | 0.47 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.56 | 0.62 | 0.00 | | 0.00 | 0.56 | 0.27 | 0.62 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 42.6 | 9.1 | 0.0 | | 0.0 | 24.5 | 20.7 | 46.8 | 0.0 | 42.1 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 1.6 | 0.3 | 0.0 | | 0.0 | 0.3 | 0.2 | 3.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 44.3 | 9.4 | 0.0 | | 0.0 | 24.8 | 20.9 | 50.0 | 0.0 | 42.4 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 44.3 | 9.4 | 0.0 | | 0.0 | 24.8 | 20.9 | 50.0 | 0.0 | 42.4 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | C | C | D | A | D | A | A | A | | | |
| HCM2kAvgQ: | 9 | 17 | 0 | | 0 | 14 | 5 | 9 | 0 | 2 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.653
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 31 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | 83 | 0 | 561 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | |
| Initial Bse: | 483 | 381 | 0 | | 0 | 414 | 69 | 86 | 0 | 583 | 0 | 0 | 0 | | | |
| Added Vol: | 3 | 24 | 0 | | 0 | 71 | 2 | 7 | 0 | 13 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 486 | 405 | 0 | | 0 | 485 | 71 | 93 | 0 | 596 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 486 | 405 | 0 | | 0 | 485 | 71 | 93 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 486 | 405 | 0 | | 0 | 485 | 71 | 93 | 0 | 0 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 486 | 405 | 0 | | 0 | 485 | 71 | 93 | 0 | 0 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | 0.93 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1598 | 233 | 1769 | 0 | 1900 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.22 | 0.00 | | 0.00 | 0.30 | 0.30 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | **** | | | | | | | | |
| Green/Cycle: | 0.42 | 0.89 | 0.00 | | 0.00 | 0.47 | 0.47 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.65 | 0.25 | 0.00 | | 0.00 | 0.65 | 0.65 | 0.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 27.8 | 1.0 | 0.0 | | 0.0 | 24.6 | 24.6 | 53.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 2.1 | 0.1 | 0.0 | | 0.0 | 1.8 | 1.8 | 10.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 29.8 | 1.1 | 0.0 | | 0.0 | 26.5 | 26.5 | 63.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 29.8 | 1.1 | 0.0 | | 0.0 | 26.5 | 26.5 | 63.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | C | A | A | | A | C | C | E | A | A | A | A | A | | | |
| HCM2kAvgQ: | 15 | 2 | 0 | | 0 | 16 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.479
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 22 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 59 | 648 | 51 | | 200 | 737 | 71 | | 3 | 3 | 3 | | 128 | 55 | 251 | |
| Added Vol: | 0 | 26 | 0 | | 1 | 84 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 59 | 674 | 51 | | 201 | 821 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 59 | 674 | 51 | | 201 | 821 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 59 | 674 | 51 | | 201 | 821 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 59 | 674 | 51 | | 201 | 821 | 71 | | 3 | 3 | 3 | | 128 | 55 | 252 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.50 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 953 | 861 | 861 | | 1025 | 442 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.19 | 0.03 | | 0.11 | 0.23 | 0.04 | | 0.00 | 0.00 | 0.00 | | 0.12 | 0.12 | 0.16 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.40 | 0.40 | | 0.24 | 0.55 | 0.55 | | 0.33 | 0.33 | 0.33 | | 0.33 | 0.33 | 0.33 | |
| Volume/Cap: | 0.42 | 0.48 | 0.08 | | 0.48 | 0.42 | 0.08 | | 0.01 | 0.01 | 0.01 | | 0.38 | 0.38 | 0.48 | |
| Uniform Del: | 52.5 | 26.9 | 22.5 | | 39.4 | 15.5 | 12.5 | | 26.9 | 26.9 | 26.9 | | 30.6 | 30.6 | 31.8 | |
| IncremntDel: | 2.0 | 0.3 | 0.1 | | 0.9 | 0.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.5 | 0.5 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.5 | 27.1 | 22.5 | | 40.3 | 15.6 | 12.5 | | 26.9 | 26.9 | 26.9 | | 31.1 | 31.1 | 32.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.5 | 27.1 | 22.5 | | 40.3 | 15.6 | 12.5 | | 26.9 | 26.9 | 26.9 | | 31.1 | 31.1 | 32.5 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 10 | 1 | | 7 | 9 | 1 | | 0 | 0 | 0 | | 5 | 5 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 31.5
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 120 | 327 | 8 | | 7 | 510 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| Added Vol: | 0 | 138 | 0 | | 0 | 35 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 120 | 465 | 8 | | 7 | 545 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 120 | 465 | 8 | | 7 | 545 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 120 | 465 | 8 | | 7 | 545 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 120 | 465 | 8 | | 7 | 545 | 369 | | 119 | 35 | 47 | | 6 | 101 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.40 | 1.57 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 720 | 2797 | 50 | | 27 | 2006 | 1360 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.27 | 0.27 | 0.27 | | 0.05 | 0.08 | 0.08 | | 0.06 | 0.06 | 0.06 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | **** | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.42 | 0.42 | 0.42 | | 0.12 | 0.12 | 0.12 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.65 | 0.65 | 0.65 | | 0.65 | 0.65 | 0.65 | | 0.38 | 0.65 | 0.65 | | 0.65 | 0.65 | 0.65 | |
| Uniform Del: | 33.2 | 33.2 | 33.2 | | 23.2 | 23.2 | 23.2 | | 40.4 | 41.8 | 41.8 | | 43.8 | 43.8 | 43.8 | |
| IncremntDel: | 1.6 | 1.6 | 1.6 | | 1.1 | 1.1 | 1.1 | | 0.5 | 4.7 | 4.7 | | 8.3 | 8.3 | 8.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.8 | 34.8 | 34.8 | | 24.2 | 24.2 | 24.2 | | 40.9 | 46.6 | 46.6 | | 52.1 | 52.1 | 52.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.8 | 34.8 | 34.8 | | 24.2 | 24.2 | 24.2 | | 40.9 | 46.6 | 46.6 | | 52.1 | 52.1 | 52.1 | |
| LOS by Move: | C | C | C | | C | C | C | | D | D | D | | D | D | D | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 12 | 12 | 12 | | 3 | 5 | 5 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.548 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.3 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 0 | 2285 | 0 | 0 | 813 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 216 | 0 | 0 | 483 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 2501 | 0 | 0 | 1296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 2501 | 0 | 0 | 1296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 2501 | 0 | 0 | 1296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 2501 | 0 | 0 | 1296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.48 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.55 | 0.00 | 0.00 | 0.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 0.0 | 1.4 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 1.5 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 1.5 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 0 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2015 East Campus Only PM |
| Command: | Near Term I Project PM |
| Volume: | Near Term I Project PM |
| Geometry: | Near Term I Project PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term I Project PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term I Project PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | D | 52.4 | 0.980 | D | 53.9 | 1.001 | + 1.551 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 14.1 | 0.847 | C | 28.9 | 1.021 | +14.790 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | B | 19.0 | 0.849 | C | 23.3 | 0.908 | + 4.335 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 20.5 | 0.712 | C | 20.2 | 0.825 | -0.380 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 26.5 | 0.605 | C | 20.9 | 0.718 | -5.607 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 15.0 | 0.600 | B | 14.3 | 0.623 | -0.791 D/V |
| # 7 Middlefield at Marsh (Town of | C | 31.8 | 0.841 | D | 38.5 | 0.952 | + 6.656 D/V |
| # 8 Bayfront Exp. & Willow Rd. | D | 47.7 | 0.953 | F | 107.1 | 1.179 | +59.360 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.3 | 0.630 | C | 23.1 | 0.716 | + 0.831 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 12.2 | 0.565 | B | 13.6 | 0.696 | + 1.452 D/V |
| # 11 O'Brien Dr. & Willow Rd. | A | 9.9 | 0.567 | A | 9.1 | 0.600 | -0.733 D/V |
| # 12 Newbridge St. & Willow Rd. | C | 33.7 | 0.765 | D | 44.9 | 0.992 | +11.229 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 20.1 | 0.760 | C | 20.8 | 0.783 | + 0.678 D/V |
| # 14 Durham St. & Willow Rd. | D | 49.4 | 0.660 | B | 16.5 | 0.782 | -32.886 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 11.5 | 0.760 | B | 11.6 | 0.796 | + 0.111 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 12.2 | 0.675 | B | 11.3 | 0.741 | -0.931 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 133.4 | 1.281 | F | 169.2 | 1.386 | +35.778 D/V |
| # 18 Bayfront Exp. & University Ave | F | 164.8 | 1.332 | F | 192.8 | 1.419 | +27.929 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 13.0 | 0.694 | B | 13.3 | 0.705 | + 0.282 D/V |
| # 20 University & Kavanaugh | B | 16.2 | 0.668 | B | 16.0 | 0.672 | -0.265 D/V |
| # 21 University & Bay | C | 34.0 | 0.838 | C | 33.8 | 0.841 | -0.263 D/V |
| # 22 University & Runnymede | C | 22.9 | 0.702 | C | 22.7 | 0.706 | -0.170 D/V |
| # 23 University & Bell | A | 7.7 | 0.550 | A | 7.6 | 0.553 | -0.093 D/V |
| # 24 University & Donohoe | D | 36.6 | 0.877 | D | 37.1 | 0.879 | + 0.498 D/V |
| # 25 NB 101 & Donohoe St | C | 21.3 | 0.484 | C | 21.3 | 0.487 | + 0.059 D/V |

| Intersection | Base LOS | Base Del/Veh | Base V/C | Future LOS | Future Del/Veh | Future V/C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 25.4 | 0.529 | C | 25.3 | 0.545 | -0.083 D/V |
| # 27 University Ave. & Woodland | D | 47.1 | 0.894 | D | 47.3 | 0.901 | + 0.281 D/V |
| # 28 Middlefield Rd. & University A | C | 32.9 | 0.559 | C | 34.4 | 0.624 | + 1.482 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 19.0 | 0.709 | F | 81.6 | 1.118 | +62.594 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 14.0 | 0.607 | B | 18.1 | 0.717 | + 4.105 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 26.6 | 0.746 | C | 26.7 | 0.764 | + 0.028 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.3 | 0.629 | C | 29.2 | 0.653 | + 0.848 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 38.9 | 0.733 | D | 41.0 | 0.791 | + 2.094 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.3 | 0.526 | A | 1.4 | 0.574 | + 0.113 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

Cycle (sec): 140 Critical Vol./Cap.(X): 1.001
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 53.9
Optimal Cycle: 180 Level Of Service: D

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 1231 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2030 | | 32 | 76 | 11 | |
| Added Vol: | 980 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 53 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2211 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2083 | | 32 | 76 | 11 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2211 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2083 | | 32 | 76 | 11 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2211 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2083 | | 32 | 76 | 11 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2211 | 51 | 7 | | 0 | 360 | 193 | | 145 | 42 | 2083 | | 32 | 76 | 11 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.43 | 0.03 | 0.03 | | 0.00 | 0.10 | 0.12 | | 0.10 | 0.10 | 0.75 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.43 | 0.43 | 0.43 | | 0.00 | 0.10 | 0.42 | | 0.32 | 0.32 | 0.75 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 1.00 | 0.07 | 0.07 | | 0.00 | 1.00 | 0.29 | | 0.33 | 0.33 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Uniform Del: | 40.0 | 23.6 | 23.6 | | 0.0 | 62.9 | 26.9 | | 36.4 | 36.4 | 17.7 | | 65.4 | 65.4 | 65.4 | |
| IncremntDel: | 19.5 | 0.0 | 0.0 | | 0.0 | 47.8 | 0.2 | | 0.3 | 0.3 | 20.0 | | 82.7 | 82.7 | 82.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 59.4 | 23.6 | 23.6 | | 0.0 | 111 | 27.1 | | 36.7 | 36.7 | 37.8 | | 148.1 | 148 | 148.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 59.4 | 23.6 | 23.6 | | 0.0 | 111 | 27.1 | | 36.7 | 36.7 | 37.8 | | 148.1 | 148 | 148.1 | |
| LOS by Move: | E | C | C | | A | F | C | | D | D | D | | F | F | F | |
| HCM2kAvgQ: | 39 | 1 | 1 | | 0 | 12 | 5 | | 6 | 6 | 58 | | 9 | 9 | 9 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.021
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 28.9
Optimal Cycle: 178 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 0 | 0 | 0 | 1 | 0 0 | 0 | 0 | 0 | 0 1 | 1 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 513 | 0 | 222 | | 0 | 0 | 0 | | 0 | 2146 | 527 | | 0 | 709 | 823 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 115 | 0 | | 0 | 729 | 251 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2261 | 527 | | 0 | 1438 | 1074 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2261 | 0 | | 0 | 1438 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2261 | 0 | | 0 | 1438 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 513 | 0 | 382 | | 0 | 0 | 0 | | 3 | 2261 | 0 | | 0 | 1438 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3374 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.00 | 0.24 | | 0.00 | 0.00 | 0.00 | | 0.67 | 0.67 | 0.00 | | 0.00 | 0.41 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.24 | 0.00 | 0.24 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Volume/Cap: | 0.63 | 0.00 | 1.02 | | 0.00 | 0.00 | 0.00 | | 1.02 | 1.02 | 0.00 | | 0.00 | 0.62 | 0.00 | |
| Uniform Del: | 22.3 | 0.0 | 24.8 | | 0.0 | 0.0 | 0.0 | | 11.2 | 11.2 | 0.0 | | 0.0 | 6.5 | 0.0 | |
| IncremntDel: | 1.6 | 0.0 | 52.0 | | 0.0 | 0.0 | 0.0 | | 24.6 | 24.6 | 0.0 | | 0.0 | 0.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 23.9 | 0.0 | 76.8 | | 0.0 | 0.0 | 0.0 | | 35.8 | 35.8 | 0.0 | | 0.0 | 7.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 23.9 | 0.0 | 76.8 | | 0.0 | 0.0 | 0.0 | | 35.8 | 35.8 | 0.0 | | 0.0 | 7.0 | 0.0 | |
| LOS by Move: | C | A | E | | A | A | A | | D | D | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 0 | 14 | | 0 | 0 | 0 | | 35 | 35 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.908
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 23.3
Optimal Cycle: 83 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 0 | 0 | 0 | 0 | 2 0 | 0 | 0 | 1 | 0 0 | 2 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 1409 | 0 | 471 | | 0 | 1228 | 677 | | 0 | 978 | 293 | |
| Added Vol: | 0 | 0 | 0 | | 64 | 0 | 8 | | 0 | 61 | 0 | | 0 | 370 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1473 | 0 | 479 | | 0 | 1289 | 677 | | 0 | 1348 | 293 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1473 | 0 | 479 | | 0 | 1289 | 0 | | 0 | 1348 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1473 | 0 | 479 | | 0 | 1289 | 0 | | 0 | 1348 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1473 | 0 | 479 | | 0 | 1289 | 0 | | 0 | 1348 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.43 | 0.00 | 0.30 | | 0.00 | 0.36 | 0.00 | | 0.00 | 0.38 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.47 | 0.00 | 0.47 | | 0.00 | 0.42 | 0.00 | | 0.00 | 0.42 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.91 | 0.00 | 0.64 | | 0.00 | 0.87 | 0.00 | | 0.00 | 0.91 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 15.8 | 0.0 | 13.0 | | 0.0 | 17.2 | 0.0 | | 0.0 | 17.7 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 7.8 | 0.0 | 1.9 | | 0.0 | 5.8 | 0.0 | | 0.0 | 8.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 23.7 | 0.0 | 14.8 | | 0.0 | 23.0 | 0.0 | | 0.0 | 26.2 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 23.7 | 0.0 | 14.8 | | 0.0 | 23.0 | 0.0 | | 0.0 | 26.2 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | B | | A | C | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 19 | 0 | 8 | | 0 | 16 | 0 | | 0 | 18 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 54 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | | 254 | 9 | 2 | | 42 | 1314 | 17 | | 78 | 1109 | 214 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1367 | 18 | | 81 | 1153 | 223 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 0 | | 0 | 377 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1430 | 18 | | 81 | 1530 | 223 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1430 | 18 | | 81 | 1530 | 223 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1430 | 18 | | 81 | 1530 | 223 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 29 | 16 | 278 | | 264 | 9 | 2 | | 44 | 1430 | 18 | | 81 | 1530 | 223 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.65 | 0.35 | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | 2.96 | 0.04 | | 2.00 | 1.75 | 0.25 | |
| Final Sat.: | 1174 | 629 | 2786 | | 1716 | 61 | 1583 | | 1769 | 5011 | 62 | | 3432 | 3030 | 441 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.10 | | 0.15 | 0.15 | 0.00 | | 0.02 | 0.29 | 0.29 | | 0.02 | 0.51 | 0.51 | |
| Crit Moves: | | | **** | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.18 | 0.18 | 0.18 | | 0.05 | 0.55 | 0.55 | | 0.10 | 0.60 | 0.60 | |
| Volume/Cap: | 0.21 | 0.21 | 0.84 | | 0.84 | 0.84 | 0.01 | | 0.49 | 0.52 | 0.52 | | 0.24 | 0.84 | 0.84 | |
| Uniform Del: | 31.9 | 31.9 | 34.5 | | 31.6 | 31.6 | 26.8 | | 37.0 | 11.2 | 11.2 | | 33.4 | 13.0 | 13.0 | |
| IncremntDel: | 0.5 | 0.5 | 17.6 | | 17.8 | 17.8 | 0.0 | | 4.3 | 0.2 | 0.2 | | 0.4 | 3.3 | 3.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.4 | 32.4 | 52.1 | | 49.4 | 49.4 | 26.8 | | 41.3 | 11.4 | 11.4 | | 33.8 | 16.3 | 16.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.4 | 32.4 | 52.1 | | 49.4 | 49.4 | 26.8 | | 41.3 | 11.4 | 11.4 | | 33.8 | 16.3 | 16.3 | |
| LOS by Move: | C | C | D | | D | D | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 1 | 1 | 6 | | 9 | 9 | 0 | | 2 | 8 | 8 | | 1 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.718
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 20.9
Optimal Cycle: 36 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | | 428 | 30 | 128 | | 239 | 885 | 55 | | 26 | 833 | 316 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 920 | 57 | | 27 | 866 | 329 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 0 | | 0 | 377 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 983 | 57 | | 27 | 1243 | 329 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 983 | 57 | | 27 | 1243 | 329 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 983 | 57 | | 27 | 1243 | 329 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 99 | 33 | 60 | | 445 | 31 | 133 | | 249 | 983 | 57 | | 27 | 1243 | 329 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.88 | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.36 | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 598 | 1084 | | 3323 | 233 | 1583 | | 1769 | 3317 | 193 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.13 | 0.13 | 0.08 | | 0.14 | 0.30 | 0.30 | | 0.02 | 0.35 | 0.21 | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.08 | 0.08 | 0.08 | | 0.19 | 0.19 | 0.19 | | 0.20 | 0.59 | 0.59 | | 0.10 | 0.49 | 0.49 | |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | | 0.72 | 0.72 | 0.45 | | 0.72 | 0.51 | 0.51 | | 0.15 | 0.72 | 0.42 | |
| Uniform Del: | 36.0 | 36.0 | 36.0 | | 30.6 | 30.6 | 28.9 | | 30.1 | 9.7 | 9.7 | | 33.0 | 16.1 | 13.1 | |
| IncremntDel: | 16.6 | 17.1 | 17.1 | | 3.8 | 3.8 | 1.1 | | 7.1 | 0.2 | 0.2 | | 0.4 | 1.5 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.6 | 53.1 | 53.1 | | 34.3 | 34.3 | 30.0 | | 37.2 | 9.9 | 9.9 | | 33.4 | 17.5 | 13.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.6 | 53.1 | 53.1 | | 34.3 | 34.3 | 30.0 | | 37.2 | 9.9 | 9.9 | | 33.4 | 17.5 | 13.5 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | C | B | B | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 7 | 7 | 3 | | 7 | 8 | 8 | | 1 | 14 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.623
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.3
Optimal Cycle: 28 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 59 | 8 | 187 | | 57 | 32 | 3 | | 5 | 852 | 94 | | 208 | 927 | 49 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 2 | | 0 | 377 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 915 | 96 | | 208 | 1304 | 49 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 915 | 96 | | 208 | 1304 | 49 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 915 | 96 | | 208 | 1304 | 49 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 61 | 8 | 187 | | 57 | 32 | 3 | | 5 | 915 | 96 | | 208 | 1304 | 49 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.69 | 0.69 | 0.69 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.80 | 0.19 | | 1.00 | 1.93 | 0.07 | |
| Final Sat.: | 366 | 50 | 1119 | | 814 | 459 | 44 | | 17 | 2982 | 312 | | 1769 | 3393 | 127 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.07 | 0.07 | 0.07 | | 0.31 | 0.31 | 0.31 | | 0.12 | 0.38 | 0.38 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | | 0.49 | 0.49 | 0.49 | | 0.19 | 0.68 | 0.68 | |
| Volume/Cap: | 0.62 | 0.62 | 0.62 | | 0.26 | 0.26 | 0.26 | | 0.62 | 0.62 | 0.62 | | 0.62 | 0.56 | 0.56 | |
| Uniform Del: | 25.7 | 25.7 | 25.7 | | 23.0 | 23.0 | 23.0 | | 14.9 | 14.9 | 14.9 | | 29.8 | 6.6 | 6.6 | |
| IncremntDel: | 2.9 | 2.9 | 2.9 | | 0.4 | 0.4 | 0.4 | | 0.8 | 0.8 | 0.8 | | 3.6 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 28.6 | 28.6 | 28.6 | | 23.4 | 23.4 | 23.4 | | 15.6 | 15.6 | 15.6 | | 33.4 | 6.9 | 6.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 28.6 | 28.6 | 28.6 | | 23.4 | 23.4 | 23.4 | | 15.6 | 15.6 | 15.6 | | 33.4 | 6.9 | 6.9 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 2 | 2 | 2 | | 10 | 10 | 10 | | 6 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.952
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 38.5
Optimal Cycle: 149 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 443 | 570 | | 424 | 280 | 0 | | 0 | 0 | 0 | | 536 | 0 | 465 | |
| Added Vol: | 0 | 58 | 42 | | 23 | 11 | 0 | | 0 | 0 | 0 | | 103 | 0 | 276 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 501 | 612 | | 447 | 291 | 0 | | 0 | 0 | 0 | | 639 | 0 | 741 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 501 | 612 | | 447 | 291 | 0 | | 0 | 0 | 0 | | 639 | 0 | 741 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 501 | 612 | | 447 | 291 | 0 | | 0 | 0 | 0 | | 639 | 0 | 741 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 501 | 612 | | 447 | 291 | 0 | | 0 | 0 | 0 | | 639 | 0 | 741 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.26 | 0.38 | | 0.25 | 0.15 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.35 | 0.00 | 0.46 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.28 | 0.65 | | 0.26 | 0.54 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.63 | |
| Volume/Cap: | 0.00 | 0.95 | 0.58 | | 0.95 | 0.28 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.95 | 0.00 | 0.73 | |
| Uniform Del: | 0.0 | 39.0 | 10.9 | | 40.0 | 13.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 33.6 | 0.0 | 13.8 | |
| IncremntDel: | 0.0 | 27.5 | 0.9 | | 29.6 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 23.5 | 0.0 | 2.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 66.5 | 11.8 | | 69.6 | 14.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 57.1 | 0.0 | 16.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 66.5 | 11.8 | | 69.6 | 14.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 57.1 | 0.0 | 16.4 | |
| LOS by Move: | A | E | B | | E | B | A | | A | A | A | | E | A | B | |
| HCM2kAvgQ: | 0 | 22 | 12 | | 20 | 5 | 0 | | 0 | 0 | 0 | | 26 | 0 | 18 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.179
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 107.1
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | 8 | | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | | | | |
| Initial Bse: | 376 | 691 | 1 | | 0 | 2287 | 112 | | 37 | 14 | 1481 | | 46 | 109 | 8 | | | | | |
| Added Vol: | 393 | 257 | 3 | | 49 | 171 | 0 | | 0 | 94 | 5 | | 317 | 391 | 181 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 769 | 948 | 4 | | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | 189 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 769 | 948 | 4 | | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | 189 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 769 | 948 | 4 | | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | 189 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 769 | 948 | 4 | | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | 189 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.92 | 0.92 | 0.88 | | 0.93 | 0.93 | 0.83 | | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 2.00 | | 1.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1746 | 3492 | 3343 | | 1769 | 3538 | 1583 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.16 | 0.00 | | 0.01 | 0.42 | 0.07 | | 0.02 | 0.03 | 0.44 | | 0.21 | 0.14 | 0.12 | | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | | | | | |
| Green/Cycle: | 0.19 | 0.44 | 0.62 | | 0.10 | 0.36 | 0.36 | | 0.19 | 0.19 | 0.38 | | 0.17 | 0.17 | 0.28 | | | | | |
| Volume/Cap: | 1.18 | 0.37 | 0.00 | | 0.14 | 1.18 | 0.20 | | 0.11 | 0.16 | 1.18 | | 1.18 | 0.81 | 0.43 | | | | | |
| Uniform Del: | 52.6 | 24.2 | 9.6 | | 52.8 | 41.8 | 29.0 | | 43.9 | 44.3 | 40.5 | | 53.7 | 51.7 | 38.4 | | | | | |
| IncremntDel: | 95.8 | 0.1 | 0.0 | | 0.2 | 85.8 | 0.2 | | 0.0 | 0.1 | 89.0 | | 109.0 | 8.1 | 0.7 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 148.4 | 24.2 | 9.6 | | 53.0 | 128 | 29.1 | | 44.0 | 44.4 | 129.5 | | 162.7 | 59.8 | 39.1 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 148.4 | 24.2 | 9.6 | | 53.0 | 128 | 29.1 | | 44.0 | 44.4 | 129.5 | | 162.7 | 59.8 | 39.1 | | | | | |
| LOS by Move: | F | C | A | | D | F | C | | D | D | F | | F | E | D | | | | | |
| HCM2kAvgQ: | 26 | 9 | 0 | | 1 | 55 | 3 | | 1 | 2 | 52 | | 24 | 12 | 6 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.716
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 61 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | | 73 | 5 | 73 | | 130 | 1351 | 5 | | 20 | 553 | 67 | | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | | | | |
| Initial Bse: | 134 | 6 | 51 | | 76 | 5 | 76 | | 135 | 1405 | 5 | | 21 | 575 | 70 | | | | | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 6 | 99 | 0 | | 0 | 784 | 0 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1504 | 5 | | 21 | 1359 | 70 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1504 | 5 | | 21 | 1359 | 70 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1504 | 5 | | 21 | 1359 | 70 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 134 | 6 | 51 | | 76 | 5 | 80 | | 141 | 1504 | 5 | | 21 | 1359 | 70 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.62 | 0.62 | 0.62 | | 0.73 | 0.73 | 0.73 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | 0.92 | | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | | 0.47 | 0.03 | 0.50 | | 1.00 | 1.99 | 0.01 | | 1.00 | 1.90 | 0.10 | | | | | |
| Final Sat.: | 819 | 38 | 311 | | 658 | 45 | 692 | | 1769 | 3526 | 12 | | 1769 | 3342 | 171 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.12 | 0.12 | 0.12 | | 0.08 | 0.43 | 0.43 | | 0.01 | 0.41 | 0.41 | | | | | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.23 | 0.23 | 0.23 | | 0.11 | 0.62 | 0.62 | | 0.06 | 0.57 | 0.57 | | | | | |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | | 0.50 | 0.50 | 0.50 | | 0.72 | 0.69 | 0.69 | | 0.19 | 0.72 | 0.72 | | | | | |
| Uniform Del: | 42.7 | 42.7 | 42.7 | | 40.3 | 40.3 | 40.3 | | 51.5 | 15.2 | 15.2 | | 53.6 | 18.9 | 18.9 | | | | | |
| IncremntDel: | 8.9 | 8.9 | 8.9 | | 1.3 | 1.3 | 1.3 | | 11.8 | 0.9 | 0.9 | | 0.9 | 1.3 | 1.3 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 51.6 | 51.6 | 51.6 | | 41.6 | 41.6 | 41.6 | | 63.3 | 16.1 | 16.1 | | 54.5 | 20.1 | 20.1 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 51.6 | 51.6 | 51.6 | | 41.6 | 41.6 | 41.6 | | 63.3 | 16.1 | 16.1 | | 54.5 | 20.1 | 20.1 | | | | | |
| LOS by Move: | D | D | D | | D | D | D | | E | B | B | | D | C | C | | | | | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 6 | 6 | 6 | | 7 | 20 | 20 | | 1 | 21 | 21 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.696
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 58 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | | 5 | 5 | | 5 | 0 | 0 | | 5 | 5 |
| Lanes: | 0 | 0 | 0 | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 2 | 0 0 | 0 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | | 122 | 98 | 1457 | | 0 | 0 | 800 | | 22 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 0 | 0 | 0 | | 10 | 0 | | 127 | 102 | 1515 | | 0 | 0 | 832 | | 23 |
| Added Vol: | 0 | 0 | 0 | | 14 | 0 | | 10 | 10 | 91 | | 0 | 0 | 684 | | 104 |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 0 | 0 | 0 | | 24 | 0 | | 137 | 112 | 1606 | | 0 | 0 | 1516 | | 127 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 0 | 0 | 0 | | 24 | 0 | | 137 | 112 | 1606 | | 0 | 0 | 1516 | | 127 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 0 | 0 | 0 | | 24 | 0 | | 137 | 112 | 1606 | | 0 | 0 | 1516 | | 127 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 0 | 0 | 0 | | 24 | 0 | | 137 | 112 | 1606 | | 0 | 0 | 1516 | | 127 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | | 0.86 | 0.93 | 0.93 | | 1.00 | 1.00 | 0.92 | | 0.92 |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.15 | 0.00 | | 0.85 | 1.00 | 2.00 | | 0.00 | 0.00 | 1.85 | | 0.15 |
| Final Sat.: | 0 | 0 | 0 | | 248 | 0 | | 1389 | 1769 | 3538 | | 0 | 0 | 3225 | | 270 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.10 | 0.00 | | 0.10 | 0.06 | 0.45 | | 0.00 | 0.00 | 0.47 | | 0.47 |
| Crit Moves: | | | | | | | | **** | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.14 | 0.00 | | 0.14 | 0.09 | 0.77 | | 0.00 | 0.00 | 0.68 | | 0.68 |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.70 | 0.00 | | 0.70 | 0.70 | 0.59 | | 0.00 | 0.00 | 0.70 | | 0.70 |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 49.0 | 0.0 | | 49.0 | 52.9 | 6.0 | | 0.0 | 0.0 | 11.9 | | 11.9 |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 8.9 | 0.0 | | 8.9 | 12.5 | 0.4 | | 0.0 | 0.0 | 0.9 | | 0.9 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 1.00 | | 1.00 |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 57.9 | 0.0 | | 57.9 | 65.4 | 6.3 | | 0.0 | 0.0 | 12.8 | | 12.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 57.9 | 0.0 | | 57.9 | 65.4 | 6.3 | | 0.0 | 0.0 | 12.8 | | 12.8 |
| LOS by Move: | A | A | A | | E | A | | E | E | A | | A | A | B | | B |
| HCM2kAvgQ: | 0 | 0 | 0 | | 7 | 0 | | 7 | 5 | 13 | | 0 | 0 | 20 | | 20 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.600
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 47 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | | 0 | 0 | | 5 | 5 | 5 | | 5 | 0 |
| Lanes: | 1 | 0 | 1! | 0 0 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 1 | 1 | 0 | 2 | 0 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | | 0 | 0 | 1413 | | 204 | 73 | 888 | | 0 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 125 | 0 | 36 | | 0 | 0 | | 0 | 0 | 1470 | | 212 | 76 | 924 | | 0 |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | | 0 | 0 | 100 | | 11 | 0 | 694 | | 0 |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 129 | 0 | 36 | | 0 | 0 | | 0 | 0 | 1570 | | 223 | 76 | 1618 | | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 129 | 0 | 36 | | 0 | 0 | | 0 | 0 | 1570 | | 223 | 76 | 1618 | | 0 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 129 | 0 | 36 | | 0 | 0 | | 0 | 0 | 1570 | | 223 | 76 | 1618 | | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 129 | 0 | 36 | | 0 | 0 | | 0 | 0 | 1570 | | 223 | 76 | 1618 | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.93 | | 0.83 | 0.93 | 0.93 | | 1.00 |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 1.00 | 1.00 | 2.00 | | 0.00 |
| Final Sat.: | 2839 | 0 | 625 | | 0 | 0 | | 0 | 0 | 3538 | | 1583 | 1769 | 3538 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.44 | | 0.14 | 0.04 | 0.46 | | 0.00 |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.74 | | 0.74 | 0.07 | 0.81 | | 0.00 |
| Volume/Cap: | 0.47 | 0.00 | 0.60 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.60 | | 0.19 | 0.60 | 0.56 | | 0.00 |
| Uniform Del: | 51.2 | 0.0 | 51.9 | | 0.0 | 0.0 | | 0.0 | 0.0 | 7.3 | | 4.7 | 54.0 | 3.9 | | 0.0 |
| IncremntDel: | 1.0 | 0.0 | 3.6 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.4 | | 0.1 | 7.8 | 0.3 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.00 |
| Delay/Veh: | 52.2 | 0.0 | 55.6 | | 0.0 | 0.0 | | 0.0 | 0.0 | 7.7 | | 4.8 | 61.8 | 4.2 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 52.2 | 0.0 | 55.6 | | 0.0 | 0.0 | | 0.0 | 0.0 | 7.7 | | 4.8 | 61.8 | 4.2 | | 0.0 |
| LOS by Move: | D | A | E | | A | A | | A | A | A | | A | E | A | | A |
| HCM2kAvgQ: | 3 | 0 | 5 | | 0 | 0 | | 0 | 0 | 14 | | 2 | 4 | 11 | | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.992
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 44.9
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 258 | 177 | 57 | | 40 | 173 | 228 | | 336 | 1493 | 353 | | 106 | 1014 | 35 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 6 | 111 | 0 | | 0 | 699 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1604 | 353 | | 106 | 1713 | 35 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1604 | 353 | | 106 | 1713 | 35 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1604 | 353 | | 106 | 1713 | 35 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 258 | 177 | 57 | | 40 | 173 | 237 | | 342 | 1604 | 353 | | 106 | 1713 | 35 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.46 | 0.54 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4055 | 891 | | 1769 | 3456 | 71 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.09 | 0.04 | | 0.02 | 0.09 | 0.15 | | 0.19 | 0.40 | 0.40 | | 0.06 | 0.50 | 0.50 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.10 | 0.10 | 0.19 | | 0.09 | 0.09 | 0.29 | | 0.19 | 0.60 | 0.60 | | 0.09 | 0.50 | 0.50 | |
| Volume/Cap: | 0.79 | 0.99 | 0.19 | | 0.24 | 0.99 | 0.52 | | 0.99 | 0.66 | 0.66 | | 0.66 | 0.99 | 0.99 | |
| Uniform Del: | 53.1 | 54.2 | 41.1 | | 50.4 | 54.4 | 35.7 | | 48.2 | 15.7 | 15.7 | | 52.7 | 29.8 | 29.8 | |
| IncremntDel: | 11.8 | 65.1 | 0.3 | | 0.8 | 65.9 | 1.1 | | 46.3 | 0.5 | 0.5 | | 9.4 | 19.6 | 19.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 64.9 | 119 | 41.5 | | 51.2 | 120 | 36.8 | | 94.6 | 16.2 | 16.2 | | 62.1 | 49.4 | 49.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 64.9 | 119 | 41.5 | | 51.2 | 120 | 36.8 | | 94.6 | 16.2 | 16.2 | | 62.1 | 49.4 | 49.4 | |
| LOS by Move: | E | F | D | | D | F | D | | F | B | B | | E | D | D | |
| HCM2kAvgQ: | 7 | 11 | 2 | | 2 | 10 | 8 | | 18 | 18 | 18 | | 5 | 41 | 41 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.783
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 20.8
Optimal Cycle: 68 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 0 | 0 | 0 | | 433 | 0 | 56 | | 42 | 1493 | 0 | | 0 | 1103 | 265 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 64 | 0 | | 0 | 197 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1557 | 0 | | 0 | 1300 | 272 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1557 | 0 | | 0 | 1300 | 272 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1557 | 0 | | 0 | 1300 | 272 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 437 | 0 | 56 | | 42 | 1557 | 0 | | 0 | 1300 | 272 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.25 | 0.00 | 0.04 | | 0.02 | 0.44 | 0.00 | | 0.00 | 0.37 | 0.17 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.32 | 0.00 | 0.32 | | 0.07 | 0.56 | 0.00 | | 0.00 | 0.49 | 0.49 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.78 | 0.00 | 0.11 | | 0.32 | 0.78 | 0.00 | | 0.00 | 0.75 | 0.35 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 28.0 | 0.0 | 21.9 | | 39.5 | 15.4 | 0.0 | | 0.0 | 18.6 | 14.2 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 7.1 | 0.0 | 0.1 | | 1.4 | 2.1 | 0.0 | | 0.0 | 1.9 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 35.1 | 0.0 | 22.0 | | 40.9 | 17.5 | 0.0 | | 0.0 | 20.5 | 14.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 35.1 | 0.0 | 22.0 | | 40.9 | 17.5 | 0.0 | | 0.0 | 20.5 | 14.5 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | C | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 13 | 0 | 1 | | 1 | 19 | 0 | | 0 | 17 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 16.5
Optimal Cycle: 59 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | 122 | 5 | 31 | 11 | 1125 | 10 | 90 | 818 | 51 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 34 | 7 | 88 | 127 | 5 | 32 | 11 | 1170 | 10 | 94 | 851 | 53 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 0 | 197 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 34 | 7 | 88 | 127 | 5 | 32 | 11 | 1234 | 10 | 94 | 1048 | 53 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 34 | 7 | 88 | 127 | 5 | 32 | 11 | 1234 | 10 | 94 | 1048 | 53 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 34 | 7 | 88 | 127 | 5 | 32 | 11 | 1234 | 10 | 94 | 1048 | 53 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 34 | 7 | 88 | 127 | 5 | 32 | 11 | 1234 | 10 | 94 | 1048 | 53 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.47 | 0.84 | 0.84 | 0.54 | 0.54 | 0.83 | 0.93 | 0.93 | 0.93 | 0.93 | 0.97 | 0.97 | | | | |
| Lanes: | 1.00 | 0.08 | 0.92 | 0.96 | 0.04 | 1.00 | 1.00 | 1.98 | 0.02 | 1.00 | 0.95 | 0.05 | | | | |
| Final Sat.: | 896 | 122 | 1481 | 989 | 41 | 1583 | 1769 | 3505 | 30 | 1769 | 1760 | 89 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.06 | 0.06 | 0.13 | 0.13 | 0.02 | 0.01 | 0.35 | 0.35 | 0.05 | 0.60 | 0.60 | | | | |
| Crit Moves: | | | | | **** | | **** | | | | **** | | | | | |
| Green/Cycle: | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.04 | 0.67 | 0.67 | 0.10 | 0.74 | 0.74 | | | | |
| Volume/Cap: | 0.24 | 0.38 | 0.38 | 0.81 | 0.81 | 0.13 | 0.17 | 0.52 | 0.52 | 0.52 | 0.81 | 0.81 | | | | |
| Uniform Del: | 38.6 | 39.5 | 39.5 | 42.6 | 42.6 | 37.9 | 48.9 | 8.6 | 8.6 | 44.8 | 9.0 | 9.0 | | | | |
| IncremntDel: | 0.9 | 0.9 | 0.9 | 25.0 | 25.0 | 0.2 | 1.2 | 0.2 | 0.2 | 2.8 | 3.7 | 3.7 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 39.5 | 40.5 | 40.5 | 67.6 | 67.6 | 38.2 | 50.1 | 8.9 | 8.9 | 47.6 | 12.7 | 12.7 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 39.5 | 40.5 | 40.5 | 67.6 | 67.6 | 38.2 | 50.1 | 8.9 | 8.9 | 47.6 | 12.7 | 12.7 | | | | |
| LOS by Move: | D | D | D | E | E | D | D | A | A | D | B | B | | | | |
| HCM2kAvgQ: | 1 | 3 | 3 | 6 | 6 | 1 | 1 | 11 | 11 | 4 | 25 | 25 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.796
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 61 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1126 | 6 | | 5 | 827 | 113 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 64 | 0 | | 0 | 197 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1190 | 6 | | 5 | 1024 | 113 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1190 | 6 | | 5 | 1024 | 113 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1190 | 6 | | 5 | 1024 | 113 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 12 | 11 | 7 | | 96 | 6 | 36 | | 25 | 1190 | 6 | | 5 | 1024 | 113 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.16 | 0.98 | 0.98 | | 0.14 | 0.97 | 0.97 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.90 | 0.10 | |
| Final Sat.: | 655 | 601 | 382 | | 959 | 63 | 365 | | 313 | 1850 | 10 | | 266 | 1651 | 183 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.10 | 0.10 | 0.10 | | 0.08 | 0.64 | 0.64 | | 0.02 | 0.62 | 0.62 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.13 | 0.13 | 0.13 | | 0.13 | 0.13 | 0.13 | | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Volume/Cap: | 0.15 | 0.15 | 0.15 | | 0.80 | 0.80 | 0.80 | | 0.10 | 0.80 | 0.80 | | 0.02 | 0.77 | 0.77 | |
| Uniform Del: | 40.9 | 40.9 | 40.9 | | 44.6 | 44.6 | 44.6 | | 2.1 | 5.4 | 5.4 | | 2.0 | 5.1 | 5.1 | |
| IncremntDel: | 0.3 | 0.3 | 0.3 | | 22.0 | 22.0 | 22.0 | | 0.2 | 3.1 | 3.1 | | 0.0 | 2.5 | 2.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 41.3 | 41.3 | 41.3 | | 66.6 | 66.6 | 66.6 | | 2.3 | 8.5 | 8.5 | | 2.0 | 7.6 | 7.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.3 | 41.3 | 41.3 | | 66.6 | 66.6 | 66.6 | | 2.3 | 8.5 | 8.5 | | 2.0 | 7.6 | 7.6 | |
| LOS by Move: | D | D | D | | E | E | E | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 6 | | 0 | 22 | 22 | | 0 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.741
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 11.3
Optimal Cycle: 51 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | | 31 | 75 | 29 | | 30 | 4 | 4 | | 969 | 36 | 37 | | 832 | 17 |
| Growth Adj: | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 |
| Initial Bse: | 96 | | 32 | 78 | 30 | | 31 | 4 | 4 | | 1008 | 37 | 38 | | 865 | 18 |
| Added Vol: | 18 | | 0 | 7 | 0 | | 0 | 0 | 0 | | 57 | 22 | 24 | | 173 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 114 | | 32 | 85 | 30 | | 31 | 4 | 4 | | 1065 | 59 | 62 | | 1038 | 18 |
| User Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 114 | | 32 | 85 | 30 | | 31 | 4 | 4 | | 1065 | 59 | 62 | | 1038 | 18 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 114 | | 32 | 85 | 30 | | 31 | 4 | 4 | | 1065 | 59 | 62 | | 1038 | 18 |
| PCE Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 114 | | 32 | 85 | 30 | | 31 | 4 | 4 | | 1065 | 59 | 62 | | 1038 | 18 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 |
| Adjustment: | 0.72 | | 0.87 | 0.87 | 0.49 | | 0.96 | 0.96 | 0.21 | | 0.97 | 0.97 | 0.18 | | 0.98 | 0.98 |
| Lanes: | 1.00 | | 0.27 | 0.73 | 1.00 | | 0.88 | 0.12 | 1.00 | | 0.95 | 0.05 | 1.00 | | 0.98 | 0.02 |
| Final Sat.: | 1376 | | 456 | 1203 | 940 | | 1613 | 215 | 391 | | 1749 | 98 | 339 | | 1825 | 31 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | | 0.07 | 0.07 | 0.03 | | 0.02 | 0.02 | 0.01 | | 0.61 | 0.61 | 0.18 | | 0.57 | 0.57 |
| Crit Moves: | **** | | | | | | | | | | **** | | | | | |
| Green/Cycle: | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.82 | | 0.82 | 0.82 | 0.82 | | 0.82 | 0.82 |
| Volume/Cap: | 0.74 | | 0.63 | 0.63 | 0.29 | | 0.17 | 0.17 | 0.01 | | 0.74 | 0.74 | 0.22 | | 0.69 | 0.69 |
| Uniform Del: | 45.2 | | 44.6 | 44.6 | 42.8 | | 42.3 | 42.3 | 1.7 | | 4.3 | 4.3 | 2.0 | | 3.9 | 3.9 |
| IncremntDel: | 17.4 | | 7.0 | 7.0 | 1.5 | | 0.4 | 0.4 | 0.0 | | 2.0 | 2.0 | 0.4 | | 1.4 | 1.4 |
| InitQueuDel: | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Delay Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Delay/Veh: | 62.6 | | 51.6 | 51.6 | 44.3 | | 42.7 | 42.7 | 1.7 | | 6.2 | 6.2 | 2.5 | | 5.3 | 5.3 |
| User DelAdj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| AdjDel/Veh: | 62.6 | | 51.6 | 51.6 | 44.3 | | 42.7 | 42.7 | 1.7 | | 6.2 | 6.2 | 2.5 | | 5.3 | 5.3 |
| LOS by Move: | E | | D | D | D | | D | D | A | | A | A | A | | A | A |
| HCM2kAvgQ: | 5 | | 5 | 5 | 1 | | 1 | 1 | 0 | | 18 | 18 | 1 | | 15 | 15 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.386
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 169.2
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | | 438 | 491 | 477 | | 413 | 19 | 36 | | 170 | 158 | 382 | | 95 | 410 |
| Growth Adj: | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 |
| Initial Bse: | 101 | | 456 | 511 | 496 | | 430 | 20 | 37 | | 177 | 164 | 397 | | 99 | 426 |
| Added Vol: | 15 | | 8 | 29 | 18 | | 8 | 0 | 0 | | 32 | 24 | 104 | | 21 | 66 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 116 | | 464 | 540 | 514 | | 438 | 20 | 37 | | 209 | 188 | 501 | | 120 | 492 |
| User Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 116 | | 464 | 540 | 514 | | 438 | 20 | 37 | | 209 | 188 | 501 | | 120 | 492 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 116 | | 464 | 540 | 514 | | 438 | 20 | 37 | | 209 | 188 | 501 | | 120 | 492 |
| PCE Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 116 | | 464 | 540 | 514 | | 438 | 20 | 37 | | 209 | 188 | 501 | | 120 | 492 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 |
| Adjustment: | 0.93 | | 0.93 | 0.42 | 0.90 | | 0.90 | 0.90 | 0.93 | | 0.98 | 0.83 | 0.94 | | 0.94 | 0.83 |
| Lanes: | 1.00 | | 2.00 | 1.00 | 1.59 | | 1.35 | 0.06 | 1.00 | | 1.00 | 1.00 | 1.61 | | 0.39 | 1.00 |
| Final Sat.: | 1769 | | 3538 | 791 | 2727 | | 2321 | 105 | 1769 | | 1862 | 1583 | 2888 | | 690 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | | 0.13 | 0.68 | 0.19 | | 0.19 | 0.19 | 0.02 | | 0.11 | 0.12 | 0.17 | | 0.17 | 0.31 |
| Crit Moves: | | | | **** | **** | | | | | | | **** | | | | **** |
| Green/Cycle: | 0.49 | | 0.49 | 0.49 | 0.14 | | 0.14 | 0.14 | 0.09 | | 0.09 | 0.09 | 0.22 | | 0.22 | 0.22 |
| Volume/Cap: | 0.13 | | 0.27 | 1.39 | 1.39 | | 1.39 | 1.39 | 0.25 | | 1.31 | 1.39 | 0.77 | | 0.77 | 1.39 |
| Uniform Del: | 17.9 | | 19.3 | 33.0 | 56.2 | | 56.2 | 56.2 | 55.5 | | 59.4 | 59.4 | 47.3 | | 47.3 | 50.4 |
| IncremntDel: | 0.1 | | 0.1 | 188.9 | 182.4 | | 182 | 182.4 | 0.9 | | 175 | 212.5 | 4.7 | | 4.7 | 190.2 |
| InitQueuDel: | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Delay Adj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Delay/Veh: | 18.0 | | 19.4 | 221.9 | 238.5 | | 239 | 238.5 | 56.3 | | 235 | 271.9 | 52.0 | | 52.0 | 240.6 |
| User DelAdj: | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| AdjDel/Veh: | 18.0 | | 19.4 | 221.9 | 238.5 | | 239 | 238.5 | 56.3 | | 235 | 271.9 | 52.0 | | 52.0 | 240.6 |
| LOS by Move: | B | | B | F | F | | F | F | E | | F | F | D | | D | F |
| HCM2kAvgQ: | 2 | | 6 | 41 | 27 | | 27 | 27 | 2 | | 17 | 16 | 13 | | 13 | 38 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.419
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 192.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 392 | 1007 | 0 | 0 | 3628 | 132 | 62 | 0 | 1734 | 0 | 0 | 0 | | | | |
| Added Vol: | 4 | 105 | 0 | 0 | 396 | 98 | 12 | 0 | 11 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.22 | 0.00 | 0.00 | 0.79 | 0.15 | 0.02 | 0.00 | 0.42 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.08 | 0.64 | 0.00 | 0.00 | 0.56 | 0.56 | 0.29 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.42 | 0.34 | 0.00 | 0.00 | 1.42 | 0.26 | 0.07 | 0.00 | 1.42 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 68.9 | 12.5 | 0.0 | 0.0 | 33.2 | 17.2 | 38.2 | 0.0 | 52.9 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 208.4 | 0.1 | 0.0 | 0.0 | 191 | 0.2 | 0.0 | 0.0 | 193.4 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.0 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 277.3 | 12.6 | 0.0 | 0.0 | 224 | 17.3 | 38.2 | 0.0 | 246.4 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 277.3 | 12.6 | 0.0 | 0.0 | 224 | 17.3 | 38.2 | 0.0 | 246.4 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 19 | 8 | 0 | 0 | 119 | 5 | 1 | 0 | 55 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.705
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 55 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 0 | 0 | 0 | 125 | 0 | 103 | 21 | 1663 | 0 | 0 | 472 | 17 | | | | |
| Added Vol: | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 4 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 0 | 0 | 136 | 0 | 103 | 21 | 1675 | 0 | 0 | 570 | 21 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 136 | 0 | 103 | 21 | 1675 | 0 | 0 | 570 | 21 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 0 | 0 | 136 | 0 | 103 | 21 | 1675 | 0 | 0 | 570 | 21 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 136 | 0 | 103 | 21 | 1675 | 0 | 0 | 570 | 21 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.57 | 0.00 | 0.43 | 1.00 | 2.00 | 0.00 | 0.00 | 1.93 | 0.07 | | | | |
| Final Sat.: | 0 | 0 | 0 | 970 | 0 | 735 | 1769 | 3538 | 0 | 0 | 3397 | 123 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.14 | 0.01 | 0.47 | 0.00 | 0.00 | 0.17 | 0.17 | | | | |
| Crit Moves: | | | | **** | | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.20 | 0.17 | 0.67 | 0.00 | 0.00 | 0.50 | 0.50 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.70 | 0.07 | 0.70 | 0.00 | 0.00 | 0.34 | 0.34 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 31.7 | 0.0 | 31.7 | 29.3 | 8.7 | 0.0 | 0.0 | 12.9 | 12.9 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 6.6 | 0.0 | 6.6 | 0.1 | 1.0 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 38.3 | 0.0 | 38.3 | 29.4 | 9.7 | 0.0 | 0.0 | 13.0 | 13.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 38.3 | 0.0 | 38.3 | 29.4 | 9.7 | 0.0 | 0.0 | 13.0 | 13.0 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | A | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 15 | 0 | 0 | 5 | 5 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.672
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 16.0
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | 19 | 29 | 82 | 26 | 1579 | 19 | 18 | 527 | 13 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1642 | 20 | 19 | 548 | 14 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1654 | 20 | 19 | 646 | 14 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1654 | 20 | 19 | 646 | 14 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1654 | 20 | 19 | 646 | 14 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 36 | 32 | 12 | 20 | 30 | 85 | 27 | 1654 | 20 | 19 | 646 | 14 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.96 | 0.96 | 0.96 | 0.91 | 0.91 | 0.91 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.45 | 0.40 | 0.15 | 0.15 | 0.22 | 0.63 | 1.00 | 1.98 | 0.02 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 816 | 723 | 280 | 252 | 385 | 1089 | 1805 | 3560 | 43 | 1805 | 3525 | 74 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | 0.08 | 0.08 | 0.08 | 0.01 | 0.46 | 0.46 | 0.01 | 0.18 | 0.18 |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.07 | 0.06 | 0.06 | 0.11 | 0.11 | 0.11 | 0.15 | 0.66 | 0.66 | 0.05 | 0.56 | 0.56 |
| Volume/Cap: | 0.65 | 0.70 | 0.70 | 0.70 | 0.73 | 0.73 | 0.10 | 0.70 | 0.70 | 0.21 | 0.33 | 0.33 |
| Uniform Del: | 45.4 | 45.9 | 45.9 | 42.8 | 43.2 | 43.2 | 36.4 | 10.5 | 10.5 | 45.6 | 11.8 | 11.8 |
| IncremntDel: | 11.6 | 17.3 | 17.3 | 10.8 | 13.8 | 13.8 | 0.2 | 0.9 | 0.9 | 1.1 | 0.1 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 57.0 | 63.1 | 63.1 | 53.6 | 57.0 | 57.0 | 36.6 | 11.5 | 11.5 | 46.7 | 11.9 | 11.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 57.0 | 63.1 | 63.1 | 53.6 | 57.0 | 57.0 | 36.6 | 11.5 | 11.5 | 46.7 | 11.9 | 11.9 |
| LOS by Move: | E | E | E | D | E | E | D | B | B | D | B | B |
| HCM2kAvgQ: | 4 | 4 | 4 | 5 | 6 | 6 | 1 | 18 | 18 | 1 | 6 | 6 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.841
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 33.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 1 | 0 0 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | 94 | 262 | 110 | 93 | 1291 | 87 | 119 | 540 | 49 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1343 | 90 | 124 | 562 | 51 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1355 | 90 | 124 | 660 | 51 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1355 | 90 | 124 | 660 | 51 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1355 | 90 | 124 | 660 | 51 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 156 | 228 | 359 | 98 | 272 | 114 | 97 | 1355 | 90 | 124 | 660 | 51 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.87 | 0.13 | 1.00 | 1.86 | 0.14 |
| Final Sat.: | 1862 | 1862 | 1615 | 1805 | 1900 | 1615 | 1805 | 3354 | 224 | 1805 | 3314 | 256 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.12 | 0.22 | 0.05 | 0.14 | 0.07 | 0.05 | 0.40 | 0.40 | 0.07 | 0.20 | 0.20 |
| Crit Moves: | | | **** | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | 0.06 | 0.21 | 0.21 | 0.12 | 0.48 | 0.48 | 0.08 | 0.44 | 0.44 |
| Volume/Cap: | 0.69 | 0.46 | 0.84 | 0.84 | 0.69 | 0.34 | 0.45 | 0.84 | 0.84 | 0.84 | 0.45 | 0.45 |
| Uniform Del: | 42.2 | 30.9 | 34.8 | 46.3 | 36.7 | 33.8 | 41.0 | 22.7 | 22.7 | 45.3 | 19.4 | 19.4 |
| IncremntDel: | 3.7 | 0.4 | 14.0 | 39.5 | 5.2 | 0.6 | 1.5 | 3.9 | 3.9 | 33.1 | 0.2 | 0.2 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 45.9 | 31.3 | 48.8 | 85.8 | 41.9 | 34.4 | 42.5 | 26.6 | 26.6 | 78.4 | 19.6 | 19.6 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 45.9 | 31.3 | 48.8 | 85.8 | 41.9 | 34.4 | 42.5 | 26.6 | 26.6 | 78.4 | 19.6 | 19.6 |
| LOS by Move: | D | C | D | F | D | C | D | C | C | E | B | B |
| HCM2kAvgQ: | 6 | 6 | 13 | 5 | 9 | 3 | 3 | 23 | 23 | 6 | 8 | 8 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | 17 | 76 | 27 | 29 | 1264 | 78 | 44 | 793 | 17 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 81 | 113 | 61 | 18 | 79 | 28 | 30 | 1315 | 81 | 46 | 825 | 18 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 81 | 113 | 61 | 18 | 79 | 28 | 30 | 1327 | 81 | 46 | 923 | 18 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 81 | 113 | 61 | 18 | 79 | 28 | 30 | 1327 | 81 | 46 | 923 | 18 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 81 | 113 | 61 | 18 | 79 | 28 | 30 | 1327 | 81 | 46 | 923 | 18 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 81 | 113 | 61 | 18 | 79 | 28 | 30 | 1327 | 81 | 46 | 923 | 18 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.95 | 0.96 | 0.96 | 0.96 | 0.95 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.32 | 0.44 | 0.24 | 0.14 | 0.63 | 0.23 | 1.00 | 1.88 | 0.12 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 574 | 802 | 434 | 259 | 1159 | 412 | 1805 | 3371 | 206 | 1805 | 3532 | 68 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.14 | 0.14 | 0.07 | 0.07 | 0.07 | 0.02 | 0.39 | 0.39 | 0.03 | 0.26 | 0.26 |
| Crit Moves: | **** | | | | **** | | | **** | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | 0.09 | 0.09 | 0.09 | 0.10 | 0.55 | 0.55 | 0.05 | 0.50 | 0.50 |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.17 | 0.72 | 0.72 | 0.51 | 0.52 | 0.52 |
| Uniform Del: | 37.6 | 37.6 | 37.6 | 43.9 | 43.9 | 43.9 | 41.5 | 16.8 | 16.8 | 46.3 | 16.8 | 16.8 |
| IncremntDel: | 6.9 | 6.9 | 6.9 | 13.5 | 13.5 | 13.5 | 0.5 | 1.3 | 1.3 | 4.6 | 0.3 | 0.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 44.4 | 44.4 | 44.4 | 57.4 | 57.4 | 57.4 | 42.0 | 18.1 | 18.1 | 50.9 | 17.1 | 17.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 44.4 | 44.4 | 44.4 | 57.4 | 57.4 | 57.4 | 42.0 | 18.1 | 18.1 | 50.9 | 17.1 | 17.1 |
| LOS by Move: | D | D | D | E | E | E | D | B | B | D | B | B |
| HCM2kAvgQ: | 9 | 9 | 9 | 5 | 5 | 5 | 1 | 18 | 18 | 2 | 10 | 10 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.553
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.6
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | 11 | 68 | 22 | 42 | 1322 | 87 | 37 | 787 | 22 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 |
| Initial Bse: | 62 | 86 | 40 | 11 | 71 | 23 | 44 | 1375 | 90 | 38 | 818 | 23 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 62 | 86 | 40 | 11 | 71 | 23 | 44 | 1387 | 90 | 38 | 916 | 23 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 62 | 86 | 40 | 11 | 71 | 23 | 44 | 1387 | 90 | 38 | 916 | 23 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 62 | 86 | 40 | 11 | 71 | 23 | 44 | 1387 | 90 | 38 | 916 | 23 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 62 | 86 | 40 | 11 | 71 | 23 | 44 | 1387 | 90 | 38 | 916 | 23 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.86 | 0.86 | 0.86 | 0.94 | 0.94 | 0.94 | 0.28 | 0.94 | 0.94 | 0.14 | 0.95 | 0.95 |
| Lanes: | 0.33 | 0.46 | 0.21 | 0.11 | 0.67 | 0.22 | 1.00 | 1.88 | 0.12 | 1.00 | 1.95 | 0.05 |
| Final Sat.: | 539 | 746 | 342 | 195 | 1205 | 390 | 524 | 3358 | 219 | 260 | 3508 | 88 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.12 | 0.12 | 0.06 | 0.06 | 0.06 | 0.08 | 0.41 | 0.41 | 0.15 | 0.26 | 0.26 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| Volume/Cap: | 0.55 | 0.55 | 0.55 | 0.28 | 0.28 | 0.28 | 0.11 | 0.55 | 0.55 | 0.20 | 0.35 | 0.35 |
| Uniform Del: | 31.8 | 31.8 | 31.8 | 29.9 | 29.9 | 29.9 | 3.2 | 4.9 | 4.9 | 3.4 | 3.9 | 3.9 |
| IncremntDel: | 2.0 | 2.0 | 2.0 | 0.4 | 0.4 | 0.4 | 0.1 | 0.3 | 0.3 | 0.5 | 0.1 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 33.8 | 33.8 | 33.8 | 30.3 | 30.3 | 30.3 | 3.3 | 5.2 | 5.2 | 3.9 | 4.0 | 4.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 33.8 | 33.8 | 33.8 | 30.3 | 30.3 | 30.3 | 3.3 | 5.2 | 5.2 | 3.9 | 4.0 | 4.0 |
| LOS by Move: | C | C | C | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 5 | 5 | 5 | 3 | 3 | 3 | 0 | 10 | 10 | 1 | 5 | 5 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.879
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 37.1
Optimal Cycle: 98 Level Of Service: D

| Approach: | North Bound | | | | | | South Bound | | | | | | East Bound | | | | | | West Bound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | |
| Control: | Protected | | | | | | Protected | | | | | | Protected | | | | | | Protected | | | | | |
| Rights: | Include | | | | | | Include | | | | | | Include | | | | | | Include | | | | | |
| Min. Green: | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | |
| Lanes: | 1 | 1 | 0 | 1 | 1 | | 1 | 0 | 1 | 0 | 1 | | 1 | 0 | 1 | 1 | 0 | | 2 | 0 | 1 | 1 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | | 599 | | | 32 | 175 | | 224 | | | 217 | 784 | | 540 | | | 115 | 663 | | 173 | | |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | | | 1.04 | 1.04 | | 1.04 | | | 1.04 | 1.04 | | 1.04 | | | 1.04 | 1.04 | | 1.04 | | |
| Initial Bse: | 328 | 504 | | 623 | | | 33 | 182 | | 233 | | | 226 | 815 | | 562 | | | 120 | 690 | | 180 | | |
| Added Vol: | 0 | 0 | | 7 | | | 0 | 0 | | 0 | | | 0 | 5 | | 0 | | | 0 | 98 | | 0 | | |
| PasserByVol: | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | |
| Initial Fut: | 328 | 504 | | 630 | | | 33 | 182 | | 233 | | | 226 | 820 | | 562 | | | 120 | 788 | | 180 | | |
| User Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| PHF Volume: | 328 | 504 | | 630 | | | 33 | 182 | | 233 | | | 226 | 820 | | 562 | | | 120 | 788 | | 180 | | |
| Reduct Vol: | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | |
| Reduced Vol: | 328 | 504 | | 630 | | | 33 | 182 | | 233 | | | 226 | 820 | | 562 | | | 120 | 788 | | 180 | | |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| FinalVolume: | 328 | 504 | | 630 | | | 33 | 182 | | 233 | | | 226 | 820 | | 562 | | | 120 | 788 | | 180 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | | | 1900 | 1900 | | 1900 | | | 1900 | 1900 | | 1900 | | | 1900 | 1900 | | 1900 | | |
| Adjustment: | 0.88 | 0.88 | | 0.88 | | | 0.95 | 1.00 | | 0.85 | | | 0.95 | 0.89 | | 0.89 | | | 0.92 | 0.92 | | 0.92 | | |
| Lanes: | 1.00 | 1.33 | | 1.67 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.19 | | 0.81 | | | 2.00 | 1.63 | | 0.37 | | |
| Final Sat.: | 1669 | 2227 | | 2781 | | | 1805 | 1900 | | 1615 | | | 1805 | 2012 | | 1378 | | | 3502 | 2856 | | 653 | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.23 | | 0.23 | | | 0.02 | 0.10 | | 0.14 | | | 0.13 | 0.41 | | 0.41 | | | 0.03 | 0.28 | | 0.28 | | |
| Crit Moves: | **** | | | | | | | | | **** | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.22 | 0.31 | | 0.31 | | | 0.07 | 0.16 | | 0.16 | | | 0.16 | 0.46 | | 0.46 | | | 0.05 | 0.35 | | 0.35 | | |
| Volume/Cap: | 0.89 | 0.72 | | 0.72 | | | 0.27 | 0.59 | | 0.89 | | | 0.79 | 0.89 | | 0.89 | | | 0.68 | 0.79 | | 0.79 | | |
| Uniform Del: | 37.8 | 30.5 | | 30.5 | | | 44.1 | 38.8 | | 41.0 | | | 40.5 | 24.8 | | 24.8 | | | 46.7 | 29.2 | | 29.2 | | |
| IncremntDel: | 6.5 | 1.3 | | 1.3 | | | 1.2 | 3.1 | | 29.1 | | | 13.7 | 6.8 | | 6.8 | | | 10.6 | 3.5 | | 3.5 | | |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| Delay/Veh: | 44.3 | 31.8 | | 31.8 | | | 45.3 | 41.9 | | 70.1 | | | 54.2 | 31.7 | | 31.7 | | | 57.3 | 32.8 | | 32.8 | | |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| AdjDel/Veh: | 44.3 | 31.8 | | 31.8 | | | 45.3 | 41.9 | | 70.1 | | | 54.2 | 31.7 | | 31.7 | | | 57.3 | 32.8 | | 32.8 | | |
| LOS by Move: | D | C | | C | | | D | D | | E | | | D | C | | C | | | E | C | | C | | |
| HCM2kAvgQ: | 14 | 12 | | 12 | | | 1 | 6 | | 10 | | | 9 | 24 | | 24 | | | 3 | 16 | | 16 | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.487
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 82 Level Of Service: C

| Approach: | North Bound | | | | | | South Bound | | | | | | East Bound | | | | | | West Bound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | |
| Control: | Protected | | | | | | Protected | | | | | | Protected | | | | | | Protected | | | | | |
| Rights: | Include | | | | | | Include | | | | | | Include | | | | | | Include | | | | | |
| Min. Green: | 0 | | 32 | | 32 | | 0 | | 32 | | 0 | | 28 | | 0 | | 28 | | 0 | | 0 | | 18 | |
| Lanes: | 0 | 0 | 2 | 1 | 0 | | 0 | 0 | 2 | 0 | 0 | | 2 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | 0 | 1 | |
| Volume Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | | 19 | | | 0 | 783 | | 0 | | | 765 | | 0 | | 277 | | 0 | | 0 | | 16 | |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | | | 1.04 | 1.04 | | 1.04 | | | 1.04 | 1.04 | | 1.04 | | | 1.04 | 1.04 | | 1.04 | | |
| Initial Bse: | 0 | 834 | | 20 | | | 0 | 814 | | 0 | | | 796 | | 0 | | 288 | | 0 | | 0 | | 17 | |
| Added Vol: | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 7 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| PasserByVol: | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Initial Fut: | 0 | 834 | | 20 | | | 0 | 814 | | 0 | | | 803 | | 0 | | 288 | | 0 | | 0 | | 17 | |
| User Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| PHF Volume: | 0 | 834 | | 20 | | | 0 | 814 | | 0 | | | 803 | | 0 | | 288 | | 0 | | 0 | | 17 | |
| Reduct Vol: | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Reduced Vol: | 0 | 834 | | 20 | | | 0 | 814 | | 0 | | | 803 | | 0 | | 288 | | 0 | | 0 | | 17 | |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| FinalVolume: | 0 | 834 | | 20 | | | 0 | 814 | | 0 | | | 803 | | 0 | | 288 | | 0 | | 0 | | 17 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | | | 1900 | 1900 | | 1900 | | | 1900 | 1900 | | 1900 | | | 1900 | 1900 | | 1900 | | |
| Adjustment: | 1.00 | 0.91 | | 0.91 | | | 1.00 | 0.95 | | 1.00 | | | 0.92 | 1.00 | | 0.85 | | | 1.00 | 1.00 | | 0.87 | | |
| Lanes: | 0.00 | 2.93 | | 0.07 | | | 0.00 | 2.00 | | 0.00 | | | 2.00 | 0.00 | | 1.00 | | | 0.00 | 0.00 | | 1.00 | | |
| Final Sat.: | 0 | 5052 | | 120 | | | 0 | 3610 | | 0 | | | 3502 | | 0 | | 1615 | | 0 | | 0 | | 1644 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | | 0.17 | | | 0.00 | 0.23 | | 0.00 | | | 0.23 | 0.00 | | 0.18 | | | 0.00 | 0.00 | | 0.01 | | |
| Crit Moves: | **** | | | | | | | **** | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.37 | | 0.37 | | | 0.00 | 0.37 | | 0.00 | | | 0.38 | 0.00 | | 0.58 | | | 0.00 | 0.00 | | 0.20 | | |
| Volume/Cap: | 0.00 | 0.44 | | 0.44 | | | 0.00 | 0.60 | | 0.00 | | | 0.60 | 0.00 | | 0.31 | | | 0.00 | 0.00 | | 0.05 | | |
| Uniform Del: | 0.0 | 21.1 | | 21.1 | | | 0.0 | 22.7 | | 0.0 | | | 22.4 | 0.0 | | 9.6 | | | 0.0 | 0.0 | | 29.1 | | |
| IncremntDel: | 0.0 | 0.2 | | 0.2 | | | 0.0 | 0.8 | | 0.0 | | | 0.8 | 0.0 | | 0.2 | | | 0.0 | 0.0 | | 0.1 | | |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | | 0.0 | | |
| Delay Adj: | 0.00 | 1.00 | | 1.00 | | | 0.00 | 1.00 | | 0.00 | | | 1.00 | 0.00 | | 1.00 | | | 0.00 | 0.00 | | 1.00 | | |
| Delay/Veh: | 0.0 | 21.2 | | 21.2 | | | 0.0 | 23.5 | | 0.0 | | | 23.2 | 0.0 | | 9.8 | | | 0.0 | 0.0 | | 29.2 | | |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | | 1.00 | 1.00 | | 1.00 | | |
| AdjDel/Veh: | 0.0 | 21.2 | | 21.2 | | | 0.0 | 23.5 | | 0.0 | | | 23.2 | 0.0 | | 9.8 | | | 0.0 | 0.0 | | 29.2 | | |
| LOS by Move: | A | C | | C | | | A | C | | A | | | C | A | | A | | | A | A | | C | | |
| HCM2kAvgQ: | 0 | 7 | | 7 | | | 0 | 10 | | 0 | | | 10 | 0 | | 4 | | | 0 | 0 | | 0 | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.545
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 151 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | | 18 | 18 | 0 | | 0 | 0 | 0 | | 39 | 57 | 21 | | 64 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | 388 | 487 | 927 | | | 0 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | 1.04 |
| Initial Bse: | 317 | | 1 | 457 | 0 | | 0 | 0 | 1447 | 404 | 506 | 964 | | | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | 16 | 54 | 56 | | | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Initial Fut: | 317 | | 1 | 457 | 0 | | 0 | 0 | 1452 | 420 | 560 | 1020 | | | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 317 | | 1 | 457 | 0 | | 0 | 0 | 1452 | 420 | 560 | 1020 | | | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Reduced Vol: | 317 | | 1 | 457 | 0 | | 0 | 0 | 1452 | 420 | 560 | 1020 | | | | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 317 | | 1 | 457 | 0 | | 0 | 0 | 1452 | 420 | 560 | 1020 | | | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | 1.00 | | | 1.00 |
| Lanes: | 1.41 | 0.01 | | 1.58 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | | | 0.00 |
| Final Sat.: | 2292 | | 4 | 2585 | 0 | | 0 | 0 | 3610 | 2842 | 3502 | 3610 | | | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.24 | | 0.18 | 0.00 | 0.00 | | 0.00 | 0.40 | 0.15 | 0.16 | 0.28 | 0.00 | | | |
| Crit Moves: | | **** | | | | | | | | | | **** | | | | |
| Green/Cycle: | 0.20 | 0.20 | | 0.20 | 0.00 | 0.00 | | 0.00 | 0.43 | 0.43 | 0.32 | 0.76 | 0.00 | | | |
| Volume/Cap: | 0.69 | 1.19 | | 0.88 | 0.00 | 0.00 | | 0.00 | 0.93 | 0.34 | 0.50 | 0.37 | 0.00 | | | |
| Uniform Del: | 33.4 | 36.0 | | 35.0 | 0.0 | 0.0 | | 0.0 | 24.2 | 17.0 | 24.6 | 3.7 | 0.0 | | | |
| IncremntDel: | 1.9 | 101 | | 10.5 | 0.0 | 0.0 | | 0.0 | 10.0 | 0.2 | 0.3 | 0.1 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | |
| Delay/Veh: | 35.3 | 137 | | 45.5 | 0.0 | 0.0 | | 0.0 | 34.2 | 17.1 | 25.0 | 3.8 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 35.3 | 137 | | 45.5 | 0.0 | 0.0 | | 0.0 | 34.2 | 17.1 | 25.0 | 3.8 | 0.0 | | | |
| LOS by Move: | D | F | | D | A | A | | A | C | B | C | A | A | | | |
| HCM2kAvgQ: | 7 | 22 | | 11 | 0 | 0 | | 0 | 25 | 4 | 7 | 5 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.901
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 47.3
Optimal Cycle: 113 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | 809 | | 9 | 274 | 800 | | 327 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | 1.04 |
| Initial Bse: | 17 | | 90 | 285 | 636 | | 124 | 35 | 29 | 841 | | 9 | 285 | 832 | | 340 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 22 | | 0 | 0 | 56 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 17 | | 90 | 285 | 636 | | 124 | 35 | 29 | 863 | | 9 | 285 | 888 | | 340 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 17 | | 90 | 285 | 636 | | 124 | 35 | 29 | 863 | | 9 | 285 | 888 | | 340 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 17 | | 90 | 285 | 636 | | 124 | 35 | 29 | 863 | | 9 | 285 | 888 | | 340 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 17 | | 90 | 285 | 636 | | 124 | 35 | 29 | 863 | | 9 | 285 | 888 | | 340 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.97 | | 0.97 | 0.95 | 0.95 | 0.95 | 0.95 | 0.85 | | | |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.78 | | 0.22 | 1.00 | 1.98 | 0.02 | 1.00 | 2.00 | | | 1.00 |
| Final Sat.: | 73 | 395 | | 1243 | 3502 | 1429 | | 408 | 1805 | 3564 | | 39 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.23 | | 0.23 | 0.18 | 0.09 | | 0.09 | 0.02 | 0.24 | | 0.24 | 0.16 | 0.25 | | 0.21 |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.33 | 0.25 | | 0.25 | 0.20 | 0.13 | | 0.13 | 0.07 | 0.27 | | 0.27 | 0.18 | 0.37 | | 0.37 |
| Volume/Cap: | 0.69 | 0.90 | | 0.90 | 0.90 | 0.69 | | 0.69 | 0.23 | 0.90 | | 0.90 | 0.90 | 0.66 | | 0.56 |
| Uniform Del: | 31.9 | 39.7 | | 39.7 | 42.8 | 46.1 | | 46.1 | 48.4 | 38.8 | | 38.8 | 44.4 | 28.5 | | 27.2 |
| IncremntDel: | 3.7 | 21.4 | | 21.4 | 14.7 | 8.8 | | 8.8 | 1.0 | 11.4 | | 11.4 | 27.2 | 1.2 | | 1.2 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 35.6 | 61.1 | | 61.1 | 57.5 | 54.9 | | 54.9 | 49.4 | 50.2 | | 50.2 | 71.6 | 29.7 | | 28.5 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 35.6 | 61.1 | | 61.1 | 57.5 | 54.9 | | 54.9 | 49.4 | 50.2 | | 50.2 | 71.6 | 29.7 | | 28.5 |
| LOS by Move: | D | E | | E | E | D | | D | D | D | | D | E | C | | C |
| HCM2kAvgQ: | 12 | 16 | | 16 | 14 | 7 | | 7 | 1 | 19 | | 19 | 13 | 14 | | 9 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 34.4
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | | 82 | 384 | 76 | | 59 | 328 | 23 | | 71 | 442 | 88 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 31 | 392 | 89 | | 85 | 399 | 79 | | 61 | 341 | 24 | | 74 | 460 | 92 | |
| Added Vol: | 0 | 37 | 5 | | 16 | 96 | 23 | | 3 | 1 | 0 | | 37 | 7 | 12 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 31 | 429 | 94 | | 101 | 495 | 102 | | 64 | 342 | 24 | | 111 | 467 | 104 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 31 | 429 | 94 | | 101 | 495 | 102 | | 64 | 342 | 24 | | 111 | 467 | 104 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 31 | 429 | 94 | | 101 | 495 | 102 | | 64 | 342 | 24 | | 111 | 467 | 104 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 31 | 429 | 94 | | 101 | 495 | 102 | | 64 | 342 | 24 | | 111 | 467 | 104 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.92 | 0.92 | |
| Lanes: | 0.11 | 1.55 | 0.34 | | 0.29 | 1.42 | 0.29 | | 1.00 | 1.87 | 0.13 | | 1.00 | 1.64 | 0.36 | |
| Final Sat.: | 197 | 2714 | 597 | | 508 | 2486 | 512 | | 1805 | 3340 | 234 | | 1805 | 2875 | 638 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.20 | 0.20 | 0.20 | | 0.04 | 0.10 | 0.10 | | 0.06 | 0.16 | 0.16 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.32 | 0.32 | 0.32 | | 0.06 | 0.20 | 0.20 | | 0.12 | 0.26 | 0.26 | |
| Volume/Cap: | 0.62 | 0.62 | 0.62 | | 0.62 | 0.62 | 0.62 | | 0.62 | 0.52 | 0.52 | | 0.52 | 0.62 | 0.62 | |
| Uniform Del: | 33.1 | 33.1 | 33.1 | | 28.9 | 28.9 | 28.9 | | 46.1 | 35.8 | 35.8 | | 41.4 | 32.7 | 32.7 | |
| IncremntDel: | 1.4 | 1.4 | 1.4 | | 1.1 | 1.1 | 1.1 | | 11.4 | 0.7 | 0.7 | | 2.2 | 1.4 | 1.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.5 | 34.5 | 34.5 | | 30.0 | 30.0 | 30.0 | | 57.4 | 36.5 | 36.5 | | 43.5 | 34.0 | 34.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.5 | 34.5 | 34.5 | | 30.0 | 30.0 | 30.0 | | 57.4 | 36.5 | 36.5 | | 43.5 | 34.0 | 34.0 | |
| LOS by Move: | C | C | C | | C | C | C | | E | D | D | | D | C | C | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 10 | 10 | 10 | | 3 | 6 | 6 | | 4 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.118
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 81.6
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 1 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | | 0 | 2235 | 16 | | 334 | 0 | 76 | | 0 | 0 | 0 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 10 | 969 | 0 | | 0 | 2324 | 17 | | 347 | 0 | 79 | | 0 | 0 | 0 | |
| Added Vol: | 38 | 363 | 0 | | 0 | 53 | 0 | | 617 | 0 | 86 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 48 | 1332 | 0 | | 0 | 2377 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 48 | 1332 | 0 | | 0 | 2377 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 48 | 1332 | 0 | | 0 | 2377 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 48 | 1332 | 0 | | 0 | 2377 | 17 | | 964 | 0 | 165 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.26 | 0.00 | | 0.00 | 0.47 | 0.01 | | 0.55 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.45 | 0.00 | | 0.00 | 0.41 | 0.41 | | 0.48 | 0.00 | 0.48 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.71 | 0.58 | 0.00 | | 0.00 | 1.14 | 0.03 | | 1.14 | 0.00 | 0.22 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 61.8 | 26.6 | 0.0 | | 0.0 | 38.2 | 22.7 | | 33.8 | 0.0 | 19.6 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 29.5 | 0.4 | 0.0 | | 0.0 | 67.3 | 0.0 | | 75.2 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 91.3 | 27.0 | 0.0 | | 0.0 | 106 | 22.7 | | 109.0 | 0.0 | 19.7 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 91.3 | 27.0 | 0.0 | | 0.0 | 106 | 22.7 | | 109.0 | 0.0 | 19.7 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | C | A | | A | F | C | | F | A | B | | A | A | A | |
| HCM2kAvgQ: | 3 | 14 | 0 | | 0 | 50 | 0 | | 55 | 0 | 4 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.717
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 56 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | |
| Initial Bse: | 15 | 814 | 0 | | 0 | 2211 | 166 | 198 | 0 | 193 | 0 | 0 | 0 | | | |
| Added Vol: | 38 | 400 | 0 | | 0 | 135 | 3 | 1 | 0 | 86 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 53 | 1214 | 0 | | 0 | 2346 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 53 | 1214 | 0 | | 0 | 2346 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 53 | 1214 | 0 | | 0 | 2346 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 53 | 1214 | 0 | | 0 | 2346 | 169 | 199 | 0 | 279 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.24 | 0.00 | | 0.00 | 0.46 | 0.11 | 0.11 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.04 | 0.68 | 0.00 | | 0.00 | 0.64 | 0.64 | 0.25 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.72 | 0.35 | 0.00 | | 0.00 | 0.72 | 0.17 | 0.46 | 0.00 | 0.72 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 61.6 | 8.5 | 0.0 | | 0.0 | 15.4 | 9.3 | 41.6 | 0.0 | 44.9 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 28.7 | 0.1 | 0.0 | | 0.0 | 0.8 | 0.1 | 0.8 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 90.3 | 8.6 | 0.0 | | 0.0 | 16.1 | 9.3 | 42.4 | 0.0 | 51.2 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 90.3 | 8.6 | 0.0 | | 0.0 | 16.1 | 9.3 | 42.4 | 0.0 | 51.2 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | F | A | A | | A | B | A | D | A | D | A | A | A | | | |
| HCM2kAvgQ: | 3 | 7 | 0 | | 0 | 23 | 3 | 7 | 0 | 11 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.764
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 26.7
Optimal Cycle: 44 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | |
| Initial Bse: | 506 | 589 | 0 | | 0 | 371 | 96 | 267 | 0 | 733 | 0 | 0 | 0 | | | |
| Added Vol: | 14 | 58 | 0 | | 0 | 21 | 6 | 3 | 0 | 3 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 520 | 647 | 0 | | 0 | 392 | 102 | 270 | 0 | 736 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 520 | 647 | 0 | | 0 | 392 | 102 | 270 | 0 | 736 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 520 | 647 | 0 | | 0 | 392 | 102 | 270 | 0 | 736 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 520 | 647 | 0 | | 0 | 392 | 102 | 270 | 0 | 736 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1437 | 373 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.29 | 0.35 | 0.00 | | 0.00 | 0.27 | 0.27 | 0.15 | 0.00 | 0.47 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.39 | 0.74 | 0.00 | | 0.00 | 0.36 | 0.36 | 0.22 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.76 | 0.47 | 0.00 | | 0.00 | 0.76 | 0.76 | 0.68 | 0.00 | 0.76 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 32.1 | 6.1 | 0.0 | | 0.0 | 34.1 | 34.1 | 42.7 | 0.0 | 17.1 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 5.1 | 0.3 | 0.0 | | 0.0 | 5.4 | 5.4 | 4.8 | 0.0 | 3.7 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 37.2 | 6.3 | 0.0 | | 0.0 | 39.4 | 39.4 | 47.5 | 0.0 | 20.8 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 37.2 | 6.3 | 0.0 | | 0.0 | 39.4 | 39.4 | 47.5 | 0.0 | 20.8 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | D | D | D | A | C | A | A | A | | | |
| HCM2kAvgQ: | 18 | 9 | 0 | | 0 | 17 | 17 | 10 | 0 | 21 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.653
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 29.2
Optimal Cycle: 31 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 0 | 2 0 | 1 | | 1 0 | 2 0 | 1 | | 1 0 | 0 1 | 0 | | 0 1 | 0 0 | 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 51 | 791 | 132 | | 370 | 653 | 37 | | 78 | 79 | 64 | | 76 | 8 | 277 | |
| Added Vol: | 0 | 68 | 0 | | 2 | 23 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 51 | 859 | 132 | | 372 | 676 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 51 | 859 | 132 | | 372 | 676 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 51 | 859 | 132 | | 372 | 676 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 51 | 859 | 132 | | 372 | 676 | 37 | | 78 | 79 | 64 | | 76 | 8 | 282 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.63 | 0.91 | 0.91 | | 0.64 | 0.64 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1188 | 957 | 781 | | 1091 | 120 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.24 | 0.08 | | 0.21 | 0.19 | 0.02 | | 0.07 | 0.08 | 0.08 | | 0.07 | 0.07 | 0.18 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.10 | 0.37 | 0.37 | | 0.32 | 0.59 | 0.59 | | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | |
| Volume/Cap: | 0.28 | 0.65 | 0.22 | | 0.65 | 0.32 | 0.04 | | 0.24 | 0.30 | 0.30 | | 0.26 | 0.26 | 0.65 | |
| Uniform Del: | 49.7 | 31.3 | 25.8 | | 34.9 | 12.4 | 10.3 | | 34.0 | 34.6 | 34.6 | | 34.1 | 34.1 | 38.6 | |
| IncremntDel: | 0.8 | 1.2 | 0.2 | | 2.7 | 0.1 | 0.0 | | 0.4 | 0.4 | 0.4 | | 0.4 | 0.4 | 3.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.5 | 32.4 | 26.0 | | 37.6 | 12.5 | 10.3 | | 34.4 | 35.0 | 35.0 | | 34.5 | 34.5 | 42.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.5 | 32.4 | 26.0 | | 37.6 | 12.5 | 10.3 | | 34.4 | 35.0 | 35.0 | | 34.5 | 34.5 | 42.2 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | D | |
| HCM2kAvgQ: | 2 | 14 | 3 | | 12 | 6 | 1 | | 2 | 4 | 4 | | 3 | 3 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.791
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 41.0
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 1 | 0 1 | 0 | | 0 1 | 0 1 | 0 | | 1 0 | 1! 0 | 0 | | 0 0 | 1! 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 93 | 475 | 25 | | 25 | 528 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| Added Vol: | 0 | 53 | 0 | | 0 | 136 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 93 | 528 | 25 | | 25 | 664 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 93 | 528 | 25 | | 25 | 664 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 93 | 528 | 25 | | 25 | 664 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 93 | 528 | 25 | | 25 | 664 | 170 | | 436 | 140 | 81 | | 7 | 57 | 12 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.55 | 0.39 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 511 | 2915 | 138 | | 102 | 2706 | 691 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.25 | 0.25 | 0.25 | | 0.16 | 0.24 | 0.24 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | **** | | | | **** | | | | | | **** | | | **** | | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.31 | 0.31 | 0.31 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.79 | 0.79 | 0.79 | | 0.79 | 0.79 | 0.79 | | 0.52 | 0.79 | 0.79 | | 0.79 | 0.79 | 0.79 | |
| Uniform Del: | 39.9 | 39.9 | 39.9 | | 34.7 | 34.7 | 34.7 | | 31.4 | 34.8 | 34.8 | | 51.5 | 51.5 | 51.5 | |
| IncremntDel: | 5.3 | 5.3 | 5.3 | | 4.0 | 4.0 | 4.0 | | 0.4 | 5.2 | 5.2 | | 34.2 | 34.2 | 34.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 45.2 | 45.2 | 45.2 | | 38.7 | 38.7 | 38.7 | | 31.8 | 40.0 | 40.0 | | 85.7 | 85.7 | 85.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 45.2 | 45.2 | 45.2 | | 38.7 | 38.7 | 38.7 | | 31.8 | 40.0 | 40.0 | | 85.7 | 85.7 | 85.7 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 13 | 13 | 13 | | 16 | 16 | 16 | | 8 | 15 | 15 | | 4 | 4 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.574 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.4 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 0 | 736 | 0 | 0 | 2399 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Added Vol: | 0 | 438 | 0 | 0 | 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 1174 | 0 | 0 | 2620 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 1174 | 0 | 0 | 2620 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 1174 | 0 | 0 | 2620 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 1174 | 0 | 0 | 2620 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.23 | 0.00 | 0.00 | 0.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.00 | 0.26 | 0.00 | 0.00 | 0.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 0.0 | 0.9 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 0.0 | 1.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 1.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | | | | |
| HCM2kAvgQ: | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2018 East Campus Only AM |
| Command: | Near Term II No Project AM |
| Volume: | Near Term II No Project AM |
| Geometry: | Near Term II No Project AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term II No Project AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term II No Project AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 23.1 | 0.790 | C | 23.4 | 0.829 | + 0.374 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.2 | 0.657 | D | 46.7 | 1.075 | +30.480 |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 22.5 | 0.886 | C | 25.6 | 0.910 | + 3.175 |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 30.8 | 0.845 | C | 26.6 | 0.869 | -4.248 |
| # 5 Bohannon/ Florence & Marsh Rd. | B | 19.9 | 0.582 | B | 15.1 | 0.602 | -4.804 |
| # 6 Bay Rd. & Marsh Rd. | B | 16.7 | 0.603 | B | 16.7 | 0.691 | -0.002 |
| # 7 Middlefield at Marsh (Town of | C | 27.1 | 0.628 | C | 26.9 | 0.754 | -0.194 |
| # 8 Bayfront Exp. & Willow Rd. | C | 27.8 | 0.627 | D | 46.1 | 0.900 | +18.223 |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.1 | 0.575 | C | 20.7 | 0.602 | -2.412 |
| # 10 Ivy Dr. & Willow Rd. | B | 18.2 | 0.532 | C | 22.9 | 0.649 | + 4.768 |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.1 | 0.477 | B | 13.4 | 0.617 | -1.643 |
| # 12 Newbridge St. & Willow Rd. | D | 51.0 | 0.929 | D | 52.2 | 0.963 | + 1.121 |
| # 13 Bay Rd. & Willow Rd. | C | 20.4 | 0.714 | C | 20.5 | 0.785 | + 0.104 |
| # 14 Durham St. & Willow Rd. | C | 27.5 | 0.734 | B | 12.9 | 0.764 | -14.559 |
| # 15 Coleman Ave. & Willow Rd. | B | 13.6 | 0.735 | B | 15.9 | 0.845 | + 2.339 |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.5 | 0.682 | B | 16.5 | 0.817 | + 2.041 |
| # 17 Middlefield Rd. & Willow Rd. | F | 105.0 | 0.974 | F | 107.5 | 1.161 | + 2.504 |
| # 18 Bayfront Exp. & University Ave | C | 30.1 | 0.828 | C | 31.8 | 0.857 | + 1.732 |
| # 19 O'Brien Dr. & University Ave. | A | 6.5 | 0.563 | A | 6.4 | 0.571 | -0.133 |
| # 20 University & Kavanaugh | B | 14.0 | 0.580 | B | 13.7 | 0.582 | -0.259 |
| # 21 University & Bay | C | 27.9 | 0.660 | C | 27.4 | 0.662 | -0.474 |
| # 22 University & Runnymede | C | 20.7 | 0.645 | C | 20.5 | 0.648 | -0.229 |
| # 23 University & Bell | A | 7.7 | 0.253 | A | 7.2 | 0.284 | -0.440 |
| # 24 University & Donohoe | D | 42.1 | 0.952 | D | 43.4 | 0.965 | + 1.356 |
| # 25 NB 101 & Donohoe St | B | 9.0 | 0.393 | B | 9.2 | 0.411 | + 0.155 |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 17.4 | 0.661 | B | 17.7 | 0.664 | + 0.346 D/V |
| # 27 University Ave. & Woodland | D | 41.3 | 0.917 | D | 41.5 | 0.921 | + 0.280 D/V |
| # 28 Middlefield Rd. & University A | D | 35.3 | 0.755 | D | 40.7 | 0.836 | + 5.471 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.4 | 0.601 | B | 17.2 | 0.700 | + 9.780 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.2 | 0.610 | B | 19.4 | 0.637 | + 2.189 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 22.4 | 0.623 | C | 23.6 | 0.670 | + 1.211 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.7 | 0.484 | C | 25.4 | 0.492 | -3.245 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 30.4 | 0.612 | C | 31.9 | 0.665 | + 1.492 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.3 | 0.515 | A | 1.4 | 0.562 | + 0.111 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.829
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 92 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 2458 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1067 | | 7 | 20 | 5 | |
| Added Vol: | 183 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 442 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2641 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1509 | | 7 | 20 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2641 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1509 | | 7 | 20 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2641 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1509 | | 7 | 20 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2641 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1509 | | 7 | 20 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.51 | 0.12 | 0.12 | | 0.02 | 0.02 | 0.10 | | 0.12 | 0.12 | 0.54 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.61 | 0.61 | 0.61 | | 0.12 | 0.12 | 0.12 | | 0.14 | 0.14 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.84 | 0.20 | 0.20 | | 0.17 | 0.17 | 0.84 | | 0.84 | 0.84 | 0.72 | | 0.48 | 0.48 | 0.48 | |
| Uniform Del: | 20.6 | 11.4 | 11.4 | | 51.5 | 51.5 | 56.1 | | 54.3 | 54.3 | 8.8 | | 61.2 | 61.2 | 61.2 | |
| IncremntDel: | 2.3 | 0.1 | 0.1 | | 0.2 | 0.2 | 28.0 | | 21.9 | 21.9 | 1.3 | | 5.1 | 5.1 | 5.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 22.9 | 11.5 | 11.5 | | 51.7 | 51.7 | 84.2 | | 76.2 | 76.2 | 10.1 | | 66.4 | 66.4 | 66.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 22.9 | 11.5 | 11.5 | | 51.7 | 51.7 | 84.2 | | 76.2 | 76.2 | 10.1 | | 66.4 | 66.4 | 66.4 | |
| LOS by Move: | C | B | B | | D | D | F | | E | E | B | | E | E | E | |
| HCM2kAvgQ: | 31 | 4 | 4 | | 1 | 1 | 9 | | 11 | 11 | 19 | | 2 | 2 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.075
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 46.7
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 | 0 | 1 1 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 875 | 0 | 309 | | 0 | 0 | 0 | | 0 | 1218 | 541 | | 0 | 878 | 1818 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 592 | 0 | | 0 | 148 | 35 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 1810 | 541 | | 0 | 1026 | 1853 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 1810 | 0 | | 0 | 1026 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 1810 | 0 | | 0 | 1026 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 1810 | 0 | | 0 | 1026 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.26 | 0.00 | 0.44 | | 0.00 | 0.00 | 0.00 | | 0.54 | 0.54 | 0.00 | | 0.00 | 0.29 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.41 | 0.00 | 0.41 | | 0.00 | 0.00 | 0.00 | | 0.50 | 0.50 | 0.00 | | 0.00 | 0.50 | 0.00 | |
| Volume/Cap: | 0.62 | 0.00 | 1.07 | | 0.00 | 0.00 | 0.00 | | 1.07 | 1.07 | 0.00 | | 0.00 | 0.58 | 0.00 | |
| Uniform Del: | 18.5 | 0.0 | 23.5 | | 0.0 | 0.0 | 0.0 | | 20.0 | 20.0 | 0.0 | | 0.0 | 14.1 | 0.0 | |
| IncremntDel: | 0.8 | 0.0 | 56.9 | | 0.0 | 0.0 | 0.0 | | 45.0 | 45.0 | 0.0 | | 0.0 | 0.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 19.3 | 0.0 | 80.4 | | 0.0 | 0.0 | 0.0 | | 65.1 | 65.1 | 0.0 | | 0.0 | 14.6 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 19.3 | 0.0 | 80.4 | | 0.0 | 0.0 | 0.0 | | 65.1 | 65.1 | 0.0 | | 0.0 | 14.6 | 0.0 | |
| LOS by Move: | B | A | F | | A | A | A | | E | E | A | | A | B | A | |
| HCM2kAvgQ: | 9 | 0 | 29 | | 0 | 0 | 0 | | 37 | 37 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.910
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 93 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 941 | 0 | 597 | | 0 | 892 | 624 | | 0 | 1526 | 92 | |
| Added Vol: | 0 | 0 | 0 | | 315 | 0 | 7 | | 0 | 282 | 0 | | 0 | 62 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1256 | 0 | 604 | | 0 | 1174 | 624 | | 0 | 1588 | 92 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1256 | 0 | 604 | | 0 | 1174 | 0 | | 0 | 1588 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1256 | 0 | 604 | | 0 | 1174 | 0 | | 0 | 1588 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1256 | 0 | 604 | | 0 | 1174 | 0 | | 0 | 1588 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.38 | | 0.00 | 0.33 | 0.00 | | 0.00 | 0.45 | 0.00 | |
| Crit Moves: | | | | | | | **** | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.42 | 0.00 | 0.42 | | 0.00 | 0.49 | 0.00 | | 0.00 | 0.49 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.87 | 0.00 | 0.91 | | 0.00 | 0.67 | 0.00 | | 0.00 | 0.91 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 21.3 | 0.0 | 21.8 | | 0.0 | 15.4 | 0.0 | | 0.0 | 18.6 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 6.1 | 0.0 | 16.7 | | 0.0 | 1.0 | 0.0 | | 0.0 | 7.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 27.4 | 0.0 | 38.5 | | 0.0 | 16.4 | 0.0 | | 0.0 | 26.2 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 27.4 | 0.0 | 38.5 | | 0.0 | 16.4 | 0.0 | | 0.0 | 26.2 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | D | | A | B | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 18 | 0 | 18 | | 0 | 12 | 0 | | 0 | 23 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.869
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 26.6
Optimal Cycle: 90 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1210 | 31 | | 287 | 1515 | 300 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 282 | 0 | | 0 | 69 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1492 | 31 | | 287 | 1584 | 300 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1492 | 31 | | 287 | 1584 | 300 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1492 | 31 | | 287 | 1584 | 300 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1492 | 31 | | 287 | 1584 | 300 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.92 | 0.08 | 1.00 | | 1.00 | 2.94 | 0.06 | | 2.00 | 1.68 | 0.32 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4965 | 103 | | 3432 | 2904 | 549 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.14 | 0.14 | 0.00 | | 0.01 | 0.30 | 0.30 | | 0.08 | 0.55 | 0.55 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.49 | 0.49 | | 0.14 | 0.57 | 0.57 | |
| Volume/Cap: | 0.36 | 0.36 | 0.38 | | 0.95 | 0.95 | 0.01 | | 0.18 | 0.62 | 0.62 | | 0.62 | 0.95 | 0.95 | |
| Uniform Del: | 36.8 | 36.8 | 36.8 | | 33.6 | 33.6 | 28.8 | | 36.4 | 15.0 | 15.0 | | 32.6 | 16.0 | 16.0 | |
| IncremntDel: | 2.5 | 2.5 | 1.7 | | 41.5 | 41.5 | 0.0 | | 1.0 | 0.5 | 0.5 | | 2.5 | 10.9 | 10.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.2 | 39.2 | 38.5 | | 75.2 | 75.2 | 28.9 | | 37.4 | 15.5 | 15.5 | | 35.1 | 27.0 | 27.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.2 | 39.2 | 38.5 | | 75.2 | 75.2 | 28.9 | | 37.4 | 15.5 | 15.5 | | 35.1 | 27.0 | 27.0 | |
| LOS by Move: | D | D | D | | E | E | C | | D | B | B | | D | C | C | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 11 | 11 | 0 | | 1 | 11 | 11 | | 5 | 29 | 29 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 27 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 852 | 62 | | 49 | 1221 | 346 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 282 | 0 | | 0 | 69 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1134 | 62 | | 49 | 1290 | 346 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1134 | 62 | | 49 | 1290 | 346 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1134 | 62 | | 49 | 1290 | 346 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1134 | 62 | | 49 | 1290 | 346 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.90 | 0.10 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3327 | 182 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.13 | 0.13 | 0.06 | | 0.07 | 0.34 | 0.34 | | 0.03 | 0.36 | 0.22 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.61 | 0.61 | | 0.09 | 0.58 | 0.58 | |
| Volume/Cap: | 0.18 | 0.21 | 0.21 | | 0.62 | 0.62 | 0.30 | | 0.62 | 0.56 | 0.56 | | 0.31 | 0.62 | 0.37 | |
| Uniform Del: | 36.4 | 36.5 | 36.5 | | 29.1 | 29.1 | 27.1 | | 33.8 | 9.3 | 9.3 | | 34.1 | 10.9 | 8.8 | |
| IncremntDel: | 1.0 | 1.2 | 1.2 | | 1.7 | 1.7 | 0.5 | | 6.0 | 0.3 | 0.3 | | 1.1 | 0.6 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.4 | 37.7 | 37.7 | | 30.8 | 30.8 | 27.7 | | 39.9 | 9.6 | 9.6 | | 35.3 | 11.5 | 9.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.4 | 37.7 | 37.7 | | 30.8 | 30.8 | 27.7 | | 39.9 | 9.6 | 9.6 | | 35.3 | 11.5 | 9.1 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | D | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 2 | | 4 | 10 | 10 | | 1 | 11 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 16.7
Optimal Cycle: 34 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 0 | 1 | 0 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 75 | 3 | 189 | | 120 | 30 | 5 | | 2 | 712 | 71 | | 282 | 1051 | 24 | |
| Added Vol: | 1 | 0 | 0 | | 0 | 0 | 0 | | 0 | 282 | 2 | | 0 | 69 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 994 | 73 | | 282 | 1120 | 24 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 994 | 73 | | 282 | 1120 | 24 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 994 | 73 | | 282 | 1120 | 24 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 994 | 73 | | 282 | 1120 | 24 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.79 | 0.79 | 0.79 | | 0.53 | 0.53 | 0.53 | | 0.88 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.28 | 0.01 | 0.71 | | 0.78 | 0.19 | 0.03 | | 0.01 | 1.86 | 0.13 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 427 | 18 | 1065 | | 784 | 196 | 35 | | 7 | 3111 | 227 | | 1769 | 3455 | 73 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.15 | 0.15 | 0.15 | | 0.32 | 0.32 | 0.32 | | 0.16 | 0.32 | 0.32 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.26 | 0.26 | 0.26 | | 0.46 | 0.46 | 0.46 | | 0.23 | 0.69 | 0.69 | |
| Volume/Cap: | 0.69 | 0.69 | 0.69 | | 0.59 | 0.59 | 0.59 | | 0.69 | 0.69 | 0.69 | | 0.69 | 0.47 | 0.47 | |
| Uniform Del: | 26.9 | 26.9 | 26.9 | | 26.1 | 26.1 | 26.1 | | 17.0 | 17.0 | 17.0 | | 28.1 | 5.6 | 5.6 | |
| IncremntDel: | 5.3 | 5.3 | 5.3 | | 3.7 | 3.7 | 3.7 | | 1.4 | 1.4 | 1.4 | | 5.0 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.1 | 32.1 | 32.1 | | 29.7 | 29.7 | 29.7 | | 18.4 | 18.4 | 18.4 | | 33.2 | 5.7 | 5.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.1 | 32.1 | 32.1 | | 29.7 | 29.7 | 29.7 | | 18.4 | 18.4 | 18.4 | | 33.2 | 5.7 | 5.7 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 4 | 4 | 4 | | 12 | 12 | 12 | | 8 | 7 | 7 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.754
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 26.9
Optimal Cycle: 64 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 0 | 0 | 0 | 0 | 0 0 | 1 | 0 | 0 | 0 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 178 | 425 | | 366 | 393 | 0 | | 0 | 0 | 0 | | 495 | 0 | 181 | |
| Added Vol: | 0 | 8 | 110 | | 174 | 64 | 0 | | 0 | 0 | 0 | | 26 | 0 | 44 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 186 | 535 | | 540 | 457 | 0 | | 0 | 0 | 0 | | 521 | 0 | 225 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 186 | 535 | | 540 | 457 | 0 | | 0 | 0 | 0 | | 521 | 0 | 225 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 186 | 535 | | 540 | 457 | 0 | | 0 | 0 | 0 | | 521 | 0 | 225 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 186 | 535 | | 540 | 457 | 0 | | 0 | 0 | 0 | | 521 | 0 | 225 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.33 | | 0.30 | 0.24 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.14 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.13 | 0.51 | | 0.40 | 0.53 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.38 | 0.00 | 0.78 | |
| Volume/Cap: | 0.00 | 0.75 | 0.65 | | 0.75 | 0.46 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.75 | 0.00 | 0.18 | |
| Uniform Del: | 0.0 | 46.2 | 19.5 | | 28.6 | 16.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 29.4 | 0.0 | 3.1 | |
| IncremntDel: | 0.0 | 12.4 | 1.8 | | 4.6 | 0.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 4.7 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 58.6 | 21.3 | | 33.1 | 16.6 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.2 | 0.0 | 3.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 58.6 | 21.3 | | 33.1 | 16.6 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.2 | 0.0 | 3.2 | |
| LOS by Move: | A | E | C | | C | B | A | | A | A | A | | C | A | A | |
| HCM2kAvgQ: | 0 | 8 | 14 | | 17 | 10 | 0 | | 0 | 0 | 0 | | 17 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.900
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 46.1
Optimal Cycle: 124 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 1 | 2 | 0 | 3 | 0 1 | 1 | 1 | 1 | 0 2 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | | 6 | 13 | 677 | | 92 | 84 | 34 | | 379 | 3 | | 6 | 5 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1106 | 2256 | | 6 | 14 | 724 | | 98 | 90 | 36 | | 406 | 3 | | 6 | 5 |
| Added Vol: | 36 | 202 | | 24 | 441 | 42 | | 0 | 0 | 838 | | 2 | 24 | | 30 | 14 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 1142 | 2458 | | 30 | 455 | 766 | | 98 | 90 | 874 | | 408 | 27 | | 36 | 19 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1142 | 2458 | | 30 | 455 | 766 | | 98 | 90 | 874 | | 408 | 27 | | 36 | 19 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 1142 | 2458 | | 30 | 455 | 766 | | 98 | 90 | 874 | | 408 | 27 | | 36 | 19 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1142 | 2458 | | 30 | 455 | 766 | | 98 | 90 | 874 | | 408 | 27 | | 36 | 19 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.93 | 0.93 | 0.88 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 2.00 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1760 | 3520 | 3343 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.42 | 0.02 | | 0.13 | 0.13 | 0.06 | | 0.05 | 0.25 | 0.12 | | 0.02 | 0.01 | 0.01 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.43 | 0.46 | 0.49 | | 0.14 | 0.17 | 0.17 | | 0.27 | 0.27 | 0.27 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.77 | 0.92 | 0.04 | | 0.92 | 0.77 | 0.37 | | 0.19 | 0.92 | 0.45 | | 0.40 | 0.27 | 0.32 | |
| Uniform Del: | 31.6 | 33.2 | 16.9 | | 54.9 | 51.6 | 47.8 | | 36.6 | 46.2 | 39.5 | | 61.0 | 60.7 | 60.8 | |
| IncremntDel: | 2.6 | 6.0 | 0.0 | | 22.8 | 3.8 | 0.9 | | 0.0 | 13.0 | 0.4 | | 3.8 | 1.1 | 3.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.2 | 39.2 | 17.0 | | 77.8 | 55.4 | 48.7 | | 36.6 | 59.1 | 39.9 | | 64.9 | 61.8 | 63.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.2 | 39.2 | 17.0 | | 77.8 | 55.4 | 48.7 | | 36.6 | 59.1 | 39.9 | | 64.9 | 61.8 | 63.8 | |
| LOS by Move: | C | D | B | | E | E | D | | D | E | D | | E | E | E | |
| HCM2kAvgQ: | 21 | 37 | 1 | | 13 | 12 | 4 | | 3 | 22 | 8 | | 2 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.7
Optimal Cycle: 48 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | | 26 | 71 | 19 | | 72 | 115 | 415 | | 52 | 56 | 1037 | | 74 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 19 | 14 | | 28 | 76 | 20 | | 77 | 123 | 444 | | 56 | 60 | 1110 | | 79 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 8 | 2 | 839 | | 0 | 0 | 66 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 19 | 14 | | 28 | 76 | 20 | | 85 | 125 | 1283 | | 56 | 60 | 1176 | | 79 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 19 | 14 | | 28 | 76 | 20 | | 85 | 125 | 1283 | | 56 | 60 | 1176 | | 79 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 19 | 14 | | 28 | 76 | 20 | | 85 | 125 | 1283 | | 56 | 60 | 1176 | | 79 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 19 | 14 | | 28 | 76 | 20 | | 85 | 125 | 1283 | | 56 | 60 | 1176 | | 79 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.83 | 0.83 | 0.83 | | 0.78 | 0.78 | 0.78 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | 0.92 | |
| Lanes: | 0.31 | 0.23 | 0.46 | | 0.42 | 0.11 | 0.47 | | 1.00 | 1.92 | 0.08 | | 1.00 | 1.87 | 0.13 | |
| Final Sat.: | 497 | 359 | 719 | | 622 | 166 | 696 | | 1769 | 3370 | 146 | | 1769 | 3285 | 221 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | | 0.12 | 0.12 | 0.12 | | 0.07 | 0.38 | 0.38 | | 0.03 | 0.36 | 0.36 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.20 | 0.20 | 0.20 | | 0.12 | 0.65 | 0.65 | | 0.07 | 0.59 | 0.59 | |
| Volume/Cap: | 0.19 | 0.19 | 0.19 | | 0.60 | 0.60 | 0.60 | | 0.60 | 0.59 | 0.59 | | 0.52 | 0.60 | 0.60 | |
| Uniform Del: | 43.0 | 43.0 | 43.0 | | 47.0 | 47.0 | 47.0 | | 54.5 | 13.1 | 13.1 | | 58.8 | 16.6 | 16.6 | |
| IncremntDel: | 0.3 | 0.3 | 0.3 | | 3.4 | 3.4 | 3.4 | | 4.9 | 0.4 | 0.4 | | 4.1 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 43.2 | 43.2 | 43.2 | | 50.4 | 50.4 | 50.4 | | 59.3 | 13.5 | 13.5 | | 62.9 | 17.1 | 17.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 43.2 | 43.2 | 43.2 | | 50.4 | 50.4 | 50.4 | | 59.3 | 13.5 | 13.5 | | 62.9 | 17.1 | 17.1 | |
| LOS by Move: | D | D | D | | D | D | D | | E | B | B | | E | B | B | |
| HCM2kAvgQ: | 2 | 2 | 2 | | 7 | 7 | 7 | | 6 | 16 | 16 | | 3 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 53 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | 14 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 199 | | 88 | 698 | 0 | | 0 | 1092 | 15 | |
| Added Vol: | 0 | 0 | 0 | | 115 | 0 | 6 | | 7 | 726 | 0 | | 0 | 65 | 9 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 116 | 0 | 205 | | 95 | 1424 | 0 | | 0 | 1157 | 24 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 116 | 0 | 205 | | 95 | 1424 | 0 | | 0 | 1157 | 24 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 116 | 0 | 205 | | 95 | 1424 | 0 | | 0 | 1157 | 24 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 116 | 0 | 205 | | 95 | 1424 | 0 | | 0 | 1157 | 24 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.88 | 1.00 | 0.88 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.36 | 0.00 | 0.64 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.96 | 0.04 | |
| Final Sat.: | 0 | 0 | 0 | | 604 | 0 | 1067 | | 1769 | 3538 | 0 | | 0 | 3456 | 72 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.19 | 0.00 | 0.19 | | 0.05 | 0.40 | 0.00 | | 0.00 | 0.33 | 0.33 | |
| Crit Moves: | | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.30 | 0.00 | 0.30 | | 0.09 | 0.62 | 0.00 | | 0.00 | 0.53 | 0.53 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.65 | 0.00 | 0.65 | | 0.63 | 0.65 | 0.00 | | 0.00 | 0.63 | 0.63 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 39.9 | 0.0 | 39.9 | | 57.4 | 15.7 | 0.0 | | 0.0 | 21.2 | 21.2 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.0 | 0.0 | 3.0 | | 8.1 | 0.7 | 0.0 | | 0.0 | 0.7 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.9 | 0.0 | 42.9 | | 65.5 | 16.4 | 0.0 | | 0.0 | 21.9 | 21.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.9 | 0.0 | 42.9 | | 65.5 | 16.4 | 0.0 | | 0.0 | 21.9 | 21.9 | |
| LOS by Move: | A | A | A | | D | A | D | | E | B | A | | A | C | C | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 12 | 0 | 12 | | 5 | 19 | 0 | | 0 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.4
Optimal Cycle: 49 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 139 | 0 | 72 | | 0 | 0 | 0 | | 0 | 746 | 268 | | 109 | 1253 | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 733 | 2 | | 0 | 71 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1479 | 270 | | 109 | 1324 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1479 | 270 | | 109 | 1324 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1479 | 270 | | 109 | 1324 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1479 | 270 | | 109 | 1324 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2585 | 0 | 839 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.42 | 0.17 | | 0.06 | 0.37 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.14 | 0.00 | 0.14 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.68 | 0.68 | | 0.10 | 0.78 | 0.00 | |
| Volume/Cap: | 0.42 | 0.00 | 0.62 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.62 | 0.25 | | 0.62 | 0.48 | 0.00 | |
| Uniform Del: | 51.2 | 0.0 | 52.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 11.6 | 8.2 | | 56.1 | 5.2 | 0.0 | |
| IncremntDel: | 0.5 | 0.0 | 3.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.5 | 0.1 | | 6.5 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 51.7 | 0.0 | 56.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.1 | 8.3 | | 62.6 | 5.3 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.7 | 0.0 | 56.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.1 | 8.3 | | 62.6 | 5.3 | 0.0 | |
| LOS by Move: | D | A | E | | A | A | A | | A | B | A | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 6 | | 0 | 0 | 0 | | 0 | 17 | 4 | | 5 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.963
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 52.2
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 375 | 119 | 39 | | 30 | 190 | 411 | | 158 | 884 | 166 | | 30 | 1306 | 4 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 3 | | 10 | 735 | 0 | | 0 | 80 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 1619 | 166 | | 30 | 1386 | 4 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 1619 | 166 | | 30 | 1386 | 4 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 1619 | 166 | | 30 | 1386 | 4 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 1619 | 166 | | 30 | 1386 | 4 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.72 | 0.28 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4546 | 466 | | 1769 | 3527 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.06 | 0.02 | | 0.02 | 0.10 | 0.26 | | 0.10 | 0.36 | 0.36 | | 0.02 | 0.39 | 0.39 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.46 | 0.46 | | 0.05 | 0.41 | 0.41 | |
| Volume/Cap: | 0.96 | 0.56 | 0.21 | | 0.06 | 0.38 | 0.96 | | 0.96 | 0.78 | 0.78 | | 0.34 | 0.96 | 0.96 | |
| Uniform Del: | 57.4 | 54.6 | 52.4 | | 35.1 | 38.4 | 46.7 | | 58.3 | 29.7 | 29.7 | | 59.7 | 37.5 | 37.5 | |
| IncremntDel: | 35.8 | 3.5 | 0.6 | | 0.1 | 0.5 | 33.7 | | 56.9 | 1.8 | 1.8 | | 2.3 | 15.6 | 15.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 93.2 | 58.0 | 53.0 | | 35.1 | 38.9 | 80.4 | | 115.2 | 31.4 | 31.4 | | 62.1 | 53.1 | 53.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 93.2 | 58.0 | 53.0 | | 35.1 | 38.9 | 80.4 | | 115.2 | 31.4 | 31.4 | | 62.1 | 53.1 | 53.1 | |
| LOS by Move: | F | E | D | | D | D | F | | F | C | C | | E | D | D | |
| HCM2kAvgQ: | 11 | 5 | 2 | | 1 | 6 | 21 | | 10 | 23 | 23 | | 2 | 34 | 34 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.785
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 71 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 386 | 0 | 80 | | 68 | 1474 | 0 | | 0 | 1192 | 341 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 220 | 0 | | 0 | 50 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1694 | 0 | | 0 | 1242 | 344 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1694 | 0 | | 0 | 1242 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1694 | 0 | | 0 | 1242 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1694 | 0 | | 0 | 1242 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.22 | 0.00 | 0.05 | | 0.04 | 0.48 | 0.00 | | 0.00 | 0.35 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.28 | | 0.08 | 0.61 | 0.00 | | 0.00 | 0.53 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.78 | 0.00 | 0.18 | | 0.51 | 0.78 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 33.2 | 0.0 | 27.3 | | 44.4 | 14.6 | 0.0 | | 0.0 | 16.7 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 8.1 | 0.0 | 0.2 | | 3.2 | 2.0 | 0.0 | | 0.0 | 0.9 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 41.3 | 0.0 | 27.5 | | 47.6 | 16.5 | 0.0 | | 0.0 | 17.6 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 41.3 | 0.0 | 27.5 | | 47.6 | 16.5 | 0.0 | | 0.0 | 17.6 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 13 | 0 | 2 | | 3 | 22 | 0 | | 0 | 15 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.764
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 55 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1071 | 10 | | 44 | 910 | 152 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 220 | 0 | | 0 | 50 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1291 | 10 | | 44 | 960 | 152 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1291 | 10 | | 44 | 960 | 152 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1291 | 10 | | 44 | 960 | 152 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1291 | 10 | | 44 | 960 | 152 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.48 | 0.48 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.99 | 0.01 | | 1.00 | 0.86 | 0.14 | |
| Final Sat.: | 1365 | 183 | 1431 | | 860 | 45 | 1583 | | 1769 | 3508 | 26 | | 1769 | 1574 | 249 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.09 | 0.09 | | 0.05 | 0.05 | 0.00 | | 0.01 | 0.37 | 0.37 | | 0.02 | 0.61 | 0.61 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.04 | 0.73 | 0.73 | | 0.08 | 0.77 | 0.77 | |
| Volume/Cap: | 0.41 | 0.79 | 0.79 | | 0.40 | 0.40 | 0.01 | | 0.18 | 0.50 | 0.50 | | 0.31 | 0.79 | 0.79 | |
| Uniform Del: | 40.9 | 42.9 | 42.9 | | 40.8 | 40.8 | 38.9 | | 46.4 | 5.7 | 5.7 | | 43.4 | 6.7 | 6.7 | |
| IncremntDel: | 1.7 | 19.6 | 19.6 | | 2.4 | 2.4 | 0.0 | | 1.2 | 0.2 | 0.2 | | 1.3 | 3.1 | 3.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.6 | 62.5 | 62.5 | | 43.2 | 43.2 | 38.9 | | 47.7 | 5.8 | 5.8 | | 44.7 | 9.8 | 9.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.6 | 62.5 | 62.5 | | 43.2 | 43.2 | 38.9 | | 47.7 | 5.8 | 5.8 | | 44.7 | 9.8 | 9.8 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | A | A | |
| HCM2kAvgQ: | 2 | 7 | 7 | | 2 | 2 | 0 | | 1 | 9 | 9 | | 2 | 22 | 22 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.845
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.9
Optimal Cycle: 74 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 954 | 5 | | 6 | 914 | 66 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 220 | 0 | | 0 | 50 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1174 | 5 | | 6 | 964 | 66 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1174 | 5 | | 6 | 964 | 66 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1174 | 5 | | 6 | 964 | 66 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1174 | 5 | | 6 | 964 | 66 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.17 | 0.98 | 0.98 | | 0.10 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 351 | 351 | 937 | | 999 | 42 | 338 | | 330 | 1852 | 8 | | 196 | 1725 | 119 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.15 | 0.15 | 0.15 | | 0.06 | 0.63 | 0.63 | | 0.03 | 0.56 | 0.56 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.05 | 0.05 | 0.05 | | 0.85 | 0.85 | 0.85 | | 0.07 | 0.85 | 0.85 | | 0.04 | 0.74 | 0.74 | |
| Uniform Del: | 33.9 | 33.9 | 33.9 | | 39.7 | 39.7 | 39.7 | | 3.3 | 8.5 | 8.5 | | 3.2 | 7.1 | 7.1 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 22.6 | 22.6 | 22.6 | | 0.1 | 5.0 | 5.0 | | 0.1 | 2.2 | 2.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.0 | 34.0 | 34.0 | | 62.2 | 62.2 | 62.2 | | 3.4 | 13.5 | 13.5 | | 3.4 | 9.3 | 9.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.0 | 34.0 | 34.0 | | 62.2 | 62.2 | 62.2 | | 3.4 | 13.5 | 13.5 | | 3.4 | 9.3 | 9.3 | |
| LOS by Move: | C | C | C | | E | E | E | | A | B | B | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 9 | 9 | 9 | | 0 | 27 | 27 | | 0 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.817
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 16.5
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | | 85 | 122 | 31 | | 41 | 7 | 4 | | 794 | 72 | 41 | | 869 | 5 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 108 | | 91 | 131 | 33 | | 44 | 7 | 4 | | 850 | 77 | 44 | | 930 | 5 |
| Added Vol: | 11 | | 0 | 26 | 0 | | 0 | 0 | 0 | | 194 | 8 | 4 | | 46 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 119 | | 91 | 157 | 33 | | 44 | 7 | 4 | | 1044 | 85 | 48 | | 976 | 5 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 119 | | 91 | 157 | 33 | | 44 | 7 | 4 | | 1044 | 85 | 48 | | 976 | 5 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 119 | | 91 | 157 | 33 | | 44 | 7 | 4 | | 1044 | 85 | 48 | | 976 | 5 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 119 | | 91 | 157 | 33 | | 44 | 7 | 4 | | 1044 | 85 | 48 | | 976 | 5 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.71 | 0.89 | | 0.89 | 0.28 | 0.96 | | 0.96 | 0.20 | 0.97 | | 0.97 | 0.13 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.37 | | 0.63 | 1.00 | 0.85 | | 0.15 | 1.00 | 0.92 | | 0.08 | 1.00 | 0.99 | | 0.01 |
| Final Sat.: | 1352 | 619 | | 1066 | 523 | 1555 | | 266 | 371 | 1703 | | 139 | 242 | 1850 | | 10 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.15 | | 0.15 | 0.06 | 0.03 | | 0.03 | 0.01 | 0.61 | | 0.61 | 0.20 | 0.53 | | 0.53 |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.18 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | | 0.75 |
| Volume/Cap: | 0.49 | 0.82 | | 0.82 | 0.35 | 0.16 | | 0.16 | 0.02 | 0.82 | | 0.82 | 0.26 | 0.70 | | 0.70 |
| Uniform Del: | 36.9 | 39.4 | | 39.4 | 35.9 | 34.6 | | 34.6 | 3.2 | 8.1 | | 8.1 | 3.9 | 6.6 | | 6.6 |
| IncremntDel: | 1.6 | 15.7 | | 15.7 | 2.3 | 0.2 | | 0.2 | 0.0 | 3.9 | | 3.9 | 0.8 | 1.6 | | 1.6 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 38.4 | 55.2 | | 55.2 | 38.2 | 34.8 | | 34.8 | 3.2 | 12.0 | | 12.0 | 4.7 | 8.2 | | 8.2 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 38.4 | 55.2 | | 55.2 | 38.2 | 34.8 | | 34.8 | 3.2 | 12.0 | | 12.0 | 4.7 | 8.2 | | 8.2 |
| LOS by Move: | D | E | | E | D | C | | C | A | B | | B | A | A | | A |
| HCM2kAvgQ: | 4 | 10 | | 10 | 1 | 1 | | 1 | 0 | 24 | | 24 | 1 | 17 | | 17 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.161
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 107.5
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | | 342 | 245 | 408 | | 322 | 10 | 16 | | 166 | 117 | 420 | | 64 | 494 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 72 | | 366 | 262 | 437 | | 345 | 11 | 17 | | 178 | 125 | 449 | | 68 | 529 |
| Added Vol: | 15 | | 9 | 114 | 80 | | 7 | 0 | 0 | | 8 | 10 | 18 | | 18 | 21 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 87 | | 375 | 376 | 517 | | 352 | 11 | 17 | | 186 | 135 | 467 | | 86 | 550 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 87 | | 375 | 376 | 517 | | 352 | 11 | 17 | | 186 | 135 | 467 | | 86 | 550 |
| Reduct Vol: | 0 | | 0 | 3 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 87 | | 375 | 373 | 517 | | 352 | 11 | 17 | | 186 | 135 | 467 | | 86 | 550 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 87 | | 375 | 373 | 517 | | 352 | 11 | 17 | | 186 | 135 | 467 | | 86 | 550 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.76 | 1.20 | | 0.04 | 1.00 | 1.00 | | 1.00 | 1.69 | 0.31 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 3023 | 2057 | | 63 | 1769 | 1862 | | 1583 | 3017 | 558 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.11 | | 0.47 | 0.17 | 0.17 | | 0.17 | 0.01 | 0.10 | | 0.09 | 0.15 | 0.15 | | 0.35 |
| Crit Moves: | | | | **** | **** | | | | | **** | | | | | | **** |
| Green/Cycle: | 0.41 | 0.41 | | 0.41 | 0.15 | 0.15 | | 0.15 | 0.09 | 0.09 | | 0.09 | 0.30 | 0.30 | | 0.30 |
| Volume/Cap: | 0.12 | 0.26 | | 1.16 | 1.16 | 1.16 | | 1.16 | 0.11 | 1.16 | | 0.99 | 0.52 | 0.52 | | 1.16 |
| Uniform Del: | 24.1 | 25.6 | | 38.6 | 55.4 | 55.4 | | 55.4 | 54.8 | 59.4 | | 59.4 | 37.8 | 37.8 | | 45.6 |
| IncremntDel: | 0.1 | 0.1 | | 101.2 | 86.7 | 86.7 | | 86.7 | 0.3 | 121 | | 75.5 | 0.4 | 0.4 | | 93.6 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 24.2 | 25.7 | | 139.8 | 142.1 | 142 | | 142.1 | 55.2 | 180 | | 134.8 | 38.2 | 38.2 | | 139.1 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 24.2 | 25.7 | | 139.8 | 142.1 | 142 | | 142.1 | 55.2 | 180 | | 134.8 | 38.2 | 38.2 | | 139.1 |
| LOS by Move: | C | C | | F | F | F | | F | E | F | | F | D | D | | F |
| HCM2kAvgQ: | 2 | 5 | | 24 | 21 | 21 | | 21 | 1 | 13 | | 9 | 9 | 9 | | 34 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.857
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 31.8
Optimal Cycle: 102 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1649 | 3084 | 0 | | 0 | 946 | 201 | | 192 | 0 | 459 | | 0 | 0 | 0 | |
| Added Vol: | 10 | 439 | 0 | | 0 | 61 | 8 | | 109 | 0 | 2 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1659 | 3523 | 0 | | 0 | 1007 | 209 | | 301 | 0 | 461 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1659 | 3523 | 0 | | 0 | 1007 | 209 | | 301 | 0 | 461 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1659 | 3523 | 0 | | 0 | 1007 | 209 | | 301 | 0 | 461 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1659 | 3523 | 0 | | 0 | 1007 | 209 | | 301 | 0 | 461 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.48 | 0.69 | 0.00 | | 0.00 | 0.20 | 0.13 | | 0.09 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.57 | 0.81 | 0.00 | | 0.00 | 0.24 | 0.24 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.84 | 0.86 | 0.00 | | 0.00 | 0.84 | 0.56 | | 0.68 | 0.00 | 0.86 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 28.1 | 9.5 | 0.0 | | 0.0 | 58.4 | 53.9 | | 66.6 | 0.0 | 68.3 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.5 | 2.0 | 0.0 | | 0.0 | 5.6 | 2.0 | | 4.3 | 0.0 | 12.9 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 31.6 | 11.5 | 0.0 | | 0.0 | 64.0 | 55.9 | | 70.8 | 0.0 | 81.1 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.6 | 11.5 | 0.0 | | 0.0 | 64.0 | 55.9 | | 70.8 | 0.0 | 81.1 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | E | A | F | | A | A | A | |
| HCM2kAvgQ: | 36 | 41 | 0 | | 0 | 19 | 9 | | 8 | 0 | 11 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.571
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 43 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 | 1! | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 24 | 0 | 24 | | 73 | 563 | 0 | | 0 | 1435 | 49 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 109 | 0 | | 0 | 8 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 672 | 0 | | 0 | 1443 | 59 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 672 | 0 | | 0 | 1443 | 59 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 672 | 0 | | 0 | 1443 | 59 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 672 | 0 | | 0 | 1443 | 59 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 883 | 0 | 814 | | 1769 | 3538 | 0 | | 0 | 3378 | 139 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.19 | 0.00 | | 0.00 | 0.43 | 0.43 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.49 | 0.00 | 0.49 | | 0.58 | 0.23 | 0.00 | | 0.00 | 0.58 | 0.58 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.8 | 0.0 | 38.8 | | 38.2 | 1.9 | 0.0 | | 0.0 | 5.0 | 5.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.8 | 0.0 | 3.8 | | 6.5 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.5 | 0.0 | 42.5 | | 44.7 | 1.9 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.5 | 0.0 | 42.5 | | 44.7 | 1.9 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 2 | 0 | | 0 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 623 | 46 | 27 | 1393 | 27 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 8 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 732 | 46 | 27 | 1401 | 27 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 732 | 46 | 27 | 1401 | 27 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 732 | 46 | 27 | 1401 | 27 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 732 | 46 | 27 | 1401 | 27 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.95 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.36 | 0.42 | 0.22 | 0.11 | 0.29 | 0.60 | 1.00 | 1.88 | 0.12 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 651 | 752 | 407 | 190 | 500 | 1047 | 1805 | 3366 | 212 | 1805 | 3532 | 67 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.02 | 0.22 | 0.22 | 0.01 | 0.40 | 0.40 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.05 | 0.59 | 0.59 | 0.14 | 0.67 | 0.67 |
| Volume/Cap: | 0.59 | 0.62 | 0.62 | 0.56 | 0.59 | 0.59 | 0.47 | 0.37 | 0.37 | 0.11 | 0.59 | 0.59 |
| Uniform Del: | 43.8 | 44.2 | 44.2 | 44.2 | 44.7 | 44.7 | 46.2 | 10.8 | 10.8 | 37.9 | 8.8 | 8.8 |
| IncremntDel: | 5.6 | 7.5 | 7.5 | 4.9 | 6.8 | 6.8 | 3.9 | 0.1 | 0.1 | 0.2 | 0.4 | 0.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 49.3 | 51.6 | 51.6 | 49.1 | 51.4 | 51.4 | 50.1 | 10.9 | 10.9 | 38.1 | 9.2 | 9.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 49.3 | 51.6 | 51.6 | 49.1 | 51.4 | 51.4 | 50.1 | 10.9 | 10.9 | 38.1 | 9.2 | 9.2 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | A | A |
| HCM2kAvgQ: | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 7 | 7 | 1 | 13 | 13 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.662
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 27.4
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 532 | 83 | 104 | 1193 | 52 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 8 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 641 | 83 | 104 | 1201 | 52 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 641 | 83 | 104 | 1201 | 52 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 641 | 83 | 104 | 1201 | 52 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 641 | 83 | 104 | 1201 | 52 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.93 | 0.93 | 0.95 | 0.94 | 0.94 |
| Lanes: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.77 | 0.23 | 1.00 | 1.92 | 0.08 |
| Final Sat.: | 1805 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3140 | 409 | 1805 | 3438 | 150 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.13 | 0.07 | 0.03 | 0.11 | 0.06 | 0.08 | 0.20 | 0.20 | 0.06 | 0.35 | 0.35 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.09 | 0.19 | 0.19 | 0.05 | 0.15 | 0.15 | 0.13 | 0.51 | 0.51 | 0.14 | 0.52 | 0.52 |
| Volume/Cap: | 0.73 | 0.67 | 0.39 | 0.59 | 0.73 | 0.37 | 0.67 | 0.40 | 0.40 | 0.40 | 0.67 | 0.67 |
| Uniform Del: | 44.4 | 37.5 | 35.4 | 46.5 | 40.4 | 38.1 | 41.7 | 15.3 | 15.3 | 39.0 | 17.4 | 17.4 |
| IncremntDel: | 15.4 | 4.7 | 0.8 | 10.1 | 8.9 | 1.0 | 7.3 | 0.1 | 0.1 | 1.0 | 0.9 | 0.9 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 59.8 | 42.2 | 36.3 | 56.6 | 49.3 | 39.1 | 49.1 | 15.4 | 15.4 | 40.0 | 18.3 | 18.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 59.8 | 42.2 | 36.3 | 56.6 | 49.3 | 39.1 | 49.1 | 15.4 | 15.4 | 40.0 | 18.3 | 18.3 |
| LOS by Move: | E | D | D | E | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 5 | 8 | 4 | 3 | 8 | 3 | 6 | 7 | 7 | 3 | 15 | 15 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 670 | 51 | 94 | 1333 | 65 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 8 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 779 | 51 | 94 | 1341 | 65 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 779 | 51 | 94 | 1341 | 65 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 779 | 51 | 94 | 1341 | 65 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 779 | 51 | 94 | 1341 | 65 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 0.29 | 0.64 | 0.07 | 0.12 | 0.45 | 0.43 | 1.00 | 1.88 | 0.12 | 1.00 | 1.91 | 0.09 |
| Final Sat.: | 532 | 1187 | 136 | 217 | 801 | 761 | 1805 | 3356 | 221 | 1805 | 3418 | 166 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.01 | 0.23 | 0.23 | 0.05 | 0.39 | 0.39 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.14 | 0.14 | 0.14 | 0.12 | 0.12 | 0.12 | 0.05 | 0.52 | 0.52 | 0.12 | 0.58 | 0.58 |
| Volume/Cap: | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 0.21 | 0.45 | 0.45 | 0.45 | 0.67 | 0.67 |
| Uniform Del: | 40.8 | 40.8 | 40.8 | 42.3 | 42.3 | 42.3 | 45.6 | 15.2 | 15.2 | 41.2 | 14.3 | 14.3 |
| IncremntDel: | 6.8 | 6.8 | 6.8 | 8.4 | 8.4 | 8.4 | 1.2 | 0.2 | 0.2 | 1.5 | 0.9 | 0.9 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 47.6 | 47.6 | 47.6 | 50.7 | 50.7 | 50.7 | 46.8 | 15.4 | 15.4 | 42.7 | 15.2 | 15.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 47.6 | 47.6 | 47.6 | 50.7 | 50.7 | 50.7 | 46.8 | 15.4 | 15.4 | 42.7 | 15.2 | 15.2 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 6 | 6 | 6 | 5 | 5 | 5 | 1 | 8 | 8 | 3 | 16 | 16 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.284
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.2
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Permitted | | | Permitted | | | Permitted | | | Permitted | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 14 | 14 | 14 | 14 | 14 | 14 | 73 | 73 | 73 | 73 | 73 | 73 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 657 | 26 | 16 | 132 | 26 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 8 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 766 | 26 | 16 | 140 | 26 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 766 | 26 | 16 | 140 | 26 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 766 | 26 | 16 | 140 | 26 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 766 | 26 | 16 | 140 | 26 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.64 | 0.95 | 0.95 | 0.33 | 0.93 | 0.93 |
| Lanes: | 0.21 | 0.69 | 0.10 | 0.11 | 0.71 | 0.18 | 1.00 | 1.94 | 0.06 | 1.00 | 1.69 | 0.31 |
| Final Sat.: | 370 | 1212 | 185 | 207 | 1272 | 325 | 1218 | 3475 | 117 | 619 | 2979 | 548 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.01 | 0.22 | 0.22 | 0.03 | 0.05 | 0.05 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Volume/Cap: | 0.28 | 0.28 | 0.28 | 0.20 | 0.20 | 0.20 | 0.02 | 0.28 | 0.28 | 0.03 | 0.06 | 0.06 |
| Uniform Del: | 33.4 | 33.4 | 33.4 | 32.9 | 32.9 | 32.9 | 2.4 | 3.1 | 3.1 | 2.5 | 2.5 | 2.5 |
| IncremntDel: | 0.5 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 33.9 | 33.9 | 33.9 | 33.2 | 33.2 | 33.2 | 2.4 | 3.1 | 3.1 | 2.5 | 2.5 | 2.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 33.9 | 33.9 | 33.9 | 33.2 | 33.2 | 33.2 | 2.4 | 3.1 | 3.1 | 2.5 | 2.5 | 2.5 |
| LOS by Move: | C | C | C | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 4 | 4 | 0 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.965
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 43.4
Optimal Cycle: 152 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 387 | 468 | 351 | | 12 | 133 | 410 | | 125 | 377 | 303 | | 52 | 1289 | 73 | |
| Added Vol: | 0 | 0 | 60 | | 0 | 0 | 0 | | 0 | 49 | 0 | | 0 | 8 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 387 | 468 | 411 | | 12 | 133 | 410 | | 125 | 426 | 303 | | 52 | 1297 | 73 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 387 | 468 | 411 | | 12 | 133 | 410 | | 125 | 426 | 303 | | 52 | 1297 | 73 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 387 | 468 | 411 | | 12 | 133 | 410 | | 125 | 426 | 303 | | 52 | 1297 | 73 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 387 | 468 | 411 | | 12 | 133 | 410 | | 125 | 426 | 303 | | 52 | 1297 | 73 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.22 | 1.48 | 1.30 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2069 | 2498 | 2196 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3391 | 190 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.01 | 0.07 | 0.25 | | 0.04 | 0.12 | 0.19 | | 0.03 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.35 | 0.35 | | 0.09 | 0.26 | 0.26 | | 0.05 | 0.35 | 0.35 | | 0.09 | 0.39 | 0.39 | |
| Volume/Cap: | 0.98 | 0.53 | 0.53 | | 0.07 | 0.27 | 0.98 | | 0.72 | 0.34 | 0.54 | | 0.31 | 0.98 | 0.98 | |
| Uniform Del: | 40.3 | 25.6 | 25.6 | | 41.2 | 29.5 | 36.8 | | 46.8 | 24.1 | 26.2 | | 42.4 | 30.1 | 30.1 | |
| IncremntDel: | 20.4 | 0.2 | 0.2 | | 0.2 | 0.3 | 38.7 | | 13.1 | 0.2 | 1.1 | | 1.1 | 19.5 | 19.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 60.7 | 25.8 | 25.8 | | 41.4 | 29.8 | 75.5 | | 59.9 | 24.3 | 27.3 | | 43.5 | 49.6 | 49.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 60.7 | 25.8 | 25.8 | | 41.4 | 29.8 | 75.5 | | 59.9 | 24.3 | 27.3 | | 43.5 | 49.6 | 49.6 | |
| LOS by Move: | E | C | C | | D | C | E | | E | C | C | | D | D | D | |
| HCM2kAvgQ: | 15 | 8 | 8 | | 0 | 3 | 18 | | 3 | 5 | 8 | | 2 | 28 | 28 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.411
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 896 | 9 | | 0 | 483 | 0 | | 391 | 0 | 150 | | 0 | 0 | 121 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 60 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 896 | 9 | | 0 | 483 | 0 | | 451 | 0 | 150 | | 0 | 0 | 121 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 896 | 9 | | 0 | 483 | 0 | | 451 | 0 | 150 | | 0 | 0 | 121 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 896 | 9 | | 0 | 483 | 0 | | 451 | 0 | 150 | | 0 | 0 | 121 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 985 | 9 | | 0 | 507 | 0 | | 464 | 0 | 150 | | 0 | 0 | 121 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5646 | 54 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | | 0.00 | 0.13 | 0.00 | | 0.13 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.08 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.42 | 0.42 | | 0.00 | 0.42 | 0.00 | | 0.31 | 0.00 | 0.51 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.41 | 0.41 | | 0.00 | 0.31 | 0.00 | | 0.41 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.41 | |
| Uniform Del: | 0.0 | 9.9 | 9.9 | | 0.0 | 9.4 | 0.0 | | 13.4 | 0.0 | 6.4 | | 0.0 | 0.0 | 17.2 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.0 | 0.0 | | 0.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.5 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 8.5 | 8.5 | | 0.0 | 8.1 | 0.0 | | 11.5 | 0.0 | 5.5 | | 0.0 | 0.0 | 15.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 8.5 | 8.5 | | 0.0 | 8.1 | 0.0 | | 11.5 | 0.0 | 5.5 | | 0.0 | 0.0 | 15.2 | |
| DesignQueue: | 0 | 7 | 7 | | 0 | 5 | 0 | | 6 | 0 | 3 | | 0 | 0 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.664
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.7
Optimal Cycle: 108 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | | 16 | 16 | 0 | | 0 | 0 | 0 | | 29 | 45 | 28 | | 61 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | | 1 | 220 | 0 | | 0 | 0 | 0 | 828 | 379 | 798 | 1527 | | | 0 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | 1.07 |
| Initial Bse: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 886 | 406 | 854 | 1634 | | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 49 | 6 | 4 | 12 | | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 |
| Initial Fut: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 935 | 412 | 858 | 1646 | | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 935 | 412 | 858 | 1646 | | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 |
| Reduced Vol: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 935 | 412 | 858 | 1646 | | | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 935 | 412 | 858 | 1646 | | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | | | 1.00 |
| Lanes: | 1.58 | 0.01 | | 1.41 | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | | | 0.00 |
| Final Sat.: | 2584 | | 6 | 2291 | 0 | | 0 | 0 | 0 | 3610 | 2842 | 3502 | 3610 | | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.18 | | 0.10 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.26 | 0.14 | 0.24 | 0.46 | | | 0.00 |
| Crit Moves: | | **** | | | | | | | | | | | **** | | | |
| Green/Cycle: | 0.19 | 0.19 | | 0.19 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.34 | 0.34 | 0.42 | 0.76 | | | 0.00 |
| Volume/Cap: | 0.70 | 0.94 | | 0.55 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.76 | 0.42 | 0.58 | 0.60 | | | 0.00 |
| Uniform Del: | 32.2 | 34.0 | | 31.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 24.9 | 21.6 | 18.7 | 4.3 | | | 0.0 |
| IncremntDel: | 2.6 | 23.0 | | 0.6 | 0.0 | 0.0 | | 0.0 | 0.0 | 2.8 | 0.3 | 0.6 | 0.4 | | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 0.00 |
| Delay/Veh: | 34.9 | 57.0 | | 31.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 27.7 | 21.9 | 19.3 | 4.7 | | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| AdjDel/Veh: | 34.9 | 57.0 | | 31.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 27.7 | 21.9 | 19.3 | 4.7 | | | 0.0 |
| LOS by Move: | C | E | | C | A | A | | A | A | C | C | B | A | | | A |
| HCM2kAvgQ: | 7 | 12 | | 5 | 0 | 0 | | 0 | 0 | 13 | 5 | 9 | 10 | | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 41.5
Optimal Cycle: 118 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 78 | | 250 | 410 | 115 | | 41 | 51 | 538 | | 13 | 238 | 1506 | | 420 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 15 | 83 | | 268 | 439 | 123 | | 44 | 55 | 576 | | 14 | 255 | 1611 | | 449 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 55 | | 0 | 0 | 12 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 15 | 83 | | 268 | 439 | 123 | | 44 | 55 | 631 | | 14 | 255 | 1623 | | 449 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 15 | 83 | | 268 | 439 | 123 | | 44 | 55 | 631 | | 14 | 255 | 1623 | | 449 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 15 | 83 | | 268 | 439 | 123 | | 44 | 55 | 631 | | 14 | 255 | 1623 | | 449 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 15 | 83 | | 268 | 439 | 123 | | 44 | 55 | 631 | | 14 | 255 | 1623 | | 449 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.96 | | 0.96 | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | | 0.85 |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.74 | | 0.26 | 1.00 | 1.96 | | 0.04 | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 70 | 390 | | 1249 | 3502 | 1346 | | 480 | 1805 | 3521 | | 78 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.21 | 0.21 | | 0.21 | 0.13 | 0.09 | | 0.09 | 0.03 | 0.18 | | 0.18 | 0.14 | 0.45 | | 0.28 |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | | 0.23 | 0.13 | 0.11 | | 0.11 | 0.05 | 0.30 | | 0.30 | 0.23 | 0.48 | | 0.48 |
| Volume/Cap: | 0.85 | 0.94 | | 0.94 | 0.94 | 0.85 | | 0.85 | 0.60 | 0.61 | | 0.61 | 0.61 | 0.94 | | 0.58 |
| Uniform Del: | 35.5 | 37.9 | | 37.9 | 42.9 | 43.8 | | 43.8 | 46.5 | 30.2 | | 30.2 | 34.2 | 24.7 | | 18.8 |
| IncremntDel: | 14.3 | 30.5 | | 30.5 | 27.1 | 27.1 | | 27.1 | 11.1 | 1.0 | | 1.0 | 2.5 | 10.5 | | 1.1 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 49.7 | 68.5 | | 68.5 | 70.0 | 70.9 | | 70.9 | 57.7 | 31.2 | | 31.2 | 36.8 | 35.2 | | 20.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 49.7 | 68.5 | | 68.5 | 70.0 | 70.9 | | 70.9 | 57.7 | 31.2 | | 31.2 | 36.8 | 35.2 | | 20.0 |
| LOS by Move: | D | E | | E | E | E | | E | E | C | | C | D | D | | B |
| HCM2kAvgQ: | 13 | 15 | | 15 | 11 | 8 | | 8 | 3 | 10 | | 10 | 8 | 30 | | 10 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.836
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 40.7
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 0 1 | 0 | 1 0 | 0 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 40 | 282 | 55 | 98 | 418 | 66 | 16 | 244 | 26 | 78 | 625 | 102 |
| Added Vol: | 0 | 104 | 41 | 6 | 27 | 2 | 25 | 8 | 0 | 3 | 1 | 9 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 40 | 386 | 96 | 104 | 445 | 68 | 41 | 252 | 26 | 81 | 626 | 111 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 40 | 386 | 96 | 104 | 445 | 68 | 41 | 252 | 26 | 81 | 626 | 111 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 40 | 386 | 96 | 104 | 445 | 68 | 41 | 252 | 26 | 81 | 626 | 111 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 40 | 386 | 96 | 104 | 445 | 68 | 41 | 252 | 26 | 81 | 626 | 111 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 | 0.95 | 0.99 | 0.99 | 0.95 | 0.98 | 0.98 |
| Lanes: | 0.15 | 1.48 | 0.37 | 0.34 | 1.44 | 0.22 | 1.00 | 0.91 | 0.09 | 1.00 | 0.85 | 0.15 |
| Final Sat.: | 266 | 2592 | 641 | 595 | 2536 | 389 | 1805 | 1700 | 173 | 1805 | 1579 | 279 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | 0.18 | 0.18 | 0.18 | 0.02 | 0.15 | 0.15 | 0.04 | 0.40 | 0.40 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | 0.20 | 0.20 | 0.20 | 0.05 | 0.38 | 0.38 | 0.13 | 0.46 | 0.46 |
| Volume/Cap: | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.45 | 0.39 | 0.39 | 0.35 | 0.86 | 0.86 |
| Uniform Del: | 40.1 | 40.1 | 40.1 | 38.4 | 38.4 | 38.4 | 46.2 | 22.4 | 22.4 | 39.7 | 24.0 | 24.0 |
| IncremntDel: | 11.7 | 11.7 | 11.7 | 10.1 | 10.1 | 10.1 | 3.6 | 0.3 | 0.3 | 0.9 | 8.7 | 8.7 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 51.9 | 51.9 | 51.9 | 48.5 | 48.5 | 48.5 | 49.8 | 22.7 | 22.7 | 40.6 | 32.7 | 32.7 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 51.9 | 51.9 | 51.9 | 48.5 | 48.5 | 48.5 | 49.8 | 22.7 | 22.7 | 40.6 | 32.7 | 32.7 |
| LOS by Move: | D | D | D | D | D | D | D | C | C | D | C | C |
| HCM2kAvgQ: | 11 | 11 | 11 | 13 | 13 | 13 | 2 | 6 | 6 | 3 | 23 | 23 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.700
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 53 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 48 | 2527 | 0 | 0 | 1106 | 33 | 110 | 0 | 6 | 0 | 0 | 0 |
| Added Vol: | 94 | 30 | 0 | 0 | 442 | 0 | 153 | 0 | 21 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 142 | 2557 | 0 | 0 | 1548 | 33 | 263 | 0 | 27 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 142 | 2557 | 0 | 0 | 1548 | 33 | 263 | 0 | 27 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 142 | 2557 | 0 | 0 | 1548 | 33 | 263 | 0 | 27 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 142 | 2557 | 0 | 0 | 1548 | 33 | 263 | 0 | 27 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.50 | 0.00 | 0.00 | 0.30 | 0.02 | 0.15 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | **** | | | | | |
| Green/Cycle: | 0.15 | 0.72 | 0.00 | 0.00 | 0.57 | 0.57 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.54 | 0.70 | 0.00 | 0.00 | 0.54 | 0.04 | 0.70 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 51.1 | 10.4 | 0.0 | 0.0 | 17.4 | 12.4 | 47.4 | 0.0 | 41.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 2.2 | 0.6 | 0.0 | 0.0 | 0.2 | 0.0 | 5.8 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 53.2 | 11.0 | 0.0 | 0.0 | 17.6 | 12.4 | 53.2 | 0.0 | 41.1 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 53.2 | 11.0 | 0.0 | 0.0 | 17.6 | 12.4 | 53.2 | 0.0 | 41.1 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | D | B | A | A | B | B | D | A | D | A | A | A |
| HCM2kAvgQ: | 6 | 21 | 0 | 0 | 14 | 1 | 11 | 0 | 1 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.637
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.4
Optimal Cycle: 46 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | 218 | 0 | 31 | 0 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 156 | 2215 | 0 | | 0 | 911 | 210 | 233 | 0 | 33 | 0 | | 0 | 0 | 0 | |
| Added Vol: | 94 | 122 | 0 | | 0 | 462 | 1 | 2 | 0 | 21 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 250 | 2337 | 0 | | 0 | 1373 | 211 | 235 | 0 | 54 | 0 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 250 | 2337 | 0 | | 0 | 1373 | 211 | 235 | 0 | 54 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 250 | 2337 | 0 | | 0 | 1373 | 211 | 235 | 0 | 54 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 250 | 2337 | 0 | | 0 | 1373 | 211 | 235 | 0 | 54 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.46 | 0.00 | | 0.00 | 0.27 | 0.13 | 0.13 | 0.00 | 0.03 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | **** | | | | | | | | |
| Green/Cycle: | 0.25 | 0.72 | 0.00 | | 0.00 | 0.47 | 0.47 | 0.21 | 0.00 | 0.21 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.57 | 0.64 | 0.00 | | 0.00 | 0.57 | 0.28 | 0.64 | 0.00 | 0.16 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 42.8 | 9.3 | 0.0 | | 0.0 | 24.7 | 20.8 | 46.9 | 0.0 | 42.1 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.8 | 0.4 | 0.0 | | 0.0 | 0.3 | 0.2 | 3.7 | 0.0 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 44.6 | 9.7 | 0.0 | | 0.0 | 25.0 | 21.0 | 50.6 | 0.0 | 42.4 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 44.6 | 9.7 | 0.0 | | 0.0 | 25.0 | 21.0 | 50.6 | 0.0 | 42.4 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | A | A | | A | C | C | D | A | D | A | | A | A | A | |
| HCM2kAvgQ: | 9 | 18 | 0 | | 0 | 14 | 5 | 9 | 0 | 2 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.670
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 23.6
Optimal Cycle: 33 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | 83 | 0 | 561 | 0 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 496 | 392 | 0 | | 0 | 426 | 71 | 89 | 0 | 600 | 0 | | 0 | 0 | 0 | |
| Added Vol: | 3 | 24 | 0 | | 0 | 71 | 2 | 7 | 0 | 13 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 613 | 0 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | 0.93 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | 1.00 | 0.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1597 | 233 | 1769 | 0 | 1900 | 0 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.28 | 0.22 | 0.00 | | 0.00 | 0.31 | 0.31 | 0.05 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | **** | | | | | | | | |
| Green/Cycle: | 0.42 | 0.89 | 0.00 | | 0.00 | 0.46 | 0.46 | 0.08 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.67 | 0.25 | 0.00 | | 0.00 | 0.67 | 0.67 | 0.67 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 28.0 | 1.0 | 0.0 | | 0.0 | 25.0 | 25.0 | 53.6 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 2.4 | 0.1 | 0.0 | | 0.0 | 2.1 | 2.1 | 11.7 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 30.4 | 1.1 | 0.0 | | 0.0 | 27.1 | 27.1 | 65.3 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 30.4 | 1.1 | 0.0 | | 0.0 | 27.1 | 27.1 | 65.3 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | C | C | E | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 15 | 2 | 0 | | 0 | 17 | 17 | 5 | 0 | 0 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.492
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 22 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 61 | 667 | 52 | | 205 | 759 | 73 | | 3 | 3 | 3 | | 132 | 57 | 258 | |
| Added Vol: | 0 | 26 | 0 | | 1 | 84 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.49 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 940 | 861 | 861 | | 1024 | 441 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.20 | 0.03 | | 0.12 | 0.24 | 0.05 | | 0.00 | 0.00 | 0.00 | | 0.13 | 0.13 | 0.16 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.40 | 0.40 | | 0.24 | 0.55 | 0.55 | | 0.33 | 0.33 | 0.33 | | 0.33 | 0.33 | 0.33 | |
| Volume/Cap: | 0.43 | 0.49 | 0.08 | | 0.49 | 0.43 | 0.08 | | 0.01 | 0.01 | 0.01 | | 0.39 | 0.39 | 0.49 | |
| Uniform Del: | 52.6 | 27.1 | 22.5 | | 39.5 | 15.6 | 12.5 | | 26.9 | 26.9 | 26.9 | | 30.7 | 30.7 | 32.0 | |
| IncremntDel: | 2.1 | 0.3 | 0.1 | | 0.9 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.5 | 0.5 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.7 | 27.4 | 22.6 | | 40.5 | 15.8 | 12.5 | | 26.9 | 26.9 | 26.9 | | 31.2 | 31.2 | 32.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.7 | 27.4 | 22.6 | | 40.5 | 15.8 | 12.5 | | 26.9 | 26.9 | 26.9 | | 31.2 | 31.2 | 32.7 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 10 | 1 | | 7 | 9 | 1 | | 0 | 0 | 0 | | 5 | 5 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.665
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 31.9
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 123 | 336 | 9 | | 7 | 524 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| Added Vol: | 0 | 138 | 0 | | 0 | 35 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 474 | 9 | | 7 | 559 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 474 | 9 | | 7 | 559 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 474 | 9 | | 7 | 559 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 474 | 9 | | 7 | 559 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.41 | 1.56 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 725 | 2792 | 50 | | 27 | 2005 | 1362 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.28 | 0.28 | 0.28 | | 0.05 | 0.08 | 0.08 | | 0.06 | 0.06 | 0.06 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | **** | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.42 | 0.42 | 0.42 | | 0.12 | 0.12 | 0.12 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.67 | 0.67 | 0.67 | | 0.67 | 0.67 | 0.67 | | 0.39 | 0.67 | 0.67 | | 0.67 | 0.67 | 0.67 | |
| Uniform Del: | 33.4 | 33.4 | 33.4 | | 23.4 | 23.4 | 23.4 | | 40.4 | 41.9 | 41.9 | | 43.9 | 43.9 | 43.9 | |
| IncremntDel: | 1.9 | 1.9 | 1.9 | | 1.2 | 1.2 | 1.2 | | 0.5 | 5.4 | 5.4 | | 9.4 | 9.4 | 9.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.3 | 35.3 | 35.3 | | 24.6 | 24.6 | 24.6 | | 40.9 | 47.3 | 47.3 | | 53.3 | 53.3 | 53.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.3 | 35.3 | 35.3 | | 24.6 | 24.6 | 24.6 | | 40.9 | 47.3 | 47.3 | | 53.3 | 53.3 | 53.3 | |
| LOS by Move: | D | D | D | | C | C | C | | D | D | D | | D | D | D | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 13 | 13 | 13 | | 3 | 6 | 6 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.562 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.4 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 0 | 2351 | 0 | 0 | 837 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 216 | 0 | 0 | 483 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 2567 | 0 | 0 | 1320 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 2567 | 0 | 0 | 1320 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 2567 | 0 | 0 | 1320 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 2567 | 0 | 0 | 1320 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.49 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.56 | 0.00 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 0.0 | 1.4 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 1.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 1.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 0 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2018 East Campus Only PM |
| Command: | Near Term II No Project PM |
| Volume: | Near Term II No Project PM |
| Geometry: | Near Term II No Project PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term II No Project PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term II No Project PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 59.1 | 1.009 | E | 61.1 | 1.030 | + 2.080 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 15.2 | 0.872 | C | 33.4 | 1.046 | +18.223 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 20.0 | 0.874 | C | 25.4 | 0.930 | + 5.386 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 21.5 | 0.733 | C | 21.1 | 0.845 | -0.404 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 27.2 | 0.623 | C | 21.4 | 0.735 | -5.794 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 15.3 | 0.618 | B | 14.5 | 0.640 | -0.748 D/V |
| # 7 Middlefield at Marsh (Town of | C | 33.8 | 0.866 | D | 41.6 | 0.976 | + 7.806 D/V |
| # 8 Bayfront Exp. & Willow Rd. | D | 52.6 | 0.981 | F | 115.6 | 1.206 | +62.990 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.7 | 0.649 | C | 23.7 | 0.730 | + 1.076 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 12.3 | 0.581 | B | 14.0 | 0.707 | + 1.620 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 10.0 | 0.584 | A | 9.3 | 0.616 | -0.689 D/V |
| # 12 Newbridge St. & Willow Rd. | C | 34.5 | 0.787 | D | 48.0 | 1.014 | +13.523 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 20.6 | 0.781 | C | 21.4 | 0.805 | + 0.801 D/V |
| # 14 Durham St. & Willow Rd. | D | 51.3 | 0.680 | B | 17.3 | 0.803 | -33.951 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 12.2 | 0.782 | B | 12.4 | 0.818 | + 0.264 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 12.7 | 0.695 | B | 11.8 | 0.760 | -0.900 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 139.3 | 1.318 | F | 179.8 | 1.423 | +40.497 D/V |
| # 18 Bayfront Exp. & University Ave | F | 178.9 | 1.370 | F | 206.8 | 1.458 | +27.896 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 13.4 | 0.714 | B | 13.7 | 0.725 | + 0.288 D/V |
| # 20 University & Kavanaugh | B | 16.6 | 0.687 | B | 16.4 | 0.691 | -0.261 D/V |
| # 21 University & Bay | D | 35.4 | 0.862 | D | 35.1 | 0.866 | -0.246 D/V |
| # 22 University & Runnymede | C | 23.4 | 0.723 | C | 23.2 | 0.726 | -0.152 D/V |
| # 23 University & Bell | A | 7.9 | 0.566 | A | 7.8 | 0.570 | -0.090 D/V |
| # 24 University & Donohoe | D | 38.1 | 0.902 | D | 38.7 | 0.904 | + 0.597 D/V |
| # 25 NB 101 & Donohoe St | B | 13.9 | 0.499 | B | 13.9 | 0.501 | + 0.040 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 27.1 | 0.544 | C | 27.0 | 0.560 | -0.065 D/V |
| # 27 University Ave. & Woodland | D | 49.6 | 0.920 | D | 50.0 | 0.927 | + 0.400 D/V |
| # 28 Middlefield Rd. & University A | C | 33.2 | 0.575 | C | 34.8 | 0.640 | + 1.586 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 19.5 | 0.729 | F | 87.4 | 1.138 | +67.973 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 14.3 | 0.625 | B | 18.4 | 0.735 | + 4.142 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 27.6 | 0.768 | C | 27.6 | 0.785 | -0.054 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.7 | 0.647 | C | 29.5 | 0.671 | + 0.837 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 39.6 | 0.754 | D | 42.0 | 0.812 | + 2.404 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.4 | 0.541 | A | 1.5 | 0.589 | + 0.120 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 1.030
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 61.1
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1267 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2089 | | 33 | 78 | 12 | |
| Added Vol: | 980 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 53 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2247 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2142 | | 33 | 78 | 12 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2247 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2142 | | 33 | 78 | 12 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2247 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2142 | | 33 | 78 | 12 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2247 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2142 | | 33 | 78 | 12 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.44 | 0.03 | 0.03 | | 0.00 | 0.10 | 0.13 | | 0.11 | 0.11 | 0.77 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.42 | 0.42 | 0.42 | | 0.00 | 0.10 | 0.42 | | 0.32 | 0.32 | 0.75 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 1.03 | 0.08 | 0.08 | | 0.00 | 1.03 | 0.30 | | 0.33 | 0.33 | 1.03 | | 1.03 | 1.03 | 1.03 | |
| Uniform Del: | 40.3 | 24.0 | 24.0 | | 0.0 | 62.9 | 26.5 | | 35.9 | 35.9 | 17.7 | | 65.4 | 65.4 | 65.4 | |
| IncremntDel: | 27.3 | 0.0 | 0.0 | | 0.0 | 55.3 | 0.2 | | 0.3 | 0.3 | 27.8 | | 90.5 | 90.5 | 90.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 67.6 | 24.1 | 24.1 | | 0.0 | 118 | 26.8 | | 36.3 | 36.3 | 45.5 | | 155.8 | 156 | 155.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 67.6 | 24.1 | 24.1 | | 0.0 | 118 | 26.8 | | 36.3 | 36.3 | 45.5 | | 155.8 | 156 | 155.8 | |
| LOS by Move: | E | C | C | | A | F | C | | D | D | D | | F | F | F | |
| HCM2kAvgQ: | 41 | 1 | 1 | | 0 | 13 | 6 | | 6 | 6 | 62 | | 9 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.046
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 33.4
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 0 | 0 | 0 | 1 | 0 0 | 0 | 0 | 0 | 0 1 | 1 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 528 | 0 | 228 | | 0 | 0 | 0 | | 0 | 2207 | 542 | | 0 | 730 | 846 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 115 | 0 | | 0 | 729 | 251 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2322 | 542 | | 0 | 1459 | 1097 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2322 | 0 | | 0 | 1459 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2322 | 0 | | 0 | 1459 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2322 | 0 | | 0 | 1459 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3374 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.00 | 0.25 | | 0.00 | 0.00 | 0.00 | | 0.69 | 0.69 | 0.00 | | 0.00 | 0.41 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.00 | 0.23 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Volume/Cap: | 0.66 | 0.00 | 1.05 | | 0.00 | 0.00 | 0.00 | | 1.05 | 1.05 | 0.00 | | 0.00 | 0.63 | 0.00 | |
| Uniform Del: | 22.5 | 0.0 | 24.9 | | 0.0 | 0.0 | 0.0 | | 11.1 | 11.1 | 0.0 | | 0.0 | 6.5 | 0.0 | |
| IncremntDel: | 2.0 | 0.0 | 59.3 | | 0.0 | 0.0 | 0.0 | | 32.5 | 32.5 | 0.0 | | 0.0 | 0.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 24.5 | 0.0 | 84.1 | | 0.0 | 0.0 | 0.0 | | 43.6 | 43.6 | 0.0 | | 0.0 | 7.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 24.5 | 0.0 | 84.1 | | 0.0 | 0.0 | 0.0 | | 43.6 | 43.6 | 0.0 | | 0.0 | 7.0 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | D | D | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 0 | 15 | | 0 | 0 | 0 | | 38 | 38 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.930
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 93 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 0 | 0 | 0 | 0 | 2 0 | 0 | 0 | 1 | 0 0 | 2 | 0 | 1 | 0 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 1450 | 0 | 485 | | 0 | 1264 | 697 | | 0 | 1006 | 302 | |
| Added Vol: | 0 | 0 | 0 | | 64 | 0 | 8 | | 0 | 61 | 0 | | 0 | 370 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1514 | 0 | 493 | | 0 | 1325 | 697 | | 0 | 1376 | 302 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1514 | 0 | 493 | | 0 | 1325 | 0 | | 0 | 1376 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1514 | 0 | 493 | | 0 | 1325 | 0 | | 0 | 1376 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1514 | 0 | 493 | | 0 | 1325 | 0 | | 0 | 1376 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.44 | 0.00 | 0.31 | | 0.00 | 0.37 | 0.00 | | 0.00 | 0.39 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.47 | 0.00 | 0.47 | | 0.00 | 0.42 | 0.00 | | 0.00 | 0.42 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.93 | 0.00 | 0.66 | | 0.00 | 0.90 | 0.00 | | 0.00 | 0.93 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 16.1 | 0.0 | 13.0 | | 0.0 | 17.6 | 0.0 | | 0.0 | 18.0 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 9.9 | 0.0 | 2.1 | | 0.0 | 7.5 | 0.0 | | 0.0 | 10.7 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 26.0 | 0.0 | 15.2 | | 0.0 | 25.1 | 0.0 | | 0.0 | 28.7 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 26.0 | 0.0 | 15.2 | | 0.0 | 25.1 | 0.0 | | 0.0 | 28.7 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | B | | A | C | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 20 | 0 | 9 | | 0 | 17 | 0 | | 0 | 19 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.845
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.1
Optimal Cycle: 59 Level Of Service: C

| Approach: | North Bound | | | | | | South Bound | | | | | | East Bound | | | | | | West Bound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | |
| Control: | Split Phase | | | | | | Split Phase | | | | | | Protected | | | | | | Protected | | | | | |
| Rights: | Include | | | | | | Include | | | | | | Include | | | | | | Include | | | | | |
| Min. Green: | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 6 | | 6 | | 4 | | 6 | | 6 | |
| Lanes: | 0 | 1 | 0 | 0 | 2 | | 0 | 1 | 0 | 0 | 1 | | 1 | 0 | 2 | 1 | 0 | | 2 | 0 | 1 | 1 | 0 | |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | | 15 | | 267 | | 254 | | 9 | | 2 | | 42 | 1314 | | 17 | | | 78 | 1109 | | 214 | | |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | | 1.07 |
| Initial Bse: | 30 | | 16 | | 286 | | 272 | | 10 | | 2 | | 45 | 1406 | | 18 | | | 83 | 1187 | | 229 | | |
| Added Vol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 63 | | 0 | | | 0 | 377 | | 0 | | |
| PasserByVol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | |
| Initial Fut: | 30 | | 16 | | 286 | | 272 | | 10 | | 2 | | 45 | 1469 | | 18 | | | 83 | 1564 | | 229 | | |
| User Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Volume: | 30 | | 16 | | 286 | | 272 | | 10 | | 2 | | 45 | 1469 | | 18 | | | 83 | 1564 | | 229 | | |
| Reduct Vol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | |
| Reduced Vol: | 30 | | 16 | | 286 | | 272 | | 10 | | 2 | | 45 | 1469 | | 18 | | | 83 | 1564 | | 229 | | |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| FinalVolume: | 30 | | 16 | | 286 | | 272 | | 10 | | 2 | | 45 | 1469 | | 18 | | | 83 | 1564 | | 229 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | | 1900 | 1900 | 1900 | | 1900 | | 1900 | 1900 | 1900 | | 1900 | | 1900 | 1900 | 1900 | | 1900 | | 1900 |
| Adjustment: | 0.95 | 0.95 | | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | | 0.89 | 0.89 | 0.90 | | 0.91 | | 0.91 | | | | | | |
| Lanes: | 0.65 | 0.35 | | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | | 2.96 | 0.04 | 2.00 | | 1.74 | | 0.26 | | | | | | |
| Final Sat.: | 1174 | 629 | | 2786 | | 1716 | 61 | 1583 | | 1769 | | 5011 | 62 | 3432 | | 3027 | | 443 | | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.03 | | 0.10 | | 0.16 | 0.16 | 0.00 | | 0.03 | | 0.29 | 0.29 | 0.02 | | 0.52 | | 0.52 | | | | | | |
| Crit Moves: | | | | **** | | | **** | | | **** | | | | | | **** | | | | | | | | |
| Green/Cycle: | 0.12 | 0.12 | | 0.12 | | 0.18 | 0.18 | 0.18 | | 0.05 | | 0.55 | 0.55 | 0.09 | | 0.60 | | 0.60 | | | | | | |
| Volume/Cap: | 0.22 | 0.22 | | 0.86 | | 0.86 | 0.86 | 0.01 | | 0.51 | | 0.53 | 0.53 | 0.26 | | 0.86 | | 0.86 | | | | | | |
| Uniform Del: | 31.9 | 31.9 | | 34.6 | | 31.7 | 31.7 | 26.7 | | 37.0 | | 11.3 | 11.3 | 33.6 | | 13.4 | | 13.4 | | | | | | |
| IncremntDel: | 0.5 | 0.5 | | 20.3 | | 20.5 | 20.5 | 0.0 | | 4.8 | | 0.2 | 0.2 | 0.4 | | 4.0 | | 4.0 | | | | | | |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | | 0.0 | | | | | | |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | | | | | | |
| Delay/Veh: | 32.4 | 32.4 | | 54.9 | | 52.2 | 52.2 | 26.7 | | 41.8 | | 11.5 | 11.5 | 34.0 | | 17.4 | | 17.4 | | | | | | |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | | | | | | |
| AdjDel/Veh: | 32.4 | 32.4 | | 54.9 | | 52.2 | 52.2 | 26.7 | | 41.8 | | 11.5 | 11.5 | 34.0 | | 17.4 | | 17.4 | | | | | | |
| LOS by Move: | C | C | | D | | D | D | C | | D | | B | B | C | | B | | B | | | | | | |
| HCM2kAvgQ: | 1 | 1 | | 7 | | 10 | 10 | 0 | | 2 | | 9 | 9 | 1 | | 22 | | 22 | | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 38 Level Of Service: C

| Approach: | North Bound | | | | | | South Bound | | | | | | East Bound | | | | | | West Bound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | | L | - | T | - | R | |
| Control: | Split Phase | | | | | | Split Phase | | | | | | Protected | | | | | | Protected | | | | | |
| Rights: | Include | | | | | | Include | | | | | | Include | | | | | | Include | | | | | |
| Min. Green: | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 6 | | 6 | | 4 | | 6 | | 6 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | | 1 | 1 | 0 | 0 | 1 | | 1 | 0 | 1 | 1 | 0 | | 1 | 0 | 2 | 0 | 1 | |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | | 32 | | 58 | | 428 | | 30 | | 128 | | 239 | 885 | | 55 | | | 26 | 833 | | 316 | | |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | | 1.07 |
| Initial Bse: | 102 | | 34 | | 62 | | 458 | | 32 | | 137 | | 256 | 947 | | 59 | | | 28 | 891 | | 338 | | |
| Added Vol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 63 | | 0 | | | 0 | 377 | | 0 | | |
| PasserByVol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | |
| Initial Fut: | 102 | | 34 | | 62 | | 458 | | 32 | | 137 | | 256 | 1010 | | 59 | | | 28 | 1268 | | 338 | | |
| User Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Volume: | 102 | | 34 | | 62 | | 458 | | 32 | | 137 | | 256 | 1010 | | 59 | | | 28 | 1268 | | 338 | | |
| Reduct Vol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | | 0 | 0 | | 0 | | |
| Reduced Vol: | 102 | | 34 | | 62 | | 458 | | 32 | | 137 | | 256 | 1010 | | 59 | | | 28 | 1268 | | 338 | | |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 |
| FinalVolume: | 102 | | 34 | | 62 | | 458 | | 32 | | 137 | | 256 | 1010 | | 59 | | | 28 | 1268 | | 338 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | | 1900 | 1900 | 1900 | | 1900 | | 1900 | 1900 | 1900 | | 1900 | | 1900 | 1900 | 1900 | | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.88 | | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | | 0.92 | 0.92 | 0.93 | | 0.93 | | 0.83 | | | | | | |
| Lanes: | 1.00 | 0.36 | | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | | 1.89 | 0.11 | 1.00 | | 2.00 | | 1.00 | | | | | | |
| Final Sat.: | 1769 | 598 | | 1084 | | 3323 | 233 | 1583 | | 1769 | | 3316 | 193 | 1769 | | 3538 | | 1583 | | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | | 0.06 | | 0.14 | 0.14 | 0.09 | | 0.14 | | 0.30 | 0.30 | 0.02 | | 0.36 | | 0.21 | | | | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | **** | | | | | | | | |
| Green/Cycle: | 0.08 | 0.08 | | 0.08 | | 0.19 | 0.19 | 0.19 | | 0.20 | | 0.59 | 0.59 | 0.10 | | 0.49 | | 0.49 | | | | | | |
| Volume/Cap: | 0.74 | 0.73 | | 0.73 | | 0.74 | 0.74 | 0.46 | | 0.74 | | 0.52 | 0.52 | 0.16 | | 0.74 | | 0.44 | | | | | | |
| Uniform Del: | 36.1 | 36.1 | | 36.1 | | 30.6 | 30.6 | 28.9 | | 30.2 | | 9.8 | 9.8 | 33.2 | | 16.4 | | 13.4 | | | | | | |
| IncremntDel: | 18.4 | 19.0 | | 19.0 | | 4.3 | 4.3 | 1.1 | | 7.9 | | 0.2 | 0.2 | 0.5 | | 1.7 | | 0.4 | | | | | | |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | | 0.0 | | | | | | |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | | | | | | |
| Delay/Veh: | 54.5 | 55.0 | | 55.0 | | 34.9 | 34.9 | 30.1 | | 38.1 | | 10.0 | 10.0 | 33.6 | | 18.0 | | 13.7 | | | | | | |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | | 1.00 | | | | | | |
| AdjDel/Veh: | 54.5 | 55.0 | | 55.0 | | 34.9 | 34.9 | 30.1 | | 38.1 | | 10.0 | 10.0 | 33.6 | | 18.0 | | 13.7 | | | | | | |
| LOS by Move: | D | E | | E | | C | C | C | | D | | B | B | C | | B | | B | | | | | | |
| HCM2kAvgQ: | 4 | 4 | | 4 | | 7 | 7 | 4 | | 8 | | 8 | 8 | 1 | | 14 | | 6 | | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.640
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 30 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! 0 | 0 | 0 | 0 | 1! 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 61 | 9 | 193 | | 59 | 33 | 3 | | 5 | 876 | 96 | | 214 | 953 | 50 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 63 | 2 | | 0 | 377 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 939 | 98 | | 214 | 1330 | 50 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 939 | 98 | | 214 | 1330 | 50 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 939 | 98 | | 214 | 1330 | 50 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 939 | 98 | | 214 | 1330 | 50 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.68 | 0.68 | 0.68 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.80 | 0.19 | | 1.00 | 1.93 | 0.07 | |
| Final Sat.: | 366 | 50 | 1118 | | 800 | 451 | 44 | | 17 | 2981 | 312 | | 1769 | 3392 | 128 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.07 | 0.07 | 0.07 | | 0.32 | 0.32 | 0.32 | | 0.12 | 0.39 | 0.39 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | | 0.49 | 0.49 | 0.49 | | 0.19 | 0.68 | 0.68 | |
| Volume/Cap: | 0.64 | 0.64 | 0.64 | | 0.27 | 0.27 | 0.27 | | 0.64 | 0.64 | 0.64 | | 0.64 | 0.58 | 0.58 | |
| Uniform Del: | 25.9 | 25.9 | 25.9 | | 23.1 | 23.1 | 23.1 | | 15.1 | 15.1 | 15.1 | | 29.9 | 6.7 | 6.7 | |
| IncremntDel: | 3.4 | 3.4 | 3.4 | | 0.4 | 0.4 | 0.4 | | 0.9 | 0.9 | 0.9 | | 4.1 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 29.3 | 29.3 | 29.3 | | 23.5 | 23.5 | 23.5 | | 15.9 | 15.9 | 15.9 | | 34.0 | 7.0 | 7.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 29.3 | 29.3 | 29.3 | | 23.5 | 23.5 | 23.5 | | 15.9 | 15.9 | 15.9 | | 34.0 | 7.0 | 7.0 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 2 | 2 | 2 | | 11 | 11 | 11 | | 6 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.976
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 41.6
Optimal Cycle: 178 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 456 | 586 | | 437 | 288 | 0 | | 0 | 0 | 0 | | 551 | 0 | 478 | |
| Added Vol: | 0 | 58 | 42 | | 23 | 11 | 0 | | 0 | 0 | 0 | | 103 | 0 | 276 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 514 | 628 | | 460 | 299 | 0 | | 0 | 0 | 0 | | 654 | 0 | 754 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 514 | 628 | | 460 | 299 | 0 | | 0 | 0 | 0 | | 654 | 0 | 754 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 514 | 628 | | 460 | 299 | 0 | | 0 | 0 | 0 | | 654 | 0 | 754 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 514 | 628 | | 460 | 299 | 0 | | 0 | 0 | 0 | | 654 | 0 | 754 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.27 | 0.39 | | 0.25 | 0.16 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.36 | 0.00 | 0.47 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.28 | 0.65 | | 0.26 | 0.54 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.63 | |
| Volume/Cap: | 0.00 | 0.98 | 0.60 | | 0.98 | 0.29 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.98 | 0.00 | 0.74 | |
| Uniform Del: | 0.0 | 39.4 | 11.1 | | 40.3 | 13.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.1 | 0.0 | 14.0 | |
| IncremntDel: | 0.0 | 33.0 | 1.0 | | 35.2 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 28.7 | 0.0 | 2.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 72.4 | 12.1 | | 75.5 | 14.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 62.8 | 0.0 | 16.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 72.4 | 12.1 | | 75.5 | 14.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 62.8 | 0.0 | 16.9 | |
| LOS by Move: | A | E | B | | E | B | A | | A | A | A | | E | A | B | |
| HCM2kAvgQ: | 0 | 23 | 13 | | 21 | 5 | 0 | | 0 | 0 | 0 | | 28 | 0 | 19 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.206
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 115.6
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | 8 | | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | | | | |
| Initial Bse: | 387 | 710 | 1 | | 0 | 2353 | 116 | | 39 | 14 | 1524 | | 47 | 112 | 9 | | | | | |
| Added Vol: | 393 | 257 | 3 | | 49 | 171 | 0 | | 0 | 94 | 5 | | 317 | 391 | 181 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 780 | 967 | 4 | | 49 | 2524 | 116 | | 39 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 780 | 967 | 4 | | 49 | 2524 | 116 | | 39 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 780 | 967 | 4 | | 49 | 2524 | 116 | | 39 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 780 | 967 | 4 | | 49 | 2524 | 116 | | 39 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.92 | 0.92 | 0.88 | | 0.93 | 0.93 | 0.83 | | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 2.00 | | 1.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1746 | 3492 | 3343 | | 1769 | 3538 | 1583 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.17 | 0.00 | | 0.01 | 0.43 | 0.07 | | 0.02 | 0.03 | 0.46 | | 0.21 | 0.14 | 0.12 | | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | | | | | |
| Green/Cycle: | 0.19 | 0.44 | 0.61 | | 0.10 | 0.36 | 0.36 | | 0.19 | 0.19 | 0.38 | | 0.17 | 0.17 | 0.27 | | | | | |
| Volume/Cap: | 1.21 | 0.37 | 0.00 | | 0.14 | 1.21 | 0.20 | | 0.12 | 0.16 | 1.21 | | 1.21 | 0.83 | 0.44 | | | | | |
| Uniform Del: | 52.7 | 24.1 | 9.7 | | 53.1 | 41.7 | 28.9 | | 43.5 | 43.9 | 40.4 | | 53.9 | 52.1 | 39.0 | | | | | |
| IncremntDel: | 106.9 | 0.1 | 0.0 | | 0.2 | 97.6 | 0.2 | | 0.0 | 0.1 | 100.5 | | 119.8 | 9.7 | 0.7 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 159.7 | 24.2 | 9.7 | | 53.2 | 139 | 29.1 | | 43.6 | 44.0 | 140.8 | | 173.7 | 61.8 | 39.7 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 159.7 | 24.2 | 9.7 | | 53.2 | 139 | 29.1 | | 43.6 | 44.0 | 140.8 | | 173.7 | 61.8 | 39.7 | | | | | |
| LOS by Move: | F | C | A | | D | F | C | | D | D | F | | F | E | D | | | | | |
| HCM2kAvgQ: | 27 | 9 | 0 | | 1 | 58 | 3 | | 1 | 2 | 55 | | 25 | 13 | 6 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 23.7
Optimal Cycle: 64 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | | 73 | 5 | 73 | | 130 | 1351 | 5 | | 20 | 553 | 67 | | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | | | | |
| Initial Bse: | 138 | 6 | 52 | | 78 | 5 | 78 | | 139 | 1446 | 5 | | 21 | 592 | 72 | | | | | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 6 | 99 | 0 | | 0 | 784 | 0 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 138 | 6 | 52 | | 78 | 5 | 82 | | 145 | 1545 | 5 | | 21 | 1376 | 72 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 138 | 6 | 52 | | 78 | 5 | 82 | | 145 | 1545 | 5 | | 21 | 1376 | 72 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 138 | 6 | 52 | | 78 | 5 | 82 | | 145 | 1545 | 5 | | 21 | 1376 | 72 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 138 | 6 | 52 | | 78 | 5 | 82 | | 145 | 1545 | 5 | | 21 | 1376 | 72 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.61 | 0.61 | 0.61 | | 0.73 | 0.73 | 0.73 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | 0.92 | | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | | 0.47 | 0.03 | 0.50 | | 1.00 | 1.99 | 0.01 | | 1.00 | 1.90 | 0.10 | | | | | |
| Final Sat.: | 815 | 38 | 310 | | 656 | 45 | 690 | | 1769 | 3526 | 12 | | 1769 | 3339 | 174 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.12 | 0.12 | 0.12 | | 0.08 | 0.44 | 0.44 | | 0.01 | 0.41 | 0.41 | | | | | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.23 | 0.23 | 0.23 | | 0.11 | 0.62 | 0.62 | | 0.06 | 0.56 | 0.56 | | | | | |
| Volume/Cap: | 0.73 | 0.73 | 0.73 | | 0.51 | 0.51 | 0.51 | | 0.73 | 0.71 | 0.71 | | 0.21 | 0.73 | 0.73 | | | | | |
| Uniform Del: | 42.6 | 42.6 | 42.6 | | 40.2 | 40.2 | 40.2 | | 51.5 | 15.6 | 15.6 | | 53.8 | 19.4 | 19.4 | | | | | |
| IncremntDel: | 9.7 | 9.7 | 9.7 | | 1.4 | 1.4 | 1.4 | | 12.9 | 1.1 | 1.1 | | 1.0 | 1.4 | 1.4 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 52.4 | 52.4 | 52.4 | | 41.6 | 41.6 | 41.6 | | 64.4 | 16.7 | 16.7 | | 54.8 | 20.8 | 20.8 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 52.4 | 52.4 | 52.4 | | 41.6 | 41.6 | 41.6 | | 64.4 | 16.7 | 16.7 | | 54.8 | 20.8 | 20.8 | | | | | |
| LOS by Move: | D | D | D | | D | D | D | | E | B | B | | D | C | C | | | | | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 6 | 6 | 6 | | 7 | 21 | 21 | | 1 | 21 | 21 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.707
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 60 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 0 | 0 0 | 0 | | 0 0 | 1! 0 | 0 | | 1 0 | 2 0 | 0 | | 0 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 11 | 0 | 131 | | 105 | 1559 | 0 | | 0 | 856 | 24 | |
| Added Vol: | 0 | 0 | 0 | | 14 | 0 | 10 | | 10 | 91 | 0 | | 0 | 684 | 104 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 25 | 0 | 141 | | 115 | 1650 | 0 | | 0 | 1540 | 128 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 25 | 0 | 141 | | 115 | 1650 | 0 | | 0 | 1540 | 128 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 25 | 0 | 141 | | 115 | 1650 | 0 | | 0 | 1540 | 128 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 25 | 0 | 141 | | 115 | 1650 | 0 | | 0 | 1540 | 128 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | 0.86 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.92 | 0.92 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.15 | 0.00 | 0.85 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.85 | 0.15 | |
| Final Sat.: | 0 | 0 | 0 | | 245 | 0 | 1392 | | 1769 | 3538 | 0 | | 0 | 3231 | 268 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.10 | 0.00 | 0.10 | | 0.06 | 0.47 | 0.00 | | 0.00 | 0.48 | 0.48 | |
| Crit Moves: | | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.14 | 0.00 | 0.14 | | 0.09 | 0.77 | 0.00 | | 0.00 | 0.67 | 0.67 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.71 | 0.00 | 0.71 | | 0.71 | 0.61 | 0.00 | | 0.00 | 0.71 | 0.71 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 49.0 | 0.0 | 49.0 | | 52.9 | 6.2 | 0.0 | | 0.0 | 12.2 | 12.2 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 9.6 | 0.0 | 9.6 | | 13.4 | 0.4 | 0.0 | | 0.0 | 1.0 | 1.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 58.6 | 0.0 | 58.6 | | 66.3 | 6.6 | 0.0 | | 0.0 | 13.2 | 13.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 58.6 | 0.0 | 58.6 | | 66.3 | 6.6 | 0.0 | | 0.0 | 13.2 | 13.2 | |
| LOS by Move: | A | A | A | | E | A | E | | E | A | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 7 | 0 | 7 | | 6 | 14 | 0 | | 0 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.616
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.3
Optimal Cycle: 49 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | | 0 0 | 2 0 | 1 | | 1 0 | 2 0 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 128 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1512 | 218 | | 78 | 950 | 0 | |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 100 | 11 | | 0 | 694 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1612 | 229 | | 78 | 1644 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1612 | 229 | | 78 | 1644 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1612 | 229 | | 78 | 1644 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1612 | 229 | | 78 | 1644 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2838 | 0 | 626 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.46 | 0.14 | | 0.04 | 0.46 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.74 | 0.74 | | 0.07 | 0.81 | 0.00 | |
| Volume/Cap: | 0.48 | 0.00 | 0.62 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.62 | 0.20 | | 0.62 | 0.57 | 0.00 | |
| Uniform Del: | 51.3 | 0.0 | 52.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.5 | 4.8 | | 54.1 | 4.0 | 0.0 | |
| IncremntDel: | 1.0 | 0.0 | 4.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.4 | 0.1 | | 8.8 | 0.3 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 52.3 | 0.0 | 56.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.9 | 4.8 | | 62.9 | 4.3 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.3 | 0.0 | 56.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.9 | 4.8 | | 62.9 | 4.3 | 0.0 | |
| LOS by Move: | D | A | E | | A | A | A | | A | A | A | | E | A | A | |
| HCM2kAvgQ: | 3 | 0 | 5 | | 0 | 0 | 0 | | 0 | 15 | 3 | | 4 | 11 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 1.014
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 48.0
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 265 | 182 | 59 | | 41 | 178 | 234 | | 346 | 1537 | 363 | | 109 | 1043 | 36 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 6 | 111 | 0 | | 0 | 699 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1648 | 363 | | 109 | 1742 | 36 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1648 | 363 | | 109 | 1742 | 36 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1648 | 363 | | 109 | 1742 | 36 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1648 | 363 | | 109 | 1742 | 36 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.46 | 0.54 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4054 | 892 | | 1769 | 3455 | 72 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.15 | | 0.20 | 0.41 | 0.41 | | 0.06 | 0.50 | 0.50 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.10 | 0.10 | 0.19 | | 0.09 | 0.09 | 0.29 | | 0.20 | 0.60 | 0.60 | | 0.09 | 0.50 | 0.50 | |
| Volume/Cap: | 0.80 | 1.01 | 0.20 | | 0.24 | 1.01 | 0.53 | | 1.01 | 0.68 | 0.68 | | 0.68 | 1.01 | 1.01 | |
| Uniform Del: | 53.1 | 54.2 | 41.1 | | 50.4 | 54.4 | 35.7 | | 48.2 | 16.0 | 16.0 | | 52.8 | 30.2 | 30.2 | |
| IncremntDel: | 13.2 | 71.0 | 0.3 | | 0.8 | 71.8 | 1.2 | | 52.1 | 0.6 | 0.6 | | 10.8 | 25.1 | 25.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 66.3 | 125 | 41.5 | | 51.2 | 126 | 36.9 | | 100.3 | 16.7 | 16.7 | | 63.6 | 55.3 | 55.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 66.3 | 125 | 41.5 | | 51.2 | 126 | 36.9 | | 100.3 | 16.7 | 16.7 | | 63.6 | 55.3 | 55.3 | |
| LOS by Move: | E | F | D | | D | F | D | | F | B | B | | E | E | E | |
| HCM2kAvgQ: | 7 | 11 | 2 | | 2 | 11 | 8 | | 19 | 18 | 18 | | 5 | 43 | 43 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.805
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 73 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 445 | 0 | 58 | | 43 | 1537 | 0 | | 0 | 1135 | 273 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 64 | 0 | | 0 | 197 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1601 | 0 | | 0 | 1332 | 280 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1601 | 0 | | 0 | 1332 | 280 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1601 | 0 | | 0 | 1332 | 280 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1601 | 0 | | 0 | 1332 | 280 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.25 | 0.00 | 0.04 | | 0.02 | 0.45 | 0.00 | | 0.00 | 0.38 | 0.18 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.32 | 0.00 | 0.32 | | 0.07 | 0.56 | 0.00 | | 0.00 | 0.49 | 0.49 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.80 | 0.00 | 0.12 | | 0.33 | 0.80 | 0.00 | | 0.00 | 0.77 | 0.36 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 28.3 | 0.0 | 21.9 | | 39.7 | 15.7 | 0.0 | | 0.0 | 18.8 | 14.2 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 8.3 | 0.0 | 0.1 | | 1.6 | 2.5 | 0.0 | | 0.0 | 2.1 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 36.6 | 0.0 | 22.0 | | 41.2 | 18.2 | 0.0 | | 0.0 | 20.9 | 14.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 36.6 | 0.0 | 22.0 | | 41.2 | 18.2 | 0.0 | | 0.0 | 20.9 | 14.5 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | C | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 14 | 0 | 1 | | 1 | 20 | 0 | | 0 | 17 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.803
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 63 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 0 | 1 | 0 0 | 1 | 1 | 0 1 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1204 | 11 | | 96 | 875 | 55 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 64 | 0 | | 0 | 197 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1268 | 11 | | 96 | 1072 | 55 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1268 | 11 | | 96 | 1072 | 55 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1268 | 11 | | 96 | 1072 | 55 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1268 | 11 | | 96 | 1072 | 55 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.46 | 0.84 | 0.84 | | 0.54 | 0.54 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.97 | 0.97 | |
| Lanes: | 1.00 | 0.08 | 0.92 | | 0.96 | 0.04 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.95 | 0.05 | |
| Final Sat.: | 879 | 122 | 1481 | | 982 | 40 | 1583 | | 1769 | 3505 | 30 | | 1769 | 1759 | 90 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.06 | 0.06 | | 0.13 | 0.13 | 0.02 | | 0.01 | 0.36 | 0.36 | | 0.05 | 0.61 | 0.61 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.16 | 0.16 | 0.16 | | 0.16 | 0.16 | 0.16 | | 0.04 | 0.67 | 0.67 | | 0.10 | 0.73 | 0.73 | |
| Volume/Cap: | 0.25 | 0.38 | 0.38 | | 0.83 | 0.83 | 0.13 | | 0.17 | 0.54 | 0.54 | | 0.54 | 0.83 | 0.83 | |
| Uniform Del: | 38.6 | 39.4 | 39.4 | | 42.7 | 42.7 | 37.8 | | 48.9 | 8.9 | 8.9 | | 44.9 | 9.4 | 9.4 | |
| IncremntDel: | 0.9 | 1.0 | 1.0 | | 28.3 | 28.3 | 0.2 | | 1.2 | 0.2 | 0.2 | | 3.3 | 4.4 | 4.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.5 | 40.4 | 40.4 | | 71.0 | 71.0 | 38.0 | | 50.1 | 9.1 | 9.1 | | 48.1 | 13.9 | 13.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.5 | 40.4 | 40.4 | | 71.0 | 71.0 | 38.0 | | 50.1 | 9.1 | 9.1 | | 48.1 | 13.9 | 13.9 | |
| LOS by Move: | D | D | D | | E | E | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 1 | 3 | 3 | | 7 | 7 | 1 | | 1 | 11 | 11 | | 4 | 27 | 27 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.818
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 67 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 1! | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1159 | 6 | | 5 | 851 | 117 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 64 | 0 | | 0 | 197 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1223 | 6 | | 5 | 1048 | 117 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1223 | 6 | | 5 | 1048 | 117 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1223 | 6 | | 5 | 1048 | 117 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1223 | 6 | | 5 | 1048 | 117 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.15 | 0.98 | 0.98 | | 0.13 | 0.97 | 0.97 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.90 | 0.10 | |
| Final Sat.: | 654 | 599 | 381 | | 961 | 63 | 366 | | 292 | 1850 | 10 | | 238 | 1650 | 184 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.10 | 0.10 | 0.10 | | 0.09 | 0.66 | 0.66 | | 0.02 | 0.63 | 0.63 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.13 | 0.13 | 0.13 | | 0.13 | 0.13 | 0.13 | | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Volume/Cap: | 0.16 | 0.16 | 0.16 | | 0.82 | 0.82 | 0.82 | | 0.11 | 0.82 | 0.82 | | 0.03 | 0.79 | 0.79 | |
| Uniform Del: | 41.0 | 41.0 | 41.0 | | 44.8 | 44.8 | 44.8 | | 2.1 | 5.7 | 5.7 | | 2.0 | 5.3 | 5.3 | |
| IncremntDel: | 0.4 | 0.4 | 0.4 | | 25.2 | 25.2 | 25.2 | | 0.2 | 3.6 | 3.6 | | 0.1 | 2.9 | 2.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 41.3 | 41.3 | 41.3 | | 69.9 | 69.9 | 69.9 | | 2.3 | 9.3 | 9.3 | | 2.0 | 8.1 | 8.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.3 | 41.3 | 41.3 | | 69.9 | 69.9 | 69.9 | | 2.3 | 9.3 | 9.3 | | 2.0 | 8.1 | 8.1 | |
| LOS by Move: | D | D | D | | E | E | E | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 7 | 7 | 7 | | 0 | 24 | 24 | | 0 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.760
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 11.8
Optimal Cycle: 54 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 98 | 33 | 80 | | 31 | 32 | 4 | | 4 | 1037 | 39 | | 40 | 890 | 18 | |
| Added Vol: | 18 | 0 | 7 | | 0 | 0 | 0 | | 0 | 57 | 22 | | 24 | 173 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 116 | 33 | 87 | | 31 | 32 | 4 | | 4 | 1094 | 61 | | 64 | 1063 | 18 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 116 | 33 | 87 | | 31 | 32 | 4 | | 4 | 1094 | 61 | | 64 | 1063 | 18 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 116 | 33 | 87 | | 31 | 32 | 4 | | 4 | 1094 | 61 | | 64 | 1063 | 18 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 116 | 33 | 87 | | 31 | 32 | 4 | | 4 | 1094 | 61 | | 64 | 1063 | 18 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.87 | 0.87 | | 0.48 | 0.96 | 0.96 | | 0.20 | 0.97 | 0.97 | | 0.17 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.28 | 0.72 | | 1.00 | 0.88 | 0.12 | | 1.00 | 0.95 | 0.05 | | 1.00 | 0.98 | 0.02 | |
| Final Sat.: | 1376 | 457 | 1202 | | 918 | 1613 | 215 | | 371 | 1750 | 97 | | 317 | 1825 | 31 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.07 | 0.07 | | 0.03 | 0.02 | 0.02 | | 0.01 | 0.62 | 0.62 | | 0.20 | 0.58 | 0.58 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.82 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 | |
| Volume/Cap: | 0.76 | 0.65 | 0.65 | | 0.30 | 0.18 | 0.18 | | 0.01 | 0.76 | 0.76 | | 0.24 | 0.71 | 0.71 | |
| Uniform Del: | 45.3 | 44.7 | 44.7 | | 42.9 | 42.3 | 42.3 | | 1.7 | 4.4 | 4.4 | | 2.1 | 4.0 | 4.0 | |
| IncremntDel: | 19.7 | 8.1 | 8.1 | | 1.7 | 0.4 | 0.4 | | 0.0 | 2.3 | 2.3 | | 0.5 | 1.6 | 1.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 65.0 | 52.8 | 52.8 | | 44.6 | 42.7 | 42.7 | | 1.7 | 6.7 | 6.7 | | 2.6 | 5.5 | 5.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 65.0 | 52.8 | 52.8 | | 44.6 | 42.7 | 42.7 | | 1.7 | 6.7 | 6.7 | | 2.6 | 5.5 | 5.5 | |
| LOS by Move: | E | D | D | | D | D | D | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 5 | 5 | 5 | | 1 | 1 | 1 | | 0 | 19 | 19 | | 1 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.423
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 179.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 104 | 469 | 525 | | 510 | 442 | 20 | | 39 | 182 | 169 | | 409 | 102 | 439 | |
| Added Vol: | 15 | 8 | 29 | | 18 | 8 | 0 | | 0 | 32 | 24 | | 104 | 21 | 66 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 119 | 477 | 554 | | 528 | 450 | 20 | | 39 | 214 | 193 | | 513 | 123 | 505 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 119 | 477 | 554 | | 528 | 450 | 20 | | 39 | 214 | 193 | | 513 | 123 | 505 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 119 | 477 | 554 | | 528 | 450 | 20 | | 39 | 214 | 193 | | 513 | 123 | 505 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 119 | 477 | 554 | | 528 | 450 | 20 | | 39 | 214 | 193 | | 513 | 123 | 505 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.59 | 1.35 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.61 | 0.39 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2727 | 2322 | 105 | | 1769 | 1862 | 1583 | | 2888 | 691 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.13 | 0.70 | | 0.19 | 0.19 | 0.19 | | 0.02 | 0.11 | 0.12 | | 0.18 | 0.18 | 0.32 | |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | | **** | |
| Green/Cycle: | 0.49 | 0.49 | 0.49 | | 0.14 | 0.14 | 0.14 | | 0.09 | 0.09 | 0.09 | | 0.22 | 0.22 | 0.22 | |
| Volume/Cap: | 0.14 | 0.27 | 1.42 | | 1.42 | 1.42 | 1.42 | | 0.25 | 1.34 | 1.42 | | 0.79 | 0.79 | 1.42 | |
| Uniform Del: | 18.0 | 19.4 | 33.0 | | 56.1 | 56.1 | 56.1 | | 55.5 | 59.4 | 59.4 | | 47.6 | 47.6 | 50.4 | |
| IncremntDel: | 0.1 | 0.1 | 204.7 | | 198.5 | 199 | 198.5 | | 0.9 | 189 | 227.6 | | 5.4 | 5.4 | 206.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 18.0 | 19.4 | 237.7 | | 254.7 | 255 | 254.7 | | 56.4 | 248 | 287.0 | | 53.0 | 53.0 | 256.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 18.0 | 19.4 | 237.7 | | 254.7 | 255 | 254.7 | | 56.4 | 248 | 287.0 | | 53.0 | 53.0 | 256.4 | |
| LOS by Move: | B | B | F | | F | F | F | | E | F | F | | D | D | F | |
| HCM2kAvgQ: | 2 | 6 | 44 | | 28 | 28 | 28 | | 2 | 17 | 17 | | 14 | 14 | 40 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.458
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 206.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 403 | 1036 | 0 | 0 | 3732 | 136 | 64 | 0 | 1784 | 0 | 0 | 0 | | | | |
| Added Vol: | 4 | 105 | 0 | 0 | 396 | 98 | 12 | 0 | 11 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 407 | 1141 | 0 | 0 | 4128 | 234 | 76 | 0 | 1795 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 407 | 1141 | 0 | 0 | 4128 | 234 | 76 | 0 | 1795 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 407 | 1141 | 0 | 0 | 4128 | 234 | 76 | 0 | 1795 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 407 | 1141 | 0 | 0 | 4128 | 234 | 76 | 0 | 1795 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.22 | 0.00 | 0.00 | 0.81 | 0.15 | 0.02 | 0.00 | 0.43 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.08 | 0.64 | 0.00 | 0.00 | 0.56 | 0.56 | 0.29 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.46 | 0.35 | 0.00 | 0.00 | 1.46 | 0.27 | 0.08 | 0.00 | 1.46 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 68.9 | 12.6 | 0.0 | 0.0 | 33.2 | 17.3 | 38.2 | 0.0 | 52.9 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 224.7 | 0.1 | 0.0 | 0.0 | 208 | 0.2 | 0.0 | 0.0 | 210.4 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 293.6 | 12.7 | 0.0 | 0.0 | 241 | 17.4 | 38.2 | 0.0 | 263.3 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 293.6 | 12.7 | 0.0 | 0.0 | 241 | 17.4 | 38.2 | 0.0 | 263.3 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 19 | 9 | 0 | 0 | 125 | 5 | 1 | 0 | 58 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.725
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 58 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 120 | 0 | 99 | 0 | 20 | 1599 | 0 | 0 | 454 | 16 | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 0 | 0 | 0 | 0 | 128 | 0 | 106 | 0 | 21 | 1711 | 0 | 0 | 486 | 17 | | |
| Added Vol: | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 4 | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Initial Fut: | 0 | 0 | 0 | 0 | 139 | 0 | 106 | 0 | 21 | 1723 | 0 | 0 | 584 | 21 | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 0 | 139 | 0 | 106 | 0 | 21 | 1723 | 0 | 0 | 584 | 21 | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Reduced Vol: | 0 | 0 | 0 | 0 | 139 | 0 | 106 | 0 | 21 | 1723 | 0 | 0 | 584 | 21 | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 0 | 139 | 0 | 106 | 0 | 21 | 1723 | 0 | 0 | 584 | 21 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.57 | 0.00 | 0.43 | 1.00 | 2.00 | 0.00 | 0.00 | 1.93 | 0.07 | | | | |
| Final Sat.: | 0 | 0 | 0 | 969 | 0 | 736 | 1769 | 3538 | 0 | 0 | 3397 | 123 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.14 | 0.01 | 0.49 | 0.00 | 0.00 | 0.17 | 0.17 | | | | |
| Crit Moves: | | | | **** | | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.20 | 0.17 | 0.67 | 0.00 | 0.00 | 0.50 | 0.50 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.72 | 0.00 | 0.72 | 0.07 | 0.72 | 0.00 | 0.00 | 0.34 | 0.34 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 31.9 | 0.0 | 31.9 | 29.5 | 8.9 | 0.0 | 0.0 | 12.8 | 12.8 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 7.6 | 0.0 | 7.6 | 0.1 | 1.1 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 39.5 | 0.0 | 39.5 | 29.6 | 10.0 | 0.0 | 0.0 | 12.9 | 12.9 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 39.5 | 0.0 | 39.5 | 29.6 | 10.0 | 0.0 | 0.0 | 12.9 | 12.9 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | B | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 16 | 0 | 0 | 5 | 5 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 16.4
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | 19 | 29 | 82 | 26 | 1579 | 19 | 18 | 527 | 13 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 37 | 33 | 13 | 20 | 31 | 88 | 28 | 1690 | 20 | 19 | 564 | 14 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 37 | 33 | 13 | 20 | 31 | 88 | 28 | 1702 | 20 | 19 | 662 | 14 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 37 | 33 | 13 | 20 | 31 | 88 | 28 | 1702 | 20 | 19 | 662 | 14 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 37 | 33 | 13 | 20 | 31 | 88 | 28 | 1702 | 20 | 19 | 662 | 14 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 37 | 33 | 13 | 20 | 31 | 88 | 28 | 1702 | 20 | 19 | 662 | 14 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.96 | 0.96 | 0.96 | 0.91 | 0.91 | 0.91 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.45 | 0.40 | 0.15 | 0.15 | 0.22 | 0.63 | 1.00 | 1.98 | 0.02 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 816 | 723 | 280 | 252 | 385 | 1089 | 1805 | 3560 | 43 | 1805 | 3525 | 74 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.08 | 0.08 | 0.08 | 0.02 | 0.48 | 0.48 | 0.01 | 0.19 | 0.19 |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.07 | 0.06 | 0.06 | 0.11 | 0.11 | 0.11 | 0.15 | 0.66 | 0.66 | 0.05 | 0.56 | 0.56 |
| Volume/Cap: | 0.68 | 0.72 | 0.72 | 0.72 | 0.74 | 0.74 | 0.10 | 0.72 | 0.72 | 0.21 | 0.33 | 0.33 |
| Uniform Del: | 45.6 | 45.9 | 45.9 | 42.9 | 43.2 | 43.2 | 36.7 | 10.8 | 10.8 | 45.6 | 11.7 | 11.7 |
| IncremntDel: | 14.6 | 19.6 | 19.6 | 12.3 | 14.8 | 14.8 | 0.2 | 1.1 | 1.1 | 1.2 | 0.1 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 60.2 | 65.5 | 65.5 | 55.2 | 58.0 | 58.0 | 36.8 | 11.9 | 11.9 | 46.8 | 11.8 | 11.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 60.2 | 65.5 | 65.5 | 55.2 | 58.0 | 58.0 | 36.8 | 11.9 | 11.9 | 46.8 | 11.8 | 11.8 |
| LOS by Move: | E | E | E | E | E | E | D | B | B | D | B | B |
| HCM2kAvgQ: | 4 | 4 | 4 | 6 | 6 | 6 | 1 | 19 | 19 | 1 | 6 | 6 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.866
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 35.1
Optimal Cycle: 93 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 1 | 0 0 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | 94 | 262 | 110 | 93 | 1291 | 87 | 119 | 540 | 49 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 161 | 234 | 369 | 101 | 280 | 118 | 100 | 1381 | 93 | 127 | 578 | 52 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 161 | 234 | 369 | 101 | 280 | 118 | 100 | 1393 | 93 | 127 | 676 | 52 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 161 | 234 | 369 | 101 | 280 | 118 | 100 | 1393 | 93 | 127 | 676 | 52 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 161 | 234 | 369 | 101 | 280 | 118 | 100 | 1393 | 93 | 127 | 676 | 52 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 161 | 234 | 369 | 101 | 280 | 118 | 100 | 1393 | 93 | 127 | 676 | 52 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.87 | 0.13 | 1.00 | 1.86 | 0.14 |
| Final Sat.: | 1862 | 1862 | 1615 | 1805 | 1900 | 1615 | 1805 | 3353 | 224 | 1805 | 3313 | 257 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.13 | 0.23 | 0.06 | 0.15 | 0.07 | 0.06 | 0.42 | 0.42 | 0.07 | 0.20 | 0.20 |
| Crit Moves: | | | **** | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | 0.06 | 0.21 | 0.21 | 0.12 | 0.48 | 0.48 | 0.08 | 0.44 | 0.44 |
| Volume/Cap: | 0.71 | 0.48 | 0.87 | 0.87 | 0.71 | 0.35 | 0.46 | 0.87 | 0.87 | 0.87 | 0.46 | 0.46 |
| Uniform Del: | 42.3 | 31.0 | 35.1 | 46.4 | 36.9 | 33.9 | 41.0 | 23.1 | 23.1 | 45.4 | 19.6 | 19.6 |
| IncremntDel: | 4.3 | 0.4 | 16.7 | 44.9 | 6.0 | 0.6 | 1.6 | 4.9 | 4.9 | 38.0 | 0.2 | 0.2 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 46.6 | 31.4 | 51.8 | 91.3 | 42.8 | 34.5 | 42.6 | 28.0 | 28.0 | 83.4 | 19.8 | 19.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 46.6 | 31.4 | 51.8 | 91.3 | 42.8 | 34.5 | 42.6 | 28.0 | 28.0 | 83.4 | 19.8 | 19.8 |
| LOS by Move: | D | C | D | F | D | C | D | C | C | F | B | B |
| HCM2kAvgQ: | 6 | 6 | 14 | 5 | 9 | 3 | 3 | 24 | 24 | 6 | 8 | 8 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.726
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | 17 | 76 | 27 | 29 | 1264 | 78 | 44 | 793 | 17 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 83 | 117 | 63 | 18 | 81 | 29 | 31 | 1352 | 83 | 47 | 849 | 18 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 83 | 117 | 63 | 18 | 81 | 29 | 31 | 1364 | 83 | 47 | 947 | 18 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 83 | 117 | 63 | 18 | 81 | 29 | 31 | 1364 | 83 | 47 | 947 | 18 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 83 | 117 | 63 | 18 | 81 | 29 | 31 | 1364 | 83 | 47 | 947 | 18 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 83 | 117 | 63 | 18 | 81 | 29 | 31 | 1364 | 83 | 47 | 947 | 18 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.95 | 0.95 | 0.95 | 0.96 | 0.96 | 0.96 | 0.95 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 | | | | |
| Lanes: | 0.32 | 0.44 | 0.24 | 0.14 | 0.63 | 0.23 | 1.00 | 1.88 | 0.12 | 1.00 | 1.96 | 0.04 | | | | |
| Final Sat.: | 574 | 802 | 434 | 259 | 1159 | 412 | 1805 | 3371 | 206 | 1805 | 3531 | 68 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | 0.07 | 0.07 | 0.07 | 0.02 | 0.40 | 0.40 | 0.03 | 0.27 | 0.27 | | | | |
| Crit Moves: | **** | | | | **** | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | 0.10 | 0.10 | 0.10 | 0.09 | 0.55 | 0.55 | 0.05 | 0.50 | 0.50 | | | | |
| Volume/Cap: | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.18 | 0.74 | 0.74 | 0.52 | 0.53 | 0.53 | | | | |
| Uniform Del: | 37.7 | 37.7 | 37.7 | 44.0 | 44.0 | 44.0 | 41.8 | 17.2 | 17.2 | 46.3 | 16.8 | 16.8 | | | | |
| IncremntDel: | 7.9 | 7.9 | 7.9 | 15.4 | 15.4 | 15.4 | 0.5 | 1.5 | 1.5 | 5.4 | 0.3 | 0.3 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 45.7 | 45.7 | 45.7 | 59.4 | 59.4 | 59.4 | 42.3 | 18.7 | 18.7 | 51.7 | 17.1 | 17.1 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 45.7 | 45.7 | 45.7 | 59.4 | 59.4 | 59.4 | 42.3 | 18.7 | 18.7 | 51.7 | 17.1 | 17.1 | | | | |
| LOS by Move: | D | D | D | E | E | E | D | B | B | D | B | B | | | | |
| HCM2kAvgQ: | 9 | 9 | 9 | 6 | 6 | 6 | 1 | 19 | 19 | 2 | 11 | 11 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.570
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.8
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | 11 | 68 | 22 | 42 | 1322 | 87 | 37 | 787 | 22 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 64 | 89 | 41 | 12 | 73 | 24 | 45 | 1415 | 93 | 40 | 842 | 24 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 98 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 64 | 89 | 41 | 12 | 73 | 24 | 45 | 1427 | 93 | 40 | 940 | 24 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 64 | 89 | 41 | 12 | 73 | 24 | 45 | 1427 | 93 | 40 | 940 | 24 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 64 | 89 | 41 | 12 | 73 | 24 | 45 | 1427 | 93 | 40 | 940 | 24 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 64 | 89 | 41 | 12 | 73 | 24 | 45 | 1427 | 93 | 40 | 940 | 24 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.85 | 0.85 | 0.85 | 0.94 | 0.94 | 0.94 | 0.27 | 0.94 | 0.94 | 0.13 | 0.95 | 0.95 | | | | |
| Lanes: | 0.33 | 0.46 | 0.21 | 0.11 | 0.67 | 0.22 | 1.00 | 1.88 | 0.12 | 1.00 | 1.95 | 0.05 | | | | |
| Final Sat.: | 536 | 742 | 340 | 195 | 1205 | 390 | 507 | 3358 | 219 | 245 | 3508 | 88 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.12 | 0.12 | 0.06 | 0.06 | 0.06 | 0.09 | 0.42 | 0.42 | 0.16 | 0.27 | 0.27 | | | | |
| Crit Moves: | | **** | | | | | | **** | | | | | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | | | | |
| Volume/Cap: | 0.57 | 0.57 | 0.57 | 0.29 | 0.29 | 0.29 | 0.12 | 0.57 | 0.57 | 0.22 | 0.36 | 0.36 | | | | |
| Uniform Del: | 31.9 | 31.9 | 31.9 | 29.9 | 29.9 | 29.9 | 3.2 | 5.1 | 5.1 | 3.5 | 4.0 | 4.0 | | | | |
| IncremntDel: | 2.3 | 2.3 | 2.3 | 0.4 | 0.4 | 0.4 | 0.1 | 0.3 | 0.3 | 0.6 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 34.2 | 34.2 | 34.2 | 30.3 | 30.3 | 30.3 | 3.3 | 5.4 | 5.4 | 4.1 | 4.1 | 4.1 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 34.2 | 34.2 | 34.2 | 30.3 | 30.3 | 30.3 | 3.3 | 5.4 | 5.4 | 4.1 | 4.1 | 4.1 | | | | |
| LOS by Move: | C | C | C | C | C | C | A | A | A | A | A | A | | | | |
| HCM2kAvgQ: | 6 | 6 | 6 | 3 | 3 | 3 | 0 | 10 | 10 | 1 | 5 | 5 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.904
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 38.7
Optimal Cycle: 110 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 1 | 0 | 1 | 1 0 | 2 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | | 32 | 175 | 224 | | 217 | 784 | 540 | | 115 | 663 | 173 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 337 | 519 | 641 | | 34 | 187 | 240 | | 232 | 839 | 578 | | 123 | 709 | 185 | |
| Added Vol: | 0 | 0 | 7 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 98 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 337 | 519 | 648 | | 34 | 187 | 240 | | 232 | 844 | 578 | | 123 | 807 | 185 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 337 | 519 | 648 | | 34 | 187 | 240 | | 232 | 844 | 578 | | 123 | 807 | 185 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 337 | 519 | 648 | | 34 | 187 | 240 | | 232 | 844 | 578 | | 123 | 807 | 185 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 337 | 519 | 648 | | 34 | 187 | 240 | | 232 | 844 | 578 | | 123 | 807 | 185 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.88 | 0.88 | 0.88 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.89 | 0.89 | | 0.92 | 0.92 | 0.92 | |
| Lanes: | 1.00 | 1.33 | 1.67 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.19 | 0.81 | | 2.00 | 1.63 | 0.37 | |
| Final Sat.: | 1669 | 2227 | 2780 | | 1805 | 1900 | 1615 | | 1805 | 2012 | 1378 | | 3502 | 2854 | 654 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.23 | 0.23 | | 0.02 | 0.10 | 0.15 | | 0.13 | 0.42 | 0.42 | | 0.04 | 0.28 | 0.28 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.22 | 0.31 | 0.31 | | 0.07 | 0.16 | 0.16 | | 0.16 | 0.46 | 0.46 | | 0.05 | 0.35 | 0.35 | |
| Volume/Cap: | 0.92 | 0.74 | 0.74 | | 0.28 | 0.61 | 0.92 | | 0.81 | 0.92 | 0.92 | | 0.70 | 0.81 | 0.81 | |
| Uniform Del: | 38.1 | 30.6 | 30.6 | | 44.3 | 39.0 | 41.2 | | 40.6 | 25.3 | 25.3 | | 46.8 | 29.6 | 29.6 | |
| IncremntDel: | 8.5 | 1.5 | 1.5 | | 1.3 | 3.5 | 34.2 | | 15.8 | 8.9 | 8.9 | | 12.1 | 4.2 | 4.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 46.6 | 32.1 | 32.1 | | 45.6 | 42.5 | 75.4 | | 56.4 | 34.2 | 34.2 | | 58.9 | 33.7 | 33.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 46.6 | 32.1 | 32.1 | | 45.6 | 42.5 | 75.4 | | 56.4 | 34.2 | 34.2 | | 58.9 | 33.7 | 33.7 | |
| LOS by Move: | D | C | C | | D | D | E | | E | C | C | | E | C | C | |
| HCM2kAvgQ: | 15 | 13 | 13 | | 1 | 6 | 11 | | 9 | 26 | 26 | | 3 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.501
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 13.9
Optimal Cycle: 82 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 32 | 32 | | 0 | 32 | 0 | | 28 | 0 | 28 | | 0 | 0 | 18 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | | 0 | 783 | 0 | | 765 | 0 | 277 | | 0 | 0 | 16 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 858 | 20 | | 0 | 838 | 0 | | 819 | 0 | 296 | | 0 | 0 | 17 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 7 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 858 | 20 | | 0 | 838 | 0 | | 826 | 0 | 296 | | 0 | 0 | 17 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 858 | 20 | | 0 | 838 | 0 | | 826 | 0 | 296 | | 0 | 0 | 17 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 858 | 20 | | 0 | 838 | 0 | | 826 | 0 | 296 | | 0 | 0 | 17 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 944 | 22 | | 0 | 880 | 0 | | 850 | 0 | 296 | | 0 | 0 | 17 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.93 | 0.07 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5568 | 132 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | | 0.00 | 0.23 | 0.00 | | 0.24 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.01 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.37 | 0.37 | | 0.00 | 0.37 | 0.00 | | 0.38 | 0.00 | 0.58 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.45 | 0.45 | | 0.00 | 0.62 | 0.00 | | 0.62 | 0.00 | 0.32 | | 0.00 | 0.00 | 0.06 | |
| Uniform Del: | 0.0 | 16.1 | 16.1 | | 0.0 | 17.4 | 0.0 | | 17.1 | 0.0 | 7.4 | | 0.0 | 0.0 | 22.1 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.6 | 0.0 | | 0.6 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 13.8 | 13.8 | | 0.0 | 15.4 | 0.0 | | 15.2 | 0.0 | 6.3 | | 0.0 | 0.0 | 18.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 13.8 | 13.8 | | 0.0 | 15.4 | 0.0 | | 15.2 | 0.0 | 6.3 | | 0.0 | 0.0 | 18.8 | |
| DesignQueue: | 0 | 11 | 11 | | 0 | 15 | 0 | | 14 | 0 | 6 | | 0 | 0 | 1 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 27.0
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | | 18 | 18 | 0 | | 0 | 0 | 0 | | 39 | 57 | 21 | | 64 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | 388 | 487 | 927 | | | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | 1.07 |
| Initial Bse: | 326 | | 1 | 470 | 0 | | 0 | 0 | 1488 | 415 | 521 | 992 | | | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | 16 | 54 | 56 | | | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Initial Fut: | 326 | | 1 | 470 | 0 | | 0 | 0 | 1493 | 431 | 575 | 1048 | | | | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 |
| PHF Volume: | 326 | | 1 | 470 | 0 | | 0 | 0 | 1493 | 431 | 575 | 1048 | | | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Reduced Vol: | 326 | | 1 | 470 | 0 | | 0 | 0 | 1493 | 431 | 575 | 1048 | | | | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 |
| FinalVolume: | 326 | | 1 | 470 | 0 | | 0 | 0 | 1493 | 431 | 575 | 1048 | | | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | 1900 |
| Adjustment: | 0.86 | 0.86 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | 1.00 | | | | |
| Lanes: | 1.41 | 0.01 | 1.58 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | | | | |
| Final Sat.: | 2292 | | 4 | 2585 | 0 | | 0 | 0 | 3610 | 2842 | 3502 | 3610 | | | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.25 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.15 | 0.16 | 0.29 | 0.00 | | | | |
| Crit Moves: | | **** | | | | | | | | | **** | | | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.43 | 0.43 | 0.32 | 0.76 | 0.00 | | | | |
| Volume/Cap: | 0.71 | 1.23 | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.95 | 0.35 | 0.51 | 0.38 | 0.00 | | | | |
| Uniform Del: | 33.6 | 36.0 | 35.2 | 0.0 | 0.0 | 0.0 | 0.0 | 24.6 | 17.0 | 24.7 | 3.8 | 0.0 | | | | |
| IncremntDel: | 2.2 | 115 | 13.2 | 0.0 | 0.0 | 0.0 | 0.0 | 13.5 | 0.2 | 0.4 | 0.1 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | |
| Delay/Veh: | 35.8 | 151 | 48.4 | 0.0 | 0.0 | 0.0 | 0.0 | 38.2 | 17.2 | 25.1 | 3.9 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 35.8 | 151 | 48.4 | 0.0 | 0.0 | 0.0 | 0.0 | 38.2 | 17.2 | 25.1 | 3.9 | 0.0 | | | | |
| LOS by Move: | D | F | D | A | A | A | A | D | B | C | A | A | | | | |
| HCM2kAvgQ: | 7 | 23 | 12 | 0 | 0 | 0 | 0 | 27 | 5 | 7 | 5 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.927
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 50.0
Optimal Cycle: 129 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 |
| Initial Bse: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 866 | 10 | 293 | | 856 | 350 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 22 | 0 | 0 | | 56 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 888 | 10 | 293 | | 912 | 350 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 888 | 10 | 293 | | 912 | 350 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 888 | 10 | 293 | | 912 | 350 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 888 | 10 | 293 | | 912 | 350 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 |
| Adjustment: | 0.90 | 0.90 | 0.90 | 0.92 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.85 | | | | |
| Lanes: | 0.04 | 0.23 | 0.73 | 2.00 | 0.78 | 0.22 | 1.00 | 1.98 | 0.02 | 1.00 | 2.00 | 1.00 | | | | |
| Final Sat.: | 73 | 395 | 1243 | 3502 | 1429 | 408 | 1805 | 3564 | 39 | 1805 | 3610 | 1615 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.24 | 0.24 | 0.19 | 0.09 | 0.09 | 0.02 | 0.25 | 0.25 | 0.16 | 0.25 | 0.22 | | | | |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.33 | 0.25 | 0.25 | 0.20 | 0.13 | 0.13 | 0.07 | 0.27 | 0.27 | 0.18 | 0.38 | 0.38 | | | | |
| Volume/Cap: | 0.71 | 0.93 | 0.93 | 0.93 | 0.71 | 0.71 | 0.25 | 0.93 | 0.93 | 0.93 | 0.67 | 0.58 | | | | |
| Uniform Del: | 32.2 | 40.0 | 40.0 | 43.1 | 46.2 | 46.2 | 48.6 | 39.2 | 39.2 | 44.7 | 28.6 | 27.3 | | | | |
| IncremntDel: | 4.2 | 25.9 | 25.9 | 18.3 | 10.0 | 10.0 | 1.0 | 14.5 | 14.5 | 32.2 | 1.3 | 1.4 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 36.5 | 65.9 | 65.9 | 61.5 | 56.3 | 56.3 | 49.7 | 53.7 | 53.7 | 76.9 | 30.0 | 28.7 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 36.5 | 65.9 | 65.9 | 61.5 | 56.3 | 56.3 | 49.7 | 53.7 | 53.7 | 76.9 | 30.0 | 28.7 | | | | |
| LOS by Move: | D | E | E | E | E | E | D | D | D | E | C | C | | | | |
| HCM2kAvgQ: | 13 | 17 | 17 | 15 | 7 | 7 | 1 | 20 | 20 | 14 | 14 | 10 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.640
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 34.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 32 | 403 | 92 | 88 | 411 | 81 | 63 | 351 | 25 | 76 | 473 | 94 |
| Added Vol: | 0 | 37 | 5 | 16 | 96 | 23 | 3 | 1 | 0 | 37 | 7 | 12 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 32 | 440 | 97 | 104 | 507 | 104 | 66 | 352 | 25 | 113 | 480 | 106 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 32 | 440 | 97 | 104 | 507 | 104 | 66 | 352 | 25 | 113 | 480 | 106 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 32 | 440 | 97 | 104 | 507 | 104 | 66 | 352 | 25 | 113 | 480 | 106 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 32 | 440 | 97 | 104 | 507 | 104 | 66 | 352 | 25 | 113 | 480 | 106 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.94 | 0.94 | 0.95 | 0.92 | 0.92 |
| Lanes: | 0.11 | 1.55 | 0.34 | 0.29 | 1.42 | 0.29 | 1.00 | 1.87 | 0.13 | 1.00 | 1.64 | 0.36 |
| Final Sat.: | 198 | 2714 | 598 | 509 | 2486 | 512 | 1805 | 3340 | 234 | 1805 | 2876 | 636 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | 0.20 | 0.20 | 0.20 | 0.04 | 0.11 | 0.11 | 0.06 | 0.17 | 0.17 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | 0.32 | 0.32 | 0.32 | 0.06 | 0.20 | 0.20 | 0.12 | 0.26 | 0.26 |
| Volume/Cap: | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 | 0.53 | 0.53 | 0.53 | 0.64 | 0.64 |
| Uniform Del: | 33.3 | 33.3 | 33.3 | 29.2 | 29.2 | 29.2 | 46.1 | 35.8 | 35.8 | 41.4 | 32.8 | 32.8 |
| IncremntDel: | 1.6 | 1.6 | 1.6 | 1.3 | 1.3 | 1.3 | 12.8 | 0.7 | 0.7 | 2.5 | 1.5 | 1.5 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 34.8 | 34.8 | 34.8 | 30.4 | 30.4 | 30.4 | 58.9 | 36.6 | 36.6 | 43.9 | 34.3 | 34.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 34.8 | 34.8 | 34.8 | 30.4 | 30.4 | 30.4 | 58.9 | 36.6 | 36.6 | 43.9 | 34.3 | 34.3 |
| LOS by Move: | C | C | C | C | C | C | E | D | D | D | C | C |
| HCM2kAvgQ: | 9 | 9 | 9 | 11 | 11 | 11 | 3 | 6 | 6 | 4 | 9 | 9 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.138
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 87.4
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 11 | 997 | 0 | 0 | 2391 | 17 | 357 | 0 | 81 | 0 | 0 | 0 |
| Added Vol: | 38 | 363 | 0 | 0 | 53 | 0 | 617 | 0 | 86 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 49 | 1360 | 0 | 0 | 2444 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 49 | 1360 | 0 | 0 | 2444 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 49 | 1360 | 0 | 0 | 2444 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 49 | 1360 | 0 | 0 | 2444 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.27 | 0.00 | 0.00 | 0.48 | 0.01 | 0.55 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | **** | | | | | |
| Green/Cycle: | 0.04 | 0.45 | 0.00 | 0.00 | 0.42 | 0.42 | 0.48 | 0.00 | 0.48 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.72 | 0.59 | 0.00 | 0.00 | 1.16 | 0.03 | 1.16 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 61.8 | 26.4 | 0.0 | 0.0 | 38.0 | 22.4 | 34.0 | 0.0 | 19.9 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 30.3 | 0.4 | 0.0 | 0.0 | 76.1 | 0.0 | 83.6 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 92.1 | 26.8 | 0.0 | 0.0 | 114 | 22.4 | 117.6 | 0.0 | 20.1 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 92.1 | 26.8 | 0.0 | 0.0 | 114 | 22.4 | 117.6 | 0.0 | 20.1 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | F | C | A | A | F | C | F | A | C | A | A | A |
| HCM2kAvgQ: | 3 | 15 | 0 | 0 | 53 | 0 | 57 | 0 | 4 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 59 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | |
| Initial Bse: | 15 | 838 | 0 | | 0 | 2275 | 171 | 203 | 0 | 199 | 0 | 0 | 0 | | | |
| Added Vol: | 38 | 400 | 0 | | 0 | 135 | 3 | 1 | 0 | 86 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 53 | 1238 | 0 | | 0 | 2410 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 53 | 1238 | 0 | | 0 | 2410 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 53 | 1238 | 0 | | 0 | 2410 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 53 | 1238 | 0 | | 0 | 2410 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.24 | 0.00 | | 0.00 | 0.47 | 0.11 | 0.12 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.04 | 0.69 | 0.00 | | 0.00 | 0.65 | 0.65 | 0.25 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.73 | 0.36 | 0.00 | | 0.00 | 0.73 | 0.17 | 0.47 | 0.00 | 0.73 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 61.7 | 8.5 | 0.0 | | 0.0 | 15.6 | 9.2 | 41.9 | 0.0 | 45.2 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 32.1 | 0.1 | 0.0 | | 0.0 | 0.9 | 0.1 | 0.8 | 0.0 | 7.2 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 93.8 | 8.5 | 0.0 | | 0.0 | 16.5 | 9.3 | 42.7 | 0.0 | 52.3 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 93.8 | 8.5 | 0.0 | | 0.0 | 16.5 | 9.3 | 42.7 | 0.0 | 52.3 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | F | A | A | | A | B | A | D | A | D | A | A | A | | | |
| HCM2kAvgQ: | 4 | 7 | 0 | | 0 | 24 | 3 | 7 | 0 | 12 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.785
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 48 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | |
| Initial Bse: | 521 | 606 | 0 | | 0 | 382 | 98 | 275 | 0 | 754 | 0 | 0 | 0 | | | |
| Added Vol: | 14 | 58 | 0 | | 0 | 21 | 6 | 3 | 0 | 3 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 535 | 664 | 0 | | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 535 | 664 | 0 | | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 535 | 664 | 0 | | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 535 | 664 | 0 | | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1437 | 373 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.30 | 0.36 | 0.00 | | 0.00 | 0.28 | 0.28 | 0.16 | 0.00 | 0.48 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.39 | 0.74 | 0.00 | | 0.00 | 0.36 | 0.36 | 0.22 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.79 | 0.48 | 0.00 | | 0.00 | 0.79 | 0.79 | 0.70 | 0.00 | 0.79 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 32.5 | 6.2 | 0.0 | | 0.0 | 34.5 | 34.5 | 42.8 | 0.0 | 17.5 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 6.0 | 0.3 | 0.0 | | 0.0 | 6.3 | 6.3 | 5.5 | 0.0 | 4.3 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 38.5 | 6.4 | 0.0 | | 0.0 | 40.8 | 40.8 | 48.4 | 0.0 | 21.8 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 38.5 | 6.4 | 0.0 | | 0.0 | 40.8 | 40.8 | 48.4 | 0.0 | 21.8 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | D | D | D | A | C | A | A | A | | | |
| HCM2kAvgQ: | 19 | 10 | 0 | | 0 | 18 | 18 | 11 | 0 | 22 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.671
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 33 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 52 | 814 | 136 | | 381 | 672 | 39 | | 80 | 81 | 66 | | 78 | 9 | 285 | |
| Added Vol: | 0 | 68 | 0 | | 2 | 23 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.62 | 0.91 | 0.91 | | 0.63 | 0.63 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1179 | 957 | 781 | | 1071 | 117 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.25 | 0.09 | | 0.22 | 0.20 | 0.02 | | 0.07 | 0.08 | 0.08 | | 0.07 | 0.07 | 0.18 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.10 | 0.37 | 0.37 | | 0.32 | 0.59 | 0.59 | | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | |
| Volume/Cap: | 0.29 | 0.67 | 0.23 | | 0.67 | 0.33 | 0.04 | | 0.25 | 0.31 | 0.31 | | 0.27 | 0.27 | 0.67 | |
| Uniform Del: | 50.0 | 31.6 | 25.9 | | 35.1 | 12.3 | 10.2 | | 34.1 | 34.7 | 34.7 | | 34.2 | 34.2 | 38.9 | |
| IncremntDel: | 0.9 | 1.4 | 0.2 | | 3.1 | 0.1 | 0.0 | | 0.4 | 0.4 | 0.4 | | 0.4 | 0.4 | 4.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.9 | 32.9 | 26.1 | | 38.3 | 12.4 | 10.2 | | 34.5 | 35.1 | 35.1 | | 34.7 | 34.7 | 42.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.9 | 32.9 | 26.1 | | 38.3 | 12.4 | 10.2 | | 34.5 | 35.1 | 35.1 | | 34.7 | 34.7 | 42.9 | |
| LOS by Move: | D | C | C | | D | B | B | | C | D | D | | C | C | D | |
| HCM2kAvgQ: | 2 | 15 | 3 | | 13 | 7 | 1 | | 2 | 4 | 4 | | 3 | 3 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 42.0
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 95 | 489 | 26 | | 26 | 544 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| Added Vol: | 0 | 53 | 0 | | 0 | 136 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 95 | 542 | 26 | | 26 | 680 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 95 | 542 | 26 | | 26 | 680 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 95 | 542 | 26 | | 26 | 680 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 95 | 542 | 26 | | 26 | 680 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.54 | 0.40 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 512 | 2913 | 138 | | 102 | 2702 | 694 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.25 | 0.25 | 0.25 | | 0.17 | 0.25 | 0.25 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | **** | | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.31 | 0.31 | 0.31 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | | 0.54 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Uniform Del: | 40.1 | 40.1 | 40.1 | | 35.0 | 35.0 | 35.0 | | 31.5 | 35.1 | 35.1 | | 51.6 | 51.6 | 51.6 | |
| IncremntDel: | 6.2 | 6.2 | 6.2 | | 4.7 | 4.7 | 4.7 | | 0.5 | 6.1 | 6.1 | | 38.3 | 38.3 | 38.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 46.3 | 46.3 | 46.3 | | 39.7 | 39.7 | 39.7 | | 32.0 | 41.2 | 41.2 | | 89.9 | 89.9 | 89.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 46.3 | 46.3 | 46.3 | | 39.7 | 39.7 | 39.7 | | 32.0 | 41.2 | 41.2 | | 89.9 | 89.9 | 89.9 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 13 | 13 | 13 | | 16 | 16 | 16 | | 9 | 16 | 16 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.589 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.5 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Lanes: | 1 0 | 3 0 | 0 | 0 | 0 0 | 3 0 | 1 | | 2 0 | 0 0 | 1 | | 0 0 | 0 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 0 | 758 | 0 | 0 | 2468 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 438 | 0 | 0 | 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 1196 | 0 | 0 | 2689 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 1196 | 0 | 0 | 2689 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 1196 | 0 | 0 | 2689 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 1196 | 0 | 0 | 2689 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.23 | 0.00 | 0.00 | 0.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.00 | 0.26 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 0.0 | 0.9 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 0.0 | 1.0 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 1.0 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | | | | |
| HCM2kAvgQ: | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2018 East and West Campuses AM |
| Command: | Near Term II Project AM |
| Volume: | Near Term II Project AM |
| Geometry: | Near Term II Project AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term II Project AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term II Project AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 23.1 | 0.790 | C | 26.0 | 0.862 | + 2.929 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.2 | 0.657 | E | 73.9 | 1.185 | +57.655 |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 22.5 | 0.886 | C | 29.7 | 0.948 | + 7.219 |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 30.8 | 0.845 | C | 26.9 | 0.874 | -3.944 |
| # 5 Bohannon/ Florence & Marsh Rd. | B | 19.9 | 0.582 | B | 15.0 | 0.606 | -4.876 |
| # 6 Bay Rd. & Marsh Rd. | B | 16.7 | 0.603 | B | 17.6 | 0.748 | + 0.878 |
| # 7 Middlefield at Marsh (Town of | C | 27.1 | 0.628 | C | 31.8 | 0.847 | + 4.707 |
| # 8 Bayfront Exp. & Willow Rd. | C | 27.8 | 0.627 | E | 56.7 | 0.979 | +28.840 |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.1 | 0.575 | B | 19.8 | 0.740 | -3.327 |
| # 10 Ivy Dr. & Willow Rd. | B | 18.2 | 0.532 | C | 26.0 | 0.825 | + 7.881 |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.1 | 0.477 | B | 13.6 | 0.747 | -1.505 |
| # 12 Newbridge St. & Willow Rd. | D | 51.0 | 0.929 | E | 55.3 | 0.973 | + 4.283 |
| # 13 Bay Rd. & Willow Rd. | C | 20.4 | 0.714 | C | 20.7 | 0.805 | + 0.257 |
| # 14 Durham St. & Willow Rd. | C | 27.5 | 0.734 | B | 12.8 | 0.766 | -14.645 |
| # 15 Coleman Ave. & Willow Rd. | B | 13.6 | 0.735 | B | 17.4 | 0.882 | + 3.831 |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.5 | 0.682 | B | 18.1 | 0.855 | + 3.599 |
| # 17 Middlefield Rd. & Willow Rd. | F | 105.0 | 0.974 | F | 121.5 | 1.216 | +16.533 |
| # 18 Bayfront Exp. & University Ave | C | 30.1 | 0.828 | C | 33.5 | 0.890 | + 3.412 |
| # 19 O'Brien Dr. & University Ave. | A | 6.5 | 0.563 | A | 6.3 | 0.573 | -0.244 |
| # 20 University & Kavanaugh | B | 14.0 | 0.580 | B | 13.6 | 0.584 | -0.406 |
| # 21 University & Bay | C | 27.9 | 0.660 | C | 27.2 | 0.664 | -0.760 |
| # 22 University & Runnymede | C | 20.7 | 0.645 | C | 20.3 | 0.649 | -0.352 |
| # 23 University & Bell | A | 7.7 | 0.253 | A | 6.9 | 0.305 | -0.779 |
| # 24 University & Donohoe | D | 42.1 | 0.952 | D | 44.4 | 0.974 | + 2.355 |
| # 25 NB 101 & Donohoe St | B | 9.0 | 0.393 | B | 9.4 | 0.423 | + 0.338 |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 17.4 | 0.661 | B | 18.0 | 0.665 | + 0.617 D/V |
| # 27 University Ave. & Woodland | D | 41.3 | 0.917 | D | 41.6 | 0.921 | + 0.305 D/V |
| # 28 Middlefield Rd. & University A | D | 35.3 | 0.755 | D | 42.7 | 0.858 | + 7.422 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.4 | 0.601 | B | 17.4 | 0.706 | + 9.989 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.2 | 0.610 | B | 19.5 | 0.657 | + 2.236 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 22.4 | 0.623 | C | 23.6 | 0.670 | + 1.211 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.7 | 0.484 | C | 25.4 | 0.492 | -3.245 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 30.4 | 0.612 | C | 32.2 | 0.676 | + 1.829 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.3 | 0.515 | B | 18.8 | 0.780 | +17.519 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.862
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.0
Optimal Cycle: 105 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 2458 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1067 | | 7 | 20 | 5 | |
| Added Vol: | 208 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 783 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.12 | 0.12 | | 0.02 | 0.02 | 0.10 | | 0.12 | 0.12 | 0.66 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | | | **** | | | **** | | |
| Green/Cycle: | 0.59 | 0.59 | 0.59 | | 0.11 | 0.11 | 0.11 | | 0.17 | 0.17 | 0.76 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.88 | 0.21 | 0.21 | | 0.17 | 0.17 | 0.88 | | 0.73 | 0.73 | 0.88 | | 0.48 | 0.48 | 0.48 | |
| Uniform Del: | 22.8 | 12.5 | 12.5 | | 52.1 | 52.1 | 56.7 | | 51.4 | 51.4 | 11.6 | | 61.2 | 61.2 | 61.2 | |
| IncremntDel: | 3.3 | 0.1 | 0.1 | | 0.2 | 0.2 | 35.5 | | 8.9 | 8.9 | 4.6 | | 5.1 | 5.1 | 5.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 26.0 | 12.6 | 12.6 | | 52.3 | 52.3 | 92.2 | | 60.3 | 60.3 | 16.2 | | 66.4 | 66.4 | 66.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.0 | 12.6 | 12.6 | | 52.3 | 52.3 | 92.2 | | 60.3 | 60.3 | 16.2 | | 66.4 | 66.4 | 66.4 | |
| LOS by Move: | C | B | B | | D | D | F | | E | E | B | | E | E | E | |
| HCM2kAvgQ: | 34 | 4 | 4 | | 1 | 1 | 9 | | 10 | 10 | 33 | | 2 | 2 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.185
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 73.9
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 | 0 | 1 1 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 875 | 0 | 309 | | 0 | 0 | 0 | | 0 | 1218 | 541 | | 0 | 878 | 1818 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 934 | 0 | | 0 | 162 | 46 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 541 | | 0 | 1040 | 1864 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 0 | | 0 | 1040 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 0 | | 0 | 1040 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 0 | | 0 | 1040 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 3 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.26 | 0.00 | 0.44 | | 0.00 | 0.00 | 0.00 | | 0.64 | 0.64 | 0.00 | | 0.00 | 0.29 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.37 | 0.00 | 0.37 | | 0.00 | 0.00 | 0.00 | | 0.54 | 0.54 | 0.00 | | 0.00 | 0.54 | 0.00 | |
| Volume/Cap: | 0.68 | 0.00 | 1.19 | | 0.00 | 0.00 | 0.00 | | 1.19 | 1.19 | 0.00 | | 0.00 | 0.55 | 0.00 | |
| Uniform Del: | 21.0 | 0.0 | 25.0 | | 0.0 | 0.0 | 0.0 | | 18.5 | 18.5 | 0.0 | | 0.0 | 12.1 | 0.0 | |
| IncremntDel: | 1.5 | 0.0 | 99.7 | | 0.0 | 0.0 | 0.0 | | 89.4 | 89.4 | 0.0 | | 0.0 | 0.3 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 22.5 | 0.0 | 124.7 | | 0.0 | 0.0 | 0.0 | | 107.9 | 108 | 0.0 | | 0.0 | 12.4 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 22.5 | 0.0 | 124.7 | | 0.0 | 0.0 | 0.0 | | 107.9 | 108 | 0.0 | | 0.0 | 12.4 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | F | F | A | | A | B | A | |
| HCM2kAvgQ: | 10 | 0 | 34 | | 0 | 0 | 0 | | 53 | 53 | 0 | | 0 | 9 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.948
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 29.7
Optimal Cycle: 117 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 941 | 0 | 597 | | 0 | 892 | 624 | | 0 | 1526 | 92 | |
| Added Vol: | 0 | 0 | 0 | | 474 | 0 | 7 | | 0 | 463 | 0 | | 0 | 76 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1415 | 0 | 604 | | 0 | 1355 | 624 | | 0 | 1602 | 92 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1415 | 0 | 604 | | 0 | 1355 | 0 | | 0 | 1602 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1415 | 0 | 604 | | 0 | 1355 | 0 | | 0 | 1602 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1415 | 0 | 604 | | 0 | 1355 | 0 | | 0 | 1602 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.41 | 0.00 | 0.38 | | 0.00 | 0.38 | 0.00 | | 0.00 | 0.45 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.43 | 0.00 | 0.43 | | 0.00 | 0.48 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.95 | 0.00 | 0.88 | | 0.00 | 0.80 | 0.00 | | 0.00 | 0.95 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 21.7 | 0.0 | 20.7 | | 0.0 | 17.7 | 0.0 | | 0.0 | 19.9 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 13.0 | 0.0 | 12.3 | | 0.0 | 2.9 | 0.0 | | 0.0 | 11.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 34.7 | 0.0 | 33.0 | | 0.0 | 20.5 | 0.0 | | 0.0 | 31.8 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 34.7 | 0.0 | 33.0 | | 0.0 | 20.5 | 0.0 | | 0.0 | 31.8 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | C | | A | C | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 23 | 0 | 17 | | 0 | 17 | 0 | | 0 | 26 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 26.9
Optimal Cycle: 92 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 0 | 2 | | 0 1 | 0 0 | 1 | | 1 0 | 2 1 | 0 | | 2 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1210 | 31 | | 287 | 1515 | 300 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 464 | 0 | | 0 | 83 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1674 | 31 | | 287 | 1598 | 300 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1674 | 31 | | 287 | 1598 | 300 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1674 | 31 | | 287 | 1598 | 300 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 29 | 3 | 52 | | 238 | 19 | 3 | | 16 | 1674 | 31 | | 287 | 1598 | 300 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.92 | 0.08 | 1.00 | | 1.00 | 2.95 | 0.05 | | 2.00 | 1.68 | 0.32 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4976 | 92 | | 3432 | 2908 | 545 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.14 | 0.14 | 0.00 | | 0.01 | 0.34 | 0.34 | | 0.08 | 0.55 | 0.55 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.50 | 0.50 | | 0.12 | 0.57 | 0.57 | |
| Volume/Cap: | 0.36 | 0.36 | 0.38 | | 0.96 | 0.96 | 0.01 | | 0.18 | 0.67 | 0.67 | | 0.67 | 0.96 | 0.96 | |
| Uniform Del: | 36.8 | 36.8 | 36.8 | | 33.7 | 33.7 | 28.9 | | 36.4 | 15.1 | 15.1 | | 33.5 | 16.1 | 16.1 | |
| IncremntDel: | 2.5 | 2.5 | 1.7 | | 43.1 | 43.1 | 0.0 | | 1.0 | 0.7 | 0.7 | | 4.2 | 11.7 | 11.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.2 | 39.2 | 38.5 | | 76.8 | 76.8 | 28.9 | | 37.4 | 15.8 | 15.8 | | 37.7 | 27.8 | 27.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.2 | 39.2 | 38.5 | | 76.8 | 76.8 | 28.9 | | 37.4 | 15.8 | 15.8 | | 37.7 | 27.8 | 27.8 | |
| LOS by Move: | D | D | D | | E | E | C | | D | B | B | | D | C | C | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 11 | 11 | 0 | | 1 | 12 | 12 | | 5 | 30 | 30 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.606
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 27 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 1 | 0 | | 1 1 | 0 0 | 1 | | 1 0 | 1 1 | 0 | | 1 0 | 2 0 | 1 | |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 852 | 62 | | 49 | 1221 | 346 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 464 | 0 | | 0 | 83 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1316 | 62 | | 49 | 1304 | 346 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1316 | 62 | | 49 | 1304 | 346 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1316 | 62 | | 49 | 1304 | 346 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 16 | 10 | 9 | | 417 | 32 | 97 | | 125 | 1316 | 62 | | 49 | 1304 | 346 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.91 | 0.09 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3355 | 158 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.13 | 0.13 | 0.06 | | 0.07 | 0.39 | 0.39 | | 0.03 | 0.37 | 0.22 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.62 | 0.62 | | 0.08 | 0.59 | 0.59 | |
| Volume/Cap: | 0.18 | 0.21 | 0.21 | | 0.63 | 0.63 | 0.31 | | 0.63 | 0.63 | 0.63 | | 0.35 | 0.63 | 0.37 | |
| Uniform Del: | 36.4 | 36.5 | 36.5 | | 29.2 | 29.2 | 27.2 | | 33.9 | 9.5 | 9.5 | | 34.9 | 10.8 | 8.8 | |
| IncremntDel: | 1.0 | 1.2 | 1.2 | | 1.8 | 1.8 | 0.5 | | 6.3 | 0.6 | 0.6 | | 1.5 | 0.6 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.4 | 37.7 | 37.7 | | 31.0 | 31.0 | 27.8 | | 40.2 | 10.1 | 10.1 | | 36.4 | 11.5 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.4 | 37.7 | 37.7 | | 31.0 | 31.0 | 27.8 | | 40.2 | 10.1 | 10.1 | | 36.4 | 11.5 | 9.0 | |
| LOS by Move: | D | D | D | | C | C | C | | D | B | B | | D | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 6 | 6 | 2 | | 4 | 12 | 12 | | 2 | 12 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.748
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 40 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 75 | 3 | 189 | | 120 | 30 | 5 | | 2 | 712 | 71 | | 282 | 1051 | 24 | |
| Added Vol: | 1 | 0 | 0 | | 0 | 0 | 0 | | 0 | 464 | 2 | | 0 | 83 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 1176 | 73 | | 282 | 1134 | 24 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 1176 | 73 | | 282 | 1134 | 24 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 1176 | 73 | | 282 | 1134 | 24 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 76 | 3 | 189 | | 120 | 30 | 5 | | 2 | 1176 | 73 | | 282 | 1134 | 24 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.79 | 0.79 | 0.79 | | 0.53 | 0.53 | 0.53 | | 0.88 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.28 | 0.01 | 0.71 | | 0.78 | 0.19 | 0.03 | | 0.01 | 1.88 | 0.11 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 427 | 18 | 1065 | | 778 | 195 | 35 | | 6 | 3148 | 194 | | 1769 | 3455 | 72 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.15 | 0.15 | 0.15 | | 0.37 | 0.37 | 0.37 | | 0.16 | 0.33 | 0.33 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.25 | 0.25 | 0.25 | | 0.49 | 0.49 | 0.49 | | 0.21 | 0.70 | 0.70 | |
| Volume/Cap: | 0.70 | 0.70 | 0.70 | | 0.61 | 0.61 | 0.61 | | 0.77 | 0.77 | 0.77 | | 0.77 | 0.47 | 0.47 | |
| Uniform Del: | 27.1 | 27.1 | 27.1 | | 26.4 | 26.4 | 26.4 | | 16.7 | 16.7 | 16.7 | | 29.8 | 5.5 | 5.5 | |
| IncremntDel: | 5.8 | 5.8 | 5.8 | | 4.2 | 4.2 | 4.2 | | 2.2 | 2.2 | 2.2 | | 9.2 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.9 | 32.9 | 32.9 | | 30.5 | 30.5 | 30.5 | | 19.0 | 19.0 | 19.0 | | 39.0 | 5.6 | 5.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.9 | 32.9 | 32.9 | | 30.5 | 30.5 | 30.5 | | 19.0 | 19.0 | 19.0 | | 39.0 | 5.6 | 5.6 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | D | A | A | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 4 | 4 | 4 | | 15 | 15 | 15 | | 9 | 7 | 7 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.847
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 31.8
Optimal Cycle: 87 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 178 | 425 | | 366 | 393 | 0 | | 0 | 0 | 0 | | 495 | 0 | 181 | |
| Added Vol: | 0 | 8 | 142 | | 323 | 64 | 0 | | 0 | 0 | 0 | | 29 | 0 | 56 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 186 | 567 | | 689 | 457 | 0 | | 0 | 0 | 0 | | 524 | 0 | 237 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 186 | 567 | | 689 | 457 | 0 | | 0 | 0 | 0 | | 524 | 0 | 237 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 186 | 567 | | 689 | 457 | 0 | | 0 | 0 | 0 | | 524 | 0 | 237 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 186 | 567 | | 689 | 457 | 0 | | 0 | 0 | 0 | | 524 | 0 | 237 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.35 | | 0.38 | 0.24 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.15 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.12 | 0.46 | | 0.45 | 0.57 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.34 | 0.00 | 0.79 | |
| Volume/Cap: | 0.00 | 0.85 | 0.77 | | 0.85 | 0.42 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.85 | 0.00 | 0.18 | |
| Uniform Del: | 0.0 | 47.7 | 24.9 | | 26.8 | 13.6 | 0.0 | | 0.0 | 0.0 | 0.0 | | 33.5 | 0.0 | 2.7 | |
| IncremntDel: | 0.0 | 25.1 | 4.8 | | 8.3 | 0.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 10.5 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 72.8 | 29.7 | | 35.1 | 13.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 44.0 | 0.0 | 2.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 72.8 | 29.7 | | 35.1 | 13.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 44.0 | 0.0 | 2.8 | |
| LOS by Move: | A | E | C | | D | B | A | | A | A | A | | D | A | A | |
| HCM2kAvgQ: | 0 | 9 | 17 | | 23 | 9 | 0 | | 0 | 0 | 0 | | 19 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.979
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 56.7
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Ovl | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 2 0 | 3 0 | 1 | 2 0 | 3 0 | 1 | 1 1 | 1 0 | 2 | 1 0 | 2 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 1106 | 2256 | 6 | 14 | 724 | 98 | 90 | 36 | 406 | 3 | 6 | 5 |
| Added Vol: | 36 | 433 | 24 | 441 | 59 | 43 | 494 | 838 | 2 | 24 | 30 | 14 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 1142 | 2689 | 30 | 455 | 783 | 141 | 584 | 874 | 408 | 27 | 36 | 19 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 1142 | 2689 | 30 | 455 | 783 | 141 | 584 | 874 | 408 | 27 | 36 | 19 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 1142 | 2689 | 30 | 455 | 783 | 141 | 584 | 874 | 408 | 27 | 36 | 19 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1142 | 2689 | 30 | 455 | 783 | 141 | 584 | 874 | 408 | 27 | 36 | 19 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.91 | 0.91 | 0.88 | 0.93 | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.20 | 1.80 | 2.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 2082 | 3118 | 3343 | 1769 | 3538 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.46 | 0.02 | 0.13 | 0.13 | 0.09 | 0.28 | 0.28 | 0.12 | 0.02 | 0.01 | 0.01 |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.42 | 0.46 | 0.50 | 0.13 | 0.17 | 0.17 | 0.28 | 0.28 | 0.28 | 0.04 | 0.04 | 0.04 |
| Volume/Cap: | 0.79 | 1.00 | 0.04 | 1.00 | 0.79 | 0.53 | 1.00 | 1.00 | 0.44 | 0.40 | 0.27 | 0.32 |
| Uniform Del: | 32.7 | 35.2 | 16.8 | 56.4 | 51.8 | 49.3 | 46.9 | 46.9 | 38.5 | 61.0 | 60.7 | 60.8 |
| IncremntDel: | 3.1 | 18.4 | 0.0 | 43.3 | 4.4 | 2.0 | 24.6 | 24.6 | 0.3 | 3.8 | 1.1 | 3.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 35.8 | 53.6 | 16.8 | 99.7 | 56.2 | 51.2 | 71.5 | 71.5 | 38.8 | 64.9 | 61.8 | 63.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.8 | 53.6 | 16.8 | 99.7 | 56.2 | 51.2 | 71.5 | 71.5 | 38.8 | 64.9 | 61.8 | 63.8 |
| LOS by Move: | D | D | B | F | E | D | E | E | D | E | E | E |
| HCM2kAvgQ: | 22 | 47 | 1 | 14 | 13 | 6 | 27 | 27 | 8 | 2 | 1 | 1 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 19.8
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Permitted | | | Permitted | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 19 | 14 | 28 | 76 | 20 | 77 | 123 | 444 | 56 | 60 | 1110 | 79 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 8 | 2 | 1333 | 0 | 0 | 104 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 19 | 14 | 28 | 76 | 20 | 85 | 125 | 1777 | 56 | 60 | 1214 | 79 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 19 | 14 | 28 | 76 | 20 | 85 | 125 | 1777 | 56 | 60 | 1214 | 79 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 19 | 14 | 28 | 76 | 20 | 85 | 125 | 1777 | 56 | 60 | 1214 | 79 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 19 | 14 | 28 | 76 | 20 | 85 | 125 | 1777 | 56 | 60 | 1214 | 79 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.80 | 0.80 | 0.80 | 0.77 | 0.77 | 0.77 | 0.93 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 |
| Lanes: | 0.31 | 0.23 | 0.46 | 0.42 | 0.11 | 0.47 | 1.00 | 1.94 | 0.06 | 1.00 | 1.88 | 0.12 |
| Final Sat.: | 483 | 349 | 697 | 614 | 164 | 687 | 1769 | 3417 | 107 | 1769 | 3291 | 215 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | 0.12 | 0.12 | 0.12 | 0.07 | 0.52 | 0.52 | 0.03 | 0.37 | 0.37 |
| Crit Moves: | | | | | **** | | | **** | | **** | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.12 | 0.70 | 0.70 | 0.05 | 0.63 | 0.63 |
| Volume/Cap: | 0.24 | 0.24 | 0.24 | 0.74 | 0.74 | 0.74 | 0.59 | 0.74 | 0.74 | 0.74 | 0.59 | 0.59 |
| Uniform Del: | 47.0 | 47.0 | 47.0 | 51.5 | 51.5 | 51.5 | 54.1 | 12.0 | 12.0 | 61.3 | 14.3 | 14.3 |
| IncremntDel: | 0.5 | 0.5 | 0.5 | 11.4 | 11.4 | 11.4 | 4.2 | 1.2 | 1.2 | 30.1 | 0.4 | 0.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 47.4 | 47.4 | 47.4 | 62.8 | 62.8 | 62.8 | 58.3 | 13.2 | 13.2 | 91.3 | 14.7 | 14.7 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 47.4 | 47.4 | 47.4 | 62.8 | 62.8 | 62.8 | 58.3 | 13.2 | 13.2 | 91.3 | 14.7 | 14.7 |
| LOS by Move: | D | D | D | E | E | E | E | B | B | F | B | B |
| HCM2kAvgQ: | 2 | 2 | 2 | 8 | 8 | 8 | 6 | 24 | 24 | 4 | 16 | 16 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 26.0
Optimal Cycle: 87 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 0 | 1 | 0 | | 186 | 82 | 652 | | 0 | 0 | 1021 | | 14 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 199 | | 88 | 698 | 0 | | 0 | 1092 | | | 15 | |
| Added Vol: | 0 | 0 | 0 | | 190 | 0 | 6 | | 7 | 1145 | 0 | | 0 | 97 | | | 14 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 191 | 0 | 205 | | 95 | 1843 | 0 | | 0 | 1189 | | | 29 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 191 | 0 | 205 | | 95 | 1843 | 0 | | 0 | 1189 | | | 29 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 191 | 0 | 205 | | 95 | 1843 | 0 | | 0 | 1189 | | | 29 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 191 | 0 | 205 | | 95 | 1843 | 0 | | 0 | 1189 | | | 29 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | | | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.48 | 0.00 | 0.52 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.95 | | | 0.05 | |
| Final Sat.: | 0 | 0 | 0 | | 815 | 0 | 875 | | 1769 | 3538 | 0 | | 0 | 3440 | | | 84 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.23 | 0.00 | 0.23 | | 0.05 | 0.52 | 0.00 | | 0.00 | 0.35 | | | 0.35 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.28 | | 0.08 | 0.63 | 0.00 | | 0.00 | 0.55 | | | 0.55 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.83 | 0.00 | 0.83 | | 0.63 | 0.83 | 0.00 | | 0.00 | 0.63 | | | 0.63 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 43.5 | 0.0 | 43.5 | | 57.5 | 18.4 | 0.0 | | 0.0 | 20.4 | | | 20.4 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 11.1 | 0.0 | 11.1 | | 8.5 | 2.6 | 0.0 | | 0.0 | 0.7 | | | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | | | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 54.7 | 0.0 | 54.7 | | 66.0 | 21.1 | 0.0 | | 0.0 | 21.1 | | | 21.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 54.7 | 0.0 | 54.7 | | 66.0 | 21.1 | 0.0 | | 0.0 | 21.1 | | | 21.1 | |
| LOS by Move: | A | A | A | | D | A | D | | E | C | A | | A | C | | | C | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 17 | 0 | 17 | | 5 | 31 | 0 | | 0 | 18 | | | 18 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.747
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 68 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | | | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | | | 1.07 | |
| Initial Bse: | 139 | 0 | 72 | | 0 | 0 | 0 | | 0 | 746 | 268 | | 109 | 1253 | | | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 1152 | 2 | | 0 | 103 | | | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | | 0 | |
| Initial Fut: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1898 | 270 | | 109 | 1356 | | | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| PHF Volume: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1898 | 270 | | 109 | 1356 | | | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | | 0 | |
| Reduced Vol: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1898 | 270 | | 109 | 1356 | | | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| FinalVolume: | 149 | 0 | 72 | | 0 | 0 | 0 | | 0 | 1898 | 270 | | 109 | 1356 | | | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | | | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | | | 0.00 | |
| Final Sat.: | 2585 | 0 | 839 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | | | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.54 | 0.17 | | 0.06 | 0.38 | | | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | | | |
| Green/Cycle: | 0.11 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.72 | 0.72 | | 0.08 | 0.80 | | | 0.00 | |
| Volume/Cap: | 0.50 | 0.00 | 0.75 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.75 | 0.24 | | 0.75 | 0.48 | | | 0.00 | |
| Uniform Del: | 54.1 | 0.0 | 55.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 11.1 | 6.2 | | 58.3 | 4.2 | | | 0.0 | |
| IncremntDel: | 0.9 | 0.0 | 10.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 1.3 | 0.1 | | 18.9 | 0.1 | | | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 0.00 | |
| Delay/Veh: | 55.0 | 0.0 | 65.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.4 | 6.3 | | 77.2 | 4.3 | | | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| AdjDel/Veh: | 55.0 | 0.0 | 65.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.4 | 6.3 | | 77.2 | 4.3 | | | 0.0 | |
| LOS by Move: | E | A | E | | A | A | A | | A | B | A | | E | A | | | A | |
| HCM2kAvgQ: | 4 | 0 | 7 | | 0 | 0 | 0 | | 0 | 25 | 4 | | 6 | 9 | | | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.973
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 55.3
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 1 | 0 | 1 | 1 | 0 1 | 0 | 1 | 1 | 0 2 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 375 | 119 | 39 | | 30 | 190 | 411 | | 158 | 884 | 166 | | 30 | 1306 | 4 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 3 | | 10 | 1154 | 0 | | 0 | 112 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.77 | 0.23 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4649 | 378 | | 1769 | 3527 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.06 | 0.02 | | 0.02 | 0.10 | 0.26 | | 0.10 | 0.44 | 0.44 | | 0.02 | 0.40 | 0.40 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.47 | 0.47 | | 0.04 | 0.41 | 0.41 | |
| Volume/Cap: | 0.97 | 0.57 | 0.22 | | 0.06 | 0.38 | 0.97 | | 0.97 | 0.93 | 0.93 | | 0.41 | 0.97 | 0.97 | |
| Uniform Del: | 57.5 | 54.7 | 52.5 | | 35.3 | 38.7 | 47.1 | | 58.5 | 32.5 | 32.5 | | 60.8 | 37.4 | 37.4 | |
| IncremntDel: | 38.5 | 3.7 | 0.6 | | 0.1 | 0.5 | 36.4 | | 60.1 | 7.5 | 7.5 | | 3.7 | 17.4 | 17.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 96.0 | 58.4 | 53.1 | | 35.4 | 39.2 | 83.4 | | 118.6 | 40.0 | 40.0 | | 64.5 | 54.8 | 54.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 96.0 | 58.4 | 53.1 | | 35.4 | 39.2 | 83.4 | | 118.6 | 40.0 | 40.0 | | 64.5 | 54.8 | 54.8 | |
| LOS by Move: | F | E | D | | D | D | F | | F | D | D | | E | D | D | |
| HCM2kAvgQ: | 12 | 5 | 2 | | 1 | 6 | 21 | | 10 | 35 | 35 | | 2 | 35 | 35 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.805
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 20.7
Optimal Cycle: 75 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 1 | 0 0 | 0 | 1 | 1 | 0 2 | 0 | 0 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 386 | 0 | 80 | | 68 | 1474 | 0 | | 0 | 1192 | 341 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 284 | 0 | | 0 | 55 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1758 | 0 | | 0 | 1247 | 344 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1758 | 0 | | 0 | 1247 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1758 | 0 | | 0 | 1247 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 388 | 0 | 80 | | 68 | 1758 | 0 | | 0 | 1247 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.22 | 0.00 | 0.05 | | 0.04 | 0.50 | 0.00 | | 0.00 | 0.35 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.27 | 0.00 | 0.27 | | 0.08 | 0.62 | 0.00 | | 0.00 | 0.54 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.81 | 0.00 | 0.19 | | 0.50 | 0.81 | 0.00 | | 0.00 | 0.65 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 33.9 | 0.0 | 27.9 | | 44.3 | 14.6 | 0.0 | | 0.0 | 16.3 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 9.6 | 0.0 | 0.2 | | 3.0 | 2.3 | 0.0 | | 0.0 | 0.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 43.5 | 0.0 | 28.1 | | 47.4 | 16.8 | 0.0 | | 0.0 | 17.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 43.5 | 0.0 | 28.1 | | 47.4 | 16.8 | 0.0 | | 0.0 | 17.1 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 13 | 0 | 2 | | 3 | 23 | 0 | | 0 | 15 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.766
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.8
Optimal Cycle: 55 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 0 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1071 | 10 | | 44 | 910 | 152 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 284 | 0 | | 0 | 55 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1355 | 10 | | 44 | 965 | 152 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1355 | 10 | | 44 | 965 | 152 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1355 | 10 | | 44 | 965 | 152 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 66 | 17 | 134 | | 41 | 2 | 2 | | 13 | 1355 | 10 | | 44 | 965 | 152 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.48 | 0.48 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.99 | 0.01 | | 1.00 | 0.86 | 0.14 | |
| Final Sat.: | 1365 | 183 | 1431 | | 858 | 45 | 1583 | | 1769 | 3509 | 25 | | 1769 | 1576 | 248 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.09 | 0.09 | | 0.05 | 0.05 | 0.00 | | 0.01 | 0.39 | 0.39 | | 0.02 | 0.61 | 0.61 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.04 | 0.74 | 0.74 | | 0.08 | 0.77 | 0.77 | |
| Volume/Cap: | 0.41 | 0.79 | 0.79 | | 0.40 | 0.40 | 0.01 | | 0.18 | 0.52 | 0.52 | | 0.33 | 0.79 | 0.79 | |
| Uniform Del: | 40.9 | 42.9 | 42.9 | | 40.8 | 40.8 | 39.0 | | 46.4 | 5.7 | 5.7 | | 43.8 | 6.7 | 6.7 | |
| IncremntDel: | 1.7 | 19.9 | 19.9 | | 2.5 | 2.5 | 0.0 | | 1.2 | 0.2 | 0.2 | | 1.4 | 3.2 | 3.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.6 | 62.8 | 62.8 | | 43.3 | 43.3 | 39.0 | | 47.7 | 5.9 | 5.9 | | 45.2 | 9.9 | 9.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.6 | 62.8 | 62.8 | | 43.3 | 43.3 | 39.0 | | 47.7 | 5.9 | 5.9 | | 45.2 | 9.9 | 9.9 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | A | A | |
| HCM2kAvgQ: | 2 | 7 | 7 | | 2 | 2 | 0 | | 1 | 10 | 10 | | 2 | 22 | 22 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.882
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 88 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 0 | 1! | 0 | 0 | 0 0 | 1! | 0 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 954 | 5 | | 6 | 914 | 66 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 284 | 0 | | 0 | 55 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1238 | 5 | | 6 | 969 | 66 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1238 | 5 | | 6 | 969 | 66 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1238 | 5 | | 6 | 969 | 66 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 9 | | 152 | 6 | 51 | | 18 | 1238 | 5 | | 6 | 969 | 66 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.87 | 0.87 | 0.87 | | 0.73 | 0.73 | 0.73 | | 0.18 | 0.98 | 0.98 | | 0.08 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 353 | 353 | 942 | | 999 | 42 | 338 | | 333 | 1852 | 8 | | 147 | 1725 | 118 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.67 | 0.67 | | 0.04 | 0.56 | 0.56 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | | 0.17 | 0.17 | 0.17 | | 0.76 | 0.76 | 0.76 | | 0.76 | 0.76 | 0.76 | |
| Volume/Cap: | 0.05 | 0.05 | 0.05 | | 0.88 | 0.88 | 0.88 | | 0.07 | 0.88 | 0.88 | | 0.06 | 0.74 | 0.74 | |
| Uniform Del: | 34.6 | 34.6 | 34.6 | | 40.4 | 40.4 | 40.4 | | 3.1 | 8.9 | 8.9 | | 3.1 | 6.7 | 6.7 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 29.6 | 29.6 | 29.6 | | 0.1 | 6.9 | 6.9 | | 0.2 | 2.2 | 2.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.6 | 34.6 | 34.6 | | 70.0 | 70.0 | 70.0 | | 3.2 | 15.7 | 15.7 | | 3.3 | 8.9 | 8.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.6 | 34.6 | 34.6 | | 70.0 | 70.0 | 70.0 | | 3.2 | 15.7 | 15.7 | | 3.3 | 8.9 | 8.9 | |
| LOS by Move: | C | C | C | | E | E | E | | A | B | B | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 9 | 9 | 9 | | 0 | 31 | 31 | | 0 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.855
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 77 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | | 85 | 122 | 31 | | 41 | 7 | 4 | | 794 | 72 | 41 | | 869 | 5 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 108 | | 91 | 131 | 33 | | 44 | 7 | 4 | | 850 | 77 | 44 | | 930 | 5 |
| Added Vol: | 11 | | 0 | 37 | 0 | | 0 | 0 | 0 | | 247 | 8 | 5 | | 50 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 119 | | 91 | 168 | 33 | | 44 | 7 | 4 | | 1097 | 85 | 49 | | 980 | 5 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 119 | | 91 | 168 | 33 | | 44 | 7 | 4 | | 1097 | 85 | 49 | | 980 | 5 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 119 | | 91 | 168 | 33 | | 44 | 7 | 4 | | 1097 | 85 | 49 | | 980 | 5 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 119 | | 91 | 168 | 33 | | 44 | 7 | 4 | | 1097 | 85 | 49 | | 980 | 5 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.71 | 0.88 | | 0.88 | 0.25 | 0.96 | | 0.96 | 0.19 | 0.97 | | 0.97 | 0.10 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.35 | | 0.65 | 1.00 | 0.85 | | 0.15 | 1.00 | 0.93 | | 0.07 | 1.00 | 0.99 | | 0.01 |
| Final Sat.: | 1352 | 592 | | 1090 | 477 | 1555 | | 266 | 369 | 1709 | | 133 | 194 | 1850 | | 10 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.15 | | 0.15 | 0.07 | 0.03 | | 0.03 | 0.01 | 0.64 | | 0.64 | 0.25 | 0.53 | | 0.53 |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.18 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | | 0.75 |
| Volume/Cap: | 0.49 | 0.86 | | 0.86 | 0.39 | 0.16 | | 0.16 | 0.02 | 0.86 | | 0.86 | 0.34 | 0.71 | | 0.71 |
| Uniform Del: | 36.9 | 39.8 | | 39.8 | 36.2 | 34.6 | | 34.6 | 3.2 | 8.7 | | 8.7 | 4.2 | 6.6 | | 6.6 |
| IncremntDel: | 1.6 | 20.6 | | 20.6 | 2.9 | 0.2 | | 0.2 | 0.0 | 5.5 | | 5.5 | 1.4 | 1.7 | | 1.7 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 38.4 | 60.3 | | 60.3 | 39.0 | 34.8 | | 34.8 | 3.2 | 14.2 | | 14.2 | 5.5 | 8.3 | | 8.3 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 38.4 | 60.3 | | 60.3 | 39.0 | 34.8 | | 34.8 | 3.2 | 14.2 | | 14.2 | 5.5 | 8.3 | | 8.3 |
| LOS by Move: | D | E | | E | D | C | | C | A | B | | B | A | A | | A |
| HCM2kAvgQ: | 4 | 11 | | 11 | 1 | 1 | | 1 | 0 | 28 | | 28 | 1 | 17 | | 17 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.216
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 121.5
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | | 342 | 245 | 408 | | 322 | 10 | 16 | | 166 | 117 | 420 | | 64 | 494 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 72 | | 366 | 262 | 437 | | 345 | 11 | 17 | | 178 | 125 | 449 | | 68 | 529 |
| Added Vol: | 15 | | 9 | 146 | 80 | | 7 | 0 | 0 | | 30 | 10 | 20 | | 19 | 21 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 87 | | 375 | 408 | 517 | | 352 | 11 | 17 | | 208 | 135 | 469 | | 87 | 550 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 87 | | 375 | 408 | 517 | | 352 | 11 | 17 | | 208 | 135 | 469 | | 87 | 550 |
| Reduct Vol: | 0 | | 0 | 3 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 87 | | 375 | 405 | 517 | | 352 | 11 | 17 | | 208 | 135 | 469 | | 87 | 550 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 87 | | 375 | 405 | 517 | | 352 | 11 | 17 | | 208 | 135 | 469 | | 87 | 550 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.76 | 1.20 | | 0.04 | 1.00 | 1.00 | | 1.00 | 1.69 | 0.31 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 3023 | 2057 | | 63 | 1769 | 1862 | | 1583 | 3013 | 562 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.11 | | 0.51 | 0.17 | 0.17 | | 0.17 | 0.01 | 0.11 | | 0.09 | 0.16 | 0.16 | | 0.35 |
| Crit Moves: | | | | **** | **** | | | | | **** | | | | | | **** |
| Green/Cycle: | 0.42 | 0.42 | | 0.42 | 0.14 | 0.14 | | 0.14 | 0.09 | 0.09 | | 0.09 | 0.29 | 0.29 | | 0.29 |
| Volume/Cap: | 0.12 | 0.25 | | 1.22 | 1.22 | 1.22 | | 1.22 | 0.11 | 1.22 | | 0.93 | 0.55 | 0.55 | | 1.22 |
| Uniform Del: | 22.9 | 24.4 | | 37.6 | 55.9 | 55.9 | | 55.9 | 54.2 | 59.0 | | 58.6 | 39.3 | 39.3 | | 46.4 |
| IncremntDel: | 0.1 | 0.1 | | 121.7 | 109.8 | 110 | | 109.8 | 0.3 | 139 | | 54.5 | 0.6 | 0.6 | | 116.2 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 23.0 | 24.5 | | 159.4 | 165.7 | 166 | | 165.7 | 54.4 | 198 | | 113.1 | 39.9 | 39.9 | | 162.6 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 23.0 | 24.5 | | 159.4 | 165.7 | 166 | | 165.7 | 54.4 | 198 | | 113.1 | 39.9 | 39.9 | | 162.6 |
| LOS by Move: | C | C | | F | F | F | | F | D | F | | F | D | D | | F |
| HCM2kAvgQ: | 2 | 5 | | 28 | 22 | 22 | | 22 | 1 | 15 | | 8 | 10 | 10 | | 36 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.890
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 121 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1649 | 3084 | 0 | | 0 | 946 | 201 | | 192 | 0 | 459 | | 0 | 0 | 0 | |
| Added Vol: | 10 | 599 | 0 | | 0 | 73 | 13 | | 181 | 0 | 2 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.48 | 0.72 | 0.00 | | 0.00 | 0.20 | 0.14 | | 0.11 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.58 | 0.81 | 0.00 | | 0.00 | 0.24 | 0.24 | | 0.12 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.84 | 0.89 | 0.00 | | 0.00 | 0.84 | 0.57 | | 0.88 | 0.00 | 0.89 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 28.0 | 10.1 | 0.0 | | 0.0 | 58.0 | 53.7 | | 68.9 | 0.0 | 69.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.4 | 2.8 | 0.0 | | 0.0 | 5.4 | 2.0 | | 18.1 | 0.0 | 17.3 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 31.4 | 12.9 | 0.0 | | 0.0 | 63.4 | 55.7 | | 87.0 | 0.0 | 86.3 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.4 | 12.9 | 0.0 | | 0.0 | 63.4 | 55.7 | | 87.0 | 0.0 | 86.3 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | F | A | F | | A | A | A | |
| HCM2kAvgQ: | 36 | 47 | 0 | | 0 | 20 | 10 | | 12 | 0 | 11 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 43 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 | 1! | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 24 | 0 | 24 | | 73 | 563 | 0 | | 0 | 1435 | 49 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 181 | 0 | | 0 | 13 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 744 | 0 | | 0 | 1448 | 59 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 744 | 0 | | 0 | 1448 | 59 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 744 | 0 | | 0 | 1448 | 59 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 26 | 0 | 24 | | 73 | 744 | 0 | | 0 | 1448 | 59 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 883 | 0 | 814 | | 1769 | 3538 | 0 | | 0 | 3378 | 138 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.21 | 0.00 | | 0.00 | 0.43 | 0.43 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.49 | 0.00 | 0.49 | | 0.58 | 0.26 | 0.00 | | 0.00 | 0.58 | 0.58 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.8 | 0.0 | 38.8 | | 38.2 | 1.9 | 0.0 | | 0.0 | 5.0 | 5.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.8 | 0.0 | 3.8 | | 6.6 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 42.5 | 0.0 | 42.5 | | 44.8 | 2.0 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 42.5 | 0.0 | 42.5 | | 44.8 | 2.0 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 3 | 0 | | 0 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.584
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | 8 | 21 | 44 | 40 | 582 | 43 | 25 | 1302 | 25 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 623 | 46 | 27 | 1393 | 27 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 | 0 | 0 | 13 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 804 | 46 | 27 | 1406 | 27 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 804 | 46 | 27 | 1406 | 27 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 804 | 46 | 27 | 1406 | 27 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 34 | 40 | 21 | 9 | 22 | 47 | 43 | 804 | 46 | 27 | 1406 | 27 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.95 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.36 | 0.42 | 0.22 | 0.11 | 0.29 | 0.60 | 1.00 | 1.89 | 0.11 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 651 | 752 | 407 | 190 | 500 | 1047 | 1805 | 3387 | 194 | 1805 | 3532 | 67 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.02 | 0.24 | 0.24 | 0.01 | 0.40 | 0.40 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.09 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.05 | 0.60 | 0.60 | 0.13 | 0.67 | 0.67 |
| Volume/Cap: | 0.59 | 0.62 | 0.62 | 0.56 | 0.59 | 0.59 | 0.47 | 0.40 | 0.40 | 0.12 | 0.59 | 0.59 |
| Uniform Del: | 43.8 | 44.2 | 44.2 | 44.3 | 44.7 | 44.7 | 46.2 | 10.6 | 10.6 | 38.8 | 8.8 | 8.8 |
| IncremntDel: | 5.7 | 7.6 | 7.6 | 5.0 | 6.9 | 6.9 | 3.9 | 0.1 | 0.1 | 0.2 | 0.4 | 0.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 49.5 | 51.8 | 51.8 | 49.2 | 51.6 | 51.6 | 50.1 | 10.7 | 10.7 | 39.0 | 9.2 | 9.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 49.5 | 51.8 | 51.8 | 49.2 | 51.6 | 51.6 | 50.1 | 10.7 | 10.7 | 39.0 | 9.2 | 9.2 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | A | A |
| HCM2kAvgQ: | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 7 | 7 | 1 | 13 | 13 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.664
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 27.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | 50 | 196 | 86 | 141 | 497 | 78 | 97 | 1115 | 49 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 532 | 83 | 104 | 1193 | 52 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 | 0 | 0 | 13 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 713 | 83 | 104 | 1206 | 52 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 713 | 83 | 104 | 1206 | 52 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 713 | 83 | 104 | 1206 | 52 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 116 | 241 | 121 | 54 | 210 | 92 | 151 | 713 | 83 | 104 | 1206 | 52 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.93 | 0.93 | 0.95 | 0.94 | 0.94 |
| Lanes: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.79 | 0.21 | 1.00 | 1.92 | 0.08 |
| Final Sat.: | 1805 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3180 | 372 | 1805 | 3439 | 149 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.13 | 0.07 | 0.03 | 0.11 | 0.06 | 0.08 | 0.22 | 0.22 | 0.06 | 0.35 | 0.35 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.09 | 0.19 | 0.19 | 0.05 | 0.15 | 0.15 | 0.13 | 0.52 | 0.52 | 0.13 | 0.53 | 0.53 |
| Volume/Cap: | 0.73 | 0.67 | 0.39 | 0.59 | 0.73 | 0.38 | 0.67 | 0.43 | 0.43 | 0.43 | 0.67 | 0.67 |
| Uniform Del: | 44.4 | 37.6 | 35.5 | 46.5 | 40.4 | 38.2 | 41.8 | 15.0 | 15.0 | 39.9 | 17.4 | 17.4 |
| IncremntDel: | 15.5 | 4.8 | 0.8 | 10.1 | 9.0 | 1.0 | 7.5 | 0.2 | 0.2 | 1.3 | 0.9 | 0.9 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 60.0 | 42.3 | 36.3 | 56.6 | 49.4 | 39.1 | 49.2 | 15.2 | 15.2 | 41.2 | 18.3 | 18.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 60.0 | 42.3 | 36.3 | 56.6 | 49.4 | 39.1 | 49.2 | 15.2 | 15.2 | 41.2 | 18.3 | 18.3 |
| LOS by Move: | E | D | D | E | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 5 | 8 | 4 | 3 | 8 | 3 | 6 | 8 | 8 | 3 | 15 | 15 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 670 | 51 | 94 | 1333 | 65 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 | 0 | 0 | 13 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 851 | 51 | 94 | 1346 | 65 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 851 | 51 | 94 | 1346 | 65 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 851 | 51 | 94 | 1346 | 65 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 50 | 112 | 13 | 17 | 63 | 60 | 19 | 851 | 51 | 94 | 1346 | 65 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 0.29 | 0.64 | 0.07 | 0.12 | 0.45 | 0.43 | 1.00 | 1.89 | 0.11 | 1.00 | 1.91 | 0.09 |
| Final Sat.: | 532 | 1187 | 136 | 217 | 801 | 761 | 1805 | 3374 | 204 | 1805 | 3419 | 166 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.01 | 0.25 | 0.25 | 0.05 | 0.39 | 0.39 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.14 | 0.14 | 0.14 | 0.12 | 0.12 | 0.12 | 0.05 | 0.52 | 0.52 | 0.11 | 0.58 | 0.58 |
| Volume/Cap: | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 | 0.21 | 0.48 | 0.48 | 0.48 | 0.68 | 0.68 |
| Uniform Del: | 40.8 | 40.8 | 40.8 | 42.3 | 42.3 | 42.3 | 45.6 | 15.1 | 15.1 | 41.9 | 14.3 | 14.3 |
| IncremntDel: | 6.9 | 6.9 | 6.9 | 8.5 | 8.5 | 8.5 | 1.2 | 0.2 | 0.2 | 1.9 | 0.9 | 0.9 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 47.7 | 47.7 | 47.7 | 50.9 | 50.9 | 50.9 | 46.8 | 15.3 | 15.3 | 43.8 | 15.2 | 15.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 47.7 | 47.7 | 47.7 | 50.9 | 50.9 | 50.9 | 46.8 | 15.3 | 15.3 | 43.8 | 15.2 | 15.2 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 6 | 6 | 6 | 5 | 5 | 5 | 1 | 9 | 9 | 3 | 16 | 16 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.305
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 6.9
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Permitted | | | Permitted | | | Permitted | | | Permitted | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 14 | 14 | 14 | 14 | 14 | 14 | 73 | 73 | 73 | 73 | 73 | 73 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 657 | 26 | 16 | 132 | 26 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 | 0 | 0 | 13 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 838 | 26 | 16 | 145 | 26 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 838 | 26 | 16 | 145 | 26 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 838 | 26 | 16 | 145 | 26 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 19 | 63 | 10 | 7 | 46 | 12 | 16 | 838 | 26 | 16 | 145 | 26 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.64 | 0.95 | 0.95 | 0.30 | 0.93 | 0.93 |
| Lanes: | 0.21 | 0.69 | 0.10 | 0.11 | 0.71 | 0.18 | 1.00 | 1.94 | 0.06 | 1.00 | 1.70 | 0.30 |
| Final Sat.: | 369 | 1209 | 184 | 207 | 1271 | 325 | 1212 | 3489 | 107 | 578 | 2995 | 532 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.01 | 0.24 | 0.24 | 0.03 | 0.05 | 0.05 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Volume/Cap: | 0.31 | 0.31 | 0.31 | 0.21 | 0.21 | 0.21 | 0.02 | 0.31 | 0.31 | 0.04 | 0.06 | 0.06 |
| Uniform Del: | 34.4 | 34.4 | 34.4 | 33.9 | 33.9 | 33.9 | 2.2 | 2.8 | 2.8 | 2.2 | 2.3 | 2.3 |
| IncremntDel: | 0.6 | 0.6 | 0.6 | 0.3 | 0.3 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 35.0 | 35.0 | 35.0 | 34.2 | 34.2 | 34.2 | 2.2 | 2.9 | 2.9 | 2.3 | 2.3 | 2.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.0 | 35.0 | 35.0 | 34.2 | 34.2 | 34.2 | 2.2 | 2.9 | 2.9 | 2.3 | 2.3 | 2.3 |
| LOS by Move: | D | D | D | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 3 | 3 | 3 | 2 | 2 | 2 | 0 | 4 | 4 | 0 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.974
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 44.4
Optimal Cycle: 161 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 0 | 1 | 1 | 1 | 0 1 | 0 | 1 | 2 | 0 2 | 0 | 1 | 1 | 0 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 387 | 468 | 351 | | 12 | 133 | 410 | | 125 | 377 | 303 | | 52 | 1289 | 73 | |
| Added Vol: | 0 | 0 | 100 | | 0 | 0 | 0 | | 0 | 81 | 0 | | 0 | 13 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 387 | 468 | 451 | | 12 | 133 | 410 | | 125 | 458 | 303 | | 52 | 1302 | 73 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 387 | 468 | 451 | | 12 | 133 | 410 | | 125 | 458 | 303 | | 52 | 1302 | 73 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 387 | 468 | 451 | | 12 | 133 | 410 | | 125 | 458 | 303 | | 52 | 1302 | 73 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 387 | 468 | 451 | | 12 | 133 | 410 | | 125 | 458 | 303 | | 52 | 1302 | 73 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.19 | 1.43 | 1.38 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2000 | 2414 | 2328 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3392 | 189 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.01 | 0.07 | 0.25 | | 0.04 | 0.13 | 0.19 | | 0.03 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.36 | 0.36 | | 0.09 | 0.26 | 0.26 | | 0.05 | 0.35 | 0.35 | | 0.09 | 0.39 | 0.39 | |
| Volume/Cap: | 0.99 | 0.54 | 0.54 | | 0.07 | 0.27 | 0.99 | | 0.72 | 0.37 | 0.54 | | 0.32 | 0.99 | 0.99 | |
| Uniform Del: | 40.1 | 25.5 | 25.5 | | 41.4 | 29.7 | 37.1 | | 46.8 | 24.5 | 26.3 | | 42.4 | 30.4 | 30.4 | |
| IncremntDel: | 22.3 | 0.2 | 0.2 | | 0.2 | 0.3 | 41.4 | | 13.1 | 0.2 | 1.1 | | 1.1 | 21.6 | 21.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 62.4 | 25.7 | 25.7 | | 41.6 | 30.0 | 78.5 | | 59.9 | 24.7 | 27.4 | | 43.5 | 52.0 | 52.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 62.4 | 25.7 | 25.7 | | 41.6 | 30.0 | 78.5 | | 59.9 | 24.7 | 27.4 | | 43.5 | 52.0 | 52.0 | |
| LOS by Move: | E | C | C | | D | C | E | | E | C | C | | D | D | D | |
| HCM2kAvgQ: | 16 | 9 | 9 | | 0 | 3 | 18 | | 3 | 6 | 8 | | 2 | 29 | 29 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.423
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 2 | 1 | 0 | 0 | 0 2 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 896 | 9 | | 0 | 483 | 0 | | 391 | 0 | 150 | | 0 | 0 | 121 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 100 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 896 | 9 | | 0 | 483 | 0 | | 491 | 0 | 150 | | 0 | 0 | 121 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 896 | 9 | | 0 | 483 | 0 | | 491 | 0 | 150 | | 0 | 0 | 121 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 896 | 9 | | 0 | 483 | 0 | | 491 | 0 | 150 | | 0 | 0 | 121 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 985 | 9 | | 0 | 507 | 0 | | 505 | 0 | 150 | | 0 | 0 | 121 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5646 | 54 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | | 0.00 | 0.13 | 0.00 | | 0.14 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.08 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.41 | 0.41 | | 0.00 | 0.41 | 0.00 | | 0.33 | 0.00 | 0.53 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.42 | 0.42 | | 0.00 | 0.32 | 0.00 | | 0.42 | 0.00 | 0.18 | | 0.00 | 0.00 | 0.42 | |
| Uniform Del: | 0.0 | 10.3 | 10.3 | | 0.0 | 9.8 | 0.0 | | 12.9 | 0.0 | 6.1 | | 0.0 | 0.0 | 17.4 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.0 | 0.0 | | 0.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.6 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 8.9 | 8.9 | | 0.0 | 8.4 | 0.0 | | 11.1 | 0.0 | 5.2 | | 0.0 | 0.0 | 15.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 8.9 | 8.9 | | 0.0 | 8.4 | 0.0 | | 11.1 | 0.0 | 5.2 | | 0.0 | 0.0 | 15.4 | |
| DesignQueue: | 0 | 7 | 7 | | 0 | 6 | 0 | | 6 | 0 | 3 | | 0 | 0 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.665
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 118 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | | 16 | 16 | 0 | | 0 | 0 | 0 | | 29 | 45 | 28 | | 61 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | | 1 | 220 | 0 | | 0 | 0 | 0 | 828 | | 379 | 798 | 1527 | | 0 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 886 | | 406 | 854 | 1634 | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 81 | | 6 | 7 | 14 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 967 | | 412 | 861 | 1648 | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 967 | | 412 | 861 | 1648 | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 967 | | 412 | 861 | 1648 | | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 339 | | 1 | 235 | 0 | | 0 | 0 | 0 | 967 | | 412 | 861 | 1648 | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.95 | | 0.75 | 0.92 | 0.95 | | 1.00 |
| Lanes: | 1.58 | 0.01 | | 1.41 | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 2.00 | 2.00 | 2.00 | | 0.00 |
| Final Sat.: | 2584 | | 6 | 2291 | 0 | | 0 | 0 | 0 | 3610 | | 2842 | 3502 | 3610 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.18 | | 0.10 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.27 | | 0.14 | 0.25 | 0.46 | | 0.00 |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.19 | | 0.19 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.34 | | 0.34 | 0.42 | 0.76 | | 0.00 |
| Volume/Cap: | 0.70 | 0.94 | | 0.55 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.79 | | 0.42 | 0.58 | 0.60 | | 0.00 |
| Uniform Del: | 32.2 | 34.0 | | 31.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 25.2 | | 21.6 | 18.7 | 4.3 | | 0.0 |
| IncremntDel: | 2.6 | 23.0 | | 0.6 | 0.0 | 0.0 | | 0.0 | 0.0 | 3.4 | | 0.3 | 0.6 | 0.4 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.00 |
| Delay/Veh: | 34.9 | 57.0 | | 31.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 28.6 | | 21.9 | 19.3 | 4.7 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 34.9 | 57.0 | | 31.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 28.6 | | 21.9 | 19.3 | 4.7 | | 0.0 |
| LOS by Move: | C | E | | C | A | A | | A | A | C | | C | B | A | | A |
| HCM2kAvgQ: | 7 | 12 | | 5 | 0 | 0 | | 0 | 0 | 14 | | 5 | 9 | 10 | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 41.6
Optimal Cycle: 119 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | | 78 | 250 | 410 | | 115 | 41 | 51 | | 538 | 13 | 238 | 1506 | | 420 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 15 | | 83 | 268 | 439 | | 123 | 44 | 55 | | 576 | 14 | 255 | 1611 | | 449 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 87 | 0 | 0 | 14 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 |
| Initial Fut: | 15 | | 83 | 268 | 439 | | 123 | 44 | 55 | | 663 | 14 | 255 | 1625 | | 449 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 15 | | 83 | 268 | 439 | | 123 | 44 | 55 | | 663 | 14 | 255 | 1625 | | 449 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 15 | | 83 | 268 | 439 | | 123 | 44 | 55 | | 663 | 14 | 255 | 1625 | | 449 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 15 | | 83 | 268 | 439 | | 123 | 44 | 55 | | 663 | 14 | 255 | 1625 | | 449 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.96 | | 0.96 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | | 0.85 |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.74 | | 0.26 | 1.00 | 1.96 | | 0.04 | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 70 | | 390 | 1249 | 3502 | 1346 | | 480 | 1805 | 3525 | | 74 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.21 | 0.21 | | 0.21 | 0.13 | 0.09 | | 0.09 | 0.03 | 0.19 | | 0.19 | 0.14 | 0.45 | | 0.28 |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | | 0.23 | 0.13 | 0.11 | | 0.11 | 0.05 | 0.30 | | 0.30 | 0.23 | 0.48 | | 0.48 |
| Volume/Cap: | 0.85 | 0.94 | | 0.94 | 0.94 | 0.85 | | 0.85 | 0.60 | 0.62 | | 0.62 | 0.62 | 0.94 | | 0.58 |
| Uniform Del: | 35.5 | 37.9 | | 37.9 | 42.9 | 43.8 | | 43.8 | 46.5 | 30.0 | | 30.0 | 34.8 | 24.7 | | 18.8 |
| IncremntDel: | 14.3 | 30.7 | | 30.7 | 27.2 | 27.2 | | 27.2 | 11.1 | 1.1 | | 1.1 | 3.0 | 10.6 | | 1.1 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 49.8 | 68.6 | | 68.6 | 70.2 | 71.0 | | 71.0 | 57.7 | 31.1 | | 31.1 | 37.8 | 35.3 | | 19.9 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 49.8 | 68.6 | | 68.6 | 70.2 | 71.0 | | 71.0 | 57.7 | 31.1 | | 31.1 | 37.8 | 35.3 | | 19.9 |
| LOS by Move: | D | E | | E | E | E | | E | E | C | | C | D | D | | B |
| HCM2kAvgQ: | 13 | 15 | | 15 | 11 | 8 | | 8 | 3 | 10 | | 10 | 8 | 30 | | 10 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.858
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 42.7
Optimal Cycle: 90 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | | 92 | 391 | 62 | | 15 | 228 | 24 | | 73 | 584 | 95 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 40 | 282 | 55 | | 98 | 418 | 66 | | 16 | 244 | 26 | | 78 | 625 | 102 | |
| Added Vol: | 0 | 131 | 67 | | 6 | 29 | 2 | | 31 | 13 | 0 | | 5 | 1 | 9 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 40 | 413 | 122 | | 104 | 447 | 68 | | 47 | 257 | 26 | | 83 | 626 | 111 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 40 | 413 | 122 | | 104 | 447 | 68 | | 47 | 257 | 26 | | 83 | 626 | 111 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 40 | 413 | 122 | | 104 | 447 | 68 | | 47 | 257 | 26 | | 83 | 626 | 111 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 40 | 413 | 122 | | 104 | 447 | 68 | | 47 | 257 | 26 | | 83 | 626 | 111 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.93 | | 0.95 | 0.99 | 0.99 | | 0.95 | 0.98 | 0.98 | |
| Lanes: | 0.14 | 1.44 | 0.42 | | 0.34 | 1.44 | 0.22 | | 1.00 | 0.91 | 0.09 | | 1.00 | 0.85 | 0.15 | |
| Final Sat.: | 240 | 2507 | 737 | | 593 | 2542 | 388 | | 1805 | 1703 | 170 | | 1805 | 1579 | 279 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | | 0.18 | 0.18 | 0.18 | | 0.03 | 0.15 | 0.15 | | 0.05 | 0.40 | 0.40 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.20 | 0.20 | 0.20 | | 0.05 | 0.38 | 0.38 | | 0.12 | 0.45 | 0.45 | |
| Volume/Cap: | 0.88 | 0.88 | 0.88 | | 0.88 | 0.88 | 0.88 | | 0.52 | 0.40 | 0.40 | | 0.37 | 0.88 | 0.88 | |
| Uniform Del: | 39.5 | 39.5 | 39.5 | | 38.8 | 38.8 | 38.8 | | 46.3 | 22.9 | 22.9 | | 40.1 | 24.9 | 24.9 | |
| IncremntDel: | 12.9 | 12.9 | 12.9 | | 12.1 | 12.1 | 12.1 | | 5.4 | 0.4 | 0.4 | | 1.0 | 10.4 | 10.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.4 | 52.4 | 52.4 | | 50.9 | 50.9 | 50.9 | | 51.7 | 23.2 | 23.2 | | 41.2 | 35.3 | 35.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.4 | 52.4 | 52.4 | | 50.9 | 50.9 | 50.9 | | 51.7 | 23.2 | 23.2 | | 41.2 | 35.3 | 35.3 | |
| LOS by Move: | D | D | D | | D | D | D | | D | C | C | | D | D | D | |
| HCM2kAvgQ: | 12 | 12 | 12 | | 13 | 13 | 13 | | 2 | 6 | 6 | | 3 | 24 | 24 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 54 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | | 0 | 1034 | 31 | | 103 | 0 | 6 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 48 | 2527 | 0 | | 0 | 1106 | 33 | | 110 | 0 | 6 | | 0 | 0 | 0 | |
| Added Vol: | 94 | 55 | 0 | | 0 | 783 | 0 | | 153 | 0 | 21 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 142 | 2582 | 0 | | 0 | 1889 | 33 | | 263 | 0 | 27 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 142 | 2582 | 0 | | 0 | 1889 | 33 | | 263 | 0 | 27 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 142 | 2582 | 0 | | 0 | 1889 | 33 | | 263 | 0 | 27 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 142 | 2582 | 0 | | 0 | 1889 | 33 | | 263 | 0 | 27 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.51 | 0.00 | | 0.00 | 0.37 | 0.02 | | 0.15 | 0.00 | 0.02 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.13 | 0.72 | 0.00 | | 0.00 | 0.59 | 0.59 | | 0.21 | 0.00 | 0.21 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.63 | 0.71 | 0.00 | | 0.00 | 0.63 | 0.04 | | 0.71 | 0.00 | 0.08 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 53.7 | 10.4 | 0.0 | | 0.0 | 17.2 | 11.1 | | 47.6 | 0.0 | 41.2 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 5.5 | 0.6 | 0.0 | | 0.0 | 0.4 | 0.0 | | 6.1 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 59.3 | 11.0 | 0.0 | | 0.0 | 17.7 | 11.1 | | 53.6 | 0.0 | 41.3 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 59.3 | 11.0 | 0.0 | | 0.0 | 17.7 | 11.1 | | 53.6 | 0.0 | 41.3 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | E | B | A | | A | B | B | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 6 | 22 | 0 | | 0 | 18 | 1 | | 11 | 0 | 1 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.657
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.5
Optimal Cycle: 48 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | 218 | 0 | 31 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | |
| Initial Bse: | 156 | 2215 | 0 | | 0 | 911 | 210 | 233 | 0 | 33 | 0 | 0 | 0 | | | |
| Added Vol: | 94 | 146 | 0 | | 0 | 803 | 1 | 2 | 0 | 21 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 250 | 2361 | 0 | | 0 | 1714 | 211 | 235 | 0 | 54 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 250 | 2361 | 0 | | 0 | 1714 | 211 | 235 | 0 | 54 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 250 | 2361 | 0 | | 0 | 1714 | 211 | 235 | 0 | 54 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 250 | 2361 | 0 | | 0 | 1714 | 211 | 235 | 0 | 54 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.46 | 0.00 | | 0.00 | 0.34 | 0.13 | 0.13 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | **** | | | | | | | | |
| Green/Cycle: | 0.22 | 0.73 | 0.00 | | 0.00 | 0.51 | 0.51 | 0.20 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.66 | 0.64 | 0.00 | | 0.00 | 0.66 | 0.26 | 0.66 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 46.6 | 9.0 | 0.0 | | 0.0 | 23.2 | 17.8 | 47.7 | 0.0 | 42.8 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 4.2 | 0.4 | 0.0 | | 0.0 | 0.6 | 0.2 | 4.4 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 50.8 | 9.3 | 0.0 | | 0.0 | 23.9 | 18.0 | 52.1 | 0.0 | 43.1 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 50.8 | 9.3 | 0.0 | | 0.0 | 23.9 | 18.0 | 52.1 | 0.0 | 43.1 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | C | B | A | D | A | A | A | A | | | |
| HCM2kAvgQ: | 10 | 18 | 0 | | 0 | 18 | 5 | 10 | 0 | 2 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.670
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 23.6
Optimal Cycle: 33 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | 83 | 0 | 561 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | |
| Initial Bse: | 496 | 392 | 0 | | 0 | 426 | 71 | 89 | 0 | 600 | 0 | 0 | 0 | | | |
| Added Vol: | 3 | 24 | 0 | | 0 | 71 | 2 | 7 | 0 | 13 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 613 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 0 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 499 | 416 | 0 | | 0 | 497 | 73 | 96 | 0 | 0 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | 0.93 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1597 | 233 | 1769 | 0 | 1900 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.28 | 0.22 | 0.00 | | 0.00 | 0.31 | 0.31 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | **** | | | | | | | | |
| Green/Cycle: | 0.42 | 0.89 | 0.00 | | 0.00 | 0.46 | 0.46 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.67 | 0.25 | 0.00 | | 0.00 | 0.67 | 0.67 | 0.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 28.0 | 1.0 | 0.0 | | 0.0 | 25.0 | 25.0 | 53.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 2.4 | 0.1 | 0.0 | | 0.0 | 2.1 | 2.1 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 30.4 | 1.1 | 0.0 | | 0.0 | 27.1 | 27.1 | 65.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 30.4 | 1.1 | 0.0 | | 0.0 | 27.1 | 27.1 | 65.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | C | A | A | | A | C | C | E | A | A | A | A | A | | | |
| HCM2kAvgQ: | 15 | 2 | 0 | | 0 | 17 | 17 | 5 | 0 | 0 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.492
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 22 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 61 | 667 | 52 | | 205 | 759 | 73 | | 3 | 3 | 3 | | 132 | 57 | 258 | |
| Added Vol: | 0 | 26 | 0 | | 1 | 84 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 61 | 693 | 52 | | 206 | 843 | 73 | | 3 | 3 | 3 | | 132 | 57 | 259 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.49 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 940 | 861 | 861 | | 1024 | 441 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.20 | 0.03 | | 0.12 | 0.24 | 0.05 | | 0.00 | 0.00 | 0.00 | | 0.13 | 0.13 | 0.16 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.40 | 0.40 | | 0.24 | 0.55 | 0.55 | | 0.33 | 0.33 | 0.33 | | 0.33 | 0.33 | 0.33 | |
| Volume/Cap: | 0.43 | 0.49 | 0.08 | | 0.49 | 0.43 | 0.08 | | 0.01 | 0.01 | 0.01 | | 0.39 | 0.39 | 0.49 | |
| Uniform Del: | 52.6 | 27.1 | 22.5 | | 39.5 | 15.6 | 12.5 | | 26.9 | 26.9 | 26.9 | | 30.7 | 30.7 | 32.0 | |
| IncremntDel: | 2.1 | 0.3 | 0.1 | | 0.9 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.5 | 0.5 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.7 | 27.4 | 22.6 | | 40.5 | 15.8 | 12.5 | | 26.9 | 26.9 | 26.9 | | 31.2 | 31.2 | 32.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.7 | 27.4 | 22.6 | | 40.5 | 15.8 | 12.5 | | 26.9 | 26.9 | 26.9 | | 31.2 | 31.2 | 32.7 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 10 | 1 | | 7 | 9 | 1 | | 0 | 0 | 0 | | 5 | 5 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.676
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 32.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 123 | 336 | 9 | | 7 | 524 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| Added Vol: | 0 | 170 | 0 | | 0 | 38 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 506 | 9 | | 7 | 562 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 506 | 9 | | 7 | 562 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 506 | 9 | | 7 | 562 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 506 | 9 | | 7 | 562 | 380 | | 122 | 36 | 48 | | 6 | 104 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.38 | 1.59 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 688 | 2831 | 48 | | 27 | 2009 | 1357 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.28 | 0.28 | 0.28 | | 0.05 | 0.08 | 0.08 | | 0.06 | 0.06 | 0.06 | |
| Crit Moves: | **** | | | | **** | | | | | | **** | | | **** | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.41 | 0.41 | 0.41 | | 0.12 | 0.12 | 0.12 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.68 | 0.68 | 0.68 | | 0.68 | 0.68 | 0.68 | | 0.40 | 0.68 | 0.68 | | 0.68 | 0.68 | 0.68 | |
| Uniform Del: | 32.9 | 32.9 | 32.9 | | 23.8 | 23.8 | 23.8 | | 40.6 | 42.1 | 42.1 | | 44.0 | 44.0 | 44.0 | |
| IncremntDel: | 2.0 | 2.0 | 2.0 | | 1.3 | 1.3 | 1.3 | | 0.5 | 5.9 | 5.9 | | 10.3 | 10.3 | 10.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.9 | 34.9 | 34.9 | | 25.2 | 25.2 | 25.2 | | 41.1 | 48.0 | 48.0 | | 54.3 | 54.3 | 54.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.9 | 34.9 | 34.9 | | 25.2 | 25.2 | 25.2 | | 41.1 | 48.0 | 48.0 | | 54.3 | 54.3 | 54.3 | |
| LOS by Move: | C | C | C | | C | C | C | | D | D | D | | D | D | D | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 13 | 13 | 13 | | 3 | 6 | 6 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.780 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 18.8 |
| Optimal Cycle: | 90 | Level Of Service: | B |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 0 | 3 0 | 0 | | 0 0 | 3 0 | 1 | | 2 0 | 0 0 | 1 | | 0 0 | 0 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | | 0 | 782 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 2351 | 0 | | 0 | 837 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Added Vol: | 725 | 216 | 0 | | 0 | 500 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 725 | 2567 | 0 | | 0 | 1337 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 725 | 2567 | 0 | | 0 | 1337 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 725 | 2567 | 0 | | 0 | 1337 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 725 | 2567 | 0 | | 0 | 1337 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.91 | 1.00 | | 1.00 | 0.91 | 0.85 | | 0.92 | 1.00 | 0.85 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1805 | 5187 | 0 | | 0 | 5187 | 1615 | | 3502 | 0 | 1615 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.40 | 0.49 | 0.00 | | 0.00 | 0.26 | 0.05 | | 0.01 | 0.00 | 0.03 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.48 | 0.78 | 0.00 | | 0.00 | 0.30 | 0.30 | | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.85 | 0.63 | 0.00 | | 0.00 | 0.85 | 0.16 | | 0.07 | 0.00 | 0.27 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 23.0 | 4.8 | 0.0 | | 0.0 | 32.5 | 25.4 | | 40.8 | 0.0 | 41.6 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 7.8 | 0.3 | 0.0 | | 0.0 | 4.4 | 0.2 | | 0.1 | 0.0 | 0.9 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 30.8 | 5.1 | 0.0 | | 0.0 | 37.0 | 25.6 | | 40.9 | 0.0 | 42.5 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 30.8 | 5.1 | 0.0 | | 0.0 | 37.0 | 25.6 | | 40.9 | 0.0 | 42.5 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | D | C | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 22 | 13 | 0 | | 0 | 17 | 2 | | 0 | 0 | 1 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Near Term 2018 East and West Campuses PM |
| Command: | Near Term II Project PM |
| Volume: | Near Term II Project PM |
| Geometry: | Near Term II Project PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term II Project PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term II Project PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 59.1 | 1.009 | E | 63.5 | 1.042 | + 4.425 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 15.2 | 0.872 | C | 35.0 | 1.056 | +19.752 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 20.0 | 0.874 | C | 29.8 | 0.977 | + 9.718 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 21.5 | 0.733 | C | 22.9 | 0.885 | + 1.351 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 27.2 | 0.623 | C | 21.8 | 0.775 | -5.344 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 15.3 | 0.618 | B | 14.5 | 0.646 | -0.784 D/V |
| # 7 Middlefield at Marsh (Town of | C | 33.8 | 0.866 | D | 45.4 | 0.999 | +11.587 D/V |
| # 8 Bayfront Exp. & Willow Rd. | D | 52.6 | 0.981 | F | 122.5 | 1.238 | +69.850 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 22.7 | 0.649 | C | 25.1 | 0.849 | + 2.430 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 12.3 | 0.581 | B | 15.9 | 0.830 | + 3.531 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 10.0 | 0.584 | A | 9.2 | 0.676 | -0.808 D/V |
| # 12 Newbridge St. & Willow Rd. | C | 34.5 | 0.787 | E | 65.3 | 1.116 | +30.857 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 20.6 | 0.781 | C | 21.7 | 0.807 | + 1.033 D/V |
| # 14 Durham St. & Willow Rd. | D | 51.3 | 0.680 | B | 18.2 | 0.831 | -33.117 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 12.2 | 0.782 | B | 13.0 | 0.821 | + 0.799 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 12.7 | 0.695 | B | 12.0 | 0.763 | -0.729 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 139.3 | 1.318 | F | 180.6 | 1.427 | +41.288 D/V |
| # 18 Bayfront Exp. & University Ave | F | 178.9 | 1.370 | F | 214.3 | 1.482 | +35.382 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 13.4 | 0.714 | B | 13.6 | 0.727 | + 0.221 D/V |
| # 20 University & Kavanaugh | B | 16.6 | 0.687 | B | 16.2 | 0.693 | -0.386 D/V |
| # 21 University & Bay | D | 35.4 | 0.862 | D | 35.0 | 0.868 | -0.350 D/V |
| # 22 University & Runnymede | C | 23.4 | 0.723 | C | 23.2 | 0.729 | -0.203 D/V |
| # 23 University & Bell | A | 7.9 | 0.566 | A | 7.7 | 0.572 | -0.134 D/V |
| # 24 University & Donohoe | D | 38.1 | 0.902 | D | 39.2 | 0.905 | + 1.055 D/V |
| # 25 NB 101 & Donohoe St | B | 13.9 | 0.499 | B | 14.0 | 0.502 | + 0.057 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 27.1 | 0.544 | C | 27.1 | 0.567 | -0.023 D/V |
| # 27 University Ave. & Woodland | D | 49.6 | 0.920 | D | 50.0 | 0.928 | + 0.410 D/V |
| # 28 Middlefield Rd. & University A | C | 33.2 | 0.575 | D | 35.3 | 0.651 | + 2.072 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 19.5 | 0.729 | F | 87.2 | 1.145 | +67.782 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 14.3 | 0.625 | B | 18.1 | 0.742 | + 3.824 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 27.6 | 0.768 | C | 27.6 | 0.785 | -0.054 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 28.7 | 0.647 | C | 29.5 | 0.671 | + 0.837 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 39.6 | 0.754 | D | 42.4 | 0.819 | + 2.766 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.4 | 0.541 | D | 36.4 | 0.929 | +35.061 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

| | | | |
|---|---|---|---|
| Cycle (sec): | 140 | Critical Vol./Cap.(X): | 1.042 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 63.5 |
| Optimal Cycle: | 180 | Level Of Service: | E |

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1267 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2089 | | 33 | 78 | 12 | |
| Added Vol: | 1222 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 84 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.48 | 0.03 | 0.03 | | 0.00 | 0.10 | 0.13 | | 0.11 | 0.11 | 0.78 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.46 | 0.46 | 0.46 | | 0.00 | 0.10 | 0.39 | | 0.28 | 0.28 | 0.75 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 1.04 | 0.07 | 0.07 | | 0.00 | 1.04 | 0.33 | | 0.38 | 0.38 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Uniform Del: | 37.5 | 20.8 | 20.8 | | 0.0 | 63.0 | 30.3 | | 40.1 | 40.1 | 17.6 | | 65.4 | 65.4 | 65.4 | |
| IncremntDel: | 30.4 | 0.0 | 0.0 | | 0.0 | 59.0 | 0.3 | | 0.5 | 0.5 | 31.6 | | 94.4 | 94.4 | 94.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 67.9 | 20.8 | 20.8 | | 0.0 | 122 | 30.6 | | 40.6 | 40.6 | 49.2 | | 159.9 | 160 | 159.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 67.9 | 20.8 | 20.8 | | 0.0 | 122 | 30.6 | | 40.6 | 40.6 | 49.2 | | 159.9 | 160 | 159.9 | |
| LOS by Move: | E | C | C | | A | F | C | | D | D | D | | F | F | F | |
| HCM2kAvgQ: | 46 | 1 | 1 | | 0 | 13 | 6 | | 7 | 7 | 64 | | 9 | 9 | 9 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.056
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 35.0
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 528 | 0 | 228 | | 0 | 0 | 0 | | 0 | 2207 | 542 | | 0 | 730 | 846 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 146 | 0 | | 0 | 862 | 360 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 542 | | 0 | 1592 | 1206 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 0 | | 0 | 1592 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 0 | | 0 | 1592 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 0 | | 0 | 1592 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3374 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.00 | 0.25 | | 0.00 | 0.00 | 0.00 | | 0.70 | 0.70 | 0.00 | | 0.00 | 0.45 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.00 | 0.23 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Volume/Cap: | 0.66 | 0.00 | 1.06 | | 0.00 | 0.00 | 0.00 | | 1.06 | 1.06 | 0.00 | | 0.00 | 0.68 | 0.00 | |
| Uniform Del: | 22.6 | 0.0 | 25.0 | | 0.0 | 0.0 | 0.0 | | 11.0 | 11.0 | 0.0 | | 0.0 | 6.8 | 0.0 | |
| IncremntDel: | 2.1 | 0.0 | 62.6 | | 0.0 | 0.0 | 0.0 | | 36.0 | 36.0 | 0.0 | | 0.0 | 0.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 24.8 | 0.0 | 87.5 | | 0.0 | 0.0 | 0.0 | | 47.0 | 47.0 | 0.0 | | 0.0 | 7.7 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 24.8 | 0.0 | 87.5 | | 0.0 | 0.0 | 0.0 | | 47.0 | 47.0 | 0.0 | | 0.0 | 7.7 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | D | D | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 0 | 15 | | 0 | 0 | 0 | | 40 | 40 | 0 | | 0 | 11 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.977
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 29.8
Optimal Cycle: 123 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 1450 | 0 | 485 | | 0 | 1264 | 697 | | 0 | 1006 | 302 | |
| Added Vol: | 0 | 0 | 0 | | 78 | 0 | 8 | | 0 | 78 | 0 | | 0 | 503 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1528 | 0 | 493 | | 0 | 1342 | 697 | | 0 | 1509 | 302 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1528 | 0 | 493 | | 0 | 1342 | 0 | | 0 | 1509 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1528 | 0 | 493 | | 0 | 1342 | 0 | | 0 | 1509 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1528 | 0 | 493 | | 0 | 1342 | 0 | | 0 | 1509 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.45 | 0.00 | 0.31 | | 0.00 | 0.38 | 0.00 | | 0.00 | 0.43 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.46 | 0.00 | 0.46 | | 0.00 | 0.44 | 0.00 | | 0.00 | 0.44 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.98 | 0.00 | 0.68 | | 0.00 | 0.87 | 0.00 | | 0.00 | 0.98 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 17.4 | 0.0 | 14.0 | | 0.0 | 16.6 | 0.0 | | 0.0 | 18.0 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 17.5 | 0.0 | 2.7 | | 0.0 | 5.6 | 0.0 | | 0.0 | 17.6 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 34.8 | 0.0 | 16.7 | | 0.0 | 22.2 | 0.0 | | 0.0 | 35.6 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 34.8 | 0.0 | 16.7 | | 0.0 | 22.2 | 0.0 | | 0.0 | 35.6 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | B | | A | C | A | | A | D | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 23 | 0 | 9 | | 0 | 16 | 0 | | 0 | 23 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.885
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 73 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | | 254 | 9 | 2 | | 42 | 1314 | 17 | | 78 | 1109 | 214 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 30 | 16 | 286 | | 272 | 10 | 2 | | 45 | 1406 | 18 | | 83 | 1187 | 229 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 80 | 0 | | 0 | 510 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 30 | 16 | 286 | | 272 | 10 | 2 | | 45 | 1486 | 18 | | 83 | 1697 | 229 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 30 | 16 | 286 | | 272 | 10 | 2 | | 45 | 1486 | 18 | | 83 | 1697 | 229 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 30 | 16 | 286 | | 272 | 10 | 2 | | 45 | 1486 | 18 | | 83 | 1697 | 229 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 30 | 16 | 286 | | 272 | 10 | 2 | | 45 | 1486 | 18 | | 83 | 1697 | 229 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.65 | 0.35 | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | 2.96 | 0.04 | | 2.00 | 1.76 | 0.24 | |
| Final Sat.: | 1174 | 629 | 2786 | | 1716 | 61 | 1583 | | 1769 | 5012 | 61 | | 3432 | 3061 | 413 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.03 | 0.10 | | 0.16 | 0.16 | 0.00 | | 0.03 | 0.30 | 0.30 | | 0.02 | 0.55 | 0.55 | |
| Crit Moves: | | | **** | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.17 | 0.17 | 0.17 | | 0.05 | 0.57 | 0.57 | | 0.10 | 0.61 | 0.61 | |
| Volume/Cap: | 0.23 | 0.23 | 0.91 | | 0.91 | 0.91 | 0.01 | | 0.51 | 0.52 | 0.52 | | 0.25 | 0.91 | 0.91 | |
| Uniform Del: | 32.3 | 32.3 | 35.0 | | 32.4 | 32.4 | 27.3 | | 37.0 | 10.7 | 10.7 | | 33.5 | 13.5 | 13.5 | |
| IncremntDel: | 0.6 | 0.6 | 28.1 | | 28.4 | 28.4 | 0.0 | | 4.8 | 0.2 | 0.2 | | 0.4 | 6.1 | 6.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.8 | 32.8 | 63.1 | | 60.7 | 60.7 | 27.3 | | 41.8 | 10.9 | 10.9 | | 34.0 | 19.6 | 19.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.8 | 32.8 | 63.1 | | 60.7 | 60.7 | 27.3 | | 41.8 | 10.9 | 10.9 | | 34.0 | 19.6 | 19.6 | |
| LOS by Move: | C | C | E | | E | E | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 1 | 1 | 7 | | 11 | 11 | 0 | | 2 | 9 | 9 | | 1 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.775
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 44 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | | 428 | 30 | 128 | | 239 | 885 | 55 | | 26 | 833 | 316 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 102 | 34 | 62 | | 458 | 32 | 137 | | 256 | 947 | 59 | | 28 | 891 | 338 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 80 | 0 | | 0 | 510 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 102 | 34 | 62 | | 458 | 32 | 137 | | 256 | 1027 | 59 | | 28 | 1401 | 338 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 102 | 34 | 62 | | 458 | 32 | 137 | | 256 | 1027 | 59 | | 28 | 1401 | 338 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 102 | 34 | 62 | | 458 | 32 | 137 | | 256 | 1027 | 59 | | 28 | 1401 | 338 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 102 | 34 | 62 | | 458 | 32 | 137 | | 256 | 1027 | 59 | | 28 | 1401 | 338 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.88 | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.36 | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 598 | 1084 | | 3323 | 233 | 1583 | | 1769 | 3319 | 190 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.14 | 0.14 | 0.09 | | 0.14 | 0.31 | 0.31 | | 0.02 | 0.40 | 0.21 | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.07 | 0.07 | 0.07 | | 0.18 | 0.18 | 0.18 | | 0.19 | 0.60 | 0.60 | | 0.10 | 0.51 | 0.51 | |
| Volume/Cap: | 0.77 | 0.77 | 0.77 | | 0.77 | 0.77 | 0.49 | | 0.77 | 0.51 | 0.51 | | 0.16 | 0.77 | 0.42 | |
| Uniform Del: | 36.4 | 36.4 | 36.4 | | 31.4 | 31.4 | 29.6 | | 30.9 | 9.2 | 9.2 | | 33.1 | 15.8 | 12.1 | |
| IncremntDel: | 24.5 | 25.2 | 25.2 | | 6.0 | 6.0 | 1.3 | | 10.9 | 0.2 | 0.2 | | 0.4 | 2.2 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 60.9 | 61.5 | 61.5 | | 37.3 | 37.3 | 30.9 | | 41.8 | 9.4 | 9.4 | | 33.6 | 18.0 | 12.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 60.9 | 61.5 | 61.5 | | 37.3 | 37.3 | 30.9 | | 41.8 | 9.4 | 9.4 | | 33.6 | 18.0 | 12.5 | |
| LOS by Move: | E | E | E | | D | D | C | | D | A | A | | C | B | B | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 8 | 8 | 4 | | 8 | 8 | 8 | | 1 | 16 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.646
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 30 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 61 | 9 | 193 | | 59 | 33 | 3 | | 5 | 876 | 96 | | 214 | 953 | 50 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 80 | 2 | | 0 | 510 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 956 | 98 | | 214 | 1463 | 50 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 956 | 98 | | 214 | 1463 | 50 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 956 | 98 | | 214 | 1463 | 50 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 63 | 9 | 193 | | 59 | 33 | 3 | | 5 | 956 | 98 | | 214 | 1463 | 50 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.68 | 0.68 | 0.68 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.80 | 0.19 | | 1.00 | 1.93 | 0.07 | |
| Final Sat.: | 366 | 50 | 1118 | | 797 | 449 | 43 | | 17 | 2984 | 307 | | 1769 | 3403 | 117 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.07 | 0.07 | 0.07 | | 0.32 | 0.32 | 0.32 | | 0.12 | 0.43 | 0.43 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | | 0.50 | 0.50 | 0.50 | | 0.19 | 0.68 | 0.68 | |
| Volume/Cap: | 0.65 | 0.65 | 0.65 | | 0.28 | 0.28 | 0.28 | | 0.65 | 0.65 | 0.65 | | 0.64 | 0.63 | 0.63 | |
| Uniform Del: | 26.0 | 26.0 | 26.0 | | 23.3 | 23.3 | 23.3 | | 14.9 | 14.9 | 14.9 | | 30.0 | 7.0 | 7.0 | |
| IncremntDel: | 3.6 | 3.6 | 3.6 | | 0.4 | 0.4 | 0.4 | | 0.9 | 0.9 | 0.9 | | 4.3 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 29.7 | 29.7 | 29.7 | | 23.7 | 23.7 | 23.7 | | 15.8 | 15.8 | 15.8 | | 34.4 | 7.5 | 7.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 29.7 | 29.7 | 29.7 | | 23.7 | 23.7 | 23.7 | | 15.8 | 15.8 | 15.8 | | 34.4 | 7.5 | 7.5 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | C | A | A | |
| HCM2kAvgQ: | 7 | 7 | 7 | | 2 | 2 | 2 | | 11 | 11 | 11 | | 6 | 11 | 11 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 45.4
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 456 | 586 | | 437 | 288 | 0 | | 0 | 0 | 0 | | 551 | 0 | 478 | |
| Added Vol: | 0 | 58 | 45 | | 37 | 11 | 0 | | 0 | 0 | 0 | | 127 | 0 | 386 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 514 | 631 | | 474 | 299 | 0 | | 0 | 0 | 0 | | 678 | 0 | 864 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 514 | 631 | | 474 | 299 | 0 | | 0 | 0 | 0 | | 678 | 0 | 864 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 514 | 631 | | 474 | 299 | 0 | | 0 | 0 | 0 | | 678 | 0 | 864 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 514 | 631 | | 474 | 299 | 0 | | 0 | 0 | 0 | | 678 | 0 | 864 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.27 | 0.39 | | 0.26 | 0.16 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.38 | 0.00 | 0.54 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.27 | 0.65 | | 0.26 | 0.53 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.38 | 0.00 | 0.64 | |
| Volume/Cap: | 0.00 | 1.00 | 0.60 | | 1.00 | 0.29 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 0.84 | |
| Uniform Del: | 0.0 | 40.1 | 11.3 | | 40.5 | 14.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.3 | 0.0 | 15.5 | |
| IncremntDel: | 0.0 | 39.5 | 1.0 | | 41.1 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.4 | 0.0 | 6.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 79.6 | 12.3 | | 81.7 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 68.7 | 0.0 | 21.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 79.6 | 12.3 | | 81.7 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 68.7 | 0.0 | 21.6 | |
| LOS by Move: | A | E | B | | F | B | A | | A | A | A | | E | A | C | |
| HCM2kAvgQ: | 0 | 24 | 13 | | 22 | 5 | 0 | | 0 | 0 | 0 | | 30 | 0 | 25 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.238
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 122.5
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 3 | 0 | 1 | 2 | 0 3 | 0 | 1 | 1 | 1 1 | 0 | 2 | 1 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 387 | 710 | 1 | 0 | 2353 | 116 | 39 | 14 | 1524 | 47 | 112 | 9 | | | | |
| Added Vol: | 393 | 278 | 3 | 49 | 341 | 255 | 45 | 94 | 5 | 317 | 391 | 181 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 780 | 988 | 4 | 49 | 2694 | 371 | 84 | 108 | 1529 | 364 | 503 | 190 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 780 | 988 | 4 | 49 | 2694 | 371 | 84 | 108 | 1529 | 364 | 503 | 190 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 780 | 988 | 4 | 49 | 2694 | 371 | 84 | 108 | 1529 | 364 | 503 | 190 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 780 | 988 | 4 | 49 | 2694 | 371 | 84 | 108 | 1529 | 364 | 503 | 190 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.91 | 0.91 | 0.88 | 0.93 | 0.93 | 0.83 | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.31 | 1.69 | 2.00 | 1.00 | 2.00 | 1.00 | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 2267 | 2929 | 3343 | 1769 | 3538 | 1583 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.17 | 0.00 | 0.01 | 0.46 | 0.23 | 0.04 | 0.04 | 0.46 | 0.21 | 0.14 | 0.12 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.45 | 0.62 | 0.10 | 0.37 | 0.37 | 0.19 | 0.19 | 0.37 | 0.17 | 0.17 | 0.27 | | | | |
| Volume/Cap: | 1.24 | 0.37 | 0.00 | 0.14 | 1.24 | 0.63 | 0.20 | 0.20 | 1.24 | 1.24 | 0.86 | 0.44 | | | | |
| Uniform Del: | 53.1 | 23.4 | 9.5 | 53.1 | 40.8 | 33.5 | 44.8 | 44.8 | 41.0 | 54.2 | 52.7 | 39.4 | | | | |
| IncremntDel: | 120.4 | 0.1 | 0.0 | 0.2 | 111 | 2.2 | 0.1 | 0.1 | 114.3 | 132.9 | 11.8 | 0.7 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 173.5 | 23.5 | 9.5 | 53.2 | 152 | 35.6 | 44.9 | 44.9 | 155.3 | 187.1 | 64.5 | 40.2 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 173.5 | 23.5 | 9.5 | 53.2 | 152 | 35.6 | 44.9 | 44.9 | 155.3 | 187.1 | 64.5 | 40.2 | | | | |
| LOS by Move: | F | C | A | D | F | D | D | D | F | F | E | D | | | | |
| HCM2kAvgQ: | 28 | 9 | 0 | 1 | 64 | 13 | 2 | 2 | 57 | 26 | 13 | 6 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.849
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 25.1
Optimal Cycle: 93 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 1! | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | 73 | 5 | 73 | 130 | 1351 | 5 | 20 | 553 | 67 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 138 | 6 | 52 | 78 | 5 | 78 | 139 | 1446 | 5 | 21 | 592 | 72 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 144 | 0 | 0 | 1155 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 138 | 6 | 52 | 78 | 5 | 82 | 145 | 1590 | 5 | 21 | 1747 | 72 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 138 | 6 | 52 | 78 | 5 | 82 | 145 | 1590 | 5 | 21 | 1747 | 72 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 138 | 6 | 52 | 78 | 5 | 82 | 145 | 1590 | 5 | 21 | 1747 | 72 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 138 | 6 | 52 | 78 | 5 | 82 | 145 | 1590 | 5 | 21 | 1747 | 72 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.60 | 0.60 | 0.60 | 0.74 | 0.74 | 0.74 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | 0.47 | 0.03 | 0.50 | 1.00 | 1.99 | 0.01 | 1.00 | 1.92 | 0.08 | | | | |
| Final Sat.: | 804 | 37 | 305 | 660 | 45 | 694 | 1769 | 3526 | 12 | 1769 | 3378 | 139 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | 0.12 | 0.12 | 0.12 | 0.08 | 0.45 | 0.45 | 0.01 | 0.52 | 0.52 | | | | |
| Crit Moves: | | **** | | | | | **** | | | | **** | | | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.10 | 0.65 | 0.65 | 0.06 | 0.61 | 0.61 | | | | |
| Volume/Cap: | 0.85 | 0.85 | 0.85 | 0.59 | 0.59 | 0.59 | 0.85 | 0.70 | 0.70 | 0.20 | 0.85 | 0.85 | | | | |
| Uniform Del: | 46.1 | 46.1 | 46.1 | 43.3 | 43.3 | 43.3 | 53.3 | 13.7 | 13.7 | 53.7 | 19.0 | 19.0 | | | | |
| IncremntDel: | 24.3 | 24.3 | 24.3 | 3.1 | 3.1 | 3.1 | 30.8 | 1.0 | 1.0 | 0.9 | 3.4 | 3.4 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 70.4 | 70.4 | 70.4 | 46.5 | 46.5 | 46.5 | 84.1 | 14.6 | 14.6 | 54.6 | 22.4 | 22.4 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 70.4 | 70.4 | 70.4 | 46.5 | 46.5 | 46.5 | 84.1 | 14.6 | 14.6 | 54.6 | 22.4 | 22.4 | | | | |
| LOS by Move: | E | E | E | D | D | D | F | B | B | D | C | C | | | | |
| HCM2kAvgQ: | 10 | 10 | 10 | 6 | 6 | 6 | 8 | 20 | 20 | 1 | 30 | 30 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.830
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 15.9
Optimal Cycle: 87 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 2 | 0 0 | 0 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | | 0 | 0 | 800 | | 22 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 0 | 0 | 0 | | 11 | 0 | 131 | | 105 | 1559 | | 0 | 0 | 856 | | 24 |
| Added Vol: | 0 | 0 | 0 | | 21 | 0 | 10 | | 10 | 129 | | 0 | 0 | 1000 | | 159 |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 0 | 0 | 0 | | 32 | 0 | 141 | | 115 | 1688 | | 0 | 0 | 1856 | | 183 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 0 | 0 | 0 | | 32 | 0 | 141 | | 115 | 1688 | | 0 | 0 | 1856 | | 183 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 0 | 0 | 0 | | 32 | 0 | 141 | | 115 | 1688 | | 0 | 0 | 1856 | | 183 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 0 | 0 | 0 | | 32 | 0 | 141 | | 115 | 1688 | | 0 | 0 | 1856 | | 183 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | 0.86 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.92 | | 0.92 |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.18 | 0.00 | 0.82 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.82 | | 0.18 |
| Final Sat.: | 0 | 0 | 0 | | 302 | 0 | 1340 | | 1769 | 3538 | | 0 | 0 | 3179 | | 313 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.10 | 0.00 | 0.10 | | 0.06 | 0.48 | 0.00 | | 0.00 | 0.58 | | 0.58 |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.13 | 0.00 | 0.13 | | 0.08 | 0.78 | 0.00 | | 0.00 | 0.70 | | 0.70 |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.83 | 0.00 | 0.83 | | 0.83 | 0.61 | 0.00 | | 0.00 | 0.83 | | 0.83 |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 51.2 | 0.0 | 51.2 | | 54.5 | 5.5 | 0.0 | | 0.0 | 12.7 | | 12.7 |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 23.5 | 0.0 | 23.5 | | 32.4 | 0.4 | 0.0 | | 0.0 | 2.5 | | 2.5 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | | 1.00 |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 74.7 | 0.0 | 74.7 | | 86.9 | 5.9 | 0.0 | | 0.0 | 15.2 | | 15.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 74.7 | 0.0 | 74.7 | | 86.9 | 5.9 | 0.0 | | 0.0 | 15.2 | | 15.2 |
| LOS by Move: | A | A | A | | E | A | E | | F | A | A | | A | B | | B |
| HCM2kAvgQ: | 0 | 0 | 0 | | 9 | 0 | 9 | | 6 | 14 | 0 | | 0 | 30 | | 30 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.676
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 55 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 0 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 1 | 1 | 0 | 2 | 0 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 128 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1512 | 218 | | 78 | 950 | | 0 |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 138 | 11 | | 0 | 1010 | | 0 |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| Initial Fut: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1650 | 229 | | 78 | 1960 | | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1650 | 229 | | 78 | 1960 | | 0 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| Reduced Vol: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1650 | 229 | | 78 | 1960 | | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 132 | 0 | 37 | | 0 | 0 | 0 | | 0 | 1650 | 229 | | 78 | 1960 | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | | 1.00 |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | | 0.00 |
| Final Sat.: | 2838 | 0 | 626 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.47 | 0.14 | | 0.04 | 0.55 | | 0.00 |
| Crit Moves: | | | **** | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.75 | 0.75 | | 0.07 | 0.82 | | 0.00 |
| Volume/Cap: | 0.53 | 0.00 | 0.68 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.62 | 0.19 | | 0.62 | 0.68 | | 0.00 |
| Uniform Del: | 52.3 | 0.0 | 53.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.1 | 4.4 | | 54.2 | 4.4 | | 0.0 |
| IncremntDel: | 1.6 | 0.0 | 7.1 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.5 | 0.1 | | 9.3 | 0.6 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Delay/Veh: | 53.9 | 0.0 | 60.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.6 | 4.5 | | 63.5 | 5.0 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 53.9 | 0.0 | 60.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.6 | 4.5 | | 63.5 | 5.0 | | 0.0 |
| LOS by Move: | D | A | E | | A | A | A | | A | A | A | | E | A | | A |
| HCM2kAvgQ: | 4 | 0 | 5 | | 0 | 0 | 0 | | 0 | 15 | 2 | | 4 | 16 | | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 1.116
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 65.3
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 1 | 0 | 2 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 265 | 182 | 59 | | 41 | 178 | 234 | | 346 | 1537 | 363 | | 109 | 1043 | 36 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 6 | 149 | 0 | | 0 | 1015 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.47 | 0.53 | | 1.00 | 1.97 | 0.03 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4070 | 876 | | 1769 | 3466 | 61 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.15 | | 0.20 | 0.41 | 0.41 | | 0.06 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.09 | 0.18 | | 0.09 | 0.09 | 0.26 | | 0.18 | 0.62 | 0.62 | | 0.09 | 0.53 | 0.53 | |
| Volume/Cap: | 0.88 | 1.12 | 0.21 | | 0.27 | 1.12 | 0.58 | | 1.12 | 0.67 | 0.67 | | 0.67 | 1.12 | 1.12 | |
| Uniform Del: | 54.1 | 54.7 | 41.9 | | 51.4 | 54.9 | 38.4 | | 49.3 | 14.9 | 14.9 | | 52.7 | 28.1 | 28.1 | |
| IncremntDel: | 25.0 | 105 | 0.4 | | 1.0 | 106 | 2.1 | | 85.6 | 0.6 | 0.6 | | 10.3 | 60.2 | 60.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 79.1 | 160 | 42.3 | | 52.3 | 161 | 40.6 | | 135.0 | 15.5 | 15.5 | | 63.0 | 88.2 | 88.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 79.1 | 160 | 42.3 | | 52.3 | 161 | 40.6 | | 135.0 | 15.5 | 15.5 | | 63.0 | 88.2 | 88.2 | |
| LOS by Move: | E | F | D | | D | F | D | | F | B | B | | E | F | F | |
| HCM2kAvgQ: | 8 | 12 | 2 | | 2 | 12 | 8 | | 21 | 18 | 18 | | 5 | 58 | 58 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 21.7
Optimal Cycle: 73 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 0 | 1 | 0 | 0 | 0 1 | 1 | 0 | 2 | 0 0 | 0 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 0 | 0 | 0 | | 445 | 0 | 58 | | 43 | 1537 | 0 | | 0 | 1135 | 273 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 70 | 0 | | 0 | 244 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1607 | 0 | | 0 | 1379 | 280 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1607 | 0 | | 0 | 1379 | 280 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1607 | 0 | | 0 | 1379 | 280 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 449 | 0 | 58 | | 43 | 1607 | 0 | | 0 | 1379 | 280 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.25 | 0.00 | 0.04 | | 0.02 | 0.45 | 0.00 | | 0.00 | 0.39 | 0.18 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.31 | 0.00 | 0.31 | | 0.07 | 0.56 | 0.00 | | 0.00 | 0.49 | 0.49 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.81 | 0.00 | 0.12 | | 0.34 | 0.81 | 0.00 | | 0.00 | 0.79 | 0.36 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 28.3 | 0.0 | 21.9 | | 39.9 | 15.7 | 0.0 | | 0.0 | 19.0 | 14.1 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 8.5 | 0.0 | 0.1 | | 1.7 | 2.5 | 0.0 | | 0.0 | 2.5 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 36.8 | 0.0 | 22.0 | | 41.5 | 18.3 | 0.0 | | 0.0 | 21.5 | 14.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 36.8 | 0.0 | 22.0 | | 41.5 | 18.3 | 0.0 | | 0.0 | 21.5 | 14.3 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | C | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 14 | 0 | 1 | | 2 | 21 | 0 | | 0 | 18 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.831
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 70 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 0 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1204 | 11 | | 96 | 875 | 55 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 70 | 0 | | 0 | 244 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1274 | 11 | | 96 | 1119 | 55 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1274 | 11 | | 96 | 1119 | 55 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1274 | 11 | | 96 | 1119 | 55 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 35 | 7 | 91 | | 131 | 5 | 33 | | 12 | 1274 | 11 | | 96 | 1119 | 55 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.46 | 0.84 | 0.84 | | 0.53 | 0.53 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.97 | 0.97 | |
| Lanes: | 1.00 | 0.08 | 0.92 | | 0.96 | 0.04 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.95 | 0.05 | |
| Final Sat.: | 868 | 122 | 1481 | | 975 | 40 | 1583 | | 1769 | 3505 | 29 | | 1769 | 1763 | 86 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.06 | 0.06 | | 0.13 | 0.13 | 0.02 | | 0.01 | 0.36 | 0.36 | | 0.05 | 0.63 | 0.63 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.16 | 0.16 | 0.16 | | 0.16 | 0.16 | 0.16 | | 0.04 | 0.68 | 0.68 | | 0.10 | 0.74 | 0.74 | |
| Volume/Cap: | 0.26 | 0.39 | 0.39 | | 0.86 | 0.86 | 0.13 | | 0.17 | 0.54 | 0.54 | | 0.54 | 0.86 | 0.86 | |
| Uniform Del: | 39.0 | 39.8 | 39.8 | | 43.2 | 43.2 | 38.2 | | 48.9 | 8.7 | 8.7 | | 44.8 | 9.8 | 9.8 | |
| IncremntDel: | 1.0 | 1.0 | 1.0 | | 34.6 | 34.6 | 0.2 | | 1.2 | 0.2 | 0.2 | | 3.2 | 5.7 | 5.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 40.0 | 40.9 | 40.9 | | 77.8 | 77.8 | 38.5 | | 50.1 | 8.9 | 8.9 | | 48.1 | 15.5 | 15.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 40.0 | 40.9 | 40.9 | | 77.8 | 77.8 | 38.5 | | 50.1 | 8.9 | 8.9 | | 48.1 | 15.5 | 15.5 | |
| LOS by Move: | D | D | D | | E | E | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 1 | 3 | 3 | | 7 | 7 | 1 | | 1 | 11 | 11 | | 4 | 29 | 29 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.821
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 68 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 0 | 1! | 0 | 0 | 0 0 | 1! | 0 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1159 | 6 | | 5 | 851 | 117 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 70 | 0 | | 0 | 244 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1229 | 6 | | 5 | 1095 | 117 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1229 | 6 | | 5 | 1095 | 117 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1229 | 6 | | 5 | 1095 | 117 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 13 | 12 | 7 | | 98 | 6 | 37 | | 26 | 1229 | 6 | | 5 | 1095 | 117 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.13 | 0.98 | 0.98 | | 0.12 | 0.97 | 0.97 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.90 | 0.10 | |
| Final Sat.: | 654 | 599 | 381 | | 961 | 63 | 366 | | 255 | 1850 | 10 | | 235 | 1659 | 177 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.10 | 0.10 | 0.10 | | 0.10 | 0.66 | 0.66 | | 0.02 | 0.66 | 0.66 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Volume/Cap: | 0.16 | 0.16 | 0.16 | | 0.82 | 0.82 | 0.82 | | 0.12 | 0.82 | 0.82 | | 0.03 | 0.82 | 0.82 | |
| Uniform Del: | 41.0 | 41.0 | 41.0 | | 44.8 | 44.8 | 44.8 | | 2.1 | 5.7 | 5.7 | | 2.0 | 5.7 | 5.7 | |
| IncremntDel: | 0.4 | 0.4 | 0.4 | | 25.8 | 25.8 | 25.8 | | 0.3 | 3.8 | 3.8 | | 0.1 | 3.6 | 3.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 41.4 | 41.4 | 41.4 | | 70.6 | 70.6 | 70.6 | | 2.4 | 9.5 | 9.5 | | 2.0 | 9.3 | 9.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.4 | 41.4 | 41.4 | | 70.6 | 70.6 | 70.6 | | 2.4 | 9.5 | 9.5 | | 2.0 | 9.3 | 9.3 | |
| LOS by Move: | D | D | D | | E | E | E | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 7 | 7 | 7 | | 0 | 25 | 25 | | 0 | 24 | 24 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.763
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 55 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | | 31 | 75 | 29 | | 30 | 4 | 4 | | 969 | 36 | 37 | | 832 | 17 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 98 | | 33 | 80 | 31 | | 32 | 4 | 4 | | 1037 | 39 | 40 | | 890 | 18 |
| Added Vol: | 18 | | 0 | 8 | 0 | | 0 | 0 | 0 | | 62 | 22 | 32 | | 212 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 116 | | 33 | 88 | 31 | | 32 | 4 | 4 | | 1099 | 61 | 72 | | 1102 | 18 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 116 | | 33 | 88 | 31 | | 32 | 4 | 4 | | 1099 | 61 | 72 | | 1102 | 18 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 116 | | 33 | 88 | 31 | | 32 | 4 | 4 | | 1099 | 61 | 72 | | 1102 | 18 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 116 | | 33 | 88 | 31 | | 32 | 4 | 4 | | 1099 | 61 | 72 | | 1102 | 18 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.72 | 0.87 | | 0.87 | 0.48 | 0.96 | | 0.96 | 0.18 | 0.97 | | 0.97 | 0.17 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.27 | | 0.73 | 1.00 | 0.88 | | 0.12 | 1.00 | 0.95 | | 0.05 | 1.00 | 0.98 | | 0.02 |
| Final Sat.: | 1376 | 453 | | 1206 | 909 | 1613 | | 215 | 343 | 1751 | | 96 | 315 | 1828 | | 30 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.07 | | 0.07 | 0.03 | 0.02 | | 0.02 | 0.01 | 0.63 | | 0.63 | 0.23 | 0.60 | | 0.60 |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.11 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 | | 0.82 |
| Volume/Cap: | 0.76 | 0.66 | | 0.66 | 0.31 | 0.18 | | 0.18 | 0.02 | 0.76 | | 0.76 | 0.28 | 0.73 | | 0.73 |
| Uniform Del: | 45.3 | 44.8 | | 44.8 | 43.0 | 42.3 | | 42.3 | 1.7 | 4.4 | | 4.4 | 2.1 | 4.2 | | 4.2 |
| IncremntDel: | 20.1 | 8.6 | | 8.6 | 1.7 | 0.4 | | 0.4 | 0.0 | 2.3 | | 2.3 | 0.6 | 1.9 | | 1.9 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 65.4 | 53.3 | | 53.3 | 44.7 | 42.8 | | 42.8 | 1.7 | 6.8 | | 6.8 | 2.7 | 6.0 | | 6.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 65.4 | 53.3 | | 53.3 | 44.7 | 42.8 | | 42.8 | 1.7 | 6.8 | | 6.8 | 2.7 | 6.0 | | 6.0 |
| LOS by Move: | E | D | | D | D | D | | D | A | A | | A | A | A | | A |
| HCM2kAvgQ: | 5 | 5 | | 5 | 1 | 1 | | 1 | 0 | 19 | | 19 | 1 | 17 | | 17 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.427
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 180.6
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | | 491 | 477 | 413 | | 19 | 36 | 170 | | 158 | 382 | | 95 | 410 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 104 | 469 | | 525 | 510 | 442 | | 20 | 39 | 182 | | 169 | 409 | | 102 | 439 |
| Added Vol: | 15 | 8 | | 32 | 18 | 8 | | 0 | 0 | 34 | | 24 | 127 | | 37 | 66 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 119 | 477 | | 557 | 528 | 450 | | 20 | 39 | 216 | | 193 | 536 | | 139 | 505 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 119 | 477 | | 557 | 528 | 450 | | 20 | 39 | 216 | | 193 | 536 | | 139 | 505 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 119 | 477 | | 557 | 528 | 450 | | 20 | 39 | 216 | | 193 | 536 | | 139 | 505 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 119 | 477 | | 557 | 528 | 450 | | 20 | 39 | 216 | | 193 | 536 | | 139 | 505 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.59 | 1.35 | | 0.06 | 1.00 | 1.00 | | 1.00 | 1.59 | 0.41 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 2727 | 2322 | | 105 | 1769 | 1862 | | 1583 | 2846 | 737 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.13 | | 0.70 | 0.19 | 0.19 | | 0.19 | 0.02 | 0.12 | | 0.12 | 0.19 | 0.19 | | 0.32 |
| Crit Moves: | | | | **** | | **** | | | | | | **** | | | | **** |
| Green/Cycle: | 0.49 | 0.49 | | 0.49 | 0.14 | 0.14 | | 0.14 | 0.09 | 0.09 | | 0.09 | 0.22 | 0.22 | | 0.22 |
| Volume/Cap: | 0.14 | 0.27 | | 1.43 | 1.43 | 1.43 | | 1.43 | 0.25 | 1.36 | | 1.43 | 0.84 | 0.84 | | 1.43 |
| Uniform Del: | 17.9 | 19.3 | | 32.9 | 56.2 | 56.2 | | 56.2 | 55.6 | 59.4 | | 59.4 | 48.3 | 48.3 | | 50.5 |
| IncremntDel: | 0.1 | 0.1 | | 206.4 | 200.3 | 200 | | 200.3 | 0.9 | 196 | | 229.3 | 8.1 | 8.1 | | 207.8 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 17.9 | 19.3 | | 239.3 | 256.5 | 256 | | 256.5 | 56.5 | 255 | | 288.7 | 56.3 | 56.3 | | 258.2 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 17.9 | 19.3 | | 239.3 | 256.5 | 256 | | 256.5 | 56.5 | 255 | | 288.7 | 56.3 | 56.3 | | 258.2 |
| LOS by Move: | B | B | | F | F | F | | F | E | F | | F | E | E | | F |
| HCM2kAvgQ: | 2 | 6 | | 44 | 29 | 29 | | 29 | 2 | 18 | | 17 | 15 | 15 | | 40 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.482
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 214.3
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 403 | 1036 | 0 | 0 | 3732 | 136 | 64 | 0 | 1784 | 0 | 0 | 0 | | | | |
| Added Vol: | 4 | 119 | 0 | 0 | 513 | 150 | 19 | 0 | 11 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 407 | 1155 | 0 | 0 | 4245 | 286 | 83 | 0 | 1795 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 407 | 1155 | 0 | 0 | 4245 | 286 | 83 | 0 | 1795 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 407 | 1155 | 0 | 0 | 4245 | 286 | 83 | 0 | 1795 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 407 | 1155 | 0 | 0 | 4245 | 286 | 83 | 0 | 1795 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.23 | 0.00 | 0.00 | 0.84 | 0.18 | 0.02 | 0.00 | 0.43 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.08 | 0.64 | 0.00 | 0.00 | 0.56 | 0.56 | 0.29 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.48 | 0.35 | 0.00 | 0.00 | 1.48 | 0.32 | 0.08 | 0.00 | 1.48 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 69.0 | 12.3 | 0.0 | 0.0 | 32.7 | 17.4 | 38.8 | 0.0 | 53.3 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 235.5 | 0.1 | 0.0 | 0.0 | 219 | 0.2 | 0.0 | 0.0 | 221.5 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 304.5 | 12.4 | 0.0 | 0.0 | 252 | 17.7 | 38.8 | 0.0 | 274.7 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 304.5 | 12.4 | 0.0 | 0.0 | 252 | 17.7 | 38.8 | 0.0 | 274.7 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 20 | 9 | 0 | 0 | 131 | 7 | 1 | 0 | 59 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.727
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 58 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 0 | 0 | 0 | 128 | 0 | 106 | 21 | 1711 | 0 | 0 | 486 | 17 | | | | |
| Added Vol: | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 19 | 0 | 0 | 150 | 4 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 0 | 0 | 139 | 0 | 106 | 21 | 1730 | 0 | 0 | 636 | 21 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 139 | 0 | 106 | 21 | 1730 | 0 | 0 | 636 | 21 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 0 | 0 | 139 | 0 | 106 | 21 | 1730 | 0 | 0 | 636 | 21 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 139 | 0 | 106 | 21 | 1730 | 0 | 0 | 636 | 21 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.57 | 0.00 | 0.43 | 1.00 | 2.00 | 0.00 | 0.00 | 1.94 | 0.06 | | | | |
| Final Sat.: | 0 | 0 | 0 | 969 | 0 | 736 | 1769 | 3538 | 0 | 0 | 3407 | 113 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 | 0.14 | 0.01 | 0.49 | 0.00 | 0.00 | 0.19 | 0.19 | | | | |
| Crit Moves: | | | | **** | | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.20 | 0.16 | 0.67 | 0.00 | 0.00 | 0.51 | 0.51 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.73 | 0.00 | 0.73 | 0.08 | 0.73 | 0.00 | 0.00 | 0.36 | 0.36 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 31.9 | 0.0 | 31.9 | 30.3 | 8.9 | 0.0 | 0.0 | 12.5 | 12.5 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 7.7 | 0.0 | 7.7 | 0.1 | 1.2 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 39.7 | 0.0 | 39.7 | 30.4 | 10.1 | 0.0 | 0.0 | 12.6 | 12.6 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 39.7 | 0.0 | 39.7 | 30.4 | 10.1 | 0.0 | 0.0 | 12.6 | 12.6 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | B | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 8 | 0 | 8 | 1 | 16 | 0 | 0 | 5 | 5 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 16.2
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 37 | 33 | 13 | | 20 | 31 | 88 | | 28 | 1690 | 20 | | 19 | 564 | 14 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 19 | 0 | | 0 | 150 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 37 | 33 | 13 | | 20 | 31 | 88 | | 28 | 1709 | 20 | | 19 | 714 | 14 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 37 | 33 | 13 | | 20 | 31 | 88 | | 28 | 1709 | 20 | | 19 | 714 | 14 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 37 | 33 | 13 | | 20 | 31 | 88 | | 28 | 1709 | 20 | | 19 | 714 | 14 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 37 | 33 | 13 | | 20 | 31 | 88 | | 28 | 1709 | 20 | | 19 | 714 | 14 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.96 | 0.96 | 0.96 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.45 | 0.40 | 0.15 | | 0.15 | 0.22 | 0.63 | | 1.00 | 1.98 | 0.02 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 816 | 723 | 280 | | 252 | 385 | 1089 | | 1805 | 3560 | 42 | | 1805 | 3530 | 69 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.08 | 0.08 | 0.08 | | 0.02 | 0.48 | 0.48 | | 0.01 | 0.20 | 0.20 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.07 | 0.06 | 0.06 | | 0.11 | 0.11 | 0.11 | | 0.14 | 0.66 | 0.66 | | 0.05 | 0.57 | 0.57 | |
| Volume/Cap: | 0.68 | 0.72 | 0.72 | | 0.72 | 0.75 | 0.75 | | 0.11 | 0.72 | 0.72 | | 0.21 | 0.35 | 0.35 | |
| Uniform Del: | 45.6 | 46.0 | 46.0 | | 42.9 | 43.3 | 43.3 | | 37.4 | 10.8 | 10.8 | | 45.6 | 11.4 | 11.4 | |
| IncremntDel: | 14.9 | 19.9 | 19.9 | | 12.6 | 15.1 | 15.1 | | 0.2 | 1.1 | 1.1 | | 1.2 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 60.5 | 65.8 | 65.8 | | 55.5 | 58.3 | 58.3 | | 37.6 | 11.9 | 11.9 | | 46.8 | 11.5 | 11.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 60.5 | 65.8 | 65.8 | | 55.5 | 58.3 | 58.3 | | 37.6 | 11.9 | 11.9 | | 46.8 | 11.5 | 11.5 | |
| LOS by Move: | E | E | E | | E | E | E | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 6 | 6 | 6 | | 1 | 19 | 19 | | 1 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 35.0
Optimal Cycle: 94 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 161 | 234 | 369 | | 101 | 280 | 118 | | 100 | 1381 | 93 | | 127 | 578 | 52 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 19 | 0 | | 0 | 150 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 161 | 234 | 369 | | 101 | 280 | 118 | | 100 | 1400 | 93 | | 127 | 728 | 52 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 161 | 234 | 369 | | 101 | 280 | 118 | | 100 | 1400 | 93 | | 127 | 728 | 52 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 161 | 234 | 369 | | 101 | 280 | 118 | | 100 | 1400 | 93 | | 127 | 728 | 52 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 161 | 234 | 369 | | 101 | 280 | 118 | | 100 | 1400 | 93 | | 127 | 728 | 52 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.98 | 0.98 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.87 | 0.13 | |
| Final Sat.: | 1862 | 1862 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3355 | 223 | | 1805 | 3334 | 240 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.13 | 0.23 | | 0.06 | 0.15 | 0.07 | | 0.06 | 0.42 | 0.42 | | 0.07 | 0.22 | 0.22 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | | 0.06 | 0.21 | 0.21 | | 0.11 | 0.48 | 0.48 | | 0.08 | 0.45 | 0.45 | |
| Volume/Cap: | 0.71 | 0.48 | 0.87 | | 0.87 | 0.71 | 0.35 | | 0.49 | 0.87 | 0.87 | | 0.87 | 0.49 | 0.49 | |
| Uniform Del: | 42.3 | 31.0 | 35.2 | | 46.4 | 36.9 | 33.9 | | 41.6 | 23.1 | 23.1 | | 45.4 | 19.4 | 19.4 | |
| IncremntDel: | 4.4 | 0.4 | 17.0 | | 45.5 | 6.1 | 0.6 | | 1.8 | 5.0 | 5.0 | | 38.5 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 46.7 | 31.5 | 52.2 | | 91.9 | 43.0 | 34.6 | | 43.4 | 28.1 | 28.1 | | 83.9 | 19.7 | 19.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 46.7 | 31.5 | 52.2 | | 91.9 | 43.0 | 34.6 | | 43.4 | 28.1 | 28.1 | | 83.9 | 19.7 | 19.7 | |
| LOS by Move: | D | C | D | | F | D | C | | D | C | C | | F | B | B | |
| HCM2kAvgQ: | 6 | 6 | 14 | | 5 | 9 | 3 | | 3 | 24 | 24 | | 6 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.729
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 83 | 117 | 63 | | 18 | 81 | 29 | | 31 | 1352 | 83 | | 47 | 849 | 18 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 19 | 0 | | 0 | 150 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 83 | 117 | 63 | | 18 | 81 | 29 | | 31 | 1371 | 83 | | 47 | 999 | 18 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 83 | 117 | 63 | | 18 | 81 | 29 | | 31 | 1371 | 83 | | 47 | 999 | 18 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 83 | 117 | 63 | | 18 | 81 | 29 | | 31 | 1371 | 83 | | 47 | 999 | 18 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 83 | 117 | 63 | | 18 | 81 | 29 | | 31 | 1371 | 83 | | 47 | 999 | 18 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.96 | 0.96 | 0.96 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.32 | 0.44 | 0.24 | | 0.14 | 0.63 | 0.23 | | 1.00 | 1.89 | 0.11 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 574 | 802 | 434 | | 259 | 1159 | 412 | | 1805 | 3372 | 205 | | 1805 | 3535 | 64 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | | 0.07 | 0.07 | 0.07 | | 0.02 | 0.41 | 0.41 | | 0.03 | 0.28 | 0.28 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | **** | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.09 | 0.09 | 0.09 | | 0.09 | 0.55 | 0.55 | | 0.05 | 0.51 | 0.51 | |
| Volume/Cap: | 0.74 | 0.74 | 0.74 | | 0.74 | 0.74 | 0.74 | | 0.19 | 0.74 | 0.74 | | 0.52 | 0.56 | 0.56 | |
| Uniform Del: | 37.8 | 37.8 | 37.8 | | 44.1 | 44.1 | 44.1 | | 42.1 | 17.1 | 17.1 | | 46.3 | 16.8 | 16.8 | |
| IncremntDel: | 8.1 | 8.1 | 8.1 | | 15.6 | 15.6 | 15.6 | | 0.6 | 1.5 | 1.5 | | 5.4 | 0.4 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 45.9 | 45.9 | 45.9 | | 59.7 | 59.7 | 59.7 | | 42.7 | 18.7 | 18.7 | | 51.7 | 17.2 | 17.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 45.9 | 45.9 | 45.9 | | 59.7 | 59.7 | 59.7 | | 42.7 | 18.7 | 18.7 | | 51.7 | 17.2 | 17.2 | |
| LOS by Move: | D | D | D | | E | E | E | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 6 | 6 | 6 | | 1 | 19 | 19 | | 2 | 11 | 11 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.572
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.7
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 64 | 89 | 41 | | 12 | 73 | 24 | | 45 | 1415 | 93 | | 40 | 842 | 24 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 19 | 0 | | 0 | 150 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 64 | 89 | 41 | | 12 | 73 | 24 | | 45 | 1434 | 93 | | 40 | 992 | 24 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 64 | 89 | 41 | | 12 | 73 | 24 | | 45 | 1434 | 93 | | 40 | 992 | 24 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 64 | 89 | 41 | | 12 | 73 | 24 | | 45 | 1434 | 93 | | 40 | 992 | 24 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 64 | 89 | 41 | | 12 | 73 | 24 | | 45 | 1434 | 93 | | 40 | 992 | 24 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.85 | 0.85 | 0.85 | | 0.94 | 0.94 | 0.94 | | 0.25 | 0.94 | 0.94 | | 0.13 | 0.95 | 0.95 | |
| Lanes: | 0.33 | 0.46 | 0.21 | | 0.11 | 0.67 | 0.22 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 536 | 742 | 340 | | 195 | 1205 | 390 | | 475 | 3359 | 218 | | 241 | 3516 | 83 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.12 | 0.12 | | 0.06 | 0.06 | 0.06 | | 0.09 | 0.43 | 0.43 | | 0.16 | 0.28 | 0.28 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.57 | 0.57 | 0.57 | | 0.29 | 0.29 | 0.29 | | 0.13 | 0.57 | 0.57 | | 0.22 | 0.38 | 0.38 | |
| Uniform Del: | 32.0 | 32.0 | 32.0 | | 29.9 | 29.9 | 29.9 | | 3.2 | 5.1 | 5.1 | | 3.5 | 4.0 | 4.0 | |
| IncremntDel: | 2.3 | 2.3 | 2.3 | | 0.4 | 0.4 | 0.4 | | 0.2 | 0.3 | 0.3 | | 0.6 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.3 | 34.3 | 34.3 | | 30.4 | 30.4 | 30.4 | | 3.4 | 5.4 | 5.4 | | 4.1 | 4.1 | 4.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.3 | 34.3 | 34.3 | | 30.4 | 30.4 | 30.4 | | 3.4 | 5.4 | 5.4 | | 4.1 | 4.1 | 4.1 | |
| LOS by Move: | C | C | C | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 3 | 3 | 3 | | 0 | 10 | 10 | | 1 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.905
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.2
Optimal Cycle: 110 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 1 | 0 1 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 1 | 0 | 2 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 337 | 519 | 641 | 34 | 187 | 240 | 232 | 839 | 578 | 123 | 709 | 185 |
| Added Vol: | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 150 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 337 | 519 | 651 | 34 | 187 | 240 | 232 | 847 | 578 | 123 | 859 | 185 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 337 | 519 | 651 | 34 | 187 | 240 | 232 | 847 | 578 | 123 | 859 | 185 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 337 | 519 | 651 | 34 | 187 | 240 | 232 | 847 | 578 | 123 | 859 | 185 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 337 | 519 | 651 | 34 | 187 | 240 | 232 | 847 | 578 | 123 | 859 | 185 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.88 | 0.88 | 0.88 | 0.95 | 1.00 | 0.85 | 0.95 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Lanes: | 1.00 | 1.33 | 1.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.19 | 0.81 | 2.00 | 1.65 | 0.35 |
| Final Sat.: | 1669 | 2221 | 2786 | 1805 | 1900 | 1615 | 1805 | 2015 | 1375 | 3502 | 2890 | 622 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.23 | 0.23 | 0.02 | 0.10 | 0.15 | 0.13 | 0.42 | 0.42 | 0.04 | 0.30 | 0.30 |
| Crit Moves: | **** | | | | | **** | | **** | | **** | | |
| Green/Cycle: | 0.22 | 0.31 | 0.31 | 0.07 | 0.16 | 0.16 | 0.15 | 0.46 | 0.46 | 0.05 | 0.35 | 0.35 |
| Volume/Cap: | 0.92 | 0.74 | 0.74 | 0.28 | 0.61 | 0.92 | 0.84 | 0.92 | 0.92 | 0.70 | 0.84 | 0.84 |
| Uniform Del: | 38.1 | 30.7 | 30.7 | 44.3 | 39.0 | 41.3 | 41.1 | 25.3 | 25.3 | 46.8 | 29.6 | 29.6 |
| IncremntDel: | 8.6 | 1.5 | 1.5 | 1.3 | 3.5 | 34.5 | 19.7 | 9.0 | 9.0 | 12.1 | 5.2 | 5.2 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 46.7 | 32.2 | 32.2 | 45.6 | 42.5 | 75.7 | 60.8 | 34.3 | 34.3 | 58.9 | 34.8 | 34.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 46.7 | 32.2 | 32.2 | 45.6 | 42.5 | 75.7 | 60.8 | 34.3 | 34.3 | 58.9 | 34.8 | 34.8 |
| LOS by Move: | D | C | C | D | D | E | E | C | C | E | C | C |
| HCM2kAvgQ: | 15 | 13 | 13 | 1 | 6 | 11 | 10 | 26 | 26 | 3 | 18 | 18 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.502
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 82 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 32 | 32 | 0 | 32 | 0 | 28 | 0 | 28 | 0 | 0 | 18 |
| Lanes: | 0 0 | 2 1 | 0 | 0 0 | 2 0 | 0 | 2 0 | 0 0 | 1 | 0 0 | 0 0 | 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 0 | 858 | 20 | 0 | 838 | 0 | 819 | 0 | 296 | 0 | 0 | 17 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 858 | 20 | 0 | 838 | 0 | 829 | 0 | 296 | 0 | 0 | 17 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 858 | 20 | 0 | 838 | 0 | 829 | 0 | 296 | 0 | 0 | 17 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 858 | 20 | 0 | 838 | 0 | 829 | 0 | 296 | 0 | 0 | 17 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.10 | 1.10 | 1.00 | 1.05 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 944 | 22 | 0 | 880 | 0 | 853 | 0 | 296 | 0 | 0 | 17 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 | 1.00 | 1.00 | 0.77 |
| Lanes: | 0.00 | 2.93 | 0.07 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 5568 | 132 | 0 | 3800 | 0 | 3610 | 0 | 1615 | 0 | 0 | 1463 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.17 | 0.17 | 0.00 | 0.23 | 0.00 | 0.24 | 0.00 | 0.18 | 0.00 | 0.00 | 0.01 |
| Crit Moves: | **** | | | | **** | | **** | | | | | **** |
| Green/Cycle: | 0.00 | 0.37 | 0.37 | 0.00 | 0.37 | 0.00 | 0.38 | 0.00 | 0.58 | 0.00 | 0.00 | 0.20 |
| Volume/Cap: | 0.00 | 0.45 | 0.45 | 0.00 | 0.62 | 0.00 | 0.62 | 0.00 | 0.32 | 0.00 | 0.00 | 0.06 |
| Uniform Del: | 0.0 | 16.1 | 16.1 | 0.0 | 17.4 | 0.0 | 17.1 | 0.0 | 7.3 | 0.0 | 0.0 | 22.1 |
| IncremntDel: | 0.0 | 0.1 | 0.1 | 0.0 | 0.6 | 0.0 | 0.6 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 0.85 | 0.85 | 0.00 | 0.85 | 0.00 | 0.85 | 0.00 | 0.85 | 0.00 | 0.00 | 0.85 |
| Delay/Veh: | 0.0 | 13.8 | 13.8 | 0.0 | 15.4 | 0.0 | 15.2 | 0.0 | 6.3 | 0.0 | 0.0 | 18.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 13.8 | 13.8 | 0.0 | 15.4 | 0.0 | 15.2 | 0.0 | 6.3 | 0.0 | 0.0 | 18.8 |
| DesignQueue: | 0 | 11 | 11 | 0 | 15 | 0 | 14 | 0 | 6 | 0 | 0 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.567
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 27.1
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | | 18 | 18 | 0 | | 0 | 0 | 0 | | 39 | 57 | 21 | | 64 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | | 388 | 487 | | 927 | 0 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 326 | | 1 | 470 | 0 | | 0 | 0 | 0 | 1488 | | 415 | 521 | | 992 | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 8 | | 16 | 83 | | 80 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 326 | | 1 | 470 | 0 | | 0 | 0 | 0 | 1496 | | 431 | 604 | | 1072 | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 326 | | 1 | 470 | 0 | | 0 | 0 | 0 | 1496 | | 431 | 604 | | 1072 | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 326 | | 1 | 470 | 0 | | 0 | 0 | 0 | 1496 | | 431 | 604 | | 1072 | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 326 | | 1 | 470 | 0 | | 0 | 0 | 0 | 1496 | | 431 | 604 | | 1072 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.95 | | 0.75 | 0.92 | 0.95 | | 1.00 |
| Lanes: | 1.41 | 0.01 | | 1.58 | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 2.00 | 2.00 | 2.00 | | 0.00 |
| Final Sat.: | 2292 | | 4 | 2585 | 0 | | 0 | 0 | 0 | 3610 | | 2842 | 3502 | 3610 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.25 | | 0.18 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.41 | | 0.15 | 0.17 | 0.30 | | 0.00 |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | | 0.20 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.43 | | 0.43 | 0.32 | 0.76 | | 0.00 |
| Volume/Cap: | 0.71 | 1.23 | | 0.91 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.96 | | 0.35 | 0.54 | 0.39 | | 0.00 |
| Uniform Del: | 33.6 | 36.0 | | 35.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 24.7 | | 17.0 | 25.0 | 3.8 | | 0.0 |
| IncremntDel: | 2.2 | 115 | | 13.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 13.8 | | 0.2 | 0.5 | 0.1 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.00 |
| Delay/Veh: | 35.8 | 151 | | 48.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 38.5 | | 17.2 | 25.5 | 3.9 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 35.8 | 151 | | 48.4 | 0.0 | 0.0 | | 0.0 | 0.0 | 38.5 | | 17.2 | 25.5 | 3.9 | | 0.0 |
| LOS by Move: | D | F | | D | A | A | | A | A | D | | B | C | A | | A |
| HCM2kAvgQ: | 7 | 23 | | 12 | 0 | 0 | | 0 | 0 | 27 | | 5 | 7 | 6 | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.928
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 50.0
Optimal Cycle: 130 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Growth Adj: | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 |
| Initial Bse: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 866 | 10 | 293 | | 856 | 350 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 25 | 0 | 0 | | 80 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 891 | 10 | 293 | | 936 | 350 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 891 | 10 | 293 | | 936 | 350 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 891 | 10 | 293 | | 936 | 350 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 17 | | 93 | 293 | 655 | | 127 | 36 | 30 | | 891 | 10 | 293 | | 936 | 350 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.97 | | 0.97 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | | 0.85 |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.78 | | 0.22 | 1.00 | 1.98 | | 0.02 | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 73 | 395 | | 1243 | 3502 | 1429 | | 408 | 1805 | 3564 | | 39 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.24 | | 0.24 | 0.19 | 0.09 | | 0.09 | 0.02 | 0.25 | | 0.25 | 0.16 | 0.26 | | 0.22 |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.33 | 0.25 | | 0.25 | 0.20 | 0.12 | | 0.12 | 0.07 | 0.27 | | 0.27 | 0.18 | 0.38 | | 0.38 |
| Volume/Cap: | 0.71 | 0.93 | | 0.93 | 0.93 | 0.71 | | 0.71 | 0.25 | 0.93 | | 0.93 | 0.93 | 0.69 | | 0.57 |
| Uniform Del: | 32.2 | 40.0 | | 40.0 | 43.1 | 46.2 | | 46.2 | 48.8 | 39.2 | | 39.2 | 44.7 | 28.7 | | 27.2 |
| IncremntDel: | 4.3 | 26.1 | | 26.1 | 18.5 | 10.1 | | 10.1 | 1.1 | 14.6 | | 14.6 | 32.4 | 1.5 | | 1.3 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 36.5 | 66.2 | | 66.2 | 61.6 | 56.3 | | 56.3 | 49.9 | 53.7 | | 53.7 | 77.1 | 30.2 | | 28.5 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 36.5 | 66.2 | | 66.2 | 61.6 | 56.3 | | 56.3 | 49.9 | 53.7 | | 53.7 | 77.1 | 30.2 | | 28.5 |
| LOS by Move: | D | E | | E | E | E | | E | D | D | | D | E | C | | C |
| HCM2kAvgQ: | 13 | 17 | | 17 | 15 | 7 | | 7 | 1 | 20 | | 20 | 14 | 15 | | 10 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.651
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 35.3
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 32 | 403 | 92 | 88 | 411 | 81 | 63 | 351 | 25 | 76 | 473 | 94 |
| Added Vol: | 0 | 40 | 7 | 16 | 116 | 27 | 3 | 1 | 0 | 56 | 11 | 12 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 32 | 443 | 99 | 104 | 527 | 108 | 66 | 352 | 25 | 132 | 484 | 106 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 32 | 443 | 99 | 104 | 527 | 108 | 66 | 352 | 25 | 132 | 484 | 106 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 32 | 443 | 99 | 104 | 527 | 108 | 66 | 352 | 25 | 132 | 484 | 106 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 32 | 443 | 99 | 104 | 527 | 108 | 66 | 352 | 25 | 132 | 484 | 106 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.94 | 0.94 | 0.95 | 0.92 | 0.92 |
| Lanes: | 0.11 | 1.55 | 0.34 | 0.28 | 1.43 | 0.29 | 1.00 | 1.87 | 0.13 | 1.00 | 1.64 | 0.36 |
| Final Sat.: | 196 | 2706 | 604 | 492 | 2500 | 514 | 1805 | 3340 | 234 | 1805 | 2881 | 632 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | 0.21 | 0.21 | 0.21 | 0.04 | 0.11 | 0.11 | 0.07 | 0.17 | 0.17 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | 0.32 | 0.32 | 0.32 | 0.06 | 0.19 | 0.19 | 0.13 | 0.26 | 0.26 |
| Volume/Cap: | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.57 | 0.57 | 0.57 | 0.65 | 0.65 |
| Uniform Del: | 33.5 | 33.5 | 33.5 | 29.0 | 29.0 | 29.0 | 46.2 | 37.1 | 37.1 | 40.9 | 33.1 | 33.1 |
| IncremntDel: | 1.7 | 1.7 | 1.7 | 1.4 | 1.4 | 1.4 | 14.0 | 1.2 | 1.2 | 3.3 | 1.7 | 1.7 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 35.2 | 35.2 | 35.2 | 30.3 | 30.3 | 30.3 | 60.2 | 38.2 | 38.2 | 44.2 | 34.8 | 34.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.2 | 35.2 | 35.2 | 30.3 | 30.3 | 30.3 | 60.2 | 38.2 | 38.2 | 44.2 | 34.8 | 34.8 |
| LOS by Move: | D | D | D | C | C | C | E | D | D | D | C | C |
| HCM2kAvgQ: | 9 | 9 | 9 | 11 | 11 | 11 | 3 | 6 | 6 | 5 | 9 | 9 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.145
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 87.2
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 11 | 997 | 0 | 0 | 2391 | 17 | 357 | 0 | 81 | 0 | 0 | 0 |
| Added Vol: | 38 | 605 | 0 | 0 | 84 | 0 | 617 | 0 | 86 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.32 | 0.00 | 0.00 | 0.49 | 0.01 | 0.55 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | **** | | | | | |
| Green/Cycle: | 0.04 | 0.46 | 0.00 | 0.00 | 0.42 | 0.42 | 0.47 | 0.00 | 0.47 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.72 | 0.69 | 0.00 | 0.00 | 1.16 | 0.03 | 1.16 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 61.8 | 28.0 | 0.0 | 0.0 | 37.8 | 22.2 | 34.2 | 0.0 | 20.1 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 30.3 | 0.9 | 0.0 | 0.0 | 79.0 | 0.0 | 86.4 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 92.1 | 28.9 | 0.0 | 0.0 | 117 | 22.2 | 120.6 | 0.0 | 20.3 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 92.1 | 28.9 | 0.0 | 0.0 | 117 | 22.2 | 120.6 | 0.0 | 20.3 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | F | C | A | A | F | C | F | A | C | A | A | A |
| HCM2kAvgQ: | 3 | 19 | 0 | 0 | 54 | 0 | 58 | 0 | 4 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.742
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 60 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 15 | 838 | 0 | 0 | 2275 | 171 | 203 | 0 | 199 | 0 | 0 | 0 | | | | |
| Added Vol: | 38 | 642 | 0 | 0 | 166 | 3 | 1 | 0 | 86 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 53 | 1480 | 0 | 0 | 2441 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 53 | 1480 | 0 | 0 | 2441 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 53 | 1480 | 0 | 0 | 2441 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 53 | 1480 | 0 | 0 | 2441 | 174 | 204 | 0 | 285 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.29 | 0.00 | 0.00 | 0.48 | 0.11 | 0.12 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.69 | 0.00 | 0.00 | 0.65 | 0.65 | 0.24 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.74 | 0.42 | 0.00 | 0.00 | 0.74 | 0.17 | 0.48 | 0.00 | 0.74 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 61.7 | 8.9 | 0.0 | 0.0 | 15.5 | 9.1 | 42.1 | 0.0 | 45.4 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 33.6 | 0.1 | 0.0 | 0.0 | 0.9 | 0.1 | 0.8 | 0.0 | 7.5 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 95.3 | 9.0 | 0.0 | 0.0 | 16.5 | 9.2 | 43.0 | 0.0 | 53.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 95.3 | 9.0 | 0.0 | 0.0 | 16.5 | 9.2 | 43.0 | 0.0 | 53.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | A | A | A | B | A | D | A | D | A | A | A | | | | |
| HCM2kAvgQ: | 4 | 9 | 0 | 0 | 25 | 3 | 7 | 0 | 12 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.785
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 48 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | 0 | 10 | 4 | 4 | 0 | 4 | 0 | 0 | 0 | | | | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 521 | 606 | 0 | 0 | 382 | 98 | 275 | 0 | 754 | 0 | 0 | 0 | | | | |
| Added Vol: | 14 | 58 | 0 | 0 | 21 | 6 | 3 | 0 | 3 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 535 | 664 | 0 | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 535 | 664 | 0 | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 535 | 664 | 0 | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 535 | 664 | 0 | 0 | 403 | 104 | 278 | 0 | 757 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1769 | 1862 | 0 | 0 | 1437 | 373 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.30 | 0.36 | 0.00 | 0.00 | 0.28 | 0.28 | 0.16 | 0.00 | 0.48 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.39 | 0.74 | 0.00 | 0.00 | 0.36 | 0.36 | 0.22 | 0.00 | 0.61 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.79 | 0.48 | 0.00 | 0.00 | 0.79 | 0.79 | 0.70 | 0.00 | 0.79 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 32.5 | 6.2 | 0.0 | 0.0 | 34.5 | 34.5 | 42.8 | 0.0 | 17.5 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 6.0 | 0.3 | 0.0 | 0.0 | 6.3 | 6.3 | 5.5 | 0.0 | 4.3 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 38.5 | 6.4 | 0.0 | 0.0 | 40.8 | 40.8 | 48.4 | 0.0 | 21.8 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 38.5 | 6.4 | 0.0 | 0.0 | 40.8 | 40.8 | 48.4 | 0.0 | 21.8 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | D | A | A | A | D | D | D | A | C | A | A | A | | | | |
| HCM2kAvgQ: | 19 | 10 | 0 | 0 | 18 | 18 | 11 | 0 | 22 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.671
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 33 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 0 | 2 0 | 1 | | 1 0 | 2 0 | 1 | | 1 0 | 0 1 | 0 | | 0 1 | 0 0 | 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 52 | 814 | 136 | | 381 | 672 | 39 | | 80 | 81 | 66 | | 78 | 9 | 285 | |
| Added Vol: | 0 | 68 | 0 | | 2 | 23 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 52 | 882 | 136 | | 383 | 695 | 39 | | 80 | 81 | 66 | | 78 | 9 | 290 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.62 | 0.91 | 0.91 | | 0.63 | 0.63 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1179 | 957 | 781 | | 1071 | 117 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.25 | 0.09 | | 0.22 | 0.20 | 0.02 | | 0.07 | 0.08 | 0.08 | | 0.07 | 0.07 | 0.18 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.10 | 0.37 | 0.37 | | 0.32 | 0.59 | 0.59 | | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | |
| Volume/Cap: | 0.29 | 0.67 | 0.23 | | 0.67 | 0.33 | 0.04 | | 0.25 | 0.31 | 0.31 | | 0.27 | 0.27 | 0.67 | |
| Uniform Del: | 50.0 | 31.6 | 25.9 | | 35.1 | 12.3 | 10.2 | | 34.1 | 34.7 | 34.7 | | 34.2 | 34.2 | 38.9 | |
| IncremntDel: | 0.9 | 1.4 | 0.2 | | 3.1 | 0.1 | 0.0 | | 0.4 | 0.4 | 0.4 | | 0.4 | 0.4 | 4.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.9 | 32.9 | 26.1 | | 38.3 | 12.4 | 10.2 | | 34.5 | 35.1 | 35.1 | | 34.7 | 34.7 | 42.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.9 | 32.9 | 26.1 | | 38.3 | 12.4 | 10.2 | | 34.5 | 35.1 | 35.1 | | 34.7 | 34.7 | 42.9 | |
| LOS by Move: | D | C | C | | D | B | B | | C | D | D | | C | C | D | |
| HCM2kAvgQ: | 2 | 15 | 3 | | 13 | 7 | 1 | | 2 | 4 | 4 | | 3 | 3 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.819
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 42.4
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 1 | 0 1 | 0 | | 0 1 | 0 1 | 0 | | 1 0 | 1! 0 | 0 | | 0 0 | 1! 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 95 | 489 | 26 | | 26 | 544 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| Added Vol: | 0 | 55 | 0 | | 0 | 159 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 95 | 544 | 26 | | 26 | 703 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 95 | 544 | 26 | | 26 | 703 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 95 | 544 | 26 | | 26 | 703 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 95 | 544 | 26 | | 26 | 703 | 174 | | 448 | 144 | 83 | | 7 | 59 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.56 | 0.38 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 510 | 2915 | 138 | | 100 | 2726 | 677 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.26 | 0.26 | 0.26 | | 0.17 | 0.25 | 0.25 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | **** | | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.31 | 0.31 | 0.31 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.82 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 | | 0.54 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 | |
| Uniform Del: | 40.3 | 40.3 | 40.3 | | 34.8 | 34.8 | 34.8 | | 31.8 | 35.4 | 35.4 | | 51.6 | 51.6 | 51.6 | |
| IncremntDel: | 6.6 | 6.6 | 6.6 | | 5.0 | 5.0 | 5.0 | | 0.5 | 6.5 | 6.5 | | 40.2 | 40.2 | 40.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 46.9 | 46.9 | 46.9 | | 39.8 | 39.8 | 39.8 | | 32.3 | 41.9 | 41.9 | | 91.8 | 91.8 | 91.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 46.9 | 46.9 | 46.9 | | 39.8 | 39.8 | 39.8 | | 32.3 | 41.9 | 41.9 | | 91.8 | 91.8 | 91.8 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 14 | 14 | 14 | | 17 | 17 | 17 | | 9 | 16 | 16 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

Cycle (sec): 100 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 36.4
Optimal Cycle: 125 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| Initial Bse: | 0 | 758 | 0 | 0 | 2468 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 66 | 438 | 0 | 0 | 222 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 66 | 1196 | 0 | 0 | 2690 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 66 | 1196 | 0 | 0 | 2690 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 66 | 1196 | 0 | 0 | 2690 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 66 | 1196 | 0 | 0 | 2690 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.91 | 1.00 | 1.00 | 0.91 | 0.85 | 0.92 | 1.00 | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1805 | 5187 | 0 | 0 | 5187 | 1615 | 3502 | 0 | 1615 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.23 | 0.00 | 0.00 | 0.52 | 0.00 | 0.07 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.10 | 0.62 | 0.00 | 0.00 | 0.52 | 0.52 | 0.26 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.37 | 0.37 | 0.00 | 0.00 | 1.00 | 0.01 | 0.26 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 42.0 | 9.5 | 0.0 | 0.0 | 24.1 | 11.7 | 29.2 | 0.0 | 36.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 1.3 | 0.1 | 0.0 | 0.0 | 17.7 | 0.0 | 0.2 | 0.0 | 44.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 43.3 | 9.6 | 0.0 | 0.0 | 41.8 | 11.7 | 29.4 | 0.0 | 81.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 43.3 | 9.6 | 0.0 | 0.0 | 41.8 | 11.7 | 29.4 | 0.0 | 81.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | D | A | A | A | D | B | C | A | F | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 2 | 7 | 0 | 0 | 39 | 0 | 3 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Cumulative 2025 AM |
| Command: | Long Term No Project I AM |
| Volume: | Long Term No Project I AM |
| Geometry: | Long Term No Project I AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term No Project I AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term No Project I AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 25.2 | 0.842 | C | 26.2 | 0.879 | + 0.975 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.9 | 0.700 | D | 42.3 | 1.054 | +25.428 |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 26.5 | 0.944 | C | 31.7 | 0.985 | + 5.106 |
| # 4 Scott Dr/Rolison at Marsh Rd. | D | 41.1 | 0.901 | D | 35.6 | 0.932 | -5.434 |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 20.8 | 0.620 | B | 15.7 | 0.647 | -5.128 |
| # 6 Bay Rd. & Marsh Rd. | B | 17.4 | 0.644 | B | 17.4 | 0.706 | + 0.053 |
| # 7 Middlefield at Marsh (Town of | C | 29.8 | 0.669 | C | 27.0 | 0.766 | -2.790 |
| # 8 Bayfront Exp. & Willow Rd. | C | 28.6 | 0.668 | D | 35.4 | 0.750 | + 6.766 |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.7 | 0.613 | C | 22.4 | 0.647 | -1.360 |
| # 10 Ivy Dr. & Willow Rd. | B | 18.7 | 0.567 | C | 21.3 | 0.643 | + 2.627 |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.4 | 0.508 | B | 14.7 | 0.552 | -0.676 |
| # 12 Newbridge St. & Willow Rd. | E | 59.2 | 0.990 | E | 62.5 | 1.028 | + 3.286 |
| # 13 Bay Rd. & Willow Rd. | C | 21.6 | 0.760 | C | 22.2 | 0.818 | + 0.602 |
| # 14 Durham St. & Willow Rd. | D | 35.1 | 0.782 | B | 15.6 | 0.844 | -19.481 |
| # 15 Coleman Ave. & Willow Rd. | B | 15.3 | 0.784 | B | 18.8 | 0.868 | + 3.487 |
| # 16 Gilbert Ave. & Willow Rd. | B | 15.7 | 0.726 | B | 18.0 | 0.836 | + 2.327 |
| # 17 Middlefield Rd. & Willow Rd. | F | 114.7 | 1.038 | F | 123.8 | 1.225 | + 9.150 |
| # 18 Bayfront Exp. & University Ave | C | 32.7 | 0.882 | D | 35.1 | 0.905 | + 2.452 |
| # 19 O'Brien Dr. & University Ave. | A | 6.8 | 0.600 | A | 6.8 | 0.611 | -0.015 |
| # 20 University & Kavanaugh | B | 14.4 | 0.617 | B | 14.2 | 0.623 | -0.161 |
| # 21 University & Bay | C | 29.3 | 0.724 | C | 29.0 | 0.730 | -0.230 |
| # 22 University & Runnymede | C | 21.7 | 0.687 | C | 21.6 | 0.693 | -0.129 |
| # 23 University & Bell | A | 7.7 | 0.270 | A | 7.4 | 0.289 | -0.275 |
| # 24 University & Donohoe | D | 51.0 | 1.014 | D | 53.5 | 1.030 | + 2.541 |
| # 25 NB 101 & Donohoe St | B | 9.1 | 0.418 | B | 9.3 | 0.436 | + 0.130 |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 18.1 | 0.704 | B | 18.3 | 0.718 | + 0.243 D/V |
| # 27 University Ave. & Woodland | D | 50.1 | 0.977 | D | 52.3 | 0.991 | + 2.164 D/V |
| # 28 Middlefield Rd. & University A | D | 38.2 | 0.805 | D | 46.5 | 0.888 | + 8.251 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.6 | 0.640 | B | 17.5 | 0.738 | + 9.814 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.8 | 0.650 | C | 20.0 | 0.675 | + 2.230 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 23.4 | 0.664 | C | 25.7 | 0.731 | + 2.288 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 29.2 | 0.515 | C | 25.7 | 0.540 | -3.470 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 31.3 | 0.652 | C | 32.7 | 0.696 | + 1.391 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.4 | 0.549 | A | 1.5 | 0.593 | + 0.123 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.879
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.2
Optimal Cycle: 113 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 2619 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1137 | | 8 | 22 | 6 | |
| Added Vol: | 173 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 256 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2792 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1393 | | 8 | 22 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2792 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1393 | | 8 | 22 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2792 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1393 | | 8 | 22 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2792 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1393 | | 8 | 22 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.54 | 0.13 | 0.13 | | 0.02 | 0.02 | 0.11 | | 0.13 | 0.13 | 0.50 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.61 | 0.61 | 0.61 | | 0.12 | 0.12 | 0.12 | | 0.14 | 0.14 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.90 | 0.22 | 0.22 | | 0.18 | 0.18 | 0.90 | | 0.90 | 0.90 | 0.67 | | 0.51 | 0.51 | 0.51 | |
| Uniform Del: | 22.1 | 11.6 | 11.6 | | 51.5 | 51.5 | 56.5 | | 54.7 | 54.7 | 8.1 | | 61.3 | 61.3 | 61.3 | |
| IncremntDel: | 3.8 | 0.1 | 0.1 | | 0.2 | 0.2 | 37.7 | | 30.3 | 30.3 | 0.8 | | 6.2 | 6.2 | 6.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 25.9 | 11.7 | 11.7 | | 51.7 | 51.7 | 94.2 | | 84.9 | 84.9 | 8.9 | | 67.5 | 67.5 | 67.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 25.9 | 11.7 | 11.7 | | 51.7 | 51.7 | 94.2 | | 84.9 | 84.9 | 8.9 | | 67.5 | 67.5 | 67.5 | |
| LOS by Move: | C | B | B | | D | D | F | | F | F | A | | E | E | E | |
| HCM2kAvgQ: | 36 | 4 | 4 | | 1 | 1 | 10 | | 12 | 12 | 16 | | 2 | 2 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.054
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 42.3
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 | 0 | 1 1 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 933 | 0 | 329 | | 0 | 0 | 0 | | 0 | 1297 | 577 | | 0 | 936 | 1937 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 407 | 0 | | 0 | 144 | 30 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1704 | 577 | | 0 | 1080 | 1967 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1704 | 0 | | 0 | 1080 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1704 | 0 | | 0 | 1080 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1704 | 0 | | 0 | 1080 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.00 | 0.46 | | 0.00 | 0.00 | 0.00 | | 0.51 | 0.51 | 0.00 | | 0.00 | 0.31 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.43 | 0.00 | 0.43 | | 0.00 | 0.00 | 0.00 | | 0.48 | 0.48 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Volume/Cap: | 0.63 | 0.00 | 1.05 | | 0.00 | 0.00 | 0.00 | | 1.05 | 1.05 | 0.00 | | 0.00 | 0.64 | 0.00 | |
| Uniform Del: | 17.6 | 0.0 | 22.7 | | 0.0 | 0.0 | 0.0 | | 20.8 | 20.8 | 0.0 | | 0.0 | 15.6 | 0.0 | |
| IncremntDel: | 0.9 | 0.0 | 49.6 | | 0.0 | 0.0 | 0.0 | | 38.3 | 38.3 | 0.0 | | 0.0 | 0.8 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 18.5 | 0.0 | 72.2 | | 0.0 | 0.0 | 0.0 | | 59.1 | 59.1 | 0.0 | | 0.0 | 16.4 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 18.5 | 0.0 | 72.2 | | 0.0 | 0.0 | 0.0 | | 59.1 | 59.1 | 0.0 | | 0.0 | 16.4 | 0.0 | |
| LOS by Move: | B | A | E | | A | A | A | | E | E | A | | A | B | A | |
| HCM2kAvgQ: | 10 | 0 | 28 | | 0 | 0 | 0 | | 34 | 34 | 0 | | 0 | 11 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.985
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 31.7
Optimal Cycle: 155 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1002 | 0 | 636 | | 0 | 951 | 665 | | 0 | 1626 | 98 | |
| Added Vol: | 0 | 0 | 0 | | 221 | 0 | 33 | | 0 | 199 | 0 | | 0 | 57 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1223 | 0 | 669 | | 0 | 1150 | 665 | | 0 | 1683 | 98 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1223 | 0 | 669 | | 0 | 1150 | 0 | | 0 | 1683 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1223 | 0 | 669 | | 0 | 1150 | 0 | | 0 | 1683 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1223 | 0 | 669 | | 0 | 1150 | 0 | | 0 | 1683 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.36 | 0.00 | 0.42 | | 0.00 | 0.32 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Crit Moves: | | | | | | | **** | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.43 | 0.00 | 0.43 | | 0.00 | 0.48 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.83 | 0.00 | 0.98 | | 0.00 | 0.67 | 0.00 | | 0.00 | 0.98 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 20.2 | 0.0 | 22.6 | | 0.0 | 15.8 | 0.0 | | 0.0 | 20.4 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 4.1 | 0.0 | 30.5 | | 0.0 | 1.1 | 0.0 | | 0.0 | 18.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 24.4 | 0.0 | 53.1 | | 0.0 | 16.9 | 0.0 | | 0.0 | 38.5 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 24.4 | 0.0 | 53.1 | | 0.0 | 16.9 | 0.0 | | 0.0 | 38.5 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | D | | A | B | A | | A | D | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 16 | 0 | 23 | | 0 | 12 | 0 | | 0 | 29 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.932
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 35.6
Optimal Cycle: 111 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 1 | 1 | 0 | 2 | 1 0 | 2 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1289 | 33 | | 306 | 1614 | 319 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 199 | 0 | | 0 | 90 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1488 | 33 | | 306 | 1704 | 319 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1488 | 33 | | 306 | 1704 | 319 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1488 | 33 | | 306 | 1704 | 319 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1488 | 33 | | 306 | 1704 | 319 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.93 | 0.07 | 1.00 | | 1.00 | 2.93 | 0.07 | | 2.00 | 1.68 | 0.32 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4958 | 110 | | 3432 | 2908 | 545 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.15 | 0.15 | 0.00 | | 0.01 | 0.30 | 0.30 | | 0.09 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.48 | 0.48 | | 0.14 | 0.57 | 0.57 | |
| Volume/Cap: | 0.38 | 0.38 | 0.40 | | 1.02 | 1.02 | 0.01 | | 0.19 | 0.62 | 0.62 | | 0.62 | 1.02 | 1.02 | |
| Uniform Del: | 36.8 | 36.8 | 36.8 | | 34.0 | 34.0 | 28.9 | | 36.5 | 15.4 | 15.4 | | 32.3 | 17.0 | 17.0 | |
| IncremntDel: | 2.7 | 2.7 | 1.9 | | 60.3 | 60.3 | 0.0 | | 1.1 | 0.5 | 0.5 | | 2.5 | 25.5 | 25.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.5 | 39.5 | 38.7 | | 94.2 | 94.2 | 28.9 | | 37.5 | 15.9 | 15.9 | | 34.8 | 42.5 | 42.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.5 | 39.5 | 38.7 | | 94.2 | 94.2 | 28.9 | | 37.5 | 15.9 | 15.9 | | 34.8 | 42.5 | 42.5 | |
| LOS by Move: | D | D | D | | F | F | C | | D | B | B | | C | D | D | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 12 | 12 | 0 | | 1 | 11 | 11 | | 5 | 37 | 37 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.647
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 30 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 1 | 0 | 0 1 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 907 | 66 | | 52 | 1301 | 368 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 199 | 0 | | 0 | 90 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1106 | 66 | | 52 | 1391 | 368 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1106 | 66 | | 52 | 1391 | 368 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1106 | 66 | | 52 | 1391 | 368 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1106 | 66 | | 52 | 1391 | 368 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3312 | 198 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.13 | 0.13 | 0.07 | | 0.08 | 0.33 | 0.33 | | 0.03 | 0.39 | 0.23 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.61 | 0.61 | | 0.09 | 0.59 | 0.59 | |
| Volume/Cap: | 0.19 | 0.22 | 0.22 | | 0.67 | 0.67 | 0.33 | | 0.67 | 0.55 | 0.55 | | 0.33 | 0.67 | 0.40 | |
| Uniform Del: | 36.5 | 36.5 | 36.5 | | 29.5 | 29.5 | 27.3 | | 34.1 | 9.2 | 9.2 | | 34.1 | 11.3 | 8.9 | |
| IncremntDel: | 1.1 | 1.3 | 1.3 | | 2.5 | 2.5 | 0.6 | | 8.5 | 0.3 | 0.3 | | 1.2 | 0.9 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.5 | 37.8 | 37.8 | | 32.0 | 32.0 | 27.9 | | 42.6 | 9.5 | 9.5 | | 35.2 | 12.1 | 9.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.5 | 37.8 | 37.8 | | 32.0 | 32.0 | 27.9 | | 42.6 | 9.5 | 9.5 | | 35.2 | 12.1 | 9.2 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | D | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 7 | 7 | 2 | | 5 | 9 | 9 | | 2 | 13 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 35 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! 0 | 0 | 0 | 0 | 1! 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | 112 | 28 | 5 | 2 | 665 | 66 | 264 | 982 | 22 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 80 | 3 | 202 | 128 | 32 | 6 | 2 | 758 | 75 | 301 | 1119 | 25 | | | | |
| Added Vol: | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 199 | 2 | 0 | 90 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 81 | 3 | 202 | 128 | 32 | 6 | 2 | 957 | 77 | 301 | 1209 | 25 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 81 | 3 | 202 | 128 | 32 | 6 | 2 | 957 | 77 | 301 | 1209 | 25 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 81 | 3 | 202 | 128 | 32 | 6 | 2 | 957 | 77 | 301 | 1209 | 25 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 81 | 3 | 202 | 128 | 32 | 6 | 2 | 957 | 77 | 301 | 1209 | 25 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.79 | 0.79 | 0.79 | 0.53 | 0.53 | 0.53 | 0.88 | 0.88 | 0.88 | 0.93 | 0.93 | 0.93 | | | | |
| Lanes: | 0.28 | 0.01 | 0.71 | 0.78 | 0.19 | 0.03 | 0.01 | 1.84 | 0.15 | 1.00 | 1.96 | 0.04 | | | | |
| Final Sat.: | 425 | 18 | 1060 | 776 | 194 | 35 | 7 | 3085 | 249 | 1769 | 3456 | 72 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | 0.16 | 0.16 | 0.16 | 0.31 | 0.31 | 0.31 | 0.17 | 0.35 | 0.35 | | | | |
| Crit Moves: | | **** | | | | | | **** | | **** | | | | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.44 | 0.44 | 0.44 | 0.24 | 0.68 | 0.68 | | | | |
| Volume/Cap: | 0.70 | 0.70 | 0.70 | 0.60 | 0.60 | 0.60 | 0.71 | 0.71 | 0.71 | 0.71 | 0.52 | 0.52 | | | | |
| Uniform Del: | 26.2 | 26.2 | 26.2 | 25.3 | 25.3 | 25.3 | 18.3 | 18.3 | 18.3 | 27.8 | 6.4 | 6.4 | | | | |
| IncremntDel: | 5.3 | 5.3 | 5.3 | 3.8 | 3.8 | 3.8 | 1.6 | 1.6 | 1.6 | 5.5 | 0.2 | 0.2 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 31.4 | 31.4 | 31.4 | 29.2 | 29.2 | 29.2 | 20.0 | 20.0 | 20.0 | 33.3 | 6.6 | 6.6 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 31.4 | 31.4 | 31.4 | 29.2 | 29.2 | 29.2 | 20.0 | 20.0 | 20.0 | 33.3 | 6.6 | 6.6 | | | | |
| LOS by Move: | C | C | C | C | C | C | B | B | B | C | A | A | | | | |
| HCM2kAvgQ: | 8 | 8 | 8 | 5 | 5 | 5 | 12 | 12 | 12 | 8 | 8 | 8 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.766
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 27.0
Optimal Cycle: 66 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | 342 | 367 | 0 | 0 | 0 | 0 | 463 | 0 | 169 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 0 | 189 | 453 | 390 | 418 | 0 | 0 | 0 | 0 | 528 | 0 | 193 | | | | |
| Added Vol: | 0 | 7 | 100 | 101 | 40 | 0 | 0 | 0 | 0 | 51 | 0 | 41 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 196 | 553 | 491 | 458 | 0 | 0 | 0 | 0 | 579 | 0 | 234 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 196 | 553 | 491 | 458 | 0 | 0 | 0 | 0 | 579 | 0 | 234 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 196 | 553 | 491 | 458 | 0 | 0 | 0 | 0 | 579 | 0 | 234 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 196 | 553 | 491 | 458 | 0 | 0 | 0 | 0 | 579 | 0 | 234 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 0.85 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 | | | | |
| Lanes: | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | | |
| Final Sat.: | 0 | 1900 | 1615 | 1805 | 1900 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.34 | 0.27 | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.14 | | | | |
| Crit Moves: | | **** | | **** | | | | | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.13 | 0.55 | 0.36 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 | 0.00 | 0.77 | | | | |
| Volume/Cap: | 0.00 | 0.77 | 0.62 | 0.77 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.77 | 0.00 | 0.19 | | | | |
| Uniform Del: | 0.0 | 45.9 | 16.6 | 31.4 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 27.3 | 0.0 | 3.3 | | | | |
| IncremntDel: | 0.0 | 12.9 | 1.3 | 5.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 4.7 | 0.0 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 58.8 | 18.0 | 36.9 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 32.0 | 0.0 | 3.4 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 58.8 | 18.0 | 36.9 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 32.0 | 0.0 | 3.4 | | | | |
| LOS by Move: | A | E | B | D | B | A | A | A | A | C | A | A | | | | |
| HCM2kAvgQ: | 0 | 8 | 13 | 16 | 10 | 0 | 0 | 0 | 0 | 18 | 0 | 2 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.750
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.4
Optimal Cycle: 71 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Ovl | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 2 0 | 3 0 | 1 | 2 0 | 3 0 | 1 | 1 1 | 1 0 | 2 | 1 0 | 2 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 1179 | 2403 | 7 | 15 | 772 | 105 | 96 | 39 | 432 | 3 | 7 | 6 |
| Added Vol: | 55 | 195 | 14 | 254 | 42 | 0 | 0 | 483 | 14 | 13 | 16 | 7 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 1234 | 2598 | 21 | 269 | 814 | 105 | 96 | 522 | 446 | 16 | 23 | 13 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 1234 | 2598 | 21 | 269 | 814 | 105 | 96 | 522 | 446 | 16 | 23 | 13 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 1234 | 2598 | 21 | 269 | 814 | 105 | 96 | 522 | 446 | 16 | 23 | 13 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1234 | 2598 | 21 | 269 | 814 | 105 | 96 | 522 | 446 | 16 | 23 | 13 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.92 | 0.92 | 0.88 | 0.93 | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 1755 | 3509 | 3343 | 1769 | 3538 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.36 | 0.44 | 0.01 | 0.08 | 0.14 | 0.07 | 0.05 | 0.15 | 0.13 | 0.01 | 0.01 | 0.01 |
| Crit Moves: | | **** | | **** | | | | **** | | **** | | |
| Green/Cycle: | 0.49 | 0.58 | 0.61 | 0.10 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.04 | 0.04 | 0.04 |
| Volume/Cap: | 0.74 | 0.77 | 0.02 | 0.77 | 0.74 | 0.35 | 0.28 | 0.77 | 0.69 | 0.24 | 0.17 | 0.21 |
| Uniform Del: | 26.6 | 21.1 | 9.8 | 56.9 | 49.7 | 45.8 | 44.8 | 49.8 | 48.9 | 60.7 | 60.5 | 60.6 |
| IncremntDel: | 1.8 | 1.2 | 0.0 | 10.2 | 2.6 | 0.7 | 0.1 | 4.7 | 3.3 | 1.8 | 0.6 | 1.7 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 28.4 | 22.2 | 9.8 | 67.2 | 52.3 | 46.5 | 44.9 | 54.5 | 52.2 | 62.5 | 61.1 | 62.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 28.4 | 22.2 | 9.8 | 67.2 | 52.3 | 46.5 | 44.9 | 54.5 | 52.2 | 62.5 | 61.1 | 62.3 |
| LOS by Move: | C | C | A | E | D | D | D | D | D | E | E | E |
| HCM2kAvgQ: | 21 | 29 | 0 | 7 | 13 | 4 | 4 | 12 | 11 | 1 | 1 | 1 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.647
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 52 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Permitted | | | Permitted | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | 26 | 71 | 19 | 72 | 115 | 415 | 52 | 56 | 1037 | 74 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 21 | 15 | 30 | 81 | 22 | 82 | 131 | 473 | 59 | 64 | 1182 | 84 |
| Added Vol: | 0 | 0 | 0 | 1 | 0 | 13 | 4 | 496 | 0 | 0 | 70 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 21 | 15 | 30 | 82 | 22 | 95 | 135 | 969 | 59 | 64 | 1252 | 84 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 21 | 15 | 30 | 82 | 22 | 95 | 135 | 969 | 59 | 64 | 1252 | 84 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 21 | 15 | 30 | 82 | 22 | 95 | 135 | 969 | 59 | 64 | 1252 | 84 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 21 | 15 | 30 | 82 | 22 | 95 | 135 | 969 | 59 | 64 | 1252 | 84 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.82 | 0.82 | 0.82 | 0.78 | 0.78 | 0.78 | 0.93 | 0.92 | 0.92 | 0.93 | 0.92 | 0.92 |
| Lanes: | 0.31 | 0.23 | 0.46 | 0.41 | 0.11 | 0.48 | 1.00 | 1.88 | 0.12 | 1.00 | 1.87 | 0.13 |
| Final Sat.: | 491 | 355 | 710 | 610 | 161 | 707 | 1769 | 3304 | 202 | 1769 | 3285 | 221 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | 0.13 | 0.13 | 0.13 | 0.08 | 0.29 | 0.29 | 0.04 | 0.38 | 0.38 |
| Crit Moves: | | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.12 | 0.63 | 0.63 | 0.08 | 0.59 | 0.59 |
| Volume/Cap: | 0.20 | 0.20 | 0.20 | 0.65 | 0.65 | 0.65 | 0.65 | 0.47 | 0.47 | 0.44 | 0.65 | 0.65 |
| Uniform Del: | 42.6 | 42.6 | 42.6 | 47.1 | 47.1 | 47.1 | 54.7 | 12.9 | 12.9 | 56.8 | 17.7 | 17.7 |
| IncremntDel: | 0.3 | 0.3 | 0.3 | 4.7 | 4.7 | 4.7 | 6.9 | 0.2 | 0.2 | 2.1 | 0.7 | 0.7 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 42.9 | 42.9 | 42.9 | 51.9 | 51.9 | 51.9 | 61.6 | 13.1 | 13.1 | 59.0 | 18.4 | 18.4 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 42.9 | 42.9 | 42.9 | 51.9 | 51.9 | 51.9 | 61.6 | 13.1 | 13.1 | 59.0 | 18.4 | 18.4 |
| LOS by Move: | D | D | D | D | D | D | E | B | B | E | B | B |
| HCM2kAvgQ: | 2 | 2 | 2 | 8 | 8 | 8 | 6 | 11 | 11 | 3 | 19 | 19 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.643
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 52 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | 14 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 212 | | 93 | 743 | 0 | | 0 | 1164 | 16 | |
| Added Vol: | 0 | 0 | 0 | | 67 | 0 | 6 | | 7 | 433 | 0 | | 0 | 78 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 68 | 0 | 218 | | 100 | 1176 | 0 | | 0 | 1242 | 21 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 68 | 0 | 218 | | 100 | 1176 | 0 | | 0 | 1242 | 21 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 68 | 0 | 218 | | 100 | 1176 | 0 | | 0 | 1242 | 21 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 68 | 0 | 218 | | 100 | 1176 | 0 | | 0 | 1242 | 21 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.87 | 1.00 | 0.87 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.24 | 0.00 | 0.76 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.97 | 0.03 | |
| Final Sat.: | 0 | 0 | 0 | | 393 | 0 | 1257 | | 1769 | 3538 | 0 | | 0 | 3469 | 59 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.17 | 0.00 | 0.17 | | 0.06 | 0.33 | 0.00 | | 0.00 | 0.36 | 0.36 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.27 | 0.00 | 0.27 | | 0.09 | 0.65 | 0.00 | | 0.00 | 0.56 | 0.56 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.64 | 0.00 | 0.64 | | 0.64 | 0.52 | 0.00 | | 0.00 | 0.64 | 0.64 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 41.9 | 0.0 | 41.9 | | 57.3 | 12.2 | 0.0 | | 0.0 | 19.9 | 19.9 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.2 | 0.0 | 3.2 | | 8.8 | 0.2 | 0.0 | | 0.0 | 0.7 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 45.1 | 0.0 | 45.1 | | 66.1 | 12.4 | 0.0 | | 0.0 | 20.6 | 20.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 45.1 | 0.0 | 45.1 | | 66.1 | 12.4 | 0.0 | | 0.0 | 20.6 | 20.6 | |
| LOS by Move: | A | A | A | | D | A | D | | E | B | A | | A | C | C | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 11 | 0 | 11 | | 5 | 13 | 0 | | 0 | 18 | 18 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.552
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.7
Optimal Cycle: 43 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 148 | 0 | 76 | | 0 | 0 | 0 | | 0 | 795 | 285 | | 116 | 1335 | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 440 | 2 | | 0 | 84 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1235 | 287 | | 116 | 1419 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1235 | 287 | | 116 | 1419 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1235 | 287 | | 116 | 1419 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1235 | 287 | | 116 | 1419 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2583 | 0 | 841 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.35 | 0.18 | | 0.07 | 0.40 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.16 | 0.00 | 0.16 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.63 | 0.63 | | 0.12 | 0.75 | 0.00 | |
| Volume/Cap: | 0.37 | 0.00 | 0.55 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.55 | 0.29 | | 0.55 | 0.53 | 0.00 | |
| Uniform Del: | 48.3 | 0.0 | 49.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.5 | 10.8 | | 54.0 | 6.7 | 0.0 | |
| IncremntDel: | 0.4 | 0.0 | 1.6 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.3 | 0.2 | | 3.2 | 0.2 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 48.7 | 0.0 | 51.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.8 | 10.9 | | 57.1 | 6.9 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.7 | 0.0 | 51.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.8 | 10.9 | | 57.1 | 6.9 | 0.0 | |
| LOS by Move: | D | A | D | | A | A | A | | A | B | B | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 6 | | 0 | 0 | 0 | | 0 | 14 | 5 | | 5 | 12 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.028
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 62.5
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 399 | 127 | 41 | | 32 | 203 | 438 | | 169 | 942 | 177 | | 32 | 1392 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 10 | 442 | 0 | | 0 | 93 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1384 | 177 | | 32 | 1485 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1384 | 177 | | 32 | 1485 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1384 | 177 | | 32 | 1485 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1384 | 177 | | 32 | 1485 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.66 | 0.34 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4431 | 566 | | 1769 | 3527 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.07 | 0.03 | | 0.02 | 0.11 | 0.28 | | 0.10 | 0.31 | 0.31 | | 0.02 | 0.42 | 0.42 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.45 | 0.45 | | 0.06 | 0.41 | 0.41 | |
| Volume/Cap: | 1.03 | 0.60 | 0.23 | | 0.07 | 0.40 | 1.03 | | 1.03 | 0.69 | 0.69 | | 0.32 | 1.03 | 1.03 | |
| Uniform Del: | 57.6 | 54.9 | 52.5 | | 35.1 | 38.7 | 47.4 | | 58.6 | 28.4 | 28.4 | | 59.0 | 38.4 | 38.4 | |
| IncremntDel: | 53.1 | 4.8 | 0.7 | | 0.1 | 0.5 | 50.8 | | 75.8 | 0.9 | 0.9 | | 1.9 | 31.1 | 31.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 110.7 | 59.6 | 53.1 | | 35.2 | 39.2 | 98.2 | | 134.5 | 29.3 | 29.3 | | 60.9 | 69.5 | 69.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 110.7 | 59.6 | 53.1 | | 35.2 | 39.2 | 98.2 | | 134.5 | 29.3 | 29.3 | | 60.9 | 69.5 | 69.5 | |
| LOS by Move: | F | E | D | | D | D | F | | F | C | C | | E | E | E | |
| HCM2kAvgQ: | 13 | 6 | 2 | | 1 | 7 | 24 | | 11 | 19 | 19 | | 2 | 40 | 40 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.818
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: 79 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 412 | 0 | 85 | | 73 | 1571 | 0 | | 0 | 1270 | 364 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 177 | 0 | | 0 | 105 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1748 | 0 | | 0 | 1375 | 367 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1748 | 0 | | 0 | 1375 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1748 | 0 | | 0 | 1375 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 414 | 0 | 86 | | 73 | 1748 | 0 | | 0 | 1375 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.23 | 0.00 | 0.05 | | 0.04 | 0.49 | 0.00 | | 0.00 | 0.39 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.29 | | 0.07 | 0.60 | 0.00 | | 0.00 | 0.54 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.82 | 0.00 | 0.19 | | 0.60 | 0.82 | 0.00 | | 0.00 | 0.73 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 33.3 | 0.0 | 27.0 | | 45.2 | 15.5 | 0.0 | | 0.0 | 17.7 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 10.1 | 0.0 | 0.2 | | 8.0 | 2.6 | 0.0 | | 0.0 | 1.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 43.4 | 0.0 | 27.2 | | 53.2 | 18.1 | 0.0 | | 0.0 | 19.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 43.4 | 0.0 | 27.2 | | 53.2 | 18.1 | 0.0 | | 0.0 | 19.1 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 14 | 0 | 2 | | 3 | 24 | 0 | | 0 | 18 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.844
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 73 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1141 | 10 | | 47 | 969 | 162 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 177 | 0 | | 0 | 105 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1318 | 10 | | 47 | 1074 | 162 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1318 | 10 | | 47 | 1074 | 162 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1318 | 10 | | 47 | 1074 | 162 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1318 | 10 | | 47 | 1074 | 162 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.41 | 0.41 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.87 | 0.13 | |
| Final Sat.: | 1359 | 183 | 1431 | | 732 | 39 | 1583 | | 1769 | 3507 | 27 | | 1769 | 1586 | 239 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.10 | 0.10 | | 0.06 | 0.06 | 0.00 | | 0.01 | 0.38 | 0.38 | | 0.03 | 0.68 | 0.68 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.04 | 0.74 | 0.74 | | 0.08 | 0.78 | 0.78 | |
| Volume/Cap: | 0.46 | 0.87 | 0.87 | | 0.52 | 0.52 | 0.01 | | 0.19 | 0.51 | 0.51 | | 0.34 | 0.87 | 0.87 | |
| Uniform Del: | 41.4 | 43.6 | 43.6 | | 41.7 | 41.7 | 39.3 | | 46.4 | 5.5 | 5.5 | | 43.6 | 7.8 | 7.8 | |
| IncremntDel: | 2.1 | 33.7 | 33.7 | | 5.4 | 5.4 | 0.0 | | 1.3 | 0.2 | 0.2 | | 1.4 | 6.3 | 6.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 43.5 | 77.2 | 77.2 | | 47.1 | 47.1 | 39.3 | | 47.8 | 5.7 | 5.7 | | 45.1 | 14.0 | 14.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 43.5 | 77.2 | 77.2 | | 47.1 | 47.1 | 39.3 | | 47.8 | 5.7 | 5.7 | | 45.1 | 14.0 | 14.0 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 3 | 8 | 8 | | 2 | 2 | 0 | | 1 | 9 | 9 | | 2 | 29 | 29 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 82 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1017 | 6 | | 7 | 974 | 71 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 177 | 0 | | 0 | 105 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1194 | 6 | | 7 | 1079 | 71 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1194 | 6 | | 7 | 1079 | 71 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1194 | 6 | | 7 | 1079 | 71 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1194 | 6 | | 7 | 1079 | 71 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.72 | 0.72 | 0.72 | | 0.11 | 0.98 | 0.98 | | 0.09 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 351 | 351 | 937 | | 998 | 42 | 337 | | 212 | 1851 | 9 | | 166 | 1732 | 113 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.16 | 0.16 | 0.16 | | 0.09 | 0.64 | 0.64 | | 0.04 | 0.62 | 0.62 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.19 | 0.19 | 0.19 | | 0.74 | 0.74 | 0.74 | | 0.74 | 0.74 | 0.74 | |
| Volume/Cap: | 0.05 | 0.05 | 0.05 | | 0.87 | 0.87 | 0.87 | | 0.12 | 0.87 | 0.87 | | 0.06 | 0.84 | 0.84 | |
| Uniform Del: | 33.4 | 33.4 | 33.4 | | 39.5 | 39.5 | 39.5 | | 3.6 | 9.3 | 9.3 | | 3.4 | 8.7 | 8.7 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 25.4 | 25.4 | 25.4 | | 0.4 | 6.1 | 6.1 | | 0.2 | 4.7 | 4.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.5 | 33.5 | 33.5 | | 64.8 | 64.8 | 64.8 | | 4.0 | 15.4 | 15.4 | | 3.6 | 13.5 | 13.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.5 | 33.5 | 33.5 | | 64.8 | 64.8 | 64.8 | | 4.0 | 15.4 | 15.4 | | 3.6 | 13.5 | 13.5 | |
| LOS by Move: | C | C | C | | E | E | E | | A | B | B | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 10 | 10 | 10 | | 0 | 29 | 29 | | 0 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.836
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 71 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | | 85 | 122 | 31 | | 41 | 7 | 4 | | 794 | 72 | 41 | | 869 | 5 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 115 | | 97 | 139 | 35 | | 47 | 8 | 5 | | 905 | 82 | 47 | | 991 | 6 |
| Added Vol: | 11 | | 0 | 19 | 0 | | 0 | 0 | 0 | | 157 | 8 | 4 | | 102 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 126 | | 97 | 158 | 35 | | 47 | 8 | 5 | | 1062 | 90 | 51 | | 1093 | 6 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 126 | | 97 | 158 | 35 | | 47 | 8 | 5 | | 1062 | 90 | 51 | | 1093 | 6 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 126 | | 97 | 158 | 35 | | 47 | 8 | 5 | | 1062 | 90 | 51 | | 1093 | 6 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 126 | | 97 | 158 | 35 | | 47 | 8 | 5 | | 1062 | 90 | 51 | | 1093 | 6 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.71 | 0.89 | | 0.89 | 0.26 | 0.96 | | 0.96 | 0.14 | 0.97 | | 0.97 | 0.12 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.38 | | 0.62 | 1.00 | 0.85 | | 0.15 | 1.00 | 0.92 | | 0.08 | 1.00 | 0.99 | | 0.01 |
| Final Sat.: | 1346 | 642 | | 1047 | 493 | 1555 | | 266 | 268 | 1696 | | 144 | 220 | 1850 | | 10 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.15 | | 0.15 | 0.07 | 0.03 | | 0.03 | 0.02 | 0.63 | | 0.63 | 0.23 | 0.59 | | 0.59 |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.18 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | | 0.75 |
| Volume/Cap: | 0.52 | 0.84 | | 0.84 | 0.40 | 0.17 | | 0.17 | 0.02 | 0.84 | | 0.84 | 0.31 | 0.79 | | 0.79 |
| Uniform Del: | 37.0 | 39.5 | | 39.5 | 36.2 | 34.6 | | 34.6 | 3.2 | 8.4 | | 8.4 | 4.1 | 7.7 | | 7.7 |
| IncremntDel: | 2.0 | 17.8 | | 17.8 | 2.9 | 0.2 | | 0.2 | 0.0 | 4.6 | | 4.6 | 1.1 | 3.1 | | 3.1 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 39.0 | 57.4 | | 57.4 | 39.0 | 34.8 | | 34.8 | 3.2 | 13.0 | | 13.0 | 5.2 | 10.8 | | 10.8 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 39.0 | 57.4 | | 57.4 | 39.0 | 34.8 | | 34.8 | 3.2 | 13.0 | | 13.0 | 5.2 | 10.8 | | 10.8 |
| LOS by Move: | D | E | | E | D | C | | C | A | B | | B | A | B | | B |
| HCM2kAvgQ: | 4 | 10 | | 10 | 1 | 1 | | 1 | 0 | 26 | | 26 | 1 | 22 | | 22 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.225
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 123.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | | 245 | 408 | 322 | | 10 | 16 | 166 | | 117 | 420 | | 64 | 494 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 76 | 390 | | 279 | 465 | 367 | | 11 | 18 | 189 | | 133 | 479 | | 73 | 563 |
| Added Vol: | 15 | 9 | | 87 | 70 | 7 | | 0 | 0 | 9 | | 10 | 17 | | 18 | 78 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 91 | 399 | | 366 | 535 | 374 | | 11 | 18 | 198 | | 143 | 496 | | 91 | 641 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 91 | 399 | | 366 | 535 | 374 | | 11 | 18 | 198 | | 143 | 496 | | 91 | 641 |
| Reduct Vol: | 0 | 0 | | 3 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 91 | 399 | | 363 | 535 | 374 | | 11 | 18 | 198 | | 143 | 496 | | 91 | 641 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 91 | 399 | | 363 | 535 | 374 | | 11 | 18 | 198 | | 143 | 496 | | 91 | 641 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.74 | 1.22 | | 0.04 | 1.00 | 1.00 | | 1.00 | 1.69 | 0.31 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 2992 | 2092 | | 64 | 1769 | 1862 | | 1583 | 3018 | 554 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.11 | | 0.46 | 0.18 | 0.18 | | 0.18 | 0.01 | 0.11 | | 0.09 | 0.16 | 0.16 | | 0.41 |
| Crit Moves: | | | | **** | **** | | | | | **** | | | | | | **** |
| Green/Cycle: | 0.37 | 0.37 | | 0.37 | 0.15 | 0.15 | | 0.15 | 0.09 | 0.09 | | 0.09 | 0.33 | 0.33 | | 0.33 |
| Volume/Cap: | 0.14 | 0.30 | | 1.22 | 1.22 | 1.22 | | 1.22 | 0.12 | 1.22 | | 1.04 | 0.50 | 0.50 | | 1.22 |
| Uniform Del: | 26.8 | 28.6 | | 40.6 | 55.5 | 55.5 | | 55.5 | 54.8 | 59.4 | | 59.4 | 34.8 | 34.8 | | 43.5 |
| IncremntDel: | 0.1 | 0.1 | | 127.4 | 112.9 | 113 | | 112.9 | 0.3 | 144 | | 88.4 | 0.3 | 0.3 | | 117.3 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 26.9 | 28.8 | | 168.1 | 168.4 | 168 | | 168.4 | 55.1 | 203 | | 147.8 | 35.2 | 35.2 | | 160.8 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 26.9 | 28.8 | | 168.1 | 168.4 | 168 | | 168.4 | 55.1 | 203 | | 147.8 | 35.2 | 35.2 | | 160.8 |
| LOS by Move: | C | C | | F | F | F | | F | E | F | | F | D | D | | F |
| HCM2kAvgQ: | 2 | 6 | | 25 | 23 | 23 | | 23 | 1 | 15 | | 10 | 9 | 9 | | 42 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160  Critical Vol./Cap.(X): 0.905
Loss Time (sec): 10 (Y+R=3.0 sec)  Average Delay (sec/veh): 35.1
Optimal Cycle: 132  Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1757 | 3285 | 0 | | 0 | 1008 | 214 | | 204 | 0 | 489 | | 0 | 0 | 0 | |
| Added Vol: | 23 | 368 | 0 | | 0 | 65 | 4 | | 63 | 0 | 7 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1780 | 3653 | 0 | | 0 | 1073 | 218 | | 267 | 0 | 496 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1780 | 3653 | 0 | | 0 | 1073 | 218 | | 267 | 0 | 496 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1780 | 3653 | 0 | | 0 | 1073 | 218 | | 267 | 0 | 496 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1780 | 3653 | 0 | | 0 | 1073 | 218 | | 267 | 0 | 496 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.72 | 0.00 | | 0.00 | 0.21 | 0.14 | | 0.08 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.57 | 0.81 | 0.00 | | 0.00 | 0.23 | 0.23 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.90 | 0.89 | 0.00 | | 0.00 | 0.90 | 0.59 | | 0.59 | 0.00 | 0.90 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 30.3 | 10.7 | 0.0 | | 0.0 | 59.6 | 54.6 | | 65.5 | 0.0 | 68.5 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 6.4 | 2.8 | 0.0 | | 0.0 | 9.9 | 2.6 | | 2.1 | 0.0 | 18.5 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 36.7 | 13.5 | 0.0 | | 0.0 | 69.6 | 57.1 | | 67.6 | 0.0 | 87.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.7 | 13.5 | 0.0 | | 0.0 | 69.6 | 57.1 | | 67.6 | 0.0 | 87.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | B | A | | A | E | E | | E | A | F | | A | A | A | |
| HCM2kAvgQ: | 42 | 47 | 0 | | 0 | 22 | 10 | | 7 | 0 | 12 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85  Critical Vol./Cap.(X): 0.611
Loss Time (sec): 11 (Y+R=3.0 sec)  Average Delay (sec/veh): 6.8
Optimal Cycle: 46  Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 25 | 0 | 25 | | 78 | 600 | 0 | | 0 | 1529 | 52 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 68 | 0 | | 0 | 18 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 668 | 0 | | 0 | 1547 | 62 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 668 | 0 | | 0 | 1547 | 62 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 668 | 0 | | 0 | 1547 | 62 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 668 | 0 | | 0 | 1547 | 62 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 881 | 0 | 816 | | 1769 | 3538 | 0 | | 0 | 3380 | 136 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.19 | 0.00 | | 0.00 | 0.46 | 0.46 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.52 | | 0.62 | 0.23 | 0.00 | | 0.00 | 0.62 | 0.62 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.8 | 0.0 | 38.8 | | 38.4 | 1.9 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 4.9 | 0.0 | 4.9 | | 9.0 | 0.0 | 0.0 | | 0.0 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 43.8 | 0.0 | 43.8 | | 47.4 | 1.9 | 0.0 | | 0.0 | 5.7 | 5.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 43.8 | 0.0 | 43.8 | | 47.4 | 1.9 | 0.0 | | 0.0 | 5.7 | 5.7 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 2 | 0 | | 0 | 11 | 11 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.623
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.2
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | | 20 | 8 | 21 | | 44 | 40 | 582 | | 43 | 25 | 1302 | | 25 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 36 | 42 | | 23 | 9 | 24 | | 50 | 46 | 663 | | 49 | 28 | 1484 | | 28 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 68 | | 0 | 0 | 18 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 36 | 42 | | 23 | 9 | 24 | | 50 | 46 | 731 | | 49 | 28 | 1502 | | 28 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 36 | 42 | | 23 | 9 | 24 | | 50 | 46 | 731 | | 49 | 28 | 1502 | | 28 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 36 | 42 | | 23 | 9 | 24 | | 50 | 46 | 731 | | 49 | 28 | 1502 | | 28 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 36 | 42 | | 23 | 9 | 24 | | 50 | 46 | 731 | | 49 | 29 | 1502 | | 29 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.95 | 0.95 | | 0.95 | 0.91 | 0.91 | | 0.91 | 0.95 | 0.94 | | 0.94 | 0.95 | 0.95 | | 0.95 |
| Lanes: | 0.36 | 0.42 | | 0.22 | 0.11 | 0.29 | | 0.60 | 1.00 | 1.87 | | 0.13 | 1.00 | 1.96 | | 0.04 |
| Final Sat.: | 651 | 752 | | 407 | 190 | 500 | | 1047 | 1805 | 3353 | | 225 | 1805 | 3532 | | 67 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | | 0.06 | 0.05 | 0.05 | | 0.05 | 0.03 | 0.22 | | 0.22 | 0.02 | 0.43 | | 0.43 |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.09 | | 0.09 | 0.08 | 0.08 | | 0.08 | 0.05 | 0.59 | | 0.59 | 0.14 | 0.68 | | 0.68 |
| Volume/Cap: | 0.63 | 0.64 | | 0.64 | 0.62 | 0.63 | | 0.63 | 0.51 | 0.37 | | 0.37 | 0.12 | 0.63 | | 0.63 |
| Uniform Del: | 44.0 | 44.1 | | 44.1 | 44.7 | 44.8 | | 44.8 | 46.3 | 10.8 | | 10.8 | 38.0 | 9.2 | | 9.2 |
| IncremntDel: | 7.8 | 8.7 | | 8.7 | 8.3 | 9.4 | | 9.4 | 4.6 | 0.1 | | 0.1 | 0.2 | 0.5 | | 0.5 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 51.8 | 52.9 | | 52.9 | 52.9 | 54.2 | | 54.2 | 50.9 | 10.9 | | 10.9 | 38.2 | 9.7 | | 9.7 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 51.8 | 52.9 | | 52.9 | 52.9 | 54.2 | | 54.2 | 50.9 | 10.9 | | 10.9 | 38.2 | 9.7 | | 9.7 |
| LOS by Move: | D | D | | D | D | D | | D | D | B | | B | D | A | | A |
| HCM2kAvgQ: | 4 | 4 | | 4 | 4 | 4 | | 4 | 2 | 7 | | 7 | 1 | 14 | | 14 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 29.0
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 |
| Lanes: | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | | 113 | 50 | 196 | | 86 | 141 | 497 | | 78 | 97 | 1115 | | 49 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 123 | 257 | | 129 | 57 | 223 | | 98 | 161 | 567 | | 89 | 111 | 1271 | | 56 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 68 | | 0 | 0 | 18 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 123 | 257 | | 129 | 57 | 223 | | 98 | 161 | 635 | | 89 | 111 | 1289 | | 56 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 123 | 257 | | 129 | 57 | 223 | | 98 | 161 | 635 | | 89 | 111 | 1289 | | 56 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 123 | 257 | | 129 | 57 | 223 | | 98 | 161 | 635 | | 89 | 111 | 1289 | | 56 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 123 | 257 | | 129 | 57 | 223 | | 98 | 161 | 635 | | 89 | 111 | 1289 | | 56 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.95 | 1.00 | | 0.85 | 0.95 | 1.00 | | 0.85 | 0.95 | 0.93 | | 0.93 | 0.95 | 0.94 | | 0.94 |
| Lanes: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.75 | | 0.25 | 1.00 | 1.92 | | 0.08 |
| Final Sat.: | 1805 | 1900 | | 1615 | 1805 | 1900 | | 1615 | 1805 | 3109 | | 436 | 1805 | 3439 | | 149 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.14 | | 0.08 | 0.03 | 0.12 | | 0.06 | 0.09 | 0.20 | | 0.20 | 0.06 | 0.37 | | 0.37 |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.19 | | 0.19 | 0.07 | 0.16 | | 0.16 | 0.12 | 0.49 | | 0.49 | 0.15 | 0.51 | | 0.51 |
| Volume/Cap: | 0.73 | 0.73 | | 0.43 | 0.46 | 0.73 | | 0.38 | 0.73 | 0.42 | | 0.42 | 0.42 | 0.73 | | 0.73 |
| Uniform Del: | 44.1 | 38.3 | | 36.0 | 44.8 | 39.9 | | 37.5 | 42.3 | 16.4 | | 16.4 | 38.8 | 18.9 | | 18.9 |
| IncremntDel: | 15.0 | 7.4 | | 1.0 | 2.7 | 8.6 | | 0.9 | 11.7 | 0.2 | | 0.2 | 1.1 | 1.5 | | 1.5 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 59.1 | 45.7 | | 37.0 | 47.4 | 48.5 | | 38.4 | 54.0 | 16.6 | | 16.6 | 39.8 | 20.4 | | 20.4 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 59.1 | 45.7 | | 37.0 | 47.4 | 48.5 | | 38.4 | 54.0 | 16.6 | | 16.6 | 39.8 | 20.4 | | 20.4 |
| LOS by Move: | E | D | | D | D | D | | D | D | B | | B | D | C | | C |
| HCM2kAvgQ: | 5 | 9 | | 4 | 2 | 8 | | 3 | 6 | 8 | | 8 | 3 | 18 | | 18 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | | 12 | 16 | 59 | | 56 | 18 | 626 | | 48 | 88 | 1246 | | 61 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 54 | 120 | | 14 | 18 | 67 | | 64 | 21 | 714 | | 55 | 100 | 1420 | | 70 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 68 | | 0 | 0 | 18 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 54 | 120 | | 14 | 18 | 67 | | 64 | 21 | 782 | | 55 | 100 | 1438 | | 70 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 54 | 120 | | 14 | 18 | 67 | | 64 | 21 | 782 | | 55 | 100 | 1438 | | 70 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 54 | 120 | | 14 | 18 | 67 | | 64 | 21 | 782 | | 55 | 100 | 1438 | | 70 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 54 | 120 | | 14 | 18 | 67 | | 64 | 21 | 782 | | 55 | 100 | 1438 | | 70 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.98 | 0.98 | | 0.98 | 0.94 | 0.94 | | 0.94 | 0.95 | 0.94 | | 0.94 | 0.95 | 0.94 | | 0.94 |
| Lanes: | 0.29 | 0.64 | | 0.07 | 0.12 | 0.45 | | 0.43 | 1.00 | 1.87 | | 0.13 | 1.00 | 1.91 | | 0.09 |
| Final Sat.: | 532 | 1187 | | 136 | 217 | 801 | | 761 | 1805 | 3340 | | 234 | 1805 | 3419 | | 165 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.10 | 0.10 | | 0.10 | 0.08 | 0.08 | | 0.08 | 0.01 | 0.23 | | 0.23 | 0.06 | 0.42 | | 0.42 |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.14 | 0.14 | | 0.14 | 0.12 | 0.12 | | 0.12 | 0.05 | 0.51 | | 0.51 | 0.12 | 0.58 | | 0.58 |
| Volume/Cap: | 0.72 | 0.72 | | 0.72 | 0.72 | 0.72 | | 0.72 | 0.23 | 0.46 | | 0.46 | 0.46 | 0.72 | | 0.72 |
| Uniform Del: | 41.1 | 41.1 | | 41.1 | 42.6 | 42.6 | | 42.6 | 45.6 | 15.5 | | 15.5 | 40.8 | 15.0 | | 15.0 |
| IncremntDel: | 9.5 | 9.5 | | 9.5 | 11.7 | 11.7 | | 11.7 | 1.3 | 0.2 | | 0.2 | 1.5 | 1.3 | | 1.3 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 50.6 | 50.6 | | 50.6 | 54.3 | 54.3 | | 54.3 | 46.9 | 15.7 | | 15.7 | 42.4 | 16.2 | | 16.2 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 50.6 | 50.6 | | 50.6 | 54.3 | 54.3 | | 54.3 | 46.9 | 15.7 | | 15.7 | 42.4 | 16.2 | | 16.2 |
| LOS by Move: | D | D | | D | D | D | | D | D | B | | B | D | B | | B |
| HCM2kAvgQ: | 7 | 7 | | 7 | 6 | 6 | | 6 | 1 | 9 | | 9 | 3 | 18 | | 18 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.289
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.4
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 14 | 14 | | 14 | 14 | 14 | | 14 | 73 | 73 | | 73 | 73 | 73 | | 73 |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | | 9 | 7 | 43 | | 11 | 15 | 614 | | 24 | 15 | 123 | | 24 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 21 | 67 | | 10 | 8 | 49 | | 13 | 17 | 700 | | 27 | 17 | 140 | | 27 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 68 | | 0 | 0 | 18 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 21 | 67 | | 10 | 8 | 49 | | 13 | 17 | 768 | | 27 | 17 | 158 | | 27 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 21 | 67 | | 10 | 8 | 49 | | 13 | 17 | 768 | | 27 | 17 | 158 | | 27 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 21 | 67 | | 10 | 8 | 49 | | 13 | 17 | 768 | | 27 | 17 | 158 | | 27 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 21 | 67 | | 10 | 8 | 49 | | 13 | 17 | 768 | | 27 | 17 | 158 | | 27 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.93 | 0.95 | 0.95 | | 0.95 | 0.63 | 0.95 | | 0.95 | 0.32 | 0.93 | | 0.93 |
| Lanes: | 0.21 | 0.69 | | 0.10 | 0.11 | 0.71 | | 0.18 | 1.00 | 1.93 | | 0.07 | 1.00 | 1.71 | | 0.29 |
| Final Sat.: | 369 | 1209 | | 184 | 207 | 1271 | | 325 | 1191 | 3468 | | 124 | 616 | 3010 | | 521 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | | 0.06 | 0.04 | 0.04 | | 0.04 | 0.01 | 0.22 | | 0.22 | 0.03 | 0.05 | | 0.05 |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.19 | 0.19 | | 0.19 | 0.19 | 0.19 | | 0.19 | 0.77 | 0.77 | | 0.77 | 0.77 | 0.77 | | 0.77 |
| Volume/Cap: | 0.29 | 0.29 | | 0.29 | 0.20 | 0.20 | | 0.20 | 0.02 | 0.29 | | 0.29 | 0.04 | 0.07 | | 0.07 |
| Uniform Del: | 33.0 | 33.0 | | 33.0 | 32.5 | 32.5 | | 32.5 | 2.6 | 3.3 | | 3.3 | 2.6 | 2.7 | | 2.7 |
| IncremntDel: | 0.5 | 0.5 | | 0.5 | 0.3 | 0.3 | | 0.3 | 0.0 | 0.1 | | 0.1 | 0.0 | 0.0 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 33.5 | 33.5 | | 33.5 | 32.8 | 32.8 | | 32.8 | 2.6 | 3.3 | | 3.3 | 2.7 | 2.7 | | 2.7 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 33.5 | 33.5 | | 33.5 | 32.8 | 32.8 | | 32.8 | 2.6 | 3.3 | | 3.3 | 2.7 | 2.7 | | 2.7 |
| LOS by Move: | C | C | | C | C | C | | C | A | A | | A | A | A | | A |
| HCM2kAvgQ: | 3 | 3 | | 3 | 2 | 2 | | 2 | 0 | 4 | | 4 | 0 | 1 | | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 1.030
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 53.5
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 413 | 498 | 374 | | 13 | 141 | 437 | | 133 | 401 | 323 | | 56 | 1374 | 78 | |
| Added Vol: | 22 | 0 | 35 | | 0 | 0 | 0 | | 0 | 33 | 0 | | 0 | 18 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 435 | 498 | 409 | | 13 | 141 | 437 | | 133 | 434 | 323 | | 56 | 1392 | 78 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 435 | 498 | 409 | | 13 | 141 | 437 | | 133 | 434 | 323 | | 56 | 1392 | 78 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 435 | 498 | 409 | | 13 | 141 | 437 | | 133 | 434 | 323 | | 56 | 1392 | 78 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 435 | 498 | 409 | | 13 | 141 | 437 | | 133 | 434 | 323 | | 56 | 1392 | 78 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.30 | 1.48 | 1.22 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2196 | 2516 | 2066 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3392 | 189 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.20 | 0.20 | | 0.01 | 0.07 | 0.27 | | 0.04 | 0.12 | 0.20 | | 0.03 | 0.41 | 0.41 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.36 | 0.36 | | 0.09 | 0.26 | 0.26 | | 0.05 | 0.35 | 0.35 | | 0.09 | 0.39 | 0.39 | |
| Volume/Cap: | 1.05 | 0.55 | 0.55 | | 0.08 | 0.29 | 1.05 | | 0.76 | 0.34 | 0.56 | | 0.35 | 1.05 | 1.05 | |
| Uniform Del: | 40.5 | 25.7 | 25.7 | | 41.7 | 29.7 | 37.1 | | 46.9 | 23.7 | 26.1 | | 42.9 | 30.4 | 30.4 | |
| IncremntDel: | 38.0 | 0.3 | 0.3 | | 0.2 | 0.3 | 56.6 | | 17.7 | 0.2 | 1.3 | | 1.3 | 37.0 | 37.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 78.6 | 26.0 | 26.0 | | 41.9 | 30.0 | 93.6 | | 64.6 | 23.9 | 27.4 | | 44.2 | 67.4 | 67.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 78.6 | 26.0 | 26.0 | | 41.9 | 30.0 | 93.6 | | 64.6 | 23.9 | 27.4 | | 44.2 | 67.4 | 67.4 | |
| LOS by Move: | E | C | C | | D | C | F | | E | C | C | | D | E | E | |
| HCM2kAvgQ: | 17 | 9 | 9 | | 0 | 4 | 21 | | 4 | 5 | 8 | | 2 | 34 | 34 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.436
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 9.3
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 954 | 9 | | 0 | 514 | 0 | | 416 | 0 | 160 | | 0 | 0 | 129 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 57 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 954 | 9 | | 0 | 514 | 0 | | 473 | 0 | 160 | | 0 | 0 | 129 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 954 | 9 | | 0 | 514 | 0 | | 473 | 0 | 160 | | 0 | 0 | 129 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 954 | 9 | | 0 | 514 | 0 | | 473 | 0 | 160 | | 0 | 0 | 129 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 1050 | 10 | | 0 | 540 | 0 | | 487 | 0 | 160 | | 0 | 0 | 129 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5646 | 54 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.19 | 0.19 | | 0.00 | 0.14 | 0.00 | | 0.13 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.09 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.43 | 0.43 | | 0.00 | 0.43 | 0.00 | | 0.31 | 0.00 | 0.51 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.44 | 0.44 | | 0.00 | 0.33 | 0.00 | | 0.44 | 0.00 | 0.19 | | 0.00 | 0.00 | 0.44 | |
| Uniform Del: | 0.0 | 10.0 | 10.0 | | 0.0 | 9.5 | 0.0 | | 13.6 | 0.0 | 6.5 | | 0.0 | 0.0 | 17.2 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.0 | 0.0 | | 0.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.7 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 8.6 | 8.6 | | 0.0 | 8.1 | 0.0 | | 11.7 | 0.0 | 5.6 | | 0.0 | 0.0 | 15.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 8.6 | 8.6 | | 0.0 | 8.1 | 0.0 | | 11.7 | 0.0 | 5.6 | | 0.0 | 0.0 | 15.3 | |
| DesignQueue: | 0 | 8 | 8 | | 0 | 6 | 0 | | 6 | 0 | 3 | | 0 | 0 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.718
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 180 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | | 16 | 16 | 0 | | 0 | 0 | 0 | | 29 | 45 | 28 | | 61 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | | 1 | 220 | 0 | | 0 | 0 | 0 | 828 | | 379 | 798 | 1527 | | 0 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 361 | | 1 | 251 | 0 | | 0 | 0 | 0 | 944 | | 432 | 910 | 1741 | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 33 | | 14 | 2 | 46 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 361 | | 1 | 251 | 0 | | 0 | 0 | 0 | 977 | | 446 | 912 | 1787 | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 361 | | 1 | 251 | 0 | | 0 | 0 | 0 | 977 | | 446 | 912 | 1787 | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 361 | | 1 | 251 | 0 | | 0 | 0 | 0 | 977 | | 446 | 912 | 1787 | | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 361 | | 1 | 251 | 0 | | 0 | 0 | 0 | 977 | | 446 | 912 | 1787 | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.95 | | 0.75 | 0.92 | 0.95 | | 1.00 |
| Lanes: | 1.58 | 0.01 | | 1.41 | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 2.00 | 2.00 | 2.00 | | 0.00 |
| Final Sat.: | 2584 | | 6 | 2291 | 0 | | 0 | 0 | 0 | 3610 | | 2842 | 3502 | 3610 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.19 | | 0.11 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.27 | | 0.16 | 0.26 | 0.49 | | 0.00 |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.19 | | 0.19 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.34 | | 0.34 | 0.42 | 0.76 | | 0.00 |
| Volume/Cap: | 0.74 | 1.00 | | 0.58 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.79 | | 0.46 | 0.61 | 0.65 | | 0.00 |
| Uniform Del: | 32.6 | 34.5 | | 31.5 | 0.0 | 0.0 | | 0.0 | 0.0 | 25.3 | | 21.9 | 19.1 | 4.7 | | 0.0 |
| IncremntDel: | 3.7 | 37.2 | | 0.8 | 0.0 | 0.0 | | 0.0 | 0.0 | 3.6 | | 0.3 | 0.8 | 0.5 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 |
| Delay/Veh: | 36.2 | 71.7 | | 32.3 | 0.0 | 0.0 | | 0.0 | 28.9 | 22.2 | | 19.9 | 5.2 | 0.0 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 36.2 | 71.7 | | 32.3 | 0.0 | 0.0 | | 0.0 | 28.9 | 22.2 | | 19.9 | 5.2 | 0.0 | | 0.0 |
| LOS by Move: | D | E | | C | A | A | | A | A | C | | C | B | A | | A |
| HCM2kAvgQ: | 7 | 14 | | 5 | 0 | 0 | | 0 | 0 | 14 | | 6 | 10 | 12 | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.991
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 52.3
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 78 | | 250 | 410 | 115 | | 41 | 51 | 538 | | 13 | 238 | 1506 | | 420 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 16 | 89 | | 285 | 467 | 131 | | 47 | 58 | 613 | | 15 | 271 | 1717 | | 479 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 48 | | 0 | 0 | 46 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 16 | 89 | | 285 | 467 | 131 | | 47 | 58 | 661 | | 15 | 271 | 1763 | | 479 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 16 | 89 | | 285 | 467 | 131 | | 47 | 58 | 661 | | 15 | 271 | 1763 | | 479 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 16 | 89 | | 285 | 467 | 131 | | 47 | 58 | 661 | | 15 | 271 | 1763 | | 479 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 16 | 89 | | 285 | 467 | 131 | | 47 | 58 | 661 | | 15 | 271 | 1763 | | 479 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.96 | | 0.96 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | | 0.85 |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.74 | | 0.26 | 1.00 | 1.96 | | 0.04 | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 70 | 390 | | 1249 | 3502 | 1346 | | 480 | 1805 | 3520 | | 79 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.23 | | 0.23 | 0.13 | 0.10 | | 0.10 | 0.03 | 0.19 | | 0.19 | 0.15 | 0.49 | | 0.30 |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | | 0.23 | 0.13 | 0.11 | | 0.11 | 0.05 | 0.30 | | 0.30 | 0.24 | 0.48 | | 0.48 |
| Volume/Cap: | 0.91 | 1.01 | | 1.01 | 1.01 | 0.91 | | 0.91 | 0.64 | 0.63 | | 0.63 | 0.63 | 1.01 | | 0.61 |
| Uniform Del: | 36.4 | 38.7 | | 38.7 | 43.4 | 44.2 | | 44.2 | 46.6 | 30.5 | | 30.5 | 34.3 | 25.9 | | 19.0 |
| IncremntDel: | 23.3 | 48.9 | | 48.9 | 44.9 | 40.3 | | 40.3 | 14.9 | 1.3 | | 1.3 | 3.1 | 24.5 | | 1.5 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 59.7 | 87.6 | | 87.6 | 88.3 | 84.5 | | 84.5 | 61.5 | 31.8 | | 31.8 | 37.4 | 50.4 | | 20.5 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 59.7 | 87.6 | | 87.6 | 88.3 | 84.5 | | 84.5 | 61.5 | 31.8 | | 31.8 | 37.4 | 50.4 | | 20.5 |
| LOS by Move: | E | F | | F | F | F | | F | E | C | | C | D | D | | C |
| HCM2kAvgQ: | 16 | 18 | | 18 | 12 | 9 | | 9 | 3 | 10 | | 10 | 8 | 37 | | 11 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.888
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 46.5
Optimal Cycle: 102 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 0 1 | 0 | 1 0 | 0 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 42 | 301 | 58 | 105 | 446 | 71 | 17 | 260 | 27 | 83 | 666 | 108 |
| Added Vol: | 1 | 87 | 24 | 6 | 27 | 1 | 15 | 18 | 0 | 2 | 36 | 9 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 43 | 388 | 82 | 111 | 473 | 72 | 32 | 278 | 27 | 85 | 702 | 117 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 43 | 388 | 82 | 111 | 473 | 72 | 32 | 278 | 27 | 85 | 702 | 117 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 43 | 388 | 82 | 111 | 473 | 72 | 32 | 278 | 27 | 85 | 702 | 117 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 43 | 388 | 82 | 111 | 473 | 72 | 32 | 278 | 27 | 85 | 702 | 117 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 | 0.95 | 0.99 | 0.99 | 0.95 | 0.98 | 0.98 |
| Lanes: | 0.17 | 1.51 | 0.32 | 0.34 | 1.44 | 0.22 | 1.00 | 0.91 | 0.09 | 1.00 | 0.86 | 0.14 |
| Final Sat.: | 295 | 2652 | 562 | 596 | 2542 | 385 | 1805 | 1707 | 168 | 1805 | 1594 | 266 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | 0.19 | 0.19 | 0.19 | 0.02 | 0.16 | 0.16 | 0.05 | 0.44 | 0.44 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.16 | 0.16 | 0.16 | 0.20 | 0.20 | 0.20 | 0.05 | 0.40 | 0.40 | 0.12 | 0.48 | 0.48 |
| Volume/Cap: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.36 | 0.40 | 0.40 | 0.38 | 0.92 | 0.92 |
| Uniform Del: | 41.4 | 41.4 | 41.4 | 39.1 | 39.1 | 39.1 | 45.9 | 21.2 | 21.2 | 40.2 | 24.3 | 24.3 |
| IncremntDel: | 20.5 | 20.5 | 20.5 | 17.1 | 17.1 | 17.1 | 2.4 | 0.4 | 0.4 | 1.1 | 14.4 | 14.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 62.0 | 62.0 | 62.0 | 56.2 | 56.2 | 56.2 | 48.3 | 21.5 | 21.5 | 41.3 | 38.7 | 38.7 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 62.0 | 62.0 | 62.0 | 56.2 | 56.2 | 56.2 | 48.3 | 21.5 | 21.5 | 41.3 | 38.7 | 38.7 |
| LOS by Move: | E | E | E | E | E | E | D | C | C | D | D | D |
| HCM2kAvgQ: | 12 | 12 | 12 | 14 | 14 | 14 | 1 | 7 | 7 | 3 | 28 | 28 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.738
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 59 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 51 | 2693 | 0 | 0 | 1179 | 35 | 117 | 0 | 7 | 0 | 0 | 0 |
| Added Vol: | 94 | 19 | 0 | 0 | 256 | 0 | 154 | 0 | 21 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 145 | 2712 | 0 | 0 | 1435 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 145 | 2712 | 0 | 0 | 1435 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 145 | 2712 | 0 | 0 | 1435 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 145 | 2712 | 0 | 0 | 1435 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.53 | 0.00 | 0.00 | 0.28 | 0.02 | 0.15 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | **** | | | | | |
| Green/Cycle: | 0.16 | 0.72 | 0.00 | 0.00 | 0.56 | 0.56 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.50 | 0.74 | 0.00 | 0.00 | 0.50 | 0.04 | 0.74 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 49.6 | 10.7 | 0.0 | 0.0 | 17.5 | 12.9 | 48.2 | 0.0 | 41.5 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 1.4 | 0.8 | 0.0 | 0.0 | 0.1 | 0.0 | 7.7 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 51.0 | 11.5 | 0.0 | 0.0 | 17.7 | 12.9 | 55.8 | 0.0 | 41.6 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 51.0 | 11.5 | 0.0 | 0.0 | 17.7 | 12.9 | 55.8 | 0.0 | 41.6 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | D | B | A | A | B | B | E | A | D | A | A | A |
| HCM2kAvgQ: | 6 | 24 | 0 | 0 | 13 | 1 | 12 | 0 | 1 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 50 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | 218 | 0 | 31 | 0 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 166 | 2360 | 0 | | 0 | 970 | 223 | 249 | 0 | 35 | 0 | | 0 | 0 | 0 | |
| Added Vol: | 94 | 109 | 0 | | 0 | 275 | 2 | 4 | 0 | 21 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 260 | 2469 | 0 | | 0 | 1245 | 225 | 253 | 0 | 56 | 0 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 260 | 2469 | 0 | | 0 | 1245 | 225 | 253 | 0 | 56 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 260 | 2469 | 0 | | 0 | 1245 | 225 | 253 | 0 | 56 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 260 | 2469 | 0 | | 0 | 1245 | 225 | 253 | 0 | 56 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.49 | 0.00 | | 0.00 | 0.24 | 0.14 | 0.14 | 0.00 | 0.04 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | **** | | | | | | | | |
| Green/Cycle: | 0.27 | 0.72 | 0.00 | | 0.00 | 0.45 | 0.45 | 0.21 | 0.00 | 0.21 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.55 | 0.68 | 0.00 | | 0.00 | 0.55 | 0.32 | 0.68 | 0.00 | 0.17 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 40.6 | 10.0 | 0.0 | | 0.0 | 26.1 | 23.0 | 47.2 | 0.0 | 41.9 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.3 | 0.5 | 0.0 | | 0.0 | 0.3 | 0.3 | 4.8 | 0.0 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 41.9 | 10.5 | 0.0 | | 0.0 | 26.4 | 23.2 | 52.0 | 0.0 | 42.2 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 41.9 | 10.5 | 0.0 | | 0.0 | 26.4 | 23.2 | 52.0 | 0.0 | 42.2 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | B | A | | A | C | C | D | A | D | A | | A | A | A | |
| HCM2kAvgQ: | 9 | 20 | 0 | | 0 | 13 | 6 | 10 | 0 | 2 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.731
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 25.7
Optimal Cycle: 40 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 561 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 529 | 417 | 0 | | 0 | 454 | 75 | | 95 | 0 | 640 | | 0 | 0 | 0 | |
| Added Vol: | 61 | 22 | 0 | | 0 | 47 | 2 | | 7 | 0 | 28 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 590 | 439 | 0 | | 0 | 501 | 77 | | 102 | 0 | 668 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 590 | 439 | 0 | | 0 | 501 | 77 | | 102 | 0 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 590 | 439 | 0 | | 0 | 501 | 77 | | 102 | 0 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 590 | 439 | 0 | | 0 | 501 | 77 | | 102 | 0 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | | 0.93 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1584 | 244 | | 1769 | 0 | 1900 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.24 | 0.00 | | 0.00 | 0.32 | 0.32 | | 0.06 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.46 | 0.89 | 0.00 | | 0.00 | 0.43 | 0.43 | | 0.08 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.73 | 0.27 | 0.00 | | 0.00 | 0.73 | 0.73 | | 0.73 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 26.6 | 1.0 | 0.0 | | 0.0 | 28.3 | 28.3 | | 54.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.5 | 0.1 | 0.0 | | 0.0 | 3.5 | 3.5 | | 17.9 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 30.1 | 1.1 | 0.0 | | 0.0 | 31.8 | 31.8 | | 72.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 30.1 | 1.1 | 0.0 | | 0.0 | 31.8 | 31.8 | | 72.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | C | C | | E | A | A | | A | A | A | |
| HCM2kAvgQ: | 19 | 3 | 0 | | 0 | 18 | 18 | | 5 | 0 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.540
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.7
Optimal Cycle: 24 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 65 | 710 | 56 | | 219 | 808 | 78 | | 3 | 3 | 3 | | 140 | 60 | 275 | |
| Added Vol: | 0 | 82 | 0 | | 1 | 74 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 65 | 792 | 56 | | 220 | 882 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 65 | 792 | 56 | | 220 | 882 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 65 | 792 | 56 | | 220 | 882 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 65 | 792 | 56 | | 220 | 882 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.47 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 896 | 861 | 861 | | 1020 | 440 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.22 | 0.04 | | 0.12 | 0.25 | 0.05 | | 0.00 | 0.00 | 0.00 | | 0.14 | 0.14 | 0.17 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.41 | 0.41 | | 0.23 | 0.56 | 0.56 | | 0.32 | 0.32 | 0.32 | | 0.32 | 0.32 | 0.32 | |
| Volume/Cap: | 0.44 | 0.54 | 0.09 | | 0.54 | 0.44 | 0.09 | | 0.01 | 0.01 | 0.01 | | 0.43 | 0.43 | 0.54 | |
| Uniform Del: | 52.4 | 26.5 | 21.3 | | 40.6 | 15.4 | 12.1 | | 27.7 | 27.7 | 27.7 | | 31.9 | 31.9 | 33.4 | |
| IncremntDel: | 2.1 | 0.4 | 0.1 | | 1.5 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.6 | 0.6 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.6 | 26.9 | 21.4 | | 42.1 | 15.5 | 12.2 | | 27.7 | 27.7 | 27.7 | | 32.6 | 32.6 | 34.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.6 | 26.9 | 21.4 | | 42.1 | 15.5 | 12.2 | | 27.7 | 27.7 | 27.7 | | 32.6 | 32.6 | 34.5 | |
| LOS by Move: | D | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 12 | 1 | | 8 | 10 | 1 | | 0 | 0 | 0 | | 6 | 6 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.696
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 32.7
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 131 | 358 | 9 | | 8 | 559 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Added Vol: | 0 | 111 | 0 | | 0 | 34 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 131 | 469 | 9 | | 8 | 593 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 131 | 469 | 9 | | 8 | 593 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 131 | 469 | 9 | | 8 | 593 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 131 | 469 | 9 | | 8 | 593 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.43 | 1.54 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 767 | 2743 | 53 | | 27 | 2000 | 1366 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.30 | 0.30 | 0.30 | | 0.05 | 0.09 | 0.09 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.43 | 0.43 | 0.43 | | 0.13 | 0.13 | 0.13 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.70 | 0.70 | 0.70 | | 0.70 | 0.70 | 0.70 | | 0.41 | 0.70 | 0.70 | | 0.70 | 0.70 | 0.70 | |
| Uniform Del: | 34.3 | 34.3 | 34.3 | | 23.5 | 23.5 | 23.5 | | 40.4 | 41.9 | 41.9 | | 43.9 | 43.9 | 43.9 | |
| IncremntDel: | 2.5 | 2.5 | 2.5 | | 1.5 | 1.5 | 1.5 | | 0.5 | 6.7 | 6.7 | | 11.5 | 11.5 | 11.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.8 | 36.8 | 36.8 | | 25.0 | 25.0 | 25.0 | | 40.9 | 48.6 | 48.6 | | 55.4 | 55.4 | 55.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.8 | 36.8 | 36.8 | | 25.0 | 25.0 | 25.0 | | 40.9 | 48.6 | 48.6 | | 55.4 | 55.4 | 55.4 | |
| LOS by Move: | D | D | D | | C | C | C | | D | D | D | | E | E | E | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 14 | 14 | 14 | | 3 | 6 | 6 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.593 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.5 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | 0 | 782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 0 | 2505 | 0 | 0 | 891 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 203 | 0 | 0 | 296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 2708 | 0 | 0 | 1187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 2708 | 0 | 0 | 1187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 2708 | 0 | 0 | 1187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 2708 | 0 | 0 | 1187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.52 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.59 | 0.00 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 0.0 | 1.5 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 1.7 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 1.7 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 0 | 8 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Cumulative 2025 PM |
| Command: | Long Term No Project I PM |
| Volume: | Long Term No Project I PM |
| Geometry: | Long Term No Project I PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term No Project I PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term No Project I PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 77.7 | 1.075 | E | 79.6 | 1.085 | + 1.883 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 19.2 | 0.929 | D | 44.9 | 1.096 | +25.633 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 23.8 | 0.931 | C | 29.9 | 0.972 | + 6.065 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 24.3 | 0.781 | C | 22.4 | 0.860 | -1.924 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 29.2 | 0.664 | C | 22.2 | 0.743 | -6.988 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 15.9 | 0.659 | B | 15.4 | 0.686 | -0.557 D/V |
| # 7 Middlefield at Marsh (Town of | D | 39.4 | 0.922 | D | 44.4 | 0.998 | + 5.015 D/V |
| # 8 Bayfront Exp. & Willow Rd. | E | 67.9 | 1.045 | F | 103.7 | 1.160 | +35.776 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.7 | 0.693 | C | 24.0 | 0.720 | + 0.345 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 12.8 | 0.619 | B | 13.9 | 0.655 | + 1.068 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 10.4 | 0.622 | B | 10.1 | 0.652 | -0.332 D/V |
| # 12 Newbridge St. & Willow Rd. | D | 36.8 | 0.838 | D | 41.1 | 0.937 | + 4.274 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 22.2 | 0.833 | C | 23.5 | 0.874 | + 1.272 D/V |
| # 14 Durham St. & Willow Rd. | E | 56.1 | 0.728 | B | 18.3 | 0.813 | -37.783 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 14.3 | 0.833 | B | 15.9 | 0.901 | + 1.604 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.1 | 0.745 | B | 13.9 | 0.839 | -0.183 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 153.6 | 1.404 | F | 205.7 | 1.505 | +52.106 D/V |
| # 18 Bayfront Exp. & University Ave | F | 211.8 | 1.460 | F | 235.7 | 1.531 | +23.859 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 14.3 | 0.760 | B | 14.7 | 0.774 | + 0.459 D/V |
| # 20 University & Kavanaugh | B | 17.7 | 0.732 | B | 17.7 | 0.739 | -0.032 D/V |
| # 21 University & Bay | D | 39.5 | 0.918 | D | 39.8 | 0.924 | + 0.289 D/V |
| # 22 University & Runnymede | C | 24.8 | 0.770 | C | 24.8 | 0.776 | + 0.005 D/V |
| # 23 University & Bell | A | 8.2 | 0.605 | A | 8.2 | 0.611 | -0.043 D/V |
| # 24 University & Donohoe | D | 43.4 | 0.962 | D | 44.9 | 0.972 | + 1.462 D/V |
| # 25 NB 101 & Donohoe St | B | 14.3 | 0.532 | B | 14.3 | 0.535 | + 0.060 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 33.4 | 0.580 | C | 34.2 | 0.592 | + 0.748 D/V |
| # 27 University Ave. & Woodland | E | 57.6 | 0.980 | E | 60.0 | 0.998 | + 2.427 D/V |
| # 28 Middlefield Rd. & University A | C | 33.8 | 0.613 | D | 35.1 | 0.666 | + 1.255 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | C | 20.8 | 0.777 | F | 102.7 | 1.180 | +81.881 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 15.0 | 0.666 | B | 19.6 | 0.770 | + 4.654 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 30.5 | 0.818 | C | 32.6 | 0.874 | + 2.127 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 29.6 | 0.689 | C | 30.0 | 0.708 | + 0.396 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 41.7 | 0.803 | D | 44.4 | 0.849 | + 2.653 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.5 | 0.576 | A | 1.6 | 0.618 | + 0.133 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 79.6
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1350 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2225 | | 35 | 83 | 13 | |
| Added Vol: | 759 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 25 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2109 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2250 | | 35 | 83 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2109 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2250 | | 35 | 83 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2109 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2250 | | 35 | 83 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2109 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2250 | | 35 | 83 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.41 | 0.03 | 0.03 | | 0.00 | 0.11 | 0.13 | | 0.11 | 0.11 | 0.81 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.38 | 0.38 | 0.38 | | 0.00 | 0.10 | 0.47 | | 0.37 | 0.37 | 0.74 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 1.08 | 0.09 | 0.09 | | 0.00 | 1.08 | 0.29 | | 0.31 | 0.31 | 1.08 | | 1.08 | 1.08 | 1.08 | |
| Uniform Del: | 43.6 | 28.1 | 28.1 | | 0.0 | 62.8 | 22.7 | | 31.6 | 31.6 | 17.9 | | 65.3 | 65.3 | 65.3 | |
| IncremntDel: | 47.6 | 0.1 | 0.1 | | 0.0 | 71.7 | 0.2 | | 0.3 | 0.3 | 47.1 | | 106.4 | 106 | 106.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 91.1 | 28.1 | 28.1 | | 0.0 | 135 | 22.9 | | 31.9 | 31.9 | 64.9 | | 171.7 | 172 | 171.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 91.1 | 28.1 | 28.1 | | 0.0 | 135 | 22.9 | | 31.9 | 31.9 | 64.9 | | 171.7 | 172 | 171.7 | |
| LOS by Move: | F | C | C | | A | F | C | | C | C | E | | F | F | F | |
| HCM2kAvgQ: | 42 | 2 | 2 | | 0 | 14 | 5 | | 6 | 6 | 70 | | 10 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.096
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 44.9
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 562 | 0 | 243 | | 0 | 0 | 0 | | 0 | 2352 | 578 | | 0 | 777 | 902 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 88 | 0 | | 0 | 609 | 150 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2440 | 578 | | 0 | 1386 | 1052 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2440 | 0 | | 0 | 1386 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2440 | 0 | | 0 | 1386 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2440 | 0 | | 0 | 1386 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3374 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.00 | 0.25 | | 0.00 | 0.00 | 0.00 | | 0.72 | 0.72 | 0.00 | | 0.00 | 0.39 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.00 | 0.23 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Volume/Cap: | 0.70 | 0.00 | 1.10 | | 0.00 | 0.00 | 0.00 | | 1.10 | 1.10 | 0.00 | | 0.00 | 0.59 | 0.00 | |
| Uniform Del: | 22.9 | 0.0 | 24.9 | | 0.0 | 0.0 | 0.0 | | 11.1 | 11.1 | 0.0 | | 0.0 | 6.2 | 0.0 | |
| IncremntDel: | 2.9 | 0.0 | 75.1 | | 0.0 | 0.0 | 0.0 | | 50.8 | 50.8 | 0.0 | | 0.0 | 0.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 25.8 | 0.0 | 100.1 | | 0.0 | 0.0 | 0.0 | | 61.9 | 61.9 | 0.0 | | 0.0 | 6.6 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 25.8 | 0.0 | 100.1 | | 0.0 | 0.0 | 0.0 | | 61.9 | 61.9 | 0.0 | | 0.0 | 6.6 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | E | E | A | | A | A | A | |
| HCM2kAvgQ: | 7 | 0 | 17 | | 0 | 0 | 0 | | 45 | 45 | 0 | | 0 | 9 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.972
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 29.9
Optimal Cycle: 119 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1545 | 0 | 516 | | 0 | 1346 | 742 | | 0 | 1072 | 321 | |
| Added Vol: | 0 | 0 | 0 | | 50 | 0 | 17 | | 0 | 77 | 0 | | 0 | 249 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1595 | 0 | 533 | | 0 | 1423 | 742 | | 0 | 1321 | 321 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1595 | 0 | 533 | | 0 | 1423 | 0 | | 0 | 1321 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1595 | 0 | 533 | | 0 | 1423 | 0 | | 0 | 1321 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1595 | 0 | 533 | | 0 | 1423 | 0 | | 0 | 1321 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.46 | 0.00 | 0.34 | | 0.00 | 0.40 | 0.00 | | 0.00 | 0.37 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.48 | 0.00 | 0.48 | | 0.00 | 0.41 | 0.00 | | 0.00 | 0.41 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.97 | 0.00 | 0.70 | | 0.00 | 0.97 | 0.00 | | 0.00 | 0.90 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 16.5 | 0.0 | 13.3 | | 0.0 | 18.7 | 0.0 | | 0.0 | 17.8 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 16.0 | 0.0 | 3.0 | | 0.0 | 17.2 | 0.0 | | 0.0 | 8.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 32.5 | 0.0 | 16.4 | | 0.0 | 35.8 | 0.0 | | 0.0 | 25.8 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 32.5 | 0.0 | 16.4 | | 0.0 | 35.8 | 0.0 | | 0.0 | 25.8 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | B | | A | D | A | | A | C | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 23 | 0 | 10 | | 0 | 22 | 0 | | 0 | 17 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.860
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 64 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | | 254 | 9 | 2 | | 42 | 1314 | 17 | | 78 | 1109 | 214 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1498 | 19 | | 89 | 1264 | 244 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 79 | 0 | | 0 | 266 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1577 | 19 | | 89 | 1530 | 244 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1577 | 19 | | 89 | 1530 | 244 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1577 | 19 | | 89 | 1530 | 244 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1577 | 19 | | 89 | 1530 | 244 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.65 | 0.35 | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | 2.96 | 0.04 | | 2.00 | 1.72 | 0.28 | |
| Final Sat.: | 1174 | 629 | 2786 | | 1716 | 61 | 1583 | | 1769 | 5012 | 62 | | 3432 | 2987 | 476 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.03 | 0.11 | | 0.17 | 0.17 | 0.00 | | 0.03 | 0.31 | 0.31 | | 0.03 | 0.51 | 0.51 | |
| Crit Moves: | | | **** | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.19 | 0.19 | 0.19 | | 0.05 | 0.55 | 0.55 | | 0.09 | 0.58 | 0.58 | |
| Volume/Cap: | 0.22 | 0.22 | 0.88 | | 0.88 | 0.88 | 0.01 | | 0.54 | 0.58 | 0.58 | | 0.30 | 0.88 | 0.88 | |
| Uniform Del: | 31.5 | 31.5 | 34.4 | | 31.4 | 31.4 | 26.1 | | 37.1 | 12.0 | 12.0 | | 34.2 | 14.2 | 14.2 | |
| IncremntDel: | 0.5 | 0.5 | 21.6 | | 21.9 | 21.9 | 0.0 | | 6.7 | 0.3 | 0.3 | | 0.6 | 4.8 | 4.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.0 | 32.0 | 56.0 | | 53.3 | 53.3 | 26.1 | | 43.8 | 12.3 | 12.3 | | 34.8 | 19.0 | 19.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.0 | 32.0 | 56.0 | | 53.3 | 53.3 | 26.1 | | 43.8 | 12.3 | 12.3 | | 34.8 | 19.0 | 19.0 | |
| LOS by Move: | C | C | E | | D | D | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 1 | 1 | 7 | | 11 | 11 | 0 | | 2 | 10 | 10 | | 1 | 23 | 23 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.743
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: 39 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | | 428 | 30 | 128 | | 239 | 885 | 55 | | 26 | 833 | 316 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1009 | 63 | | 30 | 950 | 360 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 79 | 0 | | 0 | 266 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1088 | 63 | | 30 | 1216 | 360 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1088 | 63 | | 30 | 1216 | 360 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1088 | 63 | | 30 | 1216 | 360 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1088 | 63 | | 30 | 1216 | 360 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.88 | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.36 | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 598 | 1084 | | 3323 | 233 | 1583 | | 1769 | 3318 | 191 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.15 | 0.15 | 0.09 | | 0.15 | 0.33 | 0.33 | | 0.02 | 0.34 | 0.23 | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.08 | 0.08 | 0.08 | | 0.20 | 0.20 | 0.20 | | 0.21 | 0.58 | 0.58 | | 0.09 | 0.46 | 0.46 | |
| Volume/Cap: | 0.74 | 0.74 | 0.74 | | 0.74 | 0.74 | 0.47 | | 0.74 | 0.56 | 0.56 | | 0.19 | 0.74 | 0.49 | |
| Uniform Del: | 35.9 | 35.9 | 35.9 | | 30.2 | 30.2 | 28.4 | | 29.7 | 10.4 | 10.4 | | 33.8 | 17.6 | 15.0 | |
| IncremntDel: | 18.5 | 19.0 | 19.0 | | 4.3 | 4.3 | 1.1 | | 8.0 | 0.4 | 0.4 | | 0.6 | 1.9 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.3 | 54.9 | 54.9 | | 34.5 | 34.5 | 29.5 | | 37.7 | 10.8 | 10.8 | | 34.4 | 19.5 | 15.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.3 | 54.9 | 54.9 | | 34.5 | 34.5 | 29.5 | | 37.7 | 10.8 | 10.8 | | 34.4 | 19.5 | 15.5 | |
| LOS by Move: | D | D | D | | C | C | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 8 | 8 | 4 | | 8 | 10 | 10 | | 1 | 14 | 7 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.4
Optimal Cycle: 33 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 65 | 9 | 205 | | 63 | 35 | 3 | | 6 | 934 | 103 | | 228 | 1016 | 54 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 79 | 2 | | 0 | 266 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1013 | 105 | | 228 | 1282 | 54 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1013 | 105 | | 228 | 1282 | 54 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1013 | 105 | | 228 | 1282 | 54 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1013 | 105 | | 228 | 1282 | 54 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.65 | 0.65 | 0.65 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.80 | 0.19 | | 1.00 | 1.92 | 0.08 | |
| Final Sat.: | 365 | 50 | 1119 | | 768 | 433 | 42 | | 17 | 2985 | 308 | | 1769 | 3375 | 141 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.08 | 0.08 | 0.08 | | 0.34 | 0.34 | 0.34 | | 0.13 | 0.38 | 0.38 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | | 0.50 | 0.50 | 0.50 | | 0.19 | 0.68 | 0.68 | |
| Volume/Cap: | 0.69 | 0.69 | 0.69 | | 0.31 | 0.31 | 0.31 | | 0.68 | 0.68 | 0.68 | | 0.68 | 0.56 | 0.56 | |
| Uniform Del: | 26.4 | 26.4 | 26.4 | | 23.5 | 23.5 | 23.5 | | 15.4 | 15.4 | 15.4 | | 30.2 | 6.4 | 6.4 | |
| IncremntDel: | 4.9 | 4.9 | 4.9 | | 0.5 | 0.5 | 0.5 | | 1.2 | 1.2 | 1.2 | | 5.8 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 31.3 | 31.3 | 31.3 | | 24.0 | 24.0 | 24.0 | | 16.6 | 16.6 | 16.6 | | 36.0 | 6.7 | 6.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.3 | 31.3 | 31.3 | | 24.0 | 24.0 | 24.0 | | 16.6 | 16.6 | 16.6 | | 36.0 | 6.7 | 6.7 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | D | A | A | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 2 | 2 | 2 | | 12 | 12 | 12 | | 7 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.998
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 44.4
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 486 | 625 | | 465 | 307 | 0 | | 0 | 0 | 0 | | 587 | 0 | 510 | |
| Added Vol: | 0 | 26 | 68 | | 13 | 7 | 0 | | 0 | 0 | 0 | | 86 | 0 | 183 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 512 | 693 | | 478 | 314 | 0 | | 0 | 0 | 0 | | 673 | 0 | 693 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 512 | 693 | | 478 | 314 | 0 | | 0 | 0 | 0 | | 673 | 0 | 693 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 512 | 693 | | 478 | 314 | 0 | | 0 | 0 | 0 | | 673 | 0 | 693 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 512 | 693 | | 478 | 314 | 0 | | 0 | 0 | 0 | | 673 | 0 | 693 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.27 | 0.43 | | 0.26 | 0.17 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.43 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.27 | 0.64 | | 0.27 | 0.54 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.64 | |
| Volume/Cap: | 0.00 | 1.00 | 0.67 | | 1.00 | 0.31 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 0.67 | |
| Uniform Del: | 0.0 | 40.1 | 12.2 | | 40.4 | 14.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.4 | 0.0 | 12.5 | |
| IncremntDel: | 0.0 | 39.1 | 1.7 | | 40.5 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.1 | 0.0 | 1.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 79.3 | 13.9 | | 80.9 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 68.5 | 0.0 | 14.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 79.3 | 13.9 | | 80.9 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 68.5 | 0.0 | 14.3 | |
| LOS by Move: | A | E | B | | F | B | A | | A | A | A | | E | A | B | |
| HCM2kAvgQ: | 0 | 24 | 15 | | 22 | 6 | 0 | | 0 | 0 | 0 | | 30 | 0 | 15 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.160
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 103.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | 8 | | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | | | | |
| Initial Bse: | 413 | 757 | 1 | | 0 | 2507 | 123 | | 41 | 15 | 1623 | | 50 | 120 | 9 | | | | | |
| Added Vol: | 163 | 145 | 1 | | 19 | 171 | 0 | | 0 | 37 | 40 | | 122 | 150 | 69 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 576 | 902 | 2 | | 19 | 2678 | 123 | | 41 | 52 | 1663 | | 172 | 270 | 78 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 576 | 902 | 2 | | 19 | 2678 | 123 | | 41 | 52 | 1663 | | 172 | 270 | 78 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 576 | 902 | 2 | | 19 | 2678 | 123 | | 41 | 52 | 1663 | | 172 | 270 | 78 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 576 | 902 | 2 | | 19 | 2678 | 123 | | 41 | 52 | 1663 | | 172 | 270 | 78 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.91 | 0.91 | 0.88 | | 0.93 | 0.93 | 0.83 | | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.33 | 1.67 | 2.00 | | 1.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 2294 | 2896 | 3343 | | 1769 | 3538 | 1583 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.15 | 0.00 | | 0.01 | 0.46 | 0.08 | | 0.02 | 0.02 | 0.50 | | 0.10 | 0.08 | 0.05 | | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | | | | | |
| Green/Cycle: | 0.14 | 0.43 | 0.52 | | 0.11 | 0.39 | 0.39 | | 0.28 | 0.28 | 0.43 | | 0.08 | 0.08 | 0.19 | | | | | |
| Volume/Cap: | 1.16 | 0.36 | 0.00 | | 0.05 | 1.16 | 0.20 | | 0.06 | 0.06 | 1.16 | | 1.16 | 0.91 | 0.26 | | | | | |
| Uniform Del: | 55.6 | 24.8 | 15.3 | | 52.0 | 39.3 | 25.8 | | 33.9 | 33.9 | 37.1 | | 59.5 | 59.1 | 44.7 | | | | | |
| IncremntDel: | 92.5 | 0.1 | 0.0 | | 0.1 | 77.3 | 0.2 | | 0.0 | 0.0 | 80.2 | | 123.4 | 29.9 | 0.5 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 148.1 | 24.9 | 15.3 | | 52.1 | 117 | 26.0 | | 33.9 | 33.9 | 117.3 | | 182.9 | 88.9 | 45.1 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 148.1 | 24.9 | 15.3 | | 52.1 | 117 | 26.0 | | 33.9 | 33.9 | 117.3 | | 182.9 | 88.9 | 45.1 | | | | | |
| LOS by Move: | F | C | B | | D | F | C | | C | C | F | | F | F | D | | | | | |
| HCM2kAvgQ: | 20 | 9 | 0 | | 0 | 58 | 3 | | 1 | 1 | 56 | | 13 | 8 | 3 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.720
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 24.0
Optimal Cycle: 62 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | | 73 | 5 | 73 | | 130 | 1351 | 5 | | 20 | 553 | 67 | | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | | | | |
| Initial Bse: | 147 | 7 | 56 | | 83 | 6 | 83 | | 148 | 1540 | 6 | | 23 | 630 | 76 | | | | | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 7 | | 11 | 77 | 0 | | 0 | 312 | 1 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1617 | 6 | | 23 | 942 | 77 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1617 | 6 | | 23 | 942 | 77 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1617 | 6 | | 23 | 942 | 77 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1617 | 6 | | 23 | 942 | 77 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.61 | 0.61 | 0.61 | | 0.73 | 0.73 | 0.73 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | 0.92 | | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | | 0.46 | 0.03 | 0.51 | | 1.00 | 1.99 | 0.01 | | 1.00 | 1.85 | 0.15 | | | | | |
| Final Sat.: | 807 | 38 | 306 | | 643 | 44 | 697 | | 1769 | 3522 | 12 | | 1769 | 3233 | 265 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.13 | 0.13 | 0.13 | | 0.09 | 0.46 | 0.46 | | 0.01 | 0.29 | 0.29 | | | | | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.25 | 0.25 | 0.25 | | 0.16 | 0.62 | 0.62 | | 0.04 | 0.51 | 0.51 | | | | | |
| Volume/Cap: | 0.74 | 0.74 | 0.74 | | 0.53 | 0.53 | 0.53 | | 0.58 | 0.74 | 0.74 | | 0.31 | 0.58 | 0.58 | | | | | |
| Uniform Del: | 41.7 | 41.7 | 41.7 | | 39.1 | 39.1 | 39.1 | | 46.9 | 16.0 | 16.0 | | 55.8 | 20.7 | 20.7 | | | | | |
| IncremntDel: | 9.9 | 9.9 | 9.9 | | 1.5 | 1.5 | 1.5 | | 3.0 | 1.4 | 1.4 | | 2.4 | 0.5 | 0.5 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 51.6 | 51.6 | 51.6 | | 40.7 | 40.7 | 40.7 | | 49.9 | 17.4 | 17.4 | | 58.2 | 21.2 | 21.2 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 51.6 | 51.6 | 51.6 | | 40.7 | 40.7 | 40.7 | | 49.9 | 17.4 | 17.4 | | 58.2 | 21.2 | 21.2 | | | | | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | E | C | C | | | | | |
| HCM2kAvgQ: | 9 | 9 | 9 | | 6 | 6 | 6 | | 6 | 23 | 23 | | 1 | 14 | 14 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.655
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 13.9
Optimal Cycle: 53 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 11 | 0 | 139 | | 112 | 1661 | 0 | | 0 | 912 | 25 | |
| Added Vol: | 0 | 0 | 0 | | 6 | 0 | 10 | | 10 | 82 | 0 | | 0 | 279 | 41 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 17 | 0 | 149 | | 122 | 1743 | 0 | | 0 | 1191 | 66 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 17 | 0 | 149 | | 122 | 1743 | 0 | | 0 | 1191 | 66 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 17 | 0 | 149 | | 122 | 1743 | 0 | | 0 | 1191 | 66 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 17 | 0 | 149 | | 122 | 1743 | 0 | | 0 | 1191 | 66 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | 0.86 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.92 | 0.92 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.10 | 0.00 | 0.90 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.89 | 0.11 | |
| Final Sat.: | 0 | 0 | 0 | | 170 | 0 | 1458 | | 1769 | 3538 | 0 | | 0 | 3325 | 184 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.10 | 0.00 | 0.10 | | 0.07 | 0.49 | 0.00 | | 0.00 | 0.36 | 0.36 | |
| Crit Moves: | | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.16 | 0.00 | 0.16 | | 0.12 | 0.75 | 0.00 | | 0.00 | 0.63 | 0.63 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.65 | 0.00 | 0.65 | | 0.57 | 0.65 | 0.00 | | 0.00 | 0.57 | 0.57 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 47.6 | 0.0 | 47.6 | | 49.8 | 7.3 | 0.0 | | 0.0 | 12.7 | 12.7 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 6.1 | 0.0 | 6.1 | | 3.6 | 0.6 | 0.0 | | 0.0 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 53.6 | 0.0 | 53.6 | | 53.3 | 7.9 | 0.0 | | 0.0 | 13.1 | 13.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 53.6 | 0.0 | 53.6 | | 53.3 | 7.9 | 0.0 | | 0.0 | 13.1 | 13.1 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 7 | 0 | 7 | | 5 | 17 | 0 | | 0 | 14 | 14 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.652
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 52 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 137 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1611 | 233 | | 83 | 1012 | 0 | |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 92 | 11 | | 0 | 289 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1703 | 244 | | 83 | 1301 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1703 | 244 | | 83 | 1301 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1703 | 244 | | 83 | 1301 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1703 | 244 | | 83 | 1301 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2841 | 0 | 627 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.48 | 0.15 | | 0.05 | 0.37 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | | **** | | **** | | | |
| Green/Cycle: | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.74 | 0.74 | | 0.07 | 0.81 | 0.00 | |
| Volume/Cap: | 0.51 | 0.00 | 0.65 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.65 | 0.21 | | 0.65 | 0.45 | 0.00 | |
| Uniform Del: | 51.4 | 0.0 | 52.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.9 | 4.8 | | 54.2 | 3.4 | 0.0 | |
| IncremntDel: | 1.2 | 0.0 | 5.4 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.6 | 0.1 | | 11.4 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 52.6 | 0.0 | 57.6 | | 0.0 | 0.0 | 0.0 | | 0.0 | 8.5 | 4.9 | | 65.6 | 3.5 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.6 | 0.0 | 57.6 | | 0.0 | 0.0 | 0.0 | | 0.0 | 8.5 | 4.9 | | 65.6 | 3.5 | 0.0 | |
| LOS by Move: | D | A | E | | A | A | A | | A | A | A | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 5 | | 0 | 0 | 0 | | 0 | 17 | 3 | | 4 | 8 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.937
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 41.1
Optimal Cycle: 148 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 283 | 194 | 63 | | 43 | 189 | 250 | | 368 | 1637 | 386 | | 116 | 1112 | 39 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 7 | 103 | 0 | | 0 | 293 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1740 | 386 | | 116 | 1405 | 39 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1740 | 386 | | 116 | 1405 | 39 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1740 | 386 | | 116 | 1405 | 39 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1740 | 386 | | 116 | 1405 | 39 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.45 | 0.55 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4047 | 899 | | 1769 | 3429 | 95 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.16 | | 0.21 | 0.43 | 0.43 | | 0.07 | 0.41 | 0.41 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.20 | | 0.11 | 0.11 | 0.33 | | 0.23 | 0.58 | 0.58 | | 0.09 | 0.44 | 0.44 | |
| Volume/Cap: | 0.74 | 0.94 | 0.20 | | 0.23 | 0.94 | 0.49 | | 0.94 | 0.75 | 0.75 | | 0.75 | 0.94 | 0.94 | |
| Uniform Del: | 51.7 | 52.9 | 40.1 | | 48.9 | 53.1 | 31.7 | | 45.6 | 18.9 | 18.9 | | 53.4 | 32.2 | 32.2 | |
| IncremntDel: | 7.6 | 44.9 | 0.3 | | 0.6 | 45.6 | 0.7 | | 29.4 | 1.1 | 1.1 | | 17.9 | 11.2 | 11.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 59.3 | 97.8 | 40.4 | | 49.5 | 98.7 | 32.4 | | 75.0 | 20.1 | 20.1 | | 71.3 | 43.3 | 43.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 59.3 | 97.8 | 40.4 | | 49.5 | 98.7 | 32.4 | | 75.0 | 20.1 | 20.1 | | 71.3 | 43.3 | 43.3 | |
| LOS by Move: | E | F | D | | D | F | C | | E | C | C | | E | D | D | |
| HCM2kAvgQ: | 7 | 11 | 2 | | 2 | 10 | 8 | | 18 | 22 | 22 | | 6 | 31 | 31 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 23.5
Optimal Cycle: 92 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 474 | 0 | 62 | | 46 | 1637 | 0 | | 0 | 1210 | 291 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 120 | 0 | | 0 | 133 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1757 | 0 | | 0 | 1343 | 298 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1757 | 0 | | 0 | 1343 | 298 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1757 | 0 | | 0 | 1343 | 298 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1757 | 0 | | 0 | 1343 | 298 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.27 | 0.00 | 0.04 | | 0.03 | 0.50 | 0.00 | | 0.00 | 0.38 | 0.19 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.31 | 0.00 | 0.31 | | 0.07 | 0.57 | 0.00 | | 0.00 | 0.50 | 0.50 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.87 | 0.00 | 0.13 | | 0.36 | 0.87 | 0.00 | | 0.00 | 0.77 | 0.38 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 29.4 | 0.0 | 22.3 | | 39.7 | 16.7 | 0.0 | | 0.0 | 18.4 | 14.1 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 14.5 | 0.0 | 0.1 | | 1.7 | 4.6 | 0.0 | | 0.0 | 2.1 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 43.9 | 0.0 | 22.4 | | 41.4 | 21.2 | 0.0 | | 0.0 | 20.5 | 14.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 43.9 | 0.0 | 22.4 | | 41.4 | 21.2 | 0.0 | | 0.0 | 20.5 | 14.4 | |
| LOS by Move: | A | A | A | | D | A | C | | D | C | A | | A | C | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 16 | 0 | 1 | | 2 | 25 | 0 | | 0 | 17 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 0 | 1 | 0 | 0 1 | 1 | 0 | 1 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | 122 | 5 | 31 | 11 | 1125 | 10 | 90 | 818 | 51 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 38 | 8 | 97 | 139 | 6 | 35 | 13 | 1283 | 11 | 103 | 933 | 58 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 133 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 38 | 8 | 97 | 139 | 6 | 35 | 13 | 1403 | 11 | 103 | 1066 | 58 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 38 | 8 | 97 | 139 | 6 | 35 | 13 | 1403 | 11 | 103 | 1066 | 58 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 38 | 8 | 97 | 139 | 6 | 35 | 13 | 1403 | 11 | 103 | 1066 | 58 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 38 | 8 | 97 | 139 | 6 | 35 | 13 | 1403 | 11 | 103 | 1066 | 58 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.46 | 0.84 | 0.84 | 0.53 | 0.53 | 0.83 | 0.93 | 0.93 | 0.93 | 0.93 | 0.97 | 0.97 | | | | |
| Lanes: | 1.00 | 0.08 | 0.92 | 0.96 | 0.04 | 1.00 | 1.00 | 1.98 | 0.02 | 1.00 | 0.95 | 0.05 | | | | |
| Final Sat.: | 866 | 122 | 1481 | 968 | 40 | 1583 | 1769 | 3506 | 28 | 1769 | 1752 | 96 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.07 | 0.07 | 0.14 | 0.14 | 0.02 | 0.01 | 0.40 | 0.40 | 0.06 | 0.61 | 0.61 | | | | |
| Crit Moves: | | | | | **** | | **** | | | | **** | | | | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.04 | 0.67 | 0.67 | 0.10 | 0.72 | 0.72 | | | | |
| Volume/Cap: | 0.25 | 0.38 | 0.38 | 0.84 | 0.84 | 0.13 | 0.19 | 0.60 | 0.60 | 0.60 | 0.84 | 0.84 | | | | |
| Uniform Del: | 37.7 | 38.6 | 38.6 | 42.1 | 42.1 | 36.9 | 48.9 | 9.8 | 9.8 | 45.5 | 10.2 | 10.2 | | | | |
| IncremntDel: | 0.9 | 0.9 | 0.9 | 29.1 | 29.1 | 0.2 | 1.3 | 0.4 | 0.4 | 5.9 | 4.9 | 4.9 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 38.6 | 39.5 | 39.5 | 71.2 | 71.2 | 37.1 | 50.3 | 10.2 | 10.2 | 51.4 | 15.1 | 15.1 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 38.6 | 39.5 | 39.5 | 71.2 | 71.2 | 37.1 | 50.3 | 10.2 | 10.2 | 51.4 | 15.1 | 15.1 | | | | |
| LOS by Move: | D | D | D | E | E | D | D | B | B | D | B | B | | | | |
| HCM2kAvgQ: | 1 | 3 | 3 | 7 | 7 | 1 | 1 | 14 | 14 | 4 | 28 | 28 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.901
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.9
Optimal Cycle: 99 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | 92 | 6 | 35 | 24 | 1083 | 6 | 5 | 795 | 109 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 14 | 13 | 8 | 105 | 7 | 40 | 27 | 1235 | 7 | 6 | 906 | 124 | | | | |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 133 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 14 | 13 | 8 | 105 | 7 | 40 | 27 | 1355 | 7 | 6 | 1039 | 124 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 14 | 13 | 8 | 105 | 7 | 40 | 27 | 1355 | 7 | 6 | 1039 | 124 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 14 | 13 | 8 | 105 | 7 | 40 | 27 | 1355 | 7 | 6 | 1039 | 124 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 14 | 13 | 8 | 105 | 7 | 40 | 27 | 1355 | 7 | 6 | 1039 | 124 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.86 | 0.86 | 0.86 | 0.73 | 0.73 | 0.73 | 0.16 | 0.98 | 0.98 | 0.07 | 0.96 | 0.96 | | | | |
| Lanes: | 0.40 | 0.37 | 0.23 | 0.69 | 0.05 | 0.26 | 1.00 | 0.99 | 0.01 | 1.00 | 0.89 | 0.11 | | | | |
| Final Sat.: | 650 | 596 | 379 | 965 | 63 | 367 | 298 | 1851 | 9 | 130 | 1637 | 196 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | 0.11 | 0.11 | 0.11 | 0.09 | 0.73 | 0.73 | 0.04 | 0.64 | 0.64 | | | | |
| Crit Moves: | | | | | **** | | | **** | | | | | | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | | | | |
| Volume/Cap: | 0.17 | 0.17 | 0.17 | 0.90 | 0.90 | 0.90 | 0.11 | 0.90 | 0.90 | 0.05 | 0.78 | 0.78 | | | | |
| Uniform Del: | 41.5 | 41.5 | 41.5 | 45.5 | 45.5 | 45.5 | 2.0 | 6.9 | 6.9 | 1.9 | 5.1 | 5.1 | | | | |
| IncremntDel: | 0.4 | 0.4 | 0.4 | 42.0 | 42.0 | 42.0 | 0.2 | 7.7 | 7.7 | 0.2 | 2.8 | 2.8 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 41.9 | 41.9 | 41.9 | 87.6 | 87.6 | 87.6 | 2.2 | 14.6 | 14.6 | 2.1 | 7.8 | 7.8 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 41.9 | 41.9 | 41.9 | 87.6 | 87.6 | 87.6 | 2.2 | 14.6 | 14.6 | 2.1 | 7.8 | 7.8 | | | | |
| LOS by Move: | D | D | D | F | F | F | A | B | B | A | A | A | | | | |
| HCM2kAvgQ: | 1 | 1 | 1 | 8 | 8 | 8 | 0 | 34 | 34 | 0 | 21 | 21 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.839
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 13.9
Optimal Cycle: 73 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 105 | 35 | 85 | | 33 | 34 | 5 | | 5 | 1105 | 41 | | 42 | 948 | 19 | |
| Added Vol: | 18 | 0 | 6 | | 0 | 0 | 0 | | 0 | 114 | 22 | | 15 | 118 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 35 | 91 | | 33 | 34 | 5 | | 5 | 1219 | 63 | | 57 | 1066 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 35 | 91 | | 33 | 34 | 5 | | 5 | 1219 | 63 | | 57 | 1066 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 35 | 91 | | 33 | 34 | 5 | | 5 | 1219 | 63 | | 57 | 1066 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 35 | 92 | | 33 | 34 | 5 | | 5 | 1219 | 63 | | 57 | 1066 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.87 | 0.87 | | 0.44 | 0.96 | 0.96 | | 0.20 | 0.97 | 0.97 | | 0.12 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.28 | 0.72 | | 1.00 | 0.88 | 0.12 | | 1.00 | 0.95 | 0.05 | | 1.00 | 0.98 | 0.02 | |
| Final Sat.: | 1370 | 463 | 1198 | | 845 | 1613 | 215 | | 372 | 1758 | 91 | | 223 | 1823 | 33 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.08 | 0.08 | | 0.04 | 0.02 | 0.02 | | 0.01 | 0.69 | 0.69 | | 0.26 | 0.58 | 0.58 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.83 | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 | |
| Volume/Cap: | 0.84 | 0.71 | 0.71 | | 0.37 | 0.20 | 0.20 | | 0.01 | 0.84 | 0.84 | | 0.31 | 0.71 | 0.71 | |
| Uniform Del: | 46.0 | 45.3 | 45.3 | | 43.6 | 42.8 | 42.8 | | 1.6 | 5.2 | 5.2 | | 2.1 | 3.8 | 3.8 | |
| IncremntDel: | 32.7 | 12.9 | 12.9 | | 2.5 | 0.5 | 0.5 | | 0.0 | 4.3 | 4.3 | | 1.0 | 1.5 | 1.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 78.7 | 58.2 | 58.2 | | 46.1 | 43.3 | 43.3 | | 1.6 | 9.4 | 9.4 | | 3.1 | 5.4 | 5.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 78.7 | 58.2 | 58.2 | | 46.1 | 43.3 | 43.3 | | 1.6 | 9.4 | 9.4 | | 3.1 | 5.4 | 5.4 | |
| LOS by Move: | E | E | E | | D | D | D | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 5 | 5 | | 1 | 1 | 1 | | 0 | 26 | 26 | | 1 | 16 | 16 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.505
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 205.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 2 | 0 | 1 | 1 | 1 0 | 1 | 0 | 1 | 0 1 | 0 | 1 | 1 | 1 0 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 111 | 499 | 560 | | 544 | 471 | 22 | | 41 | 194 | 180 | | 435 | 108 | 467 | |
| Added Vol: | 15 | 8 | 27 | | 77 | 8 | 0 | | 0 | 32 | 24 | | 68 | 21 | 46 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 126 | 507 | 587 | | 621 | 479 | 22 | | 41 | 226 | 204 | | 503 | 129 | 513 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 126 | 507 | 587 | | 621 | 479 | 22 | | 41 | 226 | 204 | | 503 | 129 | 513 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 126 | 507 | 587 | | 621 | 479 | 22 | | 41 | 226 | 204 | | 503 | 129 | 513 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 126 | 507 | 587 | | 621 | 479 | 22 | | 41 | 226 | 204 | | 503 | 129 | 513 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.66 | 1.28 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.59 | 0.41 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2850 | 2198 | 99 | | 1769 | 1862 | 1583 | | 2850 | 732 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.14 | 0.74 | | 0.22 | 0.22 | 0.22 | | 0.02 | 0.12 | 0.13 | | 0.18 | 0.18 | 0.32 | |
| Crit Moves: | | | **** | | | | **** | | | | **** | | | | **** | |
| Green/Cycle: | 0.49 | 0.49 | 0.49 | | 0.14 | 0.14 | 0.14 | | 0.09 | 0.09 | 0.09 | | 0.22 | 0.22 | 0.22 | |
| Volume/Cap: | 0.14 | 0.29 | 1.51 | | 1.51 | 1.51 | 1.51 | | 0.27 | 1.42 | 1.51 | | 0.82 | 0.82 | 1.51 | |
| Uniform Del: | 18.0 | 19.5 | 33.0 | | 55.6 | 55.6 | 55.6 | | 55.6 | 59.4 | 59.4 | | 48.6 | 48.6 | 51.0 | |
| IncremntDel: | 0.1 | 0.1 | 240.4 | | 234.3 | 234 | 234.3 | | 1.0 | 220 | 261.7 | | 6.9 | 6.9 | 242.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 18.1 | 19.6 | 273.3 | | 289.9 | 290 | 289.9 | | 56.6 | 279 | 321.1 | | 55.5 | 55.5 | 293.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 18.1 | 19.6 | 273.3 | | 289.9 | 290 | 289.9 | | 56.6 | 279 | 321.1 | | 55.5 | 55.5 | 293.1 | |
| LOS by Move: | B | B | F | | F | F | F | | E | F | F | | E | E | F | |
| HCM2kAvgQ: | 3 | 6 | 48 | | 33 | 33 | 33 | | 2 | 19 | 18 | | 14 | 14 | 43 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.531
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 235.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 430 | 1104 | 0 | 0 | 3976 | 145 | 68 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Added Vol: | 9 | 100 | 0 | 0 | 296 | 38 | 5 | 0 | 26 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 439 | 1204 | 0 | 0 | 4272 | 183 | 73 | 0 | 1926 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 439 | 1204 | 0 | 0 | 4272 | 183 | 73 | 0 | 1926 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 439 | 1204 | 0 | 0 | 4272 | 183 | 73 | 0 | 1926 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 439 | 1204 | 0 | 0 | 4272 | 183 | 73 | 0 | 1926 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.24 | 0.00 | 0.00 | 0.84 | 0.12 | 0.02 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.08 | 0.63 | 0.00 | 0.00 | 0.55 | 0.55 | 0.30 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.53 | 0.37 | 0.00 | 0.00 | 1.53 | 0.21 | 0.07 | 0.00 | 1.53 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 68.7 | 13.3 | 0.0 | 0.0 | 33.8 | 17.3 | 37.4 | 0.0 | 52.4 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 256.1 | 0.1 | 0.0 | 0.0 | 241 | 0.1 | 0.0 | 0.0 | 243.2 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 324.8 | 13.4 | 0.0 | 0.0 | 275 | 17.4 | 37.5 | 0.0 | 295.6 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 324.8 | 13.4 | 0.0 | 0.0 | 275 | 17.4 | 37.5 | 0.0 | 295.6 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 22 | 9 | 0 | 0 | 136 | 4 | 1 | 0 | 65 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.7
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 0 | 0 | 0 | 137 | 0 | 113 | 23 | 1823 | 0 | 0 | 518 | 18 | | | | |
| Added Vol: | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 20 | 0 | 0 | 42 | 4 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1843 | 0 | 0 | 560 | 22 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1843 | 0 | 0 | 560 | 22 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1843 | 0 | 0 | 560 | 22 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1843 | 0 | 0 | 560 | 22 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.57 | 0.00 | 0.43 | 1.00 | 2.00 | 0.00 | 0.00 | 1.92 | 0.08 | | | | |
| Final Sat.: | 0 | 0 | 0 | 967 | 0 | 738 | 1769 | 3538 | 0 | 0 | 3382 | 134 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.15 | 0.01 | 0.52 | 0.00 | 0.00 | 0.17 | 0.17 | | | | |
| Crit Moves: | | | | | | **** | | **** | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.20 | 0.18 | 0.67 | 0.00 | 0.00 | 0.50 | 0.50 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.77 | 0.00 | 0.77 | 0.07 | 0.77 | 0.00 | 0.00 | 0.33 | 0.33 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 32.3 | 0.0 | 32.3 | 29.2 | 9.5 | 0.0 | 0.0 | 12.9 | 12.9 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 10.7 | 0.0 | 10.7 | 0.1 | 1.6 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 43.0 | 0.0 | 43.0 | 29.3 | 11.1 | 0.0 | 0.0 | 13.0 | 13.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 43.0 | 0.0 | 43.0 | 29.3 | 11.1 | 0.0 | 0.0 | 13.0 | 13.0 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | B | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 9 | 0 | 9 | 1 | 19 | 0 | 0 | 5 | 5 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.739
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 17.7
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1800 | 22 | | 21 | 601 | 15 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 20 | 0 | | 0 | 42 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1820 | 22 | | 21 | 643 | 15 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1820 | 22 | | 21 | 643 | 15 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1820 | 22 | | 21 | 643 | 15 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1820 | 22 | | 21 | 643 | 15 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.96 | 0.96 | 0.96 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.45 | 0.40 | 0.15 | | 0.15 | 0.22 | 0.63 | | 1.00 | 1.98 | 0.02 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 816 | 723 | 280 | | 252 | 385 | 1089 | | 1805 | 3560 | 42 | | 1805 | 3518 | 81 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.09 | 0.09 | 0.09 | | 0.02 | 0.51 | 0.51 | | 0.01 | 0.18 | 0.18 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.06 | 0.06 | 0.06 | | 0.11 | 0.11 | 0.11 | | 0.15 | 0.66 | 0.66 | | 0.05 | 0.56 | 0.56 | |
| Volume/Cap: | 0.76 | 0.77 | 0.77 | | 0.77 | 0.78 | 0.78 | | 0.11 | 0.77 | 0.77 | | 0.23 | 0.33 | 0.33 | |
| Uniform Del: | 46.0 | 46.1 | 46.1 | | 43.2 | 43.3 | 43.3 | | 36.4 | 11.5 | 11.5 | | 45.6 | 11.8 | 11.8 | |
| IncremntDel: | 24.4 | 26.3 | 26.3 | | 17.0 | 17.8 | 17.8 | | 0.2 | 1.6 | 1.6 | | 1.3 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 70.4 | 72.4 | 72.4 | | 60.2 | 61.1 | 61.1 | | 36.6 | 13.1 | 13.1 | | 46.9 | 11.9 | 11.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 70.4 | 72.4 | 72.4 | | 60.2 | 61.1 | 61.1 | | 36.6 | 13.1 | 13.1 | | 46.9 | 11.9 | 11.9 | |
| LOS by Move: | E | E | E | | E | E | E | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 6 | 6 | 6 | | 1 | 22 | 22 | | 1 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.924
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.8
Optimal Cycle: 121 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1472 | 99 | | 136 | 616 | 56 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 20 | 0 | | 0 | 42 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1492 | 99 | | 136 | 658 | 56 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1492 | 99 | | 136 | 658 | 56 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1492 | 99 | | 136 | 658 | 56 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1492 | 99 | | 136 | 658 | 56 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.98 | 0.98 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.84 | 0.16 | |
| Final Sat.: | 1862 | 1862 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3354 | 223 | | 1805 | 3287 | 279 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.13 | 0.24 | | 0.06 | 0.16 | 0.08 | | 0.06 | 0.44 | 0.44 | | 0.08 | 0.20 | 0.20 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | | 0.06 | 0.21 | 0.21 | | 0.13 | 0.48 | 0.48 | | 0.08 | 0.43 | 0.43 | |
| Volume/Cap: | 0.76 | 0.51 | 0.92 | | 0.92 | 0.76 | 0.38 | | 0.46 | 0.92 | 0.92 | | 0.92 | 0.46 | 0.46 | |
| Uniform Del: | 42.6 | 31.3 | 35.9 | | 46.5 | 37.3 | 34.1 | | 40.4 | 24.2 | 24.2 | | 45.6 | 20.0 | 20.0 | |
| IncremntDel: | 6.1 | 0.5 | 25.9 | | 60.3 | 8.4 | 0.7 | | 1.5 | 8.9 | 8.9 | | 52.1 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.6 | 31.9 | 61.7 | | 106.8 | 45.7 | 34.8 | | 41.9 | 33.2 | 33.2 | | 97.7 | 20.2 | 20.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.6 | 31.9 | 61.7 | | 106.8 | 45.7 | 34.8 | | 41.9 | 33.2 | 33.2 | | 97.7 | 20.2 | 20.2 | |
| LOS by Move: | D | C | E | | F | D | C | | D | C | C | | F | C | C | |
| HCM2kAvgQ: | 7 | 7 | 16 | | 6 | 10 | 4 | | 4 | 29 | 29 | | 7 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 24.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | 17 | 76 | 27 | 29 | 1264 | 78 | 44 | 793 | 17 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 89 | 124 | 67 | 19 | 87 | 31 | 33 | 1441 | 89 | 50 | 904 | 19 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 42 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 89 | 124 | 67 | 19 | 87 | 31 | 33 | 1461 | 89 | 50 | 946 | 19 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 89 | 124 | 67 | 19 | 87 | 31 | 33 | 1461 | 89 | 50 | 946 | 19 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 89 | 124 | 67 | 19 | 87 | 31 | 33 | 1461 | 89 | 50 | 946 | 19 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 89 | 124 | 67 | 19 | 87 | 31 | 33 | 1461 | 89 | 50 | 946 | 19 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.95 | 0.96 | 0.96 | 0.96 | 0.95 | 0.94 | 0.94 | 0.95 | 0.95 | 0.95 |
| Lanes: | 0.32 | 0.44 | 0.24 | 0.14 | 0.63 | 0.23 | 1.00 | 1.89 | 0.11 | 1.00 | 1.96 | 0.04 |
| Final Sat.: | 574 | 802 | 434 | 259 | 1159 | 412 | 1805 | 3372 | 205 | 1805 | 3527 | 72 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | 0.07 | 0.07 | 0.07 | 0.02 | 0.43 | 0.43 | 0.03 | 0.27 | 0.27 |
| Crit Moves: | **** | | | | **** | | | **** | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | 0.09 | 0.09 | 0.09 | 0.09 | 0.55 | 0.55 | 0.05 | 0.50 | 0.50 |
| Volume/Cap: | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.19 | 0.79 | 0.79 | 0.56 | 0.53 | 0.53 |
| Uniform Del: | 38.2 | 38.2 | 38.2 | 44.3 | 44.3 | 44.3 | 41.8 | 17.9 | 17.9 | 46.4 | 16.8 | 16.8 |
| IncremntDel: | 11.3 | 11.3 | 11.3 | 21.1 | 21.1 | 21.1 | 0.6 | 2.2 | 2.2 | 7.4 | 0.3 | 0.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 49.5 | 49.5 | 49.5 | 65.4 | 65.4 | 65.4 | 42.4 | 20.2 | 20.2 | 53.9 | 17.1 | 17.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 49.5 | 49.5 | 49.5 | 65.4 | 65.4 | 65.4 | 42.4 | 20.2 | 20.2 | 53.9 | 17.1 | 17.1 |
| LOS by Move: | D | D | D | E | E | E | D | C | C | D | B | B |
| HCM2kAvgQ: | 10 | 10 | 10 | 6 | 6 | 6 | 1 | 21 | 21 | 2 | 11 | 11 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.611
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | 11 | 68 | 22 | 42 | 1322 | 87 | 37 | 787 | 22 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 68 | 95 | 43 | 13 | 78 | 25 | 48 | 1507 | 99 | 42 | 897 | 25 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 42 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 68 | 95 | 43 | 13 | 78 | 25 | 48 | 1527 | 99 | 42 | 939 | 25 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 68 | 95 | 43 | 13 | 78 | 25 | 48 | 1527 | 99 | 42 | 939 | 25 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 68 | 95 | 43 | 13 | 78 | 25 | 48 | 1527 | 99 | 42 | 939 | 25 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 68 | 95 | 43 | 13 | 78 | 25 | 48 | 1527 | 99 | 42 | 939 | 25 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.84 | 0.84 | 0.84 | 0.94 | 0.94 | 0.94 | 0.27 | 0.94 | 0.94 | 0.11 | 0.95 | 0.95 |
| Lanes: | 0.33 | 0.46 | 0.21 | 0.11 | 0.67 | 0.22 | 1.00 | 1.88 | 0.12 | 1.00 | 1.95 | 0.05 |
| Final Sat.: | 528 | 731 | 335 | 195 | 1205 | 390 | 507 | 3359 | 218 | 207 | 3502 | 94 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.13 | 0.13 | 0.06 | 0.06 | 0.06 | 0.09 | 0.45 | 0.45 | 0.20 | 0.27 | 0.27 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 | 0.74 |
| Volume/Cap: | 0.61 | 0.61 | 0.61 | 0.30 | 0.30 | 0.30 | 0.13 | 0.61 | 0.61 | 0.27 | 0.36 | 0.36 |
| Uniform Del: | 32.1 | 32.1 | 32.1 | 29.9 | 29.9 | 29.9 | 3.3 | 5.4 | 5.4 | 3.7 | 4.0 | 4.0 |
| IncremntDel: | 3.3 | 3.3 | 3.3 | 0.5 | 0.5 | 0.5 | 0.2 | 0.4 | 0.4 | 1.0 | 0.1 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 35.4 | 35.4 | 35.4 | 30.3 | 30.3 | 30.3 | 3.4 | 5.8 | 5.8 | 4.7 | 4.1 | 4.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.4 | 35.4 | 35.4 | 30.3 | 30.3 | 30.3 | 3.4 | 5.8 | 5.8 | 4.7 | 4.1 | 4.1 |
| LOS by Move: | D | D | D | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 6 | 6 | 6 | 3 | 3 | 3 | 0 | 12 | 12 | 1 | 5 | 5 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.972
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 44.9
Optimal Cycle: 159 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | | 32 | 175 | 224 | | 217 | 784 | 540 | | 115 | 663 | 173 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 359 | 553 | 683 | | 36 | 199 | 255 | | 247 | 894 | 616 | | 131 | 756 | 197 | |
| Added Vol: | 8 | 0 | 3 | | 0 | 0 | 0 | | 0 | 17 | 0 | | 0 | 42 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 367 | 553 | 686 | | 36 | 199 | 255 | | 247 | 911 | 616 | | 131 | 798 | 197 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 367 | 553 | 686 | | 36 | 199 | 255 | | 247 | 911 | 616 | | 131 | 798 | 197 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 367 | 553 | 686 | | 36 | 199 | 255 | | 247 | 911 | 616 | | 131 | 798 | 197 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 367 | 553 | 686 | | 36 | 200 | 255 | | 247 | 911 | 616 | | 131 | 798 | 197 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.88 | 0.88 | 0.88 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.89 | 0.89 | | 0.92 | 0.92 | 0.92 | |
| Lanes: | 1.00 | 1.34 | 1.66 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.19 | 0.81 | | 2.00 | 1.60 | 0.40 | |
| Final Sat.: | 1671 | 2237 | 2775 | | 1805 | 1900 | 1615 | | 1805 | 2025 | 1369 | | 3502 | 2808 | 694 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.25 | 0.25 | | 0.02 | 0.11 | 0.16 | | 0.14 | 0.45 | 0.45 | | 0.04 | 0.28 | 0.28 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.22 | 0.32 | 0.32 | | 0.06 | 0.16 | 0.16 | | 0.16 | 0.46 | 0.46 | | 0.05 | 0.34 | 0.34 | |
| Volume/Cap: | 0.99 | 0.77 | 0.77 | | 0.31 | 0.65 | 0.99 | | 0.83 | 0.99 | 0.99 | | 0.75 | 0.83 | 0.83 | |
| Uniform Del: | 38.7 | 30.8 | 30.8 | | 44.7 | 39.4 | 41.9 | | 40.4 | 26.8 | 26.8 | | 46.9 | 30.3 | 30.3 | |
| IncremntDel: | 18.8 | 1.9 | 1.9 | | 1.5 | 5.1 | 51.6 | | 17.7 | 19.4 | 19.4 | | 16.3 | 5.1 | 5.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 57.5 | 32.7 | 32.7 | | 46.2 | 44.4 | 93.5 | | 58.1 | 46.2 | 46.2 | | 63.2 | 35.4 | 35.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 57.5 | 32.7 | 32.7 | | 46.2 | 44.4 | 93.5 | | 58.1 | 46.2 | 46.2 | | 63.2 | 35.4 | 35.4 | |
| LOS by Move: | E | C | C | | D | D | F | | E | D | D | | E | D | D | |
| HCM2kAvgQ: | 17 | 14 | 14 | | 1 | 7 | 12 | | 10 | 31 | 31 | | 4 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.535
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.3
Optimal Cycle: 82 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 32 | 32 | | 0 | 32 | 0 | | 28 | 0 | 28 | | 0 | 0 | 18 | |
| Lanes: | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | | 0 | 783 | 0 | | 765 | 0 | 277 | | 0 | 0 | 16 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 914 | 22 | | 0 | 893 | 0 | | 872 | 0 | 316 | | 0 | 0 | 18 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 10 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 914 | 22 | | 0 | 893 | 0 | | 882 | 0 | 316 | | 0 | 0 | 18 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 914 | 22 | | 0 | 893 | 0 | | 882 | 0 | 316 | | 0 | 0 | 18 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 914 | 22 | | 0 | 893 | 0 | | 882 | 0 | 316 | | 0 | 0 | 18 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 1006 | 24 | | 0 | 937 | 0 | | 909 | 0 | 316 | | 0 | 0 | 18 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.93 | 0.07 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5568 | 132 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.18 | 0.18 | | 0.00 | 0.25 | 0.00 | | 0.25 | 0.00 | 0.20 | | 0.00 | 0.00 | 0.01 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.37 | 0.37 | | 0.00 | 0.37 | 0.00 | | 0.38 | 0.00 | 0.58 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.48 | 0.48 | | 0.00 | 0.66 | 0.00 | | 0.66 | 0.00 | 0.34 | | 0.00 | 0.00 | 0.06 | |
| Uniform Del: | 0.0 | 16.4 | 16.4 | | 0.0 | 17.8 | 0.0 | | 17.5 | 0.0 | 7.4 | | 0.0 | 0.0 | 22.2 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.8 | 0.0 | | 0.8 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 14.0 | 14.0 | | 0.0 | 15.9 | 0.0 | | 15.7 | 0.0 | 6.4 | | 0.0 | 0.0 | 18.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 14.0 | 14.0 | | 0.0 | 15.9 | 0.0 | | 15.7 | 0.0 | 6.4 | | 0.0 | 0.0 | 18.8 | |
| DesignQueue: | 0 | 11 | 11 | | 0 | 16 | 0 | | 15 | 0 | 7 | | 0 | 0 | 1 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.592
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 34.2
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 0 | 0 | 0 | | 0 | 39 | 57 | | 21 | 64 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | 1 | 439 | | 0 | 0 | 0 | | 0 | 1391 | 388 | | 487 | 927 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 348 | 1 | 500 | | 0 | 0 | 0 | | 0 | 1586 | 442 | | 555 | 1057 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 17 | 40 | | 21 | 42 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 348 | 1 | 500 | | 0 | 0 | 0 | | 0 | 1603 | 482 | | 576 | 1099 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 348 | 1 | 500 | | 0 | 0 | 0 | | 0 | 1603 | 482 | | 576 | 1099 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 348 | 1 | 500 | | 0 | 0 | 0 | | 0 | 1603 | 482 | | 576 | 1099 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 348 | 1 | 500 | | 0 | 0 | 0 | | 0 | 1603 | 482 | | 576 | 1099 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | | 0.92 | 0.95 | 1.00 | |
| Lanes: | 1.41 | 0.01 | 1.58 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | | 2.00 | 2.00 | 0.00 | |
| Final Sat.: | 2292 | 4 | 2585 | | 0 | 0 | 0 | | 0 | 3610 | 2842 | | 3502 | 3610 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.26 | 0.19 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.44 | 0.17 | | 0.16 | 0.30 | 0.00 | |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.43 | 0.43 | | 0.32 | 0.76 | 0.00 | |
| Volume/Cap: | 0.76 | 1.31 | 0.97 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.02 | 0.39 | | 0.51 | 0.40 | 0.00 | |
| Uniform Del: | 33.9 | 36.0 | 35.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 25.5 | 17.4 | | 24.7 | 3.9 | 0.0 | |
| IncremntDel: | 3.1 | 149 | 22.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 29.2 | 0.2 | | 0.4 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 37.0 | 185 | 58.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 54.7 | 17.6 | | 25.1 | 4.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.0 | 185 | 58.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 54.7 | 17.6 | | 25.1 | 4.0 | 0.0 | |
| LOS by Move: | D | F | E | | A | A | A | | A | D | B | | C | A | A | |
| HCM2kAvgQ: | 8 | 26 | 13 | | 0 | 0 | 0 | | 0 | 33 | 5 | | 7 | 6 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.998
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 60.0
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | 87 | 274 | | 612 | 119 | 34 | | 28 | 809 | 9 | | 274 | 800 | 327 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 18 | 99 | 312 | | 698 | 136 | 39 | | 32 | 922 | 10 | | 312 | 912 | 373 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 57 | 0 | | 0 | 42 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 18 | 99 | 312 | | 698 | 136 | 39 | | 32 | 979 | 10 | | 312 | 954 | 373 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 18 | 99 | 312 | | 698 | 136 | 39 | | 32 | 979 | 10 | | 312 | 954 | 373 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 18 | 99 | 312 | | 698 | 136 | 39 | | 32 | 979 | 10 | | 312 | 954 | 373 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 18 | 99 | 312 | | 698 | 136 | 39 | | 32 | 979 | 10 | | 312 | 954 | 373 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.90 | 0.90 | | 0.92 | 0.97 | 0.97 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.85 | |
| Lanes: | 0.04 | 0.23 | 0.73 | | 2.00 | 0.78 | 0.22 | | 1.00 | 1.98 | 0.02 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 73 | 395 | 1243 | | 3502 | 1429 | 408 | | 1805 | 3569 | 37 | | 1805 | 3610 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.25 | 0.25 | 0.25 | | 0.20 | 0.09 | 0.09 | | 0.02 | 0.27 | 0.27 | | 0.17 | 0.26 | 0.23 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.33 | 0.25 | 0.25 | | 0.20 | 0.12 | 0.12 | | 0.07 | 0.28 | 0.28 | | 0.17 | 0.38 | 0.38 | |
| Volume/Cap: | 0.77 | 1.00 | 1.00 | | 1.00 | 0.77 | 0.77 | | 0.27 | 1.00 | 1.00 | | 1.00 | 0.69 | 0.60 | |
| Uniform Del: | 33.2 | 41.1 | 41.1 | | 44.0 | 46.7 | 46.7 | | 48.9 | 39.8 | 39.8 | | 45.4 | 28.5 | 27.3 | |
| IncremntDel: | 6.3 | 42.7 | 42.7 | | 33.4 | 14.5 | 14.5 | | 1.2 | 28.0 | 28.0 | | 50.2 | 1.5 | 1.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.5 | 83.8 | 83.8 | | 77.4 | 61.1 | 61.1 | | 50.1 | 67.8 | 67.8 | | 95.6 | 30.0 | 28.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.5 | 83.8 | 83.8 | | 77.4 | 61.1 | 61.1 | | 50.1 | 67.8 | 67.8 | | 95.6 | 30.0 | 28.9 | |
| LOS by Move: | D | F | F | | E | E | E | | D | E | E | | F | C | C | |
| HCM2kAvgQ: | 15 | 20 | 20 | | 18 | 8 | 8 | | 1 | 24 | 24 | | 16 | 15 | 11 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.666
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 35.1
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 34 | 430 | 98 | 93 | 438 | 87 | 67 | 374 | 26 | 81 | 504 | 100 |
| Added Vol: | 0 | 36 | 2 | 16 | 75 | 9 | 1 | 39 | 1 | 14 | 15 | 12 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 34 | 466 | 100 | 109 | 513 | 96 | 68 | 413 | 27 | 95 | 519 | 112 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 34 | 466 | 100 | 109 | 513 | 96 | 68 | 413 | 27 | 95 | 519 | 112 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 34 | 466 | 100 | 109 | 513 | 96 | 68 | 413 | 27 | 95 | 519 | 112 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 34 | 466 | 100 | 109 | 513 | 96 | 68 | 413 | 27 | 95 | 519 | 112 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.94 | 0.94 | 0.95 | 0.92 | 0.92 |
| Lanes: | 0.11 | 1.56 | 0.33 | 0.30 | 1.43 | 0.27 | 1.00 | 1.88 | 0.12 | 1.00 | 1.64 | 0.36 |
| Final Sat.: | 200 | 2724 | 585 | 535 | 2507 | 468 | 1805 | 3356 | 221 | 1805 | 2887 | 625 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | 0.20 | 0.20 | 0.20 | 0.04 | 0.12 | 0.12 | 0.05 | 0.18 | 0.18 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | 0.31 | 0.31 | 0.31 | 0.06 | 0.23 | 0.23 | 0.10 | 0.27 | 0.27 |
| Volume/Cap: | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 | 0.54 | 0.54 | 0.54 | 0.67 | 0.67 |
| Uniform Del: | 33.3 | 33.3 | 33.3 | 30.2 | 30.2 | 30.2 | 46.2 | 33.9 | 33.9 | 43.0 | 32.5 | 32.5 |
| IncremntDel: | 1.9 | 1.9 | 1.9 | 1.6 | 1.6 | 1.6 | 15.5 | 0.7 | 0.7 | 3.3 | 1.8 | 1.8 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 35.2 | 35.2 | 35.2 | 31.8 | 31.8 | 31.8 | 61.7 | 34.6 | 34.6 | 46.2 | 34.3 | 34.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.2 | 35.2 | 35.2 | 31.8 | 31.8 | 31.8 | 61.7 | 34.6 | 34.6 | 46.2 | 34.3 | 34.3 |
| LOS by Move: | D | D | D | C | C | C | E | C | C | D | C | C |
| HCM2kAvgQ: | 10 | 10 | 10 | 11 | 11 | 11 | 3 | 7 | 7 | 4 | 10 | 10 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.180
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 102.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 11 | 1062 | 0 | 0 | 2548 | 18 | 381 | 0 | 87 | 0 | 0 | 0 |
| Added Vol: | 38 | 141 | 0 | 0 | 25 | 0 | 618 | 0 | 86 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 49 | 1203 | 0 | 0 | 2573 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 49 | 1203 | 0 | 0 | 2573 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 49 | 1203 | 0 | 0 | 2573 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 49 | 1203 | 0 | 0 | 2573 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.24 | 0.00 | 0.00 | 0.51 | 0.01 | 0.56 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | **** | | | | | |
| Green/Cycle: | 0.04 | 0.46 | 0.00 | 0.00 | 0.42 | 0.42 | 0.47 | 0.00 | 0.47 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.73 | 0.51 | 0.00 | 0.00 | 1.20 | 0.03 | 1.20 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 61.8 | 24.8 | 0.0 | 0.0 | 37.6 | 22.0 | 34.4 | 0.0 | 20.5 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 32.1 | 0.2 | 0.0 | 0.0 | 94.8 | 0.0 | 101.5 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 93.9 | 25.0 | 0.0 | 0.0 | 132 | 22.0 | 135.9 | 0.0 | 20.6 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 93.9 | 25.0 | 0.0 | 0.0 | 132 | 22.0 | 135.9 | 0.0 | 20.6 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | F | C | A | A | F | C | F | A | C | A | A | A |
| HCM2kAvgQ: | 3 | 12 | 0 | 0 | 58 | 0 | 62 | 0 | 4 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.770
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 16 | 893 | 0 | | 0 | 2424 | 182 | 217 | 0 | 212 | 0 | 0 | 0 | | | |
| Added Vol: | 38 | 177 | 0 | | 0 | 105 | 5 | 2 | 0 | 86 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 54 | 1070 | 0 | | 0 | 2529 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 54 | 1070 | 0 | | 0 | 2529 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 54 | 1070 | 0 | | 0 | 2529 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 54 | 1070 | 0 | | 0 | 2529 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.21 | 0.00 | | 0.00 | 0.50 | 0.12 | 0.12 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.04 | 0.69 | 0.00 | | 0.00 | 0.65 | 0.65 | 0.24 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.77 | 0.31 | 0.00 | | 0.00 | 0.77 | 0.18 | 0.51 | 0.00 | 0.77 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 61.8 | 8.1 | 0.0 | | 0.0 | 16.2 | 9.2 | 42.3 | 0.0 | 45.7 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 39.5 | 0.1 | 0.0 | | 0.0 | 1.2 | 0.1 | 1.0 | 0.0 | 9.1 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 101.4 | 8.2 | 0.0 | | 0.0 | 17.3 | 9.3 | 43.3 | 0.0 | 54.8 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 101.4 | 8.2 | 0.0 | | 0.0 | 17.3 | 9.3 | 43.3 | 0.0 | 54.8 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | F | A | A | | A | B | A | D | A | D | A | A | A | | | |
| HCM2kAvgQ: | 4 | 6 | 0 | | 0 | 27 | 3 | 8 | 0 | 13 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 32.6
Optimal Cycle: 75 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 555 | 645 | 0 | | 0 | 407 | 105 | 293 | 0 | 804 | 0 | 0 | 0 | | | |
| Added Vol: | 26 | 27 | 0 | | 0 | 17 | 6 | 3 | 0 | 66 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 581 | 672 | 0 | | 0 | 424 | 111 | 296 | 0 | 870 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 581 | 672 | 0 | | 0 | 424 | 111 | 296 | 0 | 870 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 581 | 672 | 0 | | 0 | 424 | 111 | 296 | 0 | 870 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 581 | 672 | 0 | | 0 | 424 | 111 | 296 | 0 | 870 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1435 | 375 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.36 | 0.00 | | 0.00 | 0.30 | 0.30 | 0.17 | 0.00 | 0.55 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.38 | 0.71 | 0.00 | | 0.00 | 0.34 | 0.34 | 0.25 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.87 | 0.51 | 0.00 | | 0.00 | 0.87 | 0.87 | 0.66 | 0.00 | 0.87 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 34.8 | 7.7 | 0.0 | | 0.0 | 37.3 | 37.3 | 40.2 | 0.0 | 18.4 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 12.3 | 0.3 | 0.0 | | 0.0 | 13.2 | 13.2 | 3.7 | 0.0 | 8.7 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 47.1 | 8.0 | 0.0 | | 0.0 | 50.5 | 50.5 | 43.9 | 0.0 | 27.1 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 47.1 | 8.0 | 0.0 | | 0.0 | 50.5 | 50.5 | 43.9 | 0.0 | 27.1 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | D | D | D | A | C | A | A | A | | | |
| HCM2kAvgQ: | 23 | 11 | 0 | | 0 | 21 | 21 | 11 | 0 | 29 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.708
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 30.0
Optimal Cycle: 37 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 0 | 2 0 | 1 | | 1 0 | 2 0 | 1 | | 1 0 | 0 1 | 0 | | 0 1 | 0 0 | 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 56 | 868 | 145 | | 406 | 716 | 41 | | 85 | 87 | 71 | | 83 | 9 | 303 | |
| Added Vol: | 0 | 48 | 0 | | 2 | 81 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 56 | 916 | 145 | | 408 | 797 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 56 | 916 | 145 | | 408 | 797 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 56 | 916 | 145 | | 408 | 797 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 56 | 916 | 145 | | 408 | 797 | 41 | | 86 | 87 | 71 | | 83 | 9 | 308 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.61 | 0.91 | 0.91 | | 0.60 | 0.60 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1164 | 957 | 781 | | 1029 | 113 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.26 | 0.09 | | 0.23 | 0.23 | 0.03 | | 0.07 | 0.09 | 0.09 | | 0.08 | 0.08 | 0.19 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.09 | 0.37 | 0.37 | | 0.33 | 0.60 | 0.60 | | 0.28 | 0.28 | 0.28 | | 0.28 | 0.28 | 0.28 | |
| Volume/Cap: | 0.35 | 0.71 | 0.25 | | 0.71 | 0.37 | 0.04 | | 0.27 | 0.33 | 0.33 | | 0.29 | 0.29 | 0.71 | |
| Uniform Del: | 51.4 | 32.6 | 26.6 | | 35.4 | 12.2 | 9.7 | | 34.0 | 34.7 | 34.7 | | 34.3 | 34.3 | 39.1 | |
| IncremntDel: | 1.4 | 1.8 | 0.2 | | 4.0 | 0.1 | 0.0 | | 0.4 | 0.4 | 0.4 | | 0.5 | 0.5 | 5.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.8 | 34.4 | 26.8 | | 39.5 | 12.4 | 9.8 | | 34.5 | 35.1 | 35.1 | | 34.8 | 34.8 | 44.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.8 | 34.4 | 26.8 | | 39.5 | 12.4 | 9.8 | | 34.5 | 35.1 | 35.1 | | 34.8 | 34.8 | 44.4 | |
| LOS by Move: | D | C | C | | D | B | A | | C | D | D | | C | C | D | |
| HCM2kAvgQ: | 2 | 16 | 4 | | 14 | 8 | 1 | | 3 | 5 | 5 | | 3 | 3 | 11 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.849
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 44.4
Optimal Cycle: 91 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 1 | 0 1 | 0 | | 0 1 | 0 1 | 0 | | 1 0 | 1! 0 | 0 | | 0 0 | 1! 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 101 | 521 | 27 | | 27 | 579 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Added Vol: | 0 | 50 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 101 | 571 | 27 | | 27 | 679 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 101 | 571 | 27 | | 27 | 679 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 101 | 571 | 27 | | 27 | 679 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 101 | 571 | 27 | | 27 | 679 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.52 | 0.42 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 517 | 2907 | 139 | | 107 | 2657 | 727 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.20 | 0.20 | | 0.26 | 0.26 | 0.26 | | 0.18 | 0.27 | 0.27 | | 0.05 | 0.05 | 0.05 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | **** | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.30 | 0.30 | 0.30 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.85 | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 | | 0.56 | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 | |
| Uniform Del: | 40.4 | 40.4 | 40.4 | | 36.1 | 36.1 | 36.1 | | 31.4 | 35.3 | 35.3 | | 51.6 | 51.6 | 51.6 | |
| IncremntDel: | 8.3 | 8.3 | 8.3 | | 6.7 | 6.7 | 6.7 | | 0.6 | 8.1 | 8.1 | | 46.1 | 46.1 | 46.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.8 | 48.8 | 48.8 | | 42.8 | 42.8 | 42.8 | | 32.0 | 43.4 | 43.4 | | 97.7 | 97.7 | 97.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.8 | 48.8 | 48.8 | | 42.8 | 42.8 | 42.8 | | 32.0 | 43.4 | 43.4 | | 97.7 | 97.7 | 97.7 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 15 | 15 | 15 | | 18 | 18 | 18 | | 9 | 18 | 18 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.618 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.6 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 0 | 807 | 0 | 0 | 2630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Added Vol: | 0 | 214 | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 1021 | 0 | 0 | 2821 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 1021 | 0 | 0 | 2821 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 1021 | 0 | 0 | 2821 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 1021 | 0 | 0 | 2821 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.20 | 0.00 | 0.00 | 0.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.00 | 0.22 | 0.00 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 0.0 | 0.9 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 0.0 | 0.9 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.9 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | | | | |
| HCM2kAvgQ: | 0 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Cumulative 2025 East Campus Only AM |
| Command: | Long Term Project I AM |
| Volume: | Long Term Project I AM |
| Geometry: | Long Term Project I AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project I AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project I AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 25.2 | 0.842 | C | 26.3 | 0.882 | + 1.101 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.9 | 0.700 | E | 55.2 | 1.115 | +38.251 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 26.5 | 0.944 | C | 32.9 | 0.987 | + 6.398 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | D | 41.1 | 0.901 | D | 35.8 | 0.934 | -5.295 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 20.8 | 0.620 | B | 15.6 | 0.649 | -5.200 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 17.4 | 0.644 | B | 17.9 | 0.735 | + 0.508 D/V |
| # 7 Middlefield at Marsh (Town of | C | 29.8 | 0.669 | C | 29.2 | 0.812 | -0.601 D/V |
| # 8 Bayfront Exp. & Willow Rd. | C | 28.6 | 0.668 | D | 48.8 | 0.929 | +20.166 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.7 | 0.613 | C | 21.8 | 0.656 | -1.898 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 18.7 | 0.567 | C | 23.9 | 0.681 | + 5.178 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.4 | 0.508 | B | 14.0 | 0.647 | -1.381 D/V |
| # 12 Newbridge St. & Willow Rd. | E | 59.2 | 0.990 | E | 62.7 | 1.036 | + 3.424 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 21.6 | 0.760 | C | 22.5 | 0.838 | + 0.865 D/V |
| # 14 Durham St. & Willow Rd. | D | 35.1 | 0.782 | B | 15.6 | 0.846 | -19.566 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 15.3 | 0.784 | C | 20.5 | 0.905 | + 5.218 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 15.7 | 0.726 | B | 19.6 | 0.874 | + 3.914 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 114.7 | 1.038 | F | 136.8 | 1.269 | +22.155 D/V |
| # 18 Bayfront Exp. & University Ave | C | 32.7 | 0.882 | D | 36.1 | 0.915 | + 3.450 D/V |
| # 19 O'Brien Dr. & University Ave. | A | 6.8 | 0.600 | A | 6.7 | 0.612 | -0.093 D/V |
| # 20 University & Kavanaugh | B | 14.4 | 0.617 | B | 14.1 | 0.624 | -0.261 D/V |
| # 21 University & Bay | C | 29.3 | 0.724 | C | 28.8 | 0.731 | -0.410 D/V |
| # 22 University & Runnymede | C | 21.7 | 0.687 | C | 21.5 | 0.694 | -0.216 D/V |
| # 23 University & Bell | A | 7.7 | 0.270 | A | 7.2 | 0.303 | -0.471 D/V |
| # 24 University & Donohoe | D | 51.0 | 1.014 | D | 54.3 | 1.036 | + 3.317 D/V |
| # 25 NB 101 & Donohoe St | B | 9.1 | 0.418 | B | 9.4 | 0.443 | + 0.247 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 18.1 | 0.704 | B | 18.5 | 0.718 | + 0.445 D/V |
| # 27 University Ave. & Woodland | D | 50.1 | 0.977 | D | 52.3 | 0.992 | + 2.205 D/V |
| # 28 Middlefield Rd. & University A | D | 38.2 | 0.805 | D | 48.5 | 0.907 | +10.300 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.6 | 0.640 | B | 17.5 | 0.741 | + 9.830 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.8 | 0.650 | C | 20.1 | 0.678 | + 2.312 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 23.4 | 0.664 | C | 26.3 | 0.745 | + 2.840 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 29.2 | 0.515 | C | 25.6 | 0.541 | -3.586 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 31.3 | 0.652 | C | 33.0 | 0.706 | + 1.717 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.4 | 0.549 | A | 1.5 | 0.596 | + 0.126 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.882 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 26.3 |
| Optimal Cycle: | 114 | Level Of Service: | C |

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 | 0 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 1! 0 0 |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 2619 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1137 | | 8 | 22 | 6 | |
| Added Vol: | 186 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 443 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.54 | 0.13 | 0.13 | | 0.02 | 0.02 | 0.11 | | 0.13 | 0.13 | 0.57 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.61 | 0.61 | 0.61 | | 0.12 | 0.12 | 0.12 | | 0.14 | 0.14 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.90 | 0.22 | 0.22 | | 0.18 | 0.18 | 0.90 | | 0.90 | 0.90 | 0.76 | | 0.51 | 0.51 | 0.51 | |
| Uniform Del: | 22.1 | 11.6 | 11.6 | | 51.6 | 51.6 | 56.5 | | 54.7 | 54.7 | 9.3 | | 61.3 | 61.3 | 61.3 | |
| IncremntDel: | 3.9 | 0.1 | 0.1 | | 0.2 | 0.2 | 38.5 | | 30.9 | 30.9 | 1.6 | | 6.2 | 6.2 | 6.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 26.0 | 11.7 | 11.7 | | 51.8 | 51.8 | 95.0 | | 85.6 | 85.6 | 11.0 | | 67.5 | 67.5 | 67.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.0 | 11.7 | 11.7 | | 51.8 | 51.8 | 95.0 | | 85.6 | 85.6 | 11.0 | | 67.5 | 67.5 | 67.5 | |
| LOS by Move: | C | B | B | | D | D | F | | F | F | B | | E | E | E | |
| HCM2kAvgQ: | 36 | 4 | 4 | | 1 | 1 | 10 | | 12 | 12 | 22 | | 2 | 2 | 2 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.115
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 55.2
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 | 0 | 1 1 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 933 | 0 | 329 | | 0 | 0 | 0 | | 0 | 1297 | 577 | | 0 | 936 | 1937 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 593 | 0 | | 0 | 151 | 36 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 577 | | 0 | 1087 | 1973 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 0 | | 0 | 1087 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 0 | | 0 | 1087 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 0 | | 0 | 1087 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.00 | 0.46 | | 0.00 | 0.00 | 0.00 | | 0.56 | 0.56 | 0.00 | | 0.00 | 0.31 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.41 | 0.00 | 0.41 | | 0.00 | 0.00 | 0.00 | | 0.50 | 0.50 | 0.00 | | 0.00 | 0.50 | 0.00 | |
| Volume/Cap: | 0.66 | 0.00 | 1.11 | | 0.00 | 0.00 | 0.00 | | 1.11 | 1.11 | 0.00 | | 0.00 | 0.61 | 0.00 | |
| Uniform Del: | 19.1 | 0.0 | 23.6 | | 0.0 | 0.0 | 0.0 | | 19.9 | 19.9 | 0.0 | | 0.0 | 14.3 | 0.0 | |
| IncremntDel: | 1.2 | 0.0 | 71.2 | | 0.0 | 0.0 | 0.0 | | 60.4 | 60.4 | 0.0 | | 0.0 | 0.6 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 20.3 | 0.0 | 94.8 | | 0.0 | 0.0 | 0.0 | | 80.3 | 80.3 | 0.0 | | 0.0 | 14.9 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 20.3 | 0.0 | 94.8 | | 0.0 | 0.0 | 0.0 | | 80.3 | 80.3 | 0.0 | | 0.0 | 14.9 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | F | F | A | | A | B | A | |
| HCM2kAvgQ: | 11 | 0 | 31 | | 0 | 0 | 0 | | 41 | 41 | 0 | | 0 | 11 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.987
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 32.9
Optimal Cycle: 159 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 879 | 0 | 558 | | 0 | 834 | 583 | | 0 | 1426 | 86 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1002 | 0 | 636 | | 0 | 951 | 665 | | 0 | 1626 | 98 | |
| Added Vol: | 0 | 0 | 0 | | 315 | 0 | 33 | | 0 | 292 | 0 | | 0 | 64 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1317 | 0 | 669 | | 0 | 1243 | 665 | | 0 | 1690 | 98 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1317 | 0 | 669 | | 0 | 1243 | 0 | | 0 | 1690 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1317 | 0 | 669 | | 0 | 1243 | 0 | | 0 | 1690 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1317 | 0 | 669 | | 0 | 1243 | 0 | | 0 | 1690 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.38 | 0.00 | 0.42 | | 0.00 | 0.35 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Crit Moves: | | | | | | | **** | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.43 | 0.00 | 0.43 | | 0.00 | 0.48 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.90 | 0.00 | 0.99 | | 0.00 | 0.73 | 0.00 | | 0.00 | 0.99 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 21.2 | 0.0 | 22.6 | | 0.0 | 16.4 | 0.0 | | 0.0 | 20.4 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 7.5 | 0.0 | 31.1 | | 0.0 | 1.6 | 0.0 | | 0.0 | 18.6 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 28.8 | 0.0 | 53.7 | | 0.0 | 18.0 | 0.0 | | 0.0 | 39.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 28.8 | 0.0 | 53.7 | | 0.0 | 18.0 | 0.0 | | 0.0 | 39.0 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | D | | A | B | A | | A | D | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 20 | 0 | 23 | | 0 | 14 | 0 | | 0 | 29 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.934
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 35.8
Optimal Cycle: 112 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 1 | 1 | 0 | 2 | 1 0 | 2 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1289 | 33 | | 306 | 1614 | 319 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 293 | 0 | | 0 | 97 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1582 | 33 | | 306 | 1711 | 319 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1582 | 33 | | 306 | 1711 | 319 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1582 | 33 | | 306 | 1711 | 319 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1582 | 33 | | 306 | 1711 | 319 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.93 | 0.07 | 1.00 | | 1.00 | 2.94 | 0.06 | | 2.00 | 1.69 | 0.31 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4964 | 104 | | 3432 | 2910 | 543 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.15 | 0.15 | 0.00 | | 0.01 | 0.32 | 0.32 | | 0.09 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.49 | 0.49 | | 0.14 | 0.57 | 0.57 | |
| Volume/Cap: | 0.38 | 0.38 | 0.40 | | 1.02 | 1.02 | 0.01 | | 0.19 | 0.65 | 0.65 | | 0.65 | 1.02 | 1.02 | |
| Uniform Del: | 36.8 | 36.8 | 36.8 | | 34.0 | 34.0 | 28.9 | | 36.5 | 15.4 | 15.4 | | 32.7 | 17.0 | 17.0 | |
| IncremntDel: | 2.7 | 2.7 | 1.9 | | 61.1 | 61.1 | 0.0 | | 1.1 | 0.6 | 0.6 | | 3.3 | 26.3 | 26.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.5 | 39.5 | 38.7 | | 95.1 | 95.1 | 29.0 | | 37.5 | 16.0 | 16.0 | | 36.0 | 43.3 | 43.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.5 | 39.5 | 38.7 | | 95.1 | 95.1 | 29.0 | | 37.5 | 16.0 | 16.0 | | 36.0 | 43.3 | 43.3 | |
| LOS by Move: | D | D | D | | F | F | C | | D | B | B | | D | D | D | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 12 | 12 | 0 | | 1 | 12 | 12 | | 5 | 37 | 37 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 30 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 1 | 0 | 0 1 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 907 | 66 | | 52 | 1301 | 368 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 293 | 0 | | 0 | 97 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1200 | 66 | | 52 | 1398 | 368 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1200 | 66 | | 52 | 1398 | 368 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1200 | 66 | | 52 | 1398 | 368 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1200 | 66 | | 52 | 1398 | 368 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.90 | 0.10 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3326 | 183 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.13 | 0.13 | 0.07 | | 0.08 | 0.36 | 0.36 | | 0.03 | 0.40 | 0.23 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.61 | 0.61 | | 0.09 | 0.59 | 0.59 | |
| Volume/Cap: | 0.19 | 0.22 | 0.22 | | 0.67 | 0.67 | 0.33 | | 0.67 | 0.59 | 0.59 | | 0.35 | 0.67 | 0.40 | |
| Uniform Del: | 36.5 | 36.5 | 36.5 | | 29.6 | 29.6 | 27.4 | | 34.1 | 9.3 | 9.3 | | 34.5 | 11.2 | 8.9 | |
| IncremntDel: | 1.1 | 1.3 | 1.3 | | 2.5 | 2.5 | 0.6 | | 8.7 | 0.4 | 0.4 | | 1.4 | 0.9 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.5 | 37.8 | 37.8 | | 32.1 | 32.1 | 28.0 | | 42.8 | 9.7 | 9.7 | | 35.9 | 12.1 | 9.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.5 | 37.8 | 37.8 | | 32.1 | 32.1 | 28.0 | | 42.8 | 9.7 | 9.7 | | 35.9 | 12.1 | 9.1 | |
| LOS by Move: | D | D | D | | C | C | C | | D | A | A | | D | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 7 | 7 | 2 | | 5 | 10 | 10 | | 2 | 13 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 38 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 0 | 1! 0 | 0 | | 0 0 | 1! 0 | 0 | | 0 1 | 0 1 | 0 | | 1 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 80 | 3 | 202 | | 128 | 32 | 6 | | 2 | 758 | 75 | | 301 | 1119 | 25 | |
| Added Vol: | 1 | 0 | 0 | | 0 | 0 | 0 | | 0 | 293 | 2 | | 0 | 97 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1051 | 77 | | 301 | 1216 | 25 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1051 | 77 | | 301 | 1216 | 25 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1051 | 77 | | 301 | 1216 | 25 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1051 | 77 | | 301 | 1216 | 25 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.79 | 0.79 | 0.79 | | 0.53 | 0.53 | 0.53 | | 0.88 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.28 | 0.01 | 0.71 | | 0.78 | 0.19 | 0.03 | | 0.01 | 1.86 | 0.13 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 425 | 18 | 1060 | | 771 | 193 | 34 | | 7 | 3110 | 229 | | 1769 | 3456 | 71 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.17 | 0.17 | 0.17 | | 0.34 | 0.34 | 0.34 | | 0.17 | 0.35 | 0.35 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | | 0.45 | 0.45 | 0.45 | | 0.23 | 0.68 | 0.68 | |
| Volume/Cap: | 0.71 | 0.71 | 0.71 | | 0.61 | 0.61 | 0.61 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.52 | 0.52 | |
| Uniform Del: | 26.4 | 26.4 | 26.4 | | 25.6 | 25.6 | 25.6 | | 18.1 | 18.1 | 18.1 | | 28.7 | 6.3 | 6.3 | |
| IncremntDel: | 5.6 | 5.6 | 5.6 | | 4.2 | 4.2 | 4.2 | | 2.1 | 2.1 | 2.1 | | 7.5 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.0 | 32.0 | 32.0 | | 29.8 | 29.8 | 29.8 | | 20.2 | 20.2 | 20.2 | | 36.2 | 6.5 | 6.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.0 | 32.0 | 32.0 | | 29.8 | 29.8 | 29.8 | | 20.2 | 20.2 | 20.2 | | 36.2 | 6.5 | 6.5 | |
| LOS by Move: | C | C | C | | C | C | C | | C | C | C | | D | A | A | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 5 | 5 | 5 | | 14 | 14 | 14 | | 9 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 29.2
Optimal Cycle: 76 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 0 | 1 0 | 1 | | 1 0 | 1 0 | 0 | | 0 0 | 0 0 | 0 | | 1 0 | 0 0 | 1 | |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 189 | 453 | | 390 | 418 | 0 | | 0 | 0 | 0 | | 528 | 0 | 193 | |
| Added Vol: | 0 | 8 | 120 | | 174 | 64 | 0 | | 0 | 0 | 0 | | 53 | 0 | 46 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 197 | 573 | | 564 | 482 | 0 | | 0 | 0 | 0 | | 581 | 0 | 239 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 197 | 573 | | 564 | 482 | 0 | | 0 | 0 | 0 | | 581 | 0 | 239 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 197 | 573 | | 564 | 482 | 0 | | 0 | 0 | 0 | | 581 | 0 | 239 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 197 | 573 | | 564 | 482 | 0 | | 0 | 0 | 0 | | 581 | 0 | 239 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.35 | | 0.31 | 0.25 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.32 | 0.00 | 0.15 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.13 | 0.52 | | 0.38 | 0.51 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.40 | 0.00 | 0.78 | |
| Volume/Cap: | 0.00 | 0.81 | 0.68 | | 0.81 | 0.50 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.81 | 0.00 | 0.19 | |
| Uniform Del: | 0.0 | 46.7 | 19.3 | | 30.3 | 17.5 | 0.0 | | 0.0 | 0.0 | 0.0 | | 29.5 | 0.0 | 3.1 | |
| IncremntDel: | 0.0 | 18.4 | 2.2 | | 7.2 | 0.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 7.0 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 65.0 | 21.5 | | 37.5 | 17.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 36.6 | 0.0 | 3.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 65.0 | 21.5 | | 37.5 | 17.9 | 0.0 | | 0.0 | 0.0 | 0.0 | | 36.6 | 0.0 | 3.2 | |
| LOS by Move: | A | E | C | | D | B | A | | A | A | A | | D | A | A | |
| HCM2kAvgQ: | 0 | 9 | 15 | | 19 | 11 | 0 | | 0 | 0 | 0 | | 19 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.8
Optimal Cycle: 145 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 1 | 2 | 0 | 3 | 0 1 | 1 | 1 | 1 | 0 2 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | | 6 | 13 | 677 | | 92 | 84 | 34 | | 379 | 3 | | 6 | 5 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | 1.14 | 1.14 |
| Initial Bse: | 1179 | 2403 | | 7 | 15 | 772 | | 105 | 96 | 39 | | 432 | 3 | | 7 | 6 |
| Added Vol: | 69 | 202 | | 24 | 441 | 42 | | 0 | 0 | 838 | | 14 | 24 | | 30 | 14 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 1248 | 2605 | | 31 | 456 | 814 | | 105 | 96 | 877 | | 446 | 27 | | 37 | 20 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 1248 | 2605 | | 31 | 456 | 814 | | 105 | 96 | 877 | | 446 | 27 | | 37 | 20 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 1248 | 2605 | | 31 | 456 | 814 | | 105 | 96 | 877 | | 446 | 27 | | 37 | 20 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 1248 | 2605 | | 31 | 456 | 814 | | 105 | 96 | 877 | | 446 | 27 | | 37 | 20 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.93 | 0.93 | 0.88 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 2.00 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1760 | 3520 | 3343 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.36 | 0.45 | 0.02 | | 0.13 | 0.14 | 0.07 | | 0.05 | 0.25 | 0.13 | | 0.02 | 0.01 | 0.01 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.44 | 0.47 | 0.51 | | 0.14 | 0.17 | 0.17 | | 0.26 | 0.26 | 0.26 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.83 | 0.95 | 0.04 | | 0.95 | 0.83 | 0.39 | | 0.21 | 0.95 | 0.51 | | 0.40 | 0.27 | 0.32 | |
| Uniform Del: | 32.1 | 33.2 | 16.1 | | 55.5 | 52.2 | 48.2 | | 37.5 | 47.2 | 40.9 | | 61.0 | 60.7 | 60.9 | |
| IncremntDel: | 3.9 | 8.6 | 0.0 | | 29.3 | 5.9 | 1.0 | | 0.0 | 17.7 | 0.5 | | 3.9 | 1.1 | 3.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.0 | 41.8 | 16.2 | | 84.8 | 58.2 | 49.1 | | 37.5 | 64.9 | 41.4 | | 64.9 | 61.8 | 63.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.0 | 41.8 | 16.2 | | 84.8 | 58.2 | 49.1 | | 37.5 | 64.9 | 41.4 | | 64.9 | 61.8 | 63.9 | |
| LOS by Move: | D | D | B | | F | E | D | | D | E | D | | E | E | E | |
| HCM2kAvgQ: | 24 | 41 | 1 | | 13 | 14 | 4 | | 3 | 23 | 9 | | 2 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.656
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 54 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | | 26 | 71 | 19 | | 72 | 115 | 415 | | 52 | 56 | 1037 | | 74 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 21 | 15 | | 30 | 81 | 22 | | 82 | 131 | 473 | | 59 | 64 | 1182 | | 84 |
| Added Vol: | 0 | 0 | | 0 | 1 | 0 | | 13 | 4 | 851 | | 0 | 0 | 98 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | 1324 | | 59 | 64 | 1280 | | 84 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | 1324 | | 59 | 64 | 1280 | | 84 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | 1324 | | 59 | 64 | 1280 | | 84 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | 1324 | | 59 | 64 | 1280 | | 84 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.82 | 0.82 | 0.82 | | 0.78 | 0.78 | 0.78 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.92 | 0.92 | |
| Lanes: | 0.31 | 0.23 | 0.46 | | 0.41 | 0.11 | 0.48 | | 1.00 | 1.91 | 0.09 | | 1.00 | 1.88 | 0.12 | |
| Final Sat.: | 490 | 354 | 708 | | 609 | 161 | 707 | | 1769 | 3366 | 151 | | 1769 | 3289 | 217 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | 0.04 | | 0.13 | 0.13 | 0.13 | | 0.08 | 0.39 | 0.39 | | 0.04 | 0.39 | 0.39 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.12 | 0.65 | 0.65 | | 0.06 | 0.59 | 0.59 | |
| Volume/Cap: | 0.20 | 0.20 | 0.20 | | 0.66 | 0.66 | 0.66 | | 0.66 | 0.61 | 0.61 | | 0.57 | 0.66 | 0.66 | |
| Uniform Del: | 42.8 | 42.8 | 42.8 | | 47.4 | 47.4 | 47.4 | | 54.9 | 13.4 | 13.4 | | 59.2 | 17.6 | 17.6 | |
| IncremntDel: | 0.3 | 0.3 | 0.3 | | 5.1 | 5.1 | 5.1 | | 7.4 | 0.5 | 0.5 | | 6.9 | 0.8 | 0.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 43.2 | 43.2 | 43.2 | | 52.6 | 52.6 | 52.6 | | 62.4 | 13.8 | 13.8 | | 66.1 | 18.3 | 18.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 43.2 | 43.2 | 43.2 | | 52.6 | 52.6 | 52.6 | | 62.4 | 13.8 | 13.8 | | 66.1 | 18.3 | 18.3 | |
| LOS by Move: | D | D | D | | D | D | D | | E | B | B | | E | B | B | |
| HCM2kAvgQ: | 2 | 2 | 2 | | 8 | 8 | 8 | | 6 | 17 | 17 | | 3 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.681
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 23.9
Optimal Cycle: 57 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 0 | 0 0 | 0 | | 0 0 | 1! 0 | 0 | | 1 0 | 2 0 | 0 | | 0 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | 14 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 212 | | 93 | 743 | 0 | | 0 | 1164 | 16 | |
| Added Vol: | 0 | 0 | 0 | | 115 | 0 | 6 | | 7 | 740 | 0 | | 0 | 102 | 9 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 116 | 0 | 218 | | 100 | 1483 | 0 | | 0 | 1266 | 25 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 116 | 0 | 218 | | 100 | 1483 | 0 | | 0 | 1266 | 25 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 116 | 0 | 218 | | 100 | 1483 | 0 | | 0 | 1266 | 25 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 116 | 0 | 218 | | 100 | 1483 | 0 | | 0 | 1266 | 25 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.88 | 1.00 | 0.88 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.35 | 0.00 | 0.65 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.96 | 0.04 | |
| Final Sat.: | 0 | 0 | 0 | | 580 | 0 | 1089 | | 1769 | 3538 | 0 | | 0 | 3459 | 68 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.20 | 0.00 | 0.20 | | 0.06 | 0.42 | 0.00 | | 0.00 | 0.37 | 0.37 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.29 | 0.00 | 0.29 | | 0.08 | 0.62 | 0.00 | | 0.00 | 0.54 | 0.54 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.68 | 0.00 | 0.68 | | 0.68 | 0.67 | 0.00 | | 0.00 | 0.68 | 0.68 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 40.5 | 0.0 | 40.5 | | 57.9 | 16.1 | 0.0 | | 0.0 | 21.9 | 21.9 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 3.9 | 0.0 | 3.9 | | 12.2 | 0.8 | 0.0 | | 0.0 | 1.0 | 1.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 44.4 | 0.0 | 44.4 | | 70.1 | 16.9 | 0.0 | | 0.0 | 22.9 | 22.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 44.4 | 0.0 | 44.4 | | 70.1 | 16.9 | 0.0 | | 0.0 | 22.9 | 22.9 | |
| LOS by Move: | A | A | A | | D | A | D | | E | B | A | | A | C | C | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 13 | 0 | 13 | | 5 | 20 | 0 | | 0 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.647
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 52 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | | 0 0 | 2 0 | 1 | | 1 0 | 2 0 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 148 | 0 | 76 | | 0 | 0 | 0 | | 0 | 795 | 285 | | 116 | 1335 | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 747 | 2 | | 0 | 108 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1542 | 287 | | 116 | 1443 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1542 | 287 | | 116 | 1443 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1542 | 287 | | 116 | 1443 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1542 | 287 | | 116 | 1443 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2583 | 0 | 841 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.44 | 0.18 | | 0.07 | 0.41 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.14 | 0.00 | 0.14 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.67 | 0.67 | | 0.10 | 0.78 | 0.00 | |
| Volume/Cap: | 0.44 | 0.00 | 0.65 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.65 | 0.27 | | 0.65 | 0.53 | 0.00 | |
| Uniform Del: | 51.2 | 0.0 | 52.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.3 | 8.5 | | 56.2 | 5.6 | 0.0 | |
| IncremntDel: | 0.6 | 0.0 | 4.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.6 | 0.1 | | 8.0 | 0.2 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 51.7 | 0.0 | 56.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.9 | 8.6 | | 64.1 | 5.7 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.7 | 0.0 | 56.9 | | 0.0 | 0.0 | 0.0 | | 0.0 | 12.9 | 8.6 | | 64.1 | 5.7 | 0.0 | |
| LOS by Move: | D | A | E | | A | A | A | | A | B | A | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 7 | | 0 | 0 | 0 | | 0 | 19 | 5 | | 6 | 12 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.036
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 62.7
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 399 | 127 | 41 | | 32 | 203 | 438 | | 169 | 942 | 177 | | 32 | 1392 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 10 | 749 | 0 | | 0 | 117 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.72 | 0.28 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4538 | 474 | | 1769 | 3527 | 11 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.07 | 0.03 | | 0.02 | 0.11 | 0.28 | | 0.10 | 0.37 | 0.37 | | 0.02 | 0.43 | 0.43 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.46 | 0.46 | | 0.05 | 0.41 | 0.41 | |
| Volume/Cap: | 1.04 | 0.61 | 0.23 | | 0.07 | 0.40 | 1.04 | | 1.04 | 0.81 | 0.81 | | 0.38 | 1.04 | 1.04 | |
| Uniform Del: | 57.7 | 55.0 | 52.6 | | 35.3 | 38.9 | 47.5 | | 58.7 | 29.9 | 29.9 | | 60.0 | 38.2 | 38.2 | |
| IncremntDel: | 55.4 | 5.0 | 0.7 | | 0.1 | 0.5 | 53.1 | | 78.2 | 2.2 | 2.2 | | 2.8 | 33.3 | 33.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 113.1 | 60.0 | 53.3 | | 35.4 | 39.5 | 100.6 | | 136.9 | 32.0 | 32.0 | | 62.8 | 71.5 | 71.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 113.1 | 60.0 | 53.3 | | 35.4 | 39.5 | 100.6 | | 136.9 | 32.0 | 32.0 | | 62.8 | 71.5 | 71.5 | |
| LOS by Move: | F | E | D | | D | D | F | | F | C | C | | E | E | E | |
| HCM2kAvgQ: | 13 | 6 | 2 | | 1 | 7 | 24 | | 12 | 25 | 25 | | 2 | 41 | 41 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.838
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 84 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 412 | 0 | 85 | | 73 | 1571 | 0 | | 0 | 1270 | 364 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 242 | 0 | | 0 | 110 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1813 | 0 | | 0 | 1380 | 367 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1813 | 0 | | 0 | 1380 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1813 | 0 | | 0 | 1380 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 414 | 0 | 86 | | 73 | 1813 | 0 | | 0 | 1380 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.23 | 0.00 | 0.05 | | 0.04 | 0.51 | 0.00 | | 0.00 | 0.39 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.28 | | 0.07 | 0.61 | 0.00 | | 0.00 | 0.54 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.84 | 0.00 | 0.19 | | 0.59 | 0.84 | 0.00 | | 0.00 | 0.72 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 33.9 | 0.0 | 27.5 | | 45.2 | 15.5 | 0.0 | | 0.0 | 17.2 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 12.0 | 0.0 | 0.2 | | 7.6 | 3.1 | 0.0 | | 0.0 | 1.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 46.0 | 0.0 | 27.7 | | 52.8 | 18.6 | 0.0 | | 0.0 | 18.6 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 46.0 | 0.0 | 27.7 | | 52.8 | 18.6 | 0.0 | | 0.0 | 18.6 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 15 | 0 | 2 | | 3 | 25 | 0 | | 0 | 18 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.846
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 74 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1141 | 10 | | 47 | 969 | 162 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 242 | 0 | | 0 | 110 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1383 | 10 | | 47 | 1079 | 162 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1383 | 10 | | 47 | 1079 | 162 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1383 | 10 | | 47 | 1079 | 162 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1383 | 10 | | 47 | 1079 | 162 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.40 | 0.40 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.99 | 0.01 | | 1.00 | 0.87 | 0.13 | |
| Final Sat.: | 1359 | 183 | 1431 | | 729 | 38 | 1583 | | 1769 | 3508 | 26 | | 1769 | 1588 | 238 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.10 | 0.10 | | 0.06 | 0.06 | 0.00 | | 0.01 | 0.39 | 0.39 | | 0.03 | 0.68 | 0.68 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.04 | 0.74 | 0.74 | | 0.08 | 0.78 | 0.78 | |
| Volume/Cap: | 0.46 | 0.88 | 0.88 | | 0.52 | 0.52 | 0.01 | | 0.19 | 0.53 | 0.53 | | 0.35 | 0.88 | 0.88 | |
| Uniform Del: | 41.4 | 43.6 | 43.6 | | 41.8 | 41.8 | 39.3 | | 46.4 | 5.5 | 5.5 | | 43.9 | 7.8 | 7.8 | |
| IncremntDel: | 2.1 | 34.2 | 34.2 | | 5.6 | 5.6 | 0.0 | | 1.3 | 0.2 | 0.2 | | 1.6 | 6.4 | 6.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 43.6 | 77.8 | 77.8 | | 47.4 | 47.4 | 39.4 | | 47.8 | 5.7 | 5.7 | | 45.5 | 14.2 | 14.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 43.6 | 77.8 | 77.8 | | 47.4 | 47.4 | 39.4 | | 47.8 | 5.7 | 5.7 | | 45.5 | 14.2 | 14.2 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 3 | 8 | 8 | | 2 | 2 | 0 | | 1 | 10 | 10 | | 2 | 30 | 30 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.905
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 100 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1017 | 6 | | 7 | 974 | 71 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 242 | 0 | | 0 | 110 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1259 | 6 | | 7 | 1084 | 71 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1259 | 6 | | 7 | 1084 | 71 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1259 | 6 | | 7 | 1084 | 71 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1259 | 6 | | 7 | 1084 | 71 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.87 | 0.87 | 0.87 | | 0.72 | 0.72 | 0.72 | | 0.12 | 0.98 | 0.98 | | 0.06 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 353 | 353 | 942 | | 998 | 42 | 337 | | 220 | 1852 | 8 | | 114 | 1732 | 113 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.16 | 0.16 | 0.16 | | 0.09 | 0.68 | 0.68 | | 0.06 | 0.63 | 0.63 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.05 | 0.05 | 0.05 | | 0.91 | 0.91 | 0.91 | | 0.12 | 0.91 | 0.91 | | 0.08 | 0.83 | 0.83 | |
| Uniform Del: | 34.0 | 34.0 | 34.0 | | 40.2 | 40.2 | 40.2 | | 3.4 | 9.7 | 9.7 | | 3.3 | 8.3 | 8.3 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 33.3 | 33.3 | 33.3 | | 0.3 | 8.7 | 8.7 | | 0.4 | 4.5 | 4.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.1 | 34.1 | 34.1 | | 73.5 | 73.5 | 73.5 | | 3.7 | 18.4 | 18.4 | | 3.7 | 12.8 | 12.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.1 | 34.1 | 34.1 | | 73.5 | 73.5 | 73.5 | | 3.7 | 18.4 | 18.4 | | 3.7 | 12.8 | 12.8 | |
| LOS by Move: | C | C | C | | E | E | E | | A | B | B | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 10 | 10 | 10 | | 0 | 34 | 34 | | 0 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 12 | | 12 | 12 | 12 | | 12 | 12 |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | | 85 | 122 | 31 | | 41 | 7 | 4 | | 794 | 72 | 41 | | 869 | 5 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 115 | | 97 | 139 | 35 | | 47 | 8 | 5 | | 905 | 82 | 47 | | 991 | 6 |
| Added Vol: | 11 | | 0 | 26 | 0 | | 0 | 0 | 0 | | 216 | 8 | 4 | | 106 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 126 | | 97 | 165 | 35 | | 47 | 8 | 5 | | 1121 | 90 | 51 | | 1097 | 6 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 126 | | 97 | 165 | 35 | | 47 | 8 | 5 | | 1121 | 90 | 51 | | 1097 | 6 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 126 | | 97 | 165 | 35 | | 47 | 8 | 5 | | 1121 | 90 | 51 | | 1097 | 6 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 126 | | 97 | 165 | 35 | | 47 | 8 | 5 | | 1121 | 90 | 51 | | 1097 | 6 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.71 | 0.89 | | 0.89 | 0.24 | 0.96 | | 0.96 | 0.14 | 0.97 | | 0.97 | 0.09 | 0.98 | | 0.98 |
| Lanes: | 1.00 | 0.37 | | 0.63 | 1.00 | 0.85 | | 0.15 | 1.00 | 0.93 | | 0.07 | 1.00 | 0.99 | | 0.01 |
| Final Sat.: | 1346 | 624 | | 1063 | 449 | 1555 | | 266 | 268 | 1705 | | 137 | 169 | 1851 | | 10 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.16 | | 0.16 | 0.08 | 0.03 | | 0.03 | 0.02 | 0.66 | | 0.66 | 0.30 | 0.59 | | 0.59 |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.18 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | | 0.75 |
| Volume/Cap: | 0.53 | 0.87 | | 0.87 | 0.44 | 0.17 | | 0.17 | 0.02 | 0.87 | | 0.87 | 0.40 | 0.79 | | 0.79 |
| Uniform Del: | 37.3 | 40.0 | | 40.0 | 36.7 | 34.9 | | 34.9 | 3.1 | 9.0 | | 9.0 | 4.4 | 7.5 | | 7.5 |
| IncremntDel: | 2.2 | 23.6 | | 23.6 | 3.9 | 0.2 | | 0.2 | 0.0 | 6.5 | | 6.5 | 2.0 | 3.1 | | 3.1 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 39.5 | 63.6 | | 63.6 | 40.6 | 35.1 | | 35.1 | 3.2 | 15.4 | | 15.4 | 6.4 | 10.6 | | 10.6 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 39.5 | 63.6 | | 63.6 | 40.6 | 35.1 | | 35.1 | 3.2 | 15.4 | | 15.4 | 6.4 | 10.6 | | 10.6 |
| LOS by Move: | D | E | | E | D | D | | D | A | B | | B | A | B | | B |
| HCM2kAvgQ: | 4 | 11 | | 11 | 2 | 1 | | 1 | 0 | 30 | | 30 | 1 | 22 | | 22 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.269
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 136.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | | 342 | 245 | 408 | | 322 | 10 | 16 | | 166 | 117 | 420 | | 64 | 494 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 76 | | 390 | 279 | 465 | | 367 | 11 | 18 | | 189 | 133 | 479 | | 73 | 563 |
| Added Vol: | 15 | | 9 | 114 | 101 | | 7 | 0 | 0 | | 9 | 10 | 19 | | 18 | 80 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 91 | | 399 | 393 | 566 | | 374 | 11 | 18 | | 198 | 143 | 498 | | 91 | 643 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 91 | | 399 | 393 | 566 | | 374 | 11 | 18 | | 198 | 143 | 498 | | 91 | 643 |
| Reduct Vol: | 0 | | 0 | 3 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 91 | | 399 | 390 | 566 | | 374 | 11 | 18 | | 198 | 143 | 498 | | 91 | 643 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 91 | | 399 | 390 | 566 | | 374 | 11 | 18 | | 198 | 143 | 498 | | 91 | 643 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.93 | 0.93 | | 0.42 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | 0.94 | | 0.83 |
| Lanes: | 1.00 | 2.00 | | 1.00 | 1.78 | 1.18 | | 0.04 | 1.00 | 1.00 | | 1.00 | 1.69 | 0.31 | | 1.00 |
| Final Sat.: | 1769 | 3538 | | 791 | 3059 | 2022 | | 62 | 1769 | 1862 | | 1583 | 3020 | 552 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.11 | | 0.49 | 0.19 | 0.19 | | 0.19 | 0.01 | 0.11 | | 0.09 | 0.16 | 0.16 | | 0.41 |
| Crit Moves: | | | | **** | | | | **** | | **** | | | | | | **** |
| Green/Cycle: | 0.39 | 0.39 | | 0.39 | 0.15 | 0.15 | | 0.15 | 0.08 | 0.08 | | 0.08 | 0.32 | 0.32 | | 0.32 |
| Volume/Cap: | 0.13 | 0.29 | | 1.27 | 1.27 | 1.27 | | 1.27 | 0.12 | 1.27 | | 1.08 | 0.51 | 0.51 | | 1.27 |
| Uniform Del: | 25.6 | 27.4 | | 39.7 | 55.5 | 55.5 | | 55.5 | 55.1 | 59.5 | | 59.5 | 36.0 | 36.0 | | 44.2 |
| IncremntDel: | 0.1 | 0.1 | | 144.3 | 131.6 | 132 | | 131.6 | 0.4 | 162 | | 101.1 | 0.4 | 0.4 | | 136.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 25.7 | 27.5 | | 184.0 | 187.1 | 187 | | 187.1 | 55.5 | 221 | | 160.7 | 36.4 | 36.4 | | 180.2 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 25.7 | 27.5 | | 184.0 | 187.1 | 187 | | 187.1 | 55.5 | 221 | | 160.7 | 36.4 | 36.4 | | 180.2 |
| LOS by Move: | C | C | | F | F | F | | F | E | F | | F | D | D | | F |
| HCM2kAvgQ: | 2 | 6 | | 28 | 24 | 24 | | 24 | 1 | 15 | | 10 | 10 | 10 | | 44 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.915
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 36.1
Optimal Cycle: 141 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1757 | 3285 | 0 | | 0 | 1008 | 214 | | 204 | 0 | 489 | | 0 | 0 | 0 | |
| Added Vol: | 23 | 471 | 0 | | 0 | 73 | 8 | | 109 | 0 | 7 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.74 | 0.00 | | 0.00 | 0.21 | 0.14 | | 0.09 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.57 | 0.81 | 0.00 | | 0.00 | 0.23 | 0.23 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.91 | 0.91 | 0.00 | | 0.00 | 0.91 | 0.60 | | 0.70 | 0.00 | 0.91 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 30.3 | 11.3 | 0.0 | | 0.0 | 59.5 | 54.5 | | 66.7 | 0.0 | 68.7 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 6.4 | 3.7 | 0.0 | | 0.0 | 9.9 | 2.7 | | 5.0 | 0.0 | 20.2 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 36.8 | 15.0 | 0.0 | | 0.0 | 69.4 | 57.2 | | 71.7 | 0.0 | 88.9 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.8 | 15.0 | 0.0 | | 0.0 | 69.4 | 57.2 | | 71.7 | 0.0 | 88.9 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | B | A | | A | E | E | | E | A | F | | A | A | A | |
| HCM2kAvgQ: | 42 | 52 | 0 | | 0 | 22 | 10 | | 9 | 0 | 12 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.612
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.7
Optimal Cycle: 46 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 25 | 0 | 25 | | 78 | 600 | 0 | | 0 | 1529 | 52 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 115 | 0 | | 0 | 21 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 715 | 0 | | 0 | 1550 | 62 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 715 | 0 | | 0 | 1550 | 62 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 715 | 0 | | 0 | 1550 | 62 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 715 | 0 | | 0 | 1550 | 62 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 881 | 0 | 816 | | 1769 | 3538 | 0 | | 0 | 3380 | 136 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.20 | 0.00 | | 0.00 | 0.46 | 0.46 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.52 | | 0.62 | 0.25 | 0.00 | | 0.00 | 0.62 | 0.62 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.8 | 0.0 | 38.8 | | 38.4 | 1.9 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 4.9 | 0.0 | 4.9 | | 9.1 | 0.0 | 0.0 | | 0.0 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 43.8 | 0.0 | 43.8 | | 47.5 | 1.9 | 0.0 | | 0.0 | 5.7 | 5.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 43.8 | 0.0 | 43.8 | | 47.5 | 1.9 | 0.0 | | 0.0 | 5.7 | 5.7 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 2 | 0 | | 0 | 11 | 11 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | | 8 | 21 | 44 | | 40 | 582 | 43 | | 25 | 1302 | 25 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 663 | 49 | | 28 | 1484 | 28 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 115 | 0 | | 0 | 21 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 778 | 49 | | 28 | 1505 | 28 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 778 | 49 | | 28 | 1505 | 28 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 778 | 49 | | 28 | 1505 | 28 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 778 | 49 | | 29 | 1505 | 29 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.36 | 0.42 | 0.22 | | 0.11 | 0.29 | 0.60 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 651 | 752 | 407 | | 190 | 500 | 1047 | | 1805 | 3366 | 212 | | 1805 | 3532 | 67 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.05 | 0.05 | 0.05 | | 0.03 | 0.23 | 0.23 | | 0.02 | 0.43 | 0.43 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.09 | 0.09 | | 0.08 | 0.08 | 0.08 | | 0.05 | 0.60 | 0.60 | | 0.13 | 0.68 | 0.68 | |
| Volume/Cap: | 0.63 | 0.64 | 0.64 | | 0.62 | 0.63 | 0.63 | | 0.51 | 0.39 | 0.39 | | 0.12 | 0.63 | 0.63 | |
| Uniform Del: | 44.0 | 44.1 | 44.1 | | 44.7 | 44.8 | 44.8 | | 46.3 | 10.6 | 10.6 | | 38.5 | 9.2 | 9.2 | |
| IncremntDel: | 7.9 | 8.8 | 8.8 | | 8.3 | 9.5 | 9.5 | | 4.6 | 0.1 | 0.1 | | 0.2 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 51.8 | 53.0 | 53.0 | | 53.0 | 54.3 | 54.3 | | 50.9 | 10.7 | 10.7 | | 38.8 | 9.7 | 9.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.8 | 53.0 | 53.0 | | 53.0 | 54.3 | 54.3 | | 50.9 | 10.7 | 10.7 | | 38.8 | 9.7 | 9.7 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | A | A | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 4 | 4 | 4 | | 2 | 7 | 7 | | 1 | 14 | 14 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.731
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 28.8
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | | 50 | 196 | 86 | | 141 | 497 | 78 | | 97 | 1115 | 49 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 567 | 89 | | 111 | 1271 | 56 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 115 | 0 | | 0 | 21 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 682 | 89 | | 111 | 1292 | 56 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 682 | 89 | | 111 | 1292 | 56 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 682 | 89 | | 111 | 1292 | 56 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 682 | 89 | | 111 | 1292 | 56 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 1.00 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.93 | 0.93 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.77 | 0.23 | | 1.00 | 1.92 | 0.08 | |
| Final Sat.: | 1805 | 1900 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3139 | 410 | | 1805 | 3440 | 149 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.14 | 0.08 | | 0.03 | 0.12 | 0.06 | | 0.09 | 0.22 | 0.22 | | 0.06 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.19 | 0.19 | | 0.07 | 0.16 | 0.16 | | 0.12 | 0.50 | 0.50 | | 0.14 | 0.51 | 0.51 | |
| Volume/Cap: | 0.73 | 0.73 | 0.43 | | 0.46 | 0.73 | 0.38 | | 0.73 | 0.44 | 0.44 | | 0.44 | 0.73 | 0.73 | |
| Uniform Del: | 44.1 | 38.3 | 36.0 | | 44.8 | 39.9 | 37.5 | | 42.3 | 16.2 | 16.2 | | 39.4 | 18.9 | 18.9 | |
| IncremntDel: | 15.1 | 7.4 | 1.0 | | 2.7 | 8.7 | 0.9 | | 11.8 | 0.2 | 0.2 | | 1.2 | 1.5 | 1.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 59.2 | 45.8 | 37.0 | | 47.5 | 48.6 | 38.4 | | 54.1 | 16.4 | 16.4 | | 40.6 | 20.4 | 20.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 59.2 | 45.8 | 37.0 | | 47.5 | 48.6 | 38.4 | | 54.1 | 16.4 | 16.4 | | 40.6 | 20.4 | 20.4 | |
| LOS by Move: | E | D | D | | D | D | D | | D | B | B | | D | C | C | |
| HCM2kAvgQ: | 5 | 9 | 4 | | 2 | 8 | 3 | | 6 | 8 | 8 | | 4 | 18 | 18 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.694
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 714 | 55 | 100 | 1420 | 70 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 21 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 829 | 55 | 100 | 1441 | 70 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 829 | 55 | 100 | 1441 | 70 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 829 | 55 | 100 | 1441 | 70 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 829 | 55 | 100 | 1441 | 70 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 0.29 | 0.64 | 0.07 | 0.12 | 0.45 | 0.43 | 1.00 | 1.88 | 0.12 | 1.00 | 1.91 | 0.09 |
| Final Sat.: | 532 | 1187 | 136 | 217 | 801 | 761 | 1805 | 3356 | 222 | 1805 | 3420 | 165 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.10 | 0.10 | 0.10 | 0.08 | 0.08 | 0.08 | 0.01 | 0.25 | 0.25 | 0.06 | 0.42 | 0.42 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.14 | 0.14 | 0.14 | 0.12 | 0.12 | 0.12 | 0.05 | 0.52 | 0.52 | 0.12 | 0.58 | 0.58 |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.23 | 0.48 | 0.48 | 0.48 | 0.72 | 0.72 |
| Uniform Del: | 41.2 | 41.2 | 41.2 | 42.6 | 42.6 | 42.6 | 45.6 | 15.5 | 15.5 | 41.3 | 15.0 | 15.0 |
| IncremntDel: | 9.6 | 9.6 | 9.6 | 11.8 | 11.8 | 11.8 | 1.3 | 0.2 | 0.2 | 1.7 | 1.3 | 1.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 50.7 | 50.7 | 50.7 | 54.4 | 54.4 | 54.4 | 46.9 | 15.7 | 15.7 | 43.0 | 16.2 | 16.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 50.7 | 50.7 | 50.7 | 54.4 | 54.4 | 54.4 | 46.9 | 15.7 | 15.7 | 43.0 | 16.2 | 16.2 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 7 | 7 | 7 | 6 | 6 | 6 | 1 | 9 | 9 | 3 | 18 | 18 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.303
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 7.2
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Permitted | | | Permitted | | | Permitted | | | Permitted | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 14 | 14 | 14 | 14 | 14 | 14 | 73 | 73 | 73 | 73 | 73 | 73 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 700 | 27 | 17 | 140 | 27 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 21 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 815 | 27 | 17 | 161 | 27 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 815 | 27 | 17 | 161 | 27 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 815 | 27 | 17 | 161 | 27 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 815 | 27 | 17 | 161 | 27 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.63 | 0.95 | 0.95 | 0.31 | 0.93 | 0.93 |
| Lanes: | 0.21 | 0.69 | 0.10 | 0.11 | 0.71 | 0.18 | 1.00 | 1.94 | 0.06 | 1.00 | 1.71 | 0.29 |
| Final Sat.: | 369 | 1209 | 184 | 207 | 1271 | 325 | 1189 | 3475 | 117 | 587 | 3018 | 512 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | 0.04 | 0.04 | 0.04 | 0.01 | 0.23 | 0.23 | 0.03 | 0.05 | 0.05 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Volume/Cap: | 0.30 | 0.30 | 0.30 | 0.21 | 0.21 | 0.21 | 0.02 | 0.30 | 0.30 | 0.04 | 0.07 | 0.07 |
| Uniform Del: | 33.5 | 33.5 | 33.5 | 32.9 | 32.9 | 32.9 | 2.5 | 3.2 | 3.2 | 2.5 | 2.6 | 2.6 |
| IncremntDel: | 0.5 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 34.1 | 34.1 | 34.1 | 33.2 | 33.2 | 33.2 | 2.5 | 3.2 | 3.2 | 2.5 | 2.6 | 2.6 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 34.1 | 34.1 | 34.1 | 33.2 | 33.2 | 33.2 | 2.5 | 3.2 | 3.2 | 2.5 | 2.6 | 2.6 |
| LOS by Move: | C | C | C | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 3 | 3 | 3 | 2 | 2 | 2 | 0 | 4 | 4 | 0 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 1.036
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 54.3
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 413 | 498 | 374 | | 13 | 141 | 437 | | 133 | 401 | 323 | | 56 | 1374 | 78 | |
| Added Vol: | 22 | 0 | 60 | | 0 | 0 | 0 | | 0 | 54 | 0 | | 0 | 21 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 435 | 498 | 434 | | 13 | 141 | 437 | | 133 | 455 | 323 | | 56 | 1395 | 78 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 435 | 498 | 434 | | 13 | 141 | 437 | | 133 | 455 | 323 | | 56 | 1395 | 78 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 435 | 498 | 434 | | 13 | 141 | 437 | | 133 | 455 | 323 | | 56 | 1395 | 78 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 435 | 498 | 434 | | 13 | 141 | 437 | | 133 | 455 | 323 | | 56 | 1395 | 78 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.27 | 1.46 | 1.27 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.89 | 0.11 | |
| Final Sat.: | 2151 | 2465 | 2147 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3393 | 189 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.20 | 0.20 | | 0.01 | 0.07 | 0.27 | | 0.04 | 0.13 | 0.20 | | 0.03 | 0.41 | 0.41 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.36 | 0.36 | | 0.09 | 0.26 | 0.26 | | 0.05 | 0.35 | 0.35 | | 0.09 | 0.39 | 0.39 | |
| Volume/Cap: | 1.05 | 0.56 | 0.56 | | 0.08 | 0.29 | 1.05 | | 0.76 | 0.36 | 0.57 | | 0.35 | 1.05 | 1.05 | |
| Uniform Del: | 40.4 | 25.7 | 25.7 | | 41.8 | 29.8 | 37.1 | | 46.9 | 24.0 | 26.2 | | 42.9 | 30.5 | 30.5 | |
| IncremntDel: | 39.8 | 0.3 | 0.3 | | 0.2 | 0.3 | 58.4 | | 17.7 | 0.2 | 1.3 | | 1.3 | 39.0 | 39.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 80.2 | 26.0 | 26.0 | | 42.0 | 30.1 | 95.6 | | 64.6 | 24.2 | 27.5 | | 44.2 | 69.4 | 69.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 80.2 | 26.0 | 26.0 | | 42.0 | 30.1 | 95.6 | | 64.6 | 24.2 | 27.5 | | 44.2 | 69.4 | 69.4 | |
| LOS by Move: | F | C | C | | D | C | F | | E | C | C | | D | E | E | |
| HCM2kAvgQ: | 18 | 9 | 9 | | 0 | 4 | 21 | | 4 | 5 | 9 | | 2 | 34 | 34 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.443
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 954 | 9 | | 0 | 514 | 0 | | 416 | 0 | 160 | | 0 | 0 | 129 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 82 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 954 | 9 | | 0 | 514 | 0 | | 498 | 0 | 160 | | 0 | 0 | 129 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 954 | 9 | | 0 | 514 | 0 | | 498 | 0 | 160 | | 0 | 0 | 129 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 954 | 9 | | 0 | 514 | 0 | | 498 | 0 | 160 | | 0 | 0 | 129 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 1050 | 10 | | 0 | 540 | 0 | | 513 | 0 | 160 | | 0 | 0 | 129 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5646 | 54 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.19 | 0.19 | | 0.00 | 0.14 | 0.00 | | 0.14 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.09 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.42 | 0.42 | | 0.00 | 0.42 | 0.00 | | 0.32 | 0.00 | 0.52 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.44 | 0.44 | | 0.00 | 0.34 | 0.00 | | 0.44 | 0.00 | 0.19 | | 0.00 | 0.00 | 0.44 | |
| Uniform Del: | 0.0 | 10.2 | 10.2 | | 0.0 | 9.7 | 0.0 | | 13.3 | 0.0 | 6.3 | | 0.0 | 0.0 | 17.4 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.1 | 0.0 | | 0.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.7 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 8.8 | 8.8 | | 0.0 | 8.3 | 0.0 | | 11.5 | 0.0 | 5.4 | | 0.0 | 0.0 | 15.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 8.8 | 8.8 | | 0.0 | 8.3 | 0.0 | | 11.5 | 0.0 | 5.4 | | 0.0 | 0.0 | 15.5 | |
| DesignQueue: | 0 | 8 | 8 | | 0 | 6 | 0 | | 7 | 0 | 3 | | 0 | 0 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.718
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 180 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | 16 | 16 | | 0 | 0 | 0 | | 0 | 29 | 45 | | 28 | 61 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | 1 | 220 | | 0 | 0 | 0 | | 0 | 828 | 379 | | 798 | 1527 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 944 | 432 | | 910 | 1741 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 54 | 14 | | 4 | 48 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 998 | 446 | | 914 | 1789 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 998 | 446 | | 914 | 1789 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 998 | 446 | | 914 | 1789 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 998 | 446 | | 914 | 1789 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | | 0.92 | 0.95 | 1.00 | |
| Lanes: | 1.58 | 0.01 | 1.41 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | | 2.00 | 2.00 | 0.00 | |
| Final Sat.: | 2584 | 6 | 2291 | | 0 | 0 | 0 | | 0 | 3610 | 2842 | | 3502 | 3610 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.19 | 0.11 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.28 | 0.16 | | 0.26 | 0.50 | 0.00 | |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.34 | 0.34 | | 0.42 | 0.76 | 0.00 | |
| Volume/Cap: | 0.74 | 1.00 | 0.58 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.81 | 0.46 | | 0.62 | 0.65 | 0.00 | |
| Uniform Del: | 32.6 | 34.5 | 31.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 25.5 | 21.9 | | 19.1 | 4.7 | 0.0 | |
| IncremntDel: | 3.7 | 37.2 | 0.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 4.1 | 0.3 | | 0.8 | 0.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 36.2 | 71.7 | 32.3 | | 0.0 | 0.0 | 0.0 | | 0.0 | 29.6 | 22.2 | | 19.9 | 5.2 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.2 | 71.7 | 32.3 | | 0.0 | 0.0 | 0.0 | | 0.0 | 29.6 | 22.2 | | 19.9 | 5.2 | 0.0 | |
| LOS by Move: | D | E | C | | A | A | A | | A | C | C | | B | A | A | |
| HCM2kAvgQ: | 7 | 14 | 5 | | 0 | 0 | 0 | | 0 | 15 | 6 | | 10 | 12 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.992
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 52.3
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 78 | 250 | | 410 | 115 | 41 | | 51 | 538 | 13 | | 238 | 1506 | 420 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 613 | 15 | | 271 | 1717 | 479 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 69 | 0 | | 0 | 48 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 682 | 15 | | 271 | 1765 | 479 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 682 | 15 | | 271 | 1765 | 479 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 682 | 15 | | 271 | 1765 | 479 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 682 | 15 | | 271 | 1765 | 479 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.90 | 0.90 | | 0.92 | 0.96 | 0.96 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.85 | |
| Lanes: | 0.04 | 0.23 | 0.73 | | 2.00 | 0.74 | 0.26 | | 1.00 | 1.96 | 0.04 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 70 | 390 | 1249 | | 3502 | 1346 | 480 | | 1805 | 3523 | 77 | | 1805 | 3610 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.23 | 0.23 | | 0.13 | 0.10 | 0.10 | | 0.03 | 0.19 | 0.19 | | 0.15 | 0.49 | 0.30 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | 0.23 | | 0.13 | 0.11 | 0.11 | | 0.05 | 0.30 | 0.30 | | 0.23 | 0.48 | 0.48 | |
| Volume/Cap: | 0.91 | 1.01 | 1.01 | | 1.01 | 0.91 | 0.91 | | 0.64 | 0.65 | 0.65 | | 0.65 | 1.01 | 0.61 | |
| Uniform Del: | 36.4 | 38.7 | 38.7 | | 43.4 | 44.2 | 44.2 | | 46.6 | 30.4 | 30.4 | | 34.6 | 25.9 | 19.0 | |
| IncremntDel: | 23.4 | 49.1 | 49.1 | | 45.1 | 40.5 | 40.5 | | 14.9 | 1.4 | 1.4 | | 3.5 | 24.7 | 1.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 59.8 | 87.8 | 87.8 | | 88.5 | 84.7 | 84.7 | | 61.5 | 31.8 | 31.8 | | 38.1 | 50.6 | 20.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 59.8 | 87.8 | 87.8 | | 88.5 | 84.7 | 84.7 | | 61.5 | 31.8 | 31.8 | | 38.1 | 50.6 | 20.5 | |
| LOS by Move: | E | F | F | | F | F | F | | E | C | C | | D | D | C | |
| HCM2kAvgQ: | 16 | 18 | 18 | | 12 | 9 | 9 | | 3 | 11 | 11 | | 8 | 37 | 11 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.907
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 48.5
Optimal Cycle: 111 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 0 1 | 0 | 1 0 | 0 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | 92 | 391 | 62 | 15 | 228 | 24 | 73 | 584 | 95 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 42 | 301 | 58 | 105 | 446 | 71 | 17 | 260 | 27 | 83 | 666 | 108 |
| Added Vol: | 1 | 104 | 41 | 6 | 28 | 2 | 25 | 21 | 0 | 3 | 36 | 9 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 43 | 405 | 99 | 111 | 474 | 73 | 42 | 281 | 27 | 86 | 702 | 117 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 43 | 405 | 99 | 111 | 474 | 73 | 42 | 281 | 27 | 86 | 702 | 117 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 43 | 405 | 99 | 111 | 474 | 73 | 42 | 281 | 27 | 86 | 702 | 117 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 43 | 405 | 99 | 111 | 474 | 73 | 42 | 281 | 27 | 86 | 702 | 117 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 | 0.95 | 0.99 | 0.99 | 0.95 | 0.98 | 0.98 |
| Lanes: | 0.16 | 1.48 | 0.36 | 0.34 | 1.44 | 0.22 | 1.00 | 0.91 | 0.09 | 1.00 | 0.86 | 0.14 |
| Final Sat.: | 276 | 2589 | 634 | 594 | 2537 | 389 | 1805 | 1709 | 166 | 1805 | 1594 | 266 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.16 | 0.16 | 0.19 | 0.19 | 0.19 | 0.02 | 0.16 | 0.16 | 0.05 | 0.44 | 0.44 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | 0.20 | 0.20 | 0.20 | 0.05 | 0.40 | 0.40 | 0.12 | 0.47 | 0.47 |
| Volume/Cap: | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.47 | 0.41 | 0.41 | 0.39 | 0.93 | 0.93 |
| Uniform Del: | 41.1 | 41.1 | 41.1 | 39.3 | 39.3 | 39.3 | 46.2 | 21.5 | 21.5 | 40.5 | 24.9 | 24.9 |
| IncremntDel: | 22.0 | 22.0 | 22.0 | 19.3 | 19.3 | 19.3 | 3.8 | 0.4 | 0.4 | 1.2 | 16.4 | 16.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 63.0 | 63.0 | 63.0 | 58.6 | 58.6 | 58.6 | 50.0 | 21.9 | 21.9 | 41.7 | 41.3 | 41.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 63.0 | 63.0 | 63.0 | 58.6 | 58.6 | 58.6 | 50.0 | 21.9 | 21.9 | 41.7 | 41.3 | 41.3 |
| LOS by Move: | E | E | E | E | E | E | D | C | C | D | D | D |
| HCM2kAvgQ: | 13 | 13 | 13 | 15 | 15 | 15 | 2 | 7 | 7 | 3 | 29 | 29 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.741
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 60 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 51 | 2693 | 0 | 0 | 1179 | 35 | 117 | 0 | 7 | 0 | 0 | 0 |
| Added Vol: | 94 | 32 | 0 | 0 | 443 | 0 | 154 | 0 | 21 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | 0 | 28 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.54 | 0.00 | 0.00 | 0.32 | 0.02 | 0.15 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | **** | | | | | |
| Green/Cycle: | 0.15 | 0.72 | 0.00 | 0.00 | 0.58 | 0.58 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.55 | 0.74 | 0.00 | 0.00 | 0.55 | 0.04 | 0.74 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 51.4 | 10.7 | 0.0 | 0.0 | 17.2 | 12.0 | 48.3 | 0.0 | 41.6 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 2.6 | 0.8 | 0.0 | 0.0 | 0.2 | 0.0 | 7.9 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 54.0 | 11.5 | 0.0 | 0.0 | 17.4 | 12.0 | 56.1 | 0.0 | 41.7 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 54.0 | 11.5 | 0.0 | 0.0 | 17.4 | 12.0 | 56.1 | 0.0 | 41.7 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | D | B | A | A | B | B | E | A | D | A | A | A |
| HCM2kAvgQ: | 6 | 24 | 0 | 0 | 15 | 1 | 12 | 0 | 1 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.678
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.1
Optimal Cycle: 50 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | 218 | 0 | 31 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 166 | 2360 | 0 | | 0 | 970 | 223 | 249 | 0 | 35 | 0 | 0 | 0 | | | |
| Added Vol: | 94 | 122 | 0 | | 0 | 462 | 2 | 4 | 0 | 21 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 260 | 2482 | 0 | | 0 | 1432 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 260 | 2482 | 0 | | 0 | 1432 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 260 | 2482 | 0 | | 0 | 1432 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 260 | 2482 | 0 | | 0 | 1432 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.49 | 0.00 | | 0.00 | 0.28 | 0.14 | 0.14 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | | **** | | | **** | | | **** | | | | | | | | |
| Green/Cycle: | 0.25 | 0.72 | 0.00 | | 0.00 | 0.47 | 0.47 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.60 | 0.68 | 0.00 | | 0.00 | 0.60 | 0.30 | 0.68 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 43.2 | 9.9 | 0.0 | | 0.0 | 25.1 | 21.1 | 47.3 | 0.0 | 42.0 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 2.2 | 0.5 | 0.0 | | 0.0 | 0.4 | 0.2 | 5.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 45.4 | 10.5 | 0.0 | | 0.0 | 25.5 | 21.3 | 52.2 | 0.0 | 42.2 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 45.4 | 10.5 | 0.0 | | 0.0 | 25.5 | 21.3 | 52.2 | 0.0 | 42.2 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | B | A | | A | C | C | D | A | D | A | A | A | | | |
| HCM2kAvgQ: | 10 | 20 | 0 | | 0 | 15 | 5 | 10 | 0 | 2 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.745
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 26.3
Optimal Cycle: 41 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | | R | L | T | | R | L | T | | R | L | T | | R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | | 83 | 0 | 561 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 529 | 417 | 0 | | 0 | 454 | 75 | | 95 | 0 | 640 | | 0 | 0 | 0 | |
| Added Vol: | 62 | 24 | 0 | | 0 | 71 | 2 | | 7 | 0 | 35 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 591 | 441 | 0 | | 0 | 525 | 77 | | 102 | 0 | 675 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 591 | 441 | 0 | | 0 | 525 | 77 | | 102 | 0 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 591 | 441 | 0 | | 0 | 525 | 77 | | 102 | 0 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 591 | 441 | 0 | | 0 | 525 | 77 | | 102 | 0 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | | 0.93 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1595 | 235 | | 1769 | 0 | 1900 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.24 | 0.00 | | 0.00 | 0.33 | 0.33 | | 0.06 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.45 | 0.89 | 0.00 | | 0.00 | 0.44 | 0.44 | | 0.08 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.75 | 0.27 | 0.00 | | 0.00 | 0.75 | 0.75 | | 0.75 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 27.4 | 1.0 | 0.0 | | 0.0 | 27.9 | 27.9 | | 54.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.9 | 0.1 | 0.0 | | 0.0 | 3.8 | 3.8 | | 19.9 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 31.3 | 1.0 | 0.0 | | 0.0 | 31.7 | 31.7 | | 74.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.3 | 1.0 | 0.0 | | 0.0 | 31.7 | 31.7 | | 74.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | C | C | | E | A | A | | A | A | A | |
| HCM2kAvgQ: | 19 | 2 | 0 | | 0 | 19 | 19 | | 5 | 0 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.541
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 24 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 65 | 710 | 56 | | 219 | 808 | 78 | | 3 | 3 | 3 | | 140 | 60 | 275 | |
| Added Vol: | 0 | 84 | 0 | | 1 | 105 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.47 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 896 | 861 | 861 | | 1020 | 440 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.22 | 0.04 | | 0.12 | 0.26 | 0.05 | | 0.00 | 0.00 | 0.00 | | 0.14 | 0.14 | 0.17 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.41 | 0.41 | | 0.23 | 0.56 | 0.56 | | 0.32 | 0.32 | 0.32 | | 0.32 | 0.32 | 0.32 | |
| Volume/Cap: | 0.46 | 0.54 | 0.09 | | 0.54 | 0.46 | 0.09 | | 0.01 | 0.01 | 0.01 | | 0.43 | 0.43 | 0.54 | |
| Uniform Del: | 52.7 | 26.5 | 21.3 | | 40.7 | 15.3 | 12.0 | | 27.7 | 27.7 | 27.7 | | 32.0 | 32.0 | 33.4 | |
| IncremntDel: | 2.3 | 0.4 | 0.1 | | 1.5 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.6 | 0.6 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 55.0 | 26.9 | 21.3 | | 42.1 | 15.5 | 12.0 | | 27.7 | 27.7 | 27.7 | | 32.6 | 32.6 | 34.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 55.0 | 26.9 | 21.3 | | 42.1 | 15.5 | 12.0 | | 27.7 | 27.7 | 27.7 | | 32.6 | 32.6 | 34.6 | |
| LOS by Move: | E | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 12 | 1 | | 8 | 10 | 1 | | 0 | 0 | 0 | | 6 | 6 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 33.0
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 131 | 358 | 9 | | 8 | 559 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Added Vol: | 0 | 138 | 0 | | 0 | 37 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 131 | 496 | 9 | | 8 | 596 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 131 | 496 | 9 | | 8 | 596 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 131 | 496 | 9 | | 8 | 596 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 131 | 496 | 9 | | 8 | 596 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.41 | 1.56 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 735 | 2781 | 51 | | 27 | 2005 | 1362 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.30 | 0.30 | 0.30 | | 0.05 | 0.09 | 0.09 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | **** | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.42 | 0.42 | 0.42 | | 0.12 | 0.12 | 0.12 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.71 | 0.71 | 0.71 | | 0.71 | 0.71 | 0.71 | | 0.42 | 0.71 | 0.71 | | 0.71 | 0.71 | 0.71 | |
| Uniform Del: | 34.0 | 34.0 | 34.0 | | 23.8 | 23.8 | 23.8 | | 40.5 | 42.1 | 42.1 | | 44.0 | 44.0 | 44.0 | |
| IncremntDel: | 2.6 | 2.6 | 2.6 | | 1.6 | 1.6 | 1.6 | | 0.5 | 7.2 | 7.2 | | 12.4 | 12.4 | 12.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.5 | 36.5 | 36.5 | | 25.5 | 25.5 | 25.5 | | 41.0 | 49.3 | 49.3 | | 56.4 | 56.4 | 56.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.5 | 36.5 | 36.5 | | 25.5 | 25.5 | 25.5 | | 41.0 | 49.3 | 49.3 | | 56.4 | 56.4 | 56.4 | |
| LOS by Move: | D | D | D | | C | C | C | | D | D | D | | E | E | E | |
| HCM2kAvgQ: | 11 | 11 | 11 | | 14 | 14 | 14 | | 3 | 6 | 6 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.596 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.5 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 0 | 3 0 | 0 | | 0 0 | 3 0 | 1 | | 2 0 | 0 0 | 1 | | 0 0 | 0 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | | 0 | 782 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 2505 | 0 | | 0 | 891 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Added Vol: | 0 | 216 | 0 | | 0 | 483 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 2721 | 0 | | 0 | 1374 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 2721 | 0 | | 0 | 1374 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 2721 | 0 | | 0 | 1374 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 2721 | 0 | | 0 | 1374 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 0.91 | 1.00 | | 1.00 | 0.91 | 1.00 | | 0.97 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1900 | 5187 | 0 | | 0 | 5187 | 1900 | | 3686 | 0 | 1900 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.52 | 0.00 | | 0.00 | 0.26 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | | 0.00 | 0.88 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.00 | 0.60 | 0.00 | | 0.00 | 0.30 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 0.0 | 1.5 | 0.0 | | 0.0 | 1.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 0.0 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 0.0 | 1.7 | 0.0 | | 0.0 | 1.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 1.7 | 0.0 | | 0.0 | 1.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | A | A | A | | A | A | A | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 8 | 0 | | 0 | 3 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Cumulative 2025 East Campus Only PM |
| Command: | Long Term Project I PM |
| Volume: | Long Term Project I PM |
| Geometry: | Long Term Project I PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project I PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project I PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 77.7 | 1.075 | F | 83.0 | 1.096 | + 5.266 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 19.2 | 0.929 | D | 46.5 | 1.105 | +27.224 |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 23.8 | 0.931 | C | 34.6 | 0.983 | +10.805 |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 24.3 | 0.781 | C | 24.2 | 0.896 | -0.153 |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 29.2 | 0.664 | C | 22.6 | 0.779 | -6.564 |
| # 6 Bay Rd. & Marsh Rd. | B | 15.9 | 0.659 | B | 15.3 | 0.691 | -0.631 |
| # 7 Middlefield at Marsh (Town of | D | 39.4 | 0.922 | D | 50.6 | 1.040 | +11.151 |
| # 8 Bayfront Exp. & Willow Rd. | E | 67.9 | 1.045 | F | 140.2 | 1.282 | +72.292 |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.7 | 0.693 | C | 25.7 | 0.772 | + 2.036 |
| # 10 Ivy Dr. & Willow Rd. | B | 12.8 | 0.619 | B | 14.9 | 0.741 | + 2.098 |
| # 11 O'Brien Dr. & Willow Rd. | B | 10.4 | 0.622 | A | 9.8 | 0.667 | -0.569 |
| # 12 Newbridge St. & Willow Rd. | D | 36.8 | 0.838 | E | 57.1 | 1.071 | +20.276 |
| # 13 Bay Rd. & Willow Rd. | C | 22.2 | 0.833 | C | 23.9 | 0.877 | + 1.715 |
| # 14 Durham St. & Willow Rd. | E | 56.1 | 0.728 | C | 20.2 | 0.865 | -35.939 |
| # 15 Coleman Ave. & Willow Rd. | B | 14.3 | 0.833 | B | 17.1 | 0.906 | + 2.709 |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.1 | 0.745 | B | 14.3 | 0.844 | + 0.214 |
| # 17 Middlefield Rd. & Willow Rd. | F | 153.6 | 1.404 | F | 215.0 | 1.539 | +61.397 |
| # 18 Bayfront Exp. & University Ave | F | 211.8 | 1.460 | F | 244.3 | 1.560 | +32.474 |
| # 19 O'Brien Dr. & University Ave. | B | 14.3 | 0.760 | B | 14.7 | 0.776 | + 0.374 |
| # 20 University & Kavanaugh | B | 17.7 | 0.732 | B | 17.5 | 0.741 | -0.186 |
| # 21 University & Bay | D | 39.5 | 0.918 | D | 39.7 | 0.927 | + 0.171 |
| # 22 University & Runnymede | C | 24.8 | 0.770 | C | 24.7 | 0.778 | -0.060 |
| # 23 University & Bell | A | 8.2 | 0.605 | A | 8.2 | 0.613 | -0.087 |
| # 24 University & Donohoe | D | 43.4 | 0.962 | D | 45.6 | 0.973 | + 2.118 |
| # 25 NB 101 & Donohoe St | C | 22.0 | 0.531 | C | 22.2 | 0.535 | + 0.126 |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 33.4 | 0.580 | C | 34.3 | 0.600 | + 0.849 D/V |
| # 27 University Ave. & Woodland | E | 57.6 | 0.980 | E | 60.1 | 0.999 | + 2.490 D/V |
| # 28 Middlefield Rd. & University A | C | 33.8 | 0.613 | D | 35.9 | 0.683 | + 2.047 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | C | 20.8 | 0.777 | F | 101.9 | 1.187 | +81.059 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 15.0 | 0.666 | B | 19.3 | 0.776 | + 4.283 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 30.5 | 0.818 | C | 32.7 | 0.877 | + 2.193 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 29.6 | 0.689 | C | 30.0 | 0.720 | + 0.481 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 41.7 | 0.803 | D | 45.2 | 0.862 | + 3.480 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.5 | 0.576 | A | 1.6 | 0.625 | + 0.140 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

| | | | |
|---|---|---|---|
| Cycle (sec): | 140 | Critical Vol./Cap.(X): | 1.096 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 83.0 |
| Optimal Cycle: | 180 | Level Of Service: | F |

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1350 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2225 | | 35 | 83 | 13 | |
| Added Vol: | 982 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 55 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.45 | 0.03 | 0.03 | | 0.00 | 0.11 | 0.13 | | 0.11 | 0.11 | 0.82 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.41 | 0.41 | 0.41 | | 0.00 | 0.10 | 0.44 | | 0.33 | 0.33 | 0.75 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 1.10 | 0.08 | 0.08 | | 0.00 | 1.10 | 0.31 | | 0.34 | 0.34 | 1.10 | | 1.10 | 1.10 | 1.10 | |
| Uniform Del: | 41.1 | 25.0 | 25.0 | | 0.0 | 62.9 | 25.8 | | 35.1 | 35.1 | 17.7 | | 65.4 | 65.4 | 65.4 | |
| IncremntDel: | 51.5 | 0.0 | 0.0 | | 0.0 | 75.9 | 0.3 | | 0.3 | 0.3 | 51.6 | | 110.5 | 111 | 110.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 92.5 | 25.0 | 25.0 | | 0.0 | 139 | 26.0 | | 35.4 | 35.4 | 69.4 | | 175.9 | 176 | 175.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 92.5 | 25.0 | 25.0 | | 0.0 | 139 | 26.0 | | 35.4 | 35.4 | 69.4 | | 175.9 | 176 | 175.9 | |
| LOS by Move: | F | C | C | | A | F | C | | D | D | E | | F | F | F | |
| HCM2kAvgQ: | 46 | 2 | 2 | | 0 | 14 | 6 | | 6 | 6 | 72 | | 10 | 10 | 10 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.105
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 46.5
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 0 | 0 | 1 1 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 562 | 0 | 243 | | 0 | 0 | 0 | | 0 | 2352 | 578 | | 0 | 777 | 902 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 118 | 0 | | 0 | 730 | 251 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 578 | | 0 | 1507 | 1153 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 0 | | 0 | 1507 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 0 | | 0 | 1507 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 0 | | 0 | 1507 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.00 | 0.25 | | 0.00 | 0.00 | 0.00 | | 0.73 | 0.73 | 0.00 | | 0.00 | 0.43 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.00 | 0.23 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Volume/Cap: | 0.71 | 0.00 | 1.11 | | 0.00 | 0.00 | 0.00 | | 1.11 | 1.11 | 0.00 | | 0.00 | 0.64 | 0.00 | |
| Uniform Del: | 23.0 | 0.0 | 25.0 | | 0.0 | 0.0 | 0.0 | | 11.0 | 11.0 | 0.0 | | 0.0 | 6.5 | 0.0 | |
| IncremntDel: | 3.0 | 0.0 | 78.7 | | 0.0 | 0.0 | 0.0 | | 54.8 | 54.8 | 0.0 | | 0.0 | 0.6 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 26.1 | 0.0 | 103.7 | | 0.0 | 0.0 | 0.0 | | 65.8 | 65.8 | 0.0 | | 0.0 | 7.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.1 | 0.0 | 103.7 | | 0.0 | 0.0 | 0.0 | | 65.8 | 65.8 | 0.0 | | 0.0 | 7.1 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | E | E | A | | A | A | A | |
| HCM2kAvgQ: | 7 | 0 | 17 | | 0 | 0 | 0 | | 46 | 46 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.983
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 34.6
Optimal Cycle: 128 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1545 | 0 | 516 | | 0 | 1346 | 742 | | 0 | 1072 | 321 | |
| Added Vol: | 0 | 0 | 0 | | 65 | 0 | 17 | | 0 | 92 | 0 | | 0 | 371 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1610 | 0 | 533 | | 0 | 1438 | 742 | | 0 | 1443 | 321 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1610 | 0 | 533 | | 0 | 1438 | 0 | | 0 | 1443 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1610 | 0 | 533 | | 0 | 1438 | 0 | | 0 | 1443 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1610 | 0 | 533 | | 0 | 1438 | 0 | | 0 | 1443 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.47 | 0.00 | 0.34 | | 0.00 | 0.41 | 0.00 | | 0.00 | 0.41 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.48 | 0.00 | 0.48 | | 0.00 | 0.41 | 0.00 | | 0.00 | 0.41 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.98 | 0.00 | 0.71 | | 0.00 | 0.98 | 0.00 | | 0.00 | 0.98 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 16.7 | 0.0 | 13.4 | | 0.0 | 18.7 | 0.0 | | 0.0 | 18.8 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 18.2 | 0.0 | 3.1 | | 0.0 | 18.8 | 0.0 | | 0.0 | 19.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 34.9 | 0.0 | 16.5 | | 0.0 | 37.5 | 0.0 | | 0.0 | 38.2 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 34.9 | 0.0 | 16.5 | | 0.0 | 37.5 | 0.0 | | 0.0 | 38.2 | 0.0 | |
| LOS by Move: | A | A | A | | C | A | B | | A | D | A | | A | D | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 24 | 0 | 10 | | 0 | 22 | 0 | | 0 | 22 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.896
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 78 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | | 254 | 9 | 2 | | 42 | 1314 | 17 | | 78 | 1109 | 214 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1498 | 19 | | 89 | 1264 | 244 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 94 | 0 | | 0 | 388 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1592 | 19 | | 89 | 1652 | 244 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1592 | 19 | | 89 | 1652 | 244 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1592 | 19 | | 89 | 1652 | 244 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1592 | 19 | | 89 | 1652 | 244 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.65 | 0.35 | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | 2.96 | 0.04 | | 2.00 | 1.74 | 0.26 | |
| Final Sat.: | 1174 | 629 | 2786 | | 1716 | 61 | 1583 | | 1769 | 5012 | 61 | | 3432 | 3024 | 447 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.03 | 0.11 | | 0.17 | 0.17 | 0.00 | | 0.03 | 0.32 | 0.32 | | 0.03 | 0.55 | 0.55 | |
| Crit Moves: | | | **** | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.18 | 0.18 | 0.18 | | 0.05 | 0.56 | 0.56 | | 0.09 | 0.60 | 0.60 | |
| Volume/Cap: | 0.23 | 0.23 | 0.92 | | 0.92 | 0.92 | 0.01 | | 0.54 | 0.57 | 0.57 | | 0.29 | 0.92 | 0.92 | |
| Uniform Del: | 31.9 | 31.9 | 34.8 | | 32.0 | 32.0 | 26.7 | | 37.1 | 11.4 | 11.4 | | 34.2 | 14.4 | 14.4 | |
| IncremntDel: | 0.5 | 0.5 | 29.0 | | 29.3 | 29.3 | 0.0 | | 6.7 | 0.3 | 0.3 | | 0.5 | 6.9 | 6.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.4 | 32.4 | 63.8 | | 61.3 | 61.3 | 26.7 | | 43.8 | 11.7 | 11.7 | | 34.7 | 21.3 | 21.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.4 | 32.4 | 63.8 | | 61.3 | 61.3 | 26.7 | | 43.8 | 11.7 | 11.7 | | 34.7 | 21.3 | 21.3 | |
| LOS by Move: | C | C | E | | E | E | C | | D | B | B | | C | C | C | |
| HCM2kAvgQ: | 1 | 1 | 8 | | 11 | 11 | 0 | | 2 | 10 | 10 | | 1 | 27 | 27 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 45 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | | 428 | 30 | 128 | | 239 | 885 | 55 | | 26 | 833 | 316 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1009 | 63 | | 30 | 950 | 360 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 94 | 0 | | 0 | 388 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1103 | 63 | | 30 | 1338 | 360 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1103 | 63 | | 30 | 1338 | 360 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1103 | 63 | | 30 | 1338 | 360 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1103 | 63 | | 30 | 1338 | 360 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.88 | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.36 | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 598 | 1084 | | 3323 | 233 | 1583 | | 1769 | 3321 | 189 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.15 | 0.15 | 0.09 | | 0.15 | 0.33 | 0.33 | | 0.02 | 0.38 | 0.23 | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.08 | 0.08 | 0.08 | | 0.19 | 0.19 | 0.19 | | 0.20 | 0.59 | 0.59 | | 0.09 | 0.49 | 0.49 | |
| Volume/Cap: | 0.78 | 0.78 | 0.78 | | 0.78 | 0.78 | 0.49 | | 0.78 | 0.56 | 0.56 | | 0.19 | 0.78 | 0.47 | |
| Uniform Del: | 36.2 | 36.2 | 36.2 | | 30.9 | 30.9 | 29.0 | | 30.4 | 9.9 | 9.9 | | 33.7 | 17.0 | 13.7 | |
| IncremntDel: | 24.0 | 24.6 | 24.6 | | 5.8 | 5.8 | 1.3 | | 10.7 | 0.3 | 0.3 | | 0.6 | 2.4 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 60.1 | 60.8 | 60.8 | | 36.7 | 36.7 | 30.3 | | 41.1 | 10.2 | 10.2 | | 34.3 | 19.4 | 14.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 60.1 | 60.8 | 60.8 | | 36.7 | 36.7 | 30.3 | | 41.1 | 10.2 | 10.2 | | 34.3 | 19.4 | 14.2 | |
| LOS by Move: | E | E | E | | D | D | C | | D | B | B | | C | B | B | |
| HCM2kAvgQ: | 5 | 4 | 4 | | 8 | 8 | 4 | | 8 | 10 | 10 | | 1 | 16 | 6 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.691
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 34 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! 0 | 0 | 0 | 0 | 1! 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 65 | 9 | 205 | | 63 | 35 | 3 | | 6 | 934 | 103 | | 228 | 1016 | 54 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 94 | 2 | | 0 | 388 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1028 | 105 | | 228 | 1404 | 54 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1028 | 105 | | 228 | 1404 | 54 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1028 | 105 | | 228 | 1404 | 54 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1028 | 105 | | 228 | 1404 | 54 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.65 | 0.65 | 0.65 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.81 | 0.18 | | 1.00 | 1.93 | 0.07 | |
| Final Sat.: | 365 | 50 | 1119 | | 766 | 432 | 42 | | 17 | 2986 | 304 | | 1769 | 3387 | 129 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.08 | 0.08 | 0.08 | | 0.34 | 0.34 | 0.34 | | 0.13 | 0.41 | 0.41 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.26 | 0.26 | 0.26 | | 0.50 | 0.50 | 0.50 | | 0.19 | 0.69 | 0.69 | |
| Volume/Cap: | 0.69 | 0.69 | 0.69 | | 0.31 | 0.31 | 0.31 | | 0.69 | 0.69 | 0.69 | | 0.69 | 0.60 | 0.60 | |
| Uniform Del: | 26.5 | 26.5 | 26.5 | | 23.6 | 23.6 | 23.6 | | 15.3 | 15.3 | 15.3 | | 30.4 | 6.7 | 6.7 | |
| IncremntDel: | 5.2 | 5.2 | 5.2 | | 0.5 | 0.5 | 0.5 | | 1.3 | 1.3 | 1.3 | | 6.0 | 0.4 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 31.7 | 31.7 | 31.7 | | 24.1 | 24.1 | 24.1 | | 16.6 | 16.6 | 16.6 | | 36.4 | 7.2 | 7.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.7 | 31.7 | 31.7 | | 24.1 | 24.1 | 24.1 | | 16.6 | 16.6 | 16.6 | | 36.4 | 7.2 | 7.2 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | D | A | A | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 2 | 2 | 2 | | 12 | 12 | 12 | | 7 | 11 | 11 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 1.040
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 50.6
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 486 | 625 | | 465 | 307 | 0 | | 0 | 0 | 0 | | 587 | 0 | 510 | |
| Added Vol: | 0 | 58 | 71 | | 25 | 11 | 0 | | 0 | 0 | 0 | | 113 | 0 | 277 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.29 | 0.43 | | 0.27 | 0.17 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.39 | 0.00 | 0.49 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.28 | 0.65 | | 0.26 | 0.54 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.63 | |
| Volume/Cap: | 0.00 | 1.04 | 0.66 | | 1.04 | 0.31 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.04 | 0.00 | 0.77 | |
| Uniform Del: | 0.0 | 39.9 | 12.0 | | 40.6 | 14.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.5 | 0.0 | 14.4 | |
| IncremntDel: | 0.0 | 50.2 | 1.6 | | 52.3 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 45.5 | 0.0 | 3.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 90.0 | 13.6 | | 92.9 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | 17.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 90.0 | 13.6 | | 92.9 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | 17.9 | |
| LOS by Move: | A | F | B | | F | B | A | | A | A | A | | F | A | B | |
| HCM2kAvgQ: | 0 | 26 | 15 | | 24 | 6 | 0 | | 0 | 0 | 0 | | 33 | 0 | 20 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.282
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 140.2
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 1 | 2 | 0 | 3 | 0 1 | 1 | 1 | 1 | 0 2 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | | 1 | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | | 8 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 413 | 757 | | 1 | 0 | 2507 | 123 | | 41 | 15 | 1623 | | 50 | 120 | | 9 |
| Added Vol: | 404 | 257 | | 3 | 49 | 171 | 0 | | 0 | 94 | 40 | | 317 | 391 | | 181 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| Initial Fut: | 817 | 1014 | | 4 | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | | 190 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 817 | 1014 | | 4 | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | | 190 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| Reduced Vol: | 817 | 1014 | | 4 | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | | 190 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 817 | 1014 | | 4 | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | | 190 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 1.03 | | 0.83 | 0.90 | 1.03 | 0.83 | | 0.92 | 0.92 | 0.88 | | 0.93 | 0.93 | | 0.83 |
| Lanes: | 2.00 | 3.00 | | 1.00 | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 2.00 | | 1.00 | 2.00 | | 1.00 |
| Final Sat.: | 3432 | 5846 | | 1583 | 3432 | 5846 | 1583 | | 1744 | 3488 | 3343 | | 1769 | 3538 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.17 | | 0.00 | 0.01 | 0.46 | 0.08 | | 0.02 | 0.03 | 0.50 | | 0.21 | 0.14 | | 0.12 |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | |
| Green/Cycle: | 0.19 | 0.44 | | 0.61 | 0.10 | 0.36 | 0.36 | | 0.20 | 0.20 | 0.39 | | 0.16 | 0.16 | | 0.26 |
| Volume/Cap: | 1.28 | 0.39 | | 0.00 | 0.14 | 1.28 | 0.22 | | 0.12 | 0.15 | 1.28 | | 1.28 | 0.89 | | 0.46 |
| Uniform Del: | 52.9 | 24.3 | | 10.1 | 53.6 | 41.8 | 29.1 | | 42.3 | 42.7 | 39.8 | | 54.5 | 53.4 | | 40.4 |
| IncremntDel: | 138.5 | 0.1 | | 0.0 | 0.2 | 131 | 0.2 | | 0.0 | 0.1 | 132.7 | | 150.7 | 16.0 | | 0.8 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 191.4 | 24.4 | | 10.1 | 53.8 | 172 | 29.3 | | 42.4 | 42.7 | 172.5 | | 205.2 | 69.4 | | 41.2 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 191.4 | 24.4 | | 10.1 | 53.8 | 172 | 29.3 | | 42.4 | 42.7 | 172.5 | | 205.2 | 69.4 | | 41.2 |
| LOS by Move: | F | C | | B | D | F | C | | D | D | F | | F | E | | D |
| HCM2kAvgQ: | 30 | 10 | | 0 | 1 | 66 | 3 | | 1 | 2 | 64 | | 27 | 14 | | 7 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.772
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 25.7
Optimal Cycle: 72 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | | 49 | 73 | 5 | | 73 | 130 | 1351 | | 5 | 20 | 553 | | 67 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 147 | 7 | | 56 | 83 | 6 | | 83 | 148 | 1540 | | 6 | 23 | 630 | | 76 |
| Added Vol: | 0 | 0 | | 0 | 0 | 0 | | 7 | 11 | 134 | | 0 | 0 | 795 | | 1 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 147 | 7 | | 56 | 83 | 6 | | 90 | 159 | 1674 | | 6 | 23 | 1425 | | 77 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 147 | 7 | | 56 | 83 | 6 | | 90 | 159 | 1674 | | 6 | 23 | 1425 | | 77 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 147 | 7 | | 56 | 83 | 6 | | 90 | 159 | 1674 | | 6 | 23 | 1425 | | 77 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 147 | 7 | | 56 | 83 | 6 | | 90 | 159 | 1674 | | 6 | 23 | 1425 | | 77 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.60 | 0.60 | | 0.60 | 0.73 | 0.73 | | 0.73 | 0.93 | 0.93 | | 0.93 | 0.93 | 0.92 | | 0.92 |
| Lanes: | 0.70 | 0.03 | | 0.27 | 0.46 | 0.03 | | 0.51 | 1.00 | 1.99 | | 0.01 | 1.00 | 1.90 | | 0.10 |
| Final Sat.: | 804 | 37 | | 305 | 644 | 44 | | 698 | 1769 | 3526 | | 12 | 1769 | 3329 | | 181 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | | 0.18 | 0.13 | 0.13 | | 0.13 | 0.09 | 0.47 | | 0.47 | 0.01 | 0.43 | | 0.43 |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.24 | 0.24 | | 0.24 | 0.24 | 0.24 | | 0.24 | 0.12 | 0.62 | | 0.62 | 0.05 | 0.55 | | 0.55 |
| Volume/Cap: | 0.77 | 0.77 | | 0.77 | 0.55 | 0.55 | | 0.55 | 0.77 | 0.77 | | 0.77 | 0.24 | 0.77 | | 0.77 |
| Uniform Del: | 42.8 | 42.8 | | 42.8 | 40.1 | 40.1 | | 40.1 | 51.5 | 16.7 | | 16.7 | 54.4 | 20.8 | | 20.8 |
| IncremntDel: | 12.8 | 12.8 | | 12.8 | 1.9 | 1.9 | | 1.9 | 16.3 | 1.7 | | 1.7 | 1.3 | 2.0 | | 2.0 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 55.5 | 55.5 | | 55.5 | 42.0 | 42.0 | | 42.0 | 67.8 | 18.5 | | 18.5 | 55.7 | 22.8 | | 22.8 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 55.5 | 55.5 | | 55.5 | 42.0 | 42.0 | | 42.0 | 67.8 | 18.5 | | 18.5 | 55.7 | 22.8 | | 22.8 |
| LOS by Move: | E | E | | E | D | D | | D | E | B | | B | E | C | | C |
| HCM2kAvgQ: | 9 | 9 | | 9 | 6 | 6 | | 6 | 8 | 25 | | 25 | 1 | 24 | | 24 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.741
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 65 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 0 | 0 0 | 0 | | 0 0 | 1! 0 | 0 | | 1 0 | 2 0 | 0 | | 0 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | 122 | | 98 | 1457 | 0 | | 0 | 800 | 22 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 11 | 0 | 139 | | 112 | 1661 | 0 | | 0 | 912 | 25 | |
| Added Vol: | 0 | 0 | 0 | | 14 | 0 | 10 | | 10 | 131 | 0 | | 0 | 699 | 104 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 25 | 0 | 149 | | 122 | 1792 | 0 | | 0 | 1611 | 129 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 25 | 0 | 149 | | 122 | 1792 | 0 | | 0 | 1611 | 129 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 25 | 0 | 149 | | 122 | 1792 | 0 | | 0 | 1611 | 129 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 25 | 0 | 149 | | 122 | 1792 | 0 | | 0 | 1611 | 129 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | 0.86 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.92 | 0.92 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.15 | 0.00 | 0.85 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.85 | 0.15 | |
| Final Sat.: | 0 | 0 | 0 | | 238 | 0 | 1398 | | 1769 | 3538 | 0 | | 0 | 3239 | 260 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.11 | 0.00 | 0.11 | | 0.07 | 0.51 | 0.00 | | 0.00 | 0.50 | 0.50 | |
| Crit Moves: | | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.14 | 0.00 | 0.14 | | 0.09 | 0.76 | 0.00 | | 0.00 | 0.67 | 0.67 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.74 | 0.00 | 0.74 | | 0.74 | 0.66 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 49.2 | 0.0 | 49.2 | | 53.0 | 6.8 | 0.0 | | 0.0 | 12.9 | 12.9 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 11.8 | 0.0 | 11.8 | | 16.4 | 0.6 | 0.0 | | 0.0 | 1.3 | 1.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 61.0 | 0.0 | 61.0 | | 69.4 | 7.4 | 0.0 | | 0.0 | 14.2 | 14.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 61.0 | 0.0 | 61.0 | | 69.4 | 7.4 | 0.0 | | 0.0 | 14.2 | 14.2 | |
| LOS by Move: | A | A | A | | E | A | E | | E | A | A | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 8 | 0 | 8 | | 6 | 17 | 0 | | 0 | 23 | 23 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 54 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | | 0 0 | 2 0 | 1 | | 1 0 | 2 0 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | 0 | | 0 | 1413 | 204 | | 73 | 888 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 137 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1611 | 233 | | 83 | 1012 | 0 | |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 141 | 11 | | 0 | 709 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1752 | 244 | | 83 | 1721 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1752 | 244 | | 83 | 1721 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1752 | 244 | | 83 | 1721 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 141 | 0 | 40 | | 0 | 0 | 0 | | 0 | 1752 | 244 | | 83 | 1721 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2841 | 0 | 627 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.50 | 0.15 | | 0.05 | 0.49 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.74 | 0.74 | | 0.07 | 0.81 | 0.00 | |
| Volume/Cap: | 0.52 | 0.00 | 0.67 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.67 | 0.21 | | 0.67 | 0.60 | 0.00 | |
| Uniform Del: | 51.7 | 0.0 | 52.4 | | 0.0 | 0.0 | 0.0 | | 0.0 | 7.9 | 4.7 | | 54.4 | 4.1 | 0.0 | |
| IncremntDel: | 1.4 | 0.0 | 6.2 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.7 | 0.1 | | 13.0 | 0.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 53.1 | 0.0 | 58.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 8.6 | 4.8 | | 67.3 | 4.4 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 53.1 | 0.0 | 58.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 8.6 | 4.8 | | 67.3 | 4.4 | 0.0 | |
| LOS by Move: | D | A | E | | A | A | A | | A | A | A | | E | A | A | |
| HCM2kAvgQ: | 4 | 0 | 5 | | 0 | 0 | 0 | | 0 | 18 | 3 | | 4 | 12 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 1.071
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 57.1
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 1 | 0 | 1 | 1 | 0 1 | 0 | 1 | 1 | 0 2 | 1 | 0 | 1 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 283 | 194 | 63 | | 43 | 189 | 250 | | 368 | 1637 | 386 | | 116 | 1112 | 39 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 7 | 152 | 0 | | 0 | 713 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.47 | 0.53 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4067 | 879 | | 1769 | 3454 | 73 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.16 | | 0.21 | 0.44 | 0.44 | | 0.07 | 0.53 | 0.53 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.10 | 0.10 | 0.19 | | 0.09 | 0.09 | 0.29 | | 0.20 | 0.60 | 0.60 | | 0.09 | 0.49 | 0.49 | |
| Volume/Cap: | 0.85 | 1.07 | 0.21 | | 0.26 | 1.07 | 0.56 | | 1.07 | 0.73 | 0.73 | | 0.73 | 1.07 | 1.07 | |
| Uniform Del: | 53.3 | 54.2 | 41.3 | | 50.4 | 54.3 | 35.9 | | 48.1 | 17.0 | 17.0 | | 53.2 | 30.4 | 30.4 | |
| IncremntDel: | 18.0 | 87.0 | 0.4 | | 0.8 | 87.9 | 1.5 | | 68.3 | 1.0 | 1.0 | | 15.9 | 43.4 | 43.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 71.3 | 141 | 41.6 | | 51.2 | 142 | 37.4 | | 116.4 | 18.0 | 18.0 | | 69.1 | 73.9 | 73.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 71.3 | 141 | 41.6 | | 51.2 | 142 | 37.4 | | 116.4 | 18.0 | 18.0 | | 69.1 | 73.9 | 73.9 | |
| LOS by Move: | E | F | D | | D | F | D | | F | B | B | | E | E | E | |
| HCM2kAvgQ: | 8 | 12 | 2 | | 2 | 12 | 8 | | 21 | 21 | 21 | | 6 | 49 | 49 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.877
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 23.9
Optimal Cycle: 93 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 1 | 0 0 | 0 | 1 | 1 | 0 2 | 0 | 0 | 0 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 474 | 0 | 62 | | 46 | 1637 | 0 | | 0 | 1210 | 291 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 130 | 0 | | 0 | 219 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1767 | 0 | | 0 | 1429 | 298 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1767 | 0 | | 0 | 1429 | 298 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1767 | 0 | | 0 | 1429 | 298 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1767 | 0 | | 0 | 1429 | 298 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.27 | 0.00 | 0.04 | | 0.03 | 0.50 | 0.00 | | 0.00 | 0.40 | 0.19 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.31 | 0.00 | 0.31 | | 0.07 | 0.57 | 0.00 | | 0.00 | 0.50 | 0.50 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.88 | 0.00 | 0.13 | | 0.37 | 0.88 | 0.00 | | 0.00 | 0.81 | 0.38 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 29.5 | 0.0 | 22.4 | | 40.0 | 16.7 | 0.0 | | 0.0 | 18.8 | 13.8 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 14.9 | 0.0 | 0.1 | | 1.9 | 4.7 | 0.0 | | 0.0 | 2.8 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 44.4 | 0.0 | 22.5 | | 42.0 | 21.4 | 0.0 | | 0.0 | 21.7 | 14.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 44.4 | 0.0 | 22.5 | | 42.0 | 21.4 | 0.0 | | 0.0 | 21.7 | 14.1 | |
| LOS by Move: | A | A | A | | D | A | C | | D | C | A | | A | C | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 16 | 0 | 1 | | 2 | 25 | 0 | | 0 | 19 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.865
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 82 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1283 | 11 | | 103 | 933 | 58 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 130 | 0 | | 0 | 219 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1413 | 11 | | 103 | 1152 | 58 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1413 | 11 | | 103 | 1152 | 58 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1413 | 11 | | 103 | 1152 | 58 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1413 | 11 | | 103 | 1152 | 58 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.44 | 0.84 | 0.84 | | 0.52 | 0.52 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.97 | 0.97 | |
| Lanes: | 1.00 | 0.08 | 0.92 | | 0.96 | 0.04 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.95 | 0.05 | |
| Final Sat.: | 843 | 122 | 1481 | | 953 | 39 | 1583 | | 1769 | 3506 | 28 | | 1769 | 1760 | 89 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.07 | 0.07 | | 0.15 | 0.15 | 0.02 | | 0.01 | 0.40 | 0.40 | | 0.06 | 0.65 | 0.65 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.16 | 0.16 | 0.16 | | 0.16 | 0.16 | 0.16 | | 0.04 | 0.67 | 0.67 | | 0.10 | 0.73 | 0.73 | |
| Volume/Cap: | 0.27 | 0.40 | 0.40 | | 0.89 | 0.89 | 0.14 | | 0.19 | 0.60 | 0.60 | | 0.60 | 0.89 | 0.89 | |
| Uniform Del: | 38.5 | 39.3 | 39.3 | | 43.0 | 43.0 | 37.6 | | 48.9 | 9.4 | 9.4 | | 45.5 | 10.9 | 10.9 | |
| IncremntDel: | 1.1 | 1.0 | 1.0 | | 41.5 | 41.5 | 0.2 | | 1.3 | 0.4 | 0.4 | | 5.7 | 8.0 | 8.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.6 | 40.3 | 40.3 | | 84.6 | 84.6 | 37.8 | | 50.3 | 9.8 | 9.8 | | 51.2 | 18.9 | 18.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.6 | 40.3 | 40.3 | | 84.6 | 84.6 | 37.8 | | 50.3 | 9.8 | 9.8 | | 51.2 | 18.9 | 18.9 | |
| LOS by Move: | D | D | D | | F | F | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 1 | 3 | 3 | | 7 | 7 | 1 | | 1 | 13 | 13 | | 4 | 34 | 34 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.906
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 103 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1235 | 7 | | 6 | 906 | 124 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 130 | 0 | | 0 | 219 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1365 | 7 | | 6 | 1125 | 124 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1365 | 7 | | 6 | 1125 | 124 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1365 | 7 | | 6 | 1125 | 124 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1365 | 7 | | 6 | 1125 | 124 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.12 | 0.98 | 0.98 | | 0.06 | 0.97 | 0.97 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.90 | 0.10 | |
| Final Sat.: | 650 | 596 | 379 | | 965 | 63 | 367 | | 229 | 1851 | 9 | | 121 | 1652 | 182 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.11 | 0.11 | 0.11 | | 0.12 | 0.74 | 0.74 | | 0.05 | 0.68 | 0.68 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Volume/Cap: | 0.18 | 0.18 | 0.18 | | 0.91 | 0.91 | 0.91 | | 0.15 | 0.91 | 0.91 | | 0.06 | 0.84 | 0.84 | |
| Uniform Del: | 41.5 | 41.5 | 41.5 | | 45.6 | 45.6 | 45.6 | | 2.1 | 7.0 | 7.0 | | 1.9 | 5.7 | 5.7 | |
| IncremntDel: | 0.4 | 0.4 | 0.4 | | 43.6 | 43.6 | 43.6 | | 0.4 | 8.2 | 8.2 | | 0.2 | 4.3 | 4.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.0 | 42.0 | 42.0 | | 89.2 | 89.2 | 89.2 | | 2.4 | 15.2 | 15.2 | | 2.2 | 10.1 | 10.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.0 | 42.0 | 42.0 | | 89.2 | 89.2 | 89.2 | | 2.4 | 15.2 | 15.2 | | 2.2 | 10.1 | 10.1 | |
| LOS by Move: | D | D | D | | F | F | F | | A | B | B | | A | B | B | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 8 | 8 | 8 | | 0 | 35 | 35 | | 0 | 26 | 26 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.844
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 14.3
Optimal Cycle: 74 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 105 | 35 | 85 | | 33 | 34 | 5 | | 5 | 1105 | 41 | | 42 | 948 | 19 | |
| Added Vol: | 18 | 0 | 7 | | 0 | 0 | 0 | | 0 | 123 | 22 | | 24 | 195 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 35 | 92 | | 33 | 34 | 5 | | 5 | 1228 | 63 | | 66 | 1143 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 35 | 92 | | 33 | 34 | 5 | | 5 | 1228 | 63 | | 66 | 1143 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 35 | 92 | | 33 | 34 | 5 | | 5 | 1228 | 63 | | 66 | 1143 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 35 | 93 | | 33 | 34 | 5 | | 5 | 1228 | 63 | | 66 | 1143 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.87 | 0.87 | | 0.44 | 0.96 | 0.96 | | 0.17 | 0.97 | 0.97 | | 0.11 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.28 | 0.72 | | 1.00 | 0.88 | 0.12 | | 1.00 | 0.95 | 0.05 | | 1.00 | 0.98 | 0.02 | |
| Final Sat.: | 1370 | 459 | 1200 | | 836 | 1613 | 215 | | 317 | 1759 | 90 | | 218 | 1825 | 31 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.08 | 0.08 | | 0.04 | 0.02 | 0.02 | | 0.01 | 0.70 | 0.70 | | 0.30 | 0.63 | 0.63 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.83 | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 | |
| Volume/Cap: | 0.84 | 0.73 | 0.73 | | 0.37 | 0.20 | 0.20 | | 0.02 | 0.84 | 0.84 | | 0.37 | 0.76 | 0.76 | |
| Uniform Del: | 46.1 | 45.4 | 45.4 | | 43.7 | 42.8 | 42.8 | | 1.6 | 5.2 | 5.2 | | 2.3 | 4.2 | 4.2 | |
| IncremntDel: | 33.9 | 13.9 | 13.9 | | 2.6 | 0.5 | 0.5 | | 0.0 | 4.5 | 4.5 | | 1.3 | 2.2 | 2.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 79.9 | 59.4 | 59.4 | | 46.3 | 43.4 | 43.4 | | 1.6 | 9.7 | 9.7 | | 3.5 | 6.4 | 6.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 79.9 | 59.4 | 59.4 | | 46.3 | 43.4 | 43.4 | | 1.6 | 9.7 | 9.7 | | 3.5 | 6.4 | 6.4 | |
| LOS by Move: | E | E | E | | D | D | D | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 1 | 1 | 1 | | 0 | 26 | 26 | | 1 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.539
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 215.0
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 2 | 0 | 1 | 1 | 1 0 | 1 | 0 | 1 | 0 1 | 0 | 1 | 1 | 1 0 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 111 | 499 | 560 | | 544 | 471 | 22 | | 41 | 194 | 180 | | 435 | 108 | 467 | |
| Added Vol: | 15 | 8 | 31 | | 82 | 8 | 0 | | 0 | 32 | 24 | | 105 | 21 | 86 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.67 | 1.27 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.61 | 0.39 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2860 | 2189 | 99 | | 1769 | 1862 | 1583 | | 2888 | 691 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.14 | 0.75 | | 0.22 | 0.22 | 0.22 | | 0.02 | 0.12 | 0.13 | | 0.19 | 0.19 | 0.35 | |
| Crit Moves: | | | **** | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.49 | 0.49 | 0.49 | | 0.14 | 0.14 | 0.14 | | 0.08 | 0.08 | 0.08 | | 0.23 | 0.23 | 0.23 | |
| Volume/Cap: | 0.15 | 0.30 | 1.54 | | 1.54 | 1.54 | 1.54 | | 0.28 | 1.45 | 1.54 | | 0.82 | 0.82 | 1.54 | |
| Uniform Del: | 18.5 | 20.1 | 33.5 | | 55.8 | 55.8 | 55.8 | | 55.9 | 59.6 | 59.6 | | 47.8 | 47.8 | 50.2 | |
| IncremntDel: | 0.1 | 0.1 | 255.1 | | 249.2 | 249 | 249.2 | | 1.0 | 233 | 276.4 | | 6.8 | 6.8 | 255.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 18.6 | 20.2 | 288.5 | | 305.0 | 305 | 305.0 | | 56.9 | 293 | 335.9 | | 54.6 | 54.6 | 306.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 18.6 | 20.2 | 288.5 | | 305.0 | 305 | 305.0 | | 56.9 | 293 | 335.9 | | 54.6 | 54.6 | 306.1 | |
| LOS by Move: | B | C | F | | F | F | F | | E | F | F | | D | D | F | |
| HCM2kAvgQ: | 3 | 6 | 50 | | 34 | 34 | 34 | | 2 | 19 | 19 | | 15 | 15 | 47 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.560
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 244.3
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 430 | 1104 | 0 | 0 | 3976 | 145 | 68 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Added Vol: | 9 | 116 | 0 | 0 | 431 | 98 | 12 | 0 | 26 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 439 | 1220 | 0 | 0 | 4407 | 243 | 80 | 0 | 1926 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 439 | 1220 | 0 | 0 | 4407 | 243 | 80 | 0 | 1926 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 439 | 1220 | 0 | 0 | 4407 | 243 | 80 | 0 | 1926 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 439 | 1220 | 0 | 0 | 4407 | 243 | 80 | 0 | 1926 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.24 | 0.00 | 0.00 | 0.87 | 0.15 | 0.02 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.08 | 0.64 | 0.00 | 0.00 | 0.56 | 0.56 | 0.30 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.56 | 0.38 | 0.00 | 0.00 | 1.56 | 0.28 | 0.08 | 0.00 | 1.56 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 68.9 | 12.9 | 0.0 | 0.0 | 33.3 | 17.5 | 38.1 | 0.0 | 52.8 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 268.7 | 0.1 | 0.0 | 0.0 | 254 | 0.2 | 0.0 | 0.0 | 256.0 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 337.5 | 13.0 | 0.0 | 0.0 | 287 | 17.7 | 38.1 | 0.0 | 308.8 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 337.5 | 13.0 | 0.0 | 0.0 | 287 | 17.7 | 38.1 | 0.0 | 308.8 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 22 | 9 | 0 | 0 | 142 | 6 | 1 | 0 | 66 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.7
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 120 | 0 | 99 | 20 | 1599 | 0 | 0 | 454 | 16 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 0 | 0 | 0 | 137 | 0 | 113 | 23 | 1823 | 0 | 0 | 518 | 18 | | | | |
| Added Vol: | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 27 | 0 | 0 | 103 | 4 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1850 | 0 | 0 | 621 | 22 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1850 | 0 | 0 | 621 | 22 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1850 | 0 | 0 | 621 | 22 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 148 | 0 | 113 | 23 | 1850 | 0 | 0 | 621 | 22 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.57 | 0.00 | 0.43 | 1.00 | 2.00 | 0.00 | 0.00 | 1.93 | 0.07 | | | | |
| Final Sat.: | 0 | 0 | 0 | 967 | 0 | 738 | 1769 | 3538 | 0 | 0 | 3398 | 122 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.15 | 0.01 | 0.52 | 0.00 | 0.00 | 0.18 | 0.18 | | | | |
| Crit Moves: | | | | | | **** | | **** | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.20 | 0.16 | 0.67 | 0.00 | 0.00 | 0.51 | 0.51 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.78 | 0.00 | 0.78 | 0.08 | 0.78 | 0.00 | 0.00 | 0.36 | 0.36 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 32.4 | 0.0 | 32.4 | 30.1 | 9.5 | 0.0 | 0.0 | 12.5 | 12.5 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 10.9 | 0.0 | 10.9 | 0.1 | 1.7 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 43.2 | 0.0 | 43.2 | 30.2 | 11.2 | 0.0 | 0.0 | 12.6 | 12.6 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 43.2 | 0.0 | 43.2 | 30.2 | 11.2 | 0.0 | 0.0 | 12.6 | 12.6 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | B | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 9 | 0 | 9 | 1 | 19 | 0 | 0 | 5 | 5 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.741
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1800 | 22 | | 21 | 601 | 15 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 27 | 0 | | 0 | 103 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1827 | 22 | | 21 | 704 | 15 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1827 | 22 | | 21 | 704 | 15 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1827 | 22 | | 21 | 704 | 15 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1827 | 22 | | 21 | 704 | 15 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.96 | 0.96 | 0.96 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.45 | 0.40 | 0.15 | | 0.15 | 0.22 | 0.63 | | 1.00 | 1.98 | 0.02 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 816 | 723 | 280 | | 252 | 385 | 1089 | | 1805 | 3561 | 42 | | 1805 | 3525 | 74 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.09 | 0.09 | 0.09 | | 0.02 | 0.51 | 0.51 | | 0.01 | 0.20 | 0.20 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.06 | 0.06 | 0.06 | | 0.11 | 0.11 | 0.11 | | 0.14 | 0.67 | 0.67 | | 0.05 | 0.57 | 0.57 | |
| Volume/Cap: | 0.76 | 0.77 | 0.77 | | 0.77 | 0.78 | 0.78 | | 0.11 | 0.77 | 0.77 | | 0.23 | 0.35 | 0.35 | |
| Uniform Del: | 46.0 | 46.1 | 46.1 | | 43.2 | 43.3 | 43.3 | | 37.3 | 11.5 | 11.5 | | 45.6 | 11.4 | 11.4 | |
| IncremntDel: | 24.8 | 26.7 | 26.7 | | 17.3 | 18.1 | 18.1 | | 0.2 | 1.6 | 1.6 | | 1.3 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 70.8 | 72.9 | 72.9 | | 60.5 | 61.4 | 61.4 | | 37.5 | 13.1 | 13.1 | | 46.9 | 11.5 | 11.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 70.8 | 72.9 | 72.9 | | 60.5 | 61.4 | 61.4 | | 37.5 | 13.1 | 13.1 | | 46.9 | 11.5 | 11.5 | |
| LOS by Move: | E | E | E | | E | E | E | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 4 | 5 | 5 | | 6 | 6 | 6 | | 1 | 22 | 22 | | 1 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.927
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.7
Optimal Cycle: 122 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1472 | 99 | | 136 | 616 | 56 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 27 | 0 | | 0 | 103 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1499 | 99 | | 136 | 719 | 56 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1499 | 99 | | 136 | 719 | 56 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1499 | 99 | | 136 | 719 | 56 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1499 | 99 | | 136 | 719 | 56 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.98 | 0.98 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.86 | 0.14 | |
| Final Sat.: | 1862 | 1862 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3355 | 222 | | 1805 | 3313 | 258 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.13 | 0.24 | | 0.06 | 0.16 | 0.08 | | 0.06 | 0.45 | 0.45 | | 0.08 | 0.22 | 0.22 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | | 0.06 | 0.21 | 0.21 | | 0.12 | 0.48 | 0.48 | | 0.08 | 0.44 | 0.44 | |
| Volume/Cap: | 0.76 | 0.51 | 0.93 | | 0.93 | 0.76 | 0.38 | | 0.49 | 0.93 | 0.93 | | 0.93 | 0.49 | 0.49 | |
| Uniform Del: | 42.6 | 31.4 | 35.9 | | 46.6 | 37.4 | 34.1 | | 41.1 | 24.2 | 24.2 | | 45.6 | 19.8 | 19.8 | |
| IncremntDel: | 6.2 | 0.5 | 26.3 | | 61.0 | 8.5 | 0.7 | | 1.7 | 9.1 | 9.1 | | 52.8 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.8 | 31.9 | 62.2 | | 107.5 | 45.9 | 34.9 | | 42.9 | 33.4 | 33.4 | | 98.4 | 20.0 | 20.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.8 | 31.9 | 62.2 | | 107.5 | 45.9 | 34.9 | | 42.9 | 33.4 | 33.4 | | 98.4 | 20.0 | 20.0 | |
| LOS by Move: | D | C | E | | F | D | C | | D | C | C | | F | C | C | |
| HCM2kAvgQ: | 7 | 7 | 16 | | 6 | 10 | 4 | | 4 | 29 | 29 | | 7 | 9 | 9 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.778
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1441 | 89 | | 50 | 904 | 19 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 27 | 0 | | 0 | 103 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1468 | 89 | | 50 | 1007 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1468 | 89 | | 50 | 1007 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1468 | 89 | | 50 | 1007 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1468 | 89 | | 50 | 1007 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.96 | 0.96 | 0.96 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.32 | 0.44 | 0.24 | | 0.14 | 0.63 | 0.23 | | 1.00 | 1.89 | 0.11 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 574 | 802 | 434 | | 259 | 1159 | 412 | | 1805 | 3373 | 204 | | 1805 | 3531 | 68 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | | 0.07 | 0.07 | 0.07 | | 0.02 | 0.44 | 0.44 | | 0.03 | 0.29 | 0.29 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | **** | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.09 | 0.09 | 0.09 | | 0.09 | 0.55 | 0.55 | | 0.05 | 0.51 | 0.51 | |
| Volume/Cap: | 0.79 | 0.79 | 0.79 | | 0.79 | 0.79 | 0.79 | | 0.20 | 0.79 | 0.79 | | 0.56 | 0.56 | 0.56 | |
| Uniform Del: | 38.3 | 38.3 | 38.3 | | 44.3 | 44.3 | 44.3 | | 42.2 | 17.9 | 17.9 | | 46.4 | 16.8 | 16.8 | |
| IncremntDel: | 11.5 | 11.5 | 11.5 | | 21.5 | 21.5 | 21.5 | | 0.6 | 2.3 | 2.3 | | 7.4 | 0.4 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 49.8 | 49.8 | 49.8 | | 65.8 | 65.8 | 65.8 | | 42.9 | 20.2 | 20.2 | | 53.9 | 17.2 | 17.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 49.8 | 49.8 | 49.8 | | 65.8 | 65.8 | 65.8 | | 42.9 | 20.2 | 20.2 | | 53.9 | 17.2 | 17.2 | |
| LOS by Move: | D | D | D | | E | E | E | | D | C | C | | D | B | B | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 6 | 6 | 6 | | 1 | 22 | 22 | | 2 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.613
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1507 | 99 | | 42 | 897 | 25 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 27 | 0 | | 0 | 103 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1534 | 99 | | 42 | 1000 | 25 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1534 | 99 | | 42 | 1000 | 25 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1534 | 99 | | 42 | 1000 | 25 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1534 | 99 | | 42 | 1000 | 25 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.84 | 0.84 | 0.84 | | 0.94 | 0.94 | 0.94 | | 0.25 | 0.94 | 0.94 | | 0.11 | 0.95 | 0.95 | |
| Lanes: | 0.33 | 0.46 | 0.21 | | 0.11 | 0.67 | 0.22 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 528 | 730 | 334 | | 195 | 1205 | 390 | | 469 | 3360 | 217 | | 205 | 3508 | 88 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.13 | 0.13 | | 0.06 | 0.06 | 0.06 | | 0.10 | 0.46 | 0.46 | | 0.21 | 0.29 | 0.29 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.74 | 0.74 | 0.74 | | 0.74 | 0.74 | 0.74 | |
| Volume/Cap: | 0.61 | 0.61 | 0.61 | | 0.30 | 0.30 | 0.30 | | 0.14 | 0.61 | 0.61 | | 0.28 | 0.38 | 0.38 | |
| Uniform Del: | 32.2 | 32.2 | 32.2 | | 29.9 | 29.9 | 29.9 | | 3.3 | 5.4 | 5.4 | | 3.7 | 4.1 | 4.1 | |
| IncremntDel: | 3.3 | 3.3 | 3.3 | | 0.5 | 0.5 | 0.5 | | 0.2 | 0.4 | 0.4 | | 1.0 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.5 | 35.5 | 35.5 | | 30.4 | 30.4 | 30.4 | | 3.5 | 5.8 | 5.8 | | 4.7 | 4.2 | 4.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.5 | 35.5 | 35.5 | | 30.4 | 30.4 | 30.4 | | 3.5 | 5.8 | 5.8 | | 4.7 | 4.2 | 4.2 | |
| LOS by Move: | D | D | D | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 3 | 3 | 3 | | 0 | 12 | 12 | | 1 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.973
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 45.6
Optimal Cycle: 160 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 0 | 1 | 1 | 1 | 0 1 | 0 | 1 | 1 | 0 1 | 1 | 0 | 2 | 0 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | | 32 | 175 | 224 | | 217 | 784 | 540 | | 115 | 663 | 173 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 359 | 553 | 683 | | 36 | 199 | 255 | | 247 | 894 | 616 | | 131 | 756 | 197 | |
| Added Vol: | 8 | 0 | 7 | | 0 | 0 | 0 | | 0 | 21 | 0 | | 0 | 103 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 367 | 553 | 690 | | 36 | 199 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 367 | 553 | 690 | | 36 | 199 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 367 | 553 | 690 | | 36 | 199 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 367 | 553 | 690 | | 36 | 200 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.88 | 0.88 | 0.88 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.89 | 0.89 | | 0.92 | 0.92 | 0.92 | |
| Lanes: | 1.00 | 1.33 | 1.67 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.20 | 0.80 | | 2.00 | 1.63 | 0.37 | |
| Final Sat.: | 1671 | 2230 | 2783 | | 1805 | 1900 | 1615 | | 1805 | 2028 | 1365 | | 3502 | 2854 | 655 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.25 | 0.25 | | 0.02 | 0.11 | 0.16 | | 0.14 | 0.45 | 0.45 | | 0.04 | 0.30 | 0.30 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.22 | 0.32 | 0.32 | | 0.06 | 0.16 | 0.16 | | 0.16 | 0.46 | 0.46 | | 0.05 | 0.35 | 0.35 | |
| Volume/Cap: | 0.99 | 0.78 | 0.78 | | 0.31 | 0.66 | 0.99 | | 0.86 | 0.99 | 0.99 | | 0.75 | 0.86 | 0.86 | |
| Uniform Del: | 38.7 | 30.9 | 30.9 | | 44.7 | 39.4 | 41.9 | | 41.0 | 26.8 | 26.8 | | 46.9 | 30.4 | 30.4 | |
| IncremntDel: | 19.1 | 1.9 | 1.9 | | 1.6 | 5.1 | 52.1 | | 22.7 | 19.7 | 19.7 | | 16.3 | 6.6 | 6.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 57.8 | 32.8 | 32.8 | | 46.2 | 44.5 | 93.9 | | 63.8 | 46.5 | 46.5 | | 63.2 | 37.0 | 37.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 57.8 | 32.8 | 32.8 | | 46.2 | 44.5 | 93.9 | | 63.8 | 46.5 | 46.5 | | 63.2 | 37.0 | 37.0 | |
| LOS by Move: | E | C | C | | D | D | F | | E | D | D | | E | D | D | |
| HCM2kAvgQ: | 17 | 14 | 14 | | 1 | 7 | 13 | | 10 | 32 | 32 | | 4 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.535
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: 82 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 32 | 32 | | 0 | 32 | 0 | | 28 | 0 | 28 | | 0 | 0 | 18 | |
| Lanes: | 0 | 0 2 | 1 | 0 | 0 | 0 2 | 0 | 0 | 2 | 0 0 | 0 | 1 | 0 | 0 0 | 0 | 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | | 0 | 783 | 0 | | 765 | 0 | 277 | | 0 | 0 | 16 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 914 | 22 | | 0 | 893 | 0 | | 872 | 0 | 316 | | 0 | 0 | 18 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 14 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 914 | 22 | | 0 | 893 | 0 | | 886 | 0 | 316 | | 0 | 0 | 18 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 914 | 22 | | 0 | 893 | 0 | | 886 | 0 | 316 | | 0 | 0 | 18 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 914 | 22 | | 0 | 893 | 0 | | 886 | 0 | 316 | | 0 | 0 | 18 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 914 | 22 | | 0 | 893 | 0 | | 886 | 0 | 316 | | 0 | 0 | 18 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 0.91 | 0.91 | | 1.00 | 0.95 | 1.00 | | 0.92 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.87 | |
| Lanes: | 0.00 | 2.93 | 0.07 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5052 | 120 | | 0 | 3610 | 0 | | 3502 | 0 | 1615 | | 0 | 0 | 1644 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.18 | 0.18 | | 0.00 | 0.25 | 0.00 | | 0.25 | 0.00 | 0.20 | | 0.00 | 0.00 | 0.01 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.37 | 0.37 | | 0.00 | 0.37 | 0.00 | | 0.38 | 0.00 | 0.58 | | 0.00 | 0.00 | 0.20 | |
| Volume/Cap: | 0.00 | 0.48 | 0.48 | | 0.00 | 0.66 | 0.00 | | 0.66 | 0.00 | 0.34 | | 0.00 | 0.00 | 0.06 | |
| Uniform Del: | 0.0 | 21.6 | 21.6 | | 0.0 | 23.5 | 0.0 | | 23.0 | 0.0 | 9.8 | | 0.0 | 0.0 | 29.1 | |
| IncremntDel: | 0.0 | 0.2 | 0.2 | | 0.0 | 1.2 | 0.0 | | 1.3 | 0.0 | 0.2 | | 0.0 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 21.8 | 21.8 | | 0.0 | 24.7 | 0.0 | | 24.3 | 0.0 | 10.0 | | 0.0 | 0.0 | 29.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 21.8 | 21.8 | | 0.0 | 24.7 | 0.0 | | 24.3 | 0.0 | 10.0 | | 0.0 | 0.0 | 29.2 | |
| LOS by Move: | A | C | C | | A | C | A | | C | A | A | | A | A | C | |
| HCM2kAvgQ: | 0 | 7 | 7 | | 0 | 12 | 0 | | 11 | 0 | 5 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.600
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 34.3
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | | 18 | 18 | 0 | | 0 | 0 | 0 | | 39 | 57 | 21 | | 64 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | 388 | 487 | 927 | | | 0 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | 1.14 |
| Initial Bse: | 348 | | 1 | 500 | 0 | | 0 | 0 | 1586 | 442 | 555 | 1057 | | | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 21 | 40 | 54 | 69 | | | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Initial Fut: | 348 | | 1 | 500 | 0 | | 0 | 0 | 1607 | 482 | 609 | 1126 | | | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 348 | | 1 | 500 | 0 | | 0 | 0 | 1607 | 482 | 609 | 1126 | | | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| Reduced Vol: | 348 | | 1 | 500 | 0 | | 0 | 0 | 1607 | 482 | 609 | 1126 | | | | 0 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 348 | | 1 | 500 | 0 | | 0 | 0 | 1607 | 482 | 609 | 1126 | | | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.86 | 0.86 | | 0.86 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | 1.00 | | | |
| Lanes: | 1.41 | 0.01 | | 1.58 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | | | |
| Final Sat.: | 2292 | | 4 | 2585 | 0 | | 0 | 0 | 3610 | 2842 | 3502 | 3610 | | | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.26 | | 0.19 | 0.00 | 0.00 | | 0.00 | 0.45 | 0.17 | 0.17 | 0.31 | 0.00 | | | |
| Crit Moves: | | **** | | | | | | | | | | **** | | | | |
| Green/Cycle: | 0.20 | 0.20 | | 0.20 | 0.00 | 0.00 | | 0.00 | 0.43 | 0.43 | 0.32 | 0.76 | 0.00 | | | |
| Volume/Cap: | 0.76 | 1.31 | | 0.97 | 0.00 | 0.00 | | 0.00 | 1.03 | 0.39 | 0.54 | 0.41 | 0.00 | | | |
| Uniform Del: | 33.9 | 36.0 | | 35.7 | 0.0 | 0.0 | | 0.0 | 25.5 | 17.4 | 25.0 | 3.9 | 0.0 | | | |
| IncremntDel: | 3.1 | 149 | | 22.8 | 0.0 | 0.0 | | 0.0 | 30.0 | 0.2 | 0.5 | 0.1 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | |
| Delay/Veh: | 37.0 | 185 | | 58.5 | 0.0 | 0.0 | | 0.0 | 55.5 | 17.6 | 25.6 | 4.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 37.0 | 185 | | 58.5 | 0.0 | 0.0 | | 0.0 | 55.5 | 17.6 | 25.6 | 4.0 | 0.0 | | | |
| LOS by Move: | D | F | | E | A | A | | A | A | E | B | C | A | | | A |
| HCM2kAvgQ: | 8 | 26 | | 13 | 0 | 0 | | 0 | 33 | 5 | 8 | 6 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 60.1
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | 809 | | 9 | 274 | 800 | | 327 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | 1.14 |
| Initial Bse: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | 922 | | 10 | 312 | 912 | | 373 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 61 | | 0 | 0 | 69 | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | 983 | | 10 | 312 | 981 | | 373 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | 983 | | 10 | 312 | 981 | | 373 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | 983 | | 10 | 312 | 981 | | 373 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | 983 | | 10 | 312 | 981 | | 373 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.90 | 0.90 | | 0.90 | 0.92 | 0.97 | | 0.97 | 0.95 | 0.95 | 0.95 | 0.95 | 0.85 | | | |
| Lanes: | 0.04 | 0.23 | | 0.73 | 2.00 | 0.78 | | 0.22 | 1.00 | 1.98 | 0.02 | 1.00 | 2.00 | | | 1.00 |
| Final Sat.: | 73 | 395 | | 1243 | 3502 | 1429 | | 408 | 1805 | 3569 | | 37 | 1805 | 3610 | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.25 | 0.25 | | 0.25 | 0.20 | 0.09 | | 0.09 | 0.02 | 0.28 | | 0.28 | 0.17 | 0.27 | | 0.23 |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.33 | 0.25 | | 0.25 | 0.20 | 0.12 | | 0.12 | 0.06 | 0.28 | | 0.28 | 0.17 | 0.38 | | 0.38 |
| Volume/Cap: | 0.77 | 1.00 | | 1.00 | 1.00 | 0.77 | | 0.77 | 0.27 | 1.00 | | 1.00 | 1.00 | 0.71 | | 0.60 |
| Uniform Del: | 33.2 | 41.2 | | 41.2 | 44.0 | 46.7 | | 46.7 | 49.0 | 39.8 | | 39.8 | 45.5 | 28.6 | | 27.1 |
| IncremntDel: | 6.4 | 43.1 | | 43.1 | 33.8 | 14.6 | | 14.6 | 1.3 | 28.3 | | 28.3 | 50.6 | 1.7 | | 1.6 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 39.6 | 84.2 | | 84.2 | 77.8 | 61.3 | | 61.3 | 50.3 | 68.1 | | 68.1 | 96.1 | 30.3 | | 28.7 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 39.6 | 84.2 | | 84.2 | 77.8 | 61.3 | | 61.3 | 50.3 | 68.1 | | 68.1 | 96.1 | 30.3 | | 28.7 |
| LOS by Move: | D | F | | F | E | E | | E | D | E | | E | F | C | | C |
| HCM2kAvgQ: | 15 | 20 | | 20 | 18 | 8 | | 8 | 1 | 24 | | 24 | 16 | 16 | | 11 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 35.9
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 0 | 0 | 1 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | | 82 | 384 | 76 | | 59 | 328 | 23 | | 71 | 442 | 88 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 34 | 430 | 98 | | 93 | 438 | 87 | | 67 | 374 | 26 | | 81 | 504 | 100 | |
| Added Vol: | 0 | 39 | 5 | | 16 | 97 | 23 | | 3 | 40 | 1 | | 37 | 20 | 12 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 34 | 469 | 103 | | 109 | 535 | 110 | | 70 | 414 | 27 | | 118 | 524 | 112 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 34 | 469 | 103 | | 109 | 535 | 110 | | 70 | 414 | 27 | | 118 | 524 | 112 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 34 | 469 | 103 | | 109 | 535 | 110 | | 70 | 414 | 27 | | 118 | 524 | 112 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 34 | 469 | 103 | | 109 | 535 | 110 | | 70 | 414 | 27 | | 118 | 524 | 112 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.92 | 0.92 | |
| Lanes: | 0.11 | 1.55 | 0.34 | | 0.29 | 1.42 | 0.29 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.65 | 0.35 | |
| Final Sat.: | 198 | 2714 | 597 | | 509 | 2487 | 510 | | 1805 | 3357 | 221 | | 1805 | 2892 | 620 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.22 | 0.22 | 0.22 | | 0.04 | 0.12 | 0.12 | | 0.07 | 0.18 | 0.18 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.31 | 0.31 | 0.31 | | 0.06 | 0.21 | 0.21 | | 0.11 | 0.27 | 0.27 | |
| Volume/Cap: | 0.68 | 0.68 | 0.68 | | 0.68 | 0.68 | 0.68 | | 0.68 | 0.59 | 0.59 | | 0.59 | 0.68 | 0.68 | |
| Uniform Del: | 33.7 | 33.7 | 33.7 | | 29.9 | 29.9 | 29.9 | | 46.3 | 35.5 | 35.5 | | 42.2 | 33.0 | 33.0 | |
| IncremntDel: | 2.2 | 2.2 | 2.2 | | 1.8 | 1.8 | 1.8 | | 17.2 | 1.2 | 1.2 | | 4.4 | 2.1 | 2.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.9 | 35.9 | 35.9 | | 31.7 | 31.7 | 31.7 | | 63.5 | 36.7 | 36.7 | | 46.6 | 35.1 | 35.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.9 | 35.9 | 35.9 | | 31.7 | 31.7 | 31.7 | | 63.5 | 36.7 | 36.7 | | 46.6 | 35.1 | 35.1 | |
| LOS by Move: | D | D | D | | C | C | C | | E | D | D | | D | D | D | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 12 | 12 | 12 | | 3 | 7 | 7 | | 4 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.187
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 101.9
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 1 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | | 0 | 2235 | 16 | | 334 | 0 | 76 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 11 | 1062 | 0 | | 0 | 2548 | 18 | | 381 | 0 | 87 | | 0 | 0 | 0 | |
| Added Vol: | 38 | 364 | 0 | | 0 | 55 | 0 | | 618 | 0 | 86 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 49 | 1426 | 0 | | 0 | 2603 | 18 | | 999 | 0 | 173 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 49 | 1426 | 0 | | 0 | 2603 | 18 | | 999 | 0 | 173 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 49 | 1426 | 0 | | 0 | 2603 | 18 | | 999 | 0 | 173 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 49 | 1426 | 0 | | 0 | 2603 | 18 | | 999 | 0 | 173 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.28 | 0.00 | | 0.00 | 0.51 | 0.01 | | 0.56 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.46 | 0.00 | | 0.00 | 0.42 | 0.42 | | 0.47 | 0.00 | 0.47 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.73 | 0.61 | 0.00 | | 0.00 | 1.21 | 0.03 | | 1.21 | 0.00 | 0.23 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 61.8 | 26.1 | 0.0 | | 0.0 | 37.4 | 21.8 | | 34.6 | 0.0 | 20.7 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 32.1 | 0.5 | 0.0 | | 0.0 | 97.6 | 0.0 | | 104.3 | 0.0 | 0.2 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 93.9 | 26.5 | 0.0 | | 0.0 | 135 | 21.8 | | 138.9 | 0.0 | 20.8 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 93.9 | 26.5 | 0.0 | | 0.0 | 135 | 21.8 | | 138.9 | 0.0 | 20.8 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | C | A | | A | F | C | | F | A | C | | A | A | A | |
| HCM2kAvgQ: | 3 | 16 | 0 | | 0 | 60 | 0 | | 62 | 0 | 4 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.3
Optimal Cycle: 67 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 16 | 893 | 0 | | 0 | 2424 | 182 | 217 | 0 | 212 | 0 | 0 | 0 | | | |
| Added Vol: | 38 | 400 | 0 | | 0 | 135 | 5 | 2 | 0 | 86 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 54 | 1293 | 0 | | 0 | 2559 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 54 | 1293 | 0 | | 0 | 2559 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 54 | 1293 | 0 | | 0 | 2559 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 54 | 1293 | 0 | | 0 | 2559 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.25 | 0.00 | | 0.00 | 0.50 | 0.12 | 0.12 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.04 | 0.69 | 0.00 | | 0.00 | 0.65 | 0.65 | 0.24 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.78 | 0.37 | 0.00 | | 0.00 | 0.78 | 0.18 | 0.51 | 0.00 | 0.78 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 61.9 | 8.5 | 0.0 | | 0.0 | 16.1 | 9.1 | 42.5 | 0.0 | 45.9 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 41.1 | 0.1 | 0.0 | | 0.0 | 1.2 | 0.1 | 1.0 | 0.0 | 9.6 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 103.0 | 8.5 | 0.0 | | 0.0 | 17.4 | 9.2 | 43.5 | 0.0 | 55.5 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 103.0 | 8.5 | 0.0 | | 0.0 | 17.4 | 9.2 | 43.5 | 0.0 | 55.5 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | F | A | A | | A | B | A | D | A | E | A | A | A | | | |
| HCM2kAvgQ: | 4 | 8 | 0 | | 0 | 27 | 3 | 8 | 0 | 13 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.877
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 32.7
Optimal Cycle: 76 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 555 | 645 | 0 | | 0 | 407 | 105 | 293 | 0 | 804 | 0 | 0 | 0 | | | |
| Added Vol: | 35 | 58 | 0 | | 0 | 21 | 6 | 3 | 0 | 67 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1437 | 372 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.38 | 0.00 | | 0.00 | 0.30 | 0.30 | 0.17 | 0.00 | 0.55 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.38 | 0.72 | 0.00 | | 0.00 | 0.34 | 0.34 | 0.25 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.88 | 0.52 | 0.00 | | 0.00 | 0.88 | 0.88 | 0.68 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 34.6 | 7.6 | 0.0 | | 0.0 | 37.3 | 37.3 | 40.9 | 0.0 | 18.5 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 12.5 | 0.4 | 0.0 | | 0.0 | 13.5 | 13.5 | 4.3 | 0.0 | 8.9 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 47.1 | 8.0 | 0.0 | | 0.0 | 50.8 | 50.8 | 45.1 | 0.0 | 27.5 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 47.1 | 8.0 | 0.0 | | 0.0 | 50.8 | 50.8 | 45.1 | 0.0 | 27.5 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | D | D | D | A | C | A | A | A | | | |
| HCM2kAvgQ: | 23 | 12 | 0 | | 0 | 22 | 22 | 11 | 0 | 29 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.720
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 30.0
Optimal Cycle: 38 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 56 | 868 | 145 | | 406 | 716 | 41 | | 85 | 87 | 71 | | 83 | 9 | 303 | |
| Added Vol: | 0 | 89 | 0 | | 2 | 86 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 56 | 957 | 145 | | 408 | 802 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 56 | 957 | 145 | | 408 | 802 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 56 | 957 | 145 | | 408 | 802 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 56 | 957 | 145 | | 408 | 802 | 41 | | 86 | 87 | 71 | | 83 | 9 | 308 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.61 | 0.91 | 0.91 | | 0.60 | 0.60 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1160 | 957 | 781 | | 1022 | 112 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.27 | 0.09 | | 0.23 | 0.23 | 0.03 | | 0.07 | 0.09 | 0.09 | | 0.08 | 0.08 | 0.19 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.09 | 0.38 | 0.38 | | 0.32 | 0.61 | 0.61 | | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | |
| Volume/Cap: | 0.35 | 0.72 | 0.24 | | 0.72 | 0.37 | 0.04 | | 0.27 | 0.33 | 0.33 | | 0.30 | 0.30 | 0.72 | |
| Uniform Del: | 51.4 | 32.1 | 25.7 | | 36.0 | 12.0 | 9.5 | | 34.5 | 35.1 | 35.1 | | 34.8 | 34.8 | 39.6 | |
| IncremntDel: | 1.4 | 1.9 | 0.2 | | 4.5 | 0.1 | 0.0 | | 0.5 | 0.4 | 0.4 | | 0.6 | 0.6 | 5.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.8 | 34.0 | 26.0 | | 40.5 | 12.1 | 9.5 | | 34.9 | 35.5 | 35.5 | | 35.3 | 35.3 | 45.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.8 | 34.0 | 26.0 | | 40.5 | 12.1 | 9.5 | | 34.9 | 35.5 | 35.5 | | 35.3 | 35.3 | 45.5 | |
| LOS by Move: | D | C | C | | D | B | A | | C | D | D | | D | D | D | |
| HCM2kAvgQ: | 2 | 17 | 4 | | 14 | 8 | 1 | | 3 | 5 | 5 | | 3 | 3 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.862
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 45.2
Optimal Cycle: 95 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 101 | 521 | 27 | | 27 | 579 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Added Vol: | 0 | 54 | 0 | | 0 | 137 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 101 | 575 | 27 | | 27 | 716 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 101 | 575 | 27 | | 27 | 716 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 101 | 575 | 27 | | 27 | 716 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 101 | 575 | 27 | | 27 | 716 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.54 | 0.40 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 514 | 2911 | 139 | | 103 | 2696 | 699 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.20 | 0.20 | | 0.27 | 0.27 | 0.27 | | 0.18 | 0.27 | 0.27 | | 0.05 | 0.05 | 0.05 | |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | | **** | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.31 | 0.31 | 0.31 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.86 | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 | | 0.57 | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 | |
| Uniform Del: | 40.7 | 40.7 | 40.7 | | 35.8 | 35.8 | 35.8 | | 31.9 | 35.8 | 35.8 | | 51.7 | 51.7 | 51.7 | |
| IncremntDel: | 9.3 | 9.3 | 9.3 | | 7.2 | 7.2 | 7.2 | | 0.6 | 9.1 | 9.1 | | 49.6 | 49.6 | 49.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.0 | 50.0 | 50.0 | | 43.1 | 43.1 | 43.1 | | 32.5 | 44.9 | 44.9 | | 101.3 | 101 | 101.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.0 | 50.0 | 50.0 | | 43.1 | 43.1 | 43.1 | | 32.5 | 44.9 | 44.9 | | 101.3 | 101 | 101.3 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 15 | 15 | 15 | | 18 | 18 | 18 | | 9 | 18 | 18 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.625 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 1.6 |
| Optimal Cycle: | 90 | Level Of Service: | A |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 0 | 3 0 | 0 | | 0 0 | 3 0 | 1 | | 2 0 | 0 0 | 1 | | 0 0 | 0 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 0 | 807 | 0 | 0 | 2630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Added Vol: | 0 | 438 | 0 | 0 | 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 0 | 1245 | 0 | 0 | 2851 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 1245 | 0 | 0 | 2851 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 0 | 1245 | 0 | 0 | 2851 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 1245 | 0 | 0 | 2851 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1900 | 5187 | 0 | 0 | 5187 | 1900 | 3686 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.24 | 0.00 | 0.00 | 0.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | | | | | | | | |
| Green/Cycle: | 0.00 | 0.88 | 0.00 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.00 | 0.27 | 0.00 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 0.0 | 0.9 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 0.0 | 1.0 | 0.0 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 1.0 | 0.0 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A | | | | |
| HCM2kAvgQ: | 0 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Cumulative 2025 East and West Campuses AM |
| Command: | Long Term Project II AM |
| Volume: | Long Term Project II AM |
| Geometry: | Long Term Project II AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project II AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project II AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 25.2 | 0.842 | C | 29.1 | 0.899 | + 3.878 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.9 | 0.700 | F | 83.6 | 1.225 | +66.686 D/V |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 26.5 | 0.944 | D | 39.1 | 0.999 | +12.529 D/V |
| # 4 Scott Dr/Rolison at Marsh Rd. | D | 41.1 | 0.901 | D | 36.1 | 0.938 | -4.986 D/V |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 20.8 | 0.620 | B | 15.6 | 0.653 | -5.224 D/V |
| # 6 Bay Rd. & Marsh Rd. | B | 17.4 | 0.644 | B | 19.2 | 0.792 | + 1.804 D/V |
| # 7 Middlefield at Marsh (Town of | C | 29.8 | 0.669 | D | 36.1 | 0.904 | + 6.333 D/V |
| # 8 Bayfront Exp. & Willow Rd. | C | 28.6 | 0.668 | E | 62.5 | 1.009 | +33.901 D/V |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.7 | 0.613 | C | 21.6 | 0.771 | -2.076 D/V |
| # 10 Ivy Dr. & Willow Rd. | B | 18.7 | 0.567 | C | 27.6 | 0.852 | + 8.918 D/V |
| # 11 O'Brien Dr. & Willow Rd. | B | 15.4 | 0.508 | B | 14.4 | 0.776 | -0.978 D/V |
| # 12 Newbridge St. & Willow Rd. | E | 59.2 | 0.990 | E | 66.8 | 1.046 | + 7.584 D/V |
| # 13 Bay Rd. & Willow Rd. | C | 21.6 | 0.760 | C | 22.9 | 0.859 | + 1.258 D/V |
| # 14 Durham St. & Willow Rd. | D | 35.1 | 0.782 | B | 15.5 | 0.849 | -19.594 D/V |
| # 15 Coleman Ave. & Willow Rd. | B | 15.3 | 0.784 | C | 23.2 | 0.942 | + 7.938 D/V |
| # 16 Gilbert Ave. & Willow Rd. | B | 15.7 | 0.726 | C | 22.2 | 0.913 | + 6.534 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 114.7 | 1.038 | F | 151.9 | 1.324 | +37.202 D/V |
| # 18 Bayfront Exp. & University Ave | C | 32.7 | 0.882 | D | 38.8 | 0.948 | + 6.131 D/V |
| # 19 O'Brien Dr. & University Ave. | A | 6.8 | 0.600 | A | 6.6 | 0.614 | -0.198 D/V |
| # 20 University & Kavanaugh | B | 14.4 | 0.617 | B | 14.0 | 0.626 | -0.398 D/V |
| # 21 University & Bay | C | 29.3 | 0.724 | C | 28.6 | 0.733 | -0.659 D/V |
| # 22 University & Runnymede | C | 21.7 | 0.687 | C | 21.4 | 0.696 | -0.318 D/V |
| # 23 University & Bell | A | 7.7 | 0.270 | A | 6.9 | 0.323 | -0.786 D/V |
| # 24 University & Donohoe | D | 51.0 | 1.014 | E | 55.6 | 1.045 | + 4.621 D/V |
| # 25 NB 101 & Donohoe St | B | 9.1 | 0.418 | B | 9.6 | 0.456 | + 0.418 D/V |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | B | 18.1 | 0.704 | B | 18.9 | 0.719 | + 0.807 D/V |
| # 27 University Ave. & Woodland | D | 50.1 | 0.977 | D | 52.3 | 0.992 | + 2.221 D/V |
| # 28 Middlefield Rd. & University A | D | 38.2 | 0.805 | D | 52.0 | 0.929 | +13.758 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 7.6 | 0.640 | B | 17.7 | 0.746 | +10.077 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 17.8 | 0.650 | C | 20.4 | 0.686 | + 2.639 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 23.4 | 0.664 | C | 26.3 | 0.745 | + 2.840 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 29.2 | 0.515 | C | 25.6 | 0.541 | -3.586 D/V |
| # 33 Middlefield Rd and Lytton Ave | C | 31.3 | 0.652 | C | 33.4 | 0.716 | + 2.102 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.4 | 0.549 | B | 19.1 | 0.792 | +17.736 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

Cycle (sec): 130 Critical Vol./Cap.(X): 0.899
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.1
Optimal Cycle: 124 Level Of Service: C

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 | 0 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 1! 0 0 |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 2619 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1137 | | 8 | 22 | 6 | |
| Added Vol: | 211 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 784 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.23 | 0.61 | 0.16 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 407 | 1104 | 290 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.55 | 0.13 | 0.13 | | 0.02 | 0.02 | 0.11 | | 0.13 | 0.13 | 0.69 | | 0.02 | 0.02 | 0.02 | |
| Crit Moves: | **** | | | | | | **** | | | | **** | | | **** | | |
| Green/Cycle: | 0.60 | 0.60 | 0.60 | | 0.12 | 0.12 | 0.12 | | 0.15 | 0.15 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.92 | 0.22 | 0.22 | | 0.18 | 0.18 | 0.92 | | 0.85 | 0.85 | 0.92 | | 0.51 | 0.51 | 0.51 | |
| Uniform Del: | 23.1 | 12.0 | 12.0 | | 51.8 | 51.8 | 56.8 | | 53.6 | 53.6 | 12.8 | | 61.3 | 61.3 | 61.3 | |
| IncremntDel: | 4.9 | 0.1 | 0.1 | | 0.2 | 0.2 | 43.1 | | 21.1 | 21.1 | 6.8 | | 6.2 | 6.2 | 6.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 27.9 | 12.1 | 12.1 | | 52.1 | 52.1 | 99.9 | | 74.7 | 74.7 | 19.6 | | 67.5 | 67.5 | 67.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 27.9 | 12.1 | 12.1 | | 52.1 | 52.1 | 99.9 | | 74.7 | 74.7 | 19.6 | | 67.5 | 67.5 | 67.5 | |
| LOS by Move: | C | B | B | | D | D | F | | E | E | B | | E | E | E | |
| HCM2kAvgQ: | 38 | 4 | 4 | | 1 | 1 | 10 | | 11 | 11 | 38 | | 2 | 2 | 2 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.225
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 83.6
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 933 | 0 | 329 | | 0 | 0 | 0 | | 0 | 1297 | 577 | | 0 | 936 | 1937 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 934 | 0 | | 0 | 164 | 47 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 577 | | 0 | 1100 | 1984 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 0 | | 0 | 1100 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 0 | | 0 | 1100 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 0 | | 0 | 1100 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 3 | 3376 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.00 | 0.46 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.31 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.37 | 0.00 | 0.37 | | 0.00 | 0.00 | 0.00 | | 0.54 | 0.54 | 0.00 | | 0.00 | 0.54 | 0.00 | |
| Volume/Cap: | 0.73 | 0.00 | 1.23 | | 0.00 | 0.00 | 0.00 | | 1.23 | 1.23 | 0.00 | | 0.00 | 0.58 | 0.00 | |
| Uniform Del: | 21.6 | 0.0 | 25.1 | | 0.0 | 0.0 | 0.0 | | 18.4 | 18.4 | 0.0 | | 0.0 | 12.3 | 0.0 | |
| IncremntDel: | 2.2 | 0.0 | 115.9 | | 0.0 | 0.0 | 0.0 | | 106.5 | 107 | 0.0 | | 0.0 | 0.4 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 23.8 | 0.0 | 141.0 | | 0.0 | 0.0 | 0.0 | | 124.9 | 125 | 0.0 | | 0.0 | 12.7 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 23.8 | 0.0 | 141.0 | | 0.0 | 0.0 | 0.0 | | 124.9 | 125 | 0.0 | | 0.0 | 12.7 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | F | F | A | | A | B | A | |
| HCM2kAvgQ: | 12 | 0 | 37 | | 0 | 0 | 0 | | 58 | 58 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 39.1
Optimal Cycle: 179 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 0 | 879 | 0 | | 558 | 0 | 834 | | 583 | 0 | 1426 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 0 | 1002 | 0 | | 636 | 0 | 951 | | 665 | 0 | 1626 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 475 | 0 | | 33 | 0 | 474 | | 0 | 0 | 78 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 0 | 1477 | 0 | | 669 | 0 | 1425 | | 665 | 0 | 1704 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 0 | 1477 | 0 | | 669 | 0 | 1425 | | 0 | 0 | 1704 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 0 | 1477 | 0 | | 669 | 0 | 1425 | | 0 | 0 | 1704 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 0 | 1477 | 0 | | 669 | 0 | 1425 | | 0 | 0 | 1704 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.43 | 0.00 | 0.42 | | 0.00 | 0.40 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.43 | 0.00 | 0.43 | | 0.00 | 0.48 | 0.00 | | 0.00 | 0.48 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 0.98 | | 0.00 | 0.84 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 22.8 | 0.0 | 22.5 | | 0.0 | 18.0 | 0.0 | | 0.0 | 20.7 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 23.3 | 0.0 | 29.8 | | 0.0 | 3.8 | 0.0 | | 0.0 | 21.7 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 46.0 | 0.0 | 52.2 | | 0.0 | 21.8 | 0.0 | | 0.0 | 42.4 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 46.0 | 0.0 | 52.2 | | 0.0 | 21.8 | 0.0 | | 0.0 | 42.4 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | D | | A | C | A | | A | D | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 27 | 0 | 23 | | 0 | 19 | 0 | | 0 | 30 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.938
Loss Time (sec): 14 (Y+R=4.0 sec) Average Delay (sec/veh): 36.1
Optimal Cycle: 113 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 0 | 2 | | 0 1 | 0 0 | 1 | | 1 0 | 2 1 | 0 | | 2 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 27 | 3 | 49 | | 222 | 18 | 3 | | 15 | 1131 | 29 | | 268 | 1416 | 280 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1289 | 33 | | 306 | 1614 | 319 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 474 | 0 | | 0 | 111 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1763 | 33 | | 306 | 1725 | 319 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1763 | 33 | | 306 | 1725 | 319 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1763 | 33 | | 306 | 1725 | 319 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 31 | 3 | 56 | | 253 | 21 | 3 | | 17 | 1763 | 33 | | 306 | 1725 | 319 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.73 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.90 | 0.10 | 2.00 | | 0.93 | 0.07 | 1.00 | | 1.00 | 2.94 | 0.06 | | 2.00 | 1.69 | 0.31 | |
| Final Sat.: | 1604 | 178 | 2786 | | 1647 | 134 | 1583 | | 1769 | 4975 | 93 | | 3432 | 2917 | 540 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.15 | 0.15 | 0.00 | | 0.01 | 0.35 | 0.35 | | 0.09 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.15 | 0.15 | 0.15 | | 0.05 | 0.50 | 0.50 | | 0.13 | 0.58 | 0.58 | |
| Volume/Cap: | 0.38 | 0.38 | 0.40 | | 1.03 | 1.03 | 0.01 | | 0.19 | 0.71 | 0.71 | | 0.71 | 1.03 | 1.03 | |
| Uniform Del: | 36.8 | 36.8 | 36.8 | | 34.0 | 34.0 | 29.0 | | 36.5 | 15.5 | 15.5 | | 33.6 | 17.0 | 17.0 | |
| IncremntDel: | 2.7 | 2.7 | 1.9 | | 62.5 | 62.5 | 0.0 | | 1.1 | 1.0 | 1.0 | | 5.4 | 27.7 | 27.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.5 | 39.5 | 38.7 | | 96.6 | 96.6 | 29.0 | | 37.5 | 16.4 | 16.4 | | 39.0 | 44.6 | 44.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.5 | 39.5 | 38.7 | | 96.6 | 96.6 | 29.0 | | 37.5 | 16.4 | 16.4 | | 39.0 | 44.6 | 44.6 | |
| LOS by Move: | D | D | D | | F | F | C | | D | B | B | | D | D | D | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 12 | 12 | 0 | | 1 | 14 | 14 | | 5 | 37 | 37 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.653
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 31 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 1 | 0 | | 1 1 | 0 0 | 1 | | 1 0 | 1 1 | 0 | | 1 0 | 2 0 | 1 | |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 15 | 9 | 8 | | 390 | 30 | 91 | | 117 | 796 | 58 | | 46 | 1141 | 323 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 907 | 66 | | 52 | 1301 | 368 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 474 | 0 | | 0 | 111 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1381 | 66 | | 52 | 1412 | 368 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1381 | 66 | | 52 | 1412 | 368 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1381 | 66 | | 52 | 1412 | 368 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 17 | 10 | 9 | | 445 | 34 | 104 | | 133 | 1381 | 66 | | 52 | 1412 | 368 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.91 | 0.91 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.53 | 0.47 | | 1.86 | 0.14 | 1.00 | | 1.00 | 1.91 | 0.09 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 916 | 814 | | 3306 | 254 | 1583 | | 1769 | 3353 | 160 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.13 | 0.13 | 0.07 | | 0.08 | 0.41 | 0.41 | | 0.03 | 0.40 | 0.23 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.05 | 0.05 | 0.05 | | 0.20 | 0.20 | 0.20 | | 0.11 | 0.63 | 0.63 | | 0.08 | 0.59 | 0.59 | |
| Volume/Cap: | 0.19 | 0.22 | 0.22 | | 0.68 | 0.68 | 0.33 | | 0.68 | 0.66 | 0.66 | | 0.39 | 0.68 | 0.39 | |
| Uniform Del: | 36.5 | 36.5 | 36.5 | | 29.7 | 29.7 | 27.5 | | 34.2 | 9.5 | 9.5 | | 35.2 | 11.2 | 8.8 | |
| IncremntDel: | 1.1 | 1.3 | 1.3 | | 2.6 | 2.6 | 0.6 | | 9.0 | 0.7 | 0.7 | | 1.9 | 0.9 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.5 | 37.8 | 37.8 | | 32.3 | 32.3 | 28.1 | | 43.2 | 10.3 | 10.3 | | 37.1 | 12.1 | 9.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.5 | 37.8 | 37.8 | | 32.3 | 32.3 | 28.1 | | 43.2 | 10.3 | 10.3 | | 37.1 | 12.1 | 9.0 | |
| LOS by Move: | D | D | D | | C | C | C | | D | B | B | | D | B | A | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 7 | 7 | 2 | | 5 | 13 | 13 | | 2 | 13 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.792
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 47 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 0 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 70 | 3 | 177 | | 112 | 28 | 5 | | 2 | 665 | 66 | | 264 | 982 | 22 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 80 | 3 | 202 | | 128 | 32 | 6 | | 2 | 758 | 75 | | 301 | 1119 | 25 | |
| Added Vol: | 1 | 0 | 0 | | 0 | 0 | 0 | | 0 | 474 | 2 | | 0 | 111 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1232 | 77 | | 301 | 1230 | 25 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1232 | 77 | | 301 | 1230 | 25 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1232 | 77 | | 301 | 1230 | 25 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 81 | 3 | 202 | | 128 | 32 | 6 | | 2 | 1232 | 77 | | 301 | 1230 | 25 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.79 | 0.79 | 0.79 | | 0.52 | 0.52 | 0.52 | | 0.88 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.28 | 0.01 | 0.71 | | 0.78 | 0.19 | 0.03 | | 0.01 | 1.88 | 0.11 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 425 | 18 | 1062 | | 763 | 191 | 34 | | 6 | 3145 | 197 | | 1769 | 3457 | 70 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.17 | 0.17 | 0.17 | | 0.39 | 0.39 | 0.39 | | 0.17 | 0.36 | 0.36 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.26 | 0.26 | 0.26 | | 0.48 | 0.48 | 0.48 | | 0.21 | 0.69 | 0.69 | |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | | 0.64 | 0.64 | 0.64 | | 0.82 | 0.82 | 0.82 | | 0.82 | 0.52 | 0.52 | |
| Uniform Del: | 26.8 | 26.8 | 26.8 | | 26.1 | 26.1 | 26.1 | | 17.9 | 17.9 | 17.9 | | 30.2 | 6.1 | 6.1 | |
| IncremntDel: | 6.4 | 6.4 | 6.4 | | 5.1 | 5.1 | 5.1 | | 3.4 | 3.4 | 3.4 | | 13.4 | 0.2 | 0.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.2 | 33.2 | 33.2 | | 31.2 | 31.2 | 31.2 | | 21.3 | 21.3 | 21.3 | | 43.7 | 6.3 | 6.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.2 | 33.2 | 33.2 | | 31.2 | 31.2 | 31.2 | | 21.3 | 21.3 | 21.3 | | 43.7 | 6.3 | 6.3 | |
| LOS by Move: | C | C | C | | C | C | C | | C | C | C | | D | A | A | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 5 | 5 | 5 | | 17 | 17 | 17 | | 10 | 8 | 8 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.904
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 36.1
Optimal Cycle: 112 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | | 342 | 367 | 0 | | 0 | 0 | 0 | | 463 | 0 | 169 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 189 | 453 | | 390 | 418 | 0 | | 0 | 0 | 0 | | 528 | 0 | 193 | |
| Added Vol: | 0 | 8 | 152 | | 323 | 64 | 0 | | 0 | 0 | 0 | | 55 | 0 | 57 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 197 | 605 | | 713 | 482 | 0 | | 0 | 0 | 0 | | 583 | 0 | 250 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 197 | 605 | | 713 | 482 | 0 | | 0 | 0 | 0 | | 583 | 0 | 250 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 197 | 605 | | 713 | 482 | 0 | | 0 | 0 | 0 | | 583 | 0 | 250 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 197 | 605 | | 713 | 482 | 0 | | 0 | 0 | 0 | | 583 | 0 | 250 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.37 | | 0.39 | 0.25 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.32 | 0.00 | 0.15 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.11 | 0.47 | | 0.44 | 0.55 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.36 | 0.00 | 0.79 | |
| Volume/Cap: | 0.00 | 0.90 | 0.79 | | 0.90 | 0.46 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.90 | 0.00 | 0.19 | |
| Uniform Del: | 0.0 | 48.1 | 24.5 | | 28.8 | 14.8 | 0.0 | | 0.0 | 0.0 | 0.0 | | 33.6 | 0.0 | 2.8 | |
| IncremntDel: | 0.0 | 35.9 | 5.7 | | 13.8 | 0.3 | 0.0 | | 0.0 | 0.0 | 0.0 | | 16.2 | 0.0 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 83.9 | 30.2 | | 42.6 | 15.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 49.7 | 0.0 | 2.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 83.9 | 30.2 | | 42.6 | 15.1 | 0.0 | | 0.0 | 0.0 | 0.0 | | 49.7 | 0.0 | 2.8 | |
| LOS by Move: | A | F | C | | D | B | A | | A | A | A | | D | A | A | |
| HCM2kAvgQ: | 0 | 10 | 19 | | 26 | 10 | 0 | | 0 | 0 | 0 | | 22 | 0 | 2 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.009
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 62.5
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 1 | 2 | 0 | 3 | 0 1 | 1 | 1 | 1 | 0 2 | 1 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | | 6 | 13 | 677 | | 92 | 84 | | 34 | 379 | 3 | | 6 | 5 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 |
| Initial Bse: | 1179 | 2403 | | 7 | 15 | 772 | | 105 | 96 | | 39 | 432 | 3 | | 7 | 6 |
| Added Vol: | 69 | 433 | | 24 | 441 | 59 | | 43 | 494 | | 838 | 14 | 24 | | 30 | 14 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 1248 | 2836 | | 31 | 456 | 831 | | 148 | 590 | | 877 | 446 | 27 | | 37 | 20 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 1248 | 2836 | | 31 | 456 | 831 | | 148 | 590 | | 877 | 446 | 27 | | 37 | 20 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 1248 | 2836 | | 31 | 456 | 831 | | 148 | 590 | | 877 | 446 | 27 | | 37 | 20 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 1248 | 2836 | | 31 | 456 | 831 | | 148 | 590 | | 877 | 446 | 27 | | 37 | 20 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | | 0.83 | 0.90 | 1.03 | | 0.83 | 0.91 | | 0.91 | 0.88 | 0.93 | | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | | 1.00 | 2.00 | 3.00 | | 1.00 | 1.21 | | 1.79 | 2.00 | 1.00 | | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | | 1583 | 3432 | 5846 | | 1583 | 2091 | | 3109 | 3343 | 1769 | | 3538 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.36 | 0.49 | | 0.02 | 0.13 | 0.14 | | 0.09 | 0.28 | | 0.28 | 0.13 | 0.02 | | 0.01 | 0.01 |
| Crit Moves: | | **** | | | **** | | | | | | **** | | **** | | | |
| Green/Cycle: | 0.43 | 0.47 | | 0.51 | 0.13 | 0.17 | | 0.17 | 0.27 | | 0.27 | 0.27 | 0.04 | | 0.04 | 0.04 |
| Volume/Cap: | 0.85 | 1.04 | | 0.04 | 1.04 | 0.85 | | 0.56 | 1.04 | | 1.04 | 0.49 | 0.40 | | 0.27 | 0.32 |
| Uniform Del: | 33.3 | 34.5 | | 16.1 | 56.7 | 52.5 | | 49.7 | 47.3 | | 47.3 | 39.7 | 61.0 | | 60.7 | 60.9 |
| IncremntDel: | 4.8 | 27.2 | | 0.0 | 52.3 | 7.0 | | 2.6 | 33.6 | | 33.6 | 0.4 | 3.9 | | 1.1 | 3.1 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Delay/Veh: | 38.1 | 61.7 | | 16.1 | 109.0 | 59.5 | | 52.3 | 80.9 | | 80.9 | 40.1 | 64.9 | | 61.8 | 63.9 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| AdjDel/Veh: | 38.1 | 61.7 | | 16.1 | 109.0 | 59.5 | | 52.3 | 80.9 | | 80.9 | 40.1 | 64.9 | | 61.8 | 63.9 |
| LOS by Move: | D | E | | B | F | E | | D | F | | F | D | E | | E | E |
| HCM2kAvgQ: | 25 | 51 | | 1 | 14 | 14 | | 6 | 28 | | 28 | 9 | 2 | | 1 | 1 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 73 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 0 | 0 | 1! | 0 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | |
| Base Vol: | 18 | 13 | | 26 | 71 | 19 | | 72 | 115 | | 415 | 52 | 56 | | 1037 | 74 |
| Growth Adj: | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 |
| Initial Bse: | 21 | 15 | | 30 | 81 | 22 | | 82 | 131 | | 473 | 59 | 64 | | 1182 | 84 |
| Added Vol: | 0 | 0 | | 0 | 1 | 0 | | 13 | 4 | | 1345 | 0 | 0 | | 136 | 0 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | | 1818 | 59 | 64 | | 1318 | 84 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | | 1818 | 59 | 64 | | 1318 | 84 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | | 1818 | 59 | 64 | | 1318 | 84 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 21 | 15 | | 30 | 82 | 22 | | 95 | 135 | | 1818 | 59 | 64 | | 1318 | 84 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 |
| Adjustment: | 0.80 | 0.80 | | 0.80 | 0.77 | 0.77 | | 0.77 | 0.93 | | 0.93 | 0.93 | 0.93 | | 0.92 | 0.92 |
| Lanes: | 0.31 | 0.23 | | 0.46 | 0.41 | 0.11 | | 0.48 | 1.00 | | 1.94 | 0.06 | 1.00 | | 1.88 | 0.12 |
| Final Sat.: | 478 | 345 | | 690 | 600 | 158 | | 696 | 1769 | | 3409 | 111 | 1769 | | 3295 | 211 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.04 | | 0.04 | 0.14 | 0.14 | | 0.14 | 0.08 | | 0.53 | 0.53 | 0.04 | | 0.40 | 0.40 |
| Crit Moves: | | | | | | **** | | | | | **** | | **** | | | |
| Green/Cycle: | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.18 | 0.12 | | 0.69 | 0.69 | 0.05 | | 0.62 | 0.62 |
| Volume/Cap: | 0.24 | 0.24 | | 0.24 | 0.77 | 0.77 | | 0.77 | 0.65 | | 0.77 | 0.77 | 0.77 | | 0.65 | 0.65 |
| Uniform Del: | 46.0 | 46.0 | | 46.0 | 51.0 | 51.0 | | 51.0 | 54.7 | | 13.3 | 13.3 | 61.3 | | 15.7 | 15.7 |
| IncremntDel: | 0.5 | 0.5 | | 0.5 | 13.4 | 13.4 | | 13.4 | 6.8 | | 1.6 | 1.6 | 35.0 | | 0.7 | 0.7 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| Delay/Veh: | 46.5 | 46.5 | | 46.5 | 64.3 | 64.3 | | 64.3 | 61.5 | | 14.8 | 14.8 | 96.3 | | 16.3 | 16.3 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 |
| AdjDel/Veh: | 46.5 | 46.5 | | 46.5 | 64.3 | 64.3 | | 64.3 | 61.5 | | 14.8 | 14.8 | 96.3 | | 16.3 | 16.3 |
| LOS by Move: | D | D | | D | E | E | | E | E | | B | B | F | | B | B |
| HCM2kAvgQ: | 2 | 2 | | 2 | 9 | 9 | | 9 | 6 | | 27 | 27 | 4 | | 19 | 19 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.852
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 97 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1 | 0 | 186 | | 82 | 652 | 0 | | 0 | 1021 | 14 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1 | 0 | 212 | | 93 | 743 | 0 | | 0 | 1164 | 16 | |
| Added Vol: | 0 | 0 | 0 | | 190 | 0 | 6 | | 7 | 1159 | 0 | | 0 | 134 | 14 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 191 | 0 | 218 | | 100 | 1902 | 0 | | 0 | 1298 | 30 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 191 | 0 | 218 | | 100 | 1902 | 0 | | 0 | 1298 | 30 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 191 | 0 | 218 | | 100 | 1902 | 0 | | 0 | 1298 | 30 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 191 | 0 | 218 | | 100 | 1902 | 0 | | 0 | 1298 | 30 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.47 | 0.00 | 0.53 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.95 | 0.05 | |
| Final Sat.: | 0 | 0 | 0 | | 789 | 0 | 900 | | 1769 | 3538 | 0 | | 0 | 3448 | 80 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.24 | 0.00 | 0.24 | | 0.06 | 0.54 | 0.00 | | 0.00 | 0.38 | 0.38 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.28 | 0.00 | 0.28 | | 0.08 | 0.63 | 0.00 | | 0.00 | 0.55 | 0.55 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.69 | 0.85 | 0.00 | | 0.00 | 0.69 | 0.69 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 43.9 | 0.0 | 43.9 | | 58.0 | 19.1 | 0.0 | | 0.0 | 21.3 | 21.3 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 13.7 | 0.0 | 13.7 | | 12.8 | 3.4 | 0.0 | | 0.0 | 1.1 | 1.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 57.6 | 0.0 | 57.6 | | 70.8 | 22.5 | 0.0 | | 0.0 | 22.3 | 22.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 57.6 | 0.0 | 57.6 | | 70.8 | 22.5 | 0.0 | | 0.0 | 22.3 | 22.3 | |
| LOS by Move: | A | A | A | | E | A | E | | E | C | A | | A | C | C | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 18 | 0 | 18 | | 5 | 34 | 0 | | 0 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 74 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 5 | | 5 | 5 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 8:00 am - 9:00 am | | | | | | | | | | | | | | | | | | |
| Base Vol: | 130 | 0 | 67 | | 0 | 0 | 0 | | 0 | 697 | 250 | | 102 | 1171 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 148 | 0 | 76 | | 0 | 0 | 0 | | 0 | 795 | 285 | | 116 | 1335 | 0 | |
| Added Vol: | 10 | 0 | 0 | | 0 | 0 | 0 | | 0 | 1166 | 2 | | 0 | 140 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1961 | 287 | | 116 | 1475 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1961 | 287 | | 116 | 1475 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1961 | 287 | | 116 | 1475 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 158 | 0 | 76 | | 0 | 0 | 0 | | 0 | 1961 | 287 | | 116 | 1475 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.90 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.93 | 0.83 | | 0.93 | 0.93 | 1.00 | |
| Lanes: | 1.51 | 0.00 | 0.49 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 0.00 | |
| Final Sat.: | 2583 | 0 | 841 | | 0 | 0 | 0 | | 0 | 3538 | 1583 | | 1769 | 3538 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.55 | 0.18 | | 0.07 | 0.42 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.71 | 0.71 | | 0.08 | 0.80 | 0.00 | |
| Volume/Cap: | 0.52 | 0.00 | 0.78 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.78 | 0.25 | | 0.78 | 0.52 | 0.00 | |
| Uniform Del: | 54.0 | 0.0 | 55.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 11.9 | 6.5 | | 58.3 | 4.5 | 0.0 | |
| IncremntDel: | 1.1 | 0.0 | 12.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 1.6 | 0.1 | | 22.1 | 0.2 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 55.1 | 0.0 | 67.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.5 | 6.6 | | 80.4 | 4.7 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 55.1 | 0.0 | 67.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 13.5 | 6.6 | | 80.4 | 4.7 | 0.0 | |
| LOS by Move: | E | A | E | | A | A | A | | A | B | A | | F | A | A | |
| HCM2kAvgQ: | 5 | 0 | 8 | | 0 | 0 | 0 | | 0 | 27 | 4 | | 6 | 11 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.046
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 66.8
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 399 | 127 | 41 | | 32 | 203 | 438 | | 169 | 942 | 177 | | 32 | 1392 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 10 | 1168 | 0 | | 0 | 150 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.88 | 0.88 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.77 | 0.23 | | 1.00 | 1.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4634 | 388 | | 1769 | 3527 | 10 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.07 | 0.03 | | 0.02 | 0.11 | 0.28 | | 0.10 | 0.46 | 0.46 | | 0.02 | 0.44 | 0.44 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.27 | 0.27 | 0.27 | | 0.10 | 0.47 | 0.47 | | 0.04 | 0.42 | 0.42 | |
| Volume/Cap: | 1.05 | 0.61 | 0.23 | | 0.07 | 0.41 | 1.05 | | 1.05 | 0.96 | 0.96 | | 0.45 | 1.05 | 1.05 | |
| Uniform Del: | 57.8 | 55.1 | 52.7 | | 35.6 | 39.2 | 47.7 | | 58.7 | 33.0 | 33.0 | | 61.0 | 37.8 | 37.8 | |
| IncremntDel: | 58.7 | 5.3 | 0.7 | | 0.1 | 0.5 | 56.4 | | 81.6 | 10.6 | 10.6 | | 4.5 | 36.5 | 36.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 116.5 | 60.4 | 53.4 | | 35.6 | 39.8 | 104.1 | | 140.3 | 43.6 | 43.6 | | 65.5 | 74.3 | 74.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 116.5 | 60.4 | 53.4 | | 35.6 | 39.8 | 104.1 | | 140.3 | 43.6 | 43.6 | | 65.5 | 74.3 | 74.3 | |
| LOS by Move: | F | E | D | | D | D | F | | F | D | D | | E | E | E | |
| HCM2kAvgQ: | 13 | 6 | 2 | | 1 | 7 | 25 | | 12 | 37 | 37 | | 2 | 42 | 42 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.859
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 91 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 361 | 0 | 75 | | 64 | 1378 | 0 | | 0 | 1114 | 319 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 412 | 0 | 85 | | 73 | 1571 | 0 | | 0 | 1270 | 364 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 306 | 0 | | 0 | 115 | 3 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1877 | 0 | | 0 | 1385 | 367 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1877 | 0 | | 0 | 1385 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 414 | 0 | 85 | | 73 | 1877 | 0 | | 0 | 1385 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 414 | 0 | 86 | | 73 | 1877 | 0 | | 0 | 1385 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.23 | 0.00 | 0.05 | | 0.04 | 0.53 | 0.00 | | 0.00 | 0.39 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.27 | 0.00 | 0.27 | | 0.07 | 0.62 | 0.00 | | 0.00 | 0.55 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.86 | 0.00 | 0.20 | | 0.59 | 0.86 | 0.00 | | 0.00 | 0.71 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 34.6 | 0.0 | 28.0 | | 45.1 | 15.6 | 0.0 | | 0.0 | 16.8 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 14.4 | 0.0 | 0.2 | | 7.3 | 3.7 | 0.0 | | 0.0 | 1.3 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 48.9 | 0.0 | 28.2 | | 52.4 | 19.2 | 0.0 | | 0.0 | 18.1 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 48.9 | 0.0 | 28.2 | | 52.4 | 19.2 | 0.0 | | 0.0 | 18.1 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | B | A | | A | B | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 15 | 0 | 2 | | 3 | 27 | 0 | | 0 | 17 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.849
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 15.5
Optimal Cycle: 75 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 0 | 1 | 0 | 0 | 1 0 | 0 | 1 | 1 | 0 1 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 62 | 16 | 125 | | 38 | 2 | 2 | | 12 | 1001 | 9 | | 41 | 850 | 142 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1141 | 10 | | 47 | 969 | 162 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 306 | 0 | | 0 | 115 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1447 | 10 | | 47 | 1084 | 162 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1447 | 10 | | 47 | 1084 | 162 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1447 | 10 | | 47 | 1084 | 162 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 71 | 18 | 143 | | 43 | 2 | 2 | | 14 | 1447 | 10 | | 47 | 1084 | 162 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.85 | 0.85 | | 0.40 | 0.40 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.96 | 0.96 | |
| Lanes: | 1.00 | 0.11 | 0.89 | | 0.95 | 0.05 | 1.00 | | 1.00 | 1.99 | 0.01 | | 1.00 | 0.87 | 0.13 | |
| Final Sat.: | 1359 | 183 | 1431 | | 723 | 38 | 1583 | | 1769 | 3509 | 25 | | 1769 | 1589 | 237 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.10 | 0.10 | | 0.06 | 0.06 | 0.00 | | 0.01 | 0.41 | 0.41 | | 0.03 | 0.68 | 0.68 | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.04 | 0.74 | 0.74 | | 0.07 | 0.78 | 0.78 | |
| Volume/Cap: | 0.46 | 0.88 | 0.88 | | 0.53 | 0.53 | 0.01 | | 0.19 | 0.55 | 0.55 | | 0.37 | 0.88 | 0.88 | |
| Uniform Del: | 41.5 | 43.7 | 43.7 | | 41.8 | 41.8 | 39.4 | | 46.4 | 5.6 | 5.6 | | 44.2 | 7.8 | 7.8 | |
| IncremntDel: | 2.2 | 34.9 | 34.9 | | 6.0 | 6.0 | 0.0 | | 1.3 | 0.3 | 0.3 | | 1.8 | 6.6 | 6.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 43.6 | 78.5 | 78.5 | | 47.8 | 47.8 | 39.4 | | 47.8 | 5.8 | 5.8 | | 46.0 | 14.4 | 14.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 43.6 | 78.5 | 78.5 | | 47.8 | 47.8 | 39.4 | | 47.8 | 5.8 | 5.8 | | 46.0 | 14.4 | 14.4 | |
| LOS by Move: | D | E | E | | D | D | D | | D | A | A | | D | B | B | |
| HCM2kAvgQ: | 3 | 8 | 8 | | 2 | 2 | 0 | | 1 | 10 | 10 | | 2 | 30 | 30 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.942
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: 128 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 1! | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 0 | 1 | 0 | 1 | 0 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 3 | 3 | 8 | | 142 | 6 | 48 | | 17 | 892 | 5 | | 6 | 854 | 62 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1017 | 6 | | 7 | 974 | 71 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 306 | 0 | | 0 | 115 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1323 | 6 | | 7 | 1089 | 71 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1323 | 6 | | 7 | 1089 | 71 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1323 | 6 | | 7 | 1089 | 71 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 3 | 3 | 9 | | 162 | 7 | 55 | | 19 | 1323 | 6 | | 7 | 1089 | 71 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.87 | 0.87 | 0.87 | | 0.72 | 0.72 | 0.72 | | 0.12 | 0.98 | 0.98 | | 0.05 | 0.97 | 0.97 | |
| Lanes: | 0.21 | 0.21 | 0.58 | | 0.73 | 0.03 | 0.24 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.94 | 0.06 | |
| Final Sat.: | 355 | 355 | 947 | | 998 | 42 | 337 | | 225 | 1852 | 8 | | 99 | 1733 | 113 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.01 | 0.01 | | 0.16 | 0.16 | 0.16 | | 0.09 | 0.71 | 0.71 | | 0.07 | 0.63 | 0.63 | |
| Crit Moves: | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | | 0.17 | 0.17 | 0.17 | | 0.76 | 0.76 | 0.76 | | 0.76 | 0.76 | 0.76 | |
| Volume/Cap: | 0.06 | 0.06 | 0.06 | | 0.94 | 0.94 | 0.94 | | 0.11 | 0.94 | 0.94 | | 0.09 | 0.83 | 0.83 | |
| Uniform Del: | 34.6 | 34.6 | 34.6 | | 40.9 | 40.9 | 40.9 | | 3.2 | 10.3 | 10.3 | | 3.1 | 7.9 | 7.9 | |
| IncremntDel: | 0.1 | 0.1 | 0.1 | | 42.6 | 42.6 | 42.6 | | 0.3 | 12.7 | 12.7 | | 0.5 | 4.3 | 4.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 34.7 | 34.7 | 34.7 | | 83.5 | 83.5 | 83.5 | | 3.5 | 23.0 | 23.0 | | 3.7 | 12.2 | 12.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 34.7 | 34.7 | 34.7 | | 83.5 | 83.5 | 83.5 | | 3.5 | 23.0 | 23.0 | | 3.7 | 12.2 | 12.2 | |
| LOS by Move: | C | C | C | | F | F | F | | A | C | C | | A | B | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 11 | 11 | 11 | | 0 | 40 | 40 | | 0 | 25 | 25 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.913
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: 105 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 101 | 85 | 122 | | 31 | 41 | 7 | | 4 | 794 | 72 | | 41 | 869 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 115 | 97 | 139 | | 35 | 47 | 8 | | 5 | 905 | 82 | | 47 | 991 | 6 | |
| Added Vol: | 11 | 0 | 37 | | 0 | 0 | 0 | | 0 | 269 | 8 | | 5 | 110 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 126 | 97 | 176 | | 35 | 47 | 8 | | 5 | 1174 | 90 | | 52 | 1101 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 126 | 97 | 176 | | 35 | 47 | 8 | | 5 | 1174 | 90 | | 52 | 1101 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 126 | 97 | 176 | | 35 | 47 | 8 | | 5 | 1174 | 90 | | 52 | 1101 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 126 | 97 | 176 | | 35 | 47 | 8 | | 5 | 1174 | 90 | | 52 | 1101 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.71 | 0.88 | 0.88 | | 0.22 | 0.96 | 0.96 | | 0.14 | 0.97 | 0.97 | | 0.06 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.35 | 0.65 | | 1.00 | 0.85 | 0.15 | | 1.00 | 0.93 | 0.07 | | 1.00 | 0.99 | 0.01 | |
| Final Sat.: | 1346 | 597 | 1085 | | 419 | 1555 | 266 | | 264 | 1710 | 131 | | 117 | 1851 | 10 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.16 | 0.16 | | 0.08 | 0.03 | 0.03 | | 0.02 | 0.69 | 0.69 | | 0.44 | 0.59 | 0.59 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | | 0.18 | 0.18 | 0.18 | | 0.75 | 0.75 | 0.75 | | 0.75 | 0.75 | 0.75 | |
| Volume/Cap: | 0.53 | 0.91 | 0.91 | | 0.47 | 0.17 | 0.17 | | 0.02 | 0.91 | 0.91 | | 0.59 | 0.79 | 0.79 | |
| Uniform Del: | 37.3 | 40.3 | 40.3 | | 36.9 | 34.8 | 34.8 | | 3.1 | 9.8 | 9.8 | | 5.5 | 7.6 | 7.6 | |
| IncremntDel: | 2.2 | 30.5 | 30.5 | | 4.7 | 0.2 | 0.2 | | 0.0 | 9.4 | 9.4 | | 9.8 | 3.1 | 3.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.5 | 70.8 | 70.8 | | 41.6 | 35.1 | 35.1 | | 3.2 | 19.2 | 19.2 | | 15.3 | 10.7 | 10.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.5 | 70.8 | 70.8 | | 41.6 | 35.1 | 35.1 | | 3.2 | 19.2 | 19.2 | | 15.3 | 10.7 | 10.7 | |
| LOS by Move: | D | E | E | | D | D | D | | A | B | B | | B | B | B | |
| HCM2kAvgQ: | 4 | 12 | 12 | | 2 | 1 | 1 | | 0 | 35 | 35 | | 2 | 22 | 22 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.324
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 151.9
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 76 | 390 | 279 | | 465 | 367 | 11 | | 18 | 189 | 133 | | 479 | 73 | 563 | |
| Added Vol: | 15 | 9 | 146 | | 101 | 7 | 0 | | 0 | 30 | 10 | | 22 | 19 | 80 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 91 | 399 | 425 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 91 | 399 | 425 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 91 | 399 | 422 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 91 | 399 | 422 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.78 | 1.18 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.69 | 0.31 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 3059 | 2022 | 62 | | 1769 | 1862 | 1583 | | 3017 | 554 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.11 | 0.53 | | 0.19 | 0.19 | 0.19 | | 0.01 | 0.12 | 0.09 | | 0.17 | 0.17 | 0.41 | |
| Crit Moves: | | | **** | | | | **** | | | **** | | | | | **** | |
| Green/Cycle: | 0.40 | 0.40 | 0.40 | | 0.14 | 0.14 | 0.14 | | 0.09 | 0.09 | 0.09 | | 0.31 | 0.31 | 0.31 | |
| Volume/Cap: | 0.13 | 0.28 | 1.32 | | 1.32 | 1.32 | 1.32 | | 0.12 | 1.32 | 1.02 | | 0.54 | 0.54 | 1.32 | |
| Uniform Del: | 24.4 | 26.1 | 38.8 | | 55.9 | 55.9 | 55.9 | | 54.5 | 59.2 | 59.2 | | 37.4 | 37.4 | 45.1 | |
| IncremntDel: | 0.1 | 0.1 | 166.2 | | 155.5 | 156 | 155.5 | | 0.3 | 182 | 81.0 | | 0.6 | 0.6 | 159.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 24.5 | 26.2 | 205.0 | | 211.5 | 211 | 211.5 | | 54.8 | 241 | 140.2 | | 38.0 | 38.0 | 204.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 24.5 | 26.2 | 205.0 | | 211.5 | 211 | 211.5 | | 54.8 | 241 | 140.2 | | 38.0 | 38.0 | 204.8 | |
| LOS by Move: | C | C | F | | F | F | F | | D | F | F | | D | D | F | |
| HCM2kAvgQ: | 2 | 5 | 31 | | 25 | 25 | 25 | | 1 | 17 | 10 | | 10 | 10 | 46 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.948
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 38.8
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1757 | 3285 | 0 | | 0 | 1008 | 214 | | 204 | 0 | 489 | | 0 | 0 | 0 | |
| Added Vol: | 23 | 631 | 0 | | 0 | 85 | 13 | | 181 | 0 | 7 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 5083 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.77 | 0.00 | | 0.00 | 0.21 | 0.14 | | 0.11 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.57 | 0.81 | 0.00 | | 0.00 | 0.24 | 0.24 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.90 | 0.95 | 0.00 | | 0.00 | 0.90 | 0.60 | | 0.90 | 0.00 | 0.95 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 30.1 | 12.3 | 0.0 | | 0.0 | 59.2 | 54.2 | | 69.0 | 0.0 | 69.5 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 6.3 | 5.9 | 0.0 | | 0.0 | 9.6 | 2.8 | | 20.9 | 0.0 | 26.9 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 36.4 | 18.1 | 0.0 | | 0.0 | 68.8 | 57.0 | | 89.9 | 0.0 | 96.4 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.4 | 18.1 | 0.0 | | 0.0 | 68.8 | 57.0 | | 89.9 | 0.0 | 96.4 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | B | A | | A | E | E | | F | A | F | | A | A | A | |
| HCM2kAvgQ: | 42 | 62 | 0 | | 0 | 22 | 10 | | 12 | 0 | 13 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.614
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 46 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 0 | 5 | |
| Lanes: | 0 | 0 0 | 0 | 0 | 0 | 0 1! | 0 | 0 | 1 | 0 2 | 0 | 0 | 0 | 0 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 22 | 0 | 22 | | 68 | 526 | 0 | | 0 | 1341 | 46 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 25 | 0 | 25 | | 78 | 600 | 0 | | 0 | 1529 | 52 | |
| Added Vol: | 0 | 0 | 0 | | 2 | 0 | 0 | | 0 | 186 | 0 | | 0 | 27 | 10 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 786 | 0 | | 0 | 1556 | 62 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 786 | 0 | | 0 | 1556 | 62 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 786 | 0 | | 0 | 1556 | 62 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 27 | 0 | 25 | | 78 | 786 | 0 | | 0 | 1556 | 62 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.89 | 1.00 | 0.89 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.93 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.48 | | 1.00 | 2.00 | 0.00 | | 0.00 | 1.92 | 0.08 | |
| Final Sat.: | 0 | 0 | 0 | | 881 | 0 | 816 | | 1769 | 3538 | 0 | | 0 | 3381 | 136 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.03 | 0.00 | 0.03 | | 0.04 | 0.22 | 0.00 | | 0.00 | 0.46 | 0.46 | |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.06 | 0.00 | 0.06 | | 0.07 | 0.81 | 0.00 | | 0.00 | 0.74 | 0.74 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.52 | 0.00 | 0.52 | | 0.62 | 0.27 | 0.00 | | 0.00 | 0.62 | 0.62 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 38.8 | 0.0 | 38.8 | | 38.4 | 1.9 | 0.0 | | 0.0 | 5.3 | 5.3 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 4.9 | 0.0 | 4.9 | | 9.3 | 0.1 | 0.0 | | 0.0 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 43.8 | 0.0 | 43.8 | | 47.6 | 2.0 | 0.0 | | 0.0 | 5.7 | 5.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 43.8 | 0.0 | 43.8 | | 47.6 | 2.0 | 0.0 | | 0.0 | 5.7 | 5.7 | |
| LOS by Move: | A | A | A | | D | A | D | | D | A | A | | A | A | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 2 | 0 | 2 | | 3 | 3 | 0 | | 0 | 11 | 11 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.626
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 32 | 37 | 20 | | 8 | 21 | 44 | | 40 | 582 | 43 | | 25 | 1302 | 25 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 663 | 49 | | 28 | 1484 | 28 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 186 | 0 | | 0 | 27 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 849 | 49 | | 28 | 1511 | 28 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 849 | 49 | | 28 | 1511 | 28 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 849 | 49 | | 28 | 1511 | 28 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 36 | 42 | 23 | | 9 | 24 | 50 | | 46 | 849 | 49 | | 29 | 1511 | 29 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.36 | 0.42 | 0.22 | | 0.11 | 0.29 | 0.60 | | 1.00 | 1.89 | 0.11 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 651 | 752 | 407 | | 190 | 500 | 1047 | | 1805 | 3386 | 195 | | 1805 | 3533 | 67 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.05 | 0.05 | 0.05 | | 0.03 | 0.25 | 0.25 | | 0.02 | 0.43 | 0.43 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.09 | 0.09 | | 0.08 | 0.08 | 0.08 | | 0.05 | 0.61 | 0.61 | | 0.12 | 0.68 | 0.68 | |
| Volume/Cap: | 0.63 | 0.65 | 0.65 | | 0.62 | 0.63 | 0.63 | | 0.51 | 0.41 | 0.41 | | 0.13 | 0.63 | 0.63 | |
| Uniform Del: | 44.0 | 44.2 | 44.2 | | 44.7 | 44.9 | 44.9 | | 46.3 | 10.4 | 10.4 | | 39.3 | 9.2 | 9.2 | |
| IncremntDel: | 8.0 | 9.0 | 9.0 | | 8.5 | 9.7 | 9.7 | | 4.6 | 0.1 | 0.1 | | 0.3 | 0.6 | 0.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.0 | 53.1 | 53.1 | | 53.2 | 54.5 | 54.5 | | 50.9 | 10.5 | 10.5 | | 39.6 | 9.7 | 9.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.0 | 53.1 | 53.1 | | 53.2 | 54.5 | 54.5 | | 50.9 | 10.5 | 10.5 | | 39.6 | 9.7 | 9.7 | |
| LOS by Move: | D | D | D | | D | D | D | | D | B | B | | D | A | A | |
| HCM2kAvgQ: | 4 | 4 | 4 | | 4 | 4 | 4 | | 2 | 8 | 8 | | 1 | 14 | 14 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.733
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 28.6
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 108 | 225 | 113 | | 50 | 196 | 86 | | 141 | 497 | 78 | | 97 | 1115 | 49 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 567 | 89 | | 111 | 1271 | 56 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 186 | 0 | | 0 | 27 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 753 | 89 | | 111 | 1298 | 56 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 753 | 89 | | 111 | 1298 | 56 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 753 | 89 | | 111 | 1298 | 56 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 257 | 129 | | 57 | 223 | 98 | | 161 | 753 | 89 | | 111 | 1298 | 56 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 1.00 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.93 | 0.93 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.79 | 0.21 | | 1.00 | 1.92 | 0.08 | |
| Final Sat.: | 1805 | 1900 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3177 | 375 | | 1805 | 3440 | 148 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.14 | 0.08 | | 0.03 | 0.12 | 0.06 | | 0.09 | 0.24 | 0.24 | | 0.06 | 0.38 | 0.38 | |
| Crit Moves: | **** | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.19 | 0.19 | | 0.07 | 0.16 | 0.16 | | 0.12 | 0.51 | 0.51 | | 0.13 | 0.51 | 0.51 | |
| Volume/Cap: | 0.73 | 0.73 | 0.43 | | 0.46 | 0.73 | 0.38 | | 0.73 | 0.47 | 0.47 | | 0.47 | 0.73 | 0.73 | |
| Uniform Del: | 44.1 | 38.4 | 36.1 | | 44.8 | 39.9 | 37.5 | | 42.4 | 16.0 | 16.0 | | 40.2 | 18.9 | 18.9 | |
| IncremntDel: | 15.3 | 7.6 | 1.0 | | 2.7 | 8.8 | 0.9 | | 12.0 | 0.2 | 0.2 | | 1.5 | 1.5 | 1.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 59.4 | 46.0 | 37.1 | | 47.5 | 48.8 | 38.4 | | 54.3 | 16.2 | 16.2 | | 41.7 | 20.4 | 20.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 59.4 | 46.0 | 37.1 | | 47.5 | 48.8 | 38.4 | | 54.3 | 16.2 | 16.2 | | 41.7 | 20.4 | 20.4 | |
| LOS by Move: | E | D | D | | D | D | D | | D | B | B | | D | C | C | |
| HCM2kAvgQ: | 5 | 9 | 4 | | 2 | 8 | 3 | | 6 | 9 | 9 | | 4 | 18 | 18 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.696
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 47 | 105 | 12 | 16 | 59 | 56 | 18 | 626 | 48 | 88 | 1246 | 61 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 714 | 55 | 100 | 1420 | 70 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 0 | 0 | 27 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 900 | 55 | 100 | 1447 | 70 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 900 | 55 | 100 | 1447 | 70 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 900 | 55 | 100 | 1447 | 70 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 54 | 120 | 14 | 18 | 67 | 64 | 21 | 900 | 55 | 100 | 1447 | 70 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 | 0.95 | 0.94 | 0.94 |
| Lanes: | 0.29 | 0.64 | 0.07 | 0.12 | 0.45 | 0.43 | 1.00 | 1.89 | 0.11 | 1.00 | 1.91 | 0.09 |
| Final Sat.: | 532 | 1187 | 136 | 217 | 801 | 761 | 1805 | 3372 | 205 | 1805 | 3420 | 164 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.10 | 0.10 | 0.10 | 0.08 | 0.08 | 0.08 | 0.01 | 0.27 | 0.27 | 0.06 | 0.42 | 0.42 |
| Crit Moves: | **** | | | | **** | | **** | | | | **** | |
| Green/Cycle: | 0.14 | 0.14 | 0.14 | 0.12 | 0.12 | 0.12 | 0.05 | 0.53 | 0.53 | 0.11 | 0.58 | 0.58 |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.23 | 0.51 | 0.51 | 0.51 | 0.72 | 0.72 |
| Uniform Del: | 41.2 | 41.2 | 41.2 | 42.7 | 42.7 | 42.7 | 45.6 | 15.4 | 15.4 | 42.0 | 14.9 | 14.9 |
| IncremntDel: | 9.7 | 9.7 | 9.7 | 11.9 | 11.9 | 11.9 | 1.3 | 0.2 | 0.2 | 2.2 | 1.3 | 1.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 50.9 | 50.9 | 50.9 | 54.6 | 54.6 | 54.6 | 46.9 | 15.6 | 15.6 | 44.2 | 16.2 | 16.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 50.9 | 50.9 | 50.9 | 54.6 | 54.6 | 54.6 | 46.9 | 15.6 | 15.6 | 44.2 | 16.2 | 16.2 |
| LOS by Move: | D | D | D | D | D | D | D | B | B | D | B | B |
| HCM2kAvgQ: | 7 | 7 | 7 | 6 | 6 | 6 | 1 | 10 | 10 | 4 | 18 | 18 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 95 Critical Vol./Cap.(X): 0.323
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 6.9
Optimal Cycle: 91 Level Of Service: A

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Permitted | | | Permitted | | | Permitted | | | Permitted | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 14 | 14 | 14 | 14 | 14 | 14 | 73 | 73 | 73 | 73 | 73 | 73 |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 18 | 59 | 9 | 7 | 43 | 11 | 15 | 614 | 24 | 15 | 123 | 24 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 700 | 27 | 17 | 140 | 27 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 0 | 0 | 27 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 886 | 27 | 17 | 167 | 27 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 886 | 27 | 17 | 167 | 27 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 886 | 27 | 17 | 167 | 27 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 21 | 67 | 10 | 8 | 49 | 13 | 17 | 886 | 27 | 17 | 167 | 27 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.62 | 0.95 | 0.95 | 0.29 | 0.93 | 0.93 |
| Lanes: | 0.21 | 0.69 | 0.10 | 0.11 | 0.71 | 0.18 | 1.00 | 1.94 | 0.06 | 1.00 | 1.72 | 0.28 |
| Final Sat.: | 369 | 1208 | 184 | 207 | 1269 | 325 | 1182 | 3488 | 108 | 551 | 3037 | 497 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | 0.04 | 0.04 | 0.04 | 0.01 | 0.25 | 0.25 | 0.03 | 0.06 | 0.06 |
| Crit Moves: | | **** | | | | | | **** | | | | |
| Green/Cycle: | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Volume/Cap: | 0.32 | 0.32 | 0.32 | 0.22 | 0.22 | 0.22 | 0.02 | 0.32 | 0.32 | 0.04 | 0.07 | 0.07 |
| Uniform Del: | 34.5 | 34.5 | 34.5 | 33.9 | 33.9 | 33.9 | 2.2 | 2.9 | 2.9 | 2.3 | 2.3 | 2.3 |
| IncremntDel: | 0.6 | 0.6 | 0.6 | 0.4 | 0.4 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 35.1 | 35.1 | 35.1 | 34.2 | 34.2 | 34.2 | 2.2 | 3.0 | 3.0 | 2.3 | 2.3 | 2.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.1 | 35.1 | 35.1 | 34.2 | 34.2 | 34.2 | 2.2 | 3.0 | 3.0 | 2.3 | 2.3 | 2.3 |
| LOS by Move: | D | D | D | C | C | C | A | A | A | A | A | A |
| HCM2kAvgQ: | 3 | 3 | 3 | 2 | 2 | 2 | 0 | 4 | 4 | 0 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 1.045
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 55.6
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 0 1 | 1 | 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 413 | 498 | 374 | | 13 | 141 | 437 | | 133 | 401 | 323 | | 56 | 1374 | 78 | |
| Added Vol: | 22 | 0 | 100 | | 0 | 0 | 0 | | 0 | 86 | 0 | | 0 | 27 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.23 | 1.42 | 1.35 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.90 | 0.10 | |
| Final Sat.: | 2085 | 2390 | 2274 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3393 | 188 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.21 | 0.21 | 0.21 | | 0.01 | 0.07 | 0.27 | | 0.04 | 0.13 | 0.20 | | 0.03 | 0.41 | 0.41 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.20 | 0.36 | 0.36 | | 0.09 | 0.25 | 0.25 | | 0.05 | 0.35 | 0.35 | | 0.09 | 0.39 | 0.39 | |
| Volume/Cap: | 1.06 | 0.57 | 0.57 | | 0.08 | 0.29 | 1.06 | | 0.76 | 0.38 | 0.57 | | 0.35 | 1.06 | 1.06 | |
| Uniform Del: | 40.2 | 25.6 | 25.6 | | 41.9 | 30.0 | 37.3 | | 46.9 | 24.3 | 26.3 | | 42.9 | 30.6 | 30.6 | |
| IncremntDel: | 42.8 | 0.3 | 0.3 | | 0.2 | 0.3 | 61.6 | | 17.7 | 0.2 | 1.4 | | 1.4 | 42.2 | 42.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 83.0 | 25.9 | 25.9 | | 42.2 | 30.3 | 98.8 | | 64.6 | 24.5 | 27.7 | | 44.3 | 72.8 | 72.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 83.0 | 25.9 | 25.9 | | 42.2 | 30.3 | 98.8 | | 64.6 | 24.5 | 27.7 | | 44.3 | 72.8 | 72.8 | |
| LOS by Move: | F | C | C | | D | C | F | | E | C | C | | D | E | E | |
| HCM2kAvgQ: | 19 | 10 | 10 | | 0 | 4 | 21 | | 4 | 6 | 9 | | 2 | 35 | 35 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 65 Critical Vol./Cap.(X): 0.456
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 57 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 23 | 23 | | 0 | 23 | 0 | | 20 | 0 | 20 | | 0 | 0 | 10 | |
| Lanes: | 0 | 0 | 2 | 1 0 | 0 | 0 | 2 | 0 0 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 837 | 8 | | 0 | 451 | 0 | | 365 | 0 | 140 | | 0 | 0 | 113 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 954 | 9 | | 0 | 514 | 0 | | 416 | 0 | 160 | | 0 | 0 | 129 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 122 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 954 | 9 | | 0 | 514 | 0 | | 538 | 0 | 160 | | 0 | 0 | 129 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 954 | 9 | | 0 | 514 | 0 | | 538 | 0 | 160 | | 0 | 0 | 129 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 954 | 9 | | 0 | 514 | 0 | | 538 | 0 | 160 | | 0 | 0 | 129 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.10 | 1.10 | | 1.00 | 1.05 | 1.00 | | 1.03 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 1050 | 10 | | 0 | 540 | 0 | | 554 | 0 | 160 | | 0 | 0 | 129 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | | 1.00 | 1.00 | 0.77 | |
| Lanes: | 0.00 | 2.97 | 0.03 | | 0.00 | 2.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 5646 | 54 | | 0 | 3800 | 0 | | 3610 | 0 | 1615 | | 0 | 0 | 1463 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.19 | 0.19 | | 0.00 | 0.14 | 0.00 | | 0.15 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.09 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | **** | |
| Green/Cycle: | 0.00 | 0.41 | 0.41 | | 0.00 | 0.41 | 0.00 | | 0.34 | 0.00 | 0.53 | | 0.00 | 0.00 | 0.19 | |
| Volume/Cap: | 0.00 | 0.46 | 0.46 | | 0.00 | 0.35 | 0.00 | | 0.46 | 0.00 | 0.19 | | 0.00 | 0.00 | 0.46 | |
| Uniform Del: | 0.0 | 10.6 | 10.6 | | 0.0 | 10.1 | 0.0 | | 12.8 | 0.0 | 6.0 | | 0.0 | 0.0 | 17.6 | |
| IncremntDel: | 0.0 | 0.1 | 0.1 | | 0.0 | 0.1 | 0.0 | | 0.2 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.8 | |
| Delay Adj: | 0.00 | 0.85 | 0.85 | | 0.00 | 0.85 | 0.00 | | 0.85 | 0.00 | 0.85 | | 0.00 | 0.00 | 0.85 | |
| Delay/Veh: | 0.0 | 9.1 | 9.1 | | 0.0 | 8.6 | 0.0 | | 11.1 | 0.0 | 5.2 | | 0.0 | 0.0 | 15.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 9.1 | 9.1 | | 0.0 | 8.6 | 0.0 | | 11.1 | 0.0 | 5.2 | | 0.0 | 0.0 | 15.8 | |
| DesignQueue: | 0 | 8 | 8 | | 0 | 6 | 0 | | 7 | 0 | 3 | | 0 | 0 | 4 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 85 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 18.9
Optimal Cycle: 180 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 16 | 16 | 16 | | 0 | 0 | 0 | | 0 | 29 | 45 | | 28 | 61 | 0 | |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 317 | 1 | 220 | | 0 | 0 | 0 | | 0 | 828 | 379 | | 798 | 1527 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 944 | 432 | | 910 | 1741 | 0 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 86 | 14 | | 7 | 50 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 1030 | 446 | | 917 | 1791 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 1030 | 446 | | 917 | 1791 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 1030 | 446 | | 917 | 1791 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 361 | 1 | 251 | | 0 | 0 | 0 | | 0 | 1030 | 446 | | 917 | 1791 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | | 0.92 | 0.95 | 1.00 | |
| Lanes: | 1.58 | 0.01 | 1.41 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | | 2.00 | 2.00 | 0.00 | |
| Final Sat.: | 2584 | 6 | 2291 | | 0 | 0 | 0 | | 0 | 3610 | 2842 | | 3502 | 3610 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.14 | 0.19 | 0.11 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.29 | 0.16 | | 0.26 | 0.50 | 0.00 | |
| Crit Moves: | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.19 | 0.19 | 0.19 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.34 | 0.34 | | 0.42 | 0.76 | 0.00 | |
| Volume/Cap: | 0.74 | 1.00 | 0.58 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.84 | 0.46 | | 0.62 | 0.65 | 0.00 | |
| Uniform Del: | 32.6 | 34.5 | 31.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 25.8 | 21.9 | | 19.1 | 4.7 | 0.0 | |
| IncremntDel: | 3.7 | 37.2 | 0.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 5.1 | 0.3 | | 0.8 | 0.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | |
| Delay/Veh: | 36.2 | 71.7 | 32.3 | | 0.0 | 0.0 | 0.0 | | 0.0 | 31.0 | 22.2 | | 19.9 | 5.2 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.2 | 71.7 | 32.3 | | 0.0 | 0.0 | 0.0 | | 0.0 | 31.0 | 22.2 | | 19.9 | 5.2 | 0.0 | |
| LOS by Move: | D | E | C | | A | A | A | | A | C | C | | B | A | A | |
| HCM2kAvgQ: | 7 | 14 | 5 | | 0 | 0 | 0 | | 0 | 16 | 6 | | 10 | 12 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 100 Critical Vol./Cap.(X): 0.992
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 52.3
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 78 | 250 | | 410 | 115 | 41 | | 51 | 538 | 13 | | 238 | 1506 | 420 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 613 | 15 | | 271 | 1717 | 479 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 101 | 0 | | 0 | 50 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 714 | 15 | | 271 | 1767 | 479 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 714 | 15 | | 271 | 1767 | 479 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 714 | 15 | | 271 | 1767 | 479 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 16 | 89 | 285 | | 467 | 131 | 47 | | 58 | 714 | 15 | | 271 | 1767 | 479 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.90 | 0.90 | | 0.92 | 0.96 | 0.96 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.85 | |
| Lanes: | 0.04 | 0.23 | 0.73 | | 2.00 | 0.74 | 0.26 | | 1.00 | 1.96 | 0.04 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 70 | 390 | 1249 | | 3502 | 1346 | 480 | | 1805 | 3526 | 73 | | 1805 | 3610 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.23 | 0.23 | | 0.13 | 0.10 | 0.10 | | 0.03 | 0.20 | 0.20 | | 0.15 | 0.49 | 0.30 | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.25 | 0.23 | 0.23 | | 0.13 | 0.11 | 0.11 | | 0.05 | 0.31 | 0.31 | | 0.23 | 0.48 | 0.48 | |
| Volume/Cap: | 0.91 | 1.01 | 1.01 | | 1.01 | 0.91 | 0.91 | | 0.64 | 0.66 | 0.66 | | 0.66 | 1.01 | 0.61 | |
| Uniform Del: | 36.4 | 38.7 | 38.7 | | 43.4 | 44.2 | 44.2 | | 46.6 | 30.2 | 30.2 | | 35.2 | 25.8 | 19.0 | |
| IncremntDel: | 23.6 | 49.3 | 49.3 | | 45.3 | 40.6 | 40.6 | | 14.9 | 1.5 | 1.5 | | 4.0 | 24.9 | 1.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 60.0 | 88.0 | 88.0 | | 88.7 | 84.8 | 84.8 | | 61.5 | 31.7 | 31.7 | | 39.2 | 50.7 | 20.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 60.0 | 88.0 | 88.0 | | 88.7 | 84.8 | 84.8 | | 61.5 | 31.7 | 31.7 | | 39.2 | 50.7 | 20.5 | |
| LOS by Move: | E | F | F | | F | F | F | | E | C | C | | D | D | C | |
| HCM2kAvgQ: | 16 | 18 | 18 | | 12 | 9 | 9 | | 3 | 11 | 11 | | 9 | 37 | 11 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 52.0
Optimal Cycle: 124 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | |
| Base Vol: | 37 | 264 | 51 | | 92 | 391 | 62 | | 15 | 228 | 24 | | 73 | 584 | 95 | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | |
| Initial Bse: | 42 | 301 | 58 | | 105 | 446 | 71 | | 17 | 260 | 27 | | 83 | 666 | 108 | | |
| Added Vol: | 1 | 131 | 67 | | 6 | 30 | 2 | | 31 | 27 | 0 | | 5 | 37 | 9 | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| Initial Fut: | 43 | 432 | 125 | | 111 | 476 | 73 | | 48 | 287 | 27 | | 88 | 703 | 117 | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| PHF Volume: | 43 | 432 | 125 | | 111 | 476 | 73 | | 48 | 287 | 27 | | 88 | 703 | 117 | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| Reduced Vol: | 43 | 432 | 125 | | 111 | 476 | 73 | | 48 | 287 | 27 | | 88 | 703 | 117 | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| FinalVolume: | 43 | 432 | 125 | | 111 | 476 | 73 | | 48 | 287 | 27 | | 88 | 703 | 117 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | |
| Adjustment: | 0.92 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.93 | | 0.95 | 0.99 | 0.99 | | 0.95 | 0.98 | 0.98 | | |
| Lanes: | 0.14 | 1.44 | 0.42 | | 0.34 | 1.44 | 0.22 | | 1.00 | 0.91 | 0.09 | | 1.00 | 0.86 | 0.14 | | |
| Final Sat.: | 251 | 2507 | 726 | | 593 | 2543 | 388 | | 1805 | 1712 | 163 | | 1805 | 1594 | 266 | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | | 0.19 | 0.19 | 0.19 | | 0.03 | 0.17 | 0.17 | | 0.05 | 0.44 | 0.44 | | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | **** | | | |
| Green/Cycle: | 0.18 | 0.18 | 0.18 | | 0.20 | 0.20 | 0.20 | | 0.05 | 0.39 | 0.39 | | 0.12 | 0.46 | 0.46 | | |
| Volume/Cap: | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | | 0.53 | 0.42 | 0.42 | | 0.41 | 0.95 | 0.95 | | |
| Uniform Del: | 40.5 | 40.5 | 40.5 | | 39.7 | 39.7 | 39.7 | | 46.4 | 22.0 | 22.0 | | 40.9 | 25.8 | 25.8 | | |
| IncremntDel: | 24.6 | 24.6 | 24.6 | | 23.2 | 23.2 | 23.2 | | 6.0 | 0.4 | 0.4 | | 1.3 | 20.0 | 20.0 | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| Delay/Veh: | 65.2 | 65.2 | 65.2 | | 62.9 | 62.9 | 62.9 | | 52.4 | 22.4 | 22.4 | | 42.2 | 45.9 | 45.9 | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| AdjDel/Veh: | 65.2 | 65.2 | 65.2 | | 62.9 | 62.9 | 62.9 | | 52.4 | 22.4 | 22.4 | | 42.2 | 45.9 | 45.9 | | |
| LOS by Move: | E | E | E | | E | E | E | | D | C | C | | D | D | D | | |
| HCM2kAvgQ: | 14 | 14 | 14 | | 15 | 15 | 15 | | 2 | 7 | 7 | | 3 | 30 | 30 | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.746
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.7
Optimal Cycle: 61 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | | 0 | 1034 | 31 | | 103 | 0 | 6 | | 0 | 0 | 0 | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | |
| Initial Bse: | 51 | 2693 | 0 | | 0 | 1179 | 35 | | 117 | 0 | 7 | | 0 | 0 | 0 | | |
| Added Vol: | 94 | 56 | 0 | | 0 | 784 | 0 | | 154 | 0 | 21 | | 0 | 0 | 0 | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| Initial Fut: | 145 | 2749 | 0 | | 0 | 1963 | 35 | | 271 | 0 | 28 | | 0 | 0 | 0 | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| PHF Volume: | 145 | 2749 | 0 | | 0 | 1963 | 35 | | 271 | 0 | 28 | | 0 | 0 | 0 | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | |
| Reduced Vol: | 145 | 2749 | 0 | | 0 | 1963 | 35 | | 271 | 0 | 28 | | 0 | 0 | 0 | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| FinalVolume: | 145 | 2749 | 0 | | 0 | 1963 | 35 | | 271 | 0 | 28 | | 0 | 0 | 0 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.93 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | | 1769 | 0 | 1583 | | 0 | 0 | 0 | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.54 | 0.00 | | 0.00 | 0.39 | 0.02 | | 0.15 | 0.00 | 0.02 | | 0.00 | 0.00 | 0.00 | | |
| Crit Moves: | | **** | | | **** | | | | **** | | | | | | | | |
| Green/Cycle: | 0.13 | 0.73 | 0.00 | | 0.00 | 0.60 | 0.60 | | 0.21 | 0.00 | 0.21 | | 0.00 | 0.00 | 0.00 | | |
| Volume/Cap: | 0.65 | 0.75 | 0.00 | | 0.00 | 0.65 | 0.04 | | 0.75 | 0.00 | 0.09 | | 0.00 | 0.00 | 0.00 | | |
| Uniform Del: | 53.9 | 10.7 | 0.0 | | 0.0 | 17.1 | 10.8 | | 48.4 | 0.0 | 41.7 | | 0.0 | 0.0 | 0.0 | | |
| IncremntDel: | 6.4 | 0.9 | 0.0 | | 0.0 | 0.5 | 0.0 | | 8.2 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | |
| Delay/Veh: | 60.3 | 11.6 | 0.0 | | 0.0 | 17.6 | 10.8 | | 56.6 | 0.0 | 41.9 | | 0.0 | 0.0 | 0.0 | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| AdjDel/Veh: | 60.3 | 11.6 | 0.0 | | 0.0 | 17.6 | 10.8 | | 56.6 | 0.0 | 41.9 | | 0.0 | 0.0 | 0.0 | | |
| LOS by Move: | E | B | A | | A | B | B | | E | A | D | | A | A | A | | |
| HCM2kAvgQ: | 7 | 25 | 0 | | 0 | 19 | 1 | | 12 | 0 | 1 | | 0 | 0 | 0 | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 51 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 146 | 2070 | 0 | | 0 | 851 | 196 | 218 | 0 | 31 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 166 | 2360 | 0 | | 0 | 970 | 223 | 249 | 0 | 35 | 0 | 0 | 0 | | | |
| Added Vol: | 94 | 146 | 0 | | 0 | 803 | 2 | 4 | 0 | 21 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 260 | 2506 | 0 | | 0 | 1773 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 260 | 2506 | 0 | | 0 | 1773 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 260 | 2506 | 0 | | 0 | 1773 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 260 | 2506 | 0 | | 0 | 1773 | 225 | 253 | 0 | 56 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.49 | 0.00 | | 0.00 | 0.35 | 0.14 | 0.14 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | **** | | | | | | | | |
| Green/Cycle: | 0.21 | 0.72 | 0.00 | | 0.00 | 0.51 | 0.51 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.69 | 0.68 | 0.00 | | 0.00 | 0.69 | 0.28 | 0.69 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 47.0 | 9.9 | 0.0 | | 0.0 | 24.1 | 18.3 | 47.6 | 0.0 | 42.3 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 5.2 | 0.5 | 0.0 | | 0.0 | 0.8 | 0.2 | 5.3 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 52.2 | 10.4 | 0.0 | | 0.0 | 24.9 | 18.5 | 52.9 | 0.0 | 42.5 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 52.2 | 10.4 | 0.0 | | 0.0 | 24.9 | 18.5 | 52.9 | 0.0 | 42.5 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | B | A | | A | C | B | D | A | D | A | A | A | | | |
| HCM2kAvgQ: | 11 | 20 | 0 | | 0 | 20 | 5 | 10 | 0 | 2 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.745
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 26.3
Optimal Cycle: 41 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 10 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 464 | 366 | 0 | | 0 | 398 | 66 | 83 | 0 | 561 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 529 | 417 | 0 | | 0 | 454 | 75 | 95 | 0 | 640 | 0 | 0 | 0 | | | |
| Added Vol: | 62 | 24 | 0 | | 0 | 71 | 2 | 7 | 0 | 35 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 591 | 441 | 0 | | 0 | 525 | 77 | 102 | 0 | 675 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 591 | 441 | 0 | | 0 | 525 | 77 | 102 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 591 | 441 | 0 | | 0 | 525 | 77 | 102 | 0 | 0 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 591 | 441 | 0 | | 0 | 525 | 77 | 102 | 0 | 0 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.96 | 0.96 | 0.93 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.87 | 0.13 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1595 | 235 | 1769 | 0 | 1900 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.24 | 0.00 | | 0.00 | 0.33 | 0.33 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | **** | | | | | | | | |
| Green/Cycle: | 0.45 | 0.89 | 0.00 | | 0.00 | 0.44 | 0.44 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.75 | 0.27 | 0.00 | | 0.00 | 0.75 | 0.75 | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 27.4 | 1.0 | 0.0 | | 0.0 | 27.9 | 27.9 | 54.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 3.9 | 0.1 | 0.0 | | 0.0 | 3.8 | 3.8 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 31.3 | 1.0 | 0.0 | | 0.0 | 31.7 | 31.7 | 74.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 31.3 | 1.0 | 0.0 | | 0.0 | 31.7 | 31.7 | 74.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | C | A | A | | A | C | C | E | A | A | A | A | A | | | |
| HCM2kAvgQ: | 19 | 2 | 0 | | 0 | 19 | 19 | 5 | 0 | 0 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.541
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 24 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 623 | 49 | | 192 | 709 | 68 | | 3 | 3 | 3 | | 123 | 53 | 241 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 65 | 710 | 56 | | 219 | 808 | 78 | | 3 | 3 | 3 | | 140 | 60 | 275 | |
| Added Vol: | 0 | 84 | 0 | | 1 | 105 | 0 | | 0 | 0 | 0 | | 0 | 0 | 1 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 65 | 794 | 56 | | 220 | 913 | 78 | | 3 | 3 | 3 | | 140 | 60 | 276 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.47 | 0.91 | 0.91 | | 0.77 | 0.77 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.50 | 0.50 | | 0.70 | 0.30 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 896 | 861 | 861 | | 1020 | 440 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.22 | 0.04 | | 0.12 | 0.26 | 0.05 | | 0.00 | 0.00 | 0.00 | | 0.14 | 0.14 | 0.17 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.08 | 0.41 | 0.41 | | 0.23 | 0.56 | 0.56 | | 0.32 | 0.32 | 0.32 | | 0.32 | 0.32 | 0.32 | |
| Volume/Cap: | 0.46 | 0.54 | 0.09 | | 0.54 | 0.46 | 0.09 | | 0.01 | 0.01 | 0.01 | | 0.43 | 0.43 | 0.54 | |
| Uniform Del: | 52.7 | 26.5 | 21.3 | | 40.7 | 15.3 | 12.0 | | 27.7 | 27.7 | 27.7 | | 32.0 | 32.0 | 33.4 | |
| IncremntDel: | 2.3 | 0.4 | 0.1 | | 1.5 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.6 | 0.6 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 55.0 | 26.9 | 21.3 | | 42.1 | 15.5 | 12.0 | | 27.7 | 27.7 | 27.7 | | 32.6 | 32.6 | 34.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 55.0 | 26.9 | 21.3 | | 42.1 | 15.5 | 12.0 | | 27.7 | 27.7 | 27.7 | | 32.6 | 32.6 | 34.6 | |
| LOS by Move: | E | C | C | | D | B | B | | C | C | C | | C | C | C | |
| HCM2kAvgQ: | 3 | 12 | 1 | | 8 | 10 | 1 | | 0 | 0 | 0 | | 6 | 6 | 9 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.716
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 33.4
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 115 | 314 | 8 | | 7 | 490 | 355 | | 114 | 34 | 45 | | 6 | 97 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 131 | 358 | 9 | | 8 | 559 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Added Vol: | 0 | 170 | 0 | | 0 | 39 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 131 | 528 | 9 | | 8 | 598 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 131 | 528 | 9 | | 8 | 598 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 131 | 528 | 9 | | 8 | 598 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 131 | 528 | 9 | | 8 | 598 | 405 | | 130 | 39 | 51 | | 7 | 111 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.89 | 0.89 | 0.89 | | 0.94 | 0.94 | 0.94 | | 0.99 | 0.99 | 0.99 | |
| Lanes: | 0.39 | 1.58 | 0.03 | | 0.02 | 1.18 | 0.80 | | 1.42 | 0.25 | 0.33 | | 0.05 | 0.90 | 0.05 | |
| Final Sat.: | 700 | 2818 | 49 | | 27 | 2007 | 1359 | | 2526 | 445 | 589 | | 105 | 1691 | 87 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.30 | 0.30 | 0.30 | | 0.05 | 0.09 | 0.09 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.42 | 0.42 | 0.42 | | 0.12 | 0.12 | 0.12 | | 0.09 | 0.09 | 0.09 | |
| Volume/Cap: | 0.72 | 0.72 | 0.72 | | 0.72 | 0.72 | 0.72 | | 0.42 | 0.72 | 0.72 | | 0.72 | 0.72 | 0.72 | |
| Uniform Del: | 33.6 | 33.6 | 33.6 | | 24.3 | 24.3 | 24.3 | | 40.7 | 42.3 | 42.3 | | 44.2 | 44.2 | 44.2 | |
| IncremntDel: | 2.7 | 2.7 | 2.7 | | 1.8 | 1.8 | 1.8 | | 0.6 | 7.8 | 7.8 | | 13.5 | 13.5 | 13.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.2 | 36.2 | 36.2 | | 26.1 | 26.1 | 26.1 | | 41.2 | 50.1 | 50.1 | | 57.6 | 57.6 | 57.6 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.2 | 36.2 | 36.2 | | 26.1 | 26.1 | 26.1 | | 41.2 | 50.1 | 50.1 | | 57.6 | 57.6 | 57.6 | |
| LOS by Move: | D | D | D | | C | C | C | | D | D | D | | E | E | E | |
| HCM2kAvgQ: | 11 | 11 | 11 | | 15 | 15 | 15 | | 3 | 6 | 6 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.792 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 19.1 |
| Optimal Cycle: | 90 | Level Of Service: | B |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 1 0 | 3 0 | 0 | | 0 0 | 3 0 | 1 | | 2 0 | 0 0 | 1 | | 0 0 | 0 0 | 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 2197 | 0 | | 0 | 782 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 2505 | 0 | | 0 | 891 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Added Vol: | 725 | 216 | 0 | | 0 | 500 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 725 | 2721 | 0 | | 0 | 1391 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 725 | 2721 | 0 | | 0 | 1391 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 725 | 2721 | 0 | | 0 | 1391 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 725 | 2721 | 0 | | 0 | 1391 | 81 | | 25 | 0 | 43 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.91 | 1.00 | | 1.00 | 0.91 | 0.85 | | 0.92 | 1.00 | 0.85 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1805 | 5187 | 0 | | 0 | 5187 | 1615 | | 3502 | 0 | 1615 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.40 | 0.52 | 0.00 | | 0.00 | 0.27 | 0.05 | | 0.01 | 0.00 | 0.03 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.47 | 0.78 | 0.00 | | 0.00 | 0.31 | 0.31 | | 0.10 | 0.00 | 0.10 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.86 | 0.67 | 0.00 | | 0.00 | 0.86 | 0.16 | | 0.07 | 0.00 | 0.27 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 23.7 | 5.1 | 0.0 | | 0.0 | 32.3 | 24.9 | | 40.8 | 0.0 | 41.6 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 8.8 | 0.5 | 0.0 | | 0.0 | 4.9 | 0.2 | | 0.1 | 0.0 | 0.9 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 32.5 | 5.5 | 0.0 | | 0.0 | 37.2 | 25.0 | | 40.9 | 0.0 | 42.5 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.5 | 5.5 | 0.0 | | 0.0 | 37.2 | 25.0 | | 40.9 | 0.0 | 42.5 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | A | A | | A | D | C | | D | A | D | | A | A | A | |
| HCM2kAvgQ: | 23 | 15 | 0 | | 0 | 18 | 2 | | 0 | 0 | 1 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Cumulative 2025 East and West Campuses PM |
| Command: | Long Term Project II PM |
| Volume: | Long Term Project II PM |
| Geometry: | Long Term Project II PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project II PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project II PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 77.7 | 1.075 | F | 86.5 | 1.109 | + 8.785 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 19.2 | 0.929 | D | 48.1 | 1.116 | +28.869 |
| # 3 US 101 SB Ramps & Marsh Rd. | C | 23.8 | 0.931 | D | 40.6 | 1.029 | +16.739 |
| # 4 Scott Dr/Rolison at Marsh Rd. | C | 24.3 | 0.781 | C | 27.4 | 0.936 | + 3.086 |
| # 5 Bohannon/ Florence & Marsh Rd. | C | 29.2 | 0.664 | C | 23.4 | 0.819 | -5.749 |
| # 6 Bay Rd. & Marsh Rd. | B | 15.9 | 0.659 | B | 15.3 | 0.697 | -0.622 |
| # 7 Middlefield at Marsh (Town of | D | 39.4 | 0.922 | D | 54.6 | 1.062 | +15.246 |
| # 8 Bayfront Exp. & Willow Rd. | E | 67.9 | 1.045 | F | 146.8 | 1.314 | +78.891 |
| # 9 Hamilton Ave. & Willow Rd. | C | 23.7 | 0.693 | C | 28.1 | 0.890 | + 4.411 |
| # 10 Ivy Dr. & Willow Rd. | B | 12.8 | 0.619 | B | 17.4 | 0.863 | + 4.644 |
| # 11 O'Brien Dr. & Willow Rd. | B | 10.4 | 0.622 | A | 9.9 | 0.704 | -0.472 |
| # 12 Newbridge St. & Willow Rd. | D | 36.8 | 0.838 | E | 77.2 | 1.172 | +40.369 |
| # 13 Bay Rd. & Willow Rd. | C | 22.2 | 0.833 | C | 24.2 | 0.879 | + 2.043 |
| # 14 Durham St. & Willow Rd. | E | 56.1 | 0.728 | C | 21.8 | 0.893 | -34.347 |
| # 15 Coleman Ave. & Willow Rd. | B | 14.3 | 0.833 | B | 18.0 | 0.910 | + 3.616 |
| # 16 Gilbert Ave. & Willow Rd. | B | 14.1 | 0.745 | B | 14.6 | 0.847 | + 0.507 |
| # 17 Middlefield Rd. & Willow Rd. | F | 153.6 | 1.404 | F | 215.7 | 1.543 | +62.139 |
| # 18 Bayfront Exp. & University Ave | F | 211.8 | 1.460 | F | 251.8 | 1.585 | +39.940 |
| # 19 O'Brien Dr. & University Ave. | B | 14.3 | 0.760 | B | 14.6 | 0.778 | + 0.313 |
| # 20 University & Kavanaugh | B | 17.7 | 0.732 | B | 17.4 | 0.743 | -0.303 |
| # 21 University & Bay | D | 39.5 | 0.918 | D | 39.6 | 0.929 | + 0.121 |
| # 22 University & Runnymede | C | 24.8 | 0.770 | C | 24.7 | 0.780 | -0.091 |
| # 23 University & Bell | A | 8.2 | 0.605 | A | 8.1 | 0.615 | -0.126 |
| # 24 University & Donohoe | D | 43.4 | 0.962 | D | 46.3 | 0.974 | + 2.819 |
| # 25 NB 101 & Donohoe St | B | 14.3 | 0.532 | B | 14.4 | 0.537 | + 0.108 |

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 26 University & SB US 101 | C | 33.4 | 0.580 | C | 34.3 | 0.607 | + 0.849 D/V |
| # 27 University Ave. & Woodland | E | 57.6 | 0.980 | E | 60.1 | 1.000 | + 2.534 D/V |
| # 28 Middlefield Rd. & University A | C | 33.8 | 0.613 | D | 36.4 | 0.693 | + 2.632 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | C | 20.8 | 0.777 | F | 101.3 | 1.193 | +80.462 D/V |
| # 30 Bayfront Exp. & Chilco St. | B | 15.0 | 0.666 | B | 19.0 | 0.782 | + 3.987 D/V |
| # 31 Middlefield Rd. & Ravenswood A | C | 30.5 | 0.818 | C | 32.7 | 0.877 | + 2.193 D/V |
| # 32 Middlefield Rd. & Ringwood Ave | C | 29.6 | 0.689 | C | 30.0 | 0.720 | + 0.481 D/V |
| # 33 Middlefield Rd and Lytton Ave | D | 41.7 | 0.803 | D | 45.8 | 0.870 | + 4.051 D/V |
| # 34 Bayfront Expy. and Facebook We | A | 1.5 | 0.576 | D | 43.8 | 0.965 | +42.344 D/V |





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

**********
Intersection #1 Bayfront Exp. & Marsh Rd.
**********

Cycle (sec): 140 Critical Vol./Cap.(X): 1.109
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 86.5
Optimal Cycle: 180 Level Of Service: F

**********

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 0 | 1! 0 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1350 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2225 | | 35 | 83 | 13 | |
| Added Vol: | 1224 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 86 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.27 | 0.63 | 0.10 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 489 | 1151 | 174 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.50 | 0.03 | 0.03 | | 0.00 | 0.11 | 0.13 | | 0.11 | 0.11 | 0.83 | | 0.07 | 0.07 | 0.07 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.45 | 0.45 | 0.45 | | 0.00 | 0.10 | 0.40 | | 0.30 | 0.30 | 0.75 | | 0.07 | 0.07 | 0.07 | |
| Volume/Cap: | 1.11 | 0.08 | 0.08 | | 0.00 | 1.11 | 0.34 | | 0.38 | 0.38 | 1.11 | | 1.11 | 1.11 | 1.11 | |
| Uniform Del: | 38.4 | 21.9 | 21.9 | | 0.0 | 63.0 | 29.3 | | 39.0 | 39.0 | 17.6 | | 65.4 | 65.4 | 65.4 | |
| IncremntDel: | 55.8 | 0.0 | 0.0 | | 0.0 | 80.3 | 0.3 | | 0.5 | 0.5 | 56.5 | | 114.9 | 115 | 114.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 94.2 | 21.9 | 21.9 | | 0.0 | 143 | 29.6 | | 39.4 | 39.4 | 74.1 | | 180.3 | 180 | 180.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 94.2 | 21.9 | 21.9 | | 0.0 | 143 | 29.6 | | 39.4 | 39.4 | 74.1 | | 180.3 | 180 | 180.3 | |
| LOS by Move: | F | C | C | | A | F | C | | D | D | E | | F | F | F | |
| HCM2kAvgQ: | 52 | 1 | 1 | | 0 | 15 | 6 | | 7 | 7 | 74 | | 10 | 10 | 10 | |

**********
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.116
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 48.1
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 562 | 0 | 243 | | 0 | 0 | 0 | | 0 | 2352 | 578 | | 0 | 777 | 902 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 149 | 0 | | 0 | 864 | 360 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 578 | | 0 | 1641 | 1262 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 0 | | 0 | 1641 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 0 | | 0 | 1641 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 0 | | 0 | 1641 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.83 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 1583 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.00 | 0.25 | | 0.00 | 0.00 | 0.00 | | 0.74 | 0.74 | 0.00 | | 0.00 | 0.46 | 0.00 | |
| Crit Moves: | | | **** | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.00 | 0.23 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.66 | 0.00 | |
| Volume/Cap: | 0.72 | 0.00 | 1.12 | | 0.00 | 0.00 | 0.00 | | 1.12 | 1.12 | 0.00 | | 0.00 | 0.70 | 0.00 | |
| Uniform Del: | 23.2 | 0.0 | 25.1 | | 0.0 | 0.0 | 0.0 | | 10.9 | 10.9 | 0.0 | | 0.0 | 6.8 | 0.0 | |
| IncremntDel: | 3.2 | 0.0 | 82.5 | | 0.0 | 0.0 | 0.0 | | 58.9 | 58.9 | 0.0 | | 0.0 | 0.9 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 26.4 | 0.0 | 107.5 | | 0.0 | 0.0 | 0.0 | | 69.8 | 69.8 | 0.0 | | 0.0 | 7.8 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.4 | 0.0 | 107.5 | | 0.0 | 0.0 | 0.0 | | 69.8 | 69.8 | 0.0 | | 0.0 | 7.8 | 0.0 | |
| LOS by Move: | C | A | F | | A | A | A | | E | E | A | | A | A | A | |
| HCM2kAvgQ: | 7 | 0 | 17 | | 0 | 0 | 0 | | 48 | 48 | 0 | | 0 | 12 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 US 101 SB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.029
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 40.6
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 1355 | 0 | 453 | | 0 | 1181 | 651 | | 0 | 940 | 282 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 1545 | 0 | 516 | | 0 | 1346 | 742 | | 0 | 1072 | 321 | |
| Added Vol: | 0 | 0 | 0 | | 79 | 0 | 17 | | 0 | 109 | 0 | | 0 | 504 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 1624 | 0 | 533 | | 0 | 1455 | 742 | | 0 | 1576 | 321 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 0 | 0 | 0 | | 1624 | 0 | 533 | | 0 | 1455 | 0 | | 0 | 1576 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 1624 | 0 | 533 | | 0 | 1455 | 0 | | 0 | 1576 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 0 | 0 | 0 | | 1624 | 0 | 533 | | 0 | 1455 | 0 | | 0 | 1576 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.90 | 1.00 | 0.83 | | 1.00 | 0.93 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 2.00 | 0.00 | 1.00 | | 0.00 | 2.00 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 3432 | 0 | 1583 | | 0 | 3538 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.47 | 0.00 | 0.34 | | 0.00 | 0.41 | 0.00 | | 0.00 | 0.45 | 0.00 | |
| Crit Moves: | | | | | **** | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.46 | 0.00 | 0.46 | | 0.00 | 0.43 | 0.00 | | 0.00 | 0.43 | 0.00 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 1.03 | 0.00 | 0.73 | | 0.00 | 0.95 | 0.00 | | 0.00 | 1.03 | 0.00 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 17.6 | 0.0 | 14.3 | | 0.0 | 17.8 | 0.0 | | 0.0 | 18.4 | 0.0 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 30.5 | 0.0 | 3.9 | | 0.0 | 13.1 | 0.0 | | 0.0 | 30.9 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 48.1 | 0.0 | 18.2 | | 0.0 | 30.9 | 0.0 | | 0.0 | 49.3 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 48.1 | 0.0 | 18.2 | | 0.0 | 30.9 | 0.0 | | 0.0 | 49.3 | 0.0 | |
| LOS by Move: | A | A | A | | D | A | B | | A | C | A | | A | D | A | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 27 | 0 | 10 | | 0 | 21 | 0 | | 0 | 27 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Scott Dr/Rolison at Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.936
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 27.4
Optimal Cycle: 105 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 1 | 0 | 0 | 2 | 0 1 | 0 | 0 | 1 | 1 0 | 2 | 1 | 0 | 2 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 28 | 15 | 267 | | 254 | 9 | 2 | | 42 | 1314 | 17 | | 78 | 1109 | 214 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1498 | 19 | | 89 | 1264 | 244 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 111 | 0 | | 0 | 521 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1609 | 19 | | 89 | 1785 | 244 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1609 | 19 | | 89 | 1785 | 244 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1609 | 19 | | 89 | 1785 | 244 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 32 | 17 | 304 | | 290 | 10 | 2 | | 48 | 1609 | 19 | | 89 | 1785 | 244 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.73 | | 0.93 | 0.93 | 0.83 | | 0.93 | 0.89 | 0.89 | | 0.90 | 0.91 | 0.91 | |
| Lanes: | 0.65 | 0.35 | 2.00 | | 0.97 | 0.03 | 1.00 | | 1.00 | 2.96 | 0.04 | | 2.00 | 1.76 | 0.24 | |
| Final Sat.: | 1174 | 629 | 2786 | | 1716 | 61 | 1583 | | 1769 | 5013 | 60 | | 3432 | 3056 | 418 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.03 | 0.11 | | 0.17 | 0.17 | 0.00 | | 0.03 | 0.32 | 0.32 | | 0.03 | 0.58 | 0.58 | |
| Crit Moves: | | | **** | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.18 | 0.18 | 0.18 | | 0.05 | 0.57 | 0.57 | | 0.09 | 0.61 | 0.61 | |
| Volume/Cap: | 0.24 | 0.24 | 0.96 | | 0.96 | 0.96 | 0.01 | | 0.54 | 0.56 | 0.56 | | 0.29 | 0.96 | 0.96 | |
| Uniform Del: | 32.3 | 32.3 | 35.2 | | 32.7 | 32.7 | 27.2 | | 37.1 | 10.9 | 10.9 | | 34.1 | 14.6 | 14.6 | |
| IncremntDel: | 0.6 | 0.6 | 39.2 | | 39.5 | 39.5 | 0.0 | | 6.7 | 0.3 | 0.3 | | 0.5 | 11.3 | 11.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.9 | 32.9 | 74.4 | | 72.2 | 72.2 | 27.2 | | 43.8 | 11.1 | 11.1 | | 34.6 | 26.0 | 26.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.9 | 32.9 | 74.4 | | 72.2 | 72.2 | 27.2 | | 43.8 | 11.1 | 11.1 | | 34.6 | 26.0 | 26.0 | |
| LOS by Move: | C | C | E | | E | E | C | | D | B | B | | C | C | C | |
| HCM2kAvgQ: | 1 | 1 | 8 | | 12 | 12 | 0 | | 2 | 10 | 10 | | 1 | 31 | 31 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Bohannon/ Florence & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.819
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 52 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 1 0 | 0 | 1 | 0 | 1 1 | 0 | 0 | 1 | 1 0 | 1 | 1 | 0 | 1 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm | | | | | | | | | | | | | | | | |
| Base Vol: | 95 | 32 | 58 | | 428 | 30 | 128 | | 239 | 885 | 55 | | 26 | 833 | 316 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1009 | 63 | | 30 | 950 | 360 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 111 | 0 | | 0 | 521 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1120 | 63 | | 30 | 1471 | 360 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1120 | 63 | | 30 | 1471 | 360 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1120 | 63 | | 30 | 1471 | 360 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 108 | 36 | 66 | | 488 | 34 | 146 | | 272 | 1120 | 63 | | 30 | 1471 | 360 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.88 | 0.88 | | 0.94 | 0.94 | 0.83 | | 0.93 | 0.92 | 0.92 | | 0.93 | 0.93 | 0.83 | |
| Lanes: | 1.00 | 0.36 | 0.64 | | 1.87 | 0.13 | 1.00 | | 1.00 | 1.89 | 0.11 | | 1.00 | 2.00 | 1.00 | |
| Final Sat.: | 1769 | 598 | 1084 | | 3323 | 233 | 1583 | | 1769 | 3323 | 186 | | 1769 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.06 | 0.06 | 0.06 | | 0.15 | 0.15 | 0.09 | | 0.15 | 0.34 | 0.34 | | 0.02 | 0.42 | 0.23 | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.07 | 0.07 | 0.07 | | 0.18 | 0.18 | 0.18 | | 0.19 | 0.61 | 0.61 | | 0.09 | 0.51 | 0.51 | |
| Volume/Cap: | 0.82 | 0.82 | 0.82 | | 0.82 | 0.82 | 0.51 | | 0.82 | 0.56 | 0.56 | | 0.19 | 0.82 | 0.45 | |
| Uniform Del: | 36.5 | 36.5 | 36.5 | | 31.6 | 31.6 | 29.7 | | 31.2 | 9.4 | 9.4 | | 33.7 | 16.6 | 12.5 | |
| IncremntDel: | 31.5 | 32.2 | 32.2 | | 8.2 | 8.2 | 1.6 | | 14.7 | 0.3 | 0.3 | | 0.6 | 3.1 | 0.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 67.9 | 68.7 | 68.7 | | 39.8 | 39.8 | 31.3 | | 45.9 | 9.7 | 9.7 | | 34.3 | 19.7 | 12.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 67.9 | 68.7 | 68.7 | | 39.8 | 39.8 | 31.3 | | 45.9 | 9.7 | 9.7 | | 34.3 | 19.7 | 12.9 | |
| LOS by Move: | E | E | E | | D | D | C | | D | A | A | | C | B | B | |
| HCM2kAvgQ: | 5 | 5 | 5 | | 9 | 9 | 4 | | 9 | 9 | 9 | | 1 | 18 | 6 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Bay Rd. & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 34 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 6 | 6 | 6 | | 6 | 6 | 6 | | 6 | 6 | 6 | | 4 | 6 | 6 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 0 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 57 | 8 | 180 | | 55 | 31 | 3 | | 5 | 819 | 90 | | 200 | 891 | 47 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 65 | 9 | 205 | | 63 | 35 | 3 | | 6 | 934 | 103 | | 228 | 1016 | 54 | |
| Added Vol: | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 111 | 2 | | 0 | 521 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1045 | 105 | | 228 | 1537 | 54 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1045 | 105 | | 228 | 1537 | 54 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1045 | 105 | | 228 | 1537 | 54 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 67 | 9 | 205 | | 63 | 35 | 3 | | 6 | 1045 | 105 | | 228 | 1537 | 54 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.81 | 0.81 | 0.81 | | 0.65 | 0.65 | 0.65 | | 0.87 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 0.24 | 0.03 | 0.73 | | 0.62 | 0.35 | 0.03 | | 0.01 | 1.81 | 0.18 | | 1.00 | 1.93 | 0.07 | |
| Final Sat.: | 365 | 50 | 1119 | | 761 | 429 | 42 | | 16 | 2988 | 299 | | 1769 | 3402 | 119 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.18 | 0.18 | | 0.08 | 0.08 | 0.08 | | 0.35 | 0.35 | 0.35 | | 0.13 | 0.45 | 0.45 | |
| Crit Moves: | | **** | | | | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.26 | 0.26 | 0.26 | | 0.26 | 0.26 | 0.26 | | 0.50 | 0.50 | 0.50 | | 0.19 | 0.69 | 0.69 | |
| Volume/Cap: | 0.70 | 0.70 | 0.70 | | 0.31 | 0.31 | 0.31 | | 0.70 | 0.70 | 0.70 | | 0.69 | 0.66 | 0.66 | |
| Uniform Del: | 26.7 | 26.7 | 26.7 | | 23.8 | 23.8 | 23.8 | | 15.2 | 15.2 | 15.2 | | 30.5 | 7.1 | 7.1 | |
| IncremntDel: | 5.5 | 5.5 | 5.5 | | 0.6 | 0.6 | 0.6 | | 1.3 | 1.3 | 1.3 | | 6.3 | 0.7 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.2 | 32.2 | 32.2 | | 24.3 | 24.3 | 24.3 | | 16.5 | 16.5 | 16.5 | | 36.8 | 7.8 | 7.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.2 | 32.2 | 32.2 | | 24.3 | 24.3 | 24.3 | | 16.5 | 16.5 | 16.5 | | 36.8 | 7.8 | 7.8 | |
| LOS by Move: | C | C | C | | C | C | C | | B | B | B | | D | A | A | |
| HCM2kAvgQ: | 8 | 8 | 8 | | 2 | 2 | 2 | | 12 | 12 | 12 | | 7 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 1.062
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): 54.6
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 486 | 625 | | 465 | 307 | 0 | | 0 | 0 | 0 | | 587 | 0 | 510 | |
| Added Vol: | 0 | 58 | 74 | | 38 | 11 | 0 | | 0 | 0 | 0 | | 136 | 0 | 387 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 544 | 699 | | 503 | 318 | 0 | | 0 | 0 | 0 | | 723 | 0 | 897 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 544 | 699 | | 503 | 318 | 0 | | 0 | 0 | 0 | | 723 | 0 | 897 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 544 | 699 | | 503 | 318 | 0 | | 0 | 0 | 0 | | 723 | 0 | 897 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 544 | 699 | | 503 | 318 | 0 | | 0 | 0 | 0 | | 723 | 0 | 897 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.29 | 0.43 | | 0.28 | 0.17 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.40 | 0.00 | 0.56 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.27 | 0.65 | | 0.26 | 0.53 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.38 | 0.00 | 0.64 | |
| Volume/Cap: | 0.00 | 1.06 | 0.67 | | 1.06 | 0.31 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.06 | 0.00 | 0.87 | |
| Uniform Del: | 0.0 | 40.2 | 12.1 | | 40.6 | 14.5 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.3 | 0.0 | 16.1 | |
| IncremntDel: | 0.0 | 57.3 | 1.7 | | 58.8 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 52.1 | 0.0 | 8.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 97.4 | 13.8 | | 99.4 | 14.7 | 0.0 | | 0.0 | 0.0 | 0.0 | | 86.4 | 0.0 | 24.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 97.4 | 13.8 | | 99.4 | 14.7 | 0.0 | | 0.0 | 0.0 | 0.0 | | 86.4 | 0.0 | 24.0 | |
| LOS by Move: | A | F | B | | F | B | A | | A | A | A | | F | A | C | |
| HCM2kAvgQ: | 0 | 27 | 15 | | 25 | 6 | 0 | | 0 | 0 | 0 | | 35 | 0 | 27 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.314
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 146.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | 8 | | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | | | | |
| Initial Bse: | 413 | 757 | 1 | | 0 | 2507 | 123 | | 41 | 15 | 1623 | | 50 | 120 | 9 | | | | | |
| Added Vol: | 404 | 278 | 3 | | 49 | 341 | 255 | | 45 | 94 | 40 | | 317 | 391 | 181 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 817 | 1035 | 4 | | 49 | 2848 | 378 | | 86 | 109 | 1663 | | 367 | 511 | 190 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 817 | 1035 | 4 | | 49 | 2848 | 378 | | 86 | 109 | 1663 | | 367 | 511 | 190 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 817 | 1035 | 4 | | 49 | 2848 | 378 | | 86 | 109 | 1663 | | 367 | 511 | 190 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 817 | 1035 | 4 | | 49 | 2848 | 378 | | 86 | 109 | 1663 | | 367 | 511 | 190 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.91 | 0.91 | 0.88 | | 0.93 | 0.93 | 0.83 | | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.32 | 1.68 | 2.00 | | 1.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 2292 | 2898 | 3343 | | 1769 | 3538 | 1583 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.18 | 0.00 | | 0.01 | 0.49 | 0.24 | | 0.04 | 0.04 | 0.50 | | 0.21 | 0.14 | 0.12 | | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | | | | | |
| Green/Cycle: | 0.18 | 0.45 | 0.61 | | 0.10 | 0.37 | 0.37 | | 0.20 | 0.20 | 0.38 | | 0.16 | 0.16 | 0.26 | | | | | |
| Volume/Cap: | 1.31 | 0.39 | 0.00 | | 0.14 | 1.31 | 0.64 | | 0.19 | 0.19 | 1.31 | | 1.31 | 0.91 | 0.47 | | | | | |
| Uniform Del: | 53.2 | 23.6 | 9.8 | | 53.6 | 40.9 | 33.8 | | 43.5 | 43.5 | 40.4 | | 54.7 | 53.9 | 40.8 | | | | | |
| IncremntDel: | 152.4 | 0.1 | 0.0 | | 0.2 | 145 | 2.5 | | 0.1 | 0.1 | 146.8 | | 164.3 | 19.5 | 0.9 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 205.6 | 23.7 | 9.8 | | 53.8 | 185 | 36.3 | | 43.6 | 43.6 | 187.2 | | 219.0 | 73.4 | 41.7 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 205.6 | 23.7 | 9.8 | | 53.8 | 185 | 36.3 | | 43.6 | 43.6 | 187.2 | | 219.0 | 73.4 | 41.7 | | | | | |
| LOS by Move: | F | C | A | | D | F | D | | D | D | F | | F | E | D | | | | | |
| HCM2kAvgQ: | 31 | 10 | 0 | | 1 | 73 | 13 | | 2 | 2 | 66 | | 27 | 14 | 7 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 Hamilton Ave. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.890
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 28.1
Optimal Cycle: 112 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 129 | 6 | 49 | | 73 | 5 | 73 | | 130 | 1351 | 5 | | 20 | 553 | 67 | | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | | | | |
| Initial Bse: | 147 | 7 | 56 | | 83 | 6 | 83 | | 148 | 1540 | 6 | | 23 | 630 | 76 | | | | | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 7 | | 11 | 179 | 0 | | 0 | 1166 | 1 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1719 | 6 | | 23 | 1796 | 77 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1719 | 6 | | 23 | 1796 | 77 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1719 | 6 | | 23 | 1796 | 77 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 147 | 7 | 56 | | 83 | 6 | 90 | | 159 | 1719 | 6 | | 23 | 1796 | 77 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.59 | 0.59 | 0.59 | | 0.73 | 0.73 | 0.73 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 | | | | | |
| Lanes: | 0.70 | 0.03 | 0.27 | | 0.46 | 0.03 | 0.51 | | 1.00 | 1.99 | 0.01 | | 1.00 | 1.92 | 0.08 | | | | | |
| Final Sat.: | 792 | 37 | 301 | | 648 | 44 | 703 | | 1769 | 3526 | 12 | | 1769 | 3371 | 145 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.19 | 0.19 | 0.19 | | 0.13 | 0.13 | 0.13 | | 0.09 | 0.49 | 0.49 | | 0.01 | 0.53 | 0.53 | | | | | |
| Crit Moves: | | **** | | | | | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.10 | 0.64 | 0.64 | | 0.06 | 0.60 | 0.60 | | | | | |
| Volume/Cap: | 0.89 | 0.89 | 0.89 | | 0.62 | 0.62 | 0.62 | | 0.89 | 0.76 | 0.76 | | 0.23 | 0.89 | 0.89 | | | | | |
| Uniform Del: | 46.1 | 46.1 | 46.1 | | 43.1 | 43.1 | 43.1 | | 53.3 | 14.8 | 14.8 | | 54.3 | 20.7 | 20.7 | | | | | |
| IncremntDel: | 31.3 | 31.3 | 31.3 | | 3.9 | 3.9 | 3.9 | | 38.0 | 1.5 | 1.5 | | 1.2 | 5.2 | 5.2 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 77.4 | 77.4 | 77.4 | | 47.0 | 47.0 | 47.0 | | 91.3 | 16.3 | 16.3 | | 55.5 | 25.9 | 25.9 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 77.4 | 77.4 | 77.4 | | 47.0 | 47.0 | 47.0 | | 91.3 | 16.3 | 16.3 | | 55.5 | 25.9 | 25.9 | | | | | |
| LOS by Move: | E | E | E | | D | D | D | | F | B | B | | E | C | C | | | | | |
| HCM2kAvgQ: | 11 | 11 | 11 | | 7 | 7 | 7 | | 9 | 24 | 24 | | 1 | 34 | 34 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 Ivy Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.863
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 99 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | | 5 | 5 | 5 | | 0 | 0 | 5 | | 5 |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 10 | 0 | | 122 | 98 | 1457 | | 0 | 0 | 800 | | 22 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 0 | 0 | 0 | | 11 | 0 | | 139 | 112 | 1661 | | 0 | 0 | 912 | | 25 |
| Added Vol: | 0 | 0 | 0 | | 21 | 0 | | 10 | 10 | 169 | | 0 | 0 | 1015 | | 159 |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 0 | 0 | 0 | | 32 | 0 | | 149 | 122 | 1830 | | 0 | 0 | 1927 | | 184 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 0 | 0 | 0 | | 32 | 0 | | 149 | 122 | 1830 | | 0 | 0 | 1927 | | 184 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 0 | 0 | 0 | | 32 | 0 | | 149 | 122 | 1830 | | 0 | 0 | 1927 | | 184 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 0 | 0 | 0 | | 32 | 0 | | 149 | 122 | 1830 | | 0 | 0 | 1927 | | 184 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.86 | 1.00 | | 0.86 | 0.93 | 0.93 | | 1.00 | 1.00 | 0.92 | | 0.92 |
| Lanes: | 0.00 | 0.00 | 0.00 | | 0.18 | 0.00 | | 0.82 | 1.00 | 2.00 | | 0.00 | 0.00 | 1.83 | | 0.17 |
| Final Sat.: | 0 | 0 | 0 | | 293 | 0 | | 1348 | 1769 | 3538 | | 0 | 0 | 3187 | | 304 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.11 | 0.00 | | 0.11 | 0.07 | 0.52 | | 0.00 | 0.00 | 0.60 | | 0.60 |
| Crit Moves: | | | | | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.13 | 0.00 | | 0.13 | 0.08 | 0.78 | | 0.00 | 0.00 | 0.70 | | 0.70 |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.86 | 0.00 | | 0.86 | 0.86 | 0.66 | | 0.00 | 0.00 | 0.86 | | 0.86 |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 51.3 | 0.0 | | 51.3 | 54.6 | 6.0 | | 0.0 | 0.0 | 13.6 | | 13.6 |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 28.7 | 0.0 | | 28.7 | 38.6 | 0.6 | | 0.0 | 0.0 | 3.4 | | 3.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 1.00 | | 1.00 |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | | 80.0 | 93.2 | 6.6 | | 0.0 | 0.0 | 17.1 | | 17.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | | 80.0 | 93.2 | 6.6 | | 0.0 | 0.0 | 17.1 | | 17.1 |
| LOS by Move: | A | A | A | | F | A | | F | F | A | | A | A | B | | B |
| HCM2kAvgQ: | 0 | 0 | 0 | | 9 | 0 | | 9 | 7 | 17 | | 0 | 0 | 33 | | 33 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 O'Brien Dr. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.704
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 59 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | | 0 | 0 | 5 | | 5 | 5 | 5 | | 0 |
| Lanes: | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 0 | 35 | | 0 | 0 | | 0 | 0 | 1413 | | 204 | 73 | 888 | | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 |
| Initial Bse: | 137 | 0 | 40 | | 0 | 0 | | 0 | 0 | 1611 | | 233 | 83 | 1012 | | 0 |
| Added Vol: | 4 | 0 | 0 | | 0 | 0 | | 0 | 0 | 179 | | 11 | 0 | 1025 | | 0 |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Initial Fut: | 141 | 0 | 40 | | 0 | 0 | | 0 | 0 | 1790 | | 244 | 83 | 2037 | | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 141 | 0 | 40 | | 0 | 0 | | 0 | 0 | 1790 | | 244 | 83 | 2037 | | 0 |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Reduced Vol: | 141 | 0 | 40 | | 0 | 0 | | 0 | 0 | 1790 | | 244 | 83 | 2037 | | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 141 | 0 | 40 | | 0 | 0 | | 0 | 0 | 1790 | | 244 | 83 | 2037 | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 |
| Adjustment: | 0.91 | 1.00 | 0.91 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.93 | | 0.83 | 0.93 | 0.93 | | 1.00 |
| Lanes: | 1.64 | 0.00 | 0.36 | | 0.00 | 0.00 | | 0.00 | 0.00 | 2.00 | | 1.00 | 1.00 | 2.00 | | 0.00 |
| Final Sat.: | 2841 | 0 | 627 | | 0 | 0 | | 0 | 0 | 3538 | | 1583 | 1769 | 3538 | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.00 | 0.06 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.51 | | 0.15 | 0.05 | 0.58 | | 0.00 |
| Crit Moves: | | | **** | | | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.00 | 0.09 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.75 | | 0.75 | 0.07 | 0.82 | | 0.00 |
| Volume/Cap: | 0.55 | 0.00 | 0.70 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.68 | | 0.21 | 0.68 | 0.70 | | 0.00 |
| Uniform Del: | 52.2 | 0.0 | 53.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 7.7 | | 4.5 | 54.5 | 4.7 | | 0.0 |
| IncremntDel: | 2.0 | 0.0 | 8.6 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.7 | | 0.1 | 14.0 | 0.8 | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.00 |
| Delay/Veh: | 54.2 | 0.0 | 61.6 | | 0.0 | 0.0 | | 0.0 | 0.0 | 8.4 | | 4.6 | 68.5 | 5.5 | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 54.2 | 0.0 | 61.6 | | 0.0 | 0.0 | | 0.0 | 0.0 | 8.4 | | 4.6 | 68.5 | 5.5 | | 0.0 |
| LOS by Move: | D | A | E | | A | A | | A | A | A | | A | E | A | | A |
| HCM2kAvgQ: | 4 | 0 | 5 | | 0 | 0 | | 0 | 0 | 18 | | 3 | 4 | 18 | | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 1.172
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 77.2
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 0 | 1 0 | 1 | | 1 0 | 1 0 | 1 | | 1 0 | 2 1 | 0 | | 1 0 | 1 1 | 0 | |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 283 | 194 | 63 | | 43 | 189 | 250 | | 368 | 1637 | 386 | | 116 | 1112 | 39 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 7 | 190 | 0 | | 0 | 1029 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.93 | 0.87 | 0.87 | | 0.93 | 0.93 | 0.93 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 2.48 | 0.52 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 1769 | 4087 | 864 | | 1769 | 3464 | 63 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.16 | | 0.21 | 0.45 | 0.45 | | 0.07 | 0.62 | 0.62 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.09 | 0.09 | 0.18 | | 0.09 | 0.09 | 0.27 | | 0.18 | 0.62 | 0.62 | | 0.09 | 0.53 | 0.53 | |
| Volume/Cap: | 0.93 | 1.17 | 0.22 | | 0.28 | 1.17 | 0.61 | | 1.17 | 0.72 | 0.72 | | 0.72 | 1.17 | 1.17 | |
| Uniform Del: | 54.3 | 54.7 | 42.1 | | 51.3 | 54.8 | 38.5 | | 49.1 | 15.9 | 15.9 | | 53.1 | 28.4 | 28.4 | |
| IncremntDel: | 33.3 | 124 | 0.4 | | 1.0 | 125 | 2.6 | | 105.7 | 0.9 | 0.9 | | 15.1 | 83.7 | 83.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 87.6 | 179 | 42.5 | | 52.3 | 180 | 41.1 | | 154.8 | 16.8 | 16.8 | | 68.2 | 112 | 112.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 87.6 | 179 | 42.5 | | 52.3 | 180 | 41.1 | | 154.8 | 16.8 | 16.8 | | 68.2 | 112 | 112.1 | |
| LOS by Move: | F | F | D | | D | F | D | | F | B | B | | E | F | F | |
| HCM2kAvgQ: | 8 | 13 | 2 | | 2 | 13 | 9 | | 24 | 21 | 21 | | 6 | 65 | 65 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 Bay Rd. & Willow Rd.

Cycle (sec): 90 Critical Vol./Cap.(X): 0.879
Loss Time (sec): 11 (Y+R=4.0 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 94 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | | 5 | 0 | 5 | | 5 | 5 | 0 | | 0 | 5 | 5 | |
| Lanes: | 0 0 | 0 0 | 0 | | 1 0 | 0 0 | 1 | | 1 0 | 2 0 | 0 | | 0 0 | 2 0 | 1 | |
| Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | 416 | 0 | 54 | | 40 | 1436 | 0 | | 0 | 1061 | 255 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 0 | 0 | | 474 | 0 | 62 | | 46 | 1637 | 0 | | 0 | 1210 | 291 | |
| Added Vol: | 0 | 0 | 0 | | 4 | 0 | 0 | | 0 | 136 | 0 | | 0 | 266 | 7 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1773 | 0 | | 0 | 1476 | 298 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1773 | 0 | | 0 | 1476 | 298 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1773 | 0 | | 0 | 1476 | 298 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 0 | 0 | | 478 | 0 | 62 | | 46 | 1773 | 0 | | 0 | 1476 | 298 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 1.00 | | 0.93 | 1.00 | 0.83 | | 0.93 | 0.93 | 1.00 | | 1.00 | 0.93 | 0.83 | |
| Lanes: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 2.00 | 0.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 0 | 0 | 0 | | 1769 | 0 | 1583 | | 1769 | 3538 | 0 | | 0 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | | 0.27 | 0.00 | 0.04 | | 0.03 | 0.50 | 0.00 | | 0.00 | 0.42 | 0.19 | |
| Crit Moves: | | | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | | 0.31 | 0.00 | 0.31 | | 0.07 | 0.57 | 0.00 | | 0.00 | 0.50 | 0.50 | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | | 0.88 | 0.00 | 0.13 | | 0.38 | 0.88 | 0.00 | | 0.00 | 0.83 | 0.37 | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | | 29.6 | 0.0 | 22.4 | | 40.2 | 16.7 | 0.0 | | 0.0 | 19.1 | 13.7 | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | | 15.2 | 0.0 | 0.1 | | 2.1 | 4.8 | 0.0 | | 0.0 | 3.4 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | | 44.7 | 0.0 | 22.6 | | 42.3 | 21.5 | 0.0 | | 0.0 | 22.5 | 14.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | | 44.7 | 0.0 | 22.6 | | 42.3 | 21.5 | 0.0 | | 0.0 | 22.5 | 14.0 | |
| LOS by Move: | A | A | A | | D | A | C | | D | C | A | | A | C | B | |
| HCM2kAvgQ: | 0 | 0 | 0 | | 16 | 0 | 1 | | 2 | 26 | 0 | | 0 | 21 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Durham St. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.893
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 95 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 4 | 10 | 10 | | 4 | 10 | 10 | |
| Lanes: | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM | | | | | | | | | | | | | | | | | |
| Base Vol: | 33 | 7 | 85 | | 122 | 5 | 31 | | 11 | 1125 | 10 | | 90 | 818 | 51 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1283 | 11 | | 103 | 933 | 58 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 136 | 0 | | 0 | 266 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1419 | 11 | | 103 | 1199 | 58 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1419 | 11 | | 103 | 1199 | 58 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1419 | 11 | | 103 | 1199 | 58 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 38 | 8 | 97 | | 139 | 6 | 35 | | 13 | 1419 | 11 | | 103 | 1199 | 58 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.44 | 0.84 | 0.84 | | 0.52 | 0.52 | 0.83 | | 0.93 | 0.93 | 0.93 | | 0.93 | 0.97 | 0.97 | |
| Lanes: | 1.00 | 0.08 | 0.92 | | 0.96 | 0.04 | 1.00 | | 1.00 | 1.98 | 0.02 | | 1.00 | 0.95 | 0.05 | |
| Final Sat.: | 830 | 122 | 1481 | | 946 | 39 | 1583 | | 1769 | 3506 | 28 | | 1769 | 1763 | 86 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.07 | 0.07 | | 0.15 | 0.15 | 0.02 | | 0.01 | 0.40 | 0.40 | | 0.06 | 0.68 | 0.68 | |
| Crit Moves: | | | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.16 | 0.16 | 0.16 | | 0.16 | 0.16 | 0.16 | | 0.04 | 0.68 | 0.68 | | 0.10 | 0.74 | 0.74 | |
| Volume/Cap: | 0.28 | 0.41 | 0.41 | | 0.92 | 0.92 | 0.14 | | 0.19 | 0.60 | 0.60 | | 0.60 | 0.92 | 0.92 | |
| Uniform Del: | 38.9 | 39.7 | 39.7 | | 43.5 | 43.5 | 38.0 | | 48.9 | 9.2 | 9.2 | | 45.4 | 11.4 | 11.4 | |
| IncremntDel: | 1.2 | 1.1 | 1.1 | | 49.7 | 49.7 | 0.3 | | 1.3 | 0.4 | 0.4 | | 5.7 | 10.7 | 10.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 40.1 | 40.8 | 40.8 | | 93.2 | 93.2 | 38.2 | | 50.3 | 9.6 | 9.6 | | 51.1 | 22.1 | 22.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 40.1 | 40.8 | 40.8 | | 93.2 | 93.2 | 38.2 | | 50.3 | 9.6 | 9.6 | | 51.1 | 22.1 | 22.1 | |
| LOS by Move: | D | D | D | | F | F | D | | D | A | A | | D | C | C | |
| HCM2kAvgQ: | 1 | 3 | 3 | | 8 | 8 | 1 | | 1 | 13 | 13 | | 4 | 38 | 38 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Coleman Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.910
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 105 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 4 | 4 | | 4 | 4 | 4 | | 10 | 10 | 10 | | 10 | 10 | 10 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | |
| Base Vol: | 12 | 11 | 7 | | 92 | 6 | 35 | | 24 | 1083 | 6 | | 5 | 795 | 109 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1235 | 7 | | 6 | 906 | 124 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 136 | 0 | | 0 | 266 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1371 | 7 | | 6 | 1172 | 124 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1371 | 7 | | 6 | 1172 | 124 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1371 | 7 | | 6 | 1172 | 124 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 14 | 13 | 8 | | 105 | 7 | 40 | | 27 | 1371 | 7 | | 6 | 1172 | 124 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 0.73 | 0.73 | 0.73 | | 0.10 | 0.98 | 0.98 | | 0.06 | 0.97 | 0.97 | |
| Lanes: | 0.40 | 0.37 | 0.23 | | 0.69 | 0.05 | 0.26 | | 1.00 | 0.99 | 0.01 | | 1.00 | 0.90 | 0.10 | |
| Final Sat.: | 650 | 596 | 379 | | 965 | 63 | 367 | | 192 | 1851 | 9 | | 115 | 1660 | 176 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.02 | 0.02 | 0.02 | | 0.11 | 0.11 | 0.11 | | 0.14 | 0.74 | 0.74 | | 0.05 | 0.71 | 0.71 | |
| Crit Moves: | | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.12 | 0.12 | 0.12 | | 0.81 | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 | |
| Volume/Cap: | 0.18 | 0.18 | 0.18 | | 0.91 | 0.91 | 0.91 | | 0.18 | 0.91 | 0.91 | | 0.06 | 0.87 | 0.87 | |
| Uniform Del: | 41.6 | 41.6 | 41.6 | | 45.7 | 45.7 | 45.7 | | 2.1 | 7.0 | 7.0 | | 1.9 | 6.2 | 6.2 | |
| IncremntDel: | 0.4 | 0.4 | 0.4 | | 44.5 | 44.5 | 44.5 | | 0.5 | 8.5 | 8.5 | | 0.3 | 5.7 | 5.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 42.0 | 42.0 | 42.0 | | 90.2 | 90.2 | 90.2 | | 2.7 | 15.5 | 15.5 | | 2.2 | 11.9 | 11.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 42.0 | 42.0 | 42.0 | | 90.2 | 90.2 | 90.2 | | 2.7 | 15.5 | 15.5 | | 2.2 | 11.9 | 11.9 | |
| LOS by Move: | D | D | D | | F | F | F | | A | B | B | | A | B | B | |
| HCM2kAvgQ: | 1 | 1 | 1 | | 8 | 8 | 8 | | 0 | 36 | 36 | | 0 | 29 | 29 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Gilbert Ave. & Willow Rd.

Cycle (sec): 105 Critical Vol./Cap.(X): 0.847
Loss Time (sec): 7 (Y+R=3.0 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 75 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 12 | 12 | 12 | | 12 | 12 | 12 | |
| Lanes: | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 | 1 | 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 92 | 31 | 75 | | 29 | 30 | 4 | | 4 | 969 | 36 | | 37 | 832 | 17 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 105 | 35 | 85 | | 33 | 34 | 5 | | 5 | 1105 | 41 | | 42 | 948 | 19 | |
| Added Vol: | 18 | 0 | 8 | | 0 | 0 | 0 | | 0 | 128 | 22 | | 32 | 234 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 123 | 35 | 93 | | 33 | 34 | 5 | | 5 | 1233 | 63 | | 74 | 1182 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 123 | 35 | 93 | | 33 | 34 | 5 | | 5 | 1233 | 63 | | 74 | 1182 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 123 | 35 | 93 | | 33 | 34 | 5 | | 5 | 1233 | 63 | | 74 | 1182 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 123 | 35 | 94 | | 33 | 34 | 5 | | 5 | 1233 | 63 | | 74 | 1182 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.72 | 0.87 | 0.87 | | 0.44 | 0.96 | 0.96 | | 0.15 | 0.97 | 0.97 | | 0.11 | 0.98 | 0.98 | |
| Lanes: | 1.00 | 0.27 | 0.73 | | 1.00 | 0.88 | 0.12 | | 1.00 | 0.95 | 0.05 | | 1.00 | 0.98 | 0.02 | |
| Final Sat.: | 1370 | 455 | 1204 | | 827 | 1613 | 215 | | 289 | 1759 | 90 | | 214 | 1828 | 30 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.08 | 0.08 | | 0.04 | 0.02 | 0.02 | | 0.02 | 0.70 | 0.70 | | 0.35 | 0.65 | 0.65 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.11 | 0.11 | 0.11 | | 0.11 | 0.11 | 0.11 | | 0.83 | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 | |
| Volume/Cap: | 0.85 | 0.73 | 0.73 | | 0.38 | 0.20 | 0.20 | | 0.02 | 0.85 | 0.85 | | 0.42 | 0.78 | 0.78 | |
| Uniform Del: | 46.1 | 45.5 | 45.5 | | 43.7 | 42.9 | 42.9 | | 1.6 | 5.2 | 5.2 | | 2.4 | 4.4 | 4.4 | |
| IncremntDel: | 34.5 | 14.7 | 14.7 | | 2.7 | 0.5 | 0.5 | | 0.0 | 4.6 | 4.6 | | 1.6 | 2.7 | 2.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 80.6 | 60.2 | 60.2 | | 46.4 | 43.4 | 43.4 | | 1.6 | 9.8 | 9.8 | | 4.0 | 7.1 | 7.1 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 80.6 | 60.2 | 60.2 | | 46.4 | 43.4 | 43.4 | | 1.6 | 9.8 | 9.8 | | 4.0 | 7.1 | 7.1 | |
| LOS by Move: | F | E | E | | D | D | D | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 1 | 1 | 1 | | 0 | 27 | 27 | | 1 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.543
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 215.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 2 | 0 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 111 | 499 | 560 | | 544 | 471 | 22 | | 41 | 194 | 180 | | 435 | 108 | 467 | |
| Added Vol: | 15 | 8 | 34 | | 82 | 8 | 0 | | 0 | 34 | 24 | | 128 | 37 | 86 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.42 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.67 | 1.27 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.59 | 0.41 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 791 | | 2860 | 2189 | 99 | | 1769 | 1862 | 1583 | | 2848 | 734 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.14 | 0.75 | | 0.22 | 0.22 | 0.22 | | 0.02 | 0.12 | 0.13 | | 0.20 | 0.20 | 0.35 | |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | | **** | |
| Green/Cycle: | 0.49 | 0.49 | 0.49 | | 0.14 | 0.14 | 0.14 | | 0.08 | 0.08 | 0.08 | | 0.23 | 0.23 | 0.23 | |
| Volume/Cap: | 0.15 | 0.29 | 1.54 | | 1.54 | 1.54 | 1.54 | | 0.28 | 1.46 | 1.54 | | 0.87 | 0.87 | 1.54 | |
| Uniform Del: | 18.5 | 20.0 | 33.4 | | 55.8 | 55.8 | 55.8 | | 55.9 | 59.6 | 59.6 | | 48.5 | 48.5 | 50.3 | |
| IncremntDel: | 0.1 | 0.1 | 256.8 | | 251.0 | 251 | 251.0 | | 1.0 | 240 | 278.1 | | 10.3 | 10.3 | 257.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 18.5 | 20.1 | 290.2 | | 306.8 | 307 | 306.8 | | 56.9 | 300 | 337.7 | | 58.7 | 58.7 | 308.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 18.5 | 20.1 | 290.2 | | 306.8 | 307 | 306.8 | | 56.9 | 300 | 337.7 | | 58.7 | 58.7 | 308.0 | |
| LOS by Move: | B | C | F | | F | F | F | | E | F | F | | E | E | F | |
| HCM2kAvgQ: | 3 | 6 | 50 | | 34 | 34 | 34 | | 2 | 20 | 19 | | 17 | 17 | 47 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.585
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 251.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 430 | 1104 | 0 | 0 | 3976 | 145 | 68 | 0 | 1900 | 0 | 0 | 0 | | | | |
| Added Vol: | 9 | 131 | 0 | 0 | 549 | 150 | 19 | 0 | 26 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 439 | 1235 | 0 | 0 | 4525 | 295 | 87 | 0 | 1926 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 439 | 1235 | 0 | 0 | 4525 | 295 | 87 | 0 | 1926 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 439 | 1235 | 0 | 0 | 4525 | 295 | 87 | 0 | 1926 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 439 | 1235 | 0 | 0 | 4525 | 295 | 87 | 0 | 1926 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 5083 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.24 | 0.00 | 0.00 | 0.89 | 0.19 | 0.03 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.08 | 0.64 | 0.00 | 0.00 | 0.56 | 0.56 | 0.29 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.58 | 0.38 | 0.00 | 0.00 | 1.58 | 0.33 | 0.09 | 0.00 | 1.58 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 68.9 | 12.7 | 0.0 | 0.0 | 32.9 | 17.7 | 38.7 | 0.0 | 53.2 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 279.7 | 0.1 | 0.0 | 0.0 | 265 | 0.2 | 0.0 | 0.0 | 267.1 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 348.7 | 12.7 | 0.0 | 0.0 | 298 | 17.9 | 38.7 | 0.0 | 320.3 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 348.7 | 12.7 | 0.0 | 0.0 | 298 | 17.9 | 38.7 | 0.0 | 320.3 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | B | D | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 22 | 10 | 0 | 0 | 148 | 7 | 1 | 0 | 67 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 O'Brien Dr. & University Ave.

Cycle (sec): 85 Critical Vol./Cap.(X): 0.778
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 66 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 0 | 5 | 5 | 0 |
| Lanes: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 8 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 120 | 0 | 99 | 0 | 20 | 1599 | 0 | 0 | 454 | 16 | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 0 | 0 | 0 | 0 | 137 | 0 | 113 | 0 | 23 | 1823 | 0 | 0 | 518 | 18 | | |
| Added Vol: | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 155 | 4 | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Initial Fut: | 0 | 0 | 0 | 0 | 148 | 0 | 113 | 0 | 23 | 1857 | 0 | 0 | 673 | 22 | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 0 | 0 | 0 | 0 | 148 | 0 | 113 | 0 | 23 | 1857 | 0 | 0 | 673 | 22 | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Reduced Vol: | 0 | 0 | 0 | 0 | 148 | 0 | 113 | 0 | 23 | 1857 | 0 | 0 | 673 | 22 | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 0 | 0 | 0 | 0 | 148 | 0 | 113 | 0 | 23 | 1857 | 0 | 0 | 673 | 22 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 0.90 | 0.93 | 0.93 | 1.00 | 1.00 | 0.93 | 0.93 | | | | |
| Lanes: | 0.00 | 0.00 | 0.00 | 0.57 | 0.00 | 0.43 | 1.00 | 2.00 | 0.00 | 0.00 | 1.94 | 0.06 | | | | |
| Final Sat.: | 0 | 0 | 0 | 967 | 0 | 738 | 1769 | 3538 | 0 | 0 | 3407 | 113 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.00 | 0.00 | 0.15 | 0.00 | 0.15 | 0.01 | 0.52 | 0.00 | 0.00 | 0.20 | 0.20 | | | | |
| Crit Moves: | | | | | | **** | | **** | | **** | | | | | | |
| Green/Cycle: | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.20 | 0.15 | 0.67 | 0.00 | 0.00 | 0.52 | 0.52 | | | | |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.78 | 0.00 | 0.78 | 0.08 | 0.78 | 0.00 | 0.00 | 0.38 | 0.38 | | | | |
| Uniform Del: | 0.0 | 0.0 | 0.0 | 32.4 | 0.0 | 32.4 | 30.8 | 9.5 | 0.0 | 0.0 | 12.2 | 12.2 | | | | |
| IncremntDel: | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 | 11.1 | 0.1 | 1.7 | 0.0 | 0.0 | 0.1 | 0.1 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | | | | |
| Delay/Veh: | 0.0 | 0.0 | 0.0 | 43.5 | 0.0 | 43.5 | 30.9 | 11.2 | 0.0 | 0.0 | 12.4 | 12.4 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 0.0 | 0.0 | 0.0 | 43.5 | 0.0 | 43.5 | 30.9 | 11.2 | 0.0 | 0.0 | 12.4 | 12.4 | | | | |
| LOS by Move: | A | A | A | D | A | D | C | B | A | A | B | B | | | | |
| HCM2kAvgQ: | 0 | 0 | 0 | 9 | 0 | 9 | 1 | 19 | 0 | 0 | 6 | 6 | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 University & Kavanaugh

Cycle (sec): 100 Critical Vol./Cap.(X): 0.743
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 85 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 35 | 31 | 12 | | 19 | 29 | 82 | | 26 | 1579 | 19 | | 18 | 527 | 13 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1800 | 22 | | 21 | 601 | 15 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34 | 0 | | 0 | 155 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1834 | 22 | | 21 | 756 | 15 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1834 | 22 | | 21 | 756 | 15 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1834 | 22 | | 21 | 756 | 15 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 40 | 35 | 14 | | 22 | 33 | 93 | | 30 | 1834 | 22 | | 21 | 756 | 15 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.96 | 0.96 | 0.96 | | 0.91 | 0.91 | 0.91 | | 0.95 | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.45 | 0.40 | 0.15 | | 0.15 | 0.22 | 0.63 | | 1.00 | 1.98 | 0.02 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 816 | 723 | 280 | | 252 | 385 | 1089 | | 1805 | 3561 | 42 | | 1805 | 3530 | 69 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.05 | 0.05 | | 0.09 | 0.09 | 0.09 | | 0.02 | 0.52 | 0.52 | | 0.01 | 0.21 | 0.21 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.06 | 0.06 | 0.06 | | 0.11 | 0.11 | 0.11 | | 0.14 | 0.67 | 0.67 | | 0.05 | 0.58 | 0.58 | |
| Volume/Cap: | 0.76 | 0.77 | 0.77 | | 0.77 | 0.78 | 0.78 | | 0.12 | 0.77 | 0.77 | | 0.23 | 0.37 | 0.37 | |
| Uniform Del: | 46.0 | 46.1 | 46.1 | | 43.2 | 43.3 | 43.3 | | 38.0 | 11.5 | 11.5 | | 45.6 | 11.2 | 11.2 | |
| IncremntDel: | 25.2 | 27.2 | 27.2 | | 17.6 | 18.5 | 18.5 | | 0.2 | 1.6 | 1.6 | | 1.3 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 71.2 | 73.3 | 73.3 | | 60.8 | 61.8 | 61.8 | | 38.2 | 13.1 | 13.1 | | 46.9 | 11.3 | 11.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 71.2 | 73.3 | 73.3 | | 60.8 | 61.8 | 61.8 | | 38.2 | 13.1 | 13.1 | | 46.9 | 11.3 | 11.3 | |
| LOS by Move: | E | E | E | | E | E | E | | D | B | B | | D | B | B | |
| HCM2kAvgQ: | 4 | 5 | 5 | | 6 | 6 | 6 | | 1 | 22 | 22 | | 1 | 7 | 7 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 University & Bay

Cycle (sec): 100 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.6
Optimal Cycle: 123 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | |
| Base Vol: | 150 | 219 | 345 | | 94 | 262 | 110 | | 93 | 1291 | 87 | | 119 | 540 | 49 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1472 | 99 | | 136 | 616 | 56 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34 | 0 | | 0 | 155 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1506 | 99 | | 136 | 771 | 56 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1506 | 99 | | 136 | 771 | 56 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1506 | 99 | | 136 | 771 | 56 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 171 | 250 | 393 | | 107 | 299 | 125 | | 106 | 1506 | 99 | | 136 | 771 | 56 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.98 | 0.98 | 0.85 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.86 | 0.14 | |
| Final Sat.: | 1862 | 1862 | 1615 | | 1805 | 1900 | 1615 | | 1805 | 3356 | 221 | | 1805 | 3332 | 242 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.13 | 0.24 | | 0.06 | 0.16 | 0.08 | | 0.06 | 0.45 | 0.45 | | 0.08 | 0.23 | 0.23 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.26 | 0.26 | | 0.06 | 0.21 | 0.21 | | 0.11 | 0.48 | 0.48 | | 0.08 | 0.45 | 0.45 | |
| Volume/Cap: | 0.76 | 0.51 | 0.93 | | 0.93 | 0.76 | 0.38 | | 0.51 | 0.93 | 0.93 | | 0.93 | 0.51 | 0.51 | |
| Uniform Del: | 42.6 | 31.4 | 36.0 | | 46.6 | 37.4 | 34.2 | | 41.7 | 24.2 | 24.2 | | 45.7 | 19.7 | 19.7 | |
| IncremntDel: | 6.3 | 0.5 | 26.8 | | 61.7 | 8.7 | 0.7 | | 2.2 | 9.3 | 9.3 | | 53.4 | 0.3 | 0.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 48.9 | 32.0 | 62.8 | | 108.3 | 46.1 | 34.9 | | 43.9 | 33.6 | 33.6 | | 99.1 | 20.0 | 20.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 48.9 | 32.0 | 62.8 | | 108.3 | 46.1 | 34.9 | | 43.9 | 33.6 | 33.6 | | 99.1 | 20.0 | 20.0 | |
| LOS by Move: | D | C | E | | F | D | C | | D | C | C | | F | B | B | |
| HCM2kAvgQ: | 7 | 7 | 16 | | 6 | 10 | 4 | | 4 | 29 | 29 | | 7 | 10 | 10 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 University & Runnymede

Cycle (sec): 100 Critical Vol./Cap.(X): 0.780
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 85 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 78 | 109 | 59 | | 17 | 76 | 27 | | 29 | 1264 | 78 | | 44 | 793 | 17 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1441 | 89 | | 50 | 904 | 19 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34 | 0 | | 0 | 155 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1475 | 89 | | 50 | 1059 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1475 | 89 | | 50 | 1059 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1475 | 89 | | 50 | 1059 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 89 | 124 | 67 | | 19 | 87 | 31 | | 33 | 1475 | 89 | | 50 | 1059 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.95 | 0.95 | 0.95 | | 0.96 | 0.96 | 0.96 | | 0.95 | 0.94 | 0.94 | | 0.95 | 0.95 | 0.95 | |
| Lanes: | 0.32 | 0.44 | 0.24 | | 0.14 | 0.63 | 0.23 | | 1.00 | 1.89 | 0.11 | | 1.00 | 1.96 | 0.04 | |
| Final Sat.: | 574 | 802 | 434 | | 259 | 1159 | 412 | | 1805 | 3374 | 203 | | 1805 | 3534 | 65 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.15 | 0.15 | | 0.07 | 0.07 | 0.07 | | 0.02 | 0.44 | 0.44 | | 0.03 | 0.30 | 0.30 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | **** | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.09 | 0.09 | 0.09 | | 0.09 | 0.55 | 0.55 | | 0.05 | 0.51 | 0.51 | |
| Volume/Cap: | 0.79 | 0.79 | 0.79 | | 0.79 | 0.79 | 0.79 | | 0.21 | 0.79 | 0.79 | | 0.56 | 0.58 | 0.58 | |
| Uniform Del: | 38.3 | 38.3 | 38.3 | | 44.3 | 44.3 | 44.3 | | 42.6 | 17.9 | 17.9 | | 46.4 | 16.8 | 16.8 | |
| IncremntDel: | 11.7 | 11.7 | 11.7 | | 21.9 | 21.9 | 21.9 | | 0.7 | 2.3 | 2.3 | | 7.4 | 0.5 | 0.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.0 | 50.0 | 50.0 | | 66.2 | 66.2 | 66.2 | | 43.2 | 20.2 | 20.2 | | 53.9 | 17.3 | 17.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.0 | 50.0 | 50.0 | | 66.2 | 66.2 | 66.2 | | 43.2 | 20.2 | 20.2 | | 53.9 | 17.3 | 17.3 | |
| LOS by Move: | D | D | D | | E | E | E | | D | C | C | | D | B | B | |
| HCM2kAvgQ: | 10 | 10 | 10 | | 6 | 6 | 6 | | 1 | 22 | 22 | | 2 | 12 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 University & Bell

Cycle (sec): 90 Critical Vol./Cap.(X): 0.615
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 8.1
Optimal Cycle: 86 Level Of Service: A

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Permitted | | | | Permitted | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 18 | 18 | 18 | | 18 | 18 | 18 | | 64 | 64 | 64 | | 64 | 64 | 64 | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 60 | 83 | 38 | | 11 | 68 | 22 | | 42 | 1322 | 87 | | 37 | 787 | 22 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1507 | 99 | | 42 | 897 | 25 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 34 | 0 | | 0 | 155 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1541 | 99 | | 42 | 1052 | 25 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1541 | 99 | | 42 | 1052 | 25 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1541 | 99 | | 42 | 1052 | 25 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 68 | 95 | 43 | | 13 | 78 | 25 | | 48 | 1541 | 99 | | 42 | 1052 | 25 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.84 | 0.84 | 0.84 | | 0.94 | 0.94 | 0.94 | | 0.23 | 0.94 | 0.94 | | 0.11 | 0.95 | 0.95 | |
| Lanes: | 0.33 | 0.46 | 0.21 | | 0.11 | 0.67 | 0.22 | | 1.00 | 1.88 | 0.12 | | 1.00 | 1.95 | 0.05 | |
| Final Sat.: | 528 | 730 | 334 | | 195 | 1205 | 390 | | 439 | 3361 | 216 | | 203 | 3515 | 84 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.13 | 0.13 | | 0.06 | 0.06 | 0.06 | | 0.11 | 0.46 | 0.46 | | 0.21 | 0.30 | 0.30 | |
| Crit Moves: | | **** | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.21 | 0.21 | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.74 | 0.74 | 0.74 | | 0.74 | 0.74 | 0.74 | |
| Volume/Cap: | 0.62 | 0.62 | 0.62 | | 0.31 | 0.31 | 0.31 | | 0.15 | 0.62 | 0.62 | | 0.28 | 0.40 | 0.40 | |
| Uniform Del: | 32.2 | 32.2 | 32.2 | | 30.0 | 30.0 | 30.0 | | 3.3 | 5.4 | 5.4 | | 3.7 | 4.2 | 4.2 | |
| IncremntDel: | 3.4 | 3.4 | 3.4 | | 0.5 | 0.5 | 0.5 | | 0.2 | 0.4 | 0.4 | | 1.0 | 0.1 | 0.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.6 | 35.6 | 35.6 | | 30.4 | 30.4 | 30.4 | | 3.5 | 5.8 | 5.8 | | 4.7 | 4.3 | 4.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.6 | 35.6 | 35.6 | | 30.4 | 30.4 | 30.4 | | 3.5 | 5.8 | 5.8 | | 4.7 | 4.3 | 4.3 | |
| LOS by Move: | D | D | D | | C | C | C | | A | A | A | | A | A | A | |
| HCM2kAvgQ: | 6 | 6 | 6 | | 3 | 3 | 3 | | 1 | 12 | 12 | | 1 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.974
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 46.3
Optimal Cycle: 161 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 1 1 | 0 1 | 1 | 1 0 | 1 0 | 1 | 1 0 | 1 1 | 0 | 2 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | 32 | 175 | 224 | 217 | 784 | 540 | 115 | 663 | 173 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 359 | 553 | 683 | 36 | 199 | 255 | 247 | 894 | 616 | 131 | 756 | 197 |
| Added Vol: | 8 | 0 | 10 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 155 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 367 | 553 | 693 | 36 | 199 | 255 | 247 | 917 | 616 | 131 | 911 | 197 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 367 | 553 | 693 | 36 | 199 | 255 | 247 | 917 | 616 | 131 | 911 | 197 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 367 | 553 | 693 | 36 | 199 | 255 | 247 | 917 | 616 | 131 | 911 | 197 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 367 | 553 | 693 | 36 | 200 | 255 | 247 | 917 | 616 | 131 | 911 | 197 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.88 | 0.88 | 0.88 | 0.95 | 1.00 | 0.85 | 0.95 | 0.89 | 0.89 | 0.92 | 0.92 | 0.92 |
| Lanes: | 1.00 | 1.33 | 1.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.20 | 0.80 | 2.00 | 1.64 | 0.36 |
| Final Sat.: | 1671 | 2225 | 2788 | 1805 | 1900 | 1615 | 1805 | 2030 | 1363 | 3502 | 2887 | 625 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.25 | 0.25 | 0.02 | 0.11 | 0.16 | 0.14 | 0.45 | 0.45 | 0.04 | 0.32 | 0.32 |
| Crit Moves: | **** | | | | | **** | | **** | | **** | | |
| Green/Cycle: | 0.22 | 0.32 | 0.32 | 0.06 | 0.16 | 0.16 | 0.15 | 0.46 | 0.46 | 0.05 | 0.35 | 0.35 |
| Volume/Cap: | 0.99 | 0.78 | 0.78 | 0.32 | 0.66 | 0.99 | 0.89 | 0.99 | 0.99 | 0.75 | 0.89 | 0.89 |
| Uniform Del: | 38.7 | 30.9 | 30.9 | 44.7 | 39.4 | 41.9 | 41.5 | 26.8 | 26.8 | 46.9 | 30.5 | 30.5 |
| IncremntDel: | 19.2 | 2.0 | 2.0 | 1.6 | 5.1 | 52.3 | 28.1 | 19.8 | 19.8 | 16.3 | 8.4 | 8.4 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 58.0 | 32.9 | 32.9 | 46.3 | 44.5 | 94.2 | 69.6 | 46.7 | 46.7 | 63.2 | 38.9 | 38.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 58.0 | 32.9 | 32.9 | 46.3 | 44.5 | 94.2 | 69.6 | 46.7 | 46.7 | 63.2 | 38.9 | 38.9 |
| LOS by Move: | E | C | C | D | D | F | E | D | D | E | D | D |
| HCM2kAvgQ: | 17 | 14 | 14 | 1 | 7 | 13 | 11 | 32 | 32 | 4 | 20 | 20 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #25 NB 101 & Donohoe St

Cycle (sec): 90 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 82 Level Of Service: B

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 32 | 32 | 0 | 32 | 0 | 28 | 0 | 28 | 0 | 0 | 18 |
| Lanes: | 0 0 | 2 1 | 0 | 0 0 | 2 0 | 0 | 2 0 | 0 0 | 1 | 0 0 | 0 0 | 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 802 | 19 | 0 | 783 | 0 | 765 | 0 | 277 | 0 | 0 | 16 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 0 | 914 | 22 | 0 | 893 | 0 | 872 | 0 | 316 | 0 | 0 | 18 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 914 | 22 | 0 | 893 | 0 | 890 | 0 | 316 | 0 | 0 | 18 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 914 | 22 | 0 | 893 | 0 | 890 | 0 | 316 | 0 | 0 | 18 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 914 | 22 | 0 | 893 | 0 | 890 | 0 | 316 | 0 | 0 | 18 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.10 | 1.10 | 1.00 | 1.05 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 1006 | 24 | 0 | 937 | 0 | 917 | 0 | 316 | 0 | 0 | 18 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 | 1.00 | 1.00 | 0.77 |
| Lanes: | 0.00 | 2.93 | 0.07 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 5568 | 132 | 0 | 3800 | 0 | 3610 | 0 | 1615 | 0 | 0 | 1463 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.18 | 0.18 | 0.00 | 0.25 | 0.00 | 0.25 | 0.00 | 0.20 | 0.00 | 0.00 | 0.01 |
| Crit Moves: | **** | | | | **** | | **** | | | | | **** |
| Green/Cycle: | 0.00 | 0.37 | 0.37 | 0.00 | 0.37 | 0.00 | 0.38 | 0.00 | 0.58 | 0.00 | 0.00 | 0.20 |
| Volume/Cap: | 0.00 | 0.49 | 0.49 | 0.00 | 0.66 | 0.00 | 0.66 | 0.00 | 0.34 | 0.00 | 0.00 | 0.06 |
| Uniform Del: | 0.0 | 16.4 | 16.4 | 0.0 | 17.9 | 0.0 | 17.4 | 0.0 | 7.4 | 0.0 | 0.0 | 22.2 |
| IncremntDel: | 0.0 | 0.1 | 0.1 | 0.0 | 0.8 | 0.0 | 0.8 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 0.85 | 0.85 | 0.00 | 0.85 | 0.00 | 0.85 | 0.00 | 0.85 | 0.00 | 0.00 | 0.85 |
| Delay/Veh: | 0.0 | 14.1 | 14.1 | 0.0 | 16.0 | 0.0 | 15.7 | 0.0 | 6.4 | 0.0 | 0.0 | 18.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 14.1 | 14.1 | 0.0 | 16.0 | 0.0 | 15.7 | 0.0 | 6.4 | 0.0 | 0.0 | 18.8 |
| DesignQueue: | 0 | 11 | 11 | 0 | 16 | 0 | 15 | 0 | 7 | 0 | 0 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 University & SB US 101

Cycle (sec): 90 Critical Vol./Cap.(X): 0.607
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 34.3
Optimal Cycle: 180 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Permitted | | | | Protected | | | | Permitted | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 18 | | 18 | 18 | 0 | | 0 | 0 | 0 | | 39 | 57 | 21 | | 64 | 0 |
| Lanes: | 1 | 0 | 1! | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 2 | 0 2 | 2 | 0 | 2 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 305 | | 1 | 439 | 0 | | 0 | 0 | 0 | 1391 | 388 | 487 | 927 | | | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | 1.14 |
| Initial Bse: | 348 | | 1 | 500 | 0 | | 0 | 0 | 0 | 1586 | 442 | 555 | 1057 | | | 0 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 23 | 40 | 83 | 92 | | | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 |
| Initial Fut: | 348 | | 1 | 500 | 0 | | 0 | 0 | 0 | 1609 | 482 | 638 | 1149 | | | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 348 | | 1 | 500 | 0 | | 0 | 0 | 0 | 1609 | 482 | 638 | 1149 | | | 0 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 |
| Reduced Vol: | 348 | | 1 | 500 | 0 | | 0 | 0 | 0 | 1609 | 482 | 638 | 1149 | | | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 348 | | 1 | 500 | 0 | | 0 | 0 | 0 | 1609 | 482 | 638 | 1149 | | | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.86 | 0.86 | 0.86 | | 1.00 | 1.00 | 1.00 | | 1.00 | 0.95 | 0.75 | 0.92 | 0.95 | | | 1.00 |
| Lanes: | 1.41 | 0.01 | 1.58 | | 0.00 | 0.00 | 0.00 | | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | | | 0.00 |
| Final Sat.: | 2292 | | 4 | 2585 | 0 | | 0 | 0 | 0 | 3610 | 2842 | 3502 | 3610 | | | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.26 | 0.19 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.45 | 0.17 | 0.18 | 0.32 | | | 0.00 |
| Crit Moves: | | **** | | | | | | | | | | | **** | | | |
| Green/Cycle: | 0.20 | 0.20 | 0.20 | | 0.00 | 0.00 | 0.00 | | 0.00 | 0.43 | 0.43 | 0.32 | 0.76 | | | 0.00 |
| Volume/Cap: | 0.76 | 1.31 | 0.97 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.03 | 0.39 | 0.57 | 0.42 | | | 0.00 |
| Uniform Del: | 33.9 | 36.0 | 35.7 | | 0.0 | 0.0 | 0.0 | | 0.0 | 25.5 | 17.4 | 25.3 | 3.9 | | | 0.0 |
| IncremntDel: | 3.1 | 149 | 22.8 | | 0.0 | 0.0 | 0.0 | | 0.0 | 30.4 | 0.2 | 0.7 | 0.1 | | | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 0.00 |
| Delay/Veh: | 37.0 | 185 | 58.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 55.9 | 17.6 | 26.0 | 4.0 | | | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| AdjDel/Veh: | 37.0 | 185 | 58.5 | | 0.0 | 0.0 | 0.0 | | 0.0 | 55.9 | 17.6 | 26.0 | 4.0 | | | 0.0 |
| LOS by Move: | D | | F | E | A | | A | A | A | E | B | C | A | | | A |
| HCM2kAvgQ: | 8 | | 26 | 13 | 0 | | 0 | 0 | 0 | 33 | 5 | 8 | 6 | | | 0 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 University Ave. & Woodland

Cycle (sec): 110 Critical Vol./Cap.(X): 1.000
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 60.1
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 |
| Lanes: | 0 | 0 | 1! | 0 0 | 2 | 0 | 0 | 1 0 | 1 | 0 | 1 | 1 0 | 1 | 0 | 2 | 0 1 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 87 | 274 | 612 | | 119 | 34 | 28 | | 809 | 9 | 274 | | 800 | 327 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | 1.14 |
| Initial Bse: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | | 922 | 10 | 312 | | 912 | 373 |
| Added Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 64 | 0 | 0 | | 92 | 0 |
| PasserByVol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Initial Fut: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | | 986 | 10 | 312 | | 1004 | 373 |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| PHF Volume: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | | 986 | 10 | 312 | | 1004 | 373 |
| Reduct Vol: | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | | 986 | 10 | 312 | | 1004 | 373 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| FinalVolume: | 18 | | 99 | 312 | 698 | | 136 | 39 | 32 | | 986 | 10 | 312 | | 1004 | 373 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | | | 1900 |
| Adjustment: | 0.90 | 0.90 | 0.90 | | 0.92 | 0.97 | 0.97 | | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | 0.85 |
| Lanes: | 0.04 | 0.23 | 0.73 | | 2.00 | 0.78 | 0.22 | | 1.00 | 1.98 | 0.02 | 1.00 | 2.00 | | | 1.00 |
| Final Sat.: | 73 | 395 | 1243 | | 3502 | 1429 | 408 | | 1805 | 3569 | 37 | 1805 | 3610 | | | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.25 | 0.25 | 0.25 | | 0.20 | 0.09 | 0.09 | | 0.02 | 0.28 | 0.28 | 0.17 | 0.28 | | | 0.23 |
| Crit Moves: | | **** | | | **** | | | | | **** | | **** | | | | |
| Green/Cycle: | 0.33 | 0.25 | 0.25 | | 0.20 | 0.12 | 0.12 | | 0.06 | 0.28 | 0.28 | 0.17 | 0.39 | | | 0.39 |
| Volume/Cap: | 0.77 | 1.00 | 1.00 | | 1.00 | 0.77 | 0.77 | | 0.28 | 1.00 | 1.00 | 1.00 | 0.72 | | | 0.60 |
| Uniform Del: | 33.3 | 41.2 | 41.2 | | 44.0 | 46.7 | 46.7 | | 49.1 | 39.8 | 39.8 | 45.5 | 28.7 | | | 26.9 |
| IncremntDel: | 6.4 | 43.4 | 43.4 | | 34.0 | 14.7 | 14.7 | | 1.3 | 28.5 | 28.5 | 50.9 | 1.9 | | | 1.6 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Delay/Veh: | 39.7 | 84.6 | 84.6 | | 78.1 | 61.3 | 61.3 | | 50.5 | 68.3 | 68.3 | 96.4 | 30.6 | | | 28.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 |
| AdjDel/Veh: | 39.7 | 84.6 | 84.6 | | 78.1 | 61.3 | 61.3 | | 50.5 | 68.3 | 68.3 | 96.4 | 30.6 | | | 28.5 |
| LOS by Move: | D | | F | F | E | | E | E | D | | E | E | F | | C | C |
| HCM2kAvgQ: | 15 | | 20 | 20 | 18 | | 8 | 8 | 1 | | 24 | 24 | 16 | | 16 | 11 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Middlefield Rd. & University Ave.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 36.4
Optimal Cycle: 85 Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 0 1 | 0 1 | 0 | 0 1 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 30 | 377 | 86 | 82 | 384 | 76 | 59 | 328 | 23 | 71 | 442 | 88 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 34 | 430 | 98 | 93 | 438 | 87 | 67 | 374 | 26 | 81 | 504 | 100 |
| Added Vol: | 0 | 41 | 7 | 16 | 117 | 27 | 3 | 40 | 1 | 56 | 24 | 12 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 34 | 471 | 105 | 109 | 555 | 114 | 70 | 414 | 27 | 137 | 528 | 112 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 34 | 471 | 105 | 109 | 555 | 114 | 70 | 414 | 27 | 137 | 528 | 112 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 34 | 471 | 105 | 109 | 555 | 114 | 70 | 414 | 27 | 137 | 528 | 112 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 34 | 471 | 105 | 109 | 555 | 114 | 70 | 414 | 27 | 137 | 528 | 112 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.95 | 0.94 | 0.94 | 0.95 | 0.93 | 0.93 |
| Lanes: | 0.11 | 1.55 | 0.34 | 0.28 | 1.43 | 0.29 | 1.00 | 1.88 | 0.12 | 1.00 | 1.65 | 0.35 |
| Final Sat.: | 197 | 2705 | 604 | 493 | 2500 | 512 | 1805 | 3357 | 221 | 1805 | 2899 | 617 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.17 | 0.17 | 0.17 | 0.22 | 0.22 | 0.22 | 0.04 | 0.12 | 0.12 | 0.08 | 0.18 | 0.18 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | 0.32 | 0.32 | 0.32 | 0.06 | 0.20 | 0.20 | 0.12 | 0.26 | 0.26 |
| Volume/Cap: | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.62 | 0.62 | 0.62 | 0.69 | 0.69 |
| Uniform Del: | 34.0 | 34.0 | 34.0 | 29.7 | 29.7 | 29.7 | 46.3 | 36.7 | 36.7 | 41.8 | 33.2 | 33.2 |
| IncremntDel: | 2.4 | 2.4 | 2.4 | 1.9 | 1.9 | 1.9 | 18.7 | 1.8 | 1.8 | 5.6 | 2.3 | 2.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 36.4 | 36.4 | 36.4 | 31.6 | 31.6 | 31.6 | 65.0 | 38.5 | 38.5 | 47.3 | 35.5 | 35.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 36.4 | 36.4 | 36.4 | 31.6 | 31.6 | 31.6 | 65.0 | 38.5 | 38.5 | 47.3 | 35.5 | 35.5 |
| LOS by Move: | D | D | D | C | C | C | E | D | D | D | D | D |
| HCM2kAvgQ: | 10 | 10 | 10 | 12 | 12 | 12 | 4 | 7 | 7 | 5 | 10 | 10 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.193
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 101.3
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | 1 0 | 0 0 | 1 | 0 0 | 0 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 11 | 1062 | 0 | 0 | 2548 | 18 | 381 | 0 | 87 | 0 | 0 | 0 |
| Added Vol: | 38 | 606 | 0 | 0 | 86 | 0 | 618 | 0 | 86 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 49 | 1668 | 0 | 0 | 2634 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 49 | 1668 | 0 | 0 | 2634 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 49 | 1668 | 0 | 0 | 2634 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 49 | 1668 | 0 | 0 | 2634 | 18 | 999 | 0 | 173 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.33 | 0.00 | 0.00 | 0.52 | 0.01 | 0.56 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | **** | | | | | |
| Green/Cycle: | 0.04 | 0.47 | 0.00 | 0.00 | 0.43 | 0.43 | 0.47 | 0.00 | 0.47 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.73 | 0.71 | 0.00 | 0.00 | 1.21 | 0.03 | 1.21 | 0.00 | 0.23 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 61.8 | 27.6 | 0.0 | 0.0 | 37.2 | 21.6 | 34.8 | 0.0 | 20.9 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 32.1 | 1.0 | 0.0 | 0.0 | 101 | 0.0 | 107.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 93.9 | 28.6 | 0.0 | 0.0 | 138 | 21.6 | 141.9 | 0.0 | 21.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 93.9 | 28.6 | 0.0 | 0.0 | 138 | 21.6 | 141.9 | 0.0 | 21.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | F | C | A | A | F | C | F | A | C | A | A | A |
| HCM2kAvgQ: | 3 | 20 | 0 | 0 | 61 | 0 | 63 | 0 | 4 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 Bayfront Exp. & Chilco St.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 68 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 14 | 783 | 0 | | 0 | 2126 | 160 | 190 | 0 | 186 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 16 | 893 | 0 | | 0 | 2424 | 182 | 217 | 0 | 212 | 0 | 0 | 0 | | | |
| Added Vol: | 38 | 642 | 0 | | 0 | 166 | 5 | 2 | 0 | 86 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 54 | 1535 | 0 | | 0 | 2590 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 54 | 1535 | 0 | | 0 | 2590 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 54 | 1535 | 0 | | 0 | 2590 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 54 | 1535 | 0 | | 0 | 2590 | 187 | 219 | 0 | 298 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | | 0.00 | 3.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 5083 | 0 | | 0 | 5083 | 1583 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.30 | 0.00 | | 0.00 | 0.51 | 0.12 | 0.12 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.04 | 0.69 | 0.00 | | 0.00 | 0.65 | 0.65 | 0.24 | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.78 | 0.44 | 0.00 | | 0.00 | 0.78 | 0.18 | 0.51 | 0.00 | 0.78 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 61.9 | 8.9 | 0.0 | | 0.0 | 16.1 | 9.0 | 42.8 | 0.0 | 46.2 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 42.8 | 0.1 | 0.0 | | 0.0 | 1.3 | 0.1 | 1.1 | 0.0 | 10.1 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 104.7 | 9.0 | 0.0 | | 0.0 | 17.4 | 9.1 | 43.8 | 0.0 | 56.3 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 104.7 | 9.0 | 0.0 | | 0.0 | 17.4 | 9.1 | 43.8 | 0.0 | 56.3 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | F | A | A | | A | B | A | A | A | E | A | A | A | | | |
| HCM2kAvgQ: | 4 | 10 | 0 | | 0 | 28 | 3 | 8 | 0 | 13 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 Middlefield Rd. & Ravenswood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.877
Loss Time (sec): 4 (Y+R=4.0 sec) Average Delay (sec/veh): 32.7
Optimal Cycle: 76 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 4 | 10 | 0 | | 0 | 10 | 4 | | 4 | 0 | 4 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 487 | 566 | 0 | | 0 | 357 | 92 | 257 | 0 | 705 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | |
| Initial Bse: | 555 | 645 | 0 | | 0 | 407 | 105 | 293 | 0 | 804 | 0 | 0 | 0 | | | |
| Added Vol: | 35 | 58 | 0 | | 0 | 21 | 6 | 3 | 0 | 67 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Volume: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 590 | 703 | 0 | | 0 | 428 | 111 | 296 | 0 | 871 | 0 | 0 | 0 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.93 | 0.98 | 1.00 | | 1.00 | 0.95 | 0.95 | 0.93 | 1.00 | 0.83 | 1.00 | 1.00 | 1.00 | | | |
| Lanes: | 1.00 | 1.00 | 0.00 | | 0.00 | 0.79 | 0.21 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Final Sat.: | 1769 | 1862 | 0 | | 0 | 1437 | 372 | 1769 | 0 | 1583 | 0 | 0 | 0 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.38 | 0.00 | | 0.00 | 0.30 | 0.30 | 0.17 | 0.00 | 0.55 | 0.00 | 0.00 | 0.00 | | | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | | | | |
| Green/Cycle: | 0.38 | 0.72 | 0.00 | | 0.00 | 0.34 | 0.34 | 0.25 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 | | | |
| Volume/Cap: | 0.88 | 0.52 | 0.00 | | 0.00 | 0.88 | 0.88 | 0.68 | 0.00 | 0.88 | 0.00 | 0.00 | 0.00 | | | |
| Uniform Del: | 34.6 | 7.6 | 0.0 | | 0.0 | 37.3 | 37.3 | 40.9 | 0.0 | 18.5 | 0.0 | 0.0 | 0.0 | | | |
| IncremntDel: | 12.5 | 0.4 | 0.0 | | 0.0 | 13.5 | 13.5 | 4.3 | 0.0 | 8.9 | 0.0 | 0.0 | 0.0 | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | |
| Delay/Veh: | 47.1 | 8.0 | 0.0 | | 0.0 | 50.8 | 50.8 | 45.1 | 0.0 | 27.5 | 0.0 | 0.0 | 0.0 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 47.1 | 8.0 | 0.0 | | 0.0 | 50.8 | 50.8 | 45.1 | 0.0 | 27.5 | 0.0 | 0.0 | 0.0 | | | |
| LOS by Move: | D | A | A | | A | D | D | D | A | C | A | A | A | | | |
| HCM2kAvgQ: | 23 | 12 | 0 | | 0 | 22 | 22 | 11 | 0 | 29 | 0 | 0 | 0 | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 Middlefield Rd. & Ringwood Ave.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.720
Loss Time (sec): 4 (Y+R=3.0 sec) Average Delay (sec/veh): 30.0
Optimal Cycle: 38 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 4 | 10 | 10 | | 4 | 10 | 10 | | 4 | 4 | 4 | | 4 | 4 | 4 | |
| Lanes: | 1 | 0 2 | 0 1 | | 1 | 0 2 | 0 1 | | 1 | 0 0 | 1 0 | | 0 | 1 0 | 0 1 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 49 | 761 | 127 | | 356 | 628 | 36 | | 75 | 76 | 62 | | 73 | 8 | 266 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 56 | 868 | 145 | | 406 | 716 | 41 | | 85 | 87 | 71 | | 83 | 9 | 303 | |
| Added Vol: | 0 | 89 | 0 | | 2 | 86 | 0 | | 0 | 0 | 0 | | 0 | 0 | 5 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 56 | 957 | 145 | | 408 | 802 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 56 | 957 | 145 | | 408 | 802 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 56 | 957 | 145 | | 408 | 802 | 41 | | 85 | 87 | 71 | | 83 | 9 | 308 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 56 | 957 | 145 | | 408 | 802 | 41 | | 86 | 87 | 71 | | 83 | 9 | 308 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.93 | 0.83 | | 0.93 | 0.93 | 0.83 | | 0.61 | 0.91 | 0.91 | | 0.60 | 0.60 | 0.83 | |
| Lanes: | 1.00 | 2.00 | 1.00 | | 1.00 | 2.00 | 1.00 | | 1.00 | 0.55 | 0.45 | | 0.90 | 0.10 | 1.00 | |
| Final Sat.: | 1769 | 3538 | 1583 | | 1769 | 3538 | 1583 | | 1160 | 957 | 781 | | 1022 | 112 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.27 | 0.09 | | 0.23 | 0.23 | 0.03 | | 0.07 | 0.09 | 0.09 | | 0.08 | 0.08 | 0.19 | |
| Crit Moves: | | **** | | | **** | | | | | | | | | | **** | |
| Green/Cycle: | 0.09 | 0.38 | 0.38 | | 0.32 | 0.61 | 0.61 | | 0.27 | 0.27 | 0.27 | | 0.27 | 0.27 | 0.27 | |
| Volume/Cap: | 0.35 | 0.72 | 0.24 | | 0.72 | 0.37 | 0.04 | | 0.27 | 0.33 | 0.33 | | 0.30 | 0.30 | 0.72 | |
| Uniform Del: | 51.4 | 32.1 | 25.7 | | 36.0 | 12.0 | 9.5 | | 34.5 | 35.1 | 35.1 | | 34.8 | 34.8 | 39.6 | |
| IncremntDel: | 1.4 | 1.9 | 0.2 | | 4.5 | 0.1 | 0.0 | | 0.5 | 0.4 | 0.4 | | 0.6 | 0.6 | 5.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.8 | 34.0 | 26.0 | | 40.5 | 12.1 | 9.5 | | 34.9 | 35.5 | 35.5 | | 35.3 | 35.3 | 45.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.8 | 34.0 | 26.0 | | 40.5 | 12.1 | 9.5 | | 34.9 | 35.5 | 35.5 | | 35.3 | 35.3 | 45.5 | |
| LOS by Move: | D | C | C | | D | B | A | | C | D | D | | D | D | D | |
| HCM2kAvgQ: | 2 | 17 | 4 | | 14 | 8 | 1 | | 3 | 5 | 5 | | 3 | 3 | 12 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 Middlefield Rd and Lytton Ave

Cycle (sec): 110 Critical Vol./Cap.(X): 0.870
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 45.8
Optimal Cycle: 98 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 0 | 1 0 | 1 0 | | 0 | 1 0 | 1 0 | | 1 | 0 1! | 0 0 | | 0 | 0 1! | 0 0 | |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 89 | 457 | 24 | | 24 | 508 | 163 | | 419 | 135 | 78 | | 7 | 55 | 12 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 101 | 521 | 27 | | 27 | 579 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Added Vol: | 0 | 57 | 0 | | 0 | 160 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 101 | 578 | 27 | | 27 | 739 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 101 | 578 | 27 | | 27 | 739 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 101 | 578 | 27 | | 27 | 739 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 101 | 578 | 27 | | 27 | 739 | 186 | | 478 | 154 | 89 | | 8 | 63 | 14 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.94 | 0.94 | 0.94 | | 0.92 | 0.92 | 0.92 | | 0.95 | 0.95 | 0.95 | | 0.97 | 0.97 | 0.97 | |
| Lanes: | 0.29 | 1.63 | 0.08 | | 0.06 | 1.55 | 0.39 | | 1.50 | 0.32 | 0.18 | | 0.09 | 0.75 | 0.16 | |
| Final Sat.: | 511 | 2914 | 138 | | 101 | 2718 | 683 | | 2702 | 577 | 333 | | 175 | 1374 | 300 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.20 | 0.20 | | 0.27 | 0.27 | 0.27 | | 0.18 | 0.27 | 0.27 | | 0.05 | 0.05 | 0.05 | |
| Crit Moves: | | **** | | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.23 | 0.23 | 0.23 | | 0.31 | 0.31 | 0.31 | | 0.31 | 0.31 | 0.31 | | 0.05 | 0.05 | 0.05 | |
| Volume/Cap: | 0.87 | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 | | 0.58 | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 | |
| Uniform Del: | 40.9 | 40.9 | 40.9 | | 35.7 | 35.7 | 35.7 | | 32.1 | 36.1 | 36.1 | | 51.7 | 51.7 | 51.7 | |
| IncremntDel: | 10.0 | 10.0 | 10.0 | | 7.7 | 7.7 | 7.7 | | 0.7 | 9.8 | 9.8 | | 51.9 | 51.9 | 51.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 50.9 | 50.9 | 50.9 | | 43.4 | 43.4 | 43.4 | | 32.8 | 45.9 | 45.9 | | 103.7 | 104 | 103.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 50.9 | 50.9 | 50.9 | | 43.4 | 43.4 | 43.4 | | 32.8 | 45.9 | 45.9 | | 103.7 | 104 | 103.7 | |
| LOS by Move: | D | D | D | | D | D | D | | C | D | D | | F | F | F | |
| HCM2kAvgQ: | 15 | 15 | 15 | | 19 | 19 | 19 | | 10 | 18 | 18 | | 5 | 5 | 5 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 Bayfront Expy. and Facebook West Campus

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.965 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 43.8 |
| Optimal Cycle: | 151 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 2 | 0 | 0 | 0 1 | 0 | 0 | 0 | 0 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 708 | 0 | 0 | 2307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 0 | 807 | 0 | 0 | 2630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 66 | 438 | 0 | 0 | 222 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 66 | 1245 | 0 | 0 | 2852 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 66 | 1245 | 0 | 0 | 2852 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 66 | 1245 | 0 | 0 | 2852 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 66 | 1245 | 0 | 0 | 2852 | 7 | 242 | 0 | 424 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.91 | 1.00 | 1.00 | 0.91 | 0.85 | 0.92 | 1.00 | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 2.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 1805 | 5187 | 0 | 0 | 5187 | 1615 | 3502 | 0 | 1615 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.04 | 0.24 | 0.00 | 0.00 | 0.55 | 0.00 | 0.07 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.10 | 0.63 | 0.00 | 0.00 | 0.53 | 0.53 | 0.25 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.37 | 0.38 | 0.00 | 0.00 | 1.04 | 0.01 | 0.27 | 0.00 | 1.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Uniform Del: | 42.0 | 9.1 | 0.0 | 0.0 | 23.6 | 11.2 | 30.0 | 0.0 | 37.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IncremntDel: | 1.3 | 0.1 | 0.0 | 0.0 | 29.2 | 0.0 | 0.2 | 0.0 | 55.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 43.3 | 9.2 | 0.0 | 0.0 | 52.8 | 11.2 | 30.2 | 0.0 | 93.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 43.3 | 9.2 | 0.0 | 0.0 | 52.8 | 11.2 | 30.2 | 0.0 | 93.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | D | A | A | A | D | B | C | A | F | A | A | A | A | A | A | A |
| HCM2kAvgQ: | 2 | 7 | 0 | 0 | 43 | 0 | 3 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Queue reported is the number of cars per lane.

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Scenario Report

Scenario: Mitigation Near Term 2015 East Campus Only AM

| | |
|---|---|
| Command: | Near Term I Project AM |
| Volume: | Near Term I Project AM |
| Geometry: | Near Term I Project AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term I Project AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term I Project AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 8 Bayfront Exp. & Willow Rd. | C | 25.0 | 0.566 | D | 45.1 | 0.882 | +20.082 |
| # 17 Middlefield Rd. & Willow Rd. | E | 72.0 | 0.789 | D | 54.1 | 0.879 | -17.878 |
| # 18 Bayfront Exp. & University Ave | C | 28.6 | 0.757 | C | 29.7 | 0.835 | + 1.091 |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 5.7 | 0.554 | B | 13.1 | 0.622 | + 7.317 |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.882 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 45.1 |
| Optimal Cycle: | 114 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 1 | 2 | 0 | 3 | 0 1 | 1 | 1 | 1 | 0 3 | 2 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | | 13 | 677 | 92 | | 84 | 34 | 379 | | 3 | 6 | 5 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 1075 | 2192 | 6 | | 14 | 704 | 96 | | 87 | 35 | 394 | | 3 | 6 | 5 | |
| Added Vol: | 36 | 202 | 24 | | 441 | 42 | 0 | | 0 | 838 | 2 | | 24 | 30 | 14 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1111 | 2394 | 30 | | 455 | 746 | 96 | | 87 | 873 | 396 | | 27 | 36 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.93 | 0.93 | 0.88 | | 0.90 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 3.00 | | 2.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1760 | 3520 | 5014 | | 3432 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.32 | 0.41 | 0.02 | | 0.13 | 0.13 | 0.06 | | 0.05 | 0.25 | 0.08 | | 0.01 | 0.01 | 0.01 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.43 | 0.45 | 0.49 | | 0.15 | 0.17 | 0.17 | | 0.27 | 0.27 | 0.27 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.76 | 0.91 | 0.04 | | 0.91 | 0.76 | 0.36 | | 0.18 | 0.91 | 0.29 | | 0.21 | 0.27 | 0.32 | |
| Uniform Del: | 31.5 | 33.2 | 17.3 | | 54.7 | 51.5 | 47.8 | | 36.2 | 45.7 | 37.3 | | 60.6 | 60.7 | 60.8 | |
| IncremntDel: | 2.3 | 5.2 | 0.0 | | 20.5 | 3.4 | 0.8 | | 0.0 | 11.4 | 0.1 | | 0.8 | 1.1 | 3.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 33.8 | 38.4 | 17.3 | | 75.2 | 54.9 | 48.7 | | 36.2 | 57.1 | 37.4 | | 61.3 | 61.8 | 63.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 33.8 | 38.4 | 17.3 | | 75.2 | 54.9 | 48.7 | | 36.2 | 57.1 | 37.4 | | 61.3 | 61.8 | 63.8 | |
| LOS by Move: | C | D | B | | E | D | D | | D | E | D | | E | E | E | |
| HCM2kAvgQ: | 20 | 36 | 1 | | 12 | 12 | 4 | | 3 | 21 | 5 | | 1 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.879 |
| Loss Time (sec): | 8 (Y+R=4.0 sec) | Average Delay (sec/veh): | 54.1 |
| Optimal Cycle: | 98 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | |
| Initial Bse: | 70 | 356 | 255 | | 424 | 335 | 10 | | 17 | 173 | 122 | | 437 | 67 | 514 | |
| Added Vol: | 15 | 9 | 114 | | 80 | 7 | 0 | | 0 | 8 | 10 | | 18 | 18 | 21 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 85 | 365 | 369 | | 504 | 342 | 10 | | 17 | 181 | 132 | | 455 | 85 | 535 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 85 | 365 | 369 | | 504 | 342 | 10 | | 17 | 181 | 132 | | 455 | 85 | 535 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 85 | 365 | 366 | | 504 | 342 | 10 | | 17 | 181 | 132 | | 455 | 85 | 535 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 85 | 365 | 366 | | 504 | 342 | 10 | | 17 | 181 | 132 | | 455 | 85 | 535 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.00 | 2.00 | | 1.76 | 1.20 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.69 | 0.31 | 1.00 | |
| Final Sat.: | 1769 | 1636 | 1636 | | 3028 | 2052 | 62 | | 1769 | 1862 | 1583 | | 3015 | 560 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.22 | 0.22 | | 0.17 | 0.17 | 0.17 | | 0.01 | 0.10 | 0.08 | | 0.15 | 0.15 | 0.34 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | | | **** | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.19 | 0.19 | 0.19 | | 0.11 | 0.11 | 0.11 | | 0.38 | 0.38 | 0.38 | |
| Volume/Cap: | 0.19 | 0.88 | 0.88 | | 0.88 | 0.88 | 0.88 | | 0.09 | 0.88 | 0.75 | | 0.39 | 0.39 | 0.88 | |
| Uniform Del: | 38.0 | 46.5 | 46.6 | | 51.2 | 51.2 | 51.2 | | 51.9 | 57.0 | 56.1 | | 29.0 | 29.0 | 37.2 | |
| IncremntDel: | 0.2 | 10.4 | 10.6 | | 9.3 | 9.3 | 9.3 | | 0.2 | 32.3 | 16.9 | | 0.2 | 0.2 | 13.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 38.2 | 56.9 | 57.2 | | 60.5 | 60.5 | 60.5 | | 52.1 | 89.2 | 73.0 | | 29.2 | 29.2 | 51.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 38.2 | 56.9 | 57.2 | | 60.5 | 60.5 | 60.5 | | 52.1 | 89.2 | 73.0 | | 29.2 | 29.2 | 51.0 | |
| LOS by Move: | D | E | E | | E | E | E | | D | F | E | | C | C | D | |
| HCM2kAvgQ: | 3 | 18 | 10 | | 15 | 15 | 15 | | 1 | 10 | 7 | | 8 | 8 | 23 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

| | | | |
|---|---|---|---|
| Cycle (sec): | 160 | Critical Vol./Cap.(X): | 0.835 |
| Loss Time (sec): | 10 (Y+R=3.0 sec) | Average Delay (sec/veh): | 29.7 |
| Optimal Cycle: | 92 | Level Of Service: | C |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 0 | 3 0 | 0 | 0 0 | 4 0 | 1 | | | 2 0 | 0 0 | 3 | | 0 0 | 0 0 | 0 | |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | 0 | 884 | 188 | 179 | 0 | 429 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 1603 | 2997 | 0 | 0 | 919 | 196 | 186 | 0 | 446 | 0 | 0 | 0 | | | | |
| Added Vol: | 10 | 439 | 0 | 0 | 61 | 8 | 109 | 0 | 2 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 1613 | 3436 | 0 | 0 | 980 | 204 | 295 | 0 | 448 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 1613 | 3436 | 0 | 0 | 980 | 204 | 295 | 0 | 448 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 1613 | 3436 | 0 | 0 | 980 | 204 | 295 | 0 | 448 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 1613 | 3436 | 0 | 0 | 980 | 204 | 295 | 0 | 448 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 4.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 6778 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.47 | 0.68 | 0.00 | 0.00 | 0.14 | 0.13 | 0.09 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | | **** | | **** | | | | | **** | | | | | | | |
| Green/Cycle: | 0.62 | 0.81 | 0.00 | 0.00 | 0.19 | 0.19 | 0.13 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.76 | 0.84 | 0.00 | 0.00 | 0.76 | 0.68 | 0.67 | 0.00 | 0.84 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 21.9 | 9.0 | 0.0 | 0.0 | 61.3 | 60.2 | 66.5 | 0.0 | 68.1 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 1.6 | 1.6 | 0.0 | 0.0 | 2.7 | 6.0 | 4.0 | 0.0 | 10.9 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 23.6 | 10.6 | 0.0 | 0.0 | 64.0 | 66.1 | 70.5 | 0.0 | 79.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 23.6 | 10.6 | 0.0 | 0.0 | 64.0 | 66.1 | 70.5 | 0.0 | 79.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | C | B | A | A | E | E | E | A | E | A | A | A | | | | |
| HCM2kAvgQ: | 29 | 37 | 0 | 0 | 14 | 10 | 8 | 0 | 10 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.622 |
| Loss Time (sec): | 9 (Y+R=4.0 sec) | Average Delay (sec/veh): | 13.1 |
| Optimal Cycle: | 44 | Level Of Service: | B |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | | | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | 0 | 6 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 47 | 2456 | 0 | 0 | 1075 | 32 | 107 | 0 | 6 | 0 | 0 | 0 | | | | |
| Added Vol: | 94 | 30 | 0 | 0 | 442 | 0 | 153 | 0 | 21 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 141 | 2486 | 0 | 0 | 1517 | 32 | 260 | 0 | 27 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 141 | 2486 | 0 | 0 | 1517 | 32 | 260 | 0 | 27 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 141 | 2486 | 0 | 0 | 1517 | 32 | 260 | 0 | 27 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 141 | 2486 | 0 | 0 | 1517 | 32 | 260 | 0 | 27 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.92 | 1.00 | 0.92 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.83 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 3210 | 0 | 304 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.49 | 0.00 | 0.00 | 0.30 | 0.02 | 0.08 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | | **** | | **** | | | | | **** | | | | | | | |
| Green/Cycle: | 0.17 | 0.79 | 0.00 | 0.00 | 0.62 | 0.62 | 0.14 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.48 | 0.62 | 0.00 | 0.00 | 0.48 | 0.03 | 0.56 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 49.2 | 5.8 | 0.0 | 0.0 | 13.3 | 9.5 | 51.8 | 0.0 | 52.3 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 1.2 | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 | 1.4 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 50.4 | 6.1 | 0.0 | 0.0 | 13.4 | 9.5 | 53.3 | 0.0 | 54.9 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 50.4 | 6.1 | 0.0 | 0.0 | 13.4 | 9.5 | 53.3 | 0.0 | 54.9 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | D | A | A | A | B | A | D | A | D | A | A | A | | | | |
| HCM2kAvgQ: | 5 | 15 | 0 | 0 | 12 | 0 | 6 | 0 | 7 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Near Term 2015 East Campus Only PM |
| Command: | Near Term I Project PM |
| Volume: | Near Term I Project PM |
| Geometry: | Near Term I Project PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term I Project PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term I Project PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 8 Bayfront Exp. & Willow Rd. | C | 33.0 | 0.790 | D | 48.0 | 0.945 | +15.007 D/V |
| # 17 Middlefield Rd. & Willow Rd. | E | 60.9 | 0.927 | E | 72.9 | 1.013 | +11.920 D/V |
| # 18 Bayfront Exp. & University Ave | F | 98.0 | 1.140 | F | 118.8 | 1.207 | +20.790 D/V |
| # 19 O'Brien Dr. & University Ave. | B | 13.0 | 0.694 | B | 13.3 | 0.705 | + 0.282 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 15.3 | 0.654 | C | 34.1 | 0.930 | +18.790 D/V |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.945
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.0
Optimal Cycle: 161 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 1 | 2 | 0 | 3 | 0 1 | 1 | 1 | 1 | 0 3 | 2 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | | 1 | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | | 8 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | | 1.04 |
| Initial Bse: | 376 | 691 | | 1 | 0 | 2287 | 112 | | 37 | 14 | 1481 | | 46 | 109 | | 8 |
| Added Vol: | 393 | 257 | | 3 | 49 | 171 | 0 | | 0 | 94 | 5 | | 317 | 391 | | 181 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| Initial Fut: | 769 | 948 | | 4 | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | | 189 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| PHF Volume: | 769 | 948 | | 4 | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | | 189 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| Reduced Vol: | 769 | 948 | | 4 | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | | 189 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| FinalVolume: | 769 | 948 | | 4 | 49 | 2458 | 112 | | 37 | 108 | 1486 | | 363 | 500 | | 189 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 |
| Adjustment: | 0.90 | 1.03 | | 0.83 | 0.90 | 1.03 | 0.83 | | 0.92 | 0.92 | 0.88 | | 0.90 | 0.93 | | 0.83 |
| Lanes: | 2.00 | 3.00 | | 1.00 | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 3.00 | | 2.00 | 2.00 | | 1.00 |
| Final Sat.: | 3432 | 5846 | | 1583 | 3432 | 5846 | 1583 | | 1746 | 3492 | 5014 | | 3432 | 3538 | | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.16 | | 0.00 | 0.01 | 0.42 | 0.07 | | 0.02 | 0.03 | 0.30 | | 0.11 | 0.14 | | 0.12 |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | **** | | |
| Green/Cycle: | 0.24 | 0.55 | | 0.70 | 0.13 | 0.44 | 0.44 | | 0.08 | 0.08 | 0.31 | | 0.15 | 0.15 | | 0.28 |
| Volume/Cap: | 0.95 | 0.29 | | 0.00 | 0.11 | 0.95 | 0.16 | | 0.28 | 0.40 | 0.95 | | 0.71 | 0.95 | | 0.43 |
| Uniform Del: | 48.8 | 15.6 | | 5.8 | 49.8 | 34.6 | 21.6 | | 56.7 | 57.2 | 43.5 | | 52.6 | 54.8 | | 38.2 |
| IncremntDel: | 19.5 | 0.1 | | 0.0 | 0.1 | 8.2 | 0.1 | | 0.3 | 0.7 | 12.1 | | 4.5 | 26.1 | | 0.7 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Delay/Veh: | 68.3 | 15.7 | | 5.8 | 49.9 | 42.8 | 21.7 | | 57.0 | 58.0 | 55.7 | | 57.1 | 80.9 | | 38.9 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| AdjDel/Veh: | 68.3 | 15.7 | | 5.8 | 49.9 | 42.8 | 21.7 | | 57.0 | 58.0 | 55.7 | | 57.1 | 80.9 | | 38.9 |
| LOS by Move: | E | B | | A | D | D | C | | E | E | E | | E | F | | D |
| HCM2kAvgQ: | 20 | 7 | | 0 | 1 | 39 | 3 | | 2 | 3 | 26 | | 8 | 14 | | 6 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.013
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 72.9
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | | 491 | 477 | 413 | | 19 | 36 | 170 | | 158 | 382 | | 95 | 410 |
| Growth Adj: | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | 1.04 | | 1.04 | 1.04 | | 1.04 | 1.04 |
| Initial Bse: | 101 | 456 | | 511 | 496 | 430 | | 20 | 37 | 177 | | 164 | 397 | | 99 | 426 |
| Added Vol: | 15 | 8 | | 29 | 18 | 8 | | 0 | 0 | 32 | | 24 | 104 | | 21 | 66 |
| PasserByVol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Initial Fut: | 116 | 464 | | 540 | 514 | 438 | | 20 | 37 | 209 | | 188 | 501 | | 120 | 492 |
| User Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| PHF Volume: | 116 | 464 | | 540 | 514 | 438 | | 20 | 37 | 209 | | 188 | 501 | | 120 | 492 |
| Reduct Vol: | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Reduced Vol: | 116 | 464 | | 540 | 514 | 438 | | 20 | 37 | 209 | | 188 | 501 | | 120 | 492 |
| PCE Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| FinalVolume: | 116 | 464 | | 540 | 514 | 438 | | 20 | 37 | 209 | | 188 | 501 | | 120 | 492 |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | | 1900 | 1900 |
| Adjustment: | 0.93 | 0.86 | | 0.43 | 0.90 | 0.90 | | 0.90 | 0.93 | 0.98 | | 0.83 | 0.94 | | 0.94 | 0.83 |
| Lanes: | 1.00 | 1.00 | | 2.00 | 1.59 | 1.35 | | 0.06 | 1.00 | 1.00 | | 1.00 | 1.61 | | 0.39 | 1.00 |
| Final Sat.: | 1769 | 1626 | | 1626 | 2727 | 2321 | | 105 | 1769 | 1862 | | 1583 | 2888 | | 690 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.29 | | 0.33 | 0.19 | 0.19 | | 0.19 | 0.02 | 0.11 | | 0.12 | 0.17 | | 0.17 | 0.31 |
| Crit Moves: | | | | **** | **** | | | | | | | **** | | | | **** |
| Green/Cycle: | 0.33 | 0.33 | | 0.33 | 0.19 | 0.19 | | 0.19 | 0.12 | 0.12 | | 0.12 | 0.31 | | 0.31 | 0.31 |
| Volume/Cap: | 0.20 | 0.87 | | 1.01 | 1.01 | 1.01 | | 1.01 | 0.18 | 0.95 | | 1.01 | 0.57 | | 0.57 | 1.01 |
| Uniform Del: | 31.4 | 41.1 | | 43.7 | 52.9 | 52.9 | | 52.9 | 51.7 | 57.0 | | 57.4 | 37.8 | | 37.8 | 45.0 |
| IncremntDel: | 0.2 | 7.4 | | 31.8 | 32.3 | 32.3 | | 32.3 | 0.4 | 47.9 | | 69.4 | 0.7 | | 0.7 | 44.1 |
| InitQueuDel: | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Delay/Veh: | 31.6 | 48.4 | | 75.5 | 85.2 | 85.2 | | 85.2 | 52.1 | 105 | | 126.8 | 38.4 | | 38.4 | 89.1 |
| User DelAdj: | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 |
| AdjDel/Veh: | 31.6 | 48.4 | | 75.5 | 85.2 | 85.2 | | 85.2 | 52.1 | 105 | | 126.8 | 38.4 | | 38.4 | 89.1 |
| LOS by Move: | C | D | | E | F | F | | F | D | F | | F | D | | D | F |
| HCM2kAvgQ: | 3 | 21 | | 16 | 19 | 19 | | 19 | 1 | 12 | | 12 | 11 | | 11 | 26 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.207
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 118.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | 0 | 3488 | 127 | 60 | 0 | 1667 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 392 | 1007 | 0 | 0 | 3628 | 132 | 62 | 0 | 1734 | 0 | 0 | 0 | | | | |
| Added Vol: | 4 | 105 | 0 | 0 | 396 | 98 | 12 | 0 | 11 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 396 | 1112 | 0 | 0 | 4024 | 230 | 74 | 0 | 1745 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.90 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.90 | 1.00 | 0.73 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 2.00 | 3.00 | 0.00 | 0.00 | 4.00 | 1.00 | 2.00 | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 3432 | 5083 | 0 | 0 | 6778 | 1583 | 3432 | 0 | 4178 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.22 | 0.00 | 0.00 | 0.59 | 0.15 | 0.02 | 0.00 | 0.42 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.10 | 0.59 | 0.00 | 0.00 | 0.49 | 0.49 | 0.35 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 1.21 | 0.37 | 0.00 | 0.00 | 1.21 | 0.30 | 0.06 | 0.00 | 1.21 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 67.8 | 16.3 | 0.0 | 0.0 | 38.1 | 22.7 | 32.8 | 0.0 | 49.1 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 118.4 | 0.1 | 0.0 | 0.0 | 96.2 | 0.2 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 186.2 | 16.4 | 0.0 | 0.0 | 134 | 22.9 | 32.8 | 0.0 | 149.0 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 186.2 | 16.4 | 0.0 | 0.0 | 134 | 22.9 | 32.8 | 0.0 | 149.0 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | F | C | C | A | F | A | A | A | | | | |
| HCM2kAvgQ: | 16 | 10 | 0 | 0 | 75 | 6 | 1 | 0 | 46 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.930
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 34.1
Optimal Cycle: 138 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lanes: | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | 1.04 | | | | |
| Initial Bse: | 10 | 969 | 0 | 0 | 2324 | 17 | 347 | 0 | 79 | 0 | 0 | 0 | | | | |
| Added Vol: | 38 | 363 | 0 | 0 | 53 | 0 | 617 | 0 | 86 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 48 | 1332 | 0 | 0 | 2377 | 17 | 964 | 0 | 165 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 48 | 1332 | 0 | 0 | 2377 | 17 | 964 | 0 | 165 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 48 | 1332 | 0 | 0 | 2377 | 17 | 964 | 0 | 165 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 48 | 1332 | 0 | 0 | 2377 | 17 | 964 | 0 | 165 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.92 | 1.00 | 0.92 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.75 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 3047 | 0 | 445 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.26 | 0.00 | 0.00 | 0.47 | 0.01 | 0.32 | 0.00 | 0.37 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.54 | 0.00 | 0.00 | 0.50 | 0.50 | 0.39 | 0.00 | 0.39 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.71 | 0.49 | 0.00 | 0.00 | 0.94 | 0.02 | 0.80 | 0.00 | 0.94 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 61.8 | 18.9 | 0.0 | 0.0 | 30.8 | 16.6 | 34.9 | 0.0 | 37.9 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 29.5 | 0.1 | 0.0 | 0.0 | 7.8 | 0.0 | 3.4 | 0.0 | 13.9 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 91.3 | 19.1 | 0.0 | 0.0 | 38.6 | 16.6 | 38.3 | 0.0 | 51.8 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 91.3 | 19.1 | 0.0 | 0.0 | 38.6 | 16.6 | 38.3 | 0.0 | 51.8 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | D | B | D | A | D | A | A | A | | | | |
| HCM2kAvgQ: | 3 | 12 | 0 | 0 | 37 | 0 | 21 | 0 | 29 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Near Term 2018 East and West Campuses AM |
| Command: | Near Term II Project AM |
| Volume: | Near Term II Project AM |
| Geometry: | Near Term II Project AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term II Project AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term II Project AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 23.0 | 0.781 | C | 26.0 | 0.853 | + 2.936 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.0 | 0.657 | C | 32.1 | 0.979 | +16.075 |
| # 8 Bayfront Exp. & Willow Rd. | C | 25.2 | 0.583 | E | 56.6 | 0.973 | +31.328 |
| # 12 Newbridge St. & Willow Rd. | D | 42.9 | 0.754 | D | 46.5 | 0.926 | + 3.594 |
| # 17 Middlefield Rd. & Willow Rd. | E | 76.2 | 0.812 | E | 59.6 | 0.936 | -16.574 |
| # 18 Bayfront Exp. & University Ave | C | 29.2 | 0.779 | C | 32.4 | 0.890 | + 3.108 |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 5.8 | 0.570 | B | 13.0 | 0.643 | + 7.251 |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.853
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.0
Optimal Cycle: 101 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 1 | 0 | | 0 1 | 1 0 | 1 | | 0 1 | 0 0 | 2 | | 0 1 | 0 1 | 0 | |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 2458 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1067 | | 7 | 20 | 5 | |
| Added Vol: | 208 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 783 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2666 | 202 | 25 | | 7 | 62 | 158 | | 195 | 21 | 1850 | | 7 | 20 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.90 | 0.90 | 0.90 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.45 | 1.23 | 0.32 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 771 | 2093 | 551 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.12 | 0.12 | | 0.02 | 0.02 | 0.10 | | 0.12 | 0.12 | 0.66 | | 0.01 | 0.01 | 0.01 | |
| Crit Moves: | **** | | | | | | **** | | | | **** | | | **** | | |
| Green/Cycle: | 0.59 | 0.59 | 0.59 | | 0.11 | 0.11 | 0.11 | | 0.17 | 0.17 | 0.76 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.88 | 0.21 | 0.21 | | 0.17 | 0.17 | 0.88 | | 0.73 | 0.73 | 0.88 | | 0.25 | 0.25 | 0.25 | |
| Uniform Del: | 22.8 | 12.5 | 12.5 | | 52.1 | 52.1 | 56.7 | | 51.4 | 51.4 | 11.6 | | 60.7 | 60.7 | 60.7 | |
| IncremntDel: | 3.3 | 0.1 | 0.1 | | 0.2 | 0.2 | 35.5 | | 8.9 | 8.9 | 4.6 | | 1.0 | 1.0 | 1.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 26.0 | 12.6 | 12.6 | | 52.3 | 52.3 | 92.2 | | 60.3 | 60.3 | 16.2 | | 61.7 | 61.7 | 61.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.0 | 12.6 | 12.6 | | 52.3 | 52.3 | 92.2 | | 60.3 | 60.3 | 16.2 | | 61.7 | 61.7 | 61.7 | |
| LOS by Move: | C | B | B | | D | D | F | | E | E | B | | E | E | E | |
| HCM2kAvgQ: | 34 | 4 | 4 | | 1 | 1 | 9 | | 10 | 10 | 33 | | 1 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.979
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 32.1
Optimal Cycle: 148 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 0 | 0 0 | 2 | | 0 0 | 0 0 | 0 | | 0 1 | 1 0 | 1 | | 0 0 | 2 0 | 1 | |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 875 | 0 | 309 | | 0 | 0 | 0 | | 0 | 1218 | 541 | | 0 | 878 | 1818 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 934 | 0 | | 0 | 162 | 46 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 541 | | 0 | 1040 | 1864 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 0 | | 0 | 1040 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 0 | | 0 | 1040 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 877 | 0 | 703 | | 0 | 0 | 0 | | 2 | 2152 | 0 | | 0 | 1040 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 2.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 2786 | | 0 | 0 | 0 | | 3 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.26 | 0.00 | 0.25 | | 0.00 | 0.00 | 0.00 | | 0.64 | 0.64 | 0.00 | | 0.00 | 0.29 | 0.00 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.26 | 0.00 | 0.26 | | 0.00 | 0.00 | 0.00 | | 0.65 | 0.65 | 0.00 | | 0.00 | 0.65 | 0.00 | |
| Volume/Cap: | 0.98 | 0.00 | 0.97 | | 0.00 | 0.00 | 0.00 | | 0.98 | 0.98 | 0.00 | | 0.00 | 0.45 | 0.00 | |
| Uniform Del: | 29.3 | 0.0 | 29.2 | | 0.0 | 0.0 | 0.0 | | 13.4 | 13.4 | 0.0 | | 0.0 | 6.9 | 0.0 | |
| IncremntDel: | 24.8 | 0.0 | 25.3 | | 0.0 | 0.0 | 0.0 | | 14.5 | 14.5 | 0.0 | | 0.0 | 0.1 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 54.2 | 0.0 | 54.5 | | 0.0 | 0.0 | 0.0 | | 27.9 | 27.9 | 0.0 | | 0.0 | 7.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.2 | 0.0 | 54.5 | | 0.0 | 0.0 | 0.0 | | 27.9 | 27.9 | 0.0 | | 0.0 | 7.0 | 0.0 | |
| LOS by Move: | D | A | D | | A | A | A | | C | C | A | | A | A | A | |
| HCM2kAvgQ: | 17 | 0 | 15 | | 0 | 0 | 0 | | 35 | 35 | 0 | | 0 | 7 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.973
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 56.6
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 3 | 0 | 1 | 2 | 0 3 | 0 | 1 | 1 | 1 1 | 0 | 3 | 2 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | | 13 | 677 | 92 | | 84 | 34 | 379 | | 3 | 6 | 5 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1106 | 2256 | 6 | | 14 | 724 | 98 | | 90 | 36 | 406 | | 3 | 6 | 5 | |
| Added Vol: | 36 | 433 | 24 | | 441 | 59 | 43 | | 494 | 838 | 2 | | 24 | 30 | 14 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1142 | 2689 | 30 | | 455 | 783 | 141 | | 584 | 874 | 408 | | 27 | 36 | 19 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1142 | 2689 | 30 | | 455 | 783 | 141 | | 584 | 874 | 408 | | 27 | 36 | 19 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1142 | 2689 | 30 | | 455 | 783 | 141 | | 584 | 874 | 408 | | 27 | 36 | 19 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1142 | 2689 | 30 | | 455 | 783 | 141 | | 584 | 874 | 408 | | 27 | 36 | 19 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.91 | 0.91 | 0.88 | | 0.90 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.20 | 1.80 | 3.00 | | 2.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 2082 | 3118 | 5014 | | 3432 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.33 | 0.46 | 0.02 | | 0.13 | 0.13 | 0.09 | | 0.28 | 0.28 | 0.08 | | 0.01 | 0.01 | 0.01 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.42 | 0.46 | 0.50 | | 0.13 | 0.17 | 0.17 | | 0.28 | 0.28 | 0.28 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.79 | 1.00 | 0.04 | | 1.00 | 0.79 | 0.53 | | 1.00 | 1.00 | 0.29 | | 0.21 | 0.27 | 0.32 | |
| Uniform Del: | 32.7 | 35.2 | 16.8 | | 56.4 | 51.8 | 49.3 | | 46.9 | 46.9 | 36.8 | | 60.6 | 60.7 | 60.8 | |
| IncremntDel: | 3.1 | 18.4 | 0.0 | | 43.3 | 4.4 | 2.0 | | 24.6 | 24.6 | 0.1 | | 0.8 | 1.1 | 3.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 35.8 | 53.6 | 16.8 | | 99.7 | 56.2 | 51.2 | | 71.5 | 71.5 | 36.9 | | 61.4 | 61.8 | 63.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 35.8 | 53.6 | 16.8 | | 99.7 | 56.2 | 51.2 | | 71.5 | 71.5 | 36.9 | | 61.4 | 61.8 | 63.8 | |
| LOS by Move: | D | D | B | | F | E | D | | E | E | D | | E | E | E | |
| HCM2kAvgQ: | 22 | 47 | 1 | | 14 | 13 | 6 | | 27 | 27 | 5 | | 1 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.926
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 46.5
Optimal Cycle: 147 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 1 | 0 | 1 | 1 | 0 1 | 0 | 1 | 2 | 0 2 | 1 | 0 | 1 | 0 2 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 375 | 119 | 39 | | 30 | 190 | 411 | | 158 | 884 | 166 | | 30 | 1306 | 4 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 3 | | 10 | 1154 | 0 | | 0 | 112 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 375 | 119 | 39 | | 30 | 190 | 414 | | 168 | 2038 | 166 | | 30 | 1418 | 4 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.90 | 0.88 | 0.88 | | 0.93 | 0.89 | 0.89 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.77 | 0.23 | | 1.00 | 2.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 3432 | 4649 | 378 | | 1769 | 5068 | 15 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.06 | 0.02 | | 0.02 | 0.10 | 0.26 | | 0.05 | 0.44 | 0.44 | | 0.02 | 0.28 | 0.28 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.28 | 0.28 | 0.28 | | 0.07 | 0.46 | 0.46 | | 0.04 | 0.43 | 0.43 | |
| Volume/Cap: | 0.95 | 0.55 | 0.21 | | 0.06 | 0.37 | 0.95 | | 0.66 | 0.95 | 0.95 | | 0.44 | 0.66 | 0.66 | |
| Uniform Del: | 57.1 | 54.4 | 52.2 | | 34.7 | 38.0 | 46.1 | | 58.5 | 33.4 | 33.4 | | 61.1 | 29.7 | 29.7 | |
| IncremntDel: | 32.0 | 3.1 | 0.6 | | 0.1 | 0.5 | 30.0 | | 6.1 | 9.2 | 9.2 | | 4.5 | 0.7 | 0.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 89.1 | 57.5 | 52.7 | | 34.7 | 38.4 | 76.1 | | 64.6 | 42.6 | 42.6 | | 65.6 | 30.4 | 30.4 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 89.1 | 57.5 | 52.7 | | 34.7 | 38.4 | 76.1 | | 64.6 | 42.6 | 42.6 | | 65.6 | 30.4 | 30.4 | |
| LOS by Move: | F | E | D | | C | D | E | | E | D | D | | E | C | C | |
| HCM2kAvgQ: | 11 | 5 | 2 | | 1 | 6 | 21 | | 5 | 36 | 36 | | 2 | 17 | 17 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.936
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 59.6
Optimal Cycle: 141 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 72 | 366 | 262 | | 437 | 345 | 11 | | 17 | 178 | 125 | | 449 | 68 | 529 | |
| Added Vol: | 15 | 9 | 146 | | 80 | 7 | 0 | | 0 | 30 | 10 | | 20 | 19 | 21 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 87 | 375 | 408 | | 517 | 352 | 11 | | 17 | 208 | 135 | | 469 | 87 | 550 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 87 | 375 | 408 | | 517 | 352 | 11 | | 17 | 208 | 135 | | 469 | 87 | 550 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 87 | 375 | 405 | | 517 | 352 | 11 | | 17 | 208 | 135 | | 469 | 87 | 550 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 87 | 375 | 405 | | 517 | 352 | 11 | | 17 | 208 | 135 | | 469 | 87 | 550 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.00 | 2.00 | | 1.76 | 1.20 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.69 | 0.31 | 1.00 | |
| Final Sat.: | 1769 | 1631 | 1631 | | 3023 | 2057 | 63 | | 1769 | 1862 | 1583 | | 3013 | 562 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.23 | 0.25 | | 0.17 | 0.17 | 0.17 | | 0.01 | 0.11 | 0.09 | | 0.16 | 0.16 | 0.35 | |
| Crit Moves: | | | **** | | **** | | | | | **** | | | | | **** | |
| Green/Cycle: | 0.27 | 0.27 | 0.27 | | 0.18 | 0.18 | 0.18 | | 0.12 | 0.12 | 0.12 | | 0.37 | 0.37 | 0.37 | |
| Volume/Cap: | 0.18 | 0.87 | 0.94 | | 0.94 | 0.94 | 0.94 | | 0.08 | 0.94 | 0.72 | | 0.42 | 0.42 | 0.94 | |
| Uniform Del: | 36.9 | 45.5 | 46.7 | | 52.4 | 52.4 | 52.4 | | 50.9 | 56.8 | 55.1 | | 30.4 | 30.4 | 39.4 | |
| IncremntDel: | 0.2 | 8.8 | 17.5 | | 16.1 | 16.1 | 16.1 | | 0.2 | 42.7 | 12.4 | | 0.2 | 0.2 | 22.5 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 37.1 | 54.4 | 64.2 | | 68.4 | 68.4 | 68.4 | | 51.1 | 99.5 | 67.5 | | 30.7 | 30.7 | 61.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 37.1 | 54.4 | 64.2 | | 68.4 | 68.4 | 68.4 | | 51.1 | 99.5 | 67.5 | | 30.7 | 30.7 | 61.9 | |
| LOS by Move: | D | D | E | | E | E | E | | D | F | E | | C | C | E | |
| HCM2kAvgQ: | 3 | 18 | 12 | | 16 | 16 | 16 | | 1 | 12 | 7 | | 8 | 8 | 25 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.890
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 32.4
Optimal Cycle: 121 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 1649 | 3084 | 0 | | 0 | 946 | 201 | | 192 | 0 | 459 | | 0 | 0 | 0 | |
| Added Vol: | 10 | 599 | 0 | | 0 | 73 | 13 | | 181 | 0 | 2 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1659 | 3683 | 0 | | 0 | 1019 | 214 | | 373 | 0 | 461 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 4.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 6778 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.48 | 0.72 | 0.00 | | 0.00 | 0.15 | 0.14 | | 0.11 | 0.00 | 0.11 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.62 | 0.81 | 0.00 | | 0.00 | 0.19 | 0.19 | | 0.12 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.78 | 0.89 | 0.00 | | 0.00 | 0.78 | 0.70 | | 0.88 | 0.00 | 0.89 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 22.3 | 10.1 | 0.0 | | 0.0 | 61.3 | 60.3 | | 68.9 | 0.0 | 69.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.9 | 2.8 | 0.0 | | 0.0 | 3.1 | 7.1 | | 18.1 | 0.0 | 17.3 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 24.2 | 12.9 | 0.0 | | 0.0 | 64.4 | 67.4 | | 87.0 | 0.0 | 86.3 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 24.2 | 12.9 | 0.0 | | 0.0 | 64.4 | 67.4 | | 87.0 | 0.0 | 86.3 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | F | A | F | | A | A | A | |
| HCM2kAvgQ: | 31 | 47 | 0 | | 0 | 15 | 11 | | 12 | 0 | 11 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.643 |
| Loss Time (sec): | 9 (Y+R=4.0 sec) | Average Delay (sec/veh): | 13.0 |
| Optimal Cycle: | 46 | Level Of Service: | B |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | | | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | | 0 | 6 | | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 48 | 2527 | 0 | 0 | 1106 | 33 | 110 | | 0 | 6 | | | 0 | 0 | 0 | |
| Added Vol: | 94 | 55 | 0 | 0 | 783 | 0 | 153 | | 0 | 21 | | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | | 0 | 0 | 0 | |
| Initial Fut: | 142 | 2582 | 0 | 0 | 1889 | 33 | 263 | | 0 | 27 | | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 142 | 2582 | 0 | 0 | 1889 | 33 | 263 | | 0 | 27 | | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | | 0 | 0 | 0 | |
| Reduced Vol: | 142 | 2582 | 0 | 0 | 1889 | 33 | 263 | | 0 | 27 | | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 142 | 2582 | 0 | 0 | 1889 | 33 | 263 | | 0 | 27 | | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.92 | | 1.00 | 0.92 | | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.83 | | 0.00 | 0.17 | | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 3211 | | 0 | 303 | | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.51 | 0.00 | 0.00 | 0.37 | 0.02 | 0.08 | | 0.00 | 0.09 | | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | **** | | | | | | **** | | | | | | |
| Green/Cycle: | 0.14 | 0.79 | 0.00 | 0.00 | 0.65 | 0.65 | 0.14 | | 0.00 | 0.14 | | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.57 | 0.64 | 0.00 | 0.00 | 0.57 | 0.03 | 0.58 | | 0.00 | 0.64 | | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 52.2 | 5.8 | 0.0 | 0.0 | 12.7 | 8.2 | 52.3 | | 0.0 | 52.8 | | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.2 | 0.4 | 0.0 | 0.0 | 0.2 | 0.0 | 1.8 | | 0.0 | 3.2 | | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 55.4 | 6.2 | 0.0 | 0.0 | 12.9 | 8.2 | 54.0 | | 0.0 | 55.9 | | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 55.4 | 6.2 | 0.0 | 0.0 | 12.9 | 8.2 | 54.0 | | 0.0 | 55.9 | | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | E | A | A | A | B | A | D | | A | E | | | A | A | A | |
| HCM2kAvgQ: | 6 | 16 | 0 | 0 | 15 | 0 | 6 | | 0 | 7 | | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Near Term 2018 East and West Campuses PM |
| Command: | Near Term II Project PM |
| Volume: | Near Term II Project PM |
| Geometry: | Near Term II Project PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Near Term II Project PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Near Term II Project PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | D | 49.3 | 0.974 | D | 52.4 | 1.007 | + 3.114 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 14.1 | 0.872 | B | 19.2 | 0.954 | + 5.085 |
| # 8 Bayfront Exp. & Willow Rd. | C | 33.8 | 0.813 | E | 55.6 | 1.000 | +21.726 |
| # 12 Newbridge St. & Willow Rd. | C | 31.9 | 0.724 | C | 32.4 | 0.802 | + 0.581 |
| # 17 Middlefield Rd. & Willow Rd. | E | 64.7 | 0.954 | E | 78.4 | 1.042 | +13.708 |
| # 18 Bayfront Exp. & University Ave | F | 109.5 | 1.173 | F | 136.1 | 1.258 | +26.641 |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 15.6 | 0.673 | D | 35.9 | 0.955 | +20.296 |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 1.007
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 52.4
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | | | | |
| Initial Bse: | 1267 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2089 | | 33 | 78 | 12 | | | | | |
| Added Vol: | 1222 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 84 | | 0 | 0 | 0 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 2489 | 52 | 7 | | 0 | 370 | 199 | | 149 | 43 | 2173 | | 33 | 78 | 12 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.91 | 0.91 | 0.91 | | | | | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.54 | 1.27 | 0.19 | | | | | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 928 | 2186 | 329 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.48 | 0.03 | 0.03 | | 0.00 | 0.10 | 0.13 | | 0.11 | 0.11 | 0.78 | | 0.04 | 0.04 | 0.04 | | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | | | | | |
| Green/Cycle: | 0.48 | 0.48 | 0.48 | | 0.00 | 0.10 | 0.40 | | 0.29 | 0.29 | 0.77 | | 0.04 | 0.04 | 0.04 | | | | | |
| Volume/Cap: | 1.01 | 0.07 | 0.07 | | 0.00 | 1.01 | 0.32 | | 0.36 | 0.36 | 1.01 | | 1.00 | 1.00 | 1.00 | | | | | |
| Uniform Del: | 36.4 | 19.6 | 19.6 | | 0.0 | 62.7 | 29.0 | | 39.0 | 39.0 | 15.8 | | 67.5 | 67.5 | 67.5 | | | | | |
| IncremntDel: | 19.8 | 0.0 | 0.0 | | 0.0 | 48.7 | 0.3 | | 0.4 | 0.4 | 21.1 | | 81.4 | 81.4 | 81.4 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 56.2 | 19.6 | 19.6 | | 0.0 | 111 | 29.3 | | 39.4 | 39.4 | 36.8 | | 148.9 | 149 | 148.9 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 56.2 | 19.6 | 19.6 | | 0.0 | 111 | 29.3 | | 39.4 | 39.4 | 36.8 | | 148.9 | 149 | 148.9 | | | | | |
| LOS by Move: | E | B | B | | A | F | C | | D | D | D | | F | F | F | | | | | |
| HCM2kAvgQ: | 44 | 1 | 1 | | 0 | 13 | 6 | | 6 | 6 | 61 | | 5 | 5 | 5 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 0.954
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 106 Level Of Service: B

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | | | | |
| Initial Bse: | 528 | 0 | 228 | | 0 | 0 | 0 | | 0 | 2207 | 542 | | 0 | 730 | 846 | | | | | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 146 | 0 | | 0 | 862 | 360 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 542 | | 0 | 1592 | 1206 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| PHF Volume: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 0 | | 0 | 1592 | 0 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 0 | | 0 | 1592 | 0 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| FinalVolume: | 528 | 0 | 388 | | 0 | 0 | 0 | | 3 | 2353 | 0 | | 0 | 1592 | 0 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | | | | | |
| Lanes: | 2.00 | 0.00 | 2.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 0 | 2786 | | 0 | 0 | 0 | | 4 | 3374 | 1900 | | 0 | 3538 | 1900 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.00 | 0.14 | | 0.00 | 0.00 | 0.00 | | 0.70 | 0.70 | 0.00 | | 0.00 | 0.45 | 0.00 | | | | | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | | | | | |
| Green/Cycle: | 0.16 | 0.00 | 0.16 | | 0.00 | 0.00 | 0.00 | | 0.73 | 0.73 | 0.00 | | 0.00 | 0.73 | 0.00 | | | | | |
| Volume/Cap: | 0.95 | 0.00 | 0.86 | | 0.00 | 0.00 | 0.00 | | 0.95 | 0.95 | 0.00 | | 0.00 | 0.62 | 0.00 | | | | | |
| Uniform Del: | 27.0 | 0.0 | 26.6 | | 0.0 | 0.0 | 0.0 | | 7.8 | 7.8 | 0.0 | | 0.0 | 4.3 | 0.0 | | | | | |
| IncremntDel: | 27.1 | 0.0 | 15.9 | | 0.0 | 0.0 | 0.0 | | 9.6 | 9.6 | 0.0 | | 0.0 | 0.4 | 0.0 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | | | | | |
| Delay/Veh: | 54.1 | 0.0 | 42.4 | | 0.0 | 0.0 | 0.0 | | 17.3 | 17.3 | 0.0 | | 0.0 | 4.7 | 0.0 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 54.1 | 0.0 | 42.4 | | 0.0 | 0.0 | 0.0 | | 17.3 | 17.3 | 0.0 | | 0.0 | 4.7 | 0.0 | | | | | |
| LOS by Move: | D | A | D | | A | A | A | | B | B | A | | A | A | A | | | | | |
| HCM2kAvgQ: | 10 | 0 | 7 | | 0 | 0 | 0 | | 29 | 29 | 0 | | 0 | 9 | 0 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.000
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 55.6
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 3 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 1 | 1 | 1 | 0 | 3 | 2 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | 8 | | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | | | | |
| Initial Bse: | 387 | 710 | 1 | | 0 | 2353 | 116 | | 39 | 14 | 1524 | | 47 | 112 | 9 | | | | | |
| Added Vol: | 393 | 278 | 3 | | 49 | 341 | 255 | | 45 | 94 | 5 | | 317 | 391 | 181 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 780 | 988 | 4 | | 49 | 2694 | 371 | | 84 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 780 | 988 | 4 | | 49 | 2694 | 371 | | 84 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 780 | 988 | 4 | | 49 | 2694 | 371 | | 84 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 780 | 988 | 4 | | 49 | 2694 | 371 | | 84 | 108 | 1529 | | 364 | 503 | 190 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.91 | 0.91 | 0.88 | | 0.90 | 0.93 | 0.83 | | | | | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.31 | 1.69 | 3.00 | | 2.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 2267 | 2929 | 5014 | | 3432 | 3538 | 1583 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.23 | 0.17 | 0.00 | | 0.01 | 0.46 | 0.23 | | 0.04 | 0.04 | 0.30 | | 0.11 | 0.14 | 0.12 | | | | | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | **** | | | | | | |
| Green/Cycle: | 0.23 | 0.56 | 0.70 | | 0.13 | 0.46 | 0.46 | | 0.08 | 0.08 | 0.30 | | 0.14 | 0.14 | 0.27 | | | | | |
| Volume/Cap: | 1.00 | 0.30 | 0.00 | | 0.11 | 1.00 | 0.51 | | 0.48 | 0.48 | 1.00 | | 0.75 | 1.00 | 0.44 | | | | | |
| Uniform Del: | 50.2 | 15.1 | 5.8 | | 50.2 | 35.1 | 24.7 | | 57.4 | 57.4 | 45.2 | | 53.5 | 55.8 | 39.4 | | | | | |
| IncremntDel: | 32.3 | 0.1 | 0.0 | | 0.1 | 17.4 | 0.6 | | 0.9 | 0.9 | 23.1 | | 6.2 | 40.2 | 0.7 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 82.5 | 15.2 | 5.8 | | 50.3 | 52.5 | 25.3 | | 58.3 | 58.3 | 68.3 | | 59.7 | 96.0 | 40.1 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 82.5 | 15.2 | 5.8 | | 50.3 | 52.5 | 25.3 | | 58.3 | 58.3 | 68.3 | | 59.7 | 96.0 | 40.1 | | | | | |
| LOS by Move: | F | B | A | | D | D | C | | E | E | E | | E | F | D | | | | | |
| HCM2kAvgQ: | 22 | 7 | 0 | | 1 | 47 | 10 | | 3 | 3 | 29 | | 9 | 15 | 6 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.802
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 32.4
Optimal Cycle: 88 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | | | | |
| Initial Bse: | 265 | 182 | 59 | | 41 | 178 | 234 | | 346 | 1537 | 363 | | 109 | 1043 | 36 | | | | | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 6 | 149 | 0 | | 0 | 1015 | 0 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 265 | 182 | 59 | | 41 | 178 | 243 | | 352 | 1686 | 363 | | 109 | 2058 | 36 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.90 | 0.87 | 0.87 | | 0.93 | 0.89 | 0.89 | | | | | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.47 | 0.53 | | 1.00 | 2.95 | 0.05 | | | | | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 3432 | 4070 | 876 | | 1769 | 4980 | 88 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.15 | | 0.10 | 0.41 | 0.41 | | 0.06 | 0.41 | 0.41 | | | | | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | | | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.21 | | 0.12 | 0.12 | 0.25 | | 0.13 | 0.56 | 0.56 | | 0.08 | 0.52 | 0.52 | | | | | |
| Volume/Cap: | 0.64 | 0.80 | 0.18 | | 0.19 | 0.80 | 0.62 | | 0.80 | 0.74 | 0.74 | | 0.74 | 0.80 | 0.80 | | | | | |
| Uniform Del: | 50.2 | 51.3 | 39.4 | | 47.7 | 51.5 | 40.2 | | 50.9 | 19.9 | 19.9 | | 53.7 | 24.1 | 24.1 | | | | | |
| IncremntDel: | 3.2 | 18.3 | 0.3 | | 0.5 | 18.7 | 3.1 | | 10.2 | 1.1 | 1.1 | | 18.0 | 1.9 | 1.9 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 53.4 | 69.6 | 39.6 | | 48.1 | 70.2 | 43.4 | | 61.1 | 21.0 | 21.0 | | 71.7 | 25.9 | 25.9 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 53.4 | 69.6 | 39.6 | | 48.1 | 70.2 | 43.4 | | 61.1 | 21.0 | 21.0 | | 71.7 | 25.9 | 25.9 | | | | | |
| LOS by Move: | D | E | D | | D | E | D | | E | C | C | | E | C | C | | | | | |
| HCM2kAvgQ: | 6 | 9 | 2 | | 1 | 8 | 9 | | 9 | 21 | 21 | | 6 | 25 | 25 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.042
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 78.4
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 0 | 1 | 1 | 1 | 1 1 | 0 | 1 | 0 | 1 0 | 1 | 0 | 1 | 1 1 | 0 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 104 | 469 | 525 | | 510 | 442 | 20 | | 39 | 182 | 169 | | 409 | 102 | 439 | |
| Added Vol: | 15 | 8 | 32 | | 18 | 8 | 0 | | 0 | 34 | 24 | | 127 | 37 | 66 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 119 | 477 | 557 | | 528 | 450 | 20 | | 39 | 216 | 193 | | 536 | 139 | 505 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 119 | 477 | 557 | | 528 | 450 | 20 | | 39 | 216 | 193 | | 536 | 139 | 505 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 119 | 477 | 557 | | 528 | 450 | 20 | | 39 | 216 | 193 | | 536 | 139 | 505 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 119 | 477 | 557 | | 528 | 450 | 20 | | 39 | 216 | 193 | | 536 | 139 | 505 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.00 | 2.00 | | 1.59 | 1.35 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.59 | 0.41 | 1.00 | |
| Final Sat.: | 1769 | 1626 | 1626 | | 2727 | 2322 | 105 | | 1769 | 1862 | 1583 | | 2846 | 737 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.29 | 0.34 | | 0.19 | 0.19 | 0.19 | | 0.02 | 0.12 | 0.12 | | 0.19 | 0.19 | 0.32 | |
| Crit Moves: | | | **** | | | **** | | | | | **** | | | | **** | |
| Green/Cycle: | 0.33 | 0.33 | 0.33 | | 0.19 | 0.19 | 0.19 | | 0.12 | 0.12 | 0.12 | | 0.31 | 0.31 | 0.31 | |
| Volume/Cap: | 0.20 | 0.89 | 1.04 | | 1.04 | 1.04 | 1.04 | | 0.19 | 0.99 | 1.04 | | 0.61 | 0.61 | 1.04 | |
| Uniform Del: | 31.4 | 41.4 | 43.6 | | 52.9 | 52.9 | 52.9 | | 51.8 | 57.3 | 57.4 | | 38.6 | 38.6 | 45.1 | |
| IncremntDel: | 0.2 | 8.8 | 40.0 | | 40.5 | 40.5 | 40.5 | | 0.4 | 58.0 | 77.5 | | 1.1 | 1.1 | 52.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 31.5 | 50.2 | 83.6 | | 93.4 | 93.4 | 93.4 | | 52.2 | 115 | 134.9 | | 39.6 | 39.6 | 97.2 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 31.5 | 50.2 | 83.6 | | 93.4 | 93.4 | 93.4 | | 52.2 | 115 | 134.9 | | 39.6 | 39.6 | 97.2 | |
| LOS by Move: | C | D | F | | F | F | F | | D | F | F | | D | D | F | |
| HCM2kAvgQ: | 3 | 22 | 17 | | 20 | 20 | 20 | | 1 | 13 | 12 | | 12 | 12 | 28 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.258
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 136.1
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 0 | 3 | 0 | 0 | 0 0 | 4 | 0 | 1 | 2 0 | 0 | 0 | 3 | 0 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | | 0 | 3488 | 127 | | 60 | 0 | 1667 | | 0 | 0 | 0 | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Initial Bse: | 403 | 1036 | 0 | | 0 | 3732 | 136 | | 64 | 0 | 1784 | | 0 | 0 | 0 | |
| Added Vol: | 4 | 119 | 0 | | 0 | 513 | 150 | | 19 | 0 | 11 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 407 | 1155 | 0 | | 0 | 4245 | 286 | | 83 | 0 | 1795 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 407 | 1155 | 0 | | 0 | 4245 | 286 | | 83 | 0 | 1795 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 407 | 1155 | 0 | | 0 | 4245 | 286 | | 83 | 0 | 1795 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 407 | 1155 | 0 | | 0 | 4245 | 286 | | 83 | 0 | 1795 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 4.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 6778 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.23 | 0.00 | | 0.00 | 0.63 | 0.18 | | 0.02 | 0.00 | 0.43 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.09 | 0.59 | 0.00 | | 0.00 | 0.50 | 0.50 | | 0.34 | 0.00 | 0.34 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 1.26 | 0.38 | 0.00 | | 0.00 | 1.26 | 0.36 | | 0.07 | 0.00 | 1.26 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 67.9 | 16.2 | 0.0 | | 0.0 | 37.7 | 23.1 | | 33.3 | 0.0 | 49.4 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 139.0 | 0.1 | 0.0 | | 0.0 | 119 | 0.3 | | 0.0 | 0.0 | 122.2 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 206.9 | 16.2 | 0.0 | | 0.0 | 157 | 23.4 | | 33.4 | 0.0 | 171.6 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 206.9 | 16.2 | 0.0 | | 0.0 | 157 | 23.4 | | 33.4 | 0.0 | 171.6 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | B | A | | A | F | C | | C | A | F | | A | A | A | |
| HCM2kAvgQ: | 17 | 10 | 0 | | 0 | 83 | 8 | | 1 | 0 | 50 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.955 |
| Loss Time (sec): | 9 (Y+R=4.0 sec) | Average Delay (sec/veh): | 35.9 |
| Optimal Cycle: | 168 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 | 0 3 | 0 | 0 | 0 | 0 3 | 0 | 1 | 1 | 0 1! | 0 | 0 | 0 | 0 0 | 0 | 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | | | | |
| Initial Bse: | 11 | 997 | 0 | 0 | 2391 | 17 | 357 | 0 | 81 | 0 | 0 | 0 | | | | |
| Added Vol: | 38 | 605 | 0 | 0 | 84 | 0 | 617 | 0 | 86 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 49 | 1602 | 0 | 0 | 2475 | 17 | 974 | 0 | 167 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.92 | 1.00 | 0.92 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.74 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 3046 | 0 | 446 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.32 | 0.00 | 0.00 | 0.49 | 0.01 | 0.32 | 0.00 | 0.37 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.54 | 0.00 | 0.00 | 0.50 | 0.50 | 0.39 | 0.00 | 0.39 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.72 | 0.58 | 0.00 | 0.00 | 0.97 | 0.02 | 0.82 | 0.00 | 0.97 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 61.8 | 19.8 | 0.0 | 0.0 | 31.1 | 16.2 | 35.8 | 0.0 | 38.9 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 30.3 | 0.3 | 0.0 | 0.0 | 10.9 | 0.0 | 4.2 | 0.0 | 18.5 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 92.1 | 20.2 | 0.0 | 0.0 | 42.1 | 16.2 | 39.9 | 0.0 | 57.4 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 92.1 | 20.2 | 0.0 | 0.0 | 42.1 | 16.2 | 39.9 | 0.0 | 57.4 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | C | A | A | D | B | D | A | E | A | A | A | | | | |
| HCM2kAvgQ: | 3 | 16 | 0 | 0 | 40 | 0 | 22 | 0 | 31 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Cumulative 2025 East Campus Only AM |
| Command: | Long Term Project I AM |
| Volume: | Long Term Project I AM |
| Geometry: | Long Term Project I AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project I AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project I AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 25.2 | 0.832 | C | 26.3 | 0.871 | + 1.107 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.7 | 0.700 | C | 23.9 | 0.912 | + 7.194 |
| # 8 Bayfront Exp. & Willow Rd. | C | 25.8 | 0.621 | D | 48.6 | 0.923 | +22.825 |
| # 12 Newbridge St. & Willow Rd. | D | 44.6 | 0.803 | D | 46.3 | 0.881 | + 1.619 |
| # 17 Middlefield Rd. & Willow Rd. | F | 87.0 | 0.865 | E | 72.2 | 0.999 | -14.726 |
| # 18 Bayfront Exp. & University Ave | C | 31.2 | 0.829 | C | 34.1 | 0.915 | + 2.844 |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 5.9 | 0.607 | B | 13.1 | 0.676 | + 7.189 |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.871
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.3
Optimal Cycle: 109 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 | 0 | 0 | 1 0 | 0 | 1 | 1 | 0 1 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 1 0 |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 2619 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1137 | | 8 | 22 | 6 | |
| Added Vol: | 186 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 443 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2805 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1580 | | 8 | 22 | 6 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.90 | 0.90 | 0.90 | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.45 | 1.23 | 0.32 | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 771 | 2093 | 551 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.54 | 0.13 | 0.13 | | 0.02 | 0.02 | 0.11 | | 0.13 | 0.13 | 0.57 | | 0.01 | 0.01 | 0.01 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.61 | 0.61 | 0.61 | | 0.12 | 0.12 | 0.12 | | 0.14 | 0.14 | 0.75 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.90 | 0.22 | 0.22 | | 0.18 | 0.18 | 0.90 | | 0.90 | 0.90 | 0.76 | | 0.27 | 0.27 | 0.27 | |
| Uniform Del: | 22.1 | 11.6 | 11.6 | | 51.6 | 51.6 | 56.5 | | 54.7 | 54.7 | 9.3 | | 60.7 | 60.7 | 60.7 | |
| IncremntDel: | 3.9 | 0.1 | 0.1 | | 0.2 | 0.2 | 38.5 | | 30.9 | 30.9 | 1.6 | | 1.1 | 1.1 | 1.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 26.0 | 11.7 | 11.7 | | 51.8 | 51.8 | 95.0 | | 85.6 | 85.6 | 11.0 | | 61.8 | 61.8 | 61.8 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 26.0 | 11.7 | 11.7 | | 51.8 | 51.8 | 95.0 | | 85.6 | 85.6 | 11.0 | | 61.8 | 61.8 | 61.8 | |
| LOS by Move: | C | B | B | | D | D | F | | F | F | B | | E | E | E | |
| HCM2kAvgQ: | 36 | 4 | 4 | | 1 | 1 | 10 | | 12 | 12 | 22 | | 1 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 0.912
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 23.9
Optimal Cycle: 94 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 2 | 0 | 0 | 0 | 0 0 | 0 | 1 | 1 | 0 1 | 0 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 933 | 0 | 329 | | 0 | 0 | 0 | | 0 | 1297 | 577 | | 0 | 936 | 1937 | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 593 | 0 | | 0 | 151 | 36 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 577 | | 0 | 1087 | 1973 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 0 | | 0 | 1087 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 0 | | 0 | 1087 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 1890 | 0 | | 0 | 1087 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 2.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 2786 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.00 | 0.26 | | 0.00 | 0.00 | 0.00 | | 0.56 | 0.56 | 0.00 | | 0.00 | 0.31 | 0.00 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.30 | 0.00 | 0.30 | | 0.00 | 0.00 | 0.00 | | 0.61 | 0.61 | 0.00 | | 0.00 | 0.61 | 0.00 | |
| Volume/Cap: | 0.91 | 0.00 | 0.87 | | 0.00 | 0.00 | 0.00 | | 0.91 | 0.91 | 0.00 | | 0.00 | 0.50 | 0.00 | |
| Uniform Del: | 27.0 | 0.0 | 26.6 | | 0.0 | 0.0 | 0.0 | | 13.5 | 13.5 | 0.0 | | 0.0 | 8.6 | 0.0 | |
| IncremntDel: | 12.0 | 0.0 | 9.8 | | 0.0 | 0.0 | 0.0 | | 6.6 | 6.6 | 0.0 | | 0.0 | 0.2 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 39.1 | 0.0 | 36.4 | | 0.0 | 0.0 | 0.0 | | 20.2 | 20.2 | 0.0 | | 0.0 | 8.8 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.1 | 0.0 | 36.4 | | 0.0 | 0.0 | 0.0 | | 20.2 | 20.2 | 0.0 | | 0.0 | 8.8 | 0.0 | |
| LOS by Move: | D | A | D | | A | A | A | | C | C | A | | A | A | A | |
| HCM2kAvgQ: | 16 | 0 | 13 | | 0 | 0 | 0 | | 26 | 26 | 0 | | 0 | 8 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.923 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 48.6 |
| Optimal Cycle: | 141 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 3 | 0 | 1 | 2 | 0 3 | 0 | 1 | 1 | 1 1 | 0 | 3 | 2 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | | 13 | 677 | 92 | | 84 | 34 | 379 | | 3 | 6 | 5 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1179 | 2403 | 7 | | 15 | 772 | 105 | | 96 | 39 | 432 | | 3 | 7 | 6 | |
| Added Vol: | 69 | 202 | 24 | | 441 | 42 | 0 | | 0 | 838 | 14 | | 24 | 30 | 14 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1248 | 2605 | 31 | | 456 | 814 | 105 | | 96 | 877 | 446 | | 27 | 37 | 20 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1248 | 2605 | 31 | | 456 | 814 | 105 | | 96 | 877 | 446 | | 27 | 37 | 20 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1248 | 2605 | 31 | | 456 | 814 | 105 | | 96 | 877 | 446 | | 27 | 37 | 20 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1248 | 2605 | 31 | | 456 | 814 | 105 | | 96 | 877 | 446 | | 27 | 37 | 20 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.93 | 0.93 | 0.88 | | 0.90 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 3.00 | | 2.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1760 | 3520 | 5014 | | 3432 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.36 | 0.45 | 0.02 | | 0.13 | 0.14 | 0.07 | | 0.05 | 0.25 | 0.09 | | 0.01 | 0.01 | 0.01 | |
| Crit Moves: | | **** | | | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.44 | 0.47 | 0.51 | | 0.14 | 0.17 | 0.17 | | 0.26 | 0.26 | 0.26 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 0.83 | 0.95 | 0.04 | | 0.95 | 0.83 | 0.39 | | 0.21 | 0.95 | 0.34 | | 0.21 | 0.27 | 0.32 | |
| Uniform Del: | 32.1 | 33.2 | 16.1 | | 55.5 | 52.2 | 48.2 | | 37.5 | 47.2 | 38.9 | | 60.6 | 60.7 | 60.9 | |
| IncremntDel: | 3.9 | 8.6 | 0.0 | | 29.3 | 5.9 | 1.0 | | 0.0 | 17.7 | 0.2 | | 0.8 | 1.1 | 3.1 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 36.0 | 41.8 | 16.2 | | 84.8 | 58.2 | 49.1 | | 37.5 | 64.9 | 39.1 | | 61.4 | 61.8 | 63.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 36.0 | 41.8 | 16.2 | | 84.8 | 58.2 | 49.1 | | 37.5 | 64.9 | 39.1 | | 61.4 | 61.8 | 63.9 | |
| LOS by Move: | D | D | B | | F | E | D | | D | E | D | | E | E | E | |
| HCM2kAvgQ: | 24 | 41 | 1 | | 13 | 14 | 4 | | 3 | 23 | 5 | | 1 | 1 | 1 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.881 |
| Loss Time (sec): | 14 (Y+R=3.0 sec) | Average Delay (sec/veh): | 46.3 |
| Optimal Cycle: | 120 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - | R | L | - T | - | R | L | - T | - | R | L | - T | - | R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 0 1 | 0 | 1 | 1 | 0 1 | 0 | 1 | 2 | 0 2 | 1 | 0 | 1 | 0 2 | 1 | 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 399 | 127 | 41 | | 32 | 203 | 438 | | 169 | 942 | 177 | | 32 | 1392 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 10 | 749 | 0 | | 0 | 117 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 1691 | 177 | | 32 | 1509 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.90 | 0.88 | 0.88 | | 0.93 | 0.89 | 0.89 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.72 | 0.28 | | 1.00 | 2.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 3432 | 4538 | 474 | | 1769 | 5068 | 15 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.07 | 0.03 | | 0.02 | 0.11 | 0.28 | | 0.05 | 0.37 | 0.37 | | 0.02 | 0.30 | 0.30 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.13 | 0.13 | 0.13 | | 0.31 | 0.31 | 0.31 | | 0.07 | 0.41 | 0.41 | | 0.04 | 0.39 | 0.39 | |
| Volume/Cap: | 0.90 | 0.53 | 0.20 | | 0.06 | 0.35 | 0.90 | | 0.77 | 0.90 | 0.90 | | 0.47 | 0.77 | 0.77 | |
| Uniform Del: | 55.8 | 52.9 | 50.6 | | 31.5 | 34.7 | 42.9 | | 59.6 | 35.5 | 35.5 | | 61.2 | 35.0 | 35.0 | |
| IncremntDel: | 20.8 | 2.1 | 0.5 | | 0.0 | 0.4 | 19.3 | | 14.8 | 5.8 | 5.8 | | 5.0 | 2.0 | 2.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 76.6 | 55.0 | 51.1 | | 31.5 | 35.1 | 62.2 | | 74.5 | 41.3 | 41.3 | | 66.2 | 36.9 | 36.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 76.6 | 55.0 | 51.1 | | 31.5 | 35.1 | 62.2 | | 74.5 | 41.3 | 41.3 | | 66.2 | 36.9 | 36.9 | |
| LOS by Move: | E | E | D | | C | D | E | | E | D | D | | E | D | D | |
| HCM2kAvgQ: | 11 | 5 | 2 | | 1 | 6 | 20 | | 5 | 29 | 29 | | 2 | 20 | 20 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 72.2
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 76 | 390 | 279 | | 465 | 367 | 11 | | 18 | 189 | 133 | | 479 | 73 | 563 | |
| Added Vol: | 15 | 9 | 114 | | 101 | 7 | 0 | | 0 | 9 | 10 | | 19 | 18 | 80 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 91 | 399 | 393 | | 566 | 374 | 11 | | 18 | 198 | 143 | | 498 | 91 | 643 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 91 | 399 | 393 | | 566 | 374 | 11 | | 18 | 198 | 143 | | 498 | 91 | 643 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 91 | 399 | 390 | | 566 | 374 | 11 | | 18 | 198 | 143 | | 498 | 91 | 643 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 91 | 399 | 390 | | 566 | 374 | 11 | | 18 | 198 | 143 | | 498 | 91 | 643 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.01 | 1.99 | | 1.78 | 1.18 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.69 | 0.31 | 1.00 | |
| Final Sat.: | 1769 | 1662 | 1626 | | 3059 | 2022 | 62 | | 1769 | 1862 | 1583 | | 3020 | 552 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.24 | 0.24 | | 0.19 | 0.19 | 0.19 | | 0.01 | 0.11 | 0.09 | | 0.16 | 0.16 | 0.41 | |
| Crit Moves: | | **** | | | | | **** | | | **** | | | | | **** | |
| Green/Cycle: | 0.24 | 0.24 | 0.24 | | 0.19 | 0.19 | 0.19 | | 0.11 | 0.11 | 0.11 | | 0.41 | 0.41 | 0.41 | |
| Volume/Cap: | 0.22 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.10 | 1.00 | 0.85 | | 0.41 | 0.41 | 1.00 | |
| Uniform Del: | 39.6 | 49.4 | 49.4 | | 53.0 | 53.0 | 53.0 | | 52.4 | 58.1 | 57.1 | | 27.4 | 27.4 | 38.6 | |
| IncremntDel: | 0.3 | 31.9 | 31.9 | | 29.0 | 29.0 | 29.0 | | 0.2 | 63.7 | 31.5 | | 0.2 | 0.2 | 35.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 39.8 | 81.2 | 81.2 | | 82.0 | 82.0 | 82.0 | | 52.7 | 122 | 88.5 | | 27.6 | 27.6 | 73.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 39.8 | 81.2 | 81.2 | | 82.0 | 82.0 | 82.0 | | 52.7 | 122 | 88.5 | | 27.6 | 27.6 | 73.9 | |
| LOS by Move: | D | F | F | | F | F | F | | D | F | F | | C | C | E | |
| HCM2kAvgQ: | 3 | 22 | 13 | | 19 | 19 | 19 | | 1 | 12 | 8 | | 8 | 8 | 32 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.915
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 34.1
Optimal Cycle: 141 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 | 3 | 0 0 | 0 | 0 | 4 | 0 1 | 2 | 0 | 0 | 0 3 | 0 | 0 | 0 | 0 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1757 | 3285 | 0 | | 0 | 1008 | 214 | | 204 | 0 | 489 | | 0 | 0 | 0 | |
| Added Vol: | 23 | 471 | 0 | | 0 | 73 | 8 | | 109 | 0 | 7 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1780 | 3756 | 0 | | 0 | 1081 | 222 | | 313 | 0 | 496 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 4.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 6778 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.74 | 0.00 | | 0.00 | 0.16 | 0.14 | | 0.09 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.62 | 0.81 | 0.00 | | 0.00 | 0.19 | 0.19 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.84 | 0.91 | 0.00 | | 0.00 | 0.84 | 0.74 | | 0.70 | 0.00 | 0.91 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 24.3 | 11.3 | 0.0 | | 0.0 | 62.5 | 61.1 | | 66.7 | 0.0 | 68.7 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.2 | 3.7 | 0.0 | | 0.0 | 5.1 | 9.4 | | 5.0 | 0.0 | 20.2 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 27.4 | 15.0 | 0.0 | | 0.0 | 67.5 | 70.4 | | 71.7 | 0.0 | 88.9 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 27.4 | 15.0 | 0.0 | | 0.0 | 67.5 | 70.4 | | 71.7 | 0.0 | 88.9 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | E | A | F | | A | A | A | |
| HCM2kAvgQ: | 37 | 52 | 0 | | 0 | 16 | 12 | | 9 | 0 | 12 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.676 |
| Loss Time (sec): | 9 (Y+R=4.0 sec) | Average Delay (sec/veh): | 13.1 |
| Optimal Cycle: | 50 | Level Of Service: | B |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 1 0 | 3 0 | 0 | 0 0 | 3 0 | 1 | | | 1 0 | 1! 0 | 0 | | 0 0 | 0 0 | 0 | |
| Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 45 | 2362 | 0 | 0 | 1034 | 31 | 103 | | 0 | 6 | | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 51 | 2693 | 0 | 0 | 1179 | 35 | 117 | | 0 | 7 | | | 0 | 0 | 0 | |
| Added Vol: | 94 | 32 | 0 | 0 | 443 | 0 | 154 | | 0 | 21 | | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | | 0 | 0 | 0 | |
| Initial Fut: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | | 0 | 28 | | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | | 0 | 28 | | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | | 0 | 0 | 0 | |
| Reduced Vol: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | | 0 | 28 | | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 145 | 2725 | 0 | 0 | 1622 | 35 | 271 | | 0 | 28 | | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | 1900 | 1900 | | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.92 | | 1.00 | 0.92 | | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.83 | | 0.00 | 0.17 | | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 3215 | | 0 | 299 | | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.54 | 0.00 | 0.00 | 0.32 | 0.02 | 0.08 | | 0.00 | 0.09 | | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | **** | | | | | | **** | | | | | | |
| Green/Cycle: | 0.16 | 0.79 | 0.00 | 0.00 | 0.63 | 0.63 | 0.14 | | 0.00 | 0.14 | | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.51 | 0.68 | 0.00 | 0.00 | 0.51 | 0.04 | 0.61 | | 0.00 | 0.68 | | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 49.7 | 6.0 | 0.0 | 0.0 | 13.0 | 9.1 | 52.8 | | 0.0 | 53.3 | | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 1.5 | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 2.3 | | 0.0 | 4.1 | | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 51.1 | 6.5 | 0.0 | 0.0 | 13.2 | 9.1 | 55.1 | | 0.0 | 57.4 | | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 51.1 | 6.5 | 0.0 | 0.0 | 13.2 | 9.1 | 55.1 | | 0.0 | 57.4 | | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | D | A | A | A | B | A | E | | A | E | | | A | A | A | |
| HCM2kAvgQ: | 6 | 18 | 0 | 0 | 13 | 1 | 6 | | 0 | 7 | | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Cumulative 2025 East Campus Only PM |
| Command: | Long Term Project I PM |
| Volume: | Long Term Project I PM |
| Geometry: | Long Term Project I PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project I PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project I PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 64.8 | 1.037 | E | 68.7 | 1.059 | + 3.901 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 17.7 | 0.929 | C | 26.5 | 1.004 | + 8.822 D/V |
| # 7 Middlefield at Marsh (Town of | D | 39.4 | 0.922 | D | 50.6 | 1.040 | +11.151 D/V |
| # 8 Bayfront Exp. & Willow Rd. | D | 36.4 | 0.866 | E | 62.7 | 1.029 | +26.369 D/V |
| # 12 Newbridge St. & Willow Rd. | C | 33.2 | 0.771 | C | 33.9 | 0.805 | + 0.730 D/V |
| # 17 Middlefield Rd. & Willow Rd. | E | 75.2 | 1.016 | F | 100.7 | 1.130 | +25.424 D/V |
| # 18 Bayfront Exp. & University Ave | F | 136.9 | 1.250 | F | 162.1 | 1.328 | +25.154 D/V |
| # 24 University & Donohoe | D | 43.4 | 0.962 | D | 45.6 | 0.973 | + 2.118 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 16.4 | 0.717 | D | 41.3 | 0.994 | +24.945 D/V |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 1.059
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 68.7
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 | 0 | 0 | 1 0 | 0 | 1 | 1 | 0 1 | 0 | 1 | 0 | 0 2 | 0 | 1 | 0 | 1 0 |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1350 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2225 | | 35 | 83 | 13 | |
| Added Vol: | 982 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 55 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2332 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2280 | | 35 | 83 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.91 | 0.91 | 0.91 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.54 | 1.27 | 0.19 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 928 | 2186 | 329 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.45 | 0.03 | 0.03 | | 0.00 | 0.11 | 0.13 | | 0.11 | 0.11 | 0.82 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | |
| Green/Cycle: | 0.43 | 0.43 | 0.43 | | 0.00 | 0.11 | 0.45 | | 0.35 | 0.35 | 0.77 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 1.06 | 0.08 | 0.08 | | 0.00 | 1.06 | 0.30 | | 0.33 | 0.33 | 1.06 | | 1.06 | 1.06 | 1.06 | |
| Uniform Del: | 40.1 | 23.8 | 23.8 | | 0.0 | 62.6 | 24.4 | | 33.9 | 33.9 | 15.9 | | 67.5 | 67.5 | 67.5 | |
| IncremntDel: | 37.0 | 0.0 | 0.0 | | 0.0 | 63.0 | 0.2 | | 0.3 | 0.3 | 37.2 | | 97.6 | 97.6 | 97.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 77.1 | 23.8 | 23.8 | | 0.0 | 126 | 24.6 | | 34.2 | 34.2 | 53.1 | | 165.0 | 165 | 165.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 77.1 | 23.8 | 23.8 | | 0.0 | 126 | 24.6 | | 34.2 | 34.2 | 53.1 | | 165.0 | 165 | 165.0 | |
| LOS by Move: | E | C | C | | A | F | C | | C | C | D | | F | F | F | |
| HCM2kAvgQ: | 44 | 2 | 2 | | 0 | 14 | 6 | | 6 | 6 | 68 | | 6 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.004
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 26.5
Optimal Cycle: 151 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 2 | 0 | 0 | 0 | 0 0 | 0 | 1 | 1 | 0 1 | 0 | 0 | 2 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 562 | 0 | 243 | | 0 | 0 | 0 | | 0 | 2352 | 578 | | 0 | 777 | 902 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 118 | 0 | | 0 | 730 | 251 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 578 | | 0 | 1507 | 1153 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 0 | | 0 | 1507 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 0 | | 0 | 1507 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2470 | 0 | | 0 | 1507 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 2.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 2786 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.00 | 0.14 | | 0.00 | 0.00 | 0.00 | | 0.73 | 0.73 | 0.00 | | 0.00 | 0.43 | 0.00 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.16 | 0.00 | 0.16 | | 0.00 | 0.00 | 0.00 | | 0.73 | 0.73 | 0.00 | | 0.00 | 0.73 | 0.00 | |
| Volume/Cap: | 1.00 | 0.00 | 0.89 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.58 | 0.00 | |
| Uniform Del: | 27.2 | 0.0 | 26.6 | | 0.0 | 0.0 | 0.0 | | 8.8 | 8.8 | 0.0 | | 0.0 | 4.2 | 0.0 | |
| IncremntDel: | 39.0 | 0.0 | 18.5 | | 0.0 | 0.0 | 0.0 | | 19.0 | 19.0 | 0.0 | | 0.0 | 0.3 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 66.2 | 0.0 | 45.1 | | 0.0 | 0.0 | 0.0 | | 27.8 | 27.8 | 0.0 | | 0.0 | 4.5 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 66.2 | 0.0 | 45.1 | | 0.0 | 0.0 | 0.0 | | 27.8 | 27.8 | 0.0 | | 0.0 | 4.5 | 0.0 | |
| LOS by Move: | E | A | D | | A | A | A | | C | C | A | | A | A | A | |
| HCM2kAvgQ: | 11 | 0 | 8 | | 0 | 0 | 0 | | 37 | 37 | 0 | | 0 | 8 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

| | | | |
|---|---|---|---|
| Cycle (sec): | 110 | Critical Vol./Cap.(X): | 1.040 |
| Loss Time (sec): | 10 (Y+R=4.0 sec) | Average Delay (sec/veh): | 50.6 |
| Optimal Cycle: | 180 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Include | | | | Include | | | | Ovl | | | |
| Min. Green: | 0 | 6 | 6 | | 5 | 6 | 0 | | 0 | 0 | 0 | | 6 | 0 | 6 | |
| Lanes: | 0 | 0 1 | 0 | 1 | 1 | 0 1 | 0 | 0 | 0 | 0 0 | 0 | 0 | 1 | 0 0 | 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | | 408 | 269 | 0 | | 0 | 0 | 0 | | 515 | 0 | 447 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 0 | 486 | 625 | | 465 | 307 | 0 | | 0 | 0 | 0 | | 587 | 0 | 510 | |
| Added Vol: | 0 | 58 | 71 | | 25 | 11 | 0 | | 0 | 0 | 0 | | 113 | 0 | 277 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 0 | 544 | 696 | | 490 | 318 | 0 | | 0 | 0 | 0 | | 700 | 0 | 787 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 1.00 | 1.00 | 0.85 | | 0.95 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 0.95 | 1.00 | 0.85 | |
| Lanes: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Final Sat.: | 0 | 1900 | 1615 | | 1805 | 1900 | 0 | | 0 | 0 | 0 | | 1805 | 0 | 1615 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.29 | 0.43 | | 0.27 | 0.17 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.39 | 0.00 | 0.49 | |
| Crit Moves: | | **** | | | **** | | | | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.28 | 0.65 | | 0.26 | 0.54 | 0.00 | | 0.00 | 0.00 | 0.00 | | 0.37 | 0.00 | 0.63 | |
| Volume/Cap: | 0.00 | 1.04 | 0.66 | | 1.04 | 0.31 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.04 | 0.00 | 0.77 | |
| Uniform Del: | 0.0 | 39.9 | 12.0 | | 40.6 | 14.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 34.5 | 0.0 | 14.4 | |
| IncremntDel: | 0.0 | 50.2 | 1.6 | | 52.3 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | | 45.5 | 0.0 | 3.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 0.00 | 1.00 | |
| Delay/Veh: | 0.0 | 90.0 | 13.6 | | 92.9 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | 17.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 0.0 | 90.0 | 13.6 | | 92.9 | 14.4 | 0.0 | | 0.0 | 0.0 | 0.0 | | 80.0 | 0.0 | 17.9 | |
| LOS by Move: | A | F | B | | F | B | A | | A | A | A | | F | A | B | |
| HCM2kAvgQ: | 0 | 26 | 15 | | 24 | 6 | 0 | | 0 | 0 | 0 | | 33 | 0 | 20 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 1.029 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 62.7 |
| Optimal Cycle: | 180 | Level Of Service: | E |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Ovl | | | | Include | | | | Ovl | | | | Ovl | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 3 | 0 | 1 | 2 | 0 3 | 0 | 1 | 1 | 1 1 | 0 | 3 | 2 | 0 2 | 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | | 0 | 2199 | 108 | | 36 | 13 | 1424 | | 44 | 105 | 8 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 413 | 757 | 1 | | 0 | 2507 | 123 | | 41 | 15 | 1623 | | 50 | 120 | 9 | |
| Added Vol: | 404 | 257 | 3 | | 49 | 171 | 0 | | 0 | 94 | 40 | | 317 | 391 | 181 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 817 | 1014 | 4 | | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | 190 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 817 | 1014 | 4 | | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | 190 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 817 | 1014 | 4 | | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | 190 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 817 | 1014 | 4 | | 49 | 2678 | 123 | | 41 | 109 | 1663 | | 367 | 511 | 190 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.03 | 0.83 | | 0.90 | 1.03 | 0.83 | | 0.92 | 0.92 | 0.88 | | 0.90 | 0.93 | 0.83 | |
| Lanes: | 2.00 | 3.00 | 1.00 | | 2.00 | 3.00 | 1.00 | | 1.00 | 2.00 | 3.00 | | 2.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 5846 | 1583 | | 3432 | 5846 | 1583 | | 1744 | 3488 | 5014 | | 3432 | 3538 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.17 | 0.00 | | 0.01 | 0.46 | 0.08 | | 0.02 | 0.03 | 0.33 | | 0.11 | 0.14 | 0.12 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | **** | | |
| Green/Cycle: | 0.23 | 0.55 | 0.69 | | 0.12 | 0.45 | 0.45 | | 0.09 | 0.09 | 0.32 | | 0.14 | 0.14 | 0.26 | |
| Volume/Cap: | 1.03 | 0.31 | 0.00 | | 0.12 | 1.03 | 0.17 | | 0.26 | 0.34 | 1.03 | | 0.76 | 1.03 | 0.46 | |
| Uniform Del: | 50.0 | 15.7 | 6.1 | | 50.7 | 36.1 | 21.7 | | 55.0 | 55.4 | 44.0 | | 53.8 | 55.9 | 40.1 | |
| IncremntDel: | 39.6 | 0.1 | 0.0 | | 0.1 | 25.6 | 0.1 | | 0.2 | 0.5 | 30.2 | | 7.1 | 48.1 | 0.8 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 89.6 | 15.7 | 6.1 | | 50.9 | 61.7 | 21.8 | | 55.2 | 55.9 | 74.3 | | 60.9 | 104 | 40.9 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 89.6 | 15.7 | 6.1 | | 50.9 | 61.7 | 21.8 | | 55.2 | 55.9 | 74.3 | | 60.9 | 104 | 40.9 | |
| LOS by Move: | F | B | A | | D | E | C | | E | E | E | | E | F | D | |
| HCM2kAvgQ: | 23 | 8 | 0 | | 1 | 48 | 3 | | 2 | 2 | 33 | | 9 | 16 | 7 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.805
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 33.9
Optimal Cycle: 89 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 1 0 | 1 | 0 | 2 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 283 | 194 | 63 | | 43 | 189 | 250 | | 368 | 1637 | 386 | | 116 | 1112 | 39 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 7 | 152 | 0 | | 0 | 713 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1789 | 386 | | 116 | 1825 | 39 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.90 | 0.87 | 0.87 | | 0.93 | 0.89 | 0.89 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.47 | 0.53 | | 1.00 | 2.94 | 0.06 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 3432 | 4067 | 879 | | 1769 | 4963 | 105 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.16 | | 0.11 | 0.44 | 0.44 | | 0.07 | 0.37 | 0.37 | |
| Crit Moves: | | **** | | | | **** | | | | **** | | | **** | | | |
| Green/Cycle: | 0.13 | 0.13 | 0.21 | | 0.13 | 0.13 | 0.27 | | 0.14 | 0.55 | 0.55 | | 0.08 | 0.48 | 0.48 | |
| Volume/Cap: | 0.64 | 0.81 | 0.19 | | 0.19 | 0.81 | 0.60 | | 0.76 | 0.81 | 0.81 | | 0.81 | 0.76 | 0.76 | |
| Uniform Del: | 49.6 | 50.8 | 38.9 | | 47.0 | 51.0 | 38.2 | | 49.4 | 22.1 | 22.1 | | 54.2 | 25.3 | 25.3 | |
| IncremntDel: | 3.1 | 17.7 | 0.3 | | 0.4 | 18.1 | 2.5 | | 6.8 | 1.9 | 1.9 | | 27.1 | 1.4 | 1.4 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 52.7 | 68.5 | 39.2 | | 47.4 | 69.1 | 40.7 | | 56.1 | 23.9 | 23.9 | | 81.3 | 26.7 | 26.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 52.7 | 68.5 | 39.2 | | 47.4 | 69.1 | 40.7 | | 56.1 | 23.9 | 23.9 | | 81.3 | 26.7 | 26.7 | |
| LOS by Move: | D | E | D | | D | E | D | | E | C | C | | F | C | C | |
| HCM2kAvgQ: | 6 | 9 | 2 | | 2 | 9 | 9 | | 9 | 25 | 25 | | 6 | 21 | 21 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.130
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 100.7
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 111 | 499 | 560 | | 544 | 471 | 22 | | 41 | 194 | 180 | | 435 | 108 | 467 | |
| Added Vol: | 15 | 8 | 31 | | 82 | 8 | 0 | | 0 | 32 | 24 | | 105 | 21 | 86 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 126 | 507 | 591 | | 626 | 479 | 22 | | 41 | 226 | 204 | | 540 | 129 | 553 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.00 | 2.00 | | 1.67 | 1.27 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.61 | 0.39 | 1.00 | |
| Final Sat.: | 1769 | 1626 | 1626 | | 2860 | 2189 | 99 | | 1769 | 1862 | 1583 | | 2888 | 691 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.31 | 0.36 | | 0.22 | 0.22 | 0.22 | | 0.02 | 0.12 | 0.13 | | 0.19 | 0.19 | 0.35 | |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | | **** | |
| Green/Cycle: | 0.32 | 0.32 | 0.32 | | 0.19 | 0.19 | 0.19 | | 0.11 | 0.11 | 0.11 | | 0.31 | 0.31 | 0.31 | |
| Volume/Cap: | 0.22 | 0.97 | 1.13 | | 1.13 | 1.13 | 1.13 | | 0.20 | 1.06 | 1.13 | | 0.61 | 0.61 | 1.13 | |
| Uniform Del: | 32.2 | 43.5 | 44.1 | | 52.4 | 52.4 | 52.4 | | 52.2 | 57.6 | 57.6 | | 38.1 | 38.1 | 44.9 | |
| IncremntDel: | 0.2 | 20.0 | 71.8 | | 71.5 | 71.5 | 71.5 | | 0.5 | 79.4 | 106.3 | | 1.0 | 1.0 | 81.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.4 | 63.5 | 115.9 | | 123.9 | 124 | 123.9 | | 52.7 | 137 | 163.9 | | 39.1 | 39.1 | 126.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.4 | 63.5 | 115.9 | | 123.9 | 124 | 123.9 | | 52.7 | 137 | 163.9 | | 39.1 | 39.1 | 126.5 | |
| LOS by Move: | C | E | F | | F | F | F | | D | F | F | | D | D | F | |
| HCM2kAvgQ: | 4 | 26 | 20 | | 25 | 25 | 25 | | 2 | 14 | 14 | | 12 | 12 | 33 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.328
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 162.1
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | | 0 | 3488 | 127 | | 60 | 0 | 1667 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 430 | 1104 | 0 | | 0 | 3976 | 145 | | 68 | 0 | 1900 | | 0 | 0 | 0 | |
| Added Vol: | 9 | 116 | 0 | | 0 | 431 | 98 | | 12 | 0 | 26 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 439 | 1220 | 0 | | 0 | 4407 | 243 | | 80 | 0 | 1926 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 439 | 1220 | 0 | | 0 | 4407 | 243 | | 80 | 0 | 1926 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 439 | 1220 | 0 | | 0 | 4407 | 243 | | 80 | 0 | 1926 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 439 | 1220 | 0 | | 0 | 4407 | 243 | | 80 | 0 | 1926 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 4.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 6778 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.24 | 0.00 | | 0.00 | 0.65 | 0.15 | | 0.02 | 0.00 | 0.46 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.10 | 0.59 | 0.00 | | 0.00 | 0.49 | 0.49 | | 0.35 | 0.00 | 0.35 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 1.33 | 0.41 | 0.00 | | 0.00 | 1.33 | 0.31 | | 0.07 | 0.00 | 1.33 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 67.8 | 16.9 | 0.0 | | 0.0 | 38.3 | 23.1 | | 32.7 | 0.0 | 49.0 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 166.9 | 0.1 | 0.0 | | 0.0 | 150 | 0.2 | | 0.0 | 0.0 | 152.3 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 234.7 | 17.0 | 0.0 | | 0.0 | 188 | 23.3 | | 32.7 | 0.0 | 201.3 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 234.7 | 17.0 | 0.0 | | 0.0 | 188 | 23.3 | | 32.7 | 0.0 | 201.3 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | B | A | | A | F | C | | C | A | F | | A | A | A | |
| HCM2kAvgQ: | 19 | 11 | 0 | | 0 | 91 | 7 | | 1 | 0 | 56 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.973
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 45.6
Optimal Cycle: 160 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | | 32 | 175 | 224 | | 217 | 784 | 540 | | 115 | 663 | 173 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 359 | 553 | 683 | | 36 | 199 | 255 | | 247 | 894 | 616 | | 131 | 756 | 197 | |
| Added Vol: | 8 | 0 | 7 | | 0 | 0 | 0 | | 0 | 21 | 0 | | 0 | 103 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 367 | 553 | 690 | | 36 | 199 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 367 | 553 | 690 | | 36 | 199 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 367 | 553 | 690 | | 36 | 199 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 367 | 553 | 690 | | 36 | 200 | 255 | | 247 | 915 | 616 | | 131 | 859 | 197 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.88 | 0.88 | 0.88 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.89 | 0.89 | | 0.92 | 0.92 | 0.92 | |
| Lanes: | 1.00 | 1.33 | 1.67 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.20 | 0.80 | | 2.00 | 1.63 | 0.37 | |
| Final Sat.: | 1671 | 2230 | 2783 | | 1805 | 1900 | 1615 | | 1805 | 2028 | 1365 | | 3502 | 2854 | 655 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.25 | 0.25 | | 0.02 | 0.11 | 0.16 | | 0.14 | 0.45 | 0.45 | | 0.04 | 0.30 | 0.30 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.22 | 0.32 | 0.32 | | 0.06 | 0.16 | 0.16 | | 0.16 | 0.46 | 0.46 | | 0.05 | 0.35 | 0.35 | |
| Volume/Cap: | 0.99 | 0.78 | 0.78 | | 0.31 | 0.66 | 0.99 | | 0.86 | 0.99 | 0.99 | | 0.75 | 0.86 | 0.86 | |
| Uniform Del: | 38.7 | 30.9 | 30.9 | | 44.7 | 39.4 | 41.9 | | 41.0 | 26.8 | 26.8 | | 46.9 | 30.4 | 30.4 | |
| IncremntDel: | 19.1 | 1.9 | 1.9 | | 1.6 | 5.1 | 52.1 | | 22.7 | 19.7 | 19.7 | | 16.3 | 6.6 | 6.6 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 57.8 | 32.8 | 32.8 | | 46.2 | 44.5 | 93.9 | | 63.8 | 46.5 | 46.5 | | 63.2 | 37.0 | 37.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 57.8 | 32.8 | 32.8 | | 46.2 | 44.5 | 93.9 | | 63.8 | 46.5 | 46.5 | | 63.2 | 37.0 | 37.0 | |
| LOS by Move: | E | C | C | | D | D | F | | E | D | D | | E | D | D | |
| HCM2kAvgQ: | 17 | 14 | 14 | | 1 | 7 | 13 | | 10 | 32 | 32 | | 4 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 Bayfront Exp. & Chrysler Dr.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 0.994 |
| Loss Time (sec): | 9 (Y+R=4.0 sec) | Average Delay (sec/veh): | 41.3 |
| Optimal Cycle: | 180 | Level Of Service: | D |

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 5 | 0 | 0 | 0 | | | | |
| Lanes: | 1 | 0 | 3 | 0 0 | 0 | 0 | 3 | 0 1 | 1 | 0 | 1! | 0 0 | 0 | 0 | 0 | 0 0 |
| Volume Module:5:00 - 6:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 10 | 932 | 0 | 0 | 2235 | 16 | 334 | 0 | 76 | 0 | 0 | 0 | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | | | | |
| Initial Bse: | 11 | 1062 | 0 | 0 | 2548 | 18 | 381 | 0 | 87 | 0 | 0 | 0 | | | | |
| Added Vol: | 38 | 364 | 0 | 0 | 55 | 0 | 618 | 0 | 86 | 0 | 0 | 0 | | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Initial Fut: | 49 | 1426 | 0 | 0 | 2603 | 18 | 999 | 0 | 173 | 0 | 0 | 0 | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| PHF Volume: | 49 | 1426 | 0 | 0 | 2603 | 18 | 999 | 0 | 173 | 0 | 0 | 0 | | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Reduced Vol: | 49 | 1426 | 0 | 0 | 2603 | 18 | 999 | 0 | 173 | 0 | 0 | 0 | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| FinalVolume: | 49 | 1426 | 0 | 0 | 2603 | 18 | 999 | 0 | 173 | 0 | 0 | 0 | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | | |
| Adjustment: | 0.93 | 0.89 | 1.00 | 1.00 | 0.89 | 0.83 | 0.92 | 1.00 | 0.92 | 1.00 | 1.00 | 1.00 | | | | |
| Lanes: | 1.00 | 3.00 | 0.00 | 0.00 | 3.00 | 1.00 | 1.74 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | | | | |
| Final Sat.: | 1769 | 5083 | 0 | 0 | 5083 | 1583 | 3044 | 0 | 449 | 0 | 0 | 0 | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.03 | 0.28 | 0.00 | 0.00 | 0.51 | 0.01 | 0.33 | 0.00 | 0.38 | 0.00 | 0.00 | 0.00 | | | | |
| Crit Moves: | **** | | | | **** | | | | **** | | | | | | | |
| Green/Cycle: | 0.04 | 0.55 | 0.00 | 0.00 | 0.51 | 0.51 | 0.38 | 0.00 | 0.38 | 0.00 | 0.00 | 0.00 | | | | |
| Volume/Cap: | 0.73 | 0.51 | 0.00 | 0.00 | 1.01 | 0.02 | 0.86 | 0.00 | 1.01 | 0.00 | 0.00 | 0.00 | | | | |
| Uniform Del: | 61.8 | 18.5 | 0.0 | 0.0 | 31.9 | 15.8 | 36.8 | 0.0 | 40.1 | 0.0 | 0.0 | 0.0 | | | | |
| IncremntDel: | 32.1 | 0.2 | 0.0 | 0.0 | 18.9 | 0.0 | 5.6 | 0.0 | 27.6 | 0.0 | 0.0 | 0.0 | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | | | | |
| Delay/Veh: | 93.9 | 18.6 | 0.0 | 0.0 | 50.8 | 15.8 | 42.4 | 0.0 | 67.7 | 0.0 | 0.0 | 0.0 | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | |
| AdjDel/Veh: | 93.9 | 18.6 | 0.0 | 0.0 | 50.8 | 15.8 | 42.4 | 0.0 | 67.7 | 0.0 | 0.0 | 0.0 | | | | |
| LOS by Move: | F | B | A | A | D | B | D | A | E | A | A | A | | | | |
| HCM2kAvgQ: | 3 | 13 | 0 | 0 | 46 | 0 | 23 | 0 | 34 | 0 | 0 | 0 | | | | |

Note: Queue reported is the number of cars per lane.

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Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Cumulative 2025 East and West Campuses AM |
| Command: | Long Term Project II AM |
| Volume: | Long Term Project II AM |
| Geometry: | Long Term Project II AM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project II AM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project II AM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | C | 25.2 | 0.832 | C | 29.0 | 0.888 | + 3.886 D/V |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 16.7 | 0.700 | D | 39.6 | 1.023 | +22.922 D/V |
| # 7 Middlefield at Marsh (Town of | C | 27.5 | 0.564 | C | 25.5 | 0.693 | -2.004 D/V |
| # 8 Bayfront Exp. & Willow Rd. | C | 25.8 | 0.621 | E | 62.4 | 1.003 | +36.585 D/V |
| # 12 Newbridge St. & Willow Rd. | D | 44.6 | 0.803 | D | 53.6 | 0.974 | + 8.985 D/V |
| # 17 Middlefield Rd. & Willow Rd. | F | 87.0 | 0.865 | E | 77.0 | 1.031 | -9.987 D/V |
| # 18 Bayfront Exp. & University Ave | C | 31.2 | 0.829 | D | 36.9 | 0.948 | + 5.637 D/V |
| # 24 University & Donohoe | D | 42.0 | 0.972 | D | 45.6 | 1.002 | + 3.625 D/V |
| # 29 Bayfront Exp. & Chrysler Dr. | A | 5.9 | 0.607 | B | 13.1 | 0.681 | + 7.224 D/V |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.888
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.0
Optimal Cycle: 118 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 |
| Volume Module: >> Count Date: 22 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 2297 | 189 | 23 | | 7 | 58 | 148 | | 182 | 20 | 997 | | 7 | 19 | 5 | | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | | | | |
| Initial Bse: | 2619 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1137 | | 8 | 22 | 6 | | | | | |
| Added Vol: | 211 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 784 | | 0 | 0 | 0 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| PHF Volume: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| FinalVolume: | 2830 | 215 | 26 | | 8 | 66 | 169 | | 207 | 23 | 1921 | | 8 | 22 | 6 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.93 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.90 | 0.90 | 0.90 | | | | | |
| Lanes: | 3.00 | 0.89 | 0.11 | | 0.22 | 1.78 | 1.00 | | 0.90 | 0.10 | 2.00 | | 0.45 | 1.23 | 0.32 | | | | | |
| Final Sat.: | 5147 | 1633 | 199 | | 379 | 3141 | 1583 | | 1606 | 176 | 2786 | | 771 | 2093 | 551 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.55 | 0.13 | 0.13 | | 0.02 | 0.02 | 0.11 | | 0.13 | 0.13 | 0.69 | | 0.01 | 0.01 | 0.01 | | | | | |
| Crit Moves: | **** | | | | | | **** | | | | **** | | | **** | | | | | | |
| Green/Cycle: | 0.60 | 0.60 | 0.60 | | 0.12 | 0.12 | 0.12 | | 0.15 | 0.15 | 0.75 | | 0.04 | 0.04 | 0.04 | | | | | |
| Volume/Cap: | 0.92 | 0.22 | 0.22 | | 0.18 | 0.18 | 0.92 | | 0.85 | 0.85 | 0.92 | | 0.27 | 0.27 | 0.27 | | | | | |
| Uniform Del: | 23.1 | 12.0 | 12.0 | | 51.8 | 51.8 | 56.8 | | 53.6 | 53.6 | 12.8 | | 60.7 | 60.7 | 60.7 | | | | | |
| IncremntDel: | 4.9 | 0.1 | 0.1 | | 0.2 | 0.2 | 43.1 | | 21.1 | 21.1 | 6.8 | | 1.1 | 1.1 | 1.1 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| Delay/Veh: | 27.9 | 12.1 | 12.1 | | 52.1 | 52.1 | 99.9 | | 74.7 | 74.7 | 19.6 | | 61.8 | 61.8 | 61.8 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 27.9 | 12.1 | 12.1 | | 52.1 | 52.1 | 99.9 | | 74.7 | 74.7 | 19.6 | | 61.8 | 61.8 | 61.8 | | | | | |
| LOS by Move: | C | B | B | | D | D | F | | E | E | B | | E | E | E | | | | | |
| HCM2kAvgQ: | 38 | 4 | 4 | | 1 | 1 | 10 | | 11 | 11 | 38 | | 1 | 1 | 1 | | | | | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 80 Critical Vol./Cap.(X): 1.023
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 39.6
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 818 | 0 | 289 | | 0 | 0 | 0 | | 0 | 1138 | 506 | | 0 | 821 | 1699 | | | | | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | | | | |
| Initial Bse: | 933 | 0 | 329 | | 0 | 0 | 0 | | 0 | 1297 | 577 | | 0 | 936 | 1937 | | | | | |
| Added Vol: | 2 | 0 | 394 | | 0 | 0 | 0 | | 2 | 934 | 0 | | 0 | 164 | 47 | | | | | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Initial Fut: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 577 | | 0 | 1100 | 1984 | | | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| PHF Volume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 0 | | 0 | 1100 | 0 | | | | | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | | | |
| Reduced Vol: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 0 | | 0 | 1100 | 0 | | | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | | | | |
| FinalVolume: | 935 | 0 | 723 | | 0 | 0 | 0 | | 2 | 2231 | 0 | | 0 | 1100 | 0 | | | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | | | | |
| Adjustment: | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | | | | | |
| Lanes: | 2.00 | 0.00 | 2.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | | | | | |
| Final Sat.: | 3432 | 0 | 2786 | | 0 | 0 | 0 | | 3 | 3376 | 1900 | | 0 | 3538 | 1900 | | | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.27 | 0.00 | 0.26 | | 0.00 | 0.00 | 0.00 | | 0.66 | 0.66 | 0.00 | | 0.00 | 0.31 | 0.00 | | | | | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | | | | | |
| Green/Cycle: | 0.27 | 0.00 | 0.27 | | 0.00 | 0.00 | 0.00 | | 0.65 | 0.65 | 0.00 | | 0.00 | 0.65 | 0.00 | | | | | |
| Volume/Cap: | 1.02 | 0.00 | 0.98 | | 0.00 | 0.00 | 0.00 | | 1.02 | 1.02 | 0.00 | | 0.00 | 0.48 | 0.00 | | | | | |
| Uniform Del: | 29.4 | 0.0 | 29.1 | | 0.0 | 0.0 | 0.0 | | 14.1 | 14.1 | 0.0 | | 0.0 | 7.3 | 0.0 | | | | | |
| IncremntDel: | 35.7 | 0.0 | 27.0 | | 0.0 | 0.0 | 0.0 | | 25.3 | 25.3 | 0.0 | | 0.0 | 0.2 | 0.0 | | | | | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | | | | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | | | | | |
| Delay/Veh: | 65.0 | 0.0 | 56.0 | | 0.0 | 0.0 | 0.0 | | 39.4 | 39.4 | 0.0 | | 0.0 | 7.4 | 0.0 | | | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | | | | |
| AdjDel/Veh: | 65.0 | 0.0 | 56.0 | | 0.0 | 0.0 | 0.0 | | 39.4 | 39.4 | 0.0 | | 0.0 | 7.4 | 0.0 | | | | | |
| LOS by Move: | E | A | E | | A | A | A | | D | D | A | | A | A | A | | | | | |
| HCM2kAvgQ: | 19 | 0 | 16 | | 0 | 0 | 0 | | 40 | 40 | 0 | | 0 | 8 | 0 | | | | | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

| | | | |
|---|---|---|---|
| Cycle (sec): | 110 | Critical Vol./Cap.(X): | 0.693 |
| Loss Time (sec): | 10 (Y+R=4.0 sec) | Average Delay (sec/veh): | 25.5 |
| Optimal Cycle: | 54 | Level Of Service: | C |

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Ovl | | | Include | | | Include | | | Ovl | | |
| Min. Green: | 0 | 6 | 6 | 5 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| Lanes: | 0 0 | 1 0 | 1 | 2 0 | 1 0 | 0 | 0 0 | 0 0 | 0 | 1 0 | 0 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m. | | | | | | | | | | | | |
| Base Vol: | 0 | 166 | 397 | 342 | 367 | 0 | 0 | 0 | 0 | 463 | 0 | 169 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 0 | 189 | 453 | 390 | 418 | 0 | 0 | 0 | 0 | 528 | 0 | 193 |
| Added Vol: | 0 | 8 | 152 | 323 | 64 | 0 | 0 | 0 | 0 | 55 | 0 | 57 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 197 | 605 | 713 | 482 | 0 | 0 | 0 | 0 | 583 | 0 | 250 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 0 | 197 | 605 | 713 | 482 | 0 | 0 | 0 | 0 | 583 | 0 | 250 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 197 | 605 | 713 | 482 | 0 | 0 | 0 | 0 | 583 | 0 | 250 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 197 | 605 | 713 | 482 | 0 | 0 | 0 | 0 | 583 | 0 | 250 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 0.85 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 |
| Lanes: | 0.00 | 1.00 | 1.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 1900 | 1615 | 3502 | 1900 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.10 | 0.37 | 0.20 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.15 |
| Crit Moves: | | **** | | **** | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.15 | 0.62 | 0.29 | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.47 | 0.00 | 0.76 |
| Volume/Cap: | 0.00 | 0.69 | 0.61 | 0.69 | 0.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.69 | 0.00 | 0.20 |
| Uniform Del: | 0.0 | 44.4 | 13.0 | 34.5 | 22.8 | 0.0 | 0.0 | 0.0 | 0.0 | 23.2 | 0.0 | 3.8 |
| IncremntDel: | 0.0 | 7.2 | 1.1 | 2.1 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 0.0 | 0.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Delay/Veh: | 0.0 | 51.6 | 14.1 | 36.5 | 23.8 | 0.0 | 0.0 | 0.0 | 0.0 | 25.7 | 0.0 | 3.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 51.6 | 14.1 | 36.5 | 23.8 | 0.0 | 0.0 | 0.0 | 0.0 | 25.7 | 0.0 | 3.8 |
| LOS by Move: | A | D | B | D | C | A | A | A | A | C | A | A |
| HCM2kAvgQ: | 0 | 8 | 13 | 12 | 12 | 0 | 0 | 0 | 0 | 16 | 0 | 2 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 1.003 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 62.4 |
| Optimal Cycle: | 180 | Level Of Service: | E |

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Ovl | | | Include | | | Include | | | Include | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 2 0 | 3 0 | 1 | 2 0 | 3 0 | 1 | 1 1 | 1 0 | 3 | 2 0 | 2 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:45 - 8:45 AM | | | | | | | | | | | | |
| Base Vol: | 1034 | 2108 | 6 | 13 | 677 | 92 | 84 | 34 | 379 | 3 | 6 | 5 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 1179 | 2403 | 7 | 15 | 772 | 105 | 96 | 39 | 432 | 3 | 7 | 6 |
| Added Vol: | 69 | 433 | 24 | 441 | 59 | 43 | 494 | 838 | 14 | 24 | 30 | 14 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 1248 | 2836 | 31 | 456 | 831 | 148 | 590 | 877 | 446 | 27 | 37 | 20 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 1248 | 2836 | 31 | 456 | 831 | 148 | 590 | 877 | 446 | 27 | 37 | 20 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 1248 | 2836 | 31 | 456 | 831 | 148 | 590 | 877 | 446 | 27 | 37 | 20 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 1248 | 2836 | 31 | 456 | 831 | 148 | 590 | 877 | 446 | 27 | 37 | 20 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.91 | 0.91 | 0.88 | 0.90 | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.21 | 1.79 | 3.00 | 2.00 | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 2091 | 3109 | 5014 | 3432 | 3538 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.36 | 0.49 | 0.02 | 0.13 | 0.14 | 0.09 | 0.28 | 0.28 | 0.09 | 0.01 | 0.01 | 0.01 |
| Crit Moves: | | **** | | **** | | | | **** | | | **** | |
| Green/Cycle: | 0.43 | 0.47 | 0.51 | 0.13 | 0.17 | 0.17 | 0.27 | 0.27 | 0.27 | 0.04 | 0.04 | 0.04 |
| Volume/Cap: | 0.85 | 1.04 | 0.04 | 1.04 | 0.85 | 0.56 | 1.04 | 1.04 | 0.33 | 0.21 | 0.27 | 0.32 |
| Uniform Del: | 33.3 | 34.5 | 16.1 | 56.7 | 52.5 | 49.7 | 47.3 | 47.3 | 37.8 | 60.6 | 60.7 | 60.9 |
| IncremntDel: | 4.8 | 27.2 | 0.0 | 52.3 | 7.0 | 2.6 | 33.6 | 33.6 | 0.1 | 0.8 | 1.1 | 3.1 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 38.1 | 61.7 | 16.1 | 109.0 | 59.5 | 52.3 | 80.9 | 80.9 | 37.9 | 61.4 | 61.8 | 63.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 38.1 | 61.7 | 16.1 | 109.0 | 59.5 | 52.3 | 80.9 | 80.9 | 37.9 | 61.4 | 61.8 | 63.9 |
| LOS by Move: | D | E | B | F | E | D | F | F | D | E | E | E |
| HCM2kAvgQ: | 25 | 51 | 1 | 14 | 14 | 6 | 28 | 28 | 5 | 1 | 1 | 1 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.974
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 53.6
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 1 0 | 1 | 0 | 2 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 7:30 AM to 8:30 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 350 | 111 | 36 | | 28 | 178 | 384 | | 148 | 826 | 155 | | 28 | 1221 | 4 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 399 | 127 | 41 | | 32 | 203 | 438 | | 169 | 942 | 177 | | 32 | 1392 | 5 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 4 | | 10 | 1168 | 0 | | 0 | 150 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 399 | 127 | 41 | | 32 | 203 | 442 | | 179 | 2110 | 177 | | 32 | 1542 | 5 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.90 | 0.88 | 0.88 | | 0.93 | 0.89 | 0.89 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.77 | 0.23 | | 1.00 | 2.99 | 0.01 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 3432 | 4634 | 388 | | 1769 | 5068 | 15 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.07 | 0.03 | | 0.02 | 0.11 | 0.28 | | 0.05 | 0.46 | 0.46 | | 0.02 | 0.30 | 0.30 | |
| Crit Moves: | **** | | | | | | **** | | | **** | | | **** | | | |
| Green/Cycle: | 0.12 | 0.12 | 0.12 | | 0.28 | 0.28 | 0.28 | | 0.07 | 0.46 | 0.46 | | 0.04 | 0.42 | 0.42 | |
| Volume/Cap: | 1.00 | 0.58 | 0.22 | | 0.06 | 0.39 | 1.00 | | 0.72 | 1.00 | 1.00 | | 0.47 | 0.72 | 0.72 | |
| Uniform Del: | 57.4 | 54.4 | 52.1 | | 34.3 | 37.8 | 46.7 | | 59.0 | 35.2 | 35.2 | | 61.2 | 31.1 | 31.1 | |
| IncremntDel: | 43.9 | 4.0 | 0.6 | | 0.1 | 0.5 | 41.7 | | 9.8 | 17.9 | 17.9 | | 5.0 | 1.2 | 1.2 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 101.3 | 58.4 | 52.7 | | 34.4 | 38.3 | 88.4 | | 68.8 | 53.1 | 53.1 | | 66.2 | 32.3 | 32.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 101.3 | 58.4 | 52.7 | | 34.4 | 38.3 | 88.4 | | 68.8 | 53.1 | 53.1 | | 66.2 | 32.3 | 32.3 | |
| LOS by Move: | F | E | D | | C | D | F | | E | D | D | | E | C | C | |
| HCM2kAvgQ: | 12 | 6 | 2 | | 1 | 7 | 23 | | 5 | 40 | 40 | | 2 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.031
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 77.0
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 67 | 342 | 245 | | 408 | 322 | 10 | | 16 | 166 | 117 | | 420 | 64 | 494 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 76 | 390 | 279 | | 465 | 367 | 11 | | 18 | 189 | 133 | | 479 | 73 | 563 | |
| Added Vol: | 15 | 9 | 146 | | 101 | 7 | 0 | | 0 | 30 | 10 | | 22 | 19 | 80 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 91 | 399 | 425 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 91 | 399 | 425 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| Reduct Vol: | 0 | 0 | 3 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 91 | 399 | 422 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 91 | 399 | 422 | | 566 | 374 | 11 | | 18 | 219 | 143 | | 501 | 92 | 643 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.00 | 2.00 | | 1.78 | 1.18 | 0.04 | | 1.00 | 1.00 | 1.00 | | 1.69 | 0.31 | 1.00 | |
| Final Sat.: | 1769 | 1633 | 1633 | | 3059 | 2022 | 62 | | 1769 | 1862 | 1583 | | 3017 | 554 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.05 | 0.24 | 0.26 | | 0.19 | 0.19 | 0.19 | | 0.01 | 0.12 | 0.09 | | 0.17 | 0.17 | 0.41 | |
| Crit Moves: | | | **** | | | | **** | | | **** | | | | | **** | |
| Green/Cycle: | 0.25 | 0.25 | 0.25 | | 0.18 | 0.18 | 0.18 | | 0.11 | 0.11 | 0.11 | | 0.39 | 0.39 | 0.39 | |
| Volume/Cap: | 0.21 | 0.97 | 1.03 | | 1.03 | 1.03 | 1.03 | | 0.09 | 1.03 | 0.79 | | 0.42 | 0.42 | 1.03 | |
| Uniform Del: | 38.5 | 48.3 | 48.7 | | 53.3 | 53.3 | 53.3 | | 51.5 | 57.6 | 56.1 | | 28.6 | 28.6 | 39.4 | |
| IncremntDel: | 0.2 | 24.7 | 40.2 | | 37.9 | 37.9 | 37.9 | | 0.2 | 70.1 | 20.9 | | 0.2 | 0.2 | 44.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 38.7 | 73.0 | 88.9 | | 91.3 | 91.3 | 91.3 | | 51.7 | 128 | 77.0 | | 28.8 | 28.8 | 83.7 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 38.7 | 73.0 | 88.9 | | 91.3 | 91.3 | 91.3 | | 51.7 | 128 | 77.0 | | 28.8 | 28.8 | 83.7 | |
| LOS by Move: | D | E | F | | F | F | F | | D | F | E | | C | C | F | |
| HCM2kAvgQ: | 3 | 22 | 14 | | 19 | 19 | 19 | | 1 | 14 | 8 | | 8 | 8 | 33 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 160 Critical Vol./Cap.(X): 0.948
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 36.9
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 3 | 0 | 0 | 0 | 0 4 | 0 | 1 | 2 | 0 0 | 0 | 3 | 0 | 0 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 7:15 - 8:15 AM | | | | | | | | | | | | | | | | |
| Base Vol: | 1541 | 2882 | 0 | | 0 | 884 | 188 | | 179 | 0 | 429 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1757 | 3285 | 0 | | 0 | 1008 | 214 | | 204 | 0 | 489 | | 0 | 0 | 0 | |
| Added Vol: | 23 | 631 | 0 | | 0 | 85 | 13 | | 181 | 0 | 7 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 1780 | 3916 | 0 | | 0 | 1093 | 227 | | 385 | 0 | 496 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 4.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 6778 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.52 | 0.77 | 0.00 | | 0.00 | 0.16 | 0.14 | | 0.11 | 0.00 | 0.12 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | | **** | | | **** | | | | | | **** | | | | | |
| Green/Cycle: | 0.62 | 0.81 | 0.00 | | 0.00 | 0.19 | 0.19 | | 0.13 | 0.00 | 0.13 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 0.84 | 0.95 | 0.00 | | 0.00 | 0.84 | 0.75 | | 0.90 | 0.00 | 0.95 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 24.0 | 12.3 | 0.0 | | 0.0 | 62.2 | 60.9 | | 69.0 | 0.0 | 69.5 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 3.1 | 5.9 | 0.0 | | 0.0 | 4.9 | 9.6 | | 20.9 | 0.0 | 26.9 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 27.1 | 18.1 | 0.0 | | 0.0 | 67.1 | 70.5 | | 89.9 | 0.0 | 96.4 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 27.1 | 18.1 | 0.0 | | 0.0 | 67.1 | 70.5 | | 89.9 | 0.0 | 96.4 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | C | B | A | | A | E | E | | F | A | F | | A | A | A | |
| HCM2kAvgQ: | 37 | 62 | 0 | | 0 | 16 | 12 | | 12 | 0 | 13 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 1.002
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 45.6
Optimal Cycle: 180 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - T | - R | | L | - T | - R | | L | - T | - R | | L | - T | - R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 0 | 1 | 1 | 1 | 0 1 | 0 | 1 | 2 | 0 2 | 0 | 1 | 1 | 0 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | |
| Base Vol: | 362 | 437 | 328 | | 11 | 124 | 383 | | 117 | 352 | 283 | | 49 | 1205 | 68 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 413 | 498 | 374 | | 13 | 141 | 437 | | 133 | 401 | 323 | | 56 | 1374 | 78 | |
| Added Vol: | 22 | 0 | 100 | | 0 | 0 | 0 | | 0 | 86 | 0 | | 0 | 27 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 435 | 498 | 474 | | 13 | 141 | 437 | | 133 | 487 | 323 | | 56 | 1401 | 78 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.89 | 0.89 | 0.89 | | 0.95 | 1.00 | 0.85 | | 0.92 | 0.95 | 0.85 | | 0.95 | 0.94 | 0.94 | |
| Lanes: | 1.23 | 1.42 | 1.35 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.00 | 1.00 | | 1.00 | 1.90 | 0.10 | |
| Final Sat.: | 2085 | 2390 | 2274 | | 1805 | 1900 | 1615 | | 3502 | 3610 | 1615 | | 1805 | 3393 | 188 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.21 | 0.21 | 0.21 | | 0.01 | 0.07 | 0.27 | | 0.04 | 0.13 | 0.20 | | 0.03 | 0.41 | 0.41 | |
| Crit Moves: | **** | | | | | | **** | | **** | | | | | **** | | |
| Green/Cycle: | 0.21 | 0.35 | 0.35 | | 0.08 | 0.22 | 0.27 | | 0.05 | 0.37 | 0.37 | | 0.09 | 0.41 | 0.41 | |
| Volume/Cap: | 1.00 | 0.60 | 0.60 | | 0.08 | 0.34 | 1.00 | | 0.76 | 0.37 | 0.54 | | 0.33 | 1.00 | 1.00 | |
| Uniform Del: | 39.6 | 27.1 | 27.1 | | 42.4 | 32.9 | 36.5 | | 46.9 | 23.0 | 24.8 | | 42.5 | 29.4 | 29.4 | |
| IncremntDel: | 24.5 | 0.5 | 0.5 | | 0.2 | 0.5 | 43.5 | | 17.7 | 0.2 | 1.0 | | 1.2 | 23.9 | 23.9 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 64.1 | 27.5 | 27.5 | | 42.6 | 33.4 | 80.0 | | 64.6 | 23.1 | 25.8 | | 43.7 | 53.3 | 53.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 64.1 | 27.5 | 27.5 | | 42.6 | 33.4 | 80.0 | | 64.6 | 23.1 | 25.8 | | 43.7 | 53.3 | 53.3 | |
| LOS by Move: | E | C | C | | D | C | E | | E | C | C | | D | D | D | |
| HCM2kAvgQ: | 17 | 10 | 10 | | 0 | 4 | 20 | | 4 | 6 | 8 | | 2 | 32 | 32 | |

Note: Queue reported is the number of cars per lane.

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--------------------------------------------------------------------------------
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                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #29 Bayfront Exp. & Chrysler Dr.
********************************************************************************
Cycle (sec):         130                 Critical Vol./Cap.(X):         0.681
Loss Time (sec):       9 (Y+R=4.0 sec)  Average Delay (sec/veh):        13.1
Optimal Cycle:        51                 Level Of Service:                  B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     5    5     0     0    5     5     5    0     5     0    0     0
Lanes:        1  0  3  0  0    0  0  3  0  1    1  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 21 Oct 2009 << 7:15 - 8:15 AM
Base Vol:      45 2362     0     0 1034    31   103    0     6     0    0     0
Growth Adj:  1.14 1.14  1.14  1.14 1.14  1.14  1.14 1.14  1.14  1.14 1.14  1.14
Initial Bse:   51 2693     0     0 1179    35   117    0     7     0    0     0
Added Vol:     94   56     0     0  784     0   154    0    21     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  145 2749     0     0 1963    35   271    0    28     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   145 2749     0     0 1963    35   271    0    28     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  145 2749     0     0 1963    35   271    0    28     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  145 2749     0     0 1963    35   271    0    28     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.89  1.00  1.00 0.89  0.83  0.92 1.00  0.92  1.00 1.00  1.00
Lanes:       1.00 3.00  0.00  0.00 3.00  1.00  1.83 0.00  0.17  0.00 0.00  0.00
Final Sat.:  1769 5083     0     0 5083  1583  3215    0   299     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.54  0.00  0.00 0.39  0.02  0.08 0.00  0.09  0.00 0.00  0.00
Crit Moves:       ****        ****                          ****
Green/Cycle: 0.14 0.79  0.00  0.00 0.65  0.65  0.14 0.00  0.14  0.00 0.00  0.00
Volume/Cap:  0.59 0.68  0.00  0.00 0.59  0.03  0.62 0.00  0.68  0.00 0.00  0.00
Uniform Del: 52.5  6.0   0.0   0.0 12.6   7.9  52.9  0.0  53.4   0.0  0.0   0.0
IncremntDel:  3.7  0.5   0.0   0.0  0.3   0.0   2.4  0.0   4.3   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Delay/Veh:   56.2  6.5   0.0   0.0 12.9   7.9  55.3  0.0  57.7   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  56.2  6.5   0.0   0.0 12.9   7.9  55.3  0.0  57.7   0.0  0.0   0.0
LOS by Move:   E    A     A     A    B     A     E    A     E     A    A     A
HCM2kAvgQ:      6   18     0     0   16     0     6    0     7     0    0     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
```

Scenario Report

| | |
|---|---|
| Scenario: | Mitigation Cumulative 2025 East and West Campuses PM |
| Command: | Long Term Project II PM |
| Volume: | Long Term Project II PM |
| Geometry: | Long Term Project II PM |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | Long Term Project II PM |
| Trip Distribution: | Near-Term |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Long Term Project II PM |





Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in D/V |
|---|---|---|---|---|---|---|---|
| # 1 Bayfront Exp. & Marsh Rd. | E | 64.8 | 1.037 | E | 71.8 | 1.071 | + 6.972 |
| # 2 US 101 NB Ramps & Marsh Rd. | B | 17.7 | 0.929 | C | 27.8 | 1.014 | +10.094 |
| # 7 Middlefield at Marsh (Town of | C | 34.7 | 0.787 | D | 37.2 | 0.925 | + 2.546 |
| # 8 Bayfront Exp. & Willow Rd. | D | 36.4 | 0.866 | E | 69.1 | 1.061 | +32.712 |
| # 12 Newbridge St. & Willow Rd. | C | 33.2 | 0.771 | C | 34.8 | 0.843 | + 1.637 |
| # 17 Middlefield Rd. & Willow Rd. | E | 75.2 | 1.016 | F | 100.8 | 1.132 | +25.574 |
| # 18 Bayfront Exp. & University Ave | F | 136.9 | 1.250 | F | 167.8 | 1.346 | +30.810 |
| # 24 University & Donohoe | D | 37.5 | 0.902 | D | 39.2 | 0.914 | + 1.655 |
| # 29 Bayfront Exp. & Chrysler Dr. | B | 16.4 | 0.717 | D | 41.7 | 1.000 | +25.305 |

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Bayfront Exp. & Marsh Rd.

Cycle (sec): 140 Critical Vol./Cap.(X): 1.071
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 71.8
Optimal Cycle: 180 Level Of Service: E

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Ovl | | | | Ovl | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 3 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 |
| Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 1184 | 49 | 7 | | 0 | 346 | 186 | | 139 | 40 | 1952 | | 31 | 73 | 11 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 1350 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2225 | | 35 | 83 | 13 | |
| Added Vol: | 1224 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 86 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 2574 | 56 | 8 | | 0 | 394 | 212 | | 158 | 46 | 2311 | | 35 | 83 | 13 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.96 | 0.96 | | 0.95 | 0.93 | 0.83 | | 0.94 | 0.94 | 0.73 | | 0.91 | 0.91 | 0.91 | |
| Lanes: | 3.00 | 0.87 | 0.13 | | 0.00 | 2.00 | 1.00 | | 0.78 | 0.22 | 2.00 | | 0.54 | 1.27 | 0.19 | |
| Final Sat.: | 5147 | 1598 | 228 | | 0 | 3538 | 1583 | | 1392 | 401 | 2786 | | 928 | 2186 | 329 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.50 | 0.03 | 0.03 | | 0.00 | 0.11 | 0.13 | | 0.11 | 0.11 | 0.83 | | 0.04 | 0.04 | 0.04 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | **** | | | |
| Green/Cycle: | 0.47 | 0.47 | 0.47 | | 0.00 | 0.10 | 0.41 | | 0.31 | 0.31 | 0.77 | | 0.04 | 0.04 | 0.04 | |
| Volume/Cap: | 1.07 | 0.07 | 0.07 | | 0.00 | 1.07 | 0.33 | | 0.37 | 0.37 | 1.07 | | 1.07 | 1.07 | 1.07 | |
| Uniform Del: | 37.3 | 20.6 | 20.6 | | 0.0 | 62.7 | 28.0 | | 37.8 | 37.8 | 15.8 | | 67.5 | 67.5 | 67.5 | |
| IncremntDel: | 40.9 | 0.0 | 0.0 | | 0.0 | 67.2 | 0.3 | | 0.4 | 0.4 | 41.7 | | 100.0 | 100 | 100.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 78.3 | 20.7 | 20.7 | | 0.0 | 130 | 28.3 | | 38.3 | 38.3 | 57.5 | | 167.5 | 168 | 167.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 78.3 | 20.7 | 20.7 | | 0.0 | 130 | 28.3 | | 38.3 | 38.3 | 57.5 | | 167.5 | 168 | 167.5 | |
| LOS by Move: | E | C | C | | A | F | C | | D | D | E | | F | F | F | |
| HCM2kAvgQ: | 49 | 1 | 1 | | 0 | 14 | 6 | | 7 | 7 | 70 | | 6 | 6 | 6 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 US 101 NB Ramps & Marsh Rd.

Cycle (sec): 65 Critical Vol./Cap.(X): 1.014
Loss Time (sec): 7 (Y+R=4.0 sec) Average Delay (sec/veh): 27.8
Optimal Cycle: 166 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Split Phase | | | | Split Phase | | | | Permitted | | | | Permitted | | | |
| Rights: | Include | | | | Include | | | | Ignore | | | | Ignore | | | |
| Min. Green: | 5 | 0 | 5 | | 0 | 0 | 0 | | 0 | 5 | 0 | | 0 | 5 | 0 | |
| Lanes: | 2 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:30 - 5:30 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 493 | 0 | 213 | | 0 | 0 | 0 | | 0 | 2063 | 507 | | 0 | 682 | 791 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 562 | 0 | 243 | | 0 | 0 | 0 | | 0 | 2352 | 578 | | 0 | 777 | 902 | |
| Added Vol: | 0 | 0 | 160 | | 0 | 0 | 0 | | 3 | 149 | 0 | | 0 | 864 | 360 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 578 | | 0 | 1641 | 1262 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| PHF Volume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 0 | | 0 | 1641 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 0 | | 0 | 1641 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 0.00 | | 1.00 | 1.00 | 0.00 | |
| FinalVolume: | 562 | 0 | 403 | | 0 | 0 | 0 | | 3 | 2501 | 0 | | 0 | 1641 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | | 0.89 | 0.89 | 1.00 | | 1.00 | 0.93 | 1.00 | |
| Lanes: | 2.00 | 0.00 | 2.00 | | 0.00 | 0.00 | 0.00 | | 0.01 | 1.99 | 1.00 | | 0.00 | 2.00 | 1.00 | |
| Final Sat.: | 3432 | 0 | 2786 | | 0 | 0 | 0 | | 4 | 3375 | 1900 | | 0 | 3538 | 1900 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.16 | 0.00 | 0.14 | | 0.00 | 0.00 | 0.00 | | 0.74 | 0.74 | 0.00 | | 0.00 | 0.46 | 0.00 | |
| Crit Moves: | **** | | | | | | | | | **** | | | | | | |
| Green/Cycle: | 0.16 | 0.00 | 0.16 | | 0.00 | 0.00 | 0.00 | | 0.73 | 0.73 | 0.00 | | 0.00 | 0.73 | 0.00 | |
| Volume/Cap: | 1.01 | 0.00 | 0.90 | | 0.00 | 0.00 | 0.00 | | 1.01 | 1.01 | 0.00 | | 0.00 | 0.63 | 0.00 | |
| Uniform Del: | 27.3 | 0.0 | 26.7 | | 0.0 | 0.0 | 0.0 | | 8.7 | 8.7 | 0.0 | | 0.0 | 4.4 | 0.0 | |
| IncremntDel: | 41.8 | 0.0 | 20.0 | | 0.0 | 0.0 | 0.0 | | 21.7 | 21.7 | 0.0 | | 0.0 | 0.5 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 0.00 | |
| Delay/Veh: | 69.0 | 0.0 | 46.7 | | 0.0 | 0.0 | 0.0 | | 30.4 | 30.4 | 0.0 | | 0.0 | 4.9 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 69.0 | 0.0 | 46.7 | | 0.0 | 0.0 | 0.0 | | 30.4 | 30.4 | 0.0 | | 0.0 | 4.9 | 0.0 | |
| LOS by Move: | E | A | D | | A | A | A | | C | C | A | | A | A | A | |
| HCM2kAvgQ: | 12 | 0 | 8 | | 0 | 0 | 0 | | 38 | 38 | 0 | | 0 | 10 | 0 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middlefield at Marsh (Town of Atherton)

| | | | |
|---|---|---|---|
| Cycle (sec): | 110 | Critical Vol./Cap.(X): | 0.925 |
| Loss Time (sec): | 10 (Y+R=4.0 sec) | Average Delay (sec/veh): | 37.2 |
| Optimal Cycle: | 126 | Level Of Service: | D |

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Ovl | | | Include | | | Include | | | Ovl | | |
| Min. Green: | 0 | 6 | 6 | 5 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| Lanes: | 0 0 | 1 0 | 1 | 2 0 | 1 0 | 0 | 0 0 | 0 0 | 0 | 1 0 | 0 0 | 1 |
| Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m. | | | | | | | | | | | | |
| Base Vol: | 0 | 426 | 548 | 408 | 269 | 0 | 0 | 0 | 0 | 515 | 0 | 447 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 0 | 486 | 625 | 465 | 307 | 0 | 0 | 0 | 0 | 587 | 0 | 510 |
| Added Vol: | 0 | 58 | 74 | 38 | 11 | 0 | 0 | 0 | 0 | 136 | 0 | 387 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 544 | 699 | 503 | 318 | 0 | 0 | 0 | 0 | 723 | 0 | 897 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 |
| PHF Volume: | 0 | 544 | 699 | 503 | 318 | 0 | 0 | 0 | 0 | 727 | 0 | 897 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 544 | 699 | 503 | 318 | 0 | 0 | 0 | 0 | 727 | 0 | 897 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 544 | 699 | 503 | 318 | 0 | 0 | 0 | 0 | 727 | 0 | 897 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 0.85 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 |
| Lanes: | 0.00 | 1.00 | 1.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 1900 | 1615 | 3502 | 1900 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.29 | 0.43 | 0.14 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.40 | 0.00 | 0.56 |
| Crit Moves: | | **** | | **** | | | | | | | | **** |
| Green/Cycle: | 0.00 | 0.31 | 0.75 | 0.16 | 0.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.44 | 0.00 | 0.60 |
| Volume/Cap: | 0.00 | 0.93 | 0.57 | 0.93 | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.91 | 0.00 | 0.93 |
| Uniform Del: | 0.0 | 36.8 | 5.9 | 45.8 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 28.4 | 0.0 | 19.8 |
| IncremntDel: | 0.0 | 20.7 | 0.7 | 21.9 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 13.8 | 0.0 | 14.3 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Delay/Veh: | 0.0 | 57.5 | 6.5 | 67.7 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 42.2 | 0.0 | 34.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 57.5 | 6.5 | 67.7 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 42.2 | 0.0 | 34.0 |
| LOS by Move: | A | E | A | E | B | A | A | A | A | D | A | C |
| HCM2kAvgQ: | 0 | 22 | 11 | 12 | 7 | 0 | 0 | 0 | 0 | 27 | 0 | 32 |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Bayfront Exp. & Willow Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 130 | Critical Vol./Cap.(X): | 1.061 |
| Loss Time (sec): | 12 (Y+R=4.0 sec) | Average Delay (sec/veh): | 69.1 |
| Optimal Cycle: | 180 | Level Of Service: | E |

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Split Phase | | | Split Phase | | |
| Rights: | Ovl | | | Include | | | Ovl | | | Ovl | | |
| Min. Green: | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Lanes: | 2 0 | 3 0 | 1 | 2 0 | 3 0 | 1 | 1 1 | 1 0 | 3 | 2 0 | 2 0 | 1 |
| Volume Module: >> Count Date: 1 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | |
| Base Vol: | 362 | 664 | 1 | 0 | 2199 | 108 | 36 | 13 | 1424 | 44 | 105 | 8 |
| Growth Adj: | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 | 1.14 |
| Initial Bse: | 413 | 757 | 1 | 0 | 2507 | 123 | 41 | 15 | 1623 | 50 | 120 | 9 |
| Added Vol: | 404 | 278 | 3 | 49 | 341 | 255 | 45 | 94 | 40 | 317 | 391 | 181 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 817 | 1035 | 4 | 49 | 2848 | 378 | 86 | 109 | 1663 | 367 | 511 | 190 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Volume: | 817 | 1035 | 4 | 49 | 2848 | 378 | 86 | 109 | 1663 | 367 | 511 | 190 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 817 | 1035 | 4 | 49 | 2848 | 378 | 86 | 109 | 1663 | 367 | 511 | 190 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 817 | 1035 | 4 | 49 | 2848 | 378 | 86 | 109 | 1663 | 367 | 511 | 190 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.90 | 1.03 | 0.83 | 0.90 | 1.03 | 0.83 | 0.91 | 0.91 | 0.88 | 0.90 | 0.93 | 0.83 |
| Lanes: | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.32 | 1.68 | 3.00 | 2.00 | 2.00 | 1.00 |
| Final Sat.: | 3432 | 5846 | 1583 | 3432 | 5846 | 1583 | 2292 | 2898 | 5014 | 3432 | 3538 | 1583 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.24 | 0.18 | 0.00 | 0.01 | 0.49 | 0.24 | 0.04 | 0.04 | 0.33 | 0.11 | 0.14 | 0.12 |
| Crit Moves: | **** | | | | **** | | | | **** | | **** | |
| Green/Cycle: | 0.22 | 0.56 | 0.70 | 0.12 | 0.46 | 0.46 | 0.09 | 0.09 | 0.31 | 0.14 | 0.14 | 0.26 |
| Volume/Cap: | 1.06 | 0.32 | 0.00 | 0.12 | 1.06 | 0.52 | 0.42 | 0.42 | 1.06 | 0.79 | 1.06 | 0.47 |
| Uniform Del: | 50.4 | 15.2 | 6.0 | 50.8 | 35.2 | 25.0 | 56.1 | 56.1 | 44.7 | 54.3 | 56.2 | 40.7 |
| IncremntDel: | 49.9 | 0.1 | 0.0 | 0.1 | 36.4 | 0.7 | 0.6 | 0.6 | 40.9 | 8.6 | 58.2 | 0.8 |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Delay/Veh: | 100.3 | 15.3 | 6.0 | 51.0 | 71.5 | 25.7 | 56.8 | 56.8 | 85.6 | 63.0 | 114 | 41.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 100.3 | 15.3 | 6.0 | 51.0 | 71.5 | 25.7 | 56.8 | 56.8 | 85.6 | 63.0 | 114 | 41.5 |
| LOS by Move: | F | B | A | D | E | C | E | E | F | E | F | D |
| HCM2kAvgQ: | 24 | 8 | 0 | 1 | 53 | 11 | 3 | 3 | 34 | 9 | 17 | 7 |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Newbridge St. & Willow Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.843
Loss Time (sec): 14 (Y+R=3.0 sec) Average Delay (sec/veh): 34.8
Optimal Cycle: 100 Level Of Service: C

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Protected | | | | Protected | | | |
| Rights: | Ovl | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 2 | 0 | 1 | 0 1 | 1 | 0 | 1 | 0 1 | 2 | 0 | 2 | 1 0 | 1 | 0 | 2 | 1 0 |
| Volume Module: >> Count Date: 7 Oct 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 248 | 170 | 55 | | 38 | 166 | 219 | | 323 | 1436 | 339 | | 102 | 975 | 34 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 283 | 194 | 63 | | 43 | 189 | 250 | | 368 | 1637 | 386 | | 116 | 1112 | 39 | |
| Added Vol: | 0 | 0 | 0 | | 0 | 0 | 9 | | 7 | 190 | 0 | | 0 | 1029 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 283 | 194 | 63 | | 43 | 189 | 259 | | 375 | 1827 | 386 | | 116 | 2141 | 39 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.98 | 0.83 | | 0.93 | 0.98 | 0.83 | | 0.90 | 0.87 | 0.87 | | 0.93 | 0.89 | 0.89 | |
| Lanes: | 2.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 2.00 | 2.48 | 0.52 | | 1.00 | 2.95 | 0.05 | |
| Final Sat.: | 3432 | 1862 | 1583 | | 1769 | 1862 | 1583 | | 3432 | 4087 | 864 | | 1769 | 4978 | 90 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.08 | 0.10 | 0.04 | | 0.02 | 0.10 | 0.16 | | 0.11 | 0.45 | 0.45 | | 0.07 | 0.43 | 0.43 | |
| Crit Moves: | | **** | | | | **** | | | **** | | | | | **** | | |
| Green/Cycle: | 0.12 | 0.12 | 0.21 | | 0.12 | 0.12 | 0.25 | | 0.13 | 0.56 | 0.56 | | 0.08 | 0.51 | 0.51 | |
| Volume/Cap: | 0.67 | 0.84 | 0.19 | | 0.20 | 0.84 | 0.65 | | 0.84 | 0.80 | 0.80 | | 0.80 | 0.84 | 0.84 | |
| Uniform Del: | 50.2 | 51.5 | 39.4 | | 47.6 | 51.7 | 40.3 | | 51.0 | 21.3 | 21.3 | | 54.1 | 25.3 | 25.3 | |
| IncremntDel: | 4.1 | 23.7 | 0.3 | | 0.5 | 24.1 | 3.9 | | 13.7 | 1.8 | 1.8 | | 26.5 | 2.7 | 2.7 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 54.3 | 75.1 | 39.7 | | 48.1 | 75.8 | 44.2 | | 64.7 | 23.0 | 23.0 | | 80.6 | 28.0 | 28.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 54.3 | 75.1 | 39.7 | | 48.1 | 75.8 | 44.2 | | 64.7 | 23.0 | 23.0 | | 80.6 | 28.0 | 28.0 | |
| LOS by Move: | D | E | D | | D | E | D | | E | C | C | | F | C | C | |
| HCM2kAvgQ: | 6 | 9 | 2 | | 2 | 9 | 9 | | 9 | 25 | 25 | | 6 | 27 | 27 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.132
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 100.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - R | L | - | T | - R | L | - | T | - R | L | - | T | - R |
| Control: | Split Phase | | | | Split Phase | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | | 8 | 8 | 8 | |
| Lanes: | 1 | 0 | 1 | 1 1 | 1 | 1 | 0 | 1 0 | 1 | 0 | 1 | 0 1 | 1 | 1 | 0 | 0 1 |
| Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM | | | | | | | | | | | | | | | | |
| Base Vol: | 97 | 438 | 491 | | 477 | 413 | 19 | | 36 | 170 | 158 | | 382 | 95 | 410 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 111 | 499 | 560 | | 544 | 471 | 22 | | 41 | 194 | 180 | | 435 | 108 | 467 | |
| Added Vol: | 15 | 8 | 34 | | 82 | 8 | 0 | | 0 | 34 | 24 | | 128 | 37 | 86 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 126 | 507 | 594 | | 626 | 479 | 22 | | 41 | 228 | 204 | | 563 | 145 | 553 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.93 | 0.86 | 0.43 | | 0.90 | 0.90 | 0.90 | | 0.93 | 0.98 | 0.83 | | 0.94 | 0.94 | 0.83 | |
| Lanes: | 1.00 | 1.00 | 2.00 | | 1.67 | 1.27 | 0.06 | | 1.00 | 1.00 | 1.00 | | 1.59 | 0.41 | 1.00 | |
| Final Sat.: | 1769 | 1626 | 1626 | | 2860 | 2189 | 99 | | 1769 | 1862 | 1583 | | 2848 | 734 | 1583 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.07 | 0.31 | 0.37 | | 0.22 | 0.22 | 0.22 | | 0.02 | 0.12 | 0.13 | | 0.20 | 0.20 | 0.35 | |
| Crit Moves: | | | **** | | **** | | | | | | **** | | | | **** | |
| Green/Cycle: | 0.32 | 0.32 | 0.32 | | 0.19 | 0.19 | 0.19 | | 0.11 | 0.11 | 0.11 | | 0.31 | 0.31 | 0.31 | |
| Volume/Cap: | 0.22 | 0.97 | 1.13 | | 1.13 | 1.13 | 1.13 | | 0.20 | 1.07 | 1.13 | | 0.64 | 0.64 | 1.13 | |
| Uniform Del: | 32.1 | 43.4 | 44.0 | | 52.4 | 52.4 | 52.4 | | 52.2 | 57.6 | 57.6 | | 38.7 | 38.7 | 44.9 | |
| IncremntDel: | 0.2 | 19.3 | 72.5 | | 72.3 | 72.3 | 72.3 | | 0.5 | 82.9 | 107.1 | | 1.3 | 1.3 | 82.3 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 32.3 | 62.6 | 116.6 | | 124.7 | 125 | 124.7 | | 52.8 | 140 | 164.7 | | 40.0 | 40.0 | 127.3 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 32.3 | 62.6 | 116.6 | | 124.7 | 125 | 124.7 | | 52.8 | 140 | 164.7 | | 40.0 | 40.0 | 127.3 | |
| LOS by Move: | C | E | F | | F | F | F | | D | F | F | | D | D | F | |
| HCM2kAvgQ: | 4 | 26 | 20 | | 25 | 25 | 25 | | 2 | 15 | 14 | | 13 | 13 | 33 | |

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 Bayfront Exp. & University Ave.

Cycle (sec): 150 Critical Vol./Cap.(X): 1.346
Loss Time (sec): 10 (Y+R=3.0 sec) Average Delay (sec/veh): 167.8
Optimal Cycle: 180 Level Of Service: F

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Split Phase | | | | Split Phase | | | |
| Rights: | Include | | | | Include | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 0 | | 0 | 5 | 5 | | 5 | 0 | 5 | | 0 | 0 | 0 | |
| Lanes: | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 377 | 968 | 0 | | 0 | 3488 | 127 | | 60 | 0 | 1667 | | 0 | 0 | 0 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 430 | 1104 | 0 | | 0 | 3976 | 145 | | 68 | 0 | 1900 | | 0 | 0 | 0 | |
| Added Vol: | 9 | 131 | 0 | | 0 | 549 | 150 | | 19 | 0 | 26 | | 0 | 0 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 439 | 1235 | 0 | | 0 | 4525 | 295 | | 87 | 0 | 1926 | | 0 | 0 | 0 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 439 | 1235 | 0 | | 0 | 4525 | 295 | | 87 | 0 | 1926 | | 0 | 0 | 0 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 439 | 1235 | 0 | | 0 | 4525 | 295 | | 87 | 0 | 1926 | | 0 | 0 | 0 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 439 | 1235 | 0 | | 0 | 4525 | 295 | | 87 | 0 | 1926 | | 0 | 0 | 0 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.90 | 0.89 | 1.00 | | 1.00 | 0.89 | 0.83 | | 0.90 | 1.00 | 0.73 | | 1.00 | 1.00 | 1.00 | |
| Lanes: | 2.00 | 3.00 | 0.00 | | 0.00 | 4.00 | 1.00 | | 2.00 | 0.00 | 3.00 | | 0.00 | 0.00 | 0.00 | |
| Final Sat.: | 3432 | 5083 | 0 | | 0 | 6778 | 1583 | | 3432 | 0 | 4178 | | 0 | 0 | 0 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.24 | 0.00 | | 0.00 | 0.67 | 0.19 | | 0.03 | 0.00 | 0.46 | | 0.00 | 0.00 | 0.00 | |
| Crit Moves: | **** | | | | | **** | | | | | **** | | | | | |
| Green/Cycle: | 0.09 | 0.59 | 0.00 | | 0.00 | 0.50 | 0.50 | | 0.34 | 0.00 | 0.34 | | 0.00 | 0.00 | 0.00 | |
| Volume/Cap: | 1.35 | 0.41 | 0.00 | | 0.00 | 1.35 | 0.38 | | 0.07 | 0.00 | 1.35 | | 0.00 | 0.00 | 0.00 | |
| Uniform Del: | 67.9 | 16.6 | 0.0 | | 0.0 | 37.8 | 23.4 | | 33.3 | 0.0 | 49.3 | | 0.0 | 0.0 | 0.0 | |
| IncremntDel: | 175.0 | 0.1 | 0.0 | | 0.0 | 158 | 0.3 | | 0.0 | 0.0 | 160.6 | | 0.0 | 0.0 | 0.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 0.00 | | 0.00 | 1.00 | 1.00 | | 1.00 | 0.00 | 1.00 | | 0.00 | 0.00 | 0.00 | |
| Delay/Veh: | 242.9 | 16.7 | 0.0 | | 0.0 | 196 | 23.7 | | 33.3 | 0.0 | 209.9 | | 0.0 | 0.0 | 0.0 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 242.9 | 16.7 | 0.0 | | 0.0 | 196 | 23.7 | | 33.3 | 0.0 | 209.9 | | 0.0 | 0.0 | 0.0 | |
| LOS by Move: | F | B | A | | A | F | C | | C | A | F | | A | A | A | |
| HCM2kAvgQ: | 20 | 11 | 0 | | 0 | 95 | 8 | | 1 | 0 | 57 | | 0 | 0 | 0 | |

Note: Queue reported is the number of cars per lane.





Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 University & Donohoe

Cycle (sec): 100 Critical Vol./Cap.(X): 0.914
Loss Time (sec): 11 (Y+R=3.0 sec) Average Delay (sec/veh): 39.2
Optimal Cycle: 115 Level Of Service: D

| Approach: | North Bound | | | | South Bound | | | | East Bound | | | | West Bound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | | L | T | R | | L | T | R | | L | T | R | |
| Control: | Protected | | | | Protected | | | | Protected | | | | Protected | | | |
| Rights: | Include | | | | Ovl | | | | Include | | | | Include | | | |
| Min. Green: | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Lanes: | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 315 | 485 | 599 | | 32 | 175 | 224 | | 217 | 784 | 540 | | 115 | 663 | 173 | |
| Growth Adj: | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | | 1.14 | 1.14 | 1.14 | |
| Initial Bse: | 359 | 553 | 683 | | 36 | 199 | 255 | | 247 | 894 | 616 | | 131 | 756 | 197 | |
| Added Vol: | 8 | 0 | 10 | | 0 | 0 | 0 | | 0 | 23 | 0 | | 0 | 155 | 0 | |
| PasserByVol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Initial Fut: | 367 | 553 | 693 | | 36 | 199 | 255 | | 247 | 917 | 616 | | 131 | 911 | 197 | |
| User Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| PHF Volume: | 367 | 553 | 693 | | 36 | 199 | 255 | | 247 | 917 | 616 | | 131 | 911 | 197 | |
| Reduct Vol: | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | |
| Reduced Vol: | 367 | 553 | 693 | | 36 | 199 | 255 | | 247 | 917 | 616 | | 131 | 911 | 197 | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| FinalVolume: | 367 | 553 | 693 | | 36 | 200 | 255 | | 247 | 917 | 616 | | 131 | 911 | 197 | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | | 1900 | 1900 | 1900 | |
| Adjustment: | 0.88 | 0.88 | 0.88 | | 0.95 | 1.00 | 0.85 | | 0.95 | 0.89 | 0.89 | | 0.92 | 0.92 | 0.92 | |
| Lanes: | 1.00 | 1.33 | 1.67 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.20 | 0.80 | | 2.00 | 1.64 | 0.36 | |
| Final Sat.: | 1671 | 2225 | 2788 | | 1805 | 1900 | 1615 | | 1805 | 2030 | 1363 | | 3502 | 2887 | 625 | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.22 | 0.25 | 0.25 | | 0.02 | 0.11 | 0.16 | | 0.14 | 0.45 | 0.45 | | 0.04 | 0.32 | 0.32 | |
| Crit Moves: | **** | | | | | **** | | | | **** | | | **** | | | |
| Green/Cycle: | 0.24 | 0.29 | 0.29 | | 0.06 | 0.11 | 0.28 | | 0.16 | 0.49 | 0.49 | | 0.05 | 0.38 | 0.38 | |
| Volume/Cap: | 0.92 | 0.85 | 0.85 | | 0.34 | 0.92 | 0.57 | | 0.84 | 0.92 | 0.92 | | 0.75 | 0.84 | 0.84 | |
| Uniform Del: | 37.2 | 33.3 | 33.3 | | 45.2 | 43.9 | 31.1 | | 40.6 | 23.8 | 23.8 | | 46.9 | 28.5 | 28.5 | |
| IncremntDel: | 8.8 | 3.8 | 3.8 | | 1.9 | 40.7 | 1.8 | | 18.9 | 9.2 | 9.2 | | 16.3 | 5.0 | 5.0 | |
| InitQueuDel: | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| Delay Adj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| Delay/Veh: | 46.0 | 37.2 | 37.2 | | 47.1 | 84.6 | 32.8 | | 59.5 | 33.0 | 33.0 | | 63.2 | 33.5 | 33.5 | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | |
| AdjDel/Veh: | 46.0 | 37.2 | 37.2 | | 47.1 | 84.6 | 32.8 | | 59.5 | 33.0 | 33.0 | | 63.2 | 33.5 | 33.5 | |
| LOS by Move: | D | D | D | | D | F | C | | E | C | C | | E | C | C | |
| HCM2kAvgQ: | 16 | 15 | 15 | | 1 | 10 | 7 | | 10 | 28 | 28 | | 4 | 19 | 19 | |

Note: Queue reported is the number of cars per lane.

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                       Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #29 Bayfront Exp. & Chrysler Dr.
********************************************************************************
Cycle (sec):         130                 Critical Vol./Cap.(X):         1.000
Loss Time (sec):       9 (Y+R=4.0 sec)  Average Delay (sec/veh):        41.7
Optimal Cycle:       180                 Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:     5    5     0     0    5     5     5    0     5     0    0     0
Lanes:        1  0  3  0  0    0  0  3  0  1    1  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:5:00 - 6:00 AM
Base Vol:      10  932     0     0 2235    16   334    0    76     0    0     0
Growth Adj:  1.14 1.14  1.14  1.14 1.14  1.14  1.14 1.14  1.14  1.14 1.14  1.14
Initial Bse:   11 1062     0     0 2548    18   381    0    87     0    0     0
Added Vol:     38  606     0     0   86     0   618    0    86     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   49 1668     0     0 2634    18   999    0   173     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    49 1668     0     0 2634    18   999    0   173     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   49 1668     0     0 2634    18   999    0   173     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   49 1668     0     0 2634    18   999    0   173     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.89  1.00  1.00 0.89  0.83  0.92 1.00  0.92  1.00 1.00  1.00
Lanes:       1.00 3.00  0.00  0.00 3.00  1.00  1.74 0.00  0.26  0.00 0.00  0.00
Final Sat.:  1769 5083     0     0 5083  1583  3044    0   449     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.33  0.00  0.00 0.52  0.01  0.33 0.00  0.38  0.00 0.00  0.00
Crit Moves:  ****                  ****                    ****
Green/Cycle: 0.04 0.55  0.00  0.00 0.51  0.51  0.38 0.00  0.38  0.00 0.00  0.00
Volume/Cap:  0.73 0.60  0.00  0.00 1.01  0.02  0.86 0.00  1.01  0.00 0.00  0.00
Uniform Del: 61.8 19.6   0.0   0.0 31.7  15.7  37.2  0.0  40.3   0.0  0.0   0.0
IncremntDel: 32.1  0.4   0.0   0.0 20.6   0.0   5.9  0.0  29.4   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Delay/Veh:   93.9 19.9   0.0   0.0 52.4  15.7  43.1  0.0  69.7   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  93.9 19.9   0.0   0.0 52.4  15.7  43.1  0.0  69.7   0.0  0.0   0.0
LOS by Move:   F    B     A     A    D     B     D    A     E     A    A     A
HCM2kAvgQ:      3   16     0     0   47     0    24    0    34     0    0     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
```

# APPENDIX E

Revised Trip Cap Policy

FEHR PEERS

# ~~DRAFT~~ FINAL MEMORANDUM

Date: ~~March 28, 2011~~March 12, 2012

To: City of Menlo Park

From: Robert Eckols, Nikki ~~Hervol~~Nagaya, and Monica Altmaier

***Subject:*** ***Facebook Menlo Park Campus***
***Documentation of Transportation Assumptions***

*SJ09-1132*

The following memorandum summarizes the transportation assumptions used in developing the vehicle trip cap proposed as part of Facebook's relocation to Menlo Park. The memorandum includes a summary of:

- Background and study purpose
- Person and vehicle trip generation rates and description of calculation methods

## BACKGROUND AND PURPOSE

Facebook is considering relocation and expansion at the Sun Microsystem (or East) Campus, located at 14 Network Circle, and the General Motors (GM, or West) Campus, near the intersection of Bayfront Expressway and Willow Road in Menlo Park. The purpose of this evaluation is to inform Facebook and the Project Team of the transportation assumptions used in determining the proposed vehicle trip cap for the Menlo Park Campuses.

We have evaluated traffic conditions with occupancy of the two sites at 150 square feet per proposed employee, per direction from Facebook. Table 1 below summarizes the projected number of employees at each site based on this density assumption.

**TABLE 1: FACEBOOK EMPLOYEE PROJECTIONS FOR TRAFFIC ANALYSIS**

| Site | Square Feet | Employee Density | Number of Employees |
|---|---|---|---|
| East Campus | 1,000,220 | 150 s.f./emp | 6,668 |
| West Campus | 420,000 | 150 s.f./emp | 2,800 |
| Total | 1,420,220 | 150 s.f./emp | 9,468 |

Source: Fehr & Peers, Facebook, July 2010.

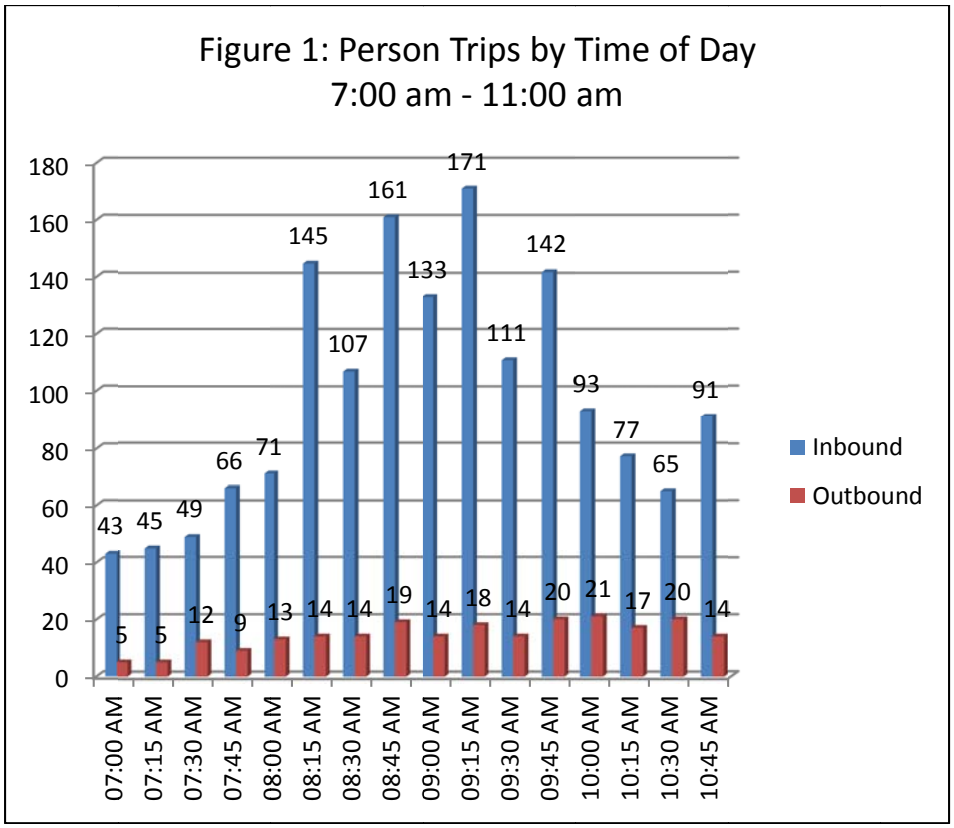
## PERSON TRIP GENERATION

Person and vehicular trip generation estimates were developed based on travel demand surveys conducted at Facebook's Palo Alto campus (1601 South California Avenue and 1050 Page Mill Road sites) over two (2) mid-week days in July 2010. The surveys collected the following data between 7:00 am and 11:00 am:

- Manual counts were collected at the driveways serving the Facebook parking areas at 1601 South California Avenue and 1050 Page Mill Road sites.
    - Vehicle Occupancy Counts – The driveway counts surveyed the number of persons in each vehicle (vehicle occupancy) to verify the number of solo drivers versus carpools and transit users.
    - Pedestrian Counts – Pedestrian counts were conducted to document the number of person walking into the campus during the peak period. Pedestrians were asked if they parked off-site and walked to the campus or if walking was their primary commute mode to the campus.
    - Bicycle Surveys – Bicycle counts were conducted at the driveways serving the sites.

- Shuttle Ridership – Facebook provided shuttle ridership data collected on the survey dates for the four shuttles provided for employees.

Using this data, we were able to determine the time distribution of persons entering and exiting the site during the morning peak hour, and the associated peak hour trip generation rate. Figure 1 presents the number of person trips arriving and departing the site by 15-minute intervals between 7:00 am and 11:00 am.



Based on this information, we were able to calculate the morning peak period (7:00 am to 9:00 am, the traditional morning commute peak period) and peak one-hour trip generation rate using the following process:

1. Calculated the total number of trips entering/exiting between 7:00 am and 9:00 am to be 687 inbound and 91 outbound, or 778 total trips
2. Determined one-hour maximum (peak hour) entering/exiting period to be 8:00 am to 9:00 am, with 484 trips inbound and 60 trips outbound, for 544 total trips
3. Calculated trip generation rate for peak hour to be 0.42 person trips per employee (544 trips / 1,300 employees = **0.42** trips per employee)
4. Correlated the peak-hour of traffic generated by Facebook to the industry standard peak hour rate from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (8th Edition, 2008)
5. Using industry standard ratios between morning peak hour and daily trip generation rates, calculated daily trip generation rates to be **3.41** person trips per employee

The trip generation rates described above represent the total number of person trips made per employee. The following section details our calculations of mode split, to reflect the number of vehicle trips per employee.

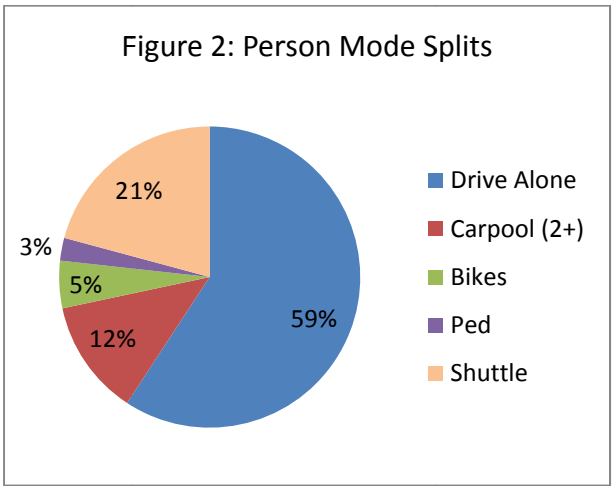
## MODE SPLIT

The travel surveys described under the Trip Generation section also provided the data necessary to calculate the share for each mode of travel to/from the campus for the total on-site employment population. Table 2 and Figure 2 below summarize the total number and percent of person trips entering and exiting the site by mode.

**TABLE 2: PERSON MODE SPLIT**

| Mode | Trips by Mode | Percent Mode Split |
|---|---|---|
| Drive alone | 968 | 59% |
| Carpool | 203 | 12% |
| Bike | 83 | 5% |
| Walk | 40 | 3% |
| Shuttles/Transit | 340 | 21% |
| Total | 1,634 | 100% |

Source: Fehr & Peers, Facebook, July 2010.




## VEHICLE TRIP GENERATION

Based on the mode split data presented in Table 2 and Figure 1, the vehicle trip generation rates were calculated to be 65 percent of the person trip generation rate. This was derived from 59 percent (drive alone) plus 12 percent carpooling at average vehicle occupancy of 2.1 persons per

car[1]. Table 3 summarizes the daily, peak hour and peak period person and vehicle trip generation rates based on Facebook-specific data, as well as a comparison to traditional industry standard documentation from the Institute of Transportation Engineers' *Trip Generation*, 8th Edition (2009).

**TABLE 3: FACEBOOK TRIP GENERATION RATES, PER EMPLOYEE**

| Unit | Source | Description | Daily | Peak Hour | Peak Period |
|---|---|---|---|---|---|
| Per employee | Travel Surveys | Person Rate | 3.41 | 0.42 | 0.60 |
| Per employee | Travel Surveys | Vehicle Rate | 2.22 | 0.27 | 0.39 |
| Per employee | ITE Best Fit Equation | General Office (710) | 2.27 | 0.37 | n/a |
| Per k.s.f. | Travel Surveys | Vehicle Rate | 13.60 | 1.73 | 2.48 |
| Per k.s.f. | ITE Best Fit Equation | General Office (710) | 7.86 | 1.18 | n/a |

Source: Fehr & Peers, Facebook, July 2010.
Institute of Transportation Engineers, *Trip Generation*, 8th Edition (2009).
Trip rates based on average rates defined for General Office (land use code 710).

As shown in Table 3, data collected from the existing Facebook campus shows employees generate 3.41 trips per day, 0.42 trips per peak hour, and 0.60 trips per peak period. The number of vehicle trips generated per employee, calculated based on the mode split summarized above, is 2.22 vehicle trips per day, 0.27 peak hour vehicle trips per day, and 0.39 vehicle trips per day. The comparison to ITE Trip Generation data shows that the best fit equation rates for a general office building is close to the total number of vehicle trips Facebook employees generate on a daily basis, within two (2) percent. The peak hour comparison shows that Facebook's trip generation rate is 27 percent lower than traditional office developments, since many of Facebook's employees travel outside of the traditional commute peak hours and 35 percent travel via alternative transportation modes.

On a per square foot basis, the number of vehicle trips generated by Facebook is substantially higher than the ITE rates, as the employee density is higher than a typical office use. On a daily basis, Facebook generates approximately 42 percent more trips per square foot; on a peak hour basis, Facebook's trip generation rate is 32 percent higher per square foot.

Table 4 below presents the number of vehicle trips estimated to be generated by the East Campus based on the rates defined in Table 3 above. As shown, the proposed vehicle trip cap was derived based on the survey rates, specific to Facebook employee travel patterns.

[1] From July 2010 travel demand survey data.

FEHR PEERS

**TABLE 4: FACEBOOK TRIP GENERATION ESTIMATES**

| Unit | Source | Description | Daily | Peak Hour | Peak Period |
|---|---|---|---|---|---|
| Per employee | Travel Surveys | Vehicle Rate | 14,800 | 1,820 | 2,600 |
| Per employee | ITE Best Fit Equation | General Office (710) | 15,200 | 2,480 | n/a |
| Per k.s.f. | Travel Surveys | Vehicle Rate | 13,600 | 1,730 | 2,480 |
| Per k.s.f. | ITE Best Fit Equation | General Office (710) | 7,860 | 1,190 | n/a |
| Proposed Trip Cap | | | 15,000[1] | n/a | 2,600 |

Source: Fehr & Peers, Facebook, July 2010.
Institute of Transportation Engineers, *Trip Generation*, 8th Edition (2009).
[1] Trip cap rounded based on Facebook specific trip rates per employee.

# APPENDIX G

Revised Transportation Demand Management Plan

# TRANSPORTATION DEMAND MANAGEMENT PROGRAM

## PROGRAM INTRODUCTION

Facebook's relocation to Menlo Park provides the opportunity for Facebook to continue to operate a highly successful Transportation Demand Management (TDM) Program. Currently, approximately 40 percent of employees commute to the Palo Alto Campuses by alternative modes (transit, carpool, bicycle and walk). Facebook has been successful in encouraging alternative transportation for several reasons. First, Facebook employees have flexible work schedules that allow commute travel to be more evenly spread throughout the day than would occur at a typical office development of similar scale. Second, the Facebook culture attracts many employees who thrive in an innovative environment and prefer alternative travel modes over driving alone. Third, Facebook employees are often knowledgeable of environmental issues and have a high-level of environmental consciousness, which contributes to their desire to choose more environmentally-friendly commute patterns.

Additionally, as the sole occupant of the proposed Menlo Park campus, Facebook will have the ability to exclusively control the TDM program for the sites. Rather than having to coordinate different TDM programs at multiple firms (tenants), Facebook can influence the trips for all employees accessing the campus. The program will continually evolve, being responsive to the changing needs of employees. Ultimately, these conditions will allow Facebook to maximize the efficacy of the TDM program outlined below.

## RELATIONSHIP TO THE PROPOSED VEHICLE TRIP CAP

For a traditional development project, a TDM program is often designed to reduce impacts of vehicular traffic and is adopted as either a mitigation measure or a condition of use. In other cases, the implementation of a TDM program is included in a project as a matter of local policy to reduce the number of drive alone commuters. Facebook's proposal to establish a vehicular trip cap for both the AM and PM peak-periods and peak-hours establishes the maximum number of trips generated by the site, while allowing the number of employees to vary depending on the effectiveness of the TDM program.

The TDM Program is proposed as a key element to the project. The proposed peak period vehicle trip cap for the East Campus limits the number of vehicle trips that can enter and exit the Campus during the peak period and peak hour when traffic congestion on adjacent roadways is at its peak. If the TDM Program is not effective in reducing vehicular travel demand at Menlo Park, Facebook will not be able to achieve its desired employee headcount. Therefore, Facebook has a vested interest in creating and sustaining a robust and effective TDM Program.

In addition to the peak period/hour trip caps, Facebook also proposes a daily trip cap for the East Campus. This daily trip cap was developed to address potential air quality impacts, while the peak period trip cap addresses local congestion.

It is expected that the TDM Program will evolve over time to respond to changing employee demographics and needs. Based on the information currently available, the following TDM Program has been developed.

## EXISTING PROGRAM FOR PALO ALTO CAMPUSES

The following strategies are currently in practice for the Palo Alto Campus. The existing TDM program is robust, and has been effective at reducing the drive alone mode share and the parking demand at each site.

- **Caltrain Go-Passes and Caltrain Station Shuttles** – All employees receive Caltrain Go-Passes funded by Facebook. Shuttle service is provided from the Palo Alto stations to the Facebook sites.
- **Employee Commuter Shuttle Bus Service** – Currently Facebook provides free-for-employees direct service between Palo Alto and San Francisco,

Campbell/Cupertino, and Mountain View for employees and vendors. Each employee has their own wi-fi card which they can use to access internet aboard the shuttles.

- **Inter-campus Shuttles** – Throughout the day, Facebook provides two 14-person shuttles that provide service between 1601 South California Avenue and 1050 Page Mill Road continuously from 5:00am to 10:00pm. The shuttle consists of about 1 to 4 trips per hour and ridership surveys from December 2010 indicate that passengers on these shuttles range from 1 to 14 (maximum capacity), with the 1:00pm shuttle at the highest occupancy.

- **Intern Shuttle** – Facebook provides a shuttle to serve the intern housing located in Mountain View and the two campuses. A total of five (5) drop-off/pick-up locations are served

- **Campus Bike Share Program** – To better serve inter-campus travel and reduce the number of shuttles on California Avenue during the day, Facebook has initiated a bike share program. This pilot program provides Facebook Bikeshare Bicycles for employees to use for trips between 1601 South California and 1050 Page Mill Road. There are currently 20 bicycles available.

  A bike room for indoor bicycle parking is also provided, as well as showers, lockers, and changing room facilities.

- **Vanpool Program** – Facebook provides a Vanpool Program, which includes seven (7) vanpools from Campbell (two groups), Santa Cruz/Scott's Valley, Fremont, Oakland, South San Jose/Los Gatos, and San Jose Evergreen. Preferred vanpool parking is provided.

- **Educational and Promotional Campaign** – Facebook has held several educational and promotional events to encourage employees to use alternative modes to travel to and from the campus. Additionally, a commuter brochure for new hires was developed to provide employees with information on commute options and alternatives. A presentation to new hires is given, where employees are informed about alternative modes to work. Various incentives and programs to encourage bicycling, walking, and taking transit are also held, including competitions with raffle prizes for those who take the Commuter Shuttles, Caltrain, or vanpools.

- Facebook also participated in the **Great Race for Clean Air** sponsored by 511 in August and September 2010 (see more information: http://www.greatraceforcleanair.com/Default.aspx) and tied with the City of Palo Alto for highest number of participants.

- **Emergency Ride Home** – Facebook provides rides home for employees in an emergency for non-automobile commuters who may not have a vehicle readily accessible.

- **Carshare** – Facebook provides access to Zipcar vehicles located at 1601 California.

- **Preferred Parking** – Preferred parking is provided for motorcycles, expectant mothers, and vanpools.

- **Monitoring** – Twice annually, Facebook conducts a monitoring survey to track the number and mode of trips to and from the campus. This information allows the existing program to be assessed and modified to respond to developing employee needs.

## EXISTING PROGRAM EFFICACY

As part of Facebook's ongoing monitoring efforts, trip generation and mode choice surveys were conducted in July 2010 and December 2010. Driveways (inbound and outbound) that serve the Facebook parking areas at the 1601 South California Avenue and 1050 Page Mill Road sites were manually surveyed to determine person trip generation and mode split for employees and visitors frequenting the Palo Alto Campus. Figures 1 through 3 present mode split for the July 2010, December 2010, and the average of the two surveys, respectively. A difference between the July and December travel surveys shows that in July, when

the weather was good and there is more daylight, the bike and walk modes were higher than in December. The three-percent drop in bike and walk modes was off-setting increases in the carpool (+2%) and drive-alone (+1%) rates. For the purposes of the trip cap calculations, it was assumed that Facebook would maintain a 40 percent alternative mode split; however, the goal of the TDM program is to achieve a higher level of alternative mode usage (50 percent).

**Figure 1: Person Mode Splits- July Surveys**

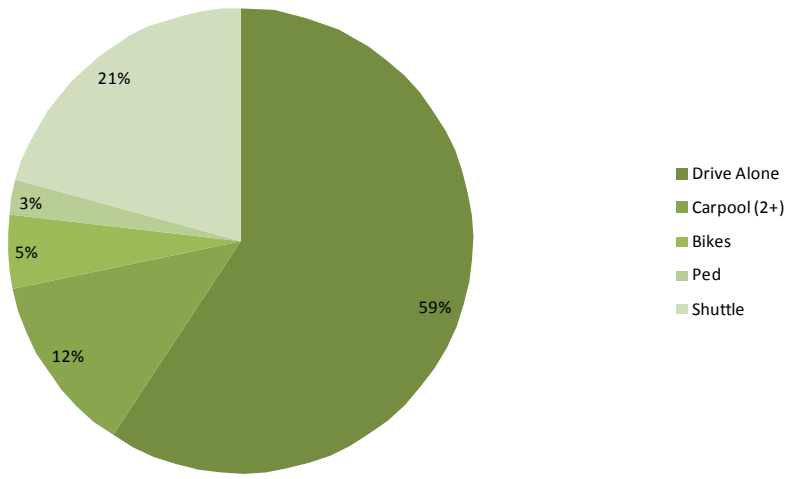
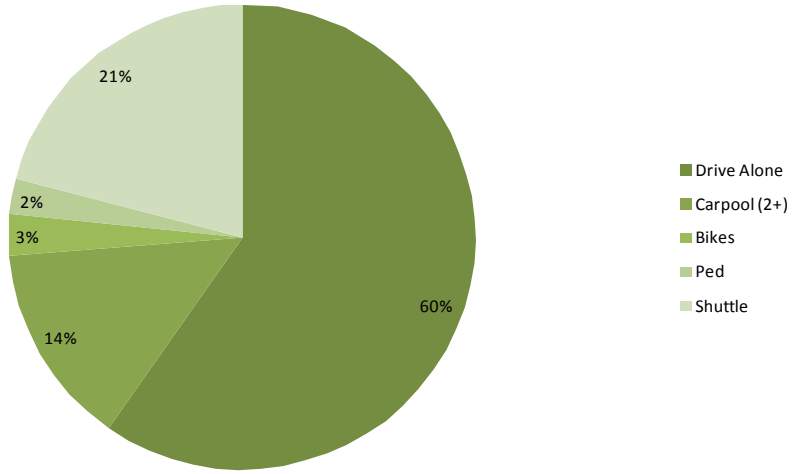
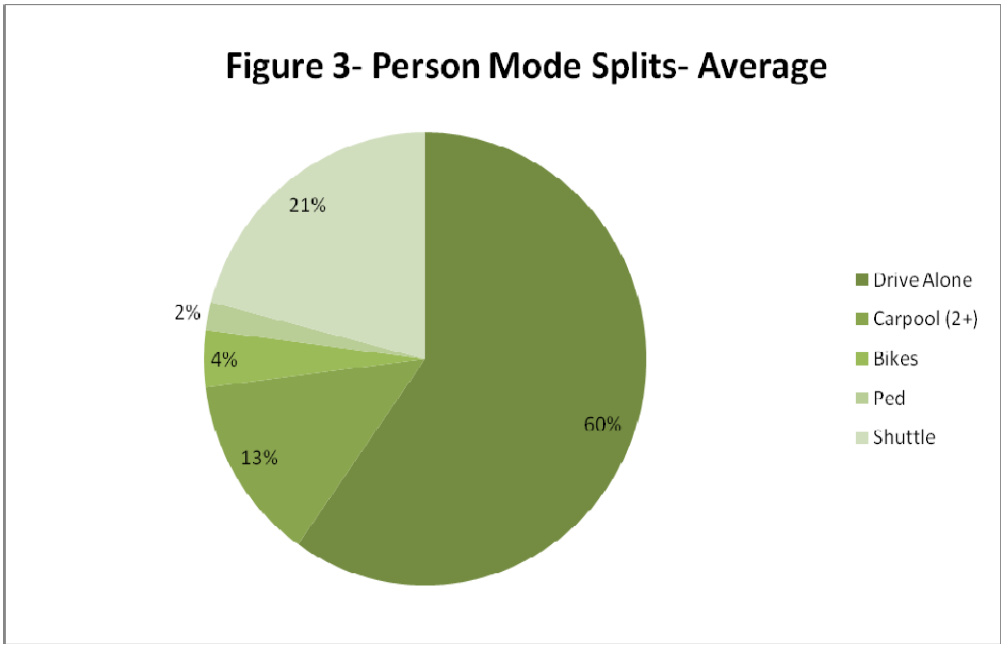



**Figure 2- Person Mode Splits- December Surveys**






## UPCOMING PROGRAM ELEMENTS

In addition to the existing TDM elements, the following strategies are proposed for near-term inclusion in Facebook's TDM Program. These elements are expected to be in place before Facebook begins to occupy the East Campus in Menlo Park in July 2011.

- **Facebus** – Facebook is developing a real-time shuttle/bus information system via a smartphone application to provide employees with up-to-the-minute information about the next available shuttle pick-up.
- **ZimRide** – ZimRide will provide ridesharing, vanpooling, and shuttle coordinating capabilities to any employees that have a Facebook email address. It will also provide monitoring and evaluation mechanisms to track the program's efficacy.

## MENLO PARK CAMPUS

The existing TDM Program will continue to grow and evolve as Facebook transitions to its new Menlo Park Campus starting in July 2011. The Commuter Shuttle and Vanpool programs will expand, with trips serving strategic employee residential locations. Caltrain Shuttles will continue to run to the nearby stations, including Menlo Park, Redwood City, and Palo Alto. Connections to public transit systems in the East Bay will become more viable with the relocation to Menlo Park. Shuttle connections to the Fremont BART and ACE Stations will be incorporated into the Program. The following sections outline the improvements planned for the Commuter Shuttle and Vanpool programs, parking management, and walking and bicycling programs at full-build out of the Campus.

As mentioned previously, the defined TDM Program is based on the best information available at this time. As the employee base expands, the TDM Program is expected to grow and adapt in order to meet the proposed vehicular trip cap. The TDM program will be used by Facebook to maintain the AM and PM peak period trip caps of a total of 2,600 vehicles per two-hour peak period (inbound and outbound trips).

### *Commuter Shuttles and Vanpools*

Based on employee zip code data obtained from Facebook and the proposed number of future employees on the

East and West Campuses, it is estimated that approximately 80 Commuter Shuttle round trips will be needed to serve the future Menlo Park campus. These shuttle trips will run to areas where employees are clustered, including San Francisco, San Mateo, Menlo Park, Palo Alto, Mountain View, the South Bay (including Sunnyvale, Cupertino, Santa Clara, San Jose, Campbell, and Los Gatos), and Fremont. The average trip length of the Commuter Shuttles is estimated to be 17.3 miles.

In order to determine the number of Commuter Shuttle round trips, employee data by place of residence was used to determine the potential locations and number of transit trips. The percent distribution by city of residence was used to calculate the number of future daily person trips by employee traveling to and from the Facebook campus. The average mode share distribution from the Facebook Monitoring Program analysis was applied and adjusted for each city to create mode share percentages; the basis for these mode share estimations depended on the available transportation options and population clustering unique to each city. The number of transit *person* trips was calculated by applying the transit mode share percentages to the total trips for each city. In order to quantify the number of shuttle *vehicle* trips, the total transit person trips were divided by 84. The value 84 represents the two-way or round trip based on an average shuttle size of 42 spaces.

**Figure ~~1~~ 4** (attached) presents the potential shuttle access routes for the East and West Campuses. The routes indicated represent those that are considered for the full build-out of the Campuses. It is anticipated that the routes would be phased in as the employee population grows on each site. Where employee residential density is not great enough to support a full shuttle, vanpools will be targeted to support travel modes outside of a personal vehicle. It is anticipated that approximately 40 vanpool round trips are needed to serve the future Menlo Park campuses. Vanpools are expected to run to areas on the Peninsula including Palo Alto, Belmont, Millbrae, and Burlingame. East Bay cities include Berkeley and Oakland. Vanpools also provide overflow service for the Commuter Shuttle routes. The average trip length for the vanpool vehicles is estimated to be 16.4 miles. Preferred vanpool parking or drop-off areas are provided.

### *Preferred Parking*

The existing TDM Program includes preferred vanpool and motorcycle parking. At the Menlo Park Campus, carpool and electric-vehicle preferred parking are also proposed. These preferred parking spaces provide an incentive for employees to carpool or use a vehicle with zero emissions, to conserve resources and limit greenhouse gas emissions.

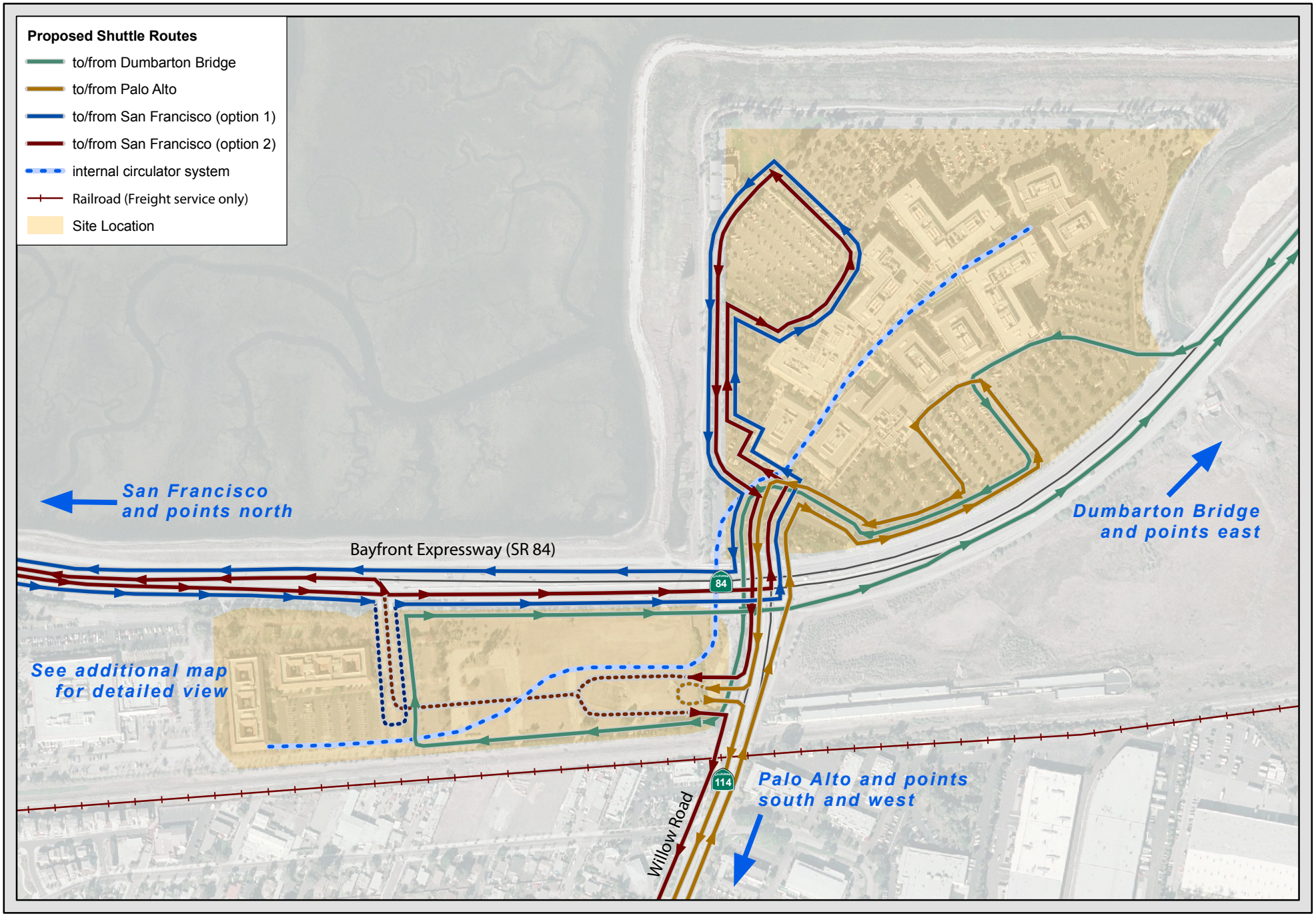
### *Walking and Bicycling Program*

In addition to the expansion of the Commuter Shuttle and vanpool programs, several other strategies are planned for the Menlo Park Campus. The existing buildings in Palo Alto are located along a lower volume street with bicycle lanes, sidewalks, and a direct connection to the California Avenue Caltrain station. This environment encourages employees to walk and bike to and from the campus. To target maintaining or expanding walking and biking mode shares to the Menlo Park campus, several strategies are planned. These programs are aimed to enhance the surrounding bicycle and pedestrian environment to encourage active transportation modes to the Menlo Park Campus:

- Expanding the bicycle share program. Providing additional bicycles on-campus to provide employees the option of bicycling between or near the Campus;
- Holding bicycle rides for employees:
    - Lunch-time recreational rides;
    - "Get back on your bike" educational rides to learn or refresh bike commuting skills;
- Providing bike racks or trailers on shuttles as an alternative travel option;
- Providing a Commuter Bike Program to offer commuter bikes on loan for employees who would like to bicycle to campus.

In addition to the programmatic elements defined above, improvements to the walking and bicycling networks are needed to provide safe connections from the East and West Campuses to the surrounding network. A major component to better pedestrian and bike access is the improvements to the tunnel located at Willow Road/Bayfront Expressway, which will provide a shared-use path. This tunnel will provide Facebook employees access under Bayfront Expressway between campuses so that employees will not have to cross at the existing traffic signal. Additionally, it completes a key grade-separation connection for the Bay Trail crossing of Bayfront Expressway. It also provides the opportunity to provide an intra-campus circulator system to connect the two campuses. Appropriate technologies for this system are currently being investigated.

On-street and off-street bike network constraints and recommendations are under development. Infrastructure improvements to the bicycling and walking networks are also being evaluated by joint efforts through the Facebook planning team and the City of Menlo Park.




FEHR PEERS

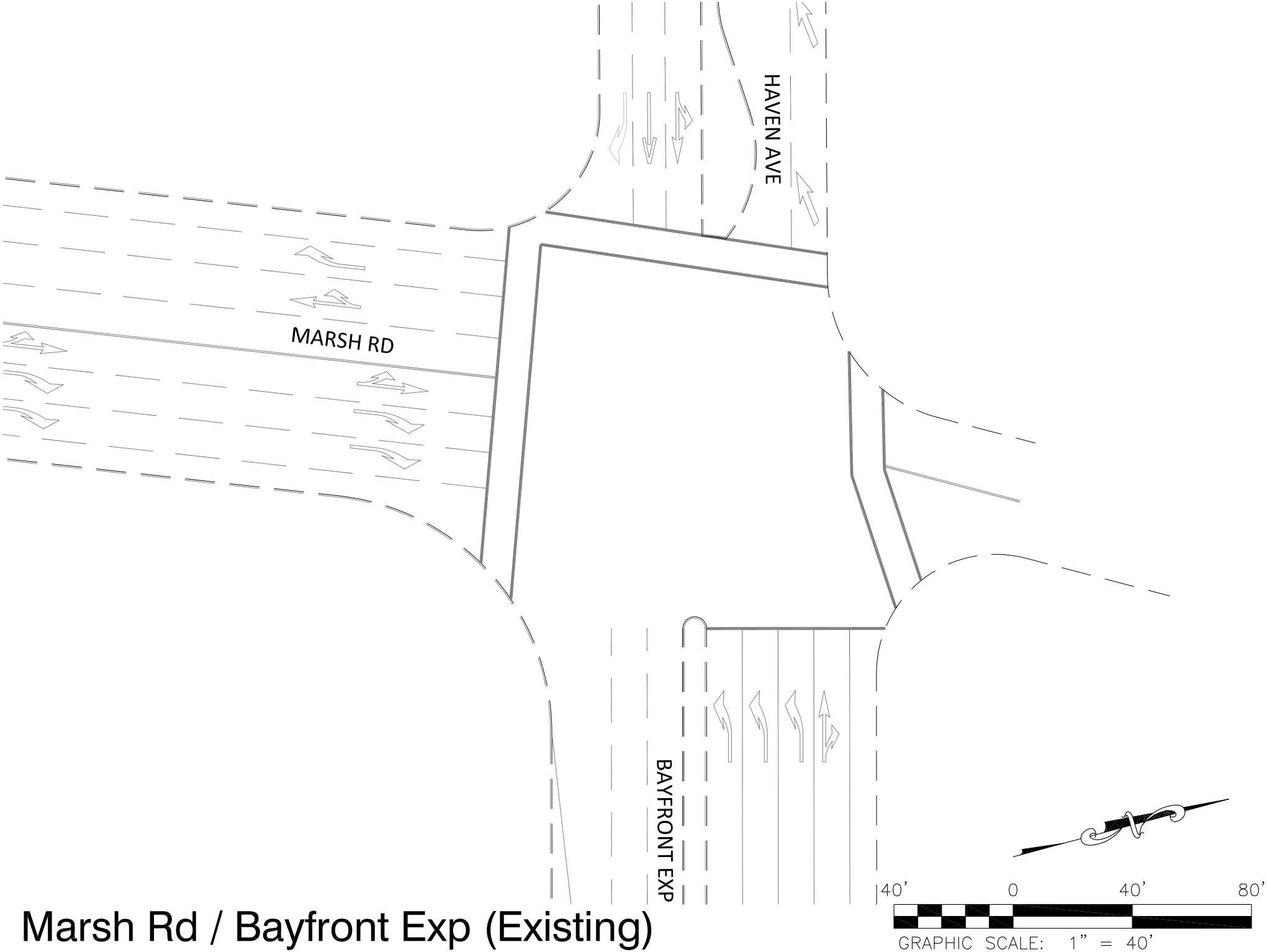
February 2011
SJ09-1132

**Proposed Shuttle Routes**

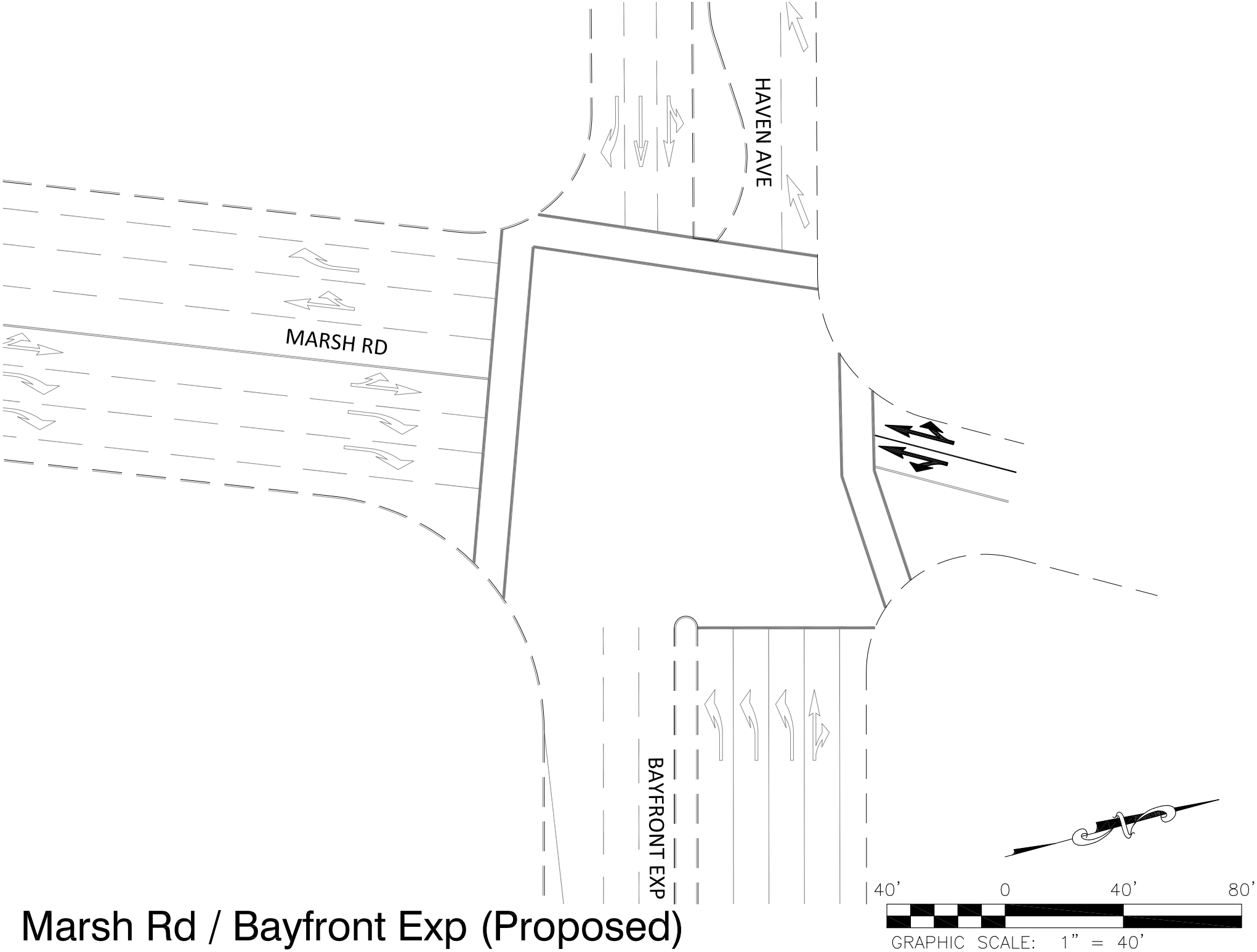
**Figure 4**

# APPENDIX I

Conceptual Layout Plans for Mitigation Measures at Intersections




# Marsh Rd / Bayfront Exp (Existing)

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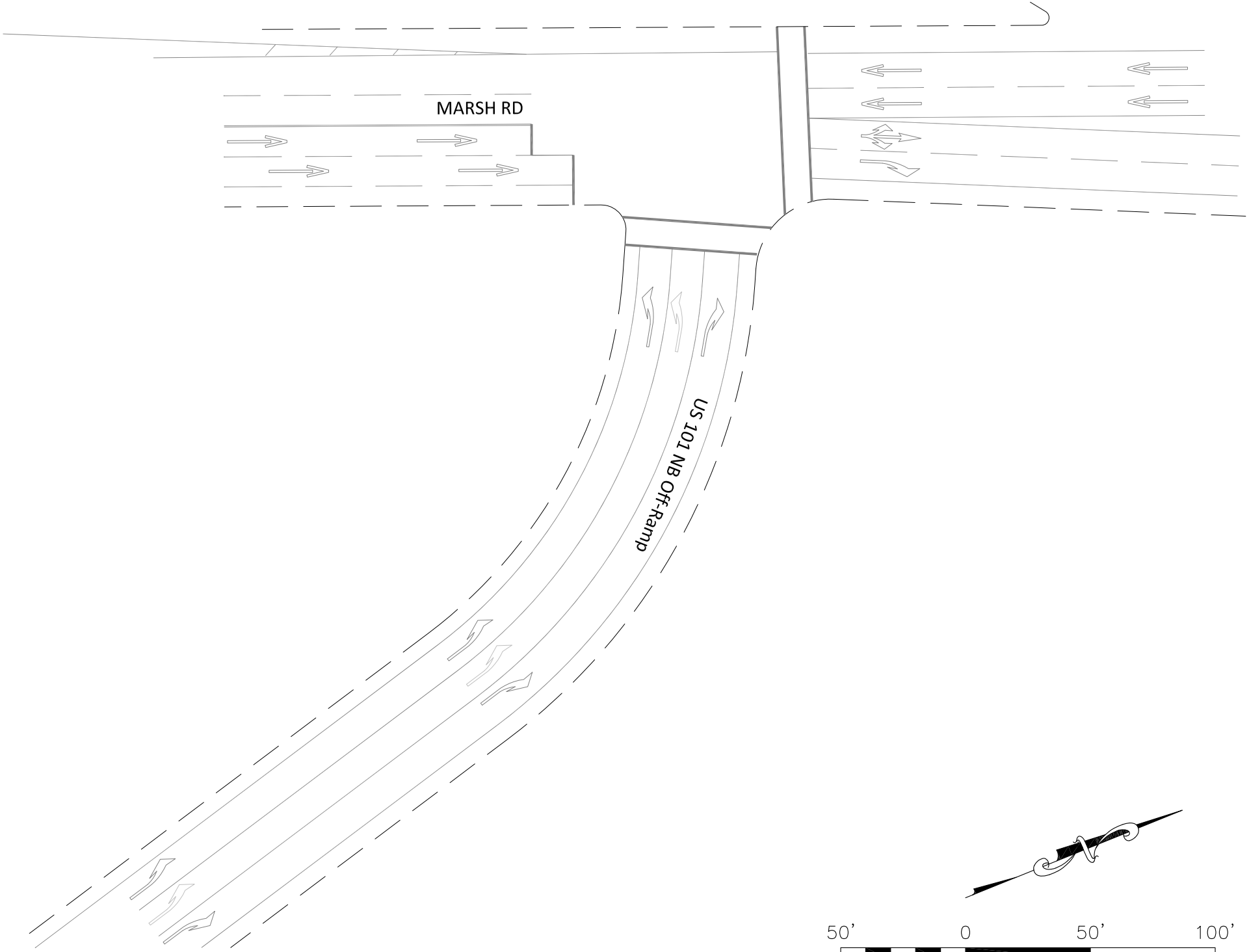


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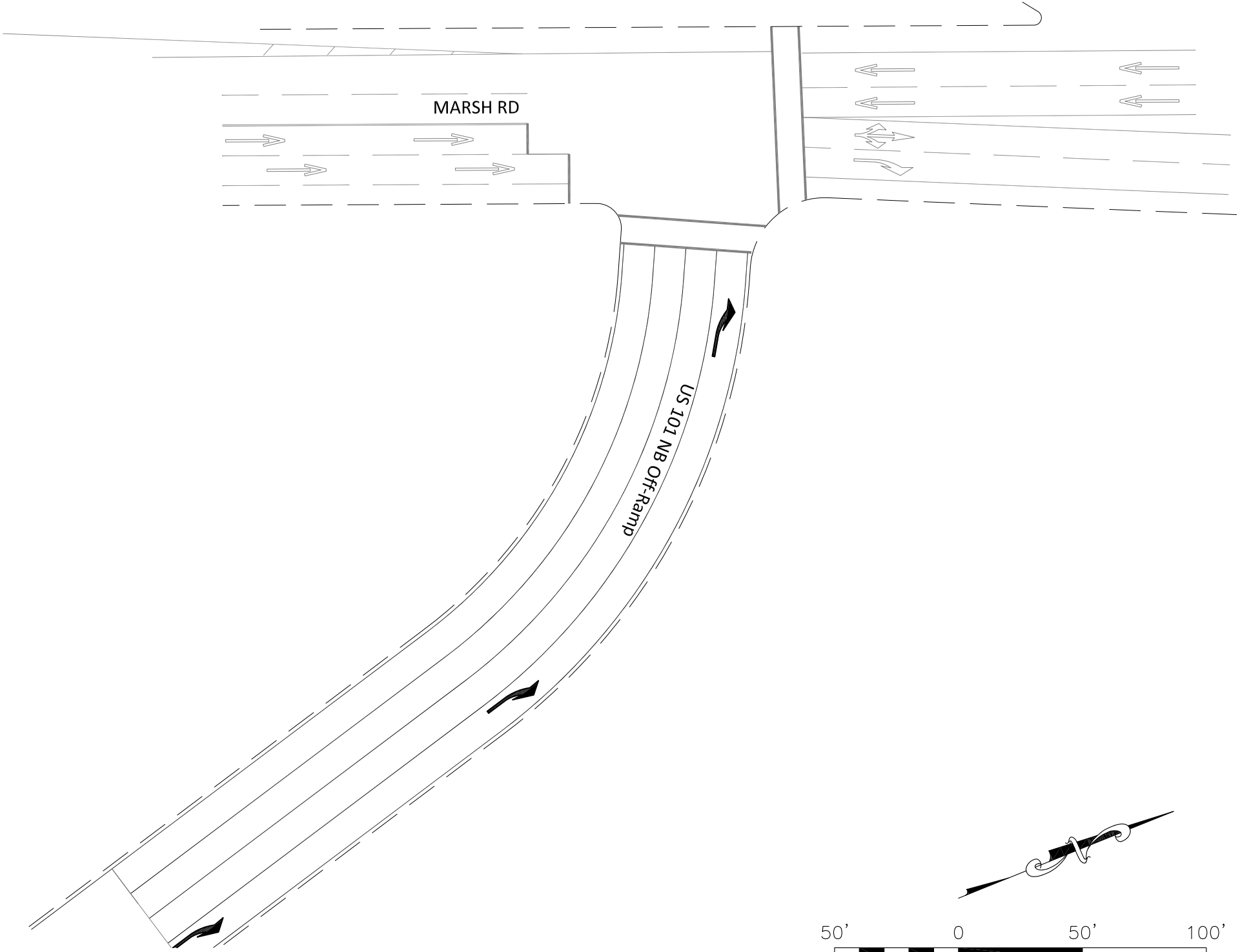
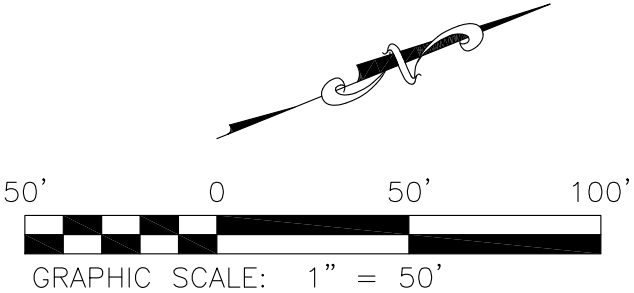
GRAPHIC SCALE: 1" = 50'

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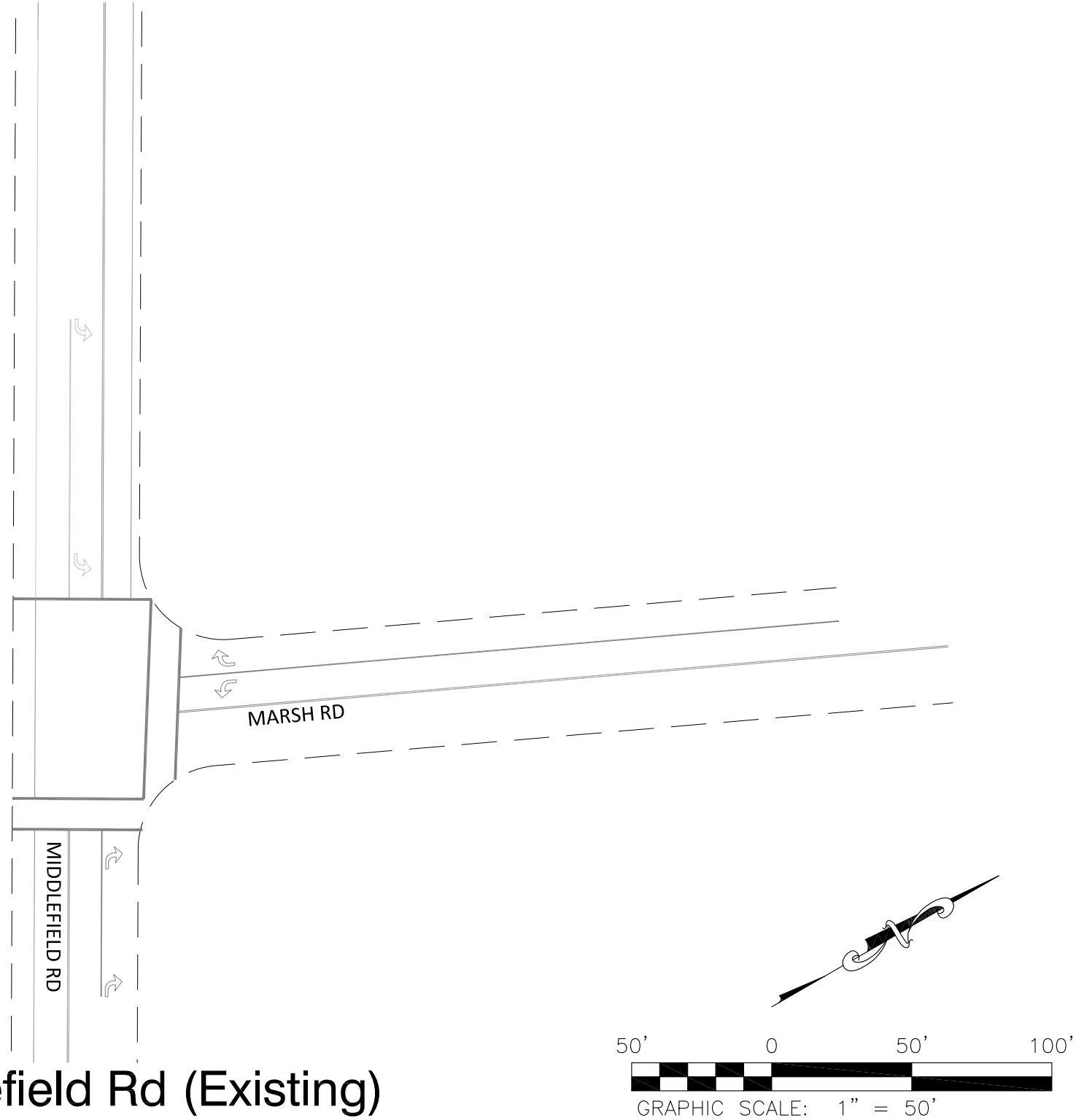


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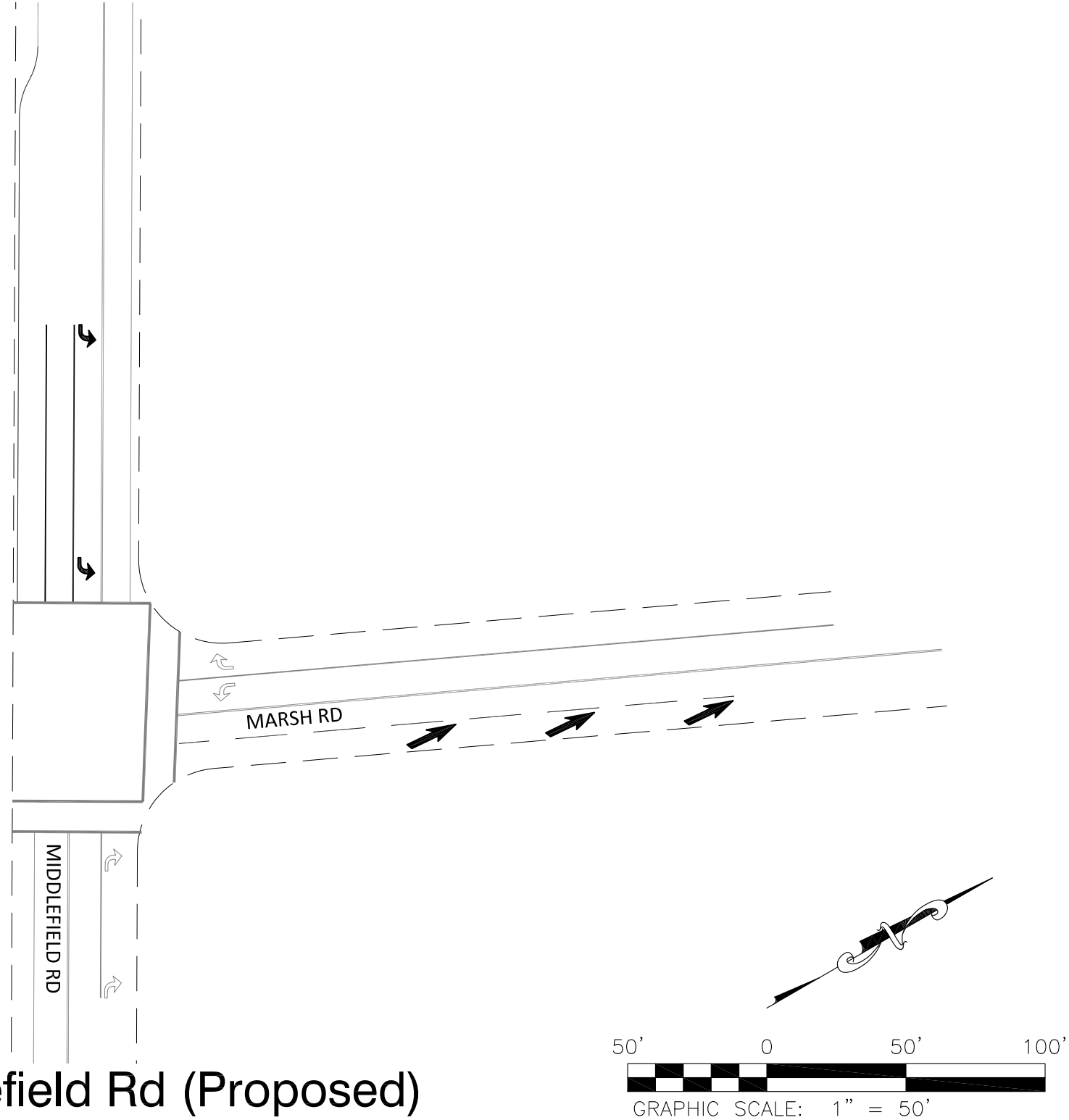


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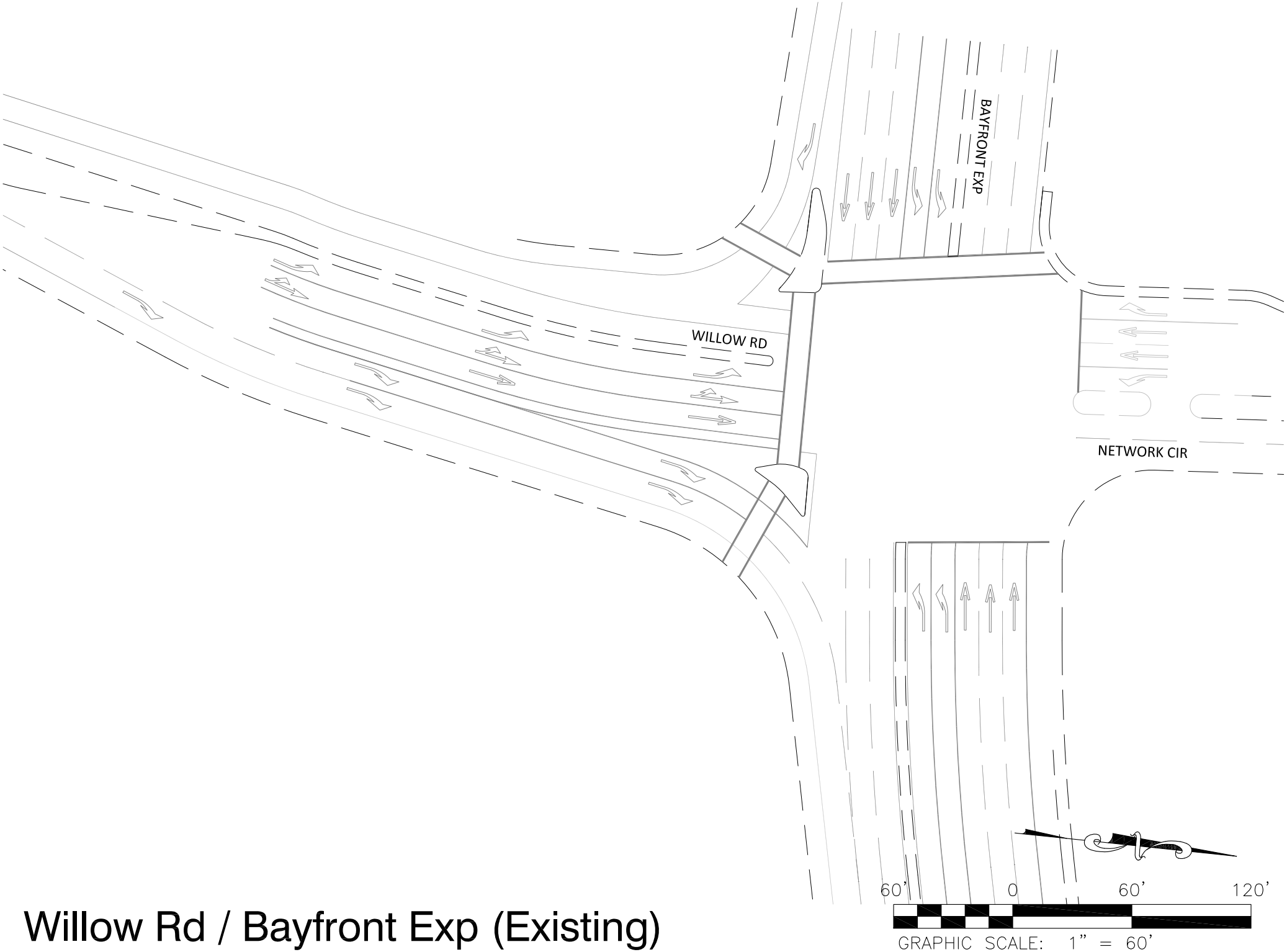
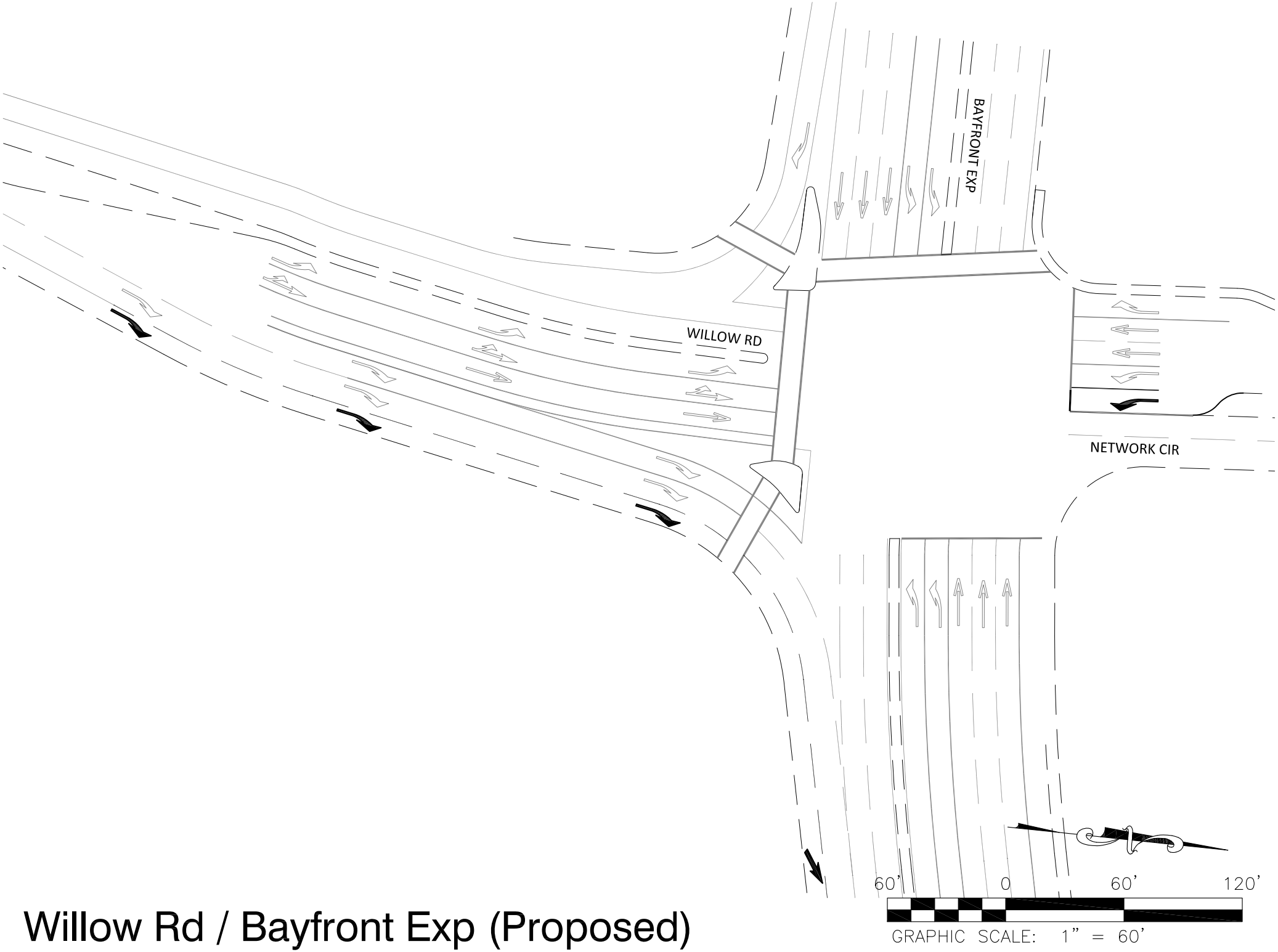



# Willow Rd / Bayfront Exp (Existing)

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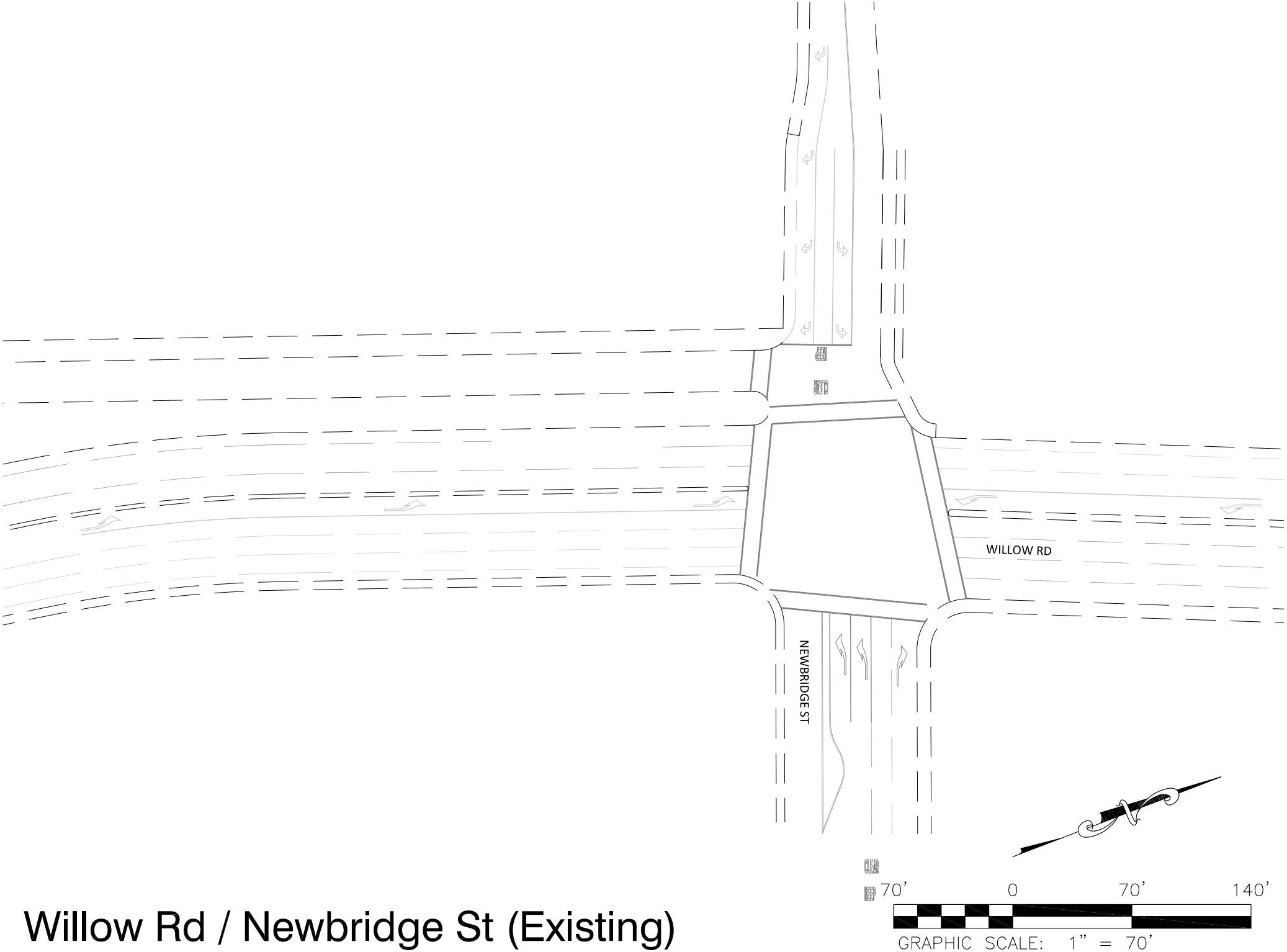
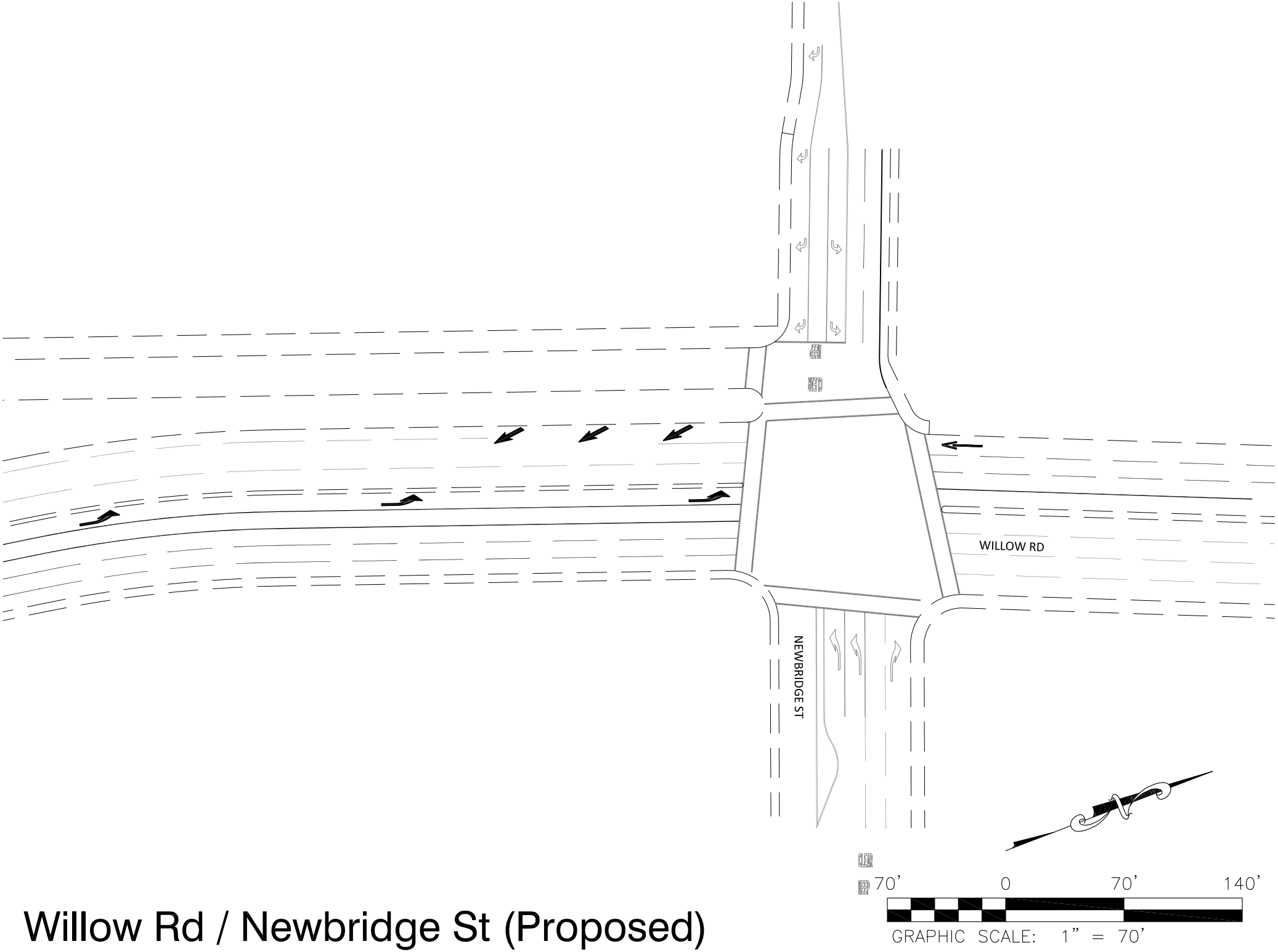
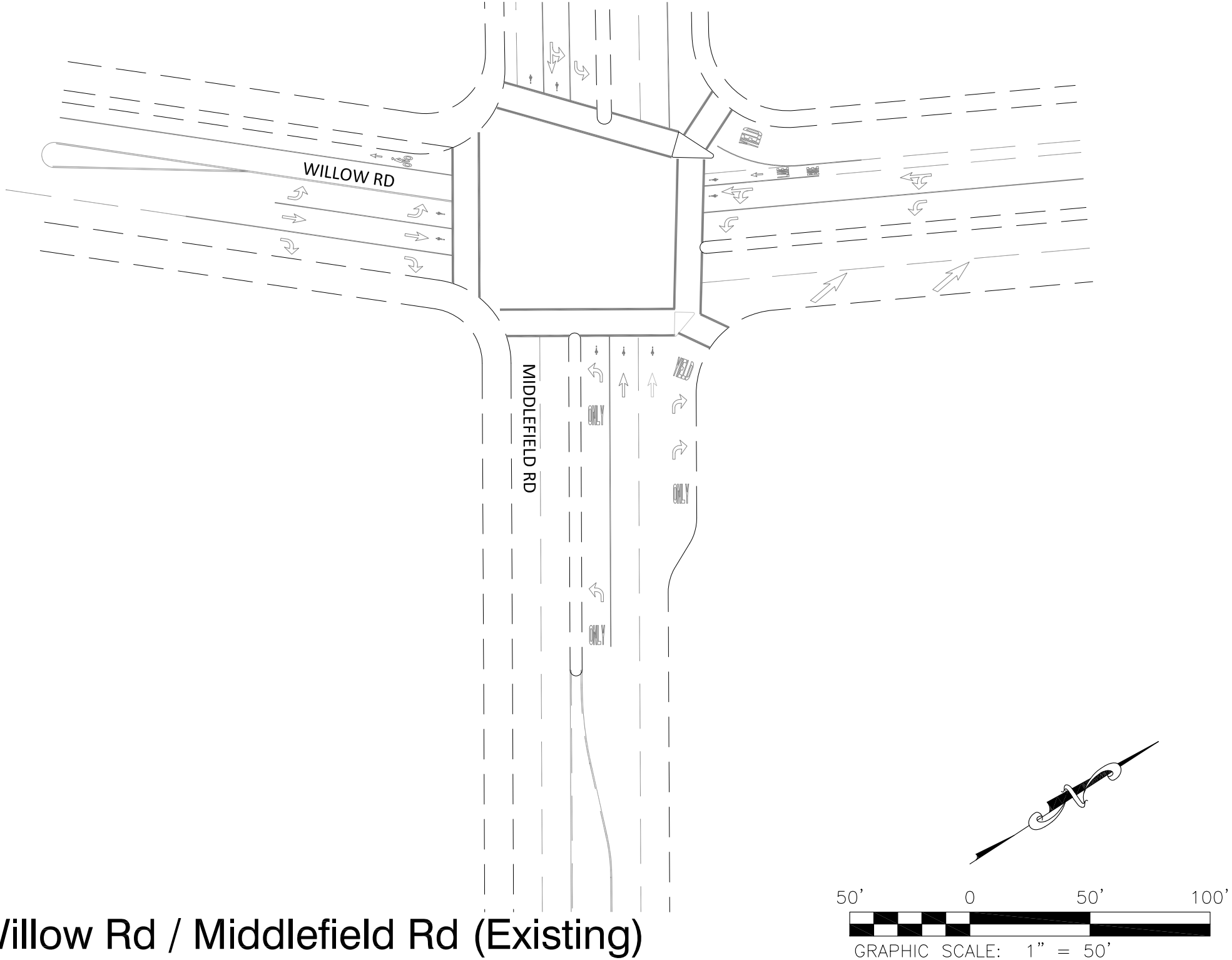


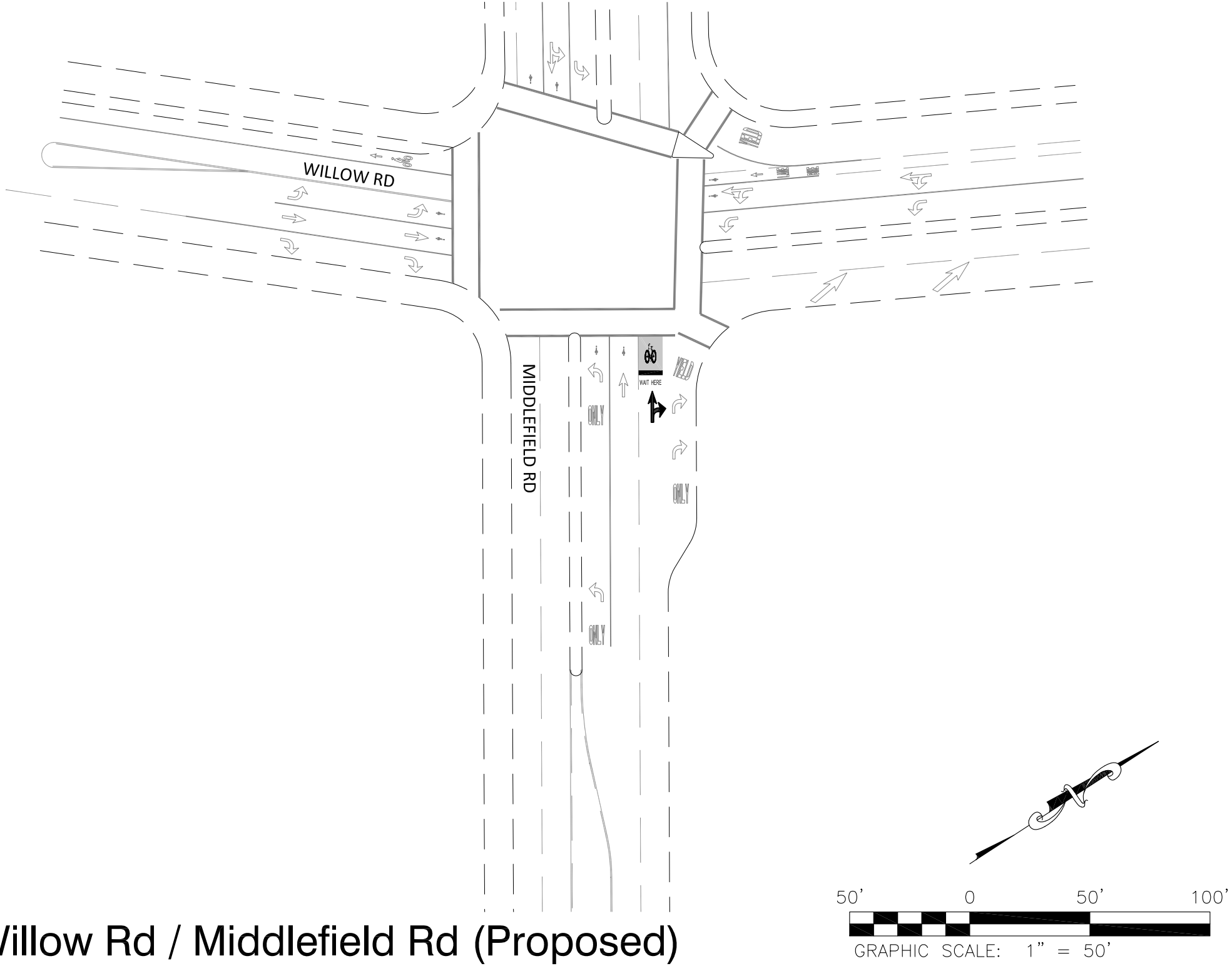

# Willow Rd / Newbridge St (Existing)




# Willow Rd / Newbridge St (Proposed)




# Willow Rd / Middlefield Rd (Existing)

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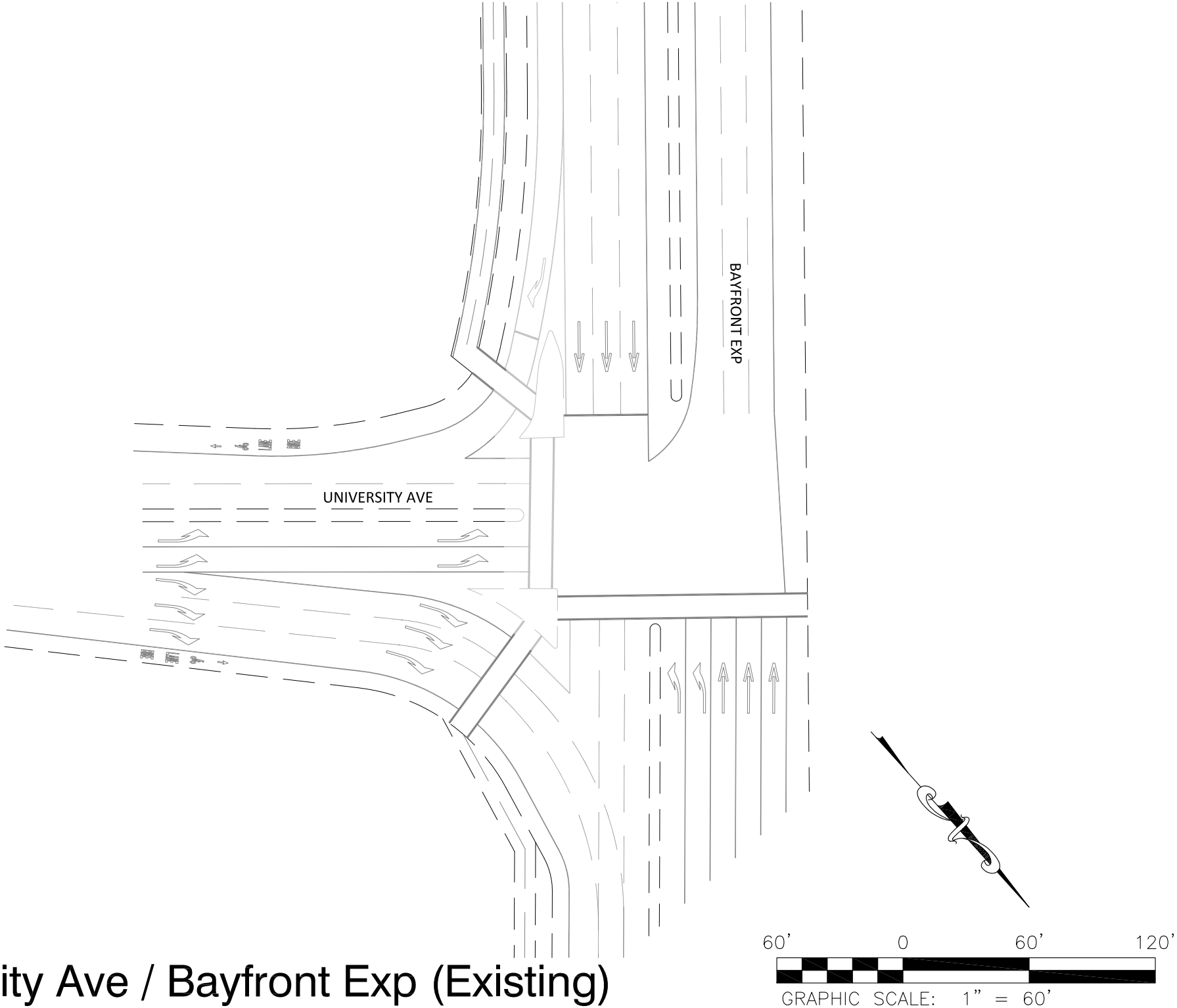
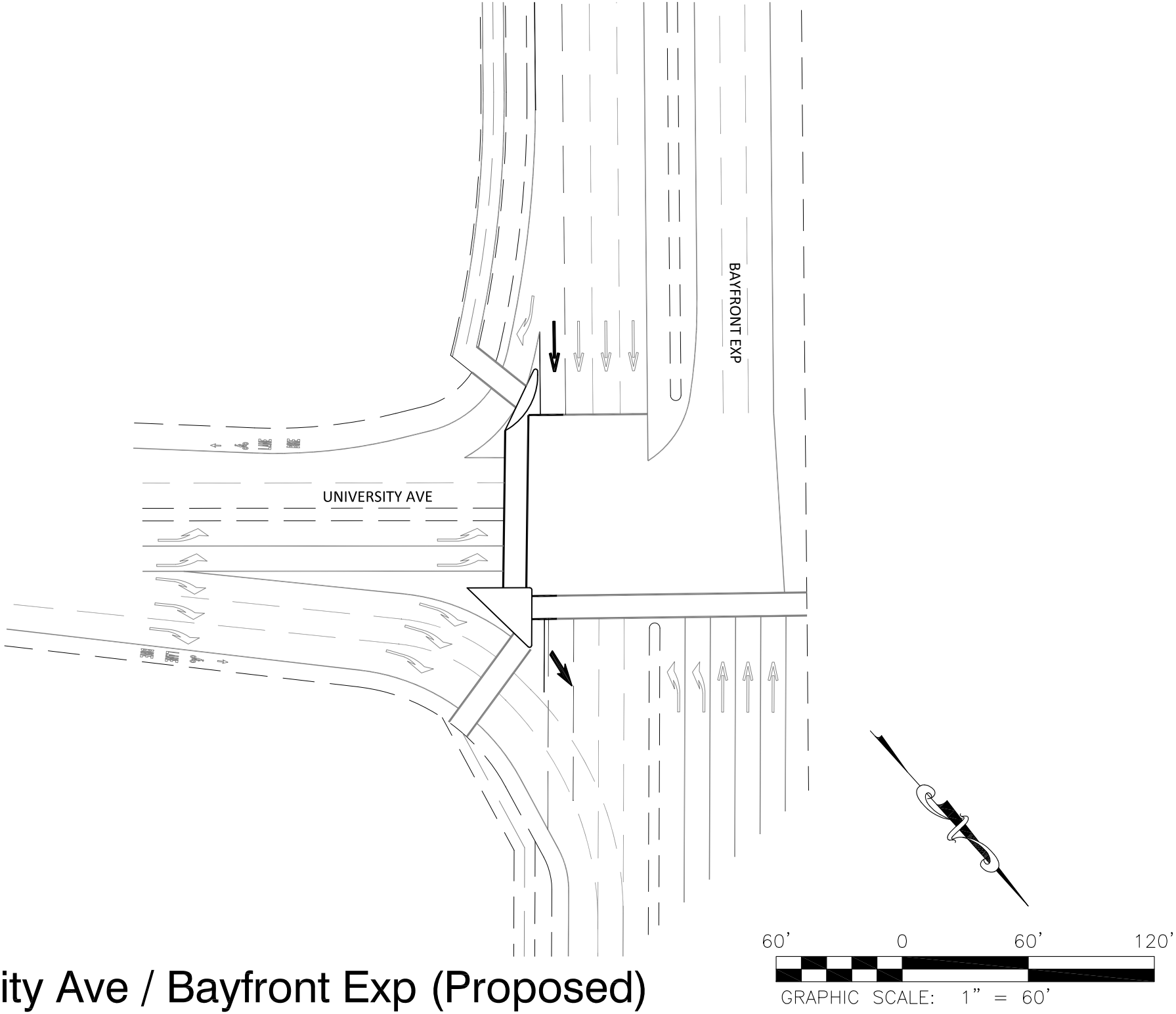
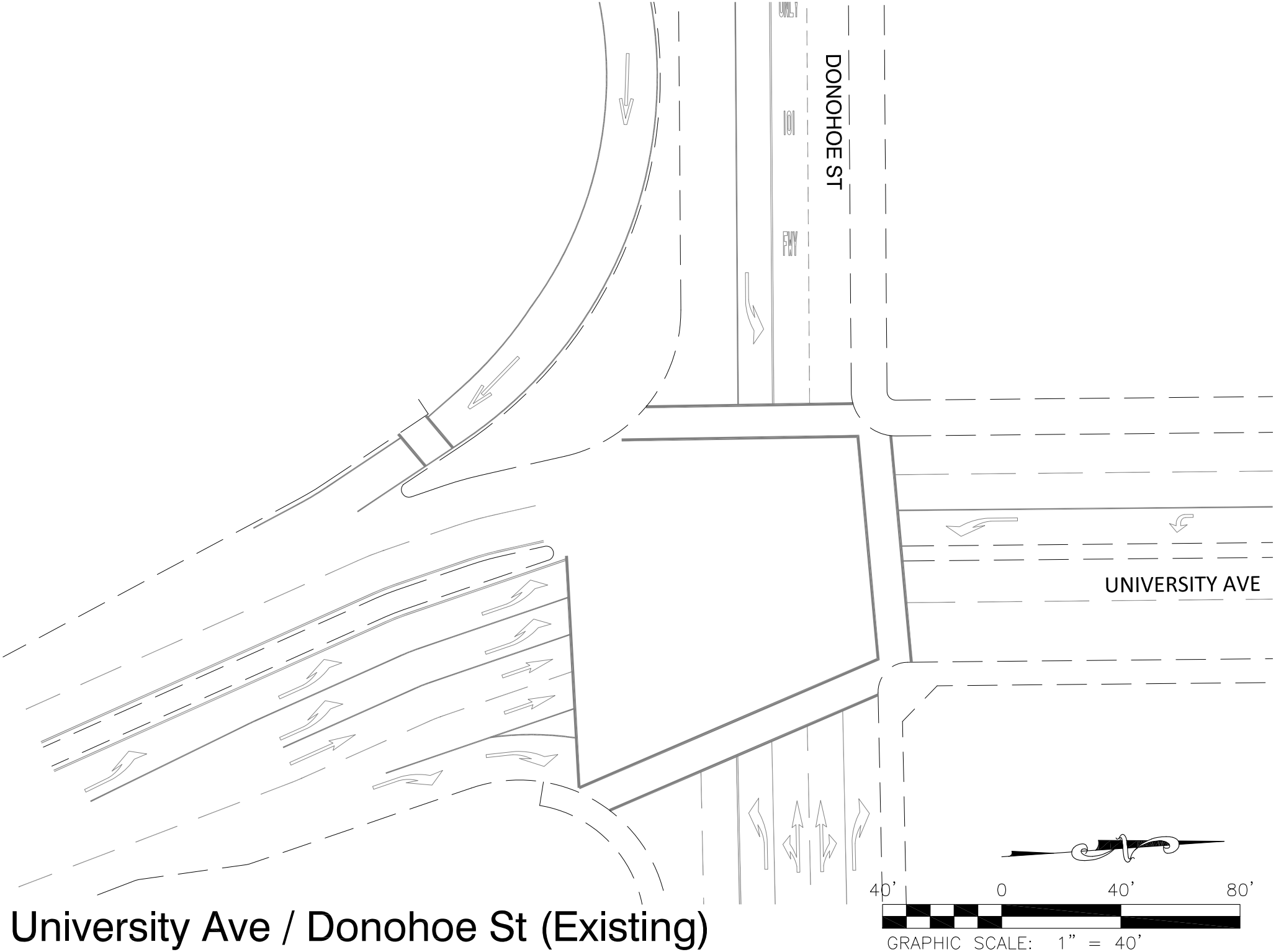


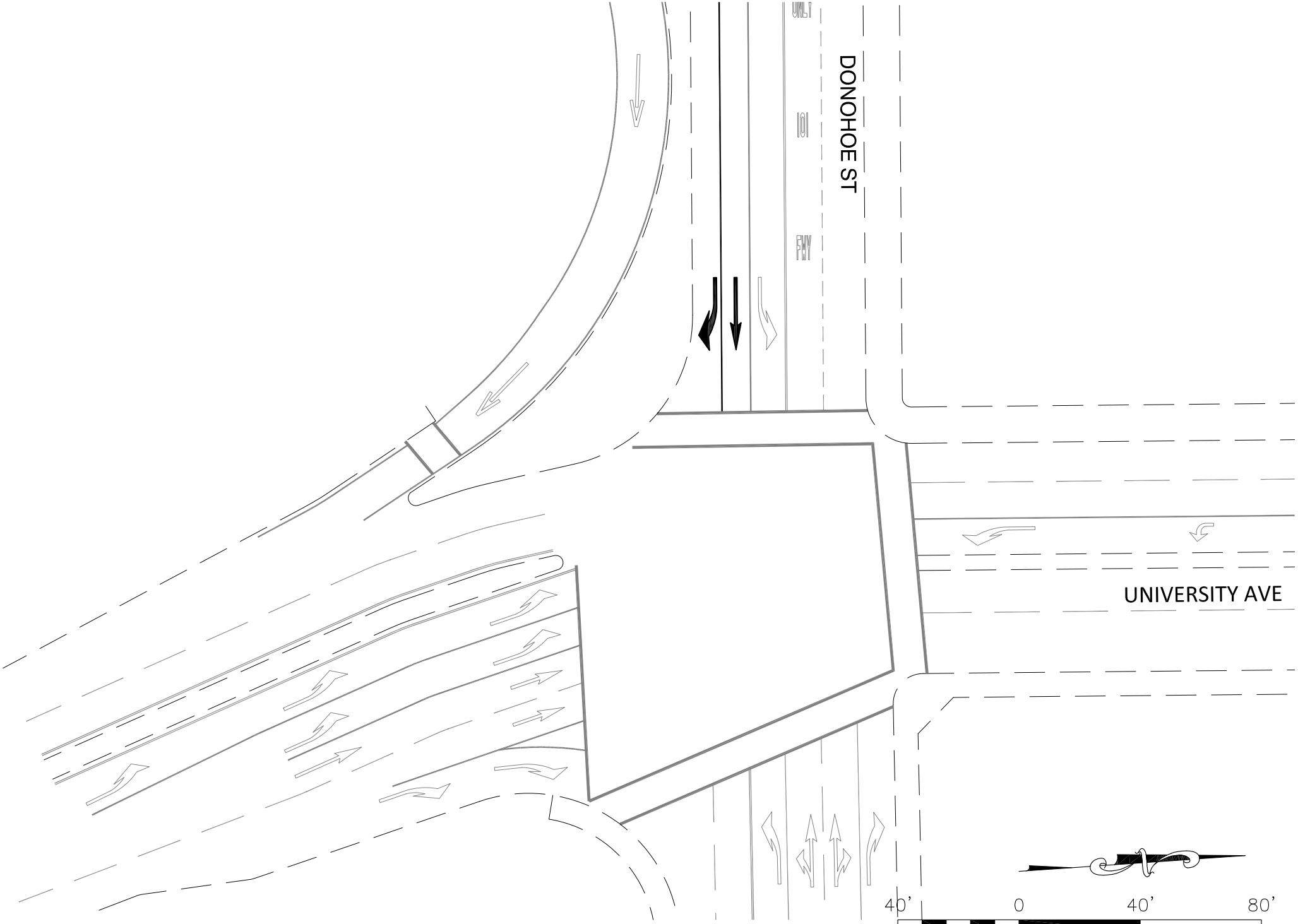

# University Ave / Bayfront Exp (Existing)



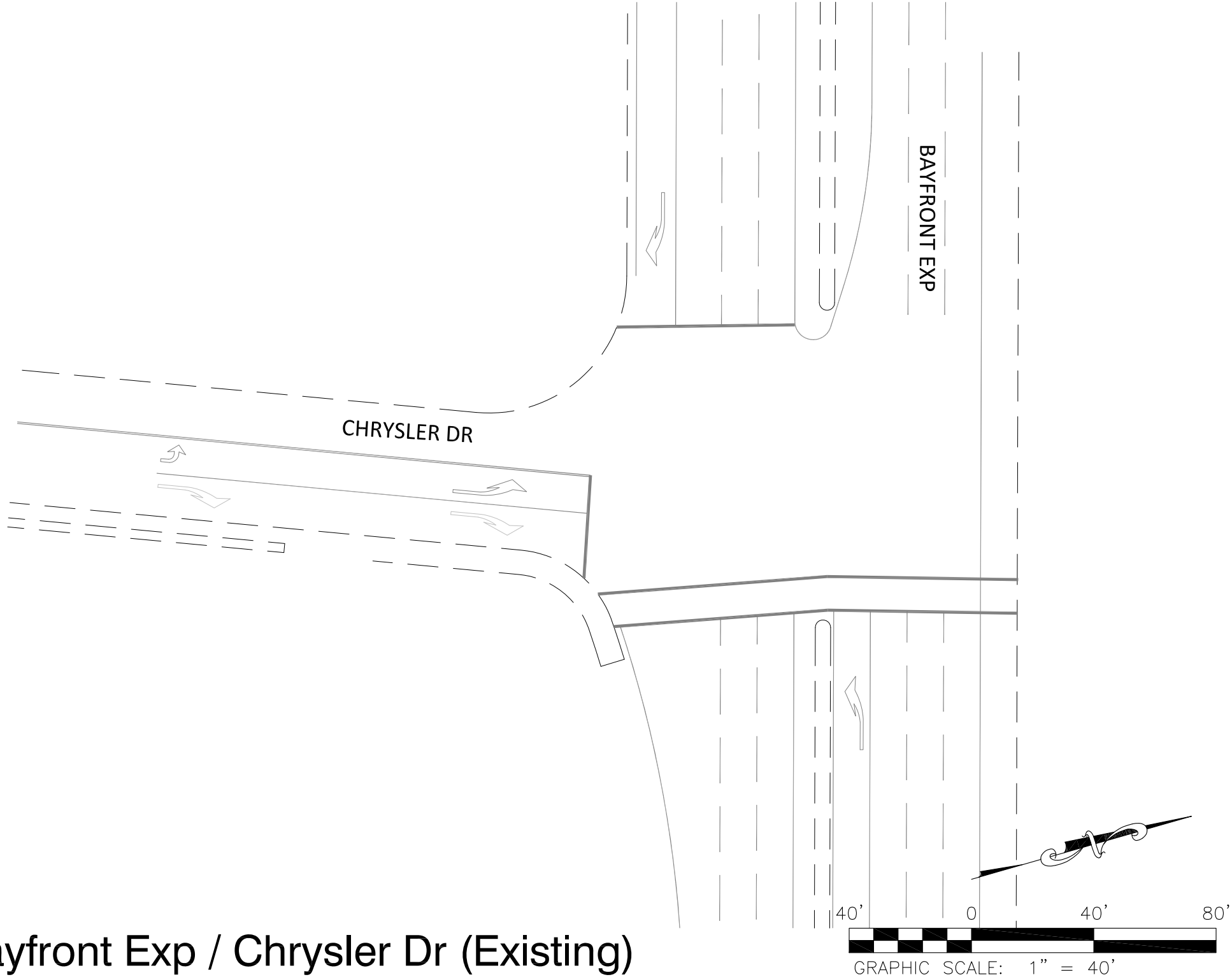

# University Ave / Bayfront Exp (Proposed)



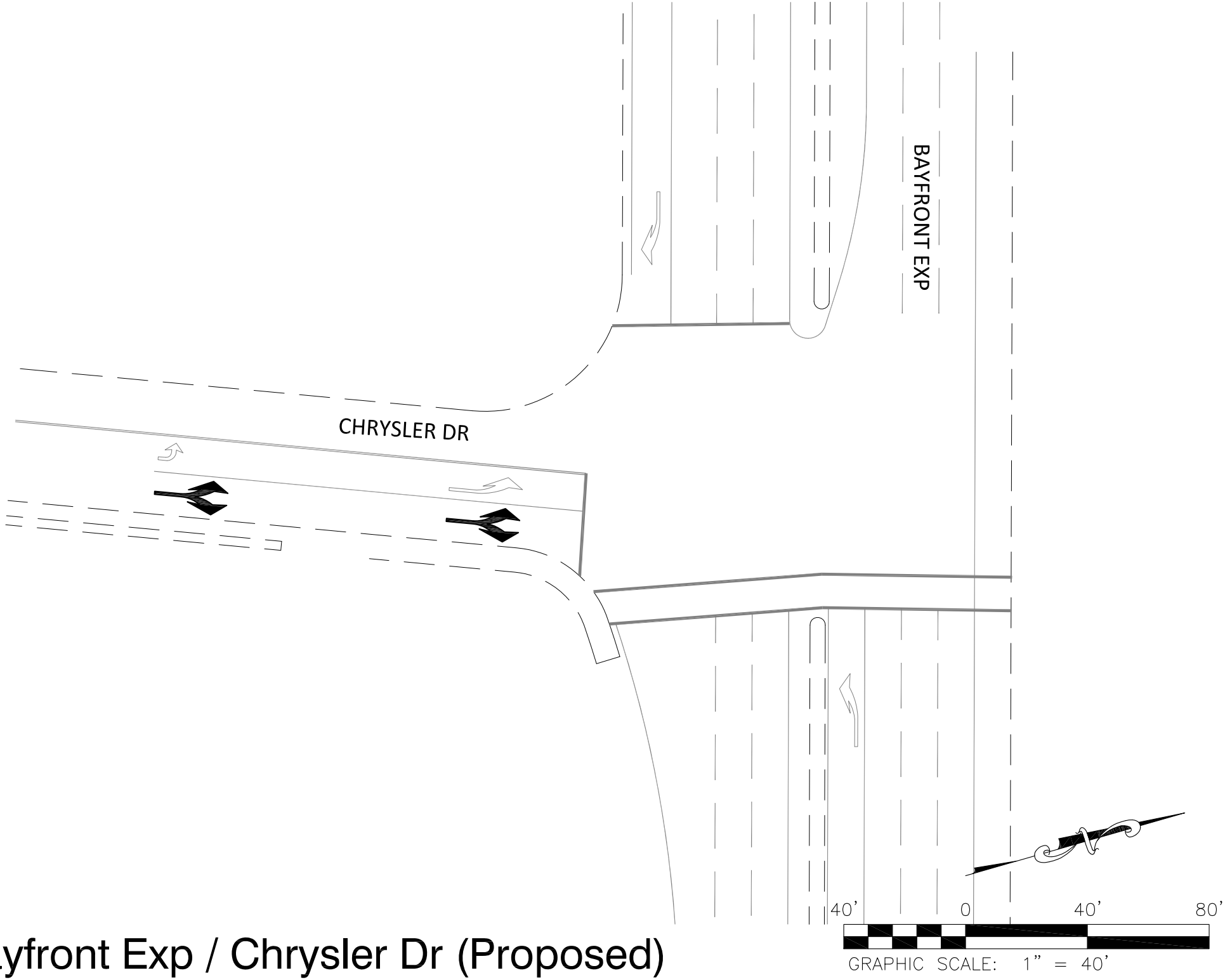

# University Ave / Donohoe St (Existing)




# University Ave / Donohoe St (Proposed)




# Bayfront Exp / Chrysler Dr (Existing)




# Bayfront Exp / Chrysler Dr (Proposed)

# APPENDIX J

Turning Movement Volumes

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 25AM FINAL
Site Code : 00000025
Start Date : 11/16/2010
Page No : 1

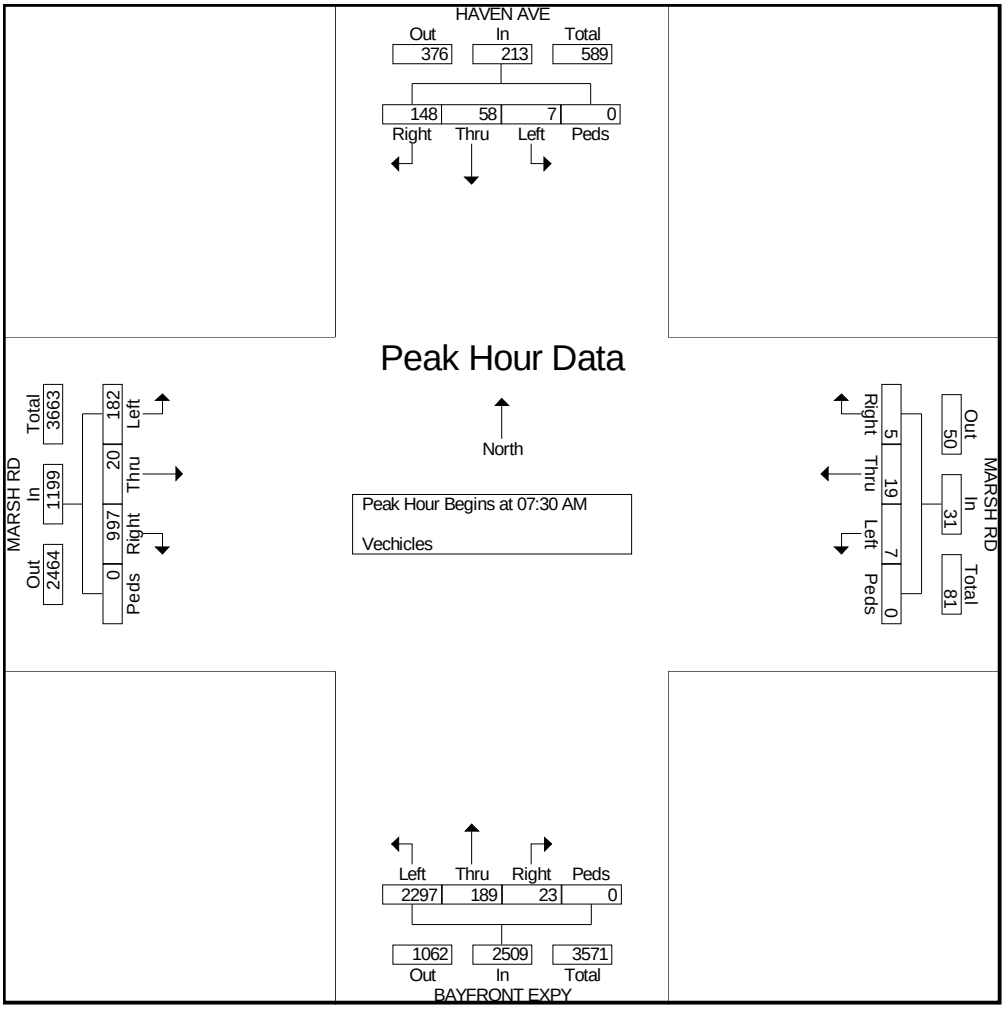
**Groups Printed- Vechicles**

| | HAVEN AVE Southbound | | | | | MARSH RD Westbound | | | | | BAYFRONT EXPY Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 25 | 10 | 1 | 0 | 36 | 1 | 1 | 1 | 0 | 3 | 3 | 30 | 404 | 0 | 437 | 127 | 10 | 33 | 0 | 170 | 646 |
| 07:15 AM | 34 | 8 | 1 | 0 | 43 | 2 | 4 | 1 | 0 | 7 | 2 | 36 | 468 | 0 | 506 | 175 | 10 | 40 | 0 | 225 | 781 |
| 07:30 AM | 48 | 15 | 1 | 0 | 64 | 0 | 7 | 0 | 0 | 7 | 9 | 30 | 621 | 0 | 660 | 219 | 3 | 37 | 0 | 259 | 990 |
| 07:45 AM | 47 | 17 | 1 | 0 | 65 | 4 | 3 | 2 | 0 | 9 | 4 | 53 | 635 | 0 | 692 | 224 | 5 | 52 | 0 | 281 | 1047 |
| Total | 154 | 50 | 4 | 0 | 208 | 7 | 15 | 4 | 0 | 26 | 18 | 149 | 2128 | 0 | 2295 | 745 | 28 | 162 | 0 | 935 | 3464 |
| 08:00 AM | 36 | 14 | 1 | 0 | 51 | 1 | 3 | 2 | 0 | 6 | 6 | 65 | 506 | 0 | 577 | 274 | 4 | 59 | 0 | 337 | 971 |
| 08:15 AM | 17 | 12 | 4 | 0 | 33 | 0 | 6 | 3 | 0 | 9 | 4 | 41 | 535 | 0 | 580 | 280 | 8 | 34 | 0 | 322 | 944 |
| 08:30 AM | 32 | 35 | 1 | 0 | 68 | 0 | 7 | 4 | 0 | 11 | 3 | 41 | 487 | 0 | 531 | 261 | 17 | 47 | 0 | 325 | 935 |
| 08:45 AM | 35 | 29 | 1 | 0 | 65 | 3 | 5 | 2 | 0 | 10 | 2 | 39 | 496 | 0 | 537 | 231 | 16 | 55 | 0 | 302 | 914 |
| Total | 120 | 90 | 7 | 0 | 217 | 4 | 21 | 11 | 0 | 36 | 15 | 186 | 2024 | 0 | 2225 | 1046 | 45 | 195 | 0 | 1286 | 3764 |
| Grand Total | 274 | 140 | 11 | 0 | 425 | 11 | 36 | 15 | 0 | 62 | 33 | 335 | 4152 | 0 | 4520 | 1791 | 73 | 357 | 0 | 2221 | 7228 |
| Apprch % | 64.5 | 32.9 | 2.6 | 0 | | 17.7 | 58.1 | 24.2 | 0 | | 0.7 | 7.4 | 91.9 | 0 | | 80.6 | 3.3 | 16.1 | 0 | | |
| Total % | 3.8 | 1.9 | 0.2 | 0 | 5.9 | 0.2 | 0.5 | 0.2 | 0 | 0.9 | 0.5 | 4.6 | 57.4 | 0 | 62.5 | 24.8 | 1 | 4.9 | 0 | 30.7 | |

| | HAVEN AVE Southbound | | | | | MARSH RD Westbound | | | | | BAYFRONT EXPY Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 48 | 15 | 1 | 0 | 64 | 0 | 7 | 0 | 0 | 7 | 9 | 30 | 621 | 0 | 660 | 219 | 3 | 37 | 0 | 259 | 990 |
| 07:45 AM | 47 | 17 | 1 | 0 | 65 | 4 | 3 | 2 | 0 | 9 | 4 | 53 | 635 | 0 | 692 | 224 | 5 | 52 | 0 | 281 | 1047 |
| 08:00 AM | 36 | 14 | 1 | 0 | 51 | 1 | 3 | 2 | 0 | 6 | 6 | 65 | 506 | 0 | 577 | 274 | 4 | 59 | 0 | 337 | 971 |
| 08:15 AM | 17 | 12 | 4 | 0 | 33 | 0 | 6 | 3 | 0 | 9 | 4 | 41 | 535 | 0 | 580 | 280 | 8 | 34 | 0 | 322 | 944 |
| Total Volume | 148 | 58 | 7 | 0 | 213 | 5 | 19 | 7 | 0 | 31 | 23 | 189 | 2297 | 0 | 2509 | 997 | 20 | 182 | 0 | 1199 | 3952 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .771 | .853 | .438 | .000 | .819 | .313 | .679 | .583 | .000 | .861 | .639 | .727 | .904 | .000 | .906 | .890 | .625 | .771 | .000 | .889 | .944 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 25AM FINAL
Site Code : 00000025
Start Date : 11/16/2010
Page No : 2



# All Traffic Data

(916) 771-8700

CITY OF MENLOW PARK

File Name : 11-7184-003 MARSH-BAYFRONT EXPY
Site Code : 00000000
Start Date : 5/3/2011
Page No : 1

**Groups Printed- Unshifted**

| | MARSH RD. Southbound | | | | BAYFRONT EXPY Westbound | | | | MARSH RD. Northbound | | | | HAVEN AVE. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 08:30 | 4 | 7 | 1 | 12 | 576 | 37 | 2 | 615 | 39 | 17 | 220 | 276 | 2 | 36 | 33 | 71 | 974 |
| 08:45 | 4 | 10 | 0 | 14 | 512 | 50 | 4 | 566 | 35 | 11 | 228 | 274 | 2 | 23 | 31 | 56 | 910 |
| Total | 8 | 17 | 1 | 26 | 1088 | 87 | 6 | 1181 | 74 | 28 | 448 | 550 | 4 | 59 | 64 | 127 | 1884 |
| 09:00 | 5 | 16 | 3 | 24 | 451 | 29 | 7 | 487 | 42 | 11 | 233 | 286 | 0 | 20 | 26 | 46 | 843 |
| 09:15 | 4 | 11 | 1 | 16 | 449 | 27 | 1 | 477 | 40 | 14 | 204 | 258 | 1 | 23 | 60 | 84 | 835 |
| 09:30 | 3 | 11 | 0 | 14 | 410 | 30 | 3 | 443 | 48 | 9 | 175 | 232 | 2 | 13 | 41 | 56 | 745 |
| 09:45 | 2 | 6 | 2 | 10 | 349 | 11 | 5 | 365 | 36 | 12 | 166 | 214 | 1 | 13 | 30 | 44 | 633 |
| Total | 14 | 44 | 6 | 64 | 1659 | 97 | 16 | 1772 | 166 | 46 | 778 | 990 | 4 | 69 | 157 | 230 | 3056 |
| 10:00 | 3 | 28 | 2 | 33 | 224 | 19 | 3 | 246 | 44 | 13 | 146 | 203 | 1 | 14 | 31 | 46 | 528 |
| 10:15 | 1 | 12 | 1 | 14 | 256 | 12 | 2 | 270 | 28 | 2 | 144 | 174 | 0 | 17 | 31 | 48 | 506 |
| Grand Total | 26 | 101 | 10 | 137 | 3227 | 215 | 27 | 3469 | 312 | 89 | 1516 | 1917 | 9 | 159 | 283 | 451 | 5974 |
| Apprch % | 19 | 73.7 | 7.3 | | 93 | 6.2 | 0.8 | | 16.3 | 4.6 | 79.1 | | 2 | 35.3 | 62.7 | | |
| Total % | 0.4 | 1.7 | 0.2 | 2.3 | 54 | 3.6 | 0.5 | 58.1 | 5.2 | 1.5 | 25.4 | 32.1 | 0.2 | 2.7 | 4.7 | 7.5 | |

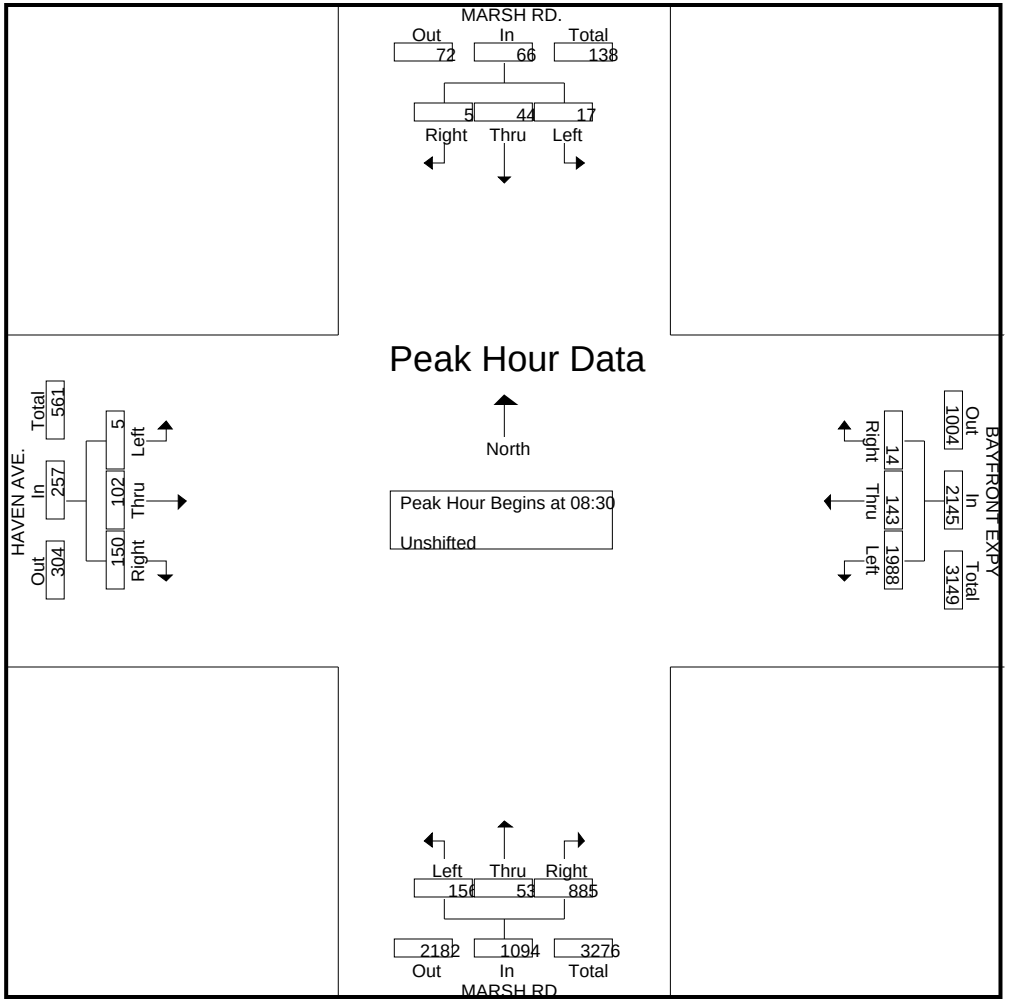
| | MARSH RD. Southbound | | | | BAYFRONT EXPY Westbound | | | | MARSH RD. Northbound | | | | HAVEN AVE. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 08:30 to 10:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:30 | | | | | | | | | | | | | | | | | |
| 08:30 | 4 | 7 | 1 | 12 | **576** | 37 | 2 | **615** | 39 | **17** | 220 | 276 | **2** | **36** | 33 | 71 | **974** |
| 08:45 | 4 | 10 | 0 | 14 | 512 | **50** | 4 | 566 | 35 | 11 | 228 | 274 | 2 | 23 | 31 | 56 | 910 |
| 09:00 | **5** | **16** | **3** | **24** | 451 | 29 | **7** | 487 | **42** | 11 | **233** | **286** | 0 | 20 | 26 | 46 | 843 |
| 09:15 | 4 | 11 | 1 | 16 | 449 | 27 | 1 | 477 | 40 | 14 | 204 | 258 | 1 | 23 | **60** | **84** | 835 |
| Total Volume | 17 | 44 | 5 | 66 | 1988 | 143 | 14 | 2145 | 156 | 53 | 885 | 1094 | 5 | 102 | 150 | 257 | 3562 |
| % App. Total | 25.8 | 66.7 | 7.6 | | 92.7 | 6.7 | 0.7 | | 14.3 | 4.8 | 80.9 | | 1.9 | 39.7 | 58.4 | | |
| PHF | .850 | .688 | .417 | .688 | .863 | .715 | .500 | .872 | .929 | .779 | .950 | .956 | .625 | .708 | .625 | .765 | .914 |

# All Traffic Data

(916) 771-8700

CITY OF MENLOW PARK

File Name : 11-7184-003 MARSH-BAYFRONT EXPY
Site Code : 00000000
Start Date : 5/3/2011
Page No : 2



Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 25PM FINAL
Site Code : 00000025
Start Date : 11/16/2010
Page No : 1

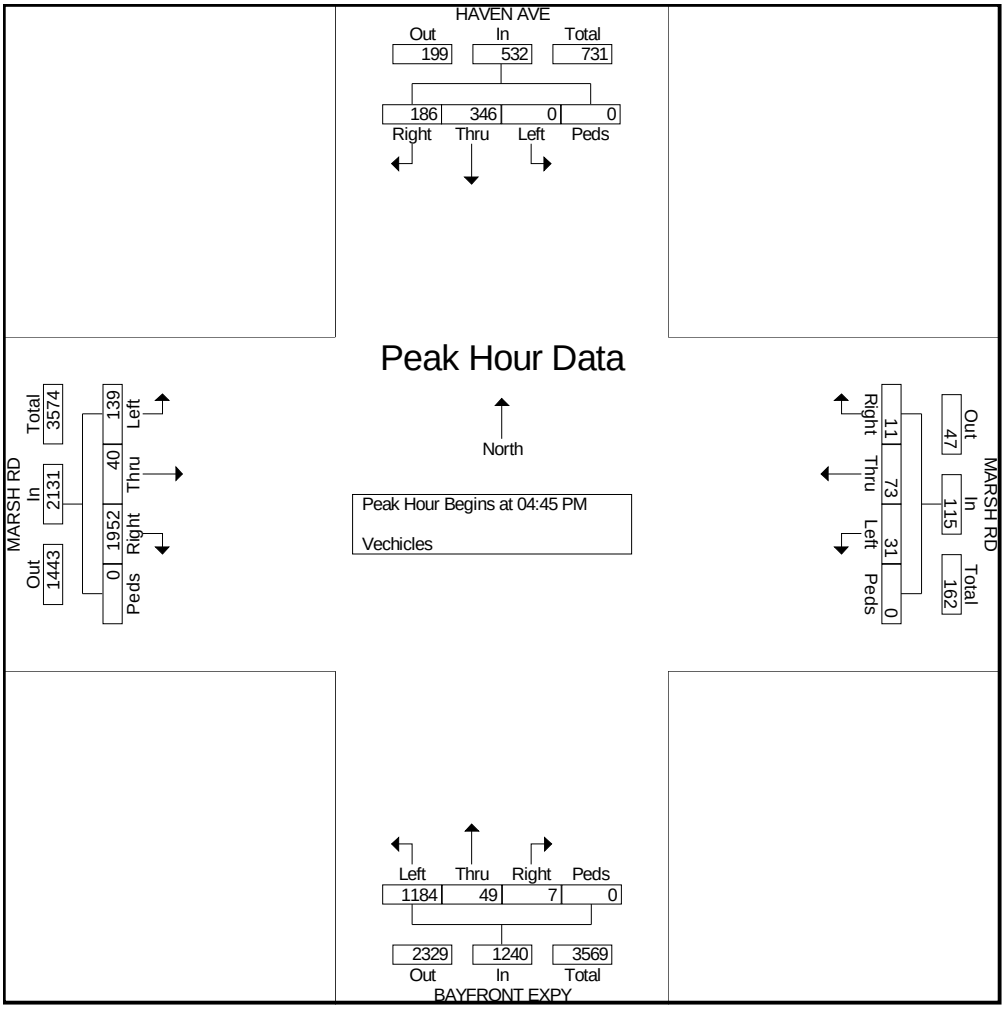
**Groups Printed- Vechicles**

| | HAVEN AVE Southbound | | | | | MARSH RD Westbound | | | | | BAYFRONT EXPY Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 61 | 48 | 0 | 0 | 109 | 2 | 2 | 4 | 0 | 8 | 3 | 11 | 236 | 0 | 250 | 376 | 10 | 18 | 0 | 404 | 771 |
| 04:15 PM | 42 | 49 | 1 | 0 | 92 | 1 | 3 | 6 | 0 | 10 | 8 | 18 | 243 | 0 | 269 | 450 | 22 | 35 | 0 | 507 | 878 |
| 04:30 PM | 41 | 38 | 1 | 0 | 80 | 1 | 12 | 1 | 0 | 14 | 7 | 23 | 275 | 0 | 305 | 454 | 15 | 36 | 0 | 505 | 904 |
| 04:45 PM | 45 | 64 | 0 | 0 | 109 | 1 | 20 | 7 | 0 | 28 | 5 | 11 | 261 | 0 | 277 | 485 | 23 | 31 | 0 | 539 | 953 |
| Total | 189 | 199 | 2 | 0 | 390 | 5 | 37 | 18 | 0 | 60 | 23 | 63 | 1015 | 0 | 1101 | 1765 | 70 | 120 | 0 | 1955 | 3506 |
| 05:00 PM | 55 | 86 | 0 | 0 | 141 | 3 | 21 | 4 | 0 | 28 | 2 | 14 | 313 | 0 | 329 | 490 | 13 | 53 | 0 | 556 | 1054 |
| 05:15 PM | 43 | 96 | 0 | 0 | 139 | 4 | 14 | 14 | 0 | 32 | 0 | 11 | 299 | 0 | 310 | 495 | 4 | 31 | 0 | 530 | 1011 |
| 05:30 PM | 43 | 100 | 0 | 0 | 143 | 3 | 18 | 6 | 0 | 27 | 0 | 13 | 311 | 0 | 324 | 482 | 0 | 24 | 0 | 506 | 1000 |
| 05:45 PM | 15 | 51 | 0 | 0 | 66 | 0 | 7 | 1 | 0 | 8 | 0 | 8 | 234 | 0 | 242 | 461 | 0 | 36 | 0 | 497 | 813 |
| Total | 156 | 333 | 0 | 0 | 489 | 10 | 60 | 25 | 0 | 95 | 2 | 46 | 1157 | 0 | 1205 | 1928 | 17 | 144 | 0 | 2089 | 3878 |
| Grand Total | 345 | 532 | 2 | 0 | 879 | 15 | 97 | 43 | 0 | 155 | 25 | 109 | 2172 | 0 | 2306 | 3693 | 87 | 264 | 0 | 4044 | 7384 |
| Apprch % | 39.2 | 60.5 | 0.2 | 0 | | 9.7 | 62.6 | 27.7 | 0 | | 1.1 | 4.7 | 94.2 | 0 | | 91.3 | 2.2 | 6.5 | 0 | | |
| Total % | 4.7 | 7.2 | 0 | 0 | 11.9 | 0.2 | 1.3 | 0.6 | 0 | 2.1 | 0.3 | 1.5 | 29.4 | 0 | 31.2 | 50 | 1.2 | 3.6 | 0 | 54.8 | |

| | HAVEN AVE Southbound | | | | | MARSH RD Westbound | | | | | BAYFRONT EXPY Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 45 | 64 | 0 | 0 | 109 | 1 | 20 | 7 | 0 | 28 | 5 | 11 | 261 | 0 | 277 | 485 | 23 | 31 | 0 | 539 | 953 |
| 05:00 PM | 55 | 86 | 0 | 0 | 141 | 3 | 21 | 4 | 0 | 28 | 2 | 14 | 313 | 0 | 329 | 490 | 13 | 53 | 0 | 556 | 1054 |
| 05:15 PM | 43 | 96 | 0 | 0 | 139 | 4 | 14 | 14 | 0 | 32 | 0 | 11 | 299 | 0 | 310 | 495 | 4 | 31 | 0 | 530 | 1011 |
| 05:30 PM | 43 | 100 | 0 | 0 | 143 | 3 | 18 | 6 | 0 | 27 | 0 | 13 | 311 | 0 | 324 | 482 | 0 | 24 | 0 | 506 | 1000 |
| Total Volume | 186 | 346 | 0 | 0 | 532 | 11 | 73 | 31 | 0 | 115 | 7 | 49 | 1184 | 0 | 1240 | 1952 | 40 | 139 | 0 | 2131 | 4018 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .845 | .865 | .000 | .000 | .930 | .688 | .869 | .554 | .000 | .898 | .350 | .875 | .946 | .000 | .942 | .986 | .435 | .656 | .000 | .958 | .953 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 25PM FINAL
Site Code : 00000025
Start Date : 11/16/2010
Page No : 2



# Traffic Data Service

Campbell, CA

**(408) 377-2988**

***tdsbay@cs.com***


File Name : 26AM FINAL
Site Code : 00000026
Start Date : 11/17/2010
Page No : 1

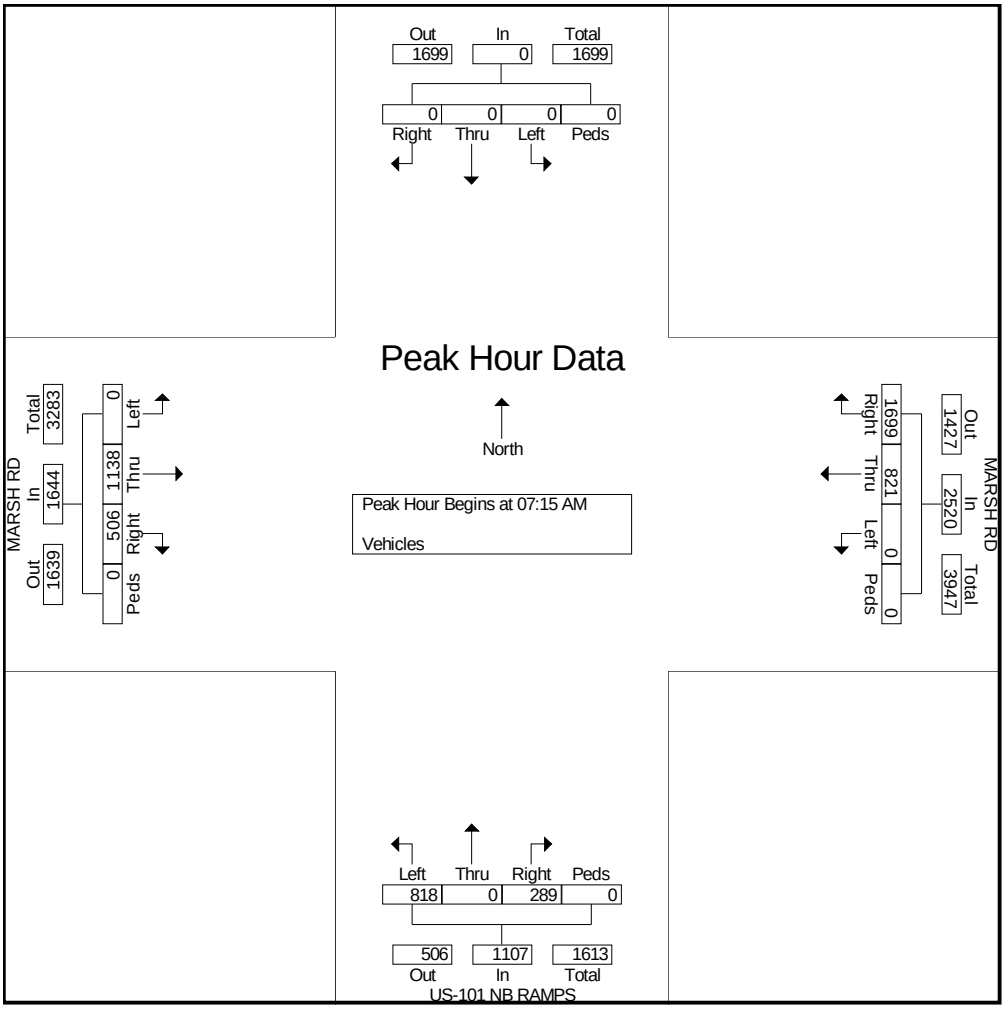
**Groups Printed- Vehicles**

| | Southbound | | | | | MARSH RD Westbound | | | | | US-101 NB RAMPS Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 327 | 159 | 0 | 0 | 486 | 56 | 0 | 126 | 0 | 182 | 86 | 192 | 0 | 0 | 278 | 946 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 418 | 168 | 0 | 0 | 586 | 72 | 0 | 186 | 0 | 258 | 124 | 259 | 0 | 0 | 383 | 1227 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 454 | 234 | 0 | 0 | 688 | 69 | 0 | 201 | 0 | 270 | 121 | 273 | 0 | 0 | 394 | 1352 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 445 | 211 | 0 | 0 | 656 | 63 | 0 | 212 | 0 | 275 | 125 | 305 | 0 | 0 | 430 | 1361 |
| Total | 0 | 0 | 0 | 0 | 0 | 1644 | 772 | 0 | 0 | 2416 | 260 | 0 | 725 | 0 | 985 | 456 | 1029 | 0 | 0 | 1485 | 4886 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 382 | 208 | 0 | 0 | 590 | 85 | 0 | 219 | 0 | 304 | 136 | 301 | 0 | 0 | 437 | 1331 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 382 | 146 | 0 | 0 | 528 | 95 | 0 | 139 | 0 | 234 | 135 | 300 | 0 | 0 | 435 | 1197 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 408 | 133 | 0 | 0 | 541 | 97 | 0 | 141 | 0 | 238 | 154 | 348 | 0 | 0 | 502 | 1281 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 439 | 174 | 0 | 0 | 613 | 108 | 0 | 156 | 0 | 264 | 192 | 263 | 0 | 0 | 455 | 1332 |
| Total | 0 | 0 | 0 | 0 | 0 | 1611 | 661 | 0 | 0 | 2272 | 385 | 0 | 655 | 0 | 1040 | 617 | 1212 | 0 | 0 | 1829 | 5141 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 3255 | 1433 | 0 | 0 | 4688 | 645 | 0 | 1380 | 0 | 2025 | 1073 | 2241 | 0 | 0 | 3314 | 10027 |
| Apprch % | 0 | 0 | 0 | 0 | | 69.4 | 30.6 | 0 | 0 | | 31.9 | 0 | 68.1 | 0 | | 32.4 | 67.6 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 32.5 | 14.3 | 0 | 0 | 46.8 | 6.4 | 0 | 13.8 | 0 | 20.2 | 10.7 | 22.3 | 0 | 0 | 33.1 | |

| | Southbound | | | | | MARSH RD Westbound | | | | | US-101 NB RAMPS Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 418 | 168 | 0 | 0 | 586 | 72 | 0 | 186 | 0 | 258 | 124 | 259 | 0 | 0 | 383 | 1227 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 454 | 234 | 0 | 0 | 688 | 69 | 0 | 201 | 0 | 270 | 121 | 273 | 0 | 0 | 394 | 1352 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 445 | 211 | 0 | 0 | 656 | 63 | 0 | 212 | 0 | 275 | 125 | 305 | 0 | 0 | 430 | 1361 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 382 | 208 | 0 | 0 | 590 | 85 | 0 | 219 | 0 | 304 | 136 | 301 | 0 | 0 | 437 | 1331 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 1699 | 821 | 0 | 0 | 2520 | 289 | 0 | 818 | 0 | 1107 | 506 | 1138 | 0 | 0 | 1644 | 5271 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .936 | .877 | .000 | .000 | .916 | .850 | .000 | .934 | .000 | .910 | .930 | .933 | .000 | .000 | .941 | .968 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 26AM FINAL
Site Code : 00000026
Start Date : 11/17/2010
Page No : 2



Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 26PM FINAL
Site Code : 00000026
Start Date : 11/17/2010
Page No : 1

**Groups Printed- Vehicles**

| | Southbound | | | | | MARSH RD Westbound | | | | | US-101 NB RAMPS Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 180 | 136 | 0 | 0 | 316 | 35 | 0 | 130 | 0 | 165 | 191 | 441 | 0 | 0 | 632 | 1113 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 201 | 128 | 0 | 0 | 329 | 45 | 0 | 117 | 0 | 162 | 147 | 508 | 0 | 0 | 655 | 1146 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 158 | 157 | 0 | 0 | 315 | 54 | 0 | 134 | 0 | 188 | 143 | 490 | 0 | 0 | 633 | 1136 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 189 | 160 | 0 | 0 | 349 | 49 | 0 | 137 | 0 | 186 | 125 | 523 | 0 | 0 | 648 | 1183 |
| Total | 0 | 0 | 0 | 0 | 0 | 728 | 581 | 0 | 0 | 1309 | 183 | 0 | 518 | 0 | 701 | 606 | 1962 | 0 | 0 | 2568 | 4578 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 207 | 190 | 0 | 0 | 397 | 63 | 0 | 108 | 0 | 171 | 136 | 548 | 0 | 0 | 684 | 1252 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 184 | 162 | 0 | 0 | 346 | 58 | 0 | 123 | 0 | 181 | 125 | 496 | 0 | 0 | 621 | 1148 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 211 | 170 | 0 | 0 | 381 | 43 | 0 | 125 | 0 | 168 | 121 | 496 | 0 | 0 | 617 | 1166 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 177 | 138 | 0 | 0 | 315 | 43 | 0 | 157 | 0 | 200 | 115 | 469 | 0 | 0 | 584 | 1099 |
| Total | 0 | 0 | 0 | 0 | 0 | 779 | 660 | 0 | 0 | 1439 | 207 | 0 | 513 | 0 | 720 | 497 | 2009 | 0 | 0 | 2506 | 4665 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 1507 | 1241 | 0 | 0 | 2748 | 390 | 0 | 1031 | 0 | 1421 | 1103 | 3971 | 0 | 0 | 5074 | 9243 |
| Apprch % | 0 | 0 | 0 | 0 | | 54.8 | 45.2 | 0 | 0 | | 27.4 | 0 | 72.6 | 0 | | 21.7 | 78.3 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 16.3 | 13.4 | 0 | 0 | 29.7 | 4.2 | 0 | 11.2 | 0 | 15.4 | 11.9 | 43 | 0 | 0 | 54.9 | |

| | Southbound | | | | | MARSH RD Westbound | | | | | US-101 NB RAMPS Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 189 | 160 | 0 | 0 | 349 | 49 | 0 | 137 | 0 | 186 | 125 | 523 | 0 | 0 | 648 | 1183 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 207 | 190 | 0 | 0 | 397 | 63 | 0 | 108 | 0 | 171 | 136 | 548 | 0 | 0 | 684 | 1252 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 184 | 162 | 0 | 0 | 346 | 58 | 0 | 123 | 0 | 181 | 125 | 496 | 0 | 0 | 621 | 1148 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 211 | 170 | 0 | 0 | 381 | 43 | 0 | 125 | 0 | 168 | 121 | 496 | 0 | 0 | 617 | 1166 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 791 | 682 | 0 | 0 | 1473 | 213 | 0 | 493 | 0 | 706 | 507 | 2063 | 0 | 0 | 2570 | 4749 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .937 | .897 | .000 | .000 | .928 | .845 | .000 | .900 | .000 | .949 | .932 | .941 | .000 | .000 | .939 | .948 |

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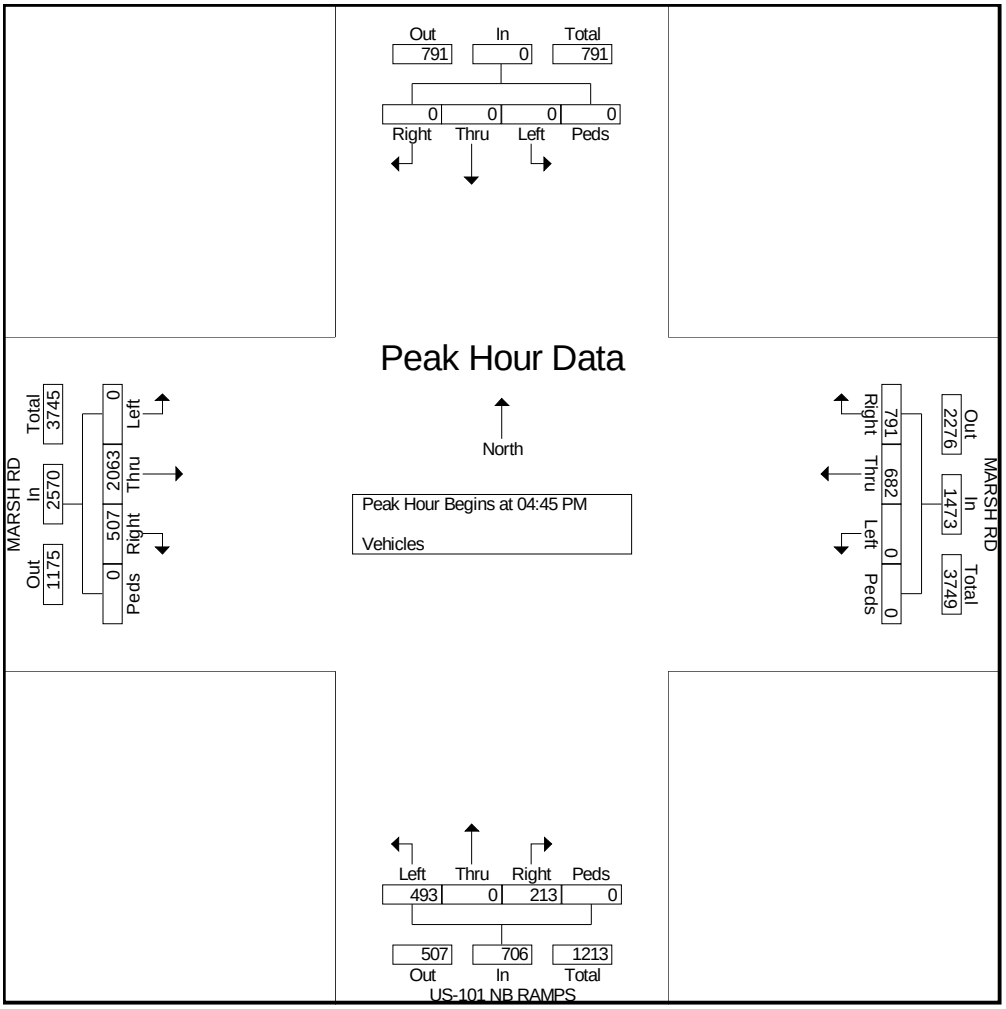

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***tdsbay@cs.com***

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Site Code : 00000027
Start Date : 11/17/2010
Page No : 1

**Groups Printed- Vehicles**

| | US-101 SB RAMPS Southbound | | | | | MARSH RD Westbound | | | | | Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 95 | 0 | 156 | 0 | 251 | 25 | 251 | 0 | 0 | 276 | 0 | 0 | 0 | 0 | 0 | 139 | 148 | 0 | 0 | 287 | 814 |
| 07:15 AM | 114 | 0 | 193 | 0 | 307 | 26 | 323 | 0 | 0 | 349 | 0 | 0 | 0 | 0 | 0 | 136 | 195 | 0 | 0 | 331 | 987 |
| 07:30 AM | 126 | 0 | 202 | 0 | 328 | 30 | 395 | 0 | 0 | 425 | 0 | 0 | 0 | 0 | 0 | 166 | 201 | 0 | 0 | 367 | 1120 |
| 07:45 AM | 157 | 0 | 247 | 0 | 404 | 18 | 370 | 0 | 0 | 388 | 0 | 0 | 0 | 0 | 0 | 146 | 191 | 0 | 0 | 337 | 1129 |
| Total | 492 | 0 | 798 | 0 | 1290 | 99 | 1339 | 0 | 0 | 1438 | 0 | 0 | 0 | 0 | 0 | 587 | 735 | 0 | 0 | 1322 | 4050 |
| 08:00 AM | 145 | 0 | 207 | 0 | 352 | 24 | 383 | 0 | 0 | 407 | 0 | 0 | 0 | 0 | 0 | 140 | 224 | 0 | 0 | 364 | 1123 |
| 08:15 AM | 130 | 0 | 223 | 0 | 353 | 14 | 278 | 0 | 0 | 292 | 0 | 0 | 0 | 0 | 0 | 131 | 218 | 0 | 0 | 349 | 994 |
| 08:30 AM | 119 | 0 | 254 | 0 | 373 | 19 | 249 | 0 | 0 | 268 | 0 | 0 | 0 | 0 | 0 | 111 | 209 | 0 | 0 | 320 | 961 |
| 08:45 AM | 149 | 0 | 216 | 0 | 365 | 20 | 292 | 0 | 0 | 312 | 0 | 0 | 0 | 0 | 0 | 107 | 208 | 0 | 0 | 315 | 992 |
| Total | 543 | 0 | 900 | 0 | 1443 | 77 | 1202 | 0 | 0 | 1279 | 0 | 0 | 0 | 0 | 0 | 489 | 859 | 0 | 0 | 1348 | 4070 |
| Grand Total | 1035 | 0 | 1698 | 0 | 2733 | 176 | 2541 | 0 | 0 | 2717 | 0 | 0 | 0 | 0 | 0 | 1076 | 1594 | 0 | 0 | 2670 | 8120 |
| Apprch % | 37.9 | 0 | 62.1 | 0 | | 6.5 | 93.5 | 0 | 0 | | 0 | 0 | 0 | 0 | | 40.3 | 59.7 | 0 | 0 | | |
| Total % | 12.7 | 0 | 20.9 | 0 | 33.7 | 2.2 | 31.3 | 0 | 0 | 33.5 | 0 | 0 | 0 | 0 | 0 | 13.3 | 19.6 | 0 | 0 | 32.9 | |

| | US-101 SB RAMPS Southbound | | | | | MARSH RD Westbound | | | | | Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 126 | 0 | 202 | 0 | 328 | 30 | 395 | 0 | 0 | 425 | 0 | 0 | 0 | 0 | 0 | 166 | 201 | 0 | 0 | 367 | 1120 |
| 07:45 AM | 157 | 0 | 247 | 0 | 404 | 18 | 370 | 0 | 0 | 388 | 0 | 0 | 0 | 0 | 0 | 146 | 191 | 0 | 0 | 337 | 1129 |
| 08:00 AM | 145 | 0 | 207 | 0 | 352 | 24 | 383 | 0 | 0 | 407 | 0 | 0 | 0 | 0 | 0 | 140 | 224 | 0 | 0 | 364 | 1123 |
| 08:15 AM | 130 | 0 | 223 | 0 | 353 | 14 | 278 | 0 | 0 | 292 | 0 | 0 | 0 | 0 | 0 | 131 | 218 | 0 | 0 | 349 | 994 |
| Total Volume | 558 | 0 | 879 | 0 | 1437 | 86 | 1426 | 0 | 0 | 1512 | 0 | 0 | 0 | 0 | 0 | 583 | 834 | 0 | 0 | 1417 | 4366 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .889 | .000 | .890 | .000 | .889 | .717 | .903 | .000 | .000 | .889 | .000 | .000 | .000 | .000 | .000 | .878 | .931 | .000 | .000 | .965 | .967 |

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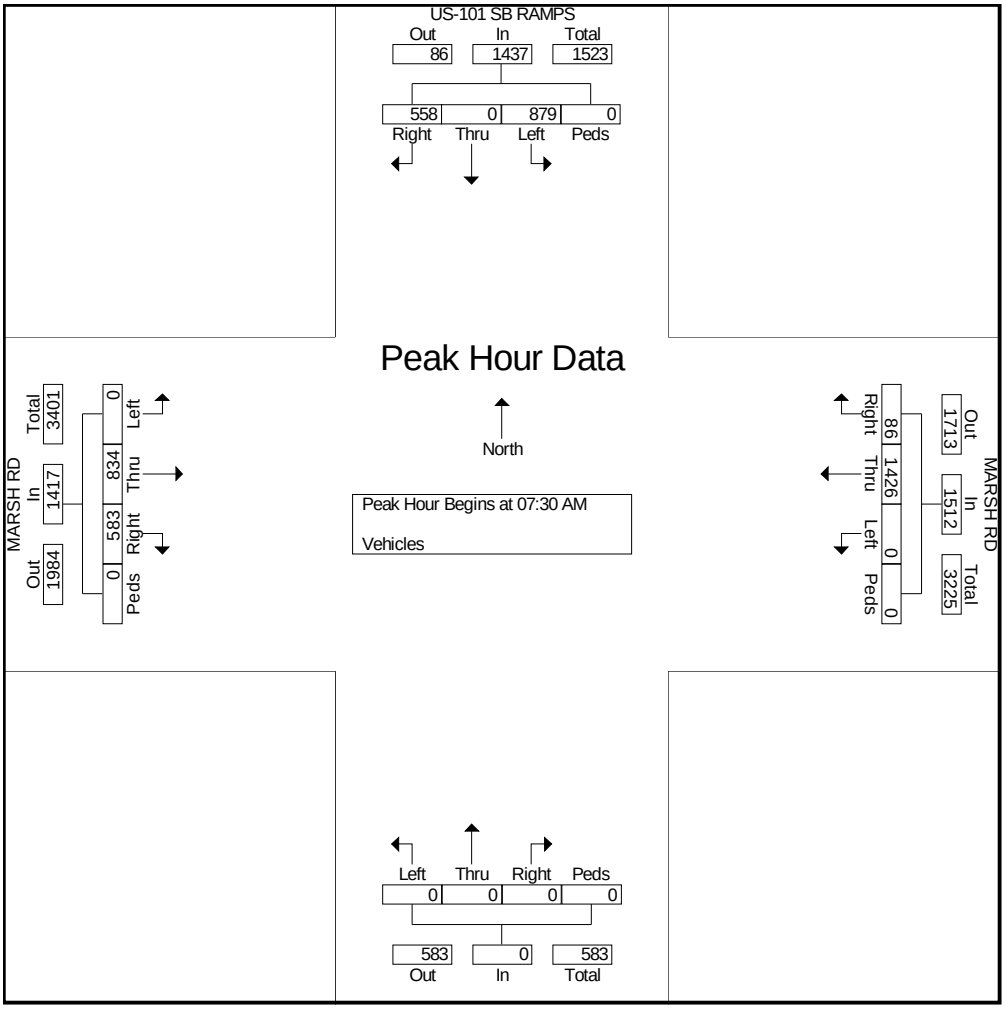

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File Name : 27PM FINAL
Site Code : 00000027
Start Date : 11/17/2010
Page No : 1

**Groups Printed- Vehicles**

| | US-101 SB RAMPS Southbound | | | | | MARSH RD Westbound | | | | | Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 108 | 0 | 295 | 0 | 403 | 61 | 201 | 0 | 0 | 262 | 0 | 0 | 0 | 0 | 0 | 122 | 311 | 0 | 0 | 433 | 1098 |
| 04:15 PM | 124 | 0 | 364 | 0 | 488 | 45 | 199 | 0 | 0 | 244 | 0 | 0 | 0 | 0 | 0 | 139 | 270 | 0 | 0 | 409 | 1141 |
| 04:30 PM | 107 | 0 | 325 | 0 | 432 | 72 | 235 | 0 | 0 | 307 | 0 | 0 | 0 | 0 | 0 | 159 | 314 | 0 | 0 | 473 | 1212 |
| 04:45 PM | 124 | 0 | 381 | 0 | 505 | 59 | 235 | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 0 | 158 | 263 | 0 | 0 | 421 | 1220 |
| Total | 463 | 0 | 1365 | 0 | 1828 | 237 | 870 | 0 | 0 | 1107 | 0 | 0 | 0 | 0 | 0 | 578 | 1158 | 0 | 0 | 1736 | 4671 |
| 05:00 PM | 137 | 0 | 353 | 0 | 490 | 80 | 233 | 0 | 0 | 313 | 0 | 0 | 0 | 0 | 0 | 164 | 291 | 0 | 0 | 455 | 1258 |
| 05:15 PM | 85 | 0 | 296 | 0 | 381 | 71 | 237 | 0 | 0 | 308 | 0 | 0 | 0 | 0 | 0 | 170 | 313 | 0 | 0 | 483 | 1172 |
| 05:30 PM | 122 | 0 | 348 | 0 | 470 | 71 | 211 | 0 | 0 | 282 | 0 | 0 | 0 | 0 | 0 | 163 | 282 | 0 | 0 | 445 | 1197 |
| 05:45 PM | 119 | 0 | 367 | 0 | 486 | 62 | 227 | 0 | 0 | 289 | 0 | 0 | 0 | 0 | 0 | 117 | 216 | 0 | 0 | 333 | 1108 |
| Total | 463 | 0 | 1364 | 0 | 1827 | 284 | 908 | 0 | 0 | 1192 | 0 | 0 | 0 | 0 | 0 | 614 | 1102 | 0 | 0 | 1716 | 4735 |
| Grand Total | 926 | 0 | 2729 | 0 | 3655 | 521 | 1778 | 0 | 0 | 2299 | 0 | 0 | 0 | 0 | 0 | 1192 | 2260 | 0 | 0 | 3452 | 9406 |
| Apprch % | 25.3 | 0 | 74.7 | 0 | | 22.7 | 77.3 | 0 | 0 | | 0 | 0 | 0 | 0 | | 34.5 | 65.5 | 0 | 0 | | |
| Total % | 9.8 | 0 | 29 | 0 | 38.9 | 5.5 | 18.9 | 0 | 0 | 24.4 | 0 | 0 | 0 | 0 | 0 | 12.7 | 24 | 0 | 0 | 36.7 | |

| | US-101 SB RAMPS Southbound | | | | | MARSH RD Westbound | | | | | Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 107 | 0 | 325 | 0 | 432 | 72 | 235 | 0 | 0 | 307 | 0 | 0 | 0 | 0 | 0 | 159 | 314 | 0 | 0 | 473 | 1212 |
| 04:45 PM | 124 | 0 | 381 | 0 | 505 | 59 | 235 | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 0 | 158 | 263 | 0 | 0 | 421 | 1220 |
| 05:00 PM | 137 | 0 | 353 | 0 | 490 | 80 | 233 | 0 | 0 | 313 | 0 | 0 | 0 | 0 | 0 | 164 | 291 | 0 | 0 | 455 | 1258 |
| 05:15 PM | 85 | 0 | 296 | 0 | 381 | 71 | 237 | 0 | 0 | 308 | 0 | 0 | 0 | 0 | 0 | 170 | 313 | 0 | 0 | 483 | 1172 |
| Total Volume | 453 | 0 | 1355 | 0 | 1808 | 282 | 940 | 0 | 0 | 1222 | 0 | 0 | 0 | 0 | 0 | 651 | 1181 | 0 | 0 | 1832 | 4862 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .827 | .000 | .889 | .000 | .895 | .881 | .992 | .000 | .000 | .976 | .000 | .000 | .000 | .000 | .000 | .957 | .940 | .000 | .000 | .948 | .966 |

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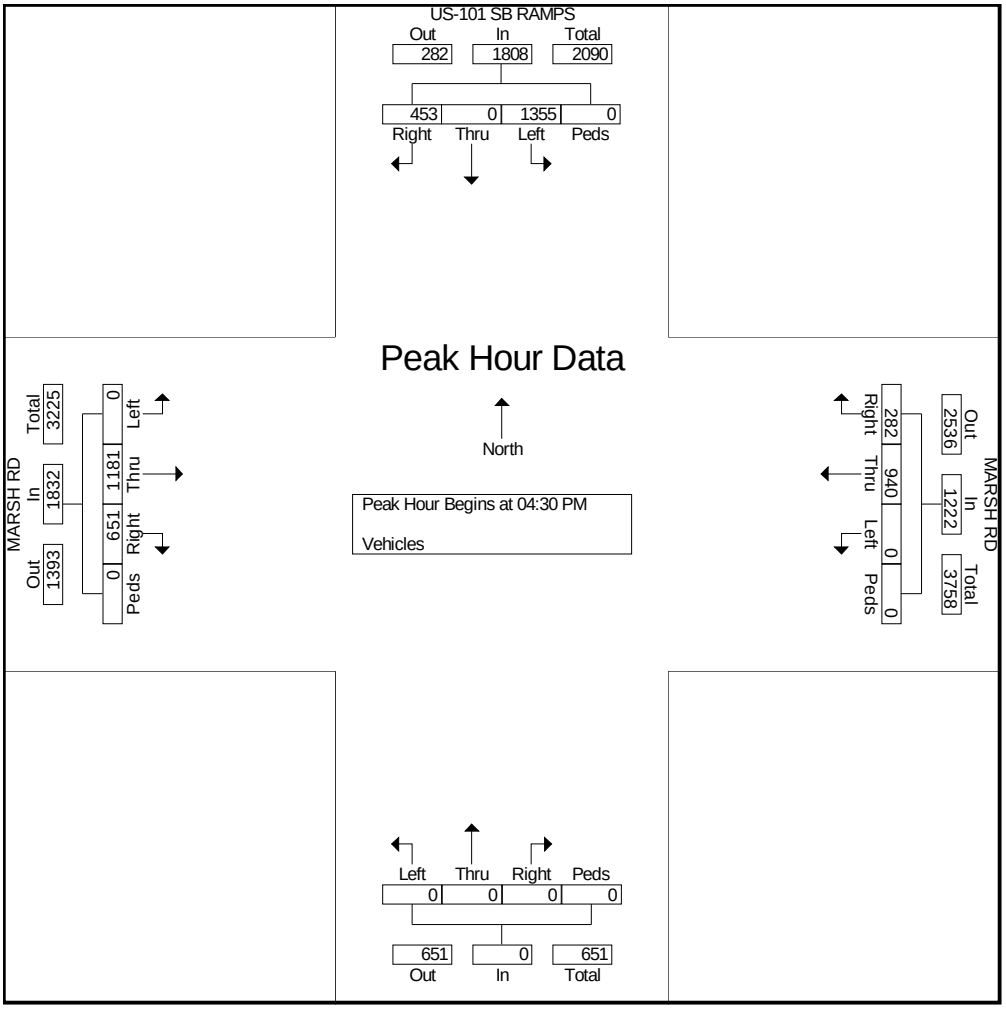

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**Groups Printed- Bikes**

| | SCOTT DR Southbound | | | | | MARSH RD Westbound | | | | | SCOTT DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Apprch % | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| Total % | | | | | | | | | | | | | | | | | | | | | |

| | SCOTT DR Southbound | | | | | MARSH RD Westbound | | | | | SCOTT DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

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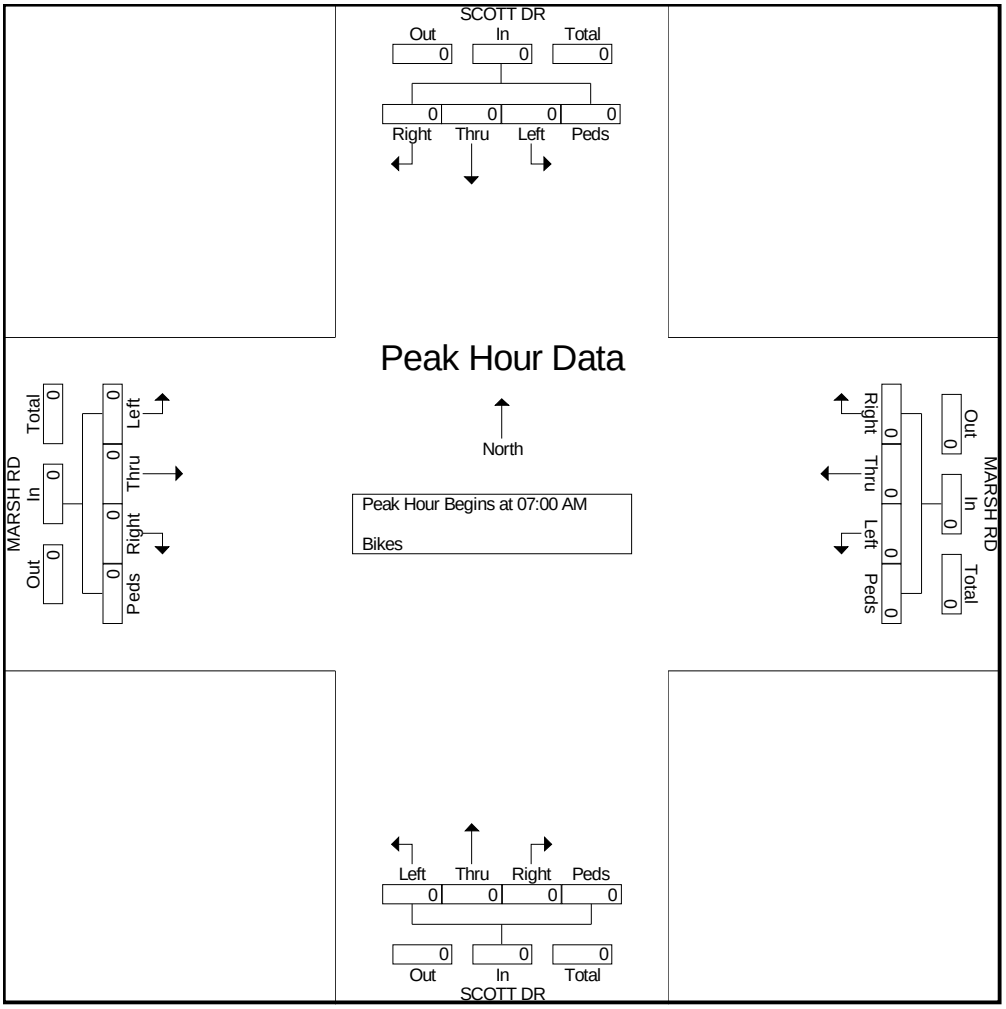

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**Groups Printed- Vechicles**

| | SCOTT DR Southbound | | | | | MARSH RD Westbound | | | | | SCOTT DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 1 | 1 | 42 | 0 | 44 | 53 | 272 | 11 | 0 | 336 | 51 | 1 | 9 | 0 | 61 | 5 | 339 | 14 | 0 | 358 | 799 |
| 04:15 PM | 0 | 4 | 42 | 0 | 46 | 48 | 229 | 18 | 0 | 295 | 53 | 2 | 8 | 0 | 63 | 2 | 298 | 60 | 0 | 360 | 764 |
| 04:30 PM | 1 | 3 | 60 | 0 | 64 | 63 | 261 | 27 | 0 | 351 | 73 | 9 | 6 | 0 | 88 | 4 | 353 | 6 | 0 | 363 | 866 |
| 04:45 PM | 1 | 3 | 55 | 0 | 59 | 53 | 287 | 14 | 0 | 354 | 45 | 2 | 6 | 0 | 53 | 5 | 310 | 8 | 0 | 323 | 789 |
| Total | 3 | 11 | 199 | 0 | 213 | 217 | 1049 | 70 | 0 | 1336 | 222 | 14 | 29 | 0 | 265 | 16 | 1300 | 88 | 0 | 1404 | 3218 |
| 05:00 PM | 0 | 1 | 63 | 0 | 64 | 45 | 285 | 22 | 0 | 352 | 89 | 0 | 7 | 0 | 96 | 4 | 294 | 17 | 0 | 315 | 827 |
| 05:15 PM | 0 | 2 | 76 | 0 | 78 | 53 | 276 | 15 | 0 | 344 | 60 | 4 | 9 | 0 | 73 | 4 | 357 | 11 | 0 | 372 | 867 |
| 05:30 PM | 0 | 2 | 57 | 0 | 59 | 55 | 249 | 9 | 0 | 313 | 72 | 3 | 12 | 0 | 87 | 6 | 330 | 13 | 0 | 349 | 808 |
| 05:45 PM | 0 | 6 | 44 | 0 | 50 | 54 | 259 | 5 | 0 | 318 | 43 | 2 | 9 | 0 | 54 | 2 | 231 | 5 | 0 | 238 | 660 |
| Total | 0 | 11 | 240 | 0 | 251 | 207 | 1069 | 51 | 0 | 1327 | 264 | 9 | 37 | 0 | 310 | 16 | 1212 | 46 | 0 | 1274 | 3162 |
| Grand Total | 3 | 22 | 439 | 0 | 464 | 424 | 2118 | 121 | 0 | 2663 | 486 | 23 | 66 | 0 | 575 | 32 | 2512 | 134 | 0 | 2678 | 6380 |
| Apprch % | 0.6 | 4.7 | 94.6 | 0 | | 15.9 | 79.5 | 4.5 | 0 | | 84.5 | 4 | 11.5 | 0 | | 1.2 | 93.8 | 5 | 0 | | |
| Total % | 0 | 0.3 | 6.9 | 0 | 7.3 | 6.6 | 33.2 | 1.9 | 0 | 41.7 | 7.6 | 0.4 | 1 | 0 | 9 | 0.5 | 39.4 | 2.1 | 0 | 42 | |

| | SCOTT DR Southbound | | | | | MARSH RD Westbound | | | | | SCOTT DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 1 | 3 | 60 | 0 | 64 | 63 | 261 | 27 | 0 | 351 | 73 | 9 | 6 | 0 | 88 | 4 | 353 | 6 | 0 | 363 | 866 |
| 04:45 PM | 1 | 3 | 55 | 0 | 59 | 53 | 287 | 14 | 0 | 354 | 45 | 2 | 6 | 0 | 53 | 5 | 310 | 8 | 0 | 323 | 789 |
| 05:00 PM | 0 | 1 | 63 | 0 | 64 | 45 | 285 | 22 | 0 | 352 | 89 | 0 | 7 | 0 | 96 | 4 | 294 | 17 | 0 | 315 | 827 |
| 05:15 PM | 0 | 2 | 76 | 0 | 78 | 53 | 276 | 15 | 0 | 344 | 60 | 4 | 9 | 0 | 73 | 4 | 357 | 11 | 0 | 372 | 867 |
| Total Volume | 2 | 9 | 254 | 0 | 265 | 214 | 1109 | 78 | 0 | 1401 | 267 | 15 | 28 | 0 | 310 | 17 | 1314 | 42 | 0 | 1373 | 3349 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .500 | .750 | .836 | .000 | .849 | .849 | .966 | .722 | .000 | .989 | .750 | .417 | .778 | .000 | .807 | .850 | .920 | .618 | .000 | .923 | .966 |

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Start Date : 11/17/2010
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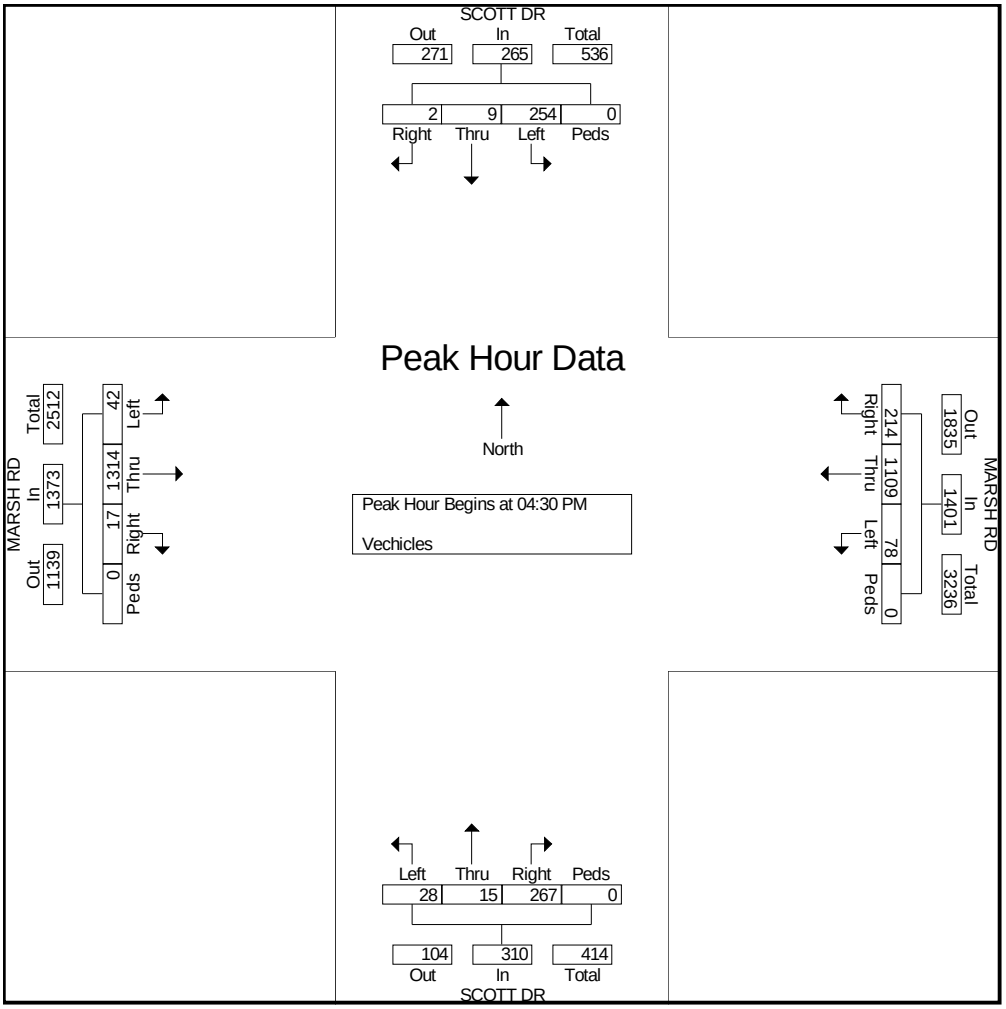

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 29AM FINAL
Site Code : 00000029
Start Date : 11/17/2010
Page No : 1

**Groups Printed- Vechicles**

| | FLORENCE ST Southbound | | | | | MARSH RD Westbound | | | | | BOHANNON DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 12 | 5 | 77 | 0 | 94 | 56 | 169 | 10 | 0 | 235 | 5 | 1 | 8 | 0 | 14 | 6 | 138 | 13 | 0 | 157 | 500 |
| 07:15 AM | 5 | 11 | 84 | 0 | 100 | 75 | 205 | 11 | 0 | 291 | 4 | 4 | 6 | 0 | 14 | 12 | 201 | 11 | 0 | 224 | 629 |
| 07:30 AM | 12 | 3 | 119 | 0 | 134 | 88 | 316 | 7 | 0 | 411 | 2 | 3 | 6 | 0 | 11 | 12 | 176 | 12 | 0 | 200 | 756 |
| 07:45 AM | 19 | 12 | 84 | 0 | 115 | 90 | 302 | 11 | 0 | 403 | 3 | 3 | 4 | 0 | 10 | 13 | 195 | 46 | 0 | 254 | 782 |
| Total | 48 | 31 | 364 | 0 | 443 | 309 | 992 | 39 | 0 | 1340 | 14 | 11 | 24 | 0 | 49 | 43 | 710 | 82 | 0 | 835 | 2667 |
| 08:00 AM | 42 | 9 | 104 | 0 | 155 | 77 | 288 | 11 | 0 | 376 | 1 | 0 | 1 | 0 | 2 | 15 | 205 | 34 | 0 | 254 | 787 |
| 08:15 AM | 18 | 6 | 83 | 0 | 107 | 68 | 235 | 17 | 0 | 320 | 2 | 3 | 4 | 0 | 9 | 18 | 220 | 25 | 0 | 263 | 699 |
| 08:30 AM | 29 | 3 | 82 | 0 | 114 | 54 | 233 | 11 | 0 | 298 | 3 | 0 | 0 | 0 | 3 | 25 | 230 | 16 | 0 | 271 | 686 |
| 08:45 AM | 48 | 11 | 58 | 0 | 117 | 73 | 239 | 7 | 0 | 319 | 1 | 1 | 6 | 0 | 8 | 14 | 167 | 37 | 0 | 218 | 662 |
| Total | 137 | 29 | 327 | 0 | 493 | 272 | 995 | 46 | 0 | 1313 | 7 | 4 | 11 | 0 | 22 | 72 | 822 | 112 | 0 | 1006 | 2834 |
| Grand Total | 185 | 60 | 691 | 0 | 936 | 581 | 1987 | 85 | 0 | 2653 | 21 | 15 | 35 | 0 | 71 | 115 | 1532 | 194 | 0 | 1841 | 5501 |
| Apprch % | 19.8 | 6.4 | 73.8 | 0 | | 21.9 | 74.9 | 3.2 | 0 | | 29.6 | 21.1 | 49.3 | 0 | | 6.2 | 83.2 | 10.5 | 0 | | |
| Total % | 3.4 | 1.1 | 12.6 | 0 | 17 | 10.6 | 36.1 | 1.5 | 0 | 48.2 | 0.4 | 0.3 | 0.6 | 0 | 1.3 | 2.1 | 27.8 | 3.5 | 0 | 33.5 | |

| | FLORENCE ST Southbound | | | | | MARSH RD Westbound | | | | | BOHANNON DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 12 | 3 | 119 | 0 | 134 | 88 | 316 | 7 | 0 | 411 | 2 | 3 | 6 | 0 | 11 | 12 | 176 | 12 | 0 | 200 | 756 |
| 07:45 AM | 19 | 12 | 84 | 0 | 115 | 90 | 302 | 11 | 0 | 403 | 3 | 3 | 4 | 0 | 10 | 13 | 195 | 46 | 0 | 254 | 782 |
| 08:00 AM | 42 | 9 | 104 | 0 | 155 | 77 | 288 | 11 | 0 | 376 | 1 | 0 | 1 | 0 | 2 | 15 | 205 | 34 | 0 | 254 | 787 |
| 08:15 AM | 18 | 6 | 83 | 0 | 107 | 68 | 235 | 17 | 0 | 320 | 2 | 3 | 4 | 0 | 9 | 18 | 220 | 25 | 0 | 263 | 699 |
| Total Volume | 91 | 30 | 390 | 0 | 511 | 323 | 1141 | 46 | 0 | 1510 | 8 | 9 | 15 | 0 | 32 | 58 | 796 | 117 | 0 | 971 | 3024 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .542 | .625 | .819 | .000 | .824 | .897 | .903 | .676 | .000 | .918 | .667 | .750 | .625 | .000 | .727 | .806 | .905 | .636 | .000 | .923 | .961 |

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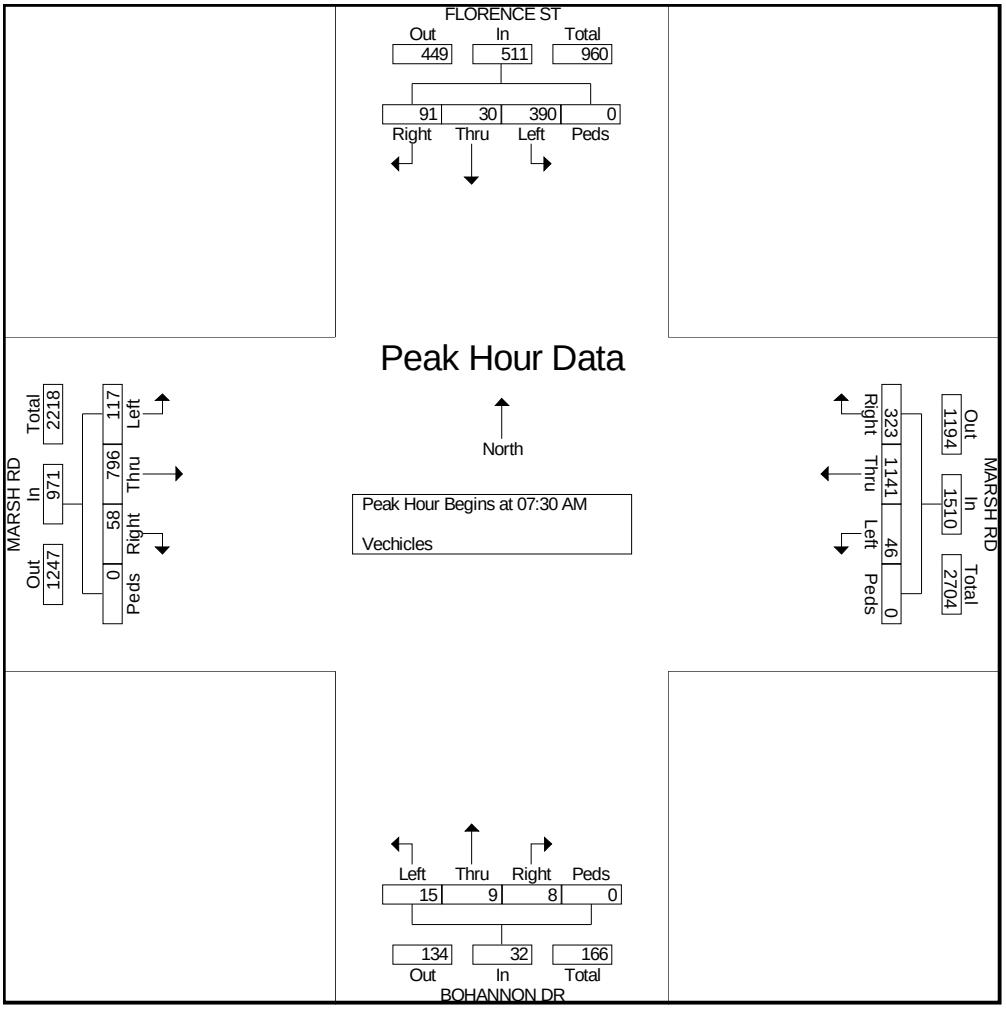

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File Name : 29PM FINAL
Site Code : 00000029
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**Groups Printed- Vechicles**

| | FLORENCE ST Southbound | | | | | MARSH RD Westbound | | | | | BOHANNON DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 22 | 6 | 102 | 0 | 130 | 85 | 182 | 10 | 0 | 277 | 27 | 8 | 11 | 0 | 46 | 49 | 203 | 36 | 0 | 288 | 741 |
| 04:15 PM | 24 | 2 | 104 | 0 | 130 | 71 | 183 | 13 | 0 | 267 | 7 | 4 | 12 | 0 | 23 | 27 | 205 | 78 | 0 | 310 | 730 |
| 04:30 PM | 20 | 9 | 88 | 0 | 117 | 94 | 189 | 5 | 0 | 288 | 18 | 6 | 12 | 0 | 36 | 15 | 215 | 59 | 0 | 289 | 730 |
| 04:45 PM | 27 | 2 | 93 | 0 | 122 | 97 | 197 | 9 | 0 | 303 | 17 | 8 | 11 | 0 | 36 | 15 | 238 | 49 | 0 | 302 | 763 |
| Total | 93 | 19 | 387 | 0 | 499 | 347 | 751 | 37 | 0 | 1135 | 69 | 26 | 46 | 0 | 141 | 106 | 861 | 222 | 0 | 1189 | 2964 |
| 05:00 PM | 31 | 4 | 116 | 0 | 151 | 76 | 206 | 5 | 0 | 287 | 15 | 12 | 29 | 0 | 56 | 13 | 211 | 72 | 0 | 296 | 790 |
| 05:15 PM | 22 | 3 | 117 | 0 | 142 | 81 | 224 | 10 | 0 | 315 | 18 | 6 | 23 | 0 | 47 | 7 | 209 | 51 | 0 | 267 | 771 |
| 05:30 PM | 48 | 21 | 102 | 0 | 171 | 62 | 206 | 2 | 0 | 270 | 8 | 6 | 32 | 0 | 46 | 20 | 227 | 67 | 0 | 314 | 801 |
| 05:45 PM | 36 | 1 | 98 | 0 | 135 | 72 | 221 | 3 | 0 | 296 | 8 | 4 | 21 | 0 | 33 | 16 | 141 | 39 | 0 | 196 | 660 |
| Total | 137 | 29 | 433 | 0 | 599 | 291 | 857 | 20 | 0 | 1168 | 49 | 28 | 105 | 0 | 182 | 56 | 788 | 229 | 0 | 1073 | 3022 |
| Grand Total | 230 | 48 | 820 | 0 | 1098 | 638 | 1608 | 57 | 0 | 2303 | 118 | 54 | 151 | 0 | 323 | 162 | 1649 | 451 | 0 | 2262 | 5986 |
| Apprch % | 20.9 | 4.4 | 74.7 | 0 | | 27.7 | 69.8 | 2.5 | 0 | | 36.5 | 16.7 | 46.7 | 0 | | 7.2 | 72.9 | 19.9 | 0 | | |
| Total % | 3.8 | 0.8 | 13.7 | 0 | 18.3 | 10.7 | 26.9 | 1 | 0 | 38.5 | 2 | 0.9 | 2.5 | 0 | 5.4 | 2.7 | 27.5 | 7.5 | 0 | 37.8 | |

| | FLORENCE ST Southbound | | | | | MARSH RD Westbound | | | | | BOHANNON DR Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 27 | 2 | 93 | 0 | 122 | 97 | 197 | 9 | 0 | 303 | 17 | 8 | 11 | 0 | 36 | 15 | 238 | 49 | 0 | 302 | 763 |
| 05:00 PM | 31 | 4 | 116 | 0 | 151 | 76 | 206 | 5 | 0 | 287 | 15 | 12 | 29 | 0 | 56 | 13 | 211 | 72 | 0 | 296 | 790 |
| 05:15 PM | 22 | 3 | 117 | 0 | 142 | 81 | 224 | 10 | 0 | 315 | 18 | 6 | 23 | 0 | 47 | 7 | 209 | 51 | 0 | 267 | 771 |
| 05:30 PM | 48 | 21 | 102 | 0 | 171 | 62 | 206 | 2 | 0 | 270 | 8 | 6 | 32 | 0 | 46 | 20 | 227 | 67 | 0 | 314 | 801 |
| Total Volume | 128 | 30 | 428 | 0 | 586 | 316 | 833 | 26 | 0 | 1175 | 58 | 32 | 95 | 0 | 185 | 55 | 885 | 239 | 0 | 1179 | 3125 |
| % App. Total | 21.8 | 5.1 | 73 | 0 | | 26.9 | 70.9 | 2.2 | 0 | | 31.4 | 17.3 | 51.4 | 0 | | 4.7 | 75.1 | 20.3 | 0 | | |
| PHF | .667 | .357 | .915 | .000 | .857 | .814 | .930 | .650 | .000 | .933 | .806 | .667 | .742 | .000 | .826 | .688 | .930 | .830 | .000 | .939 | .975 |

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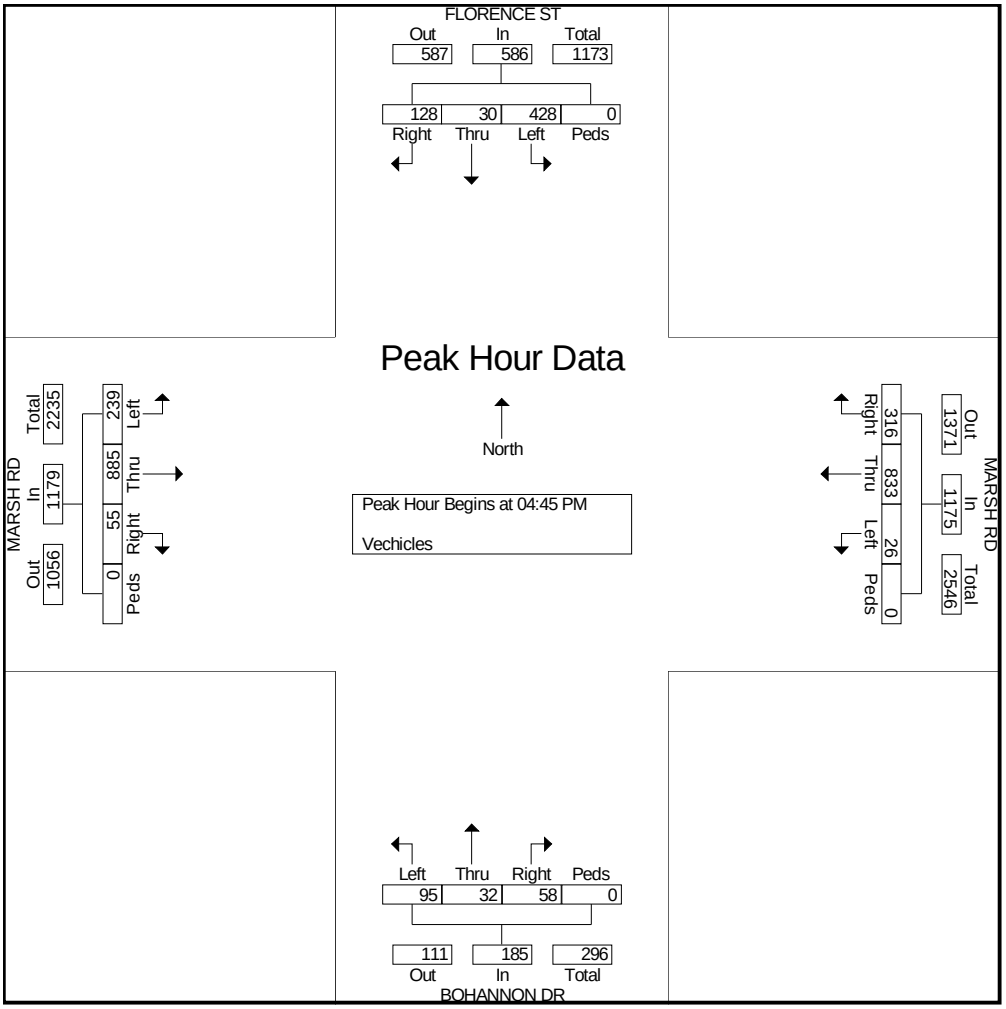

Traffic Data Service
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**Groups Printed- Vehicles**

| | BAY RD Southbound | | | | | MARSH RD Westbound | | | | | BAY RD Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 2 | 2 | 12 | 0 | 16 | 2 | 159 | 24 | 0 | 185 | 22 | 0 | 6 | 0 | 28 | 5 | 139 | 0 | 0 | 144 | 373 |
| 07:15 AM | 0 | 5 | 26 | 0 | 31 | 2 | 200 | 24 | 0 | 226 | 24 | 0 | 8 | 0 | 32 | 13 | 143 | 0 | 0 | 156 | 445 |
| 07:30 AM | 1 | 6 | 29 | 0 | 36 | 3 | 295 | 43 | 0 | 341 | 42 | 0 | 25 | 0 | 67 | 9 | 132 | 1 | 0 | 142 | 586 |
| 07:45 AM | 1 | 9 | 35 | 0 | 45 | 8 | 257 | 74 | 0 | 339 | 49 | 1 | 24 | 0 | 74 | 12 | 154 | 0 | 0 | 166 | 624 |
| Total | 4 | 22 | 102 | 0 | 128 | 15 | 911 | 165 | 0 | 1091 | 137 | 1 | 63 | 0 | 201 | 39 | 568 | 1 | 0 | 608 | 2028 |
| 08:00 AM | 0 | 7 | 29 | 0 | 36 | 7 | 227 | 80 | 0 | 314 | 37 | 2 | 11 | 0 | 50 | 25 | 197 | 1 | 0 | 223 | 623 |
| 08:15 AM | 3 | 6 | 19 | 0 | 28 | 4 | 203 | 67 | 0 | 274 | 49 | 0 | 10 | 0 | 59 | 20 | 182 | 0 | 0 | 202 | 563 |
| 08:30 AM | 2 | 9 | 23 | 0 | 34 | 8 | 179 | 67 | 0 | 254 | 49 | 1 | 22 | 0 | 72 | 16 | 170 | 2 | 0 | 188 | 548 |
| 08:45 AM | 0 | 10 | 25 | 0 | 35 | 4 | 236 | 84 | 0 | 324 | 40 | 3 | 19 | 0 | 62 | 14 | 212 | 0 | 0 | 226 | 647 |
| Total | 5 | 32 | 96 | 0 | 133 | 23 | 845 | 298 | 0 | 1166 | 175 | 6 | 62 | 0 | 243 | 75 | 761 | 3 | 0 | 839 | 2381 |
| Grand Total | 9 | 54 | 198 | 0 | 261 | 38 | 1756 | 463 | 0 | 2257 | 312 | 7 | 125 | 0 | 444 | 114 | 1329 | 4 | 0 | 1447 | 4409 |
| Apprch % | 3.4 | 20.7 | 75.9 | 0 | | 1.7 | 77.8 | 20.5 | 0 | | 70.3 | 1.6 | 28.2 | 0 | | 7.9 | 91.8 | 0.3 | 0 | | |
| Total % | 0.2 | 1.2 | 4.5 | 0 | 5.9 | 0.9 | 39.8 | 10.5 | 0 | 51.2 | 7.1 | 0.2 | 2.8 | 0 | 10.1 | 2.6 | 30.1 | 0.1 | 0 | 32.8 | |

| | BAY RD Southbound | | | | | MARSH RD Westbound | | | | | BAY RD Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 1 | 6 | 29 | 0 | 36 | 3 | 295 | 43 | 0 | 341 | 42 | 0 | 25 | 0 | 67 | 9 | 132 | 1 | 0 | 142 | 586 |
| 07:45 AM | 1 | 9 | 35 | 0 | 45 | 8 | 257 | 74 | 0 | 339 | 49 | 1 | 24 | 0 | 74 | 12 | 154 | 0 | 0 | 166 | 624 |
| 08:00 AM | 0 | 7 | 29 | 0 | 36 | 7 | 227 | 80 | 0 | 314 | 37 | 2 | 11 | 0 | 50 | 25 | 197 | 1 | 0 | 223 | 623 |
| 08:15 AM | 3 | 6 | 19 | 0 | 28 | 4 | 203 | 67 | 0 | 274 | 49 | 0 | 10 | 0 | 59 | 20 | 182 | 0 | 0 | 202 | 563 |
| Total Volume | 5 | 28 | 112 | 0 | 145 | 22 | 982 | 264 | 0 | 1268 | 177 | 3 | 70 | 0 | 250 | 66 | 665 | 2 | 0 | 733 | 2396 |
| % App. Total | 3.4 | 19.3 | 77.2 | 0 | | 1.7 | 77.4 | 20.8 | 0 | | 70.8 | 1.2 | 28 | 0 | | 9 | 90.7 | 0.3 | 0 | | |
| PHF | .417 | .778 | .800 | .000 | .806 | .688 | .832 | .825 | .000 | .930 | .903 | .375 | .700 | .000 | .845 | .660 | .844 | .500 | .000 | .822 | .960 |

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File Name : 30AM FINAL
Site Code : 00000030
Start Date : 11/17/2010
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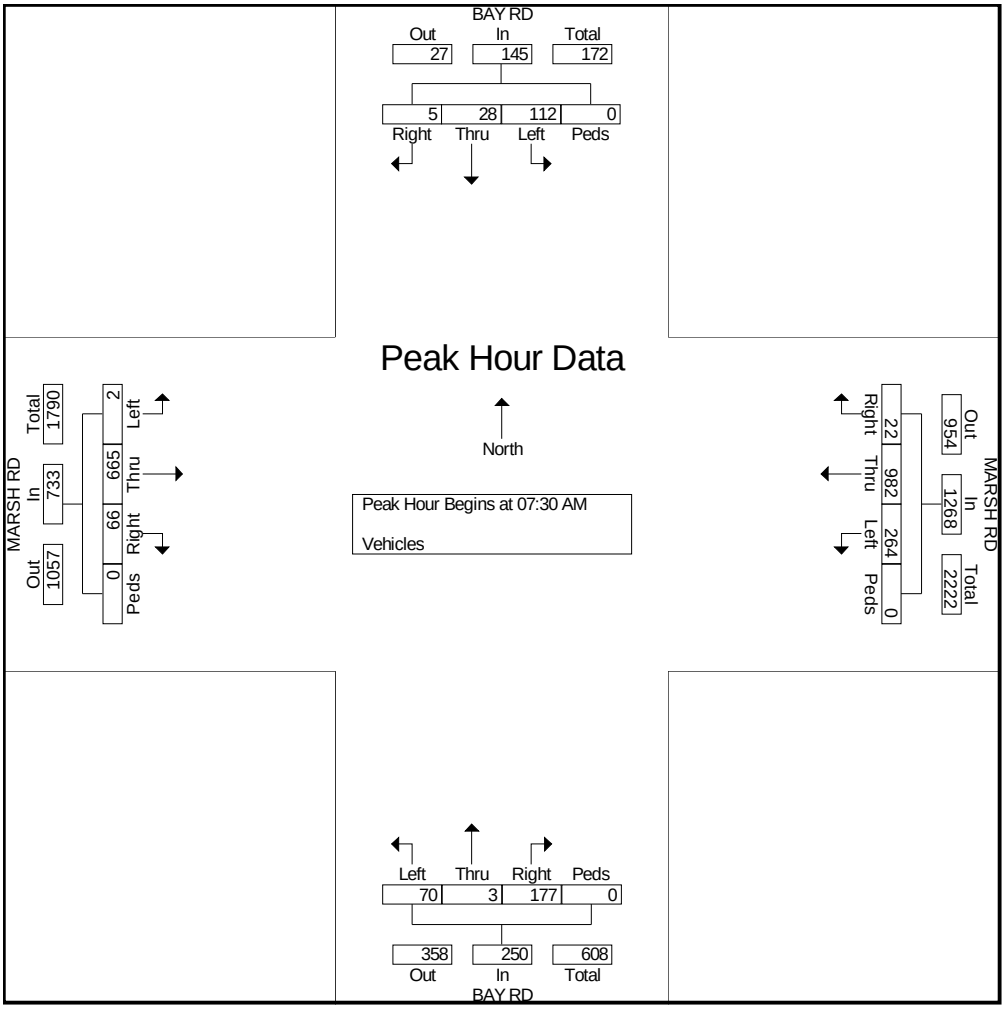

# Traffic Data Service

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File Name : 30PM FINAL
Site Code : 00000030
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**Groups Printed- Vehicles**

| | BAY RD Southbound | | | | | MARSH RD Westbound | | | | | BAY RD Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 5 | 14 | 0 | 19 | 13 | 175 | 35 | 0 | 223 | 39 | 6 | 18 | 0 | 63 | 18 | 272 | 0 | 0 | 290 | 595 |
| 04:15 PM | 1 | 6 | 20 | 0 | 27 | 13 | 182 | 31 | 0 | 226 | 41 | 2 | 13 | 0 | 56 | 18 | 251 | 0 | 0 | 269 | 578 |
| 04:30 PM | 0 | 4 | 14 | 0 | 18 | 13 | 193 | 33 | 0 | 239 | 44 | 0 | 15 | 0 | 59 | 16 | 222 | 0 | 0 | 238 | 554 |
| 04:45 PM | 1 | 3 | 11 | 0 | 15 | 9 | 183 | 44 | 0 | 236 | 31 | 3 | 13 | 0 | 47 | 18 | 241 | 1 | 0 | 260 | 558 |
| Total | 2 | 18 | 59 | 0 | 79 | 48 | 733 | 143 | 0 | 924 | 155 | 11 | 59 | 0 | 225 | 70 | 986 | 1 | 0 | 1057 | 2285 |
| 05:00 PM | 0 | 6 | 11 | 0 | 17 | 9 | 218 | 45 | 0 | 272 | 49 | 3 | 12 | 0 | 64 | 25 | 228 | 1 | 0 | 254 | 607 |
| 05:15 PM | 1 | 6 | 11 | 0 | 18 | 13 | 219 | 49 | 0 | 281 | 56 | 2 | 10 | 0 | 68 | 22 | 192 | 0 | 0 | 214 | 581 |
| 05:30 PM | 2 | 9 | 18 | 0 | 29 | 9 | 230 | 54 | 0 | 293 | 45 | 3 | 19 | 0 | 67 | 24 | 224 | 1 | 0 | 249 | 638 |
| 05:45 PM | 0 | 10 | 15 | 0 | 25 | 16 | 224 | 52 | 0 | 292 | 30 | 0 | 16 | 0 | 46 | 19 | 175 | 3 | 0 | 197 | 560 |
| Total | 3 | 31 | 55 | 0 | 89 | 47 | 891 | 200 | 0 | 1138 | 180 | 8 | 57 | 0 | 245 | 90 | 819 | 5 | 0 | 914 | 2386 |
| Grand Total | 5 | 49 | 114 | 0 | 168 | 95 | 1624 | 343 | 0 | 2062 | 335 | 19 | 116 | 0 | 470 | 160 | 1805 | 6 | 0 | 1971 | 4671 |
| Apprch % | 3 | 29.2 | 67.9 | 0 | | 4.6 | 78.8 | 16.6 | 0 | | 71.3 | 4 | 24.7 | 0 | | 8.1 | 91.6 | 0.3 | 0 | | |
| Total % | 0.1 | 1 | 2.4 | 0 | 3.6 | 2 | 34.8 | 7.3 | 0 | 44.1 | 7.2 | 0.4 | 2.5 | 0 | 10.1 | 3.4 | 38.6 | 0.1 | 0 | 42.2 | |

| | BAY RD Southbound | | | | | MARSH RD Westbound | | | | | BAY RD Northbound | | | | | MARSH RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 0 | 6 | 11 | 0 | 17 | 9 | 218 | 45 | 0 | 272 | 49 | 3 | 12 | 0 | 64 | 25 | 228 | 1 | 0 | 254 | 607 |
| 05:15 PM | 1 | 6 | 11 | 0 | 18 | 13 | 219 | 49 | 0 | 281 | 56 | 2 | 10 | 0 | 68 | 22 | 192 | 0 | 0 | 214 | 581 |
| 05:30 PM | 2 | 9 | 18 | 0 | 29 | 9 | 230 | 54 | 0 | 293 | 45 | 3 | 19 | 0 | 67 | 24 | 224 | 1 | 0 | 249 | 638 |
| 05:45 PM | 0 | 10 | 15 | 0 | 25 | 16 | 224 | 52 | 0 | 292 | 30 | 0 | 16 | 0 | 46 | 19 | 175 | 3 | 0 | 197 | 560 |
| Total Volume | 3 | 31 | 55 | 0 | 89 | 47 | 891 | 200 | 0 | 1138 | 180 | 8 | 57 | 0 | 245 | 90 | 819 | 5 | 0 | 914 | 2386 |
| % App. Total | 3.4 | 34.8 | 61.8 | 0 | | 4.1 | 78.3 | 17.6 | 0 | | 73.5 | 3.3 | 23.3 | 0 | | 9.8 | 89.6 | 0.5 | 0 | | |
| PHF | .375 | .775 | .764 | .000 | .767 | .734 | .968 | .926 | .000 | .971 | .804 | .667 | .750 | .000 | .901 | .900 | .898 | .417 | .000 | .900 | .935 |

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File Name : 30PM FINAL
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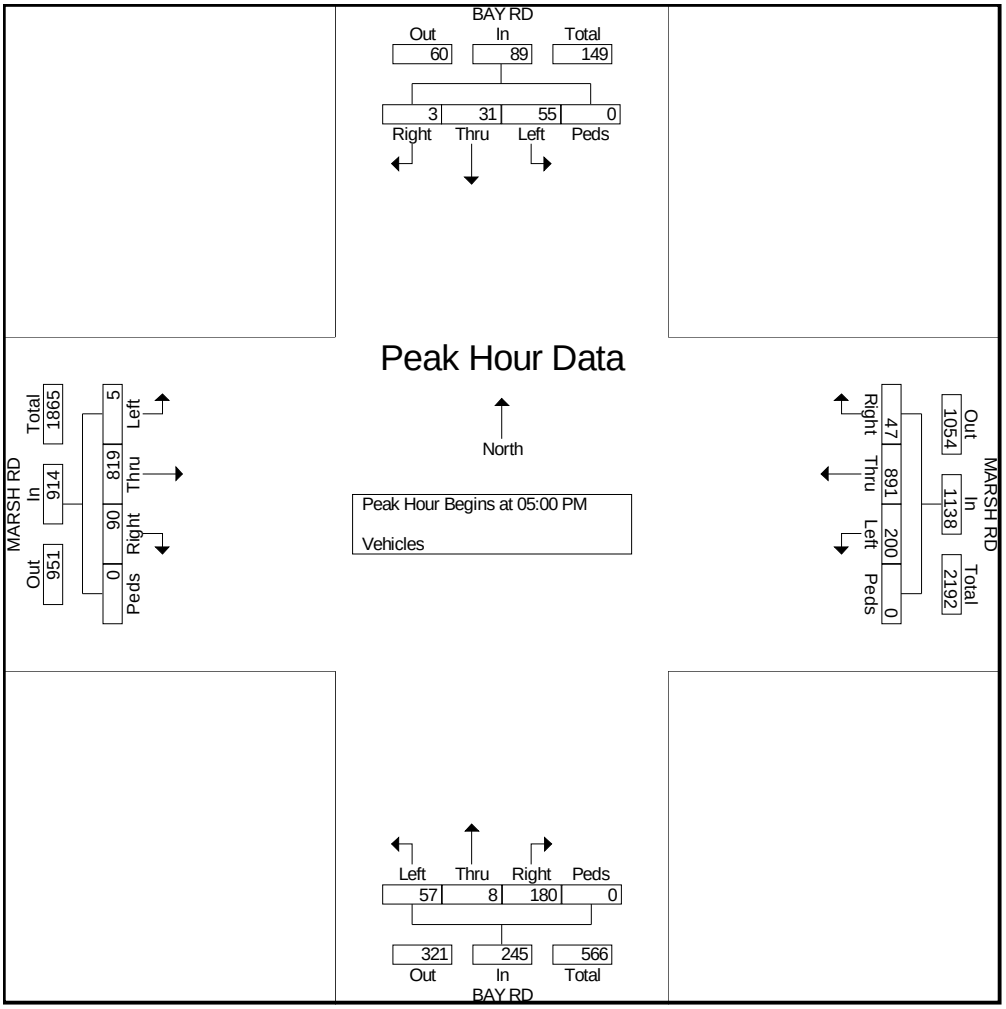

Traffic Data Service
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File Name : 13AM FINAL
Site Code : 00000013
Start Date : 11/10/2010
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**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | MARSH RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 42 | 64 | 0 | 106 | 69 | 0 | 114 | 0 | 183 | 53 | 14 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 356 |
| 07:15 AM | 0 | 55 | 94 | 0 | 149 | 85 | 0 | 131 | 0 | 216 | 54 | 33 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 452 |
| 07:30 AM | 0 | 90 | 75 | 0 | 165 | 58 | 0 | 158 | 0 | 216 | 80 | 42 | 0 | 0 | 122 | 0 | 0 | 0 | 0 | 0 | 503 |
| 07:45 AM | 0 | 105 | 74 | 0 | 179 | 45 | 0 | 107 | 0 | 152 | 91 | 38 | 0 | 0 | 129 | 0 | 0 | 0 | 0 | 0 | 460 |
| Total | 0 | 292 | 307 | 0 | 599 | 257 | 0 | 510 | 0 | 767 | 278 | 127 | 0 | 0 | 405 | 0 | 0 | 0 | 0 | 0 | 1771 |
| 08:00 AM | 0 | 90 | 108 | 0 | 198 | 34 | 0 | 92 | 0 | 126 | 106 | 39 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 469 |
| 08:15 AM | 0 | 82 | 85 | 0 | 167 | 32 | 0 | 106 | 0 | 138 | 120 | 47 | 0 | 0 | 167 | 0 | 0 | 0 | 0 | 0 | 472 |
| 08:30 AM | 0 | 85 | 101 | 0 | 186 | 31 | 0 | 99 | 0 | 130 | 108 | 57 | 0 | 0 | 165 | 0 | 0 | 0 | 0 | 0 | 481 |
| 08:45 AM | 0 | 97 | 85 | 0 | 182 | 46 | 0 | 93 | 0 | 139 | 84 | 64 | 0 | 0 | 148 | 0 | 0 | 0 | 0 | 0 | 469 |
| Total | 0 | 354 | 379 | 0 | 733 | 143 | 0 | 390 | 0 | 533 | 418 | 207 | 0 | 0 | 625 | 0 | 0 | 0 | 0 | 0 | 1891 |
| Grand Total | 0 | 646 | 686 | 0 | 1332 | 400 | 0 | 900 | 0 | 1300 | 696 | 334 | 0 | 0 | 1030 | 0 | 0 | 0 | 0 | 0 | 3662 |
| Apprch % | 0 | 48.5 | 51.5 | 0 | | 30.8 | 0 | 69.2 | 0 | | 67.6 | 32.4 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 17.6 | 18.7 | 0 | 36.4 | 10.9 | 0 | 24.6 | 0 | 35.5 | 19 | 9.1 | 0 | 0 | 28.1 | 0 | 0 | 0 | 0 | 0 | |

| | MIDDLEFIELD RD Southbound | | | | | MARSH RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 90 | 75 | 0 | 165 | 58 | 0 | 158 | 0 | 216 | 80 | 42 | 0 | 0 | 122 | 0 | 0 | 0 | 0 | 0 | 503 |
| 07:45 AM | 0 | 105 | 74 | 0 | 179 | 45 | 0 | 107 | 0 | 152 | 91 | 38 | 0 | 0 | 129 | 0 | 0 | 0 | 0 | 0 | 460 |
| 08:00 AM | 0 | 90 | 108 | 0 | 198 | 34 | 0 | 92 | 0 | 126 | 106 | 39 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 469 |
| 08:15 AM | 0 | 82 | 85 | 0 | 167 | 32 | 0 | 106 | 0 | 138 | 120 | 47 | 0 | 0 | 167 | 0 | 0 | 0 | 0 | 0 | 472 |
| Total Volume | 0 | 367 | 342 | 0 | 709 | 169 | 0 | 463 | 0 | 632 | 397 | 166 | 0 | 0 | 563 | 0 | 0 | 0 | 0 | 0 | 1904 |
| % App. Total | 0 | 51.8 | 48.2 | 0 | | 26.7 | 0 | 73.3 | 0 | | 70.5 | 29.5 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .000 | .874 | .792 | .000 | .895 | .728 | .000 | .733 | .000 | .731 | .827 | .883 | .000 | .000 | .843 | .000 | .000 | .000 | .000 | .000 | .946 |

Traffic Data Service
Campbell, CA
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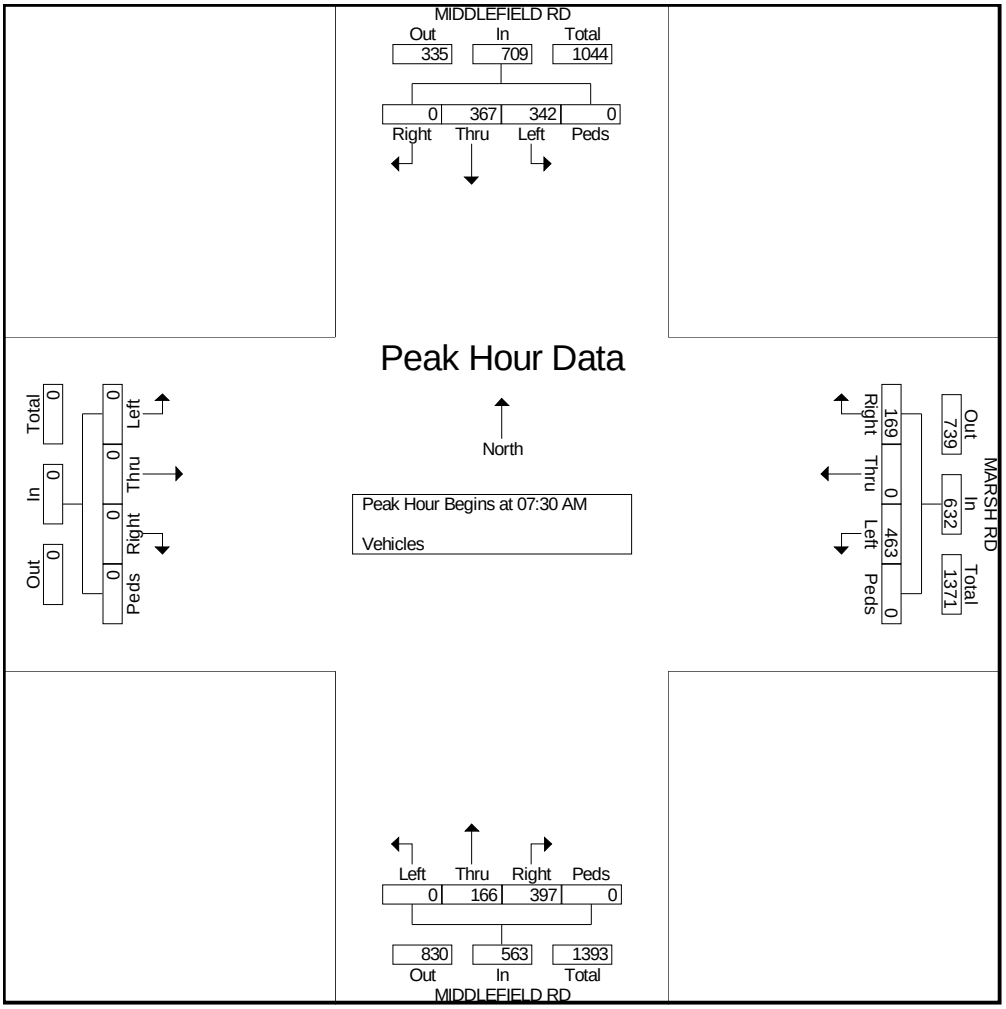
***tdsbay@cs.com***

File Name : 13AM FINAL
Site Code : 00000013
Start Date : 11/10/2010
Page No : 2



# Traffic Data Service

Campbell, CA

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***tdsbay@cs.com***


File Name : 13PM FINAL
Site Code : 00000013
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | MARSH RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 51 | 98 | 0 | 149 | 76 | 0 | 101 | 0 | 177 | 128 | 98 | 0 | 0 | 226 | 0 | 0 | 0 | 0 | 0 | 552 |
| 04:15 PM | 0 | 65 | 110 | 0 | 175 | 109 | 0 | 88 | 0 | 197 | 150 | 91 | 0 | 0 | 241 | 0 | 0 | 0 | 0 | 0 | 613 |
| 04:30 PM | 0 | 49 | 116 | 0 | 165 | 88 | 0 | 108 | 0 | 196 | 156 | 97 | 0 | 0 | 253 | 0 | 0 | 0 | 0 | 0 | 614 |
| 04:45 PM | 0 | 60 | 104 | 0 | 164 | 109 | 0 | 123 | 0 | 232 | 143 | 103 | 0 | 0 | 246 | 0 | 0 | 0 | 0 | 0 | 642 |
| Total | 0 | 225 | 428 | 0 | 653 | 382 | 0 | 420 | 0 | 802 | 577 | 389 | 0 | 0 | 966 | 0 | 0 | 0 | 0 | 0 | 2421 |
| 05:00 PM | 0 | 60 | 103 | 0 | 163 | 113 | 0 | 139 | 0 | 252 | 144 | 111 | 0 | 0 | 255 | 0 | 0 | 0 | 0 | 0 | 670 |
| 05:15 PM | 0 | 72 | 97 | 0 | 169 | 104 | 0 | 130 | 0 | 234 | 130 | 109 | 0 | 0 | 239 | 0 | 0 | 0 | 0 | 0 | 642 |
| 05:30 PM | 0 | 77 | 104 | 0 | 181 | 121 | 0 | 123 | 0 | 244 | 131 | 103 | 0 | 0 | 234 | 0 | 0 | 0 | 0 | 0 | 659 |
| 05:45 PM | 0 | 81 | 81 | 0 | 162 | 95 | 0 | 111 | 0 | 206 | 122 | 114 | 0 | 0 | 236 | 0 | 0 | 0 | 0 | 0 | 604 |
| Total | 0 | 290 | 385 | 0 | 675 | 433 | 0 | 503 | 0 | 936 | 527 | 437 | 0 | 0 | 964 | 0 | 0 | 0 | 0 | 0 | 2575 |
| Grand Total | 0 | 515 | 813 | 0 | 1328 | 815 | 0 | 923 | 0 | 1738 | 1104 | 826 | 0 | 0 | 1930 | 0 | 0 | 0 | 0 | 0 | 4996 |
| Apprch % | 0 | 38.8 | 61.2 | 0 | | 46.9 | 0 | 53.1 | 0 | | 57.2 | 42.8 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 10.3 | 16.3 | 0 | 26.6 | 16.3 | 0 | 18.5 | 0 | 34.8 | 22.1 | 16.5 | 0 | 0 | 38.6 | 0 | 0 | 0 | 0 | 0 | |

| | MIDDLEFIELD RD Southbound | | | | | MARSH RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 60 | 104 | 0 | 164 | 109 | 0 | 123 | 0 | 232 | 143 | 103 | 0 | 0 | 246 | 0 | 0 | 0 | 0 | 0 | 642 |
| 05:00 PM | 0 | 60 | 103 | 0 | 163 | 113 | 0 | 139 | 0 | 252 | 144 | 111 | 0 | 0 | 255 | 0 | 0 | 0 | 0 | 0 | 670 |
| 05:15 PM | 0 | 72 | 97 | 0 | 169 | 104 | 0 | 130 | 0 | 234 | 130 | 109 | 0 | 0 | 239 | 0 | 0 | 0 | 0 | 0 | 642 |
| 05:30 PM | 0 | 77 | 104 | 0 | 181 | 121 | 0 | 123 | 0 | 244 | 131 | 103 | 0 | 0 | 234 | 0 | 0 | 0 | 0 | 0 | 659 |
| Total Volume | 0 | 269 | 408 | 0 | 677 | 447 | 0 | 515 | 0 | 962 | 548 | 426 | 0 | 0 | 974 | 0 | 0 | 0 | 0 | 0 | 2613 |
| % App. Total | 0 | 39.7 | 60.3 | 0 | | 46.5 | 0 | 53.5 | 0 | | 56.3 | 43.7 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .000 | .873 | .981 | .000 | .935 | .924 | .000 | .926 | .000 | .954 | .951 | .959 | .000 | .000 | .955 | .000 | .000 | .000 | .000 | .000 | .975 |

Traffic Data Service
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File Name : 13PM FINAL
Site Code : 00000013
Start Date : 11/10/2010
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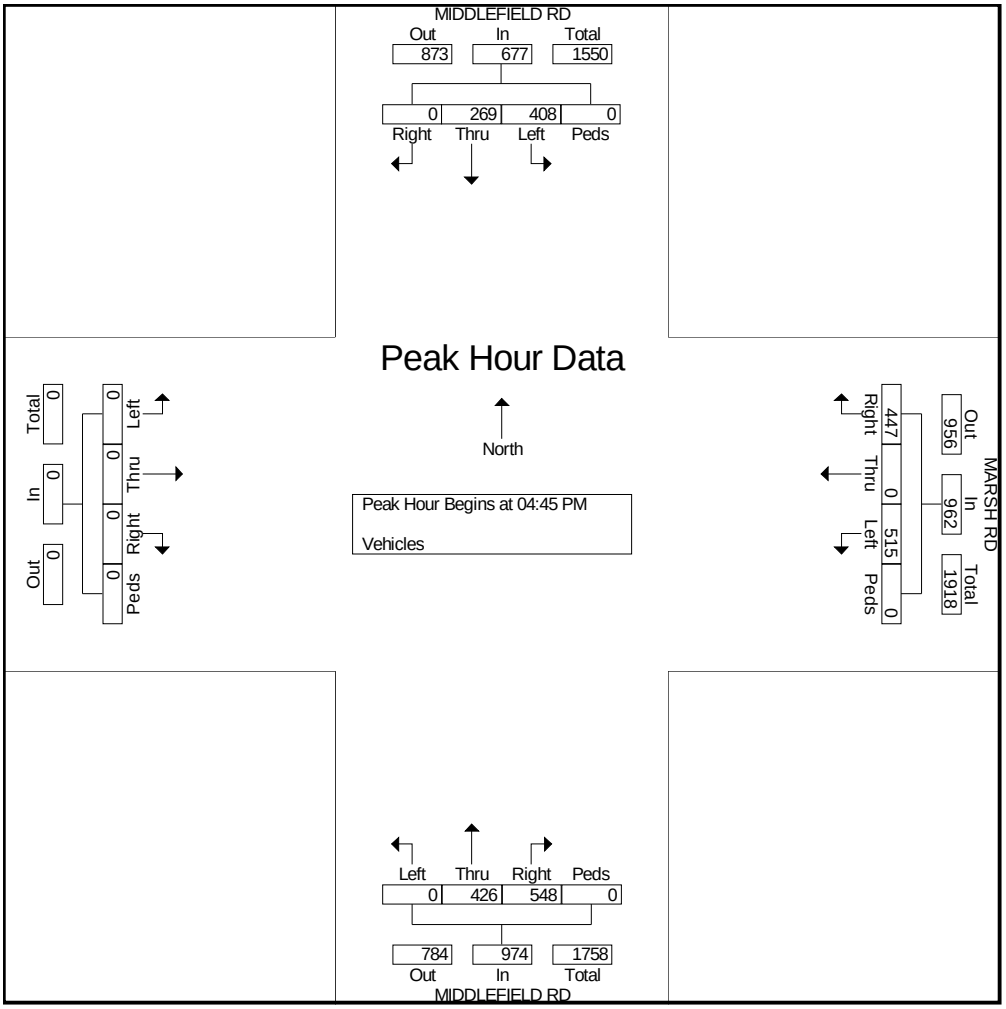

# Traffic Data Service

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***tdsbay@cs.com***


File Name : 14AM FINAL
Site Code : 00000014
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAYFRONT EXPY Southbound | | | | | NETWORK CIR Westbound | | | | | BAYFRONT EXPY Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 16 | 142 | 4 | 0 | 162 | 0 | 2 | 1 | 0 | 3 | 0 | 445 | 265 | 0 | 710 | 74 | 8 | 13 | 0 | 95 | 970 |
| 07:15 AM | 14 | 179 | 2 | 0 | 195 | 0 | 3 | 0 | 0 | 3 | 1 | 525 | 271 | 0 | 797 | 85 | 9 | 16 | 0 | 110 | 1105 |
| 07:30 AM | 26 | 159 | 3 | 0 | 188 | 1 | 1 | 1 | 0 | 3 | 2 | 538 | 290 | 0 | 830 | 106 | 8 | 28 | 0 | 142 | 1163 |
| 07:45 AM | 27 | 157 | 5 | 0 | 189 | 3 | 0 | 2 | 0 | 5 | 1 | 571 | 232 | 0 | 804 | 94 | 9 | 22 | 0 | 125 | 1123 |
| Total | 83 | 637 | 14 | 0 | 734 | 4 | 6 | 4 | 0 | 14 | 4 | 2079 | 1058 | 0 | 3141 | 359 | 34 | 79 | 0 | 472 | 4361 |
| 08:00 AM | 25 | 182 | 3 | 0 | 210 | 1 | 2 | 0 | 0 | 3 | 2 | 474 | 241 | 0 | 717 | 94 | 8 | 18 | 0 | 120 | 1050 |
| 08:15 AM | 29 | 162 | 4 | 0 | 195 | 0 | 0 | 1 | 0 | 1 | 1 | 464 | 287 | 0 | 752 | 84 | 9 | 28 | 0 | 121 | 1069 |
| 08:30 AM | 37 | 170 | 8 | 0 | 215 | 2 | 4 | 0 | 0 | 6 | 2 | 462 | 258 | 0 | 722 | 99 | 17 | 32 | 0 | 148 | 1091 |
| 08:45 AM | 36 | 178 | 1 | 0 | 215 | 3 | 1 | 0 | 0 | 4 | 3 | 519 | 261 | 0 | 783 | 71 | 15 | 20 | 0 | 106 | 1108 |
| Total | 127 | 692 | 16 | 0 | 835 | 6 | 7 | 1 | 0 | 14 | 8 | 1919 | 1047 | 0 | 2974 | 348 | 49 | 98 | 0 | 495 | 4318 |
| Grand Total | 210 | 1329 | 30 | 0 | 1569 | 10 | 13 | 5 | 0 | 28 | 12 | 3998 | 2105 | 0 | 6115 | 707 | 83 | 177 | 0 | 967 | 8679 |
| Apprch % | 13.4 | 84.7 | 1.9 | 0 | | 35.7 | 46.4 | 17.9 | 0 | | 0.2 | 65.4 | 34.4 | 0 | | 73.1 | 8.6 | 18.3 | 0 | | |
| Total % | 2.4 | 15.3 | 0.3 | 0 | 18.1 | 0.1 | 0.1 | 0.1 | 0 | 0.3 | 0.1 | 46.1 | 24.3 | 0 | 70.5 | 8.1 | 1 | 2 | 0 | 11.1 | |

| | BAYFRONT EXPY Southbound | | | | | NETWORK CIR Westbound | | | | | BAYFRONT EXPY Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 14 | 179 | 2 | 0 | 195 | 0 | 3 | 0 | 0 | 3 | 1 | 525 | 271 | 0 | 797 | 85 | 9 | 16 | 0 | 110 | 1105 |
| 07:30 AM | 26 | 159 | 3 | 0 | 188 | 1 | 1 | 1 | 0 | 3 | 2 | 538 | 290 | 0 | 830 | 106 | 8 | 28 | 0 | 142 | 1163 |
| 07:45 AM | 27 | 157 | 5 | 0 | 189 | 3 | 0 | 2 | 0 | 5 | 1 | 571 | 232 | 0 | 804 | 94 | 9 | 22 | 0 | 125 | 1123 |
| 08:00 AM | 25 | 182 | 3 | 0 | 210 | 1 | 2 | 0 | 0 | 3 | 2 | 474 | 241 | 0 | 717 | 94 | 8 | 18 | 0 | 120 | 1050 |
| Total Volume | 92 | 677 | 13 | 0 | 782 | 5 | 6 | 3 | 0 | 14 | 6 | 2108 | 1034 | 0 | 3148 | 379 | 34 | 84 | 0 | 497 | 4441 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .852 | .930 | .650 | .000 | .931 | .417 | .500 | .375 | .000 | .700 | .750 | .923 | .891 | .000 | .948 | .894 | .944 | .750 | .000 | .875 | .955 |

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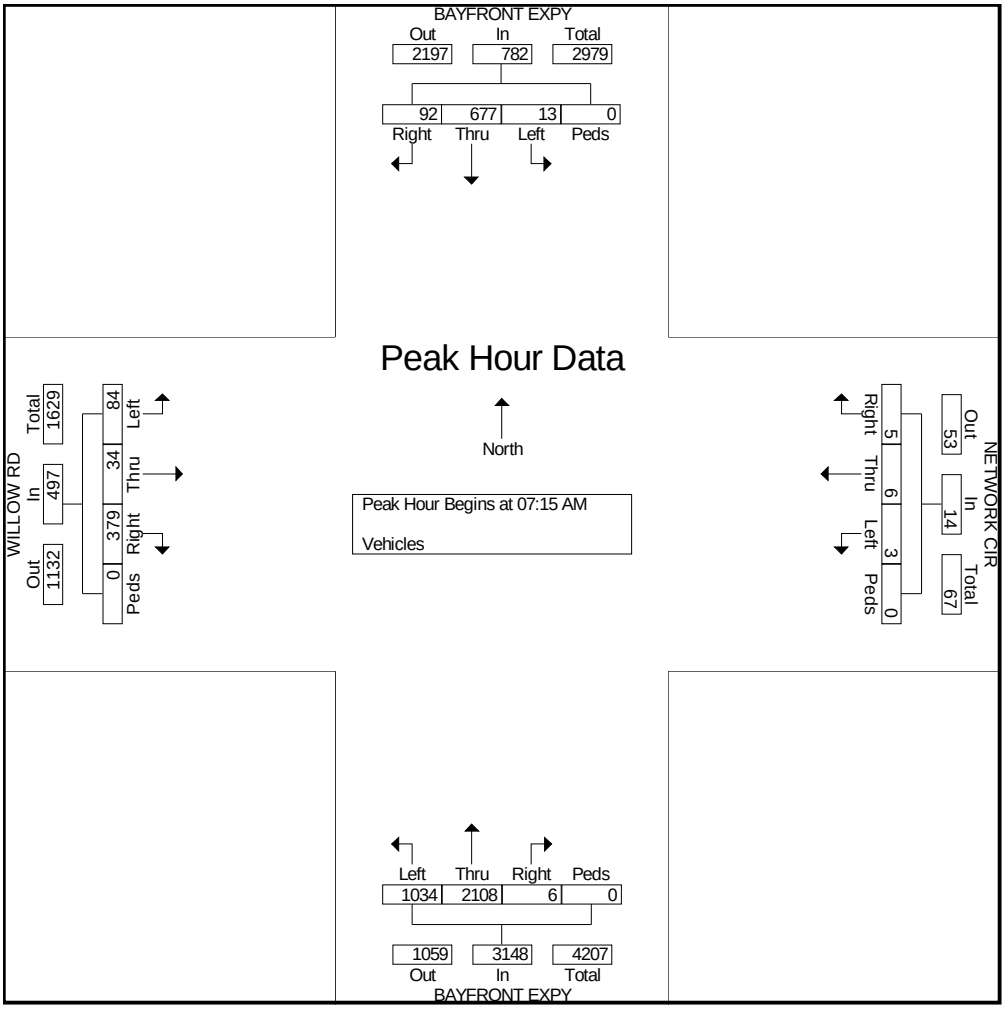
File Name : 14AM FINAL
Site Code : 00000014
Start Date : 11/9/2010
Page No : 2



# All Traffic Data

(916) 771-8700

CITY OF MENLOW PARK

File Name : 11-7184-002 WILLOW-BAYFRONT EXPY
Site Code : 00000000
Start Date : 5/3/2011
Page No : 1

**Groups Printed- Unshifted**

| | WILLOW RD. Southbound | | | | BAYFRONT EXPY. Westbound | | | | WILLOW RD. Northbound | | | | BAYFRONT EXPY. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 08:30 | 0 | 3 | 1 | 4 | 289 | 575 | 3 | 867 | 30 | 8 | 81 | 119 | 2 | 159 | 41 | 202 | 1192 |
| 08:45 | 2 | 1 | 0 | 3 | 250 | 543 | 8 | 801 | 27 | 7 | 82 | 116 | 5 | 184 | 49 | 238 | 1158 |
| Total | 2 | 4 | 1 | 7 | 539 | 1118 | 11 | 1668 | 57 | 15 | 163 | 235 | 7 | 343 | 90 | 440 | 2350 |
| 09:00 | 1 | 2 | 0 | 3 | 233 | 466 | 0 | 699 | 21 | 12 | 90 | 123 | 2 | 177 | 56 | 235 | 1060 |
| 09:15 | 1 | 2 | 0 | 3 | 230 | 406 | 4 | 640 | 25 | 13 | 92 | 130 | 2 | 134 | 44 | 180 | 953 |
| 09:30 | 0 | 7 | 1 | 8 | 253 | 379 | 4 | 636 | 37 | 19 | 102 | 158 | 4 | 136 | 30 | 170 | 972 |
| 09:45 | 1 | 3 | 2 | 6 | 207 | 331 | 0 | 538 | 11 | 16 | 72 | 99 | 3 | 126 | 29 | 158 | 801 |
| Total | 3 | 14 | 3 | 20 | 923 | 1582 | 8 | 2513 | 94 | 60 | 356 | 510 | 11 | 573 | 159 | 743 | 3786 |
| 10:00 | 0 | 1 | 1 | 2 | 165 | 214 | 3 | 382 | 14 | 7 | 65 | 86 | 3 | 114 | 27 | 144 | 614 |
| 10:15 | 0 | 3 | 3 | 6 | 155 | 226 | 0 | 381 | 12 | 9 | 81 | 102 | 5 | 113 | 27 | 145 | 634 |
| Grand Total | 5 | 22 | 8 | 35 | 1782 | 3140 | 22 | 4944 | 177 | 91 | 665 | 933 | 26 | 1143 | 303 | 1472 | 7384 |
| Apprch % | 14.3 | 62.9 | 22.9 | | 36 | 63.5 | 0.4 | | 19 | 9.8 | 71.3 | | 1.8 | 77.6 | 20.6 | | |
| Total % | 0.1 | 0.3 | 0.1 | 0.5 | 24.1 | 42.5 | 0.3 | 67 | 2.4 | 1.2 | 9 | 12.6 | 0.4 | 15.5 | 4.1 | 19.9 | |

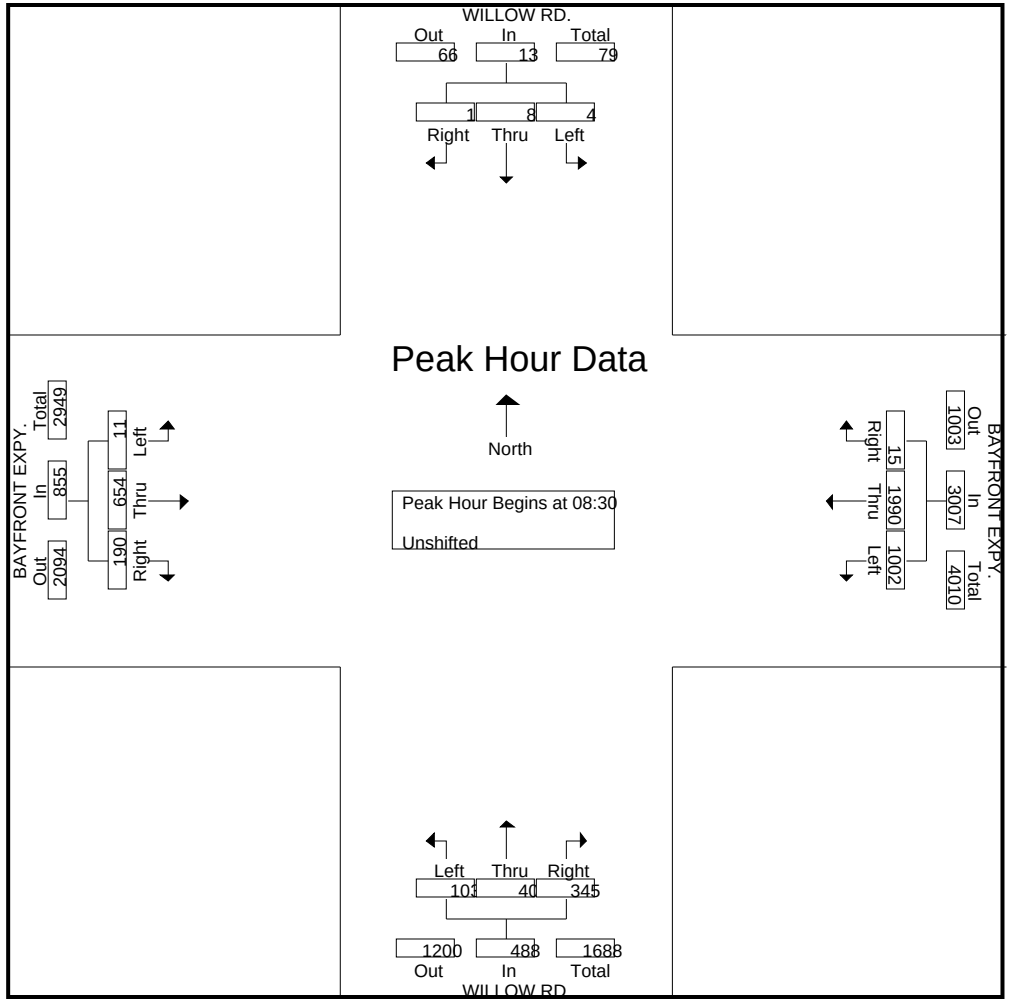
| | WILLOW RD. Southbound | | | | BAYFRONT EXPY. Westbound | | | | WILLOW RD. Northbound | | | | BAYFRONT EXPY. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 08:30 to 10:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:30 | | | | | | | | | | | | | | | | | |
| 08:30 | 0 | **3** | **1** | **4** | **289** | **575** | 3 | **867** | **30** | 8 | 81 | 119 | 2 | 159 | 41 | 202 | **1192** |
| 08:45 | **2** | 1 | 0 | 3 | 250 | 543 | **8** | 801 | 27 | 7 | 82 | 116 | **5** | **184** | 49 | **238** | 1158 |
| 09:00 | 1 | 2 | 0 | 3 | 233 | 466 | 0 | 699 | 21 | 12 | 90 | 123 | 2 | 177 | **56** | 235 | 1060 |
| 09:15 | 1 | 2 | 0 | 3 | 230 | 406 | 4 | 640 | 25 | **13** | **92** | **130** | 2 | 134 | 44 | 180 | 953 |
| Total Volume | 4 | 8 | 1 | 13 | 1002 | 1990 | 15 | 3007 | 103 | 40 | 345 | 488 | 11 | 654 | 190 | 855 | 4363 |
| % App. Total | 30.8 | 61.5 | 7.7 | | 33.3 | 66.2 | 0.5 | | 21.1 | 8.2 | 70.7 | | 1.3 | 76.5 | 22.2 | | |
| PHF | .500 | .667 | .250 | .813 | .867 | .865 | .469 | .867 | .858 | .769 | .938 | .938 | .550 | .889 | .848 | .898 | .915 |

# All Traffic Data

(916) 771-8700

CITY OF MENLOW PARK

File Name : 11-7184-002 WILLOW-BAYFRONT EXPY
Site Code : 00000000
Start Date : 5/3/2011
Page No : 2



Traffic Data Service
Campbell, CA
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***tdsbay@cs.com***

File Name : 14PM FINAL
Site Code : 00000014
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAYFRONT EXPY Southbound | | | | | NETWORK CIR Westbound | | | | | BAYFRONT EXPY Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 17 | 449 | 4 | 0 | 470 | 7 | 24 | 8 | 0 | 39 | 0 | 148 | 62 | 0 | 210 | 292 | 8 | 18 | 0 | 318 | 1037 |
| 04:15 PM | 26 | 455 | 1 | 0 | 482 | 4 | 26 | 9 | 0 | 39 | 0 | 154 | 93 | 0 | 247 | 283 | 4 | 11 | 0 | 298 | 1066 |
| 04:30 PM | 24 | 503 | 0 | 0 | 527 | 2 | 26 | 11 | 0 | 39 | 0 | 169 | 74 | 0 | 243 | 303 | 1 | 12 | 0 | 316 | 1125 |
| 04:45 PM | 23 | 451 | 0 | 0 | 474 | 5 | 27 | 11 | 0 | 43 | 2 | 159 | 92 | 0 | 253 | 326 | 1 | 7 | 0 | 334 | 1104 |
| Total | 90 | 1858 | 5 | 0 | 1953 | 18 | 103 | 39 | 0 | 160 | 2 | 630 | 321 | 0 | 953 | 1204 | 14 | 48 | 0 | 1266 | 4332 |
| 05:00 PM | 27 | 557 | 0 | 0 | 584 | 5 | 29 | 12 | 0 | 46 | 1 | 163 | 83 | 0 | 247 | 317 | 3 | 8 | 0 | 328 | 1205 |
| 05:15 PM | 25 | 602 | 0 | 0 | 627 | 2 | 30 | 15 | 0 | 47 | 0 | 180 | 83 | 0 | 263 | 345 | 3 | 14 | 0 | 362 | 1299 |
| 05:30 PM | 29 | 547 | 0 | 0 | 576 | 0 | 25 | 4 | 0 | 29 | 0 | 159 | 115 | 0 | 274 | 383 | 2 | 7 | 0 | 392 | 1271 |
| 05:45 PM | 27 | 493 | 0 | 0 | 520 | 1 | 21 | 13 | 0 | 35 | 0 | 162 | 81 | 0 | 243 | 379 | 5 | 7 | 0 | 391 | 1189 |
| Total | 108 | 2199 | 0 | 0 | 2307 | 8 | 105 | 44 | 0 | 157 | 1 | 664 | 362 | 0 | 1027 | 1424 | 13 | 36 | 0 | 1473 | 4964 |
| Grand Total | 198 | 4057 | 5 | 0 | 4260 | 26 | 208 | 83 | 0 | 317 | 3 | 1294 | 683 | 0 | 1980 | 2628 | 27 | 84 | 0 | 2739 | 9296 |
| Apprch % | 4.6 | 95.2 | 0.1 | 0 | | 8.2 | 65.6 | 26.2 | 0 | | 0.2 | 65.4 | 34.5 | 0 | | 95.9 | 1 | 3.1 | 0 | | |
| Total % | 2.1 | 43.6 | 0.1 | 0 | 45.8 | 0.3 | 2.2 | 0.9 | 0 | 3.4 | 0 | 13.9 | 7.3 | 0 | 21.3 | 28.3 | 0.3 | 0.9 | 0 | 29.5 | |

| | BAYFRONT EXPY Southbound | | | | | NETWORK CIR Westbound | | | | | BAYFRONT EXPY Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 27 | 557 | 0 | 0 | 584 | 5 | 29 | 12 | 0 | 46 | 1 | 163 | 83 | 0 | 247 | 317 | 3 | 8 | 0 | 328 | 1205 |
| 05:15 PM | 25 | 602 | 0 | 0 | 627 | 2 | 30 | 15 | 0 | 47 | 0 | 180 | 83 | 0 | 263 | 345 | 3 | 14 | 0 | 362 | 1299 |
| 05:30 PM | 29 | 547 | 0 | 0 | 576 | 0 | 25 | 4 | 0 | 29 | 0 | 159 | 115 | 0 | 274 | 383 | 2 | 7 | 0 | 392 | 1271 |
| 05:45 PM | 27 | 493 | 0 | 0 | 520 | 1 | 21 | 13 | 0 | 35 | 0 | 162 | 81 | 0 | 243 | 379 | 5 | 7 | 0 | 391 | 1189 |
| Total Volume | 108 | 2199 | 0 | 0 | 2307 | 8 | 105 | 44 | 0 | 157 | 1 | 664 | 362 | 0 | 1027 | 1424 | 13 | 36 | 0 | 1473 | 4964 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .931 | .913 | .000 | .000 | .920 | .400 | .875 | .733 | .000 | .835 | .250 | .922 | .787 | .000 | .937 | .930 | .650 | .643 | .000 | .939 | .955 |

Traffic Data Service
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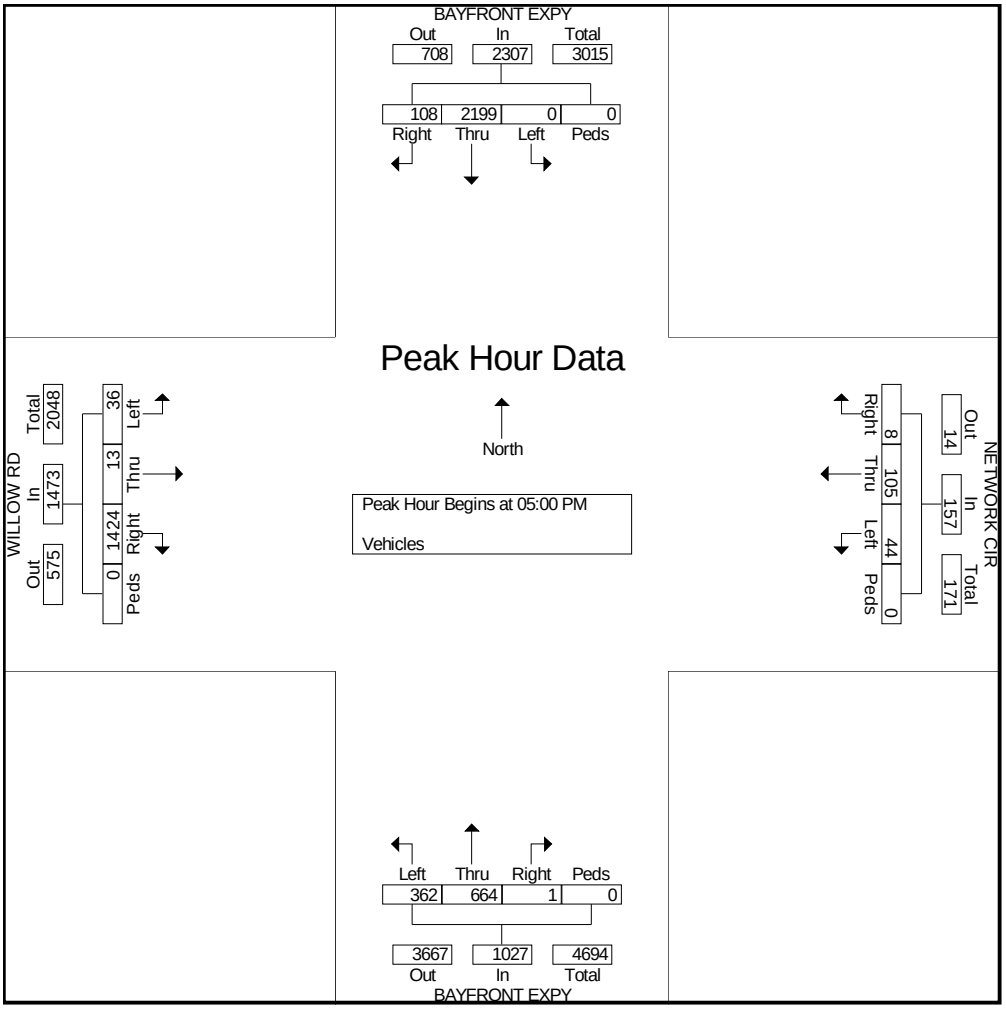
File Name : 14PM FINAL
Site Code : 00000014
Start Date : 11/9/2010
Page No : 2



# Traffic Data Service

Campbell, CA

**(408) 377-2988**

***tdsbay@cs.com***


File Name : 15AM FINAL
Site Code : 00000015
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | HAMILTON AVE Southbound | | | | | WILLOW RD Westbound | | | | | HAMILTON AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 17 | 4 | 6 | 0 | 27 | 12 | 263 | 5 | 0 | 280 | 3 | 2 | 2 | 0 | 7 | 16 | 79 | 22 | 0 | 117 | 431 |
| 07:15 AM | 19 | 0 | 15 | 0 | 34 | 14 | 264 | 16 | 0 | 294 | 0 | 0 | 1 | 0 | 1 | 14 | 109 | 23 | 0 | 146 | 475 |
| 07:30 AM | 16 | 4 | 31 | 0 | 51 | 15 | 294 | 14 | 0 | 323 | 5 | 4 | 6 | 0 | 15 | 12 | 120 | 20 | 0 | 152 | 541 |
| 07:45 AM | 12 | 4 | 21 | 0 | 37 | 14 | 191 | 23 | 0 | 228 | 2 | 1 | 2 | 0 | 5 | 9 | 106 | 22 | 0 | 137 | 407 |
| Total | 64 | 12 | 73 | 0 | 149 | 55 | 1012 | 58 | 0 | 1125 | 10 | 7 | 11 | 0 | 28 | 51 | 414 | 87 | 0 | 552 | 1854 |
| 08:00 AM | 10 | 5 | 19 | 0 | 34 | 25 | 244 | 22 | 0 | 291 | 5 | 1 | 3 | 0 | 9 | 11 | 97 | 28 | 0 | 136 | 470 |
| 08:15 AM | 17 | 1 | 17 | 0 | 35 | 8 | 243 | 16 | 0 | 267 | 9 | 6 | 8 | 0 | 23 | 11 | 104 | 25 | 0 | 140 | 465 |
| 08:30 AM | 28 | 5 | 24 | 0 | 57 | 10 | 265 | 14 | 0 | 289 | 5 | 4 | 5 | 0 | 14 | 17 | 132 | 31 | 0 | 180 | 540 |
| 08:45 AM | 17 | 8 | 11 | 0 | 36 | 13 | 285 | 22 | 0 | 320 | 7 | 2 | 2 | 0 | 11 | 13 | 82 | 31 | 0 | 126 | 493 |
| Total | 72 | 19 | 71 | 0 | 162 | 56 | 1037 | 74 | 0 | 1167 | 26 | 13 | 18 | 0 | 57 | 52 | 415 | 115 | 0 | 582 | 1968 |
| Grand Total | 136 | 31 | 144 | 0 | 311 | 111 | 2049 | 132 | 0 | 2292 | 36 | 20 | 29 | 0 | 85 | 103 | 829 | 202 | 0 | 1134 | 3822 |
| Apprch % | 43.7 | 10 | 46.3 | 0 | | 4.8 | 89.4 | 5.8 | 0 | | 42.4 | 23.5 | 34.1 | 0 | | 9.1 | 73.1 | 17.8 | 0 | | |
| Total % | 3.6 | 0.8 | 3.8 | 0 | 8.1 | 2.9 | 53.6 | 3.5 | 0 | 60 | 0.9 | 0.5 | 0.8 | 0 | 2.2 | 2.7 | 21.7 | 5.3 | 0 | 29.7 | |

| | HAMILTON AVE Southbound | | | | | WILLOW RD Westbound | | | | | HAMILTON AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 10 | 5 | 19 | 0 | 34 | 25 | 244 | 22 | 0 | 291 | 5 | 1 | 3 | 0 | 9 | 11 | 97 | 28 | 0 | 136 | 470 |
| 08:15 AM | 17 | 1 | 17 | 0 | 35 | 8 | 243 | 16 | 0 | 267 | 9 | 6 | 8 | 0 | 23 | 11 | 104 | 25 | 0 | 140 | 465 |
| 08:30 AM | 28 | 5 | 24 | 0 | 57 | 10 | 265 | 14 | 0 | 289 | 5 | 4 | 5 | 0 | 14 | 17 | 132 | 31 | 0 | 180 | 540 |
| 08:45 AM | 17 | 8 | 11 | 0 | 36 | 13 | 285 | 22 | 0 | 320 | 7 | 2 | 2 | 0 | 11 | 13 | 82 | 31 | 0 | 126 | 493 |
| Total Volume | 72 | 19 | 71 | 0 | 162 | 56 | 1037 | 74 | 0 | 1167 | 26 | 13 | 18 | 0 | 57 | 52 | 415 | 115 | 0 | 582 | 1968 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .643 | .594 | .740 | .000 | .711 | .560 | .910 | .841 | .000 | .912 | .722 | .542 | .563 | .000 | .620 | .765 | .786 | .927 | .000 | .808 | .911 |

Traffic Data Service
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File Name : 15AM FINAL
Site Code : 00000015
Start Date : 11/9/2010
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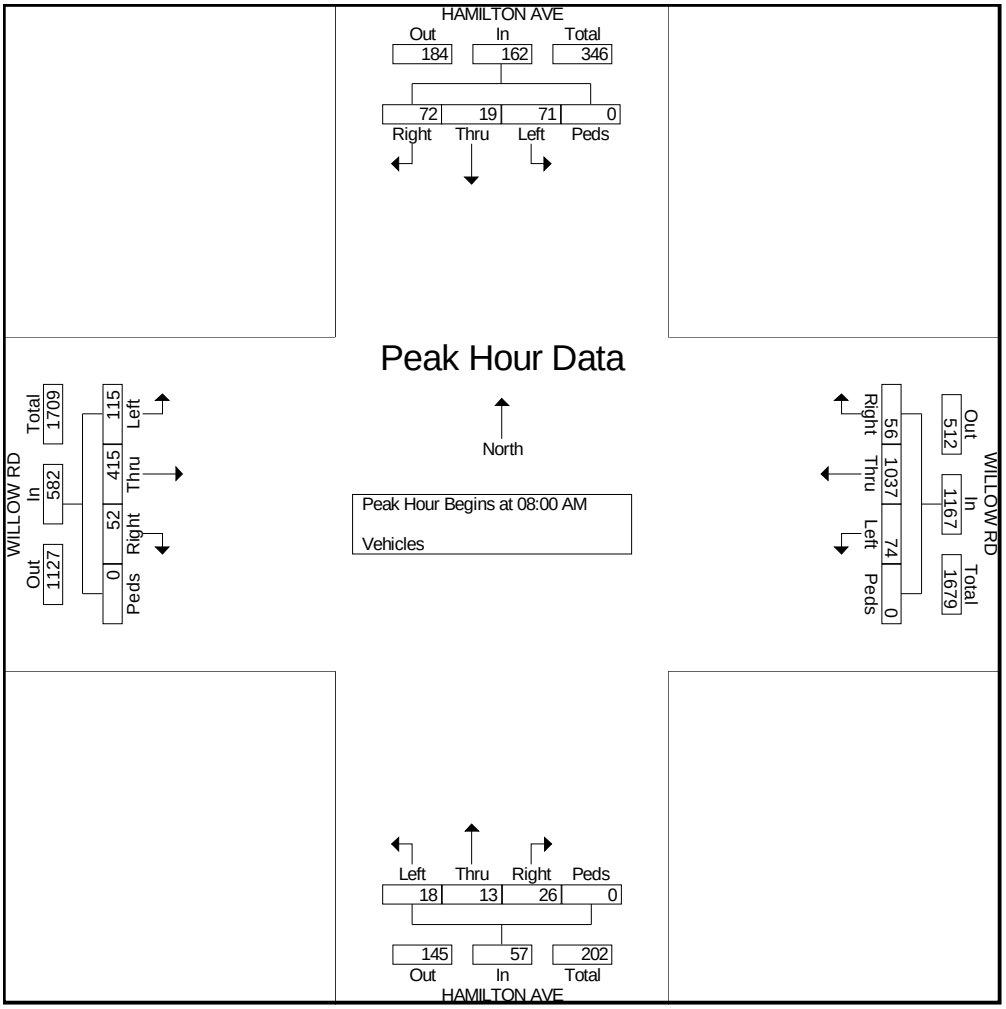

Traffic Data Service
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***tdsbay@cs.com***

File Name : 15PM FINAL
Site Code : 00000015
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | HAMILTON AVE Southbound | | | | | WILLOW RD Westbound | | | | | HAMILTON AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 17 | 1 | 13 | 0 | 31 | 9 | 100 | 3 | 0 | 112 | 12 | 3 | 17 | 0 | 32 | 3 | 253 | 22 | 0 | 278 | 453 |
| 04:15 PM | 23 | 3 | 12 | 0 | 38 | 19 | 118 | 5 | 0 | 142 | 11 | 4 | 19 | 0 | 34 | 2 | 270 | 23 | 0 | 295 | 509 |
| 04:30 PM | 16 | 0 | 15 | 0 | 31 | 10 | 123 | 7 | 0 | 140 | 16 | 4 | 16 | 0 | 36 | 2 | 284 | 32 | 0 | 318 | 525 |
| 04:45 PM | 21 | 2 | 16 | 0 | 39 | 15 | 123 | 1 | 0 | 139 | 9 | 0 | 20 | 0 | 29 | 3 | 257 | 31 | 0 | 291 | 498 |
| Total | 77 | 6 | 56 | 0 | 139 | 53 | 464 | 16 | 0 | 533 | 48 | 11 | 72 | 0 | 131 | 10 | 1064 | 108 | 0 | 1182 | 1985 |
| 05:00 PM | 14 | 0 | 18 | 0 | 32 | 14 | 140 | 6 | 0 | 160 | 8 | 1 | 32 | 0 | 41 | 1 | 311 | 26 | 0 | 338 | 571 |
| 05:15 PM | 22 | 2 | 16 | 0 | 40 | 15 | 137 | 8 | 0 | 160 | 17 | 2 | 38 | 0 | 57 | 1 | 341 | 38 | 0 | 380 | 637 |
| 05:30 PM | 18 | 2 | 22 | 0 | 42 | 18 | 146 | 3 | 0 | 167 | 9 | 2 | 27 | 0 | 38 | 1 | 338 | 34 | 0 | 373 | 620 |
| 05:45 PM | 19 | 1 | 17 | 0 | 37 | 20 | 130 | 3 | 0 | 153 | 15 | 1 | 32 | 0 | 48 | 2 | 361 | 32 | 0 | 395 | 633 |
| Total | 73 | 5 | 73 | 0 | 151 | 67 | 553 | 20 | 0 | 640 | 49 | 6 | 129 | 0 | 184 | 5 | 1351 | 130 | 0 | 1486 | 2461 |
| Grand Total | 150 | 11 | 129 | 0 | 290 | 120 | 1017 | 36 | 0 | 1173 | 97 | 17 | 201 | 0 | 315 | 15 | 2415 | 238 | 0 | 2668 | 4446 |
| Apprch % | 51.7 | 3.8 | 44.5 | 0 | | 10.2 | 86.7 | 3.1 | 0 | | 30.8 | 5.4 | 63.8 | 0 | | 0.6 | 90.5 | 8.9 | 0 | | |
| Total % | 3.4 | 0.2 | 2.9 | 0 | 6.5 | 2.7 | 22.9 | 0.8 | 0 | 26.4 | 2.2 | 0.4 | 4.5 | 0 | 7.1 | 0.3 | 54.3 | 5.4 | 0 | 60 | |

| | HAMILTON AVE Southbound | | | | | WILLOW RD Westbound | | | | | HAMILTON AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 14 | 0 | 18 | 0 | 32 | 14 | 140 | 6 | 0 | 160 | 8 | 1 | 32 | 0 | 41 | 1 | 311 | 26 | 0 | 338 | 571 |
| 05:15 PM | 22 | 2 | 16 | 0 | 40 | 15 | 137 | 8 | 0 | 160 | 17 | 2 | 38 | 0 | 57 | 1 | 341 | 38 | 0 | 380 | 637 |
| 05:30 PM | 18 | 2 | 22 | 0 | 42 | 18 | 146 | 3 | 0 | 167 | 9 | 2 | 27 | 0 | 38 | 1 | 338 | 34 | 0 | 373 | 620 |
| 05:45 PM | 19 | 1 | 17 | 0 | 37 | 20 | 130 | 3 | 0 | 153 | 15 | 1 | 32 | 0 | 48 | 2 | 361 | 32 | 0 | 395 | 633 |
| Total Volume | 73 | 5 | 73 | 0 | 151 | 67 | 553 | 20 | 0 | 640 | 49 | 6 | 129 | 0 | 184 | 5 | 1351 | 130 | 0 | 1486 | 2461 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .830 | .625 | .830 | .000 | .899 | .838 | .947 | .625 | .000 | .958 | .721 | .750 | .849 | .000 | .807 | .625 | .936 | .855 | .000 | .941 | .966 |

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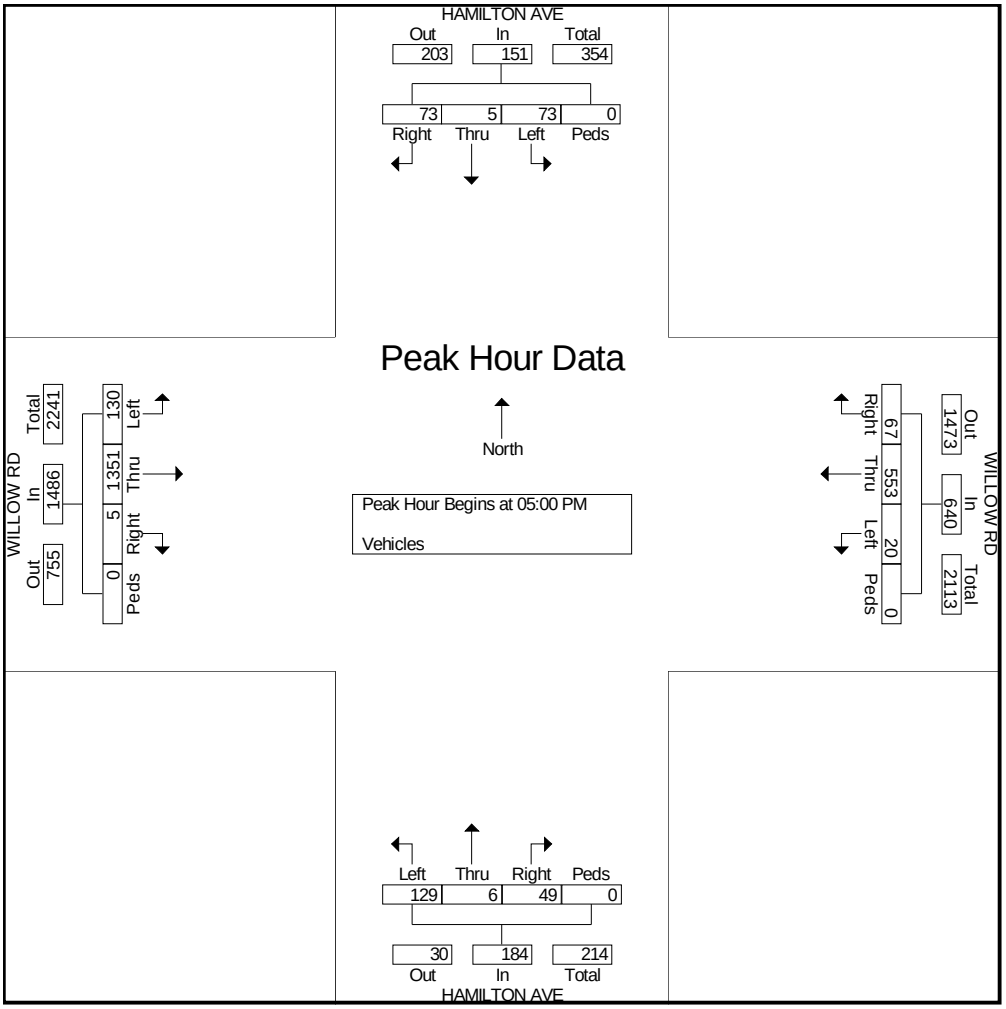

# Traffic Data Service

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File Name : 16AM FINAL
Site Code : 00000016
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | IVY DR Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 24 | 0 | 1 | 0 | 25 | 0 | 294 | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 0 | 0 | 144 | 13 | 0 | 157 | 476 |
| 07:15 AM | 40 | 0 | 1 | 0 | 41 | 2 | 284 | 0 | 0 | 286 | 0 | 0 | 0 | 0 | 0 | 0 | 156 | 19 | 0 | 175 | 502 |
| 07:30 AM | 61 | 0 | 0 | 0 | 61 | 3 | 287 | 0 | 0 | 290 | 0 | 0 | 0 | 0 | 0 | 0 | 155 | 14 | 0 | 169 | 520 |
| 07:45 AM | 40 | 0 | 0 | 0 | 40 | 2 | 227 | 0 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 167 | 21 | 0 | 188 | 457 |
| Total | 165 | 0 | 2 | 0 | 167 | 7 | 1092 | 0 | 0 | 1099 | 0 | 0 | 0 | 0 | 0 | 0 | 622 | 67 | 0 | 689 | 1955 |
| 08:00 AM | 45 | 0 | 0 | 0 | 45 | 7 | 223 | 0 | 0 | 230 | 0 | 0 | 0 | 0 | 0 | 0 | 174 | 28 | 0 | 202 | 477 |
| 08:15 AM | 35 | 0 | 2 | 0 | 37 | 0 | 235 | 0 | 0 | 235 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 24 | 0 | 174 | 446 |
| 08:30 AM | 20 | 0 | 4 | 0 | 24 | 2 | 315 | 0 | 0 | 317 | 0 | 0 | 0 | 0 | 0 | 0 | 172 | 19 | 0 | 191 | 532 |
| 08:45 AM | 18 | 0 | 3 | 0 | 21 | 9 | 288 | 0 | 0 | 297 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 14 | 0 | 156 | 474 |
| Total | 118 | 0 | 9 | 0 | 127 | 18 | 1061 | 0 | 0 | 1079 | 0 | 0 | 0 | 0 | 0 | 0 | 638 | 85 | 0 | 723 | 1929 |
| Grand Total | 283 | 0 | 11 | 0 | 294 | 25 | 2153 | 0 | 0 | 2178 | 0 | 0 | 0 | 0 | 0 | 0 | 1260 | 152 | 0 | 1412 | 3884 |
| Apprch % | 96.3 | 0 | 3.7 | 0 | | 1.1 | 98.9 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 89.2 | 10.8 | 0 | | |
| Total % | 7.3 | 0 | 0.3 | 0 | 7.6 | 0.6 | 55.4 | 0 | 0 | 56.1 | 0 | 0 | 0 | 0 | 0 | 0 | 32.4 | 3.9 | 0 | 36.4 | |

| | IVY DR Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 40 | 0 | 1 | 0 | 41 | 2 | 284 | 0 | 0 | 286 | 0 | 0 | 0 | 0 | 0 | 0 | 156 | 19 | 0 | 175 | 502 |
| 07:30 AM | 61 | 0 | 0 | 0 | 61 | 3 | 287 | 0 | 0 | 290 | 0 | 0 | 0 | 0 | 0 | 0 | 155 | 14 | 0 | 169 | 520 |
| 07:45 AM | 40 | 0 | 0 | 0 | 40 | 2 | 227 | 0 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 167 | 21 | 0 | 188 | 457 |
| 08:00 AM | 45 | 0 | 0 | 0 | 45 | 7 | 223 | 0 | 0 | 230 | 0 | 0 | 0 | 0 | 0 | 0 | 174 | 28 | 0 | 202 | 477 |
| Total Volume | 186 | 0 | 1 | 0 | 187 | 14 | 1021 | 0 | 0 | 1035 | 0 | 0 | 0 | 0 | 0 | 0 | 652 | 82 | 0 | 734 | 1956 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .762 | .000 | .250 | .000 | .766 | .500 | .889 | .000 | .000 | .892 | .000 | .000 | .000 | .000 | .000 | .000 | .937 | .732 | .000 | .908 | .940 |

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File Name : 16AM FINAL
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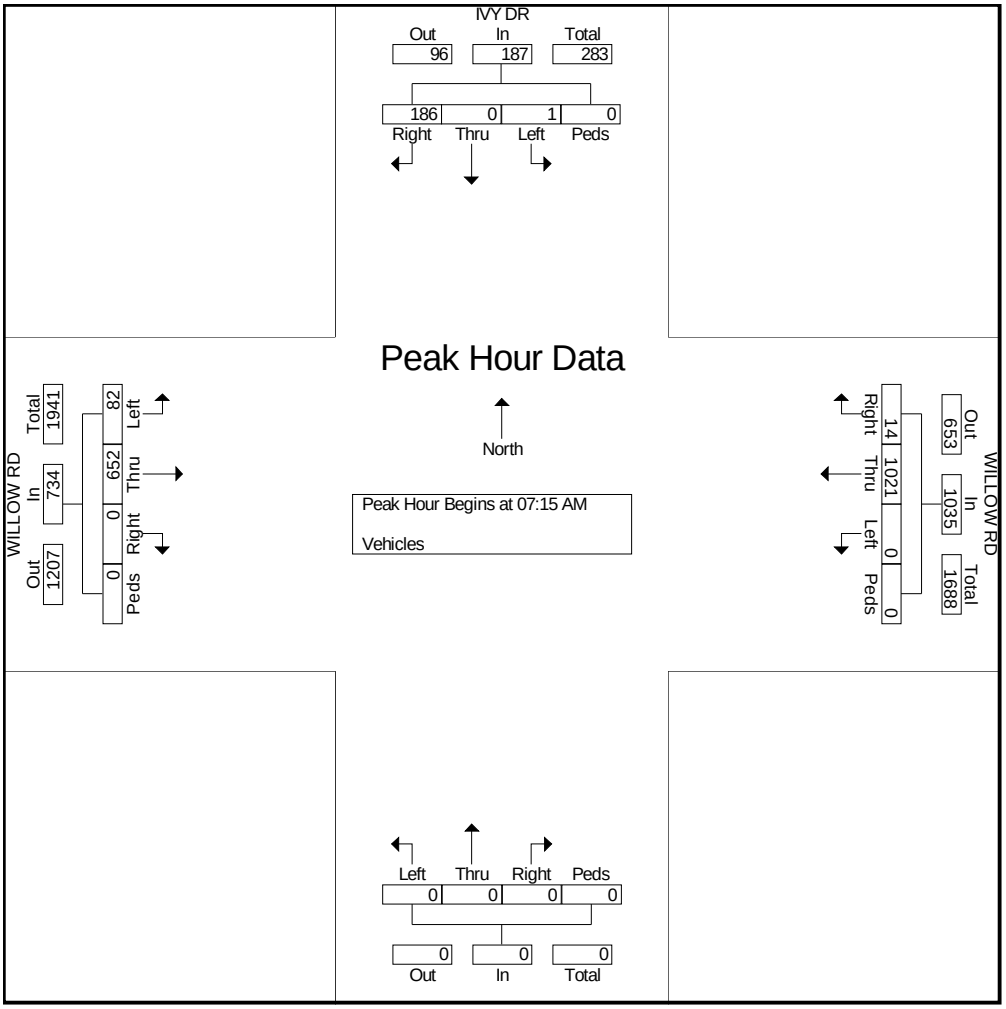

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File Name : 16PM FINAL
Site Code : 00000016
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**Groups Printed- Vehicles**

| | IVY DR Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 27 | 0 | 1 | 0 | 28 | 2 | 167 | 0 | 0 | 169 | 0 | 0 | 0 | 0 | 0 | 0 | 319 | 42 | 0 | 361 | 558 |
| 04:15 PM | 26 | 0 | 1 | 0 | 27 | 6 | 144 | 0 | 0 | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 310 | 27 | 0 | 337 | 514 |
| 04:30 PM | 34 | 0 | 1 | 0 | 35 | 6 | 159 | 0 | 0 | 165 | 0 | 0 | 0 | 0 | 0 | 0 | 271 | 23 | 0 | 294 | 494 |
| 04:45 PM | 25 | 0 | 3 | 0 | 28 | 6 | 178 | 0 | 0 | 184 | 0 | 0 | 0 | 0 | 0 | 0 | 300 | 26 | 0 | 326 | 538 |
| Total | 112 | 0 | 6 | 0 | 118 | 20 | 648 | 0 | 0 | 668 | 0 | 0 | 0 | 0 | 0 | 0 | 1200 | 118 | 0 | 1318 | 2104 |
| 05:00 PM | 26 | 0 | 2 | 0 | 28 | 3 | 203 | 0 | 0 | 206 | 0 | 0 | 0 | 0 | 0 | 0 | 356 | 26 | 0 | 382 | 616 |
| 05:15 PM | 30 | 0 | 1 | 0 | 31 | 6 | 216 | 0 | 0 | 222 | 0 | 0 | 0 | 0 | 0 | 0 | 377 | 20 | 0 | 397 | 650 |
| 05:30 PM | 37 | 0 | 6 | 0 | 43 | 5 | 170 | 0 | 0 | 175 | 0 | 0 | 0 | 0 | 0 | 0 | 354 | 32 | 0 | 386 | 604 |
| 05:45 PM | 29 | 0 | 1 | 0 | 30 | 8 | 211 | 0 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 0 | 370 | 20 | 0 | 390 | 639 |
| Total | 122 | 0 | 10 | 0 | 132 | 22 | 800 | 0 | 0 | 822 | 0 | 0 | 0 | 0 | 0 | 0 | 1457 | 98 | 0 | 1555 | 2509 |
| Grand Total | 234 | 0 | 16 | 0 | 250 | 42 | 1448 | 0 | 0 | 1490 | 0 | 0 | 0 | 0 | 0 | 0 | 2657 | 216 | 0 | 2873 | 4613 |
| Apprch % | 93.6 | 0 | 6.4 | 0 | | 2.8 | 97.2 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 92.5 | 7.5 | 0 | | |
| Total % | 5.1 | 0 | 0.3 | 0 | 5.4 | 0.9 | 31.4 | 0 | 0 | 32.3 | 0 | 0 | 0 | 0 | 0 | 0 | 57.6 | 4.7 | 0 | 62.3 | |

| | IVY DR Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 26 | 0 | 2 | 0 | 28 | 3 | 203 | 0 | 0 | 206 | 0 | 0 | 0 | 0 | 0 | 0 | 356 | 26 | 0 | 382 | 616 |
| 05:15 PM | 30 | 0 | 1 | 0 | 31 | 6 | 216 | 0 | 0 | 222 | 0 | 0 | 0 | 0 | 0 | 0 | 377 | 20 | 0 | 397 | 650 |
| 05:30 PM | 37 | 0 | 6 | 0 | 43 | 5 | 170 | 0 | 0 | 175 | 0 | 0 | 0 | 0 | 0 | 0 | 354 | 32 | 0 | 386 | 604 |
| 05:45 PM | 29 | 0 | 1 | 0 | 30 | 8 | 211 | 0 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 0 | 370 | 20 | 0 | 390 | 639 |
| Total Volume | 122 | 0 | 10 | 0 | 132 | 22 | 800 | 0 | 0 | 822 | 0 | 0 | 0 | 0 | 0 | 0 | 1457 | 98 | 0 | 1555 | 2509 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .824 | .000 | .417 | .000 | .767 | .688 | .926 | .000 | .000 | .926 | .000 | .000 | .000 | .000 | .000 | .000 | .966 | .766 | .000 | .979 | .965 |

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File Name : 16PM FINAL
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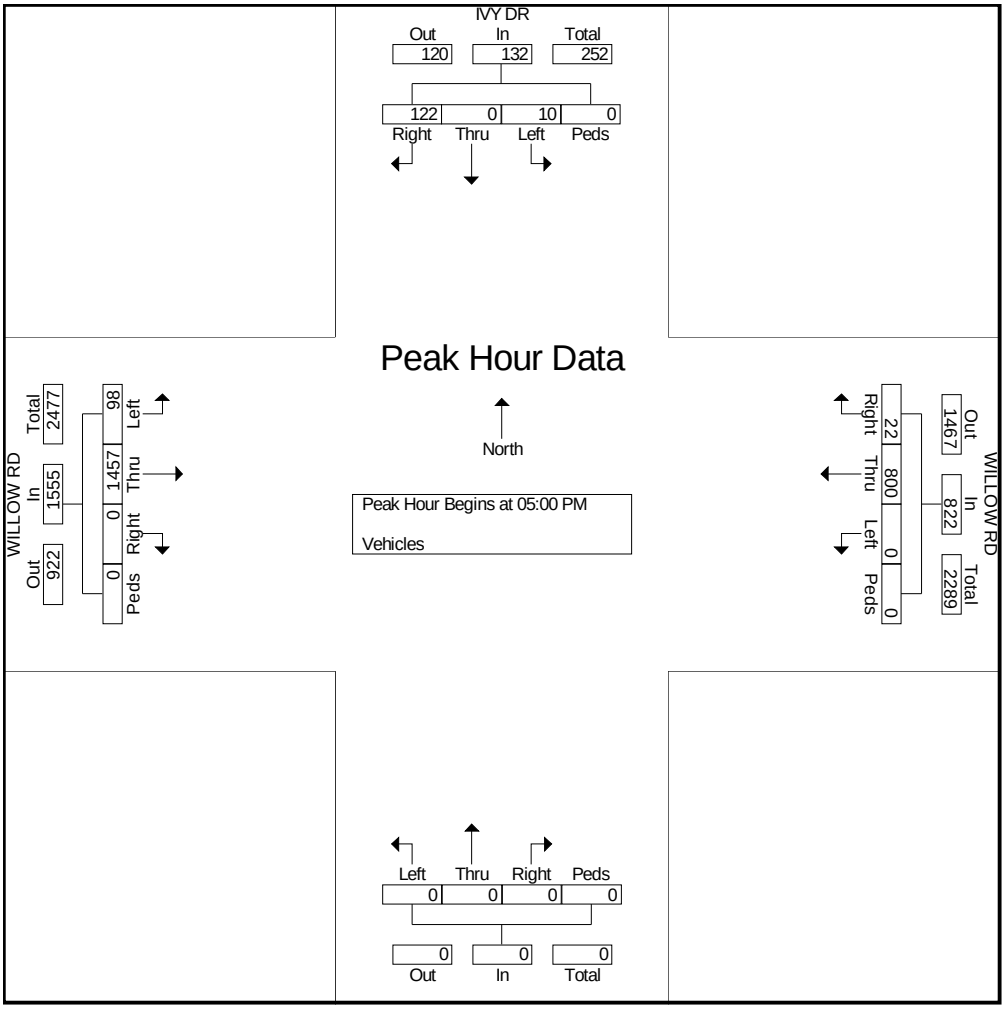

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File Name : 17AM FINAL
Site Code : 00000017
Start Date : 11/16/2010
Page No : 1

**Groups Printed- Vehicles**

| | Southbound | | | | | WILLOW RD Westbound | | | | | O'BRIEN DR Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 281 | 10 | 0 | 291 | 5 | 0 | 43 | 0 | 48 | 49 | 147 | 0 | 0 | 196 | 535 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 327 | 8 | 0 | 335 | 8 | 0 | 45 | 0 | 53 | 52 | 139 | 0 | 0 | 191 | 579 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 336 | 23 | 0 | 359 | 13 | 0 | 37 | 0 | 50 | 46 | 167 | 0 | 0 | 213 | 622 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 209 | 16 | 0 | 225 | 15 | 0 | 36 | 0 | 51 | 52 | 179 | 0 | 0 | 231 | 507 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1153 | 57 | 0 | 1210 | 41 | 0 | 161 | 0 | 202 | 199 | 632 | 0 | 0 | 831 | 2243 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 287 | 16 | 0 | 303 | 27 | 0 | 23 | 0 | 50 | 75 | 188 | 0 | 0 | 263 | 616 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 244 | 38 | 0 | 282 | 19 | 0 | 34 | 0 | 53 | 61 | 180 | 0 | 0 | 241 | 576 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 330 | 32 | 0 | 362 | 11 | 0 | 39 | 0 | 50 | 64 | 170 | 0 | 0 | 234 | 646 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 310 | 16 | 0 | 326 | 10 | 0 | 34 | 0 | 44 | 50 | 159 | 0 | 0 | 209 | 579 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 1171 | 102 | 0 | 1273 | 67 | 0 | 130 | 0 | 197 | 250 | 697 | 0 | 0 | 947 | 2417 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 2324 | 159 | 0 | 2483 | 108 | 0 | 291 | 0 | 399 | 449 | 1329 | 0 | 0 | 1778 | 4660 |
| Apprch % | 0 | 0 | 0 | 0 | | 0 | 93.6 | 6.4 | 0 | | 27.1 | 0 | 72.9 | 0 | | 25.3 | 74.7 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 49.9 | 3.4 | 0 | 53.3 | 2.3 | 0 | 6.2 | 0 | 8.6 | 9.6 | 28.5 | 0 | 0 | 38.2 | |

| | Southbound | | | | | WILLOW RD Westbound | | | | | O'BRIEN DR Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 287 | 16 | 0 | 303 | 27 | 0 | 23 | 0 | 50 | 75 | 188 | 0 | 0 | 263 | 616 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 244 | 38 | 0 | 282 | 19 | 0 | 34 | 0 | 53 | 61 | 180 | 0 | 0 | 241 | 576 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 330 | 32 | 0 | 362 | 11 | 0 | 39 | 0 | 50 | 64 | 170 | 0 | 0 | 234 | 646 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 310 | 16 | 0 | 326 | 10 | 0 | 34 | 0 | 44 | 50 | 159 | 0 | 0 | 209 | 579 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1171 | 102 | 0 | 1273 | 67 | 0 | 130 | 0 | 197 | 250 | 697 | 0 | 0 | 947 | 2417 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .887 | .671 | .000 | .879 | .620 | .000 | .833 | .000 | .929 | .833 | .927 | .000 | .000 | .900 | .935 |

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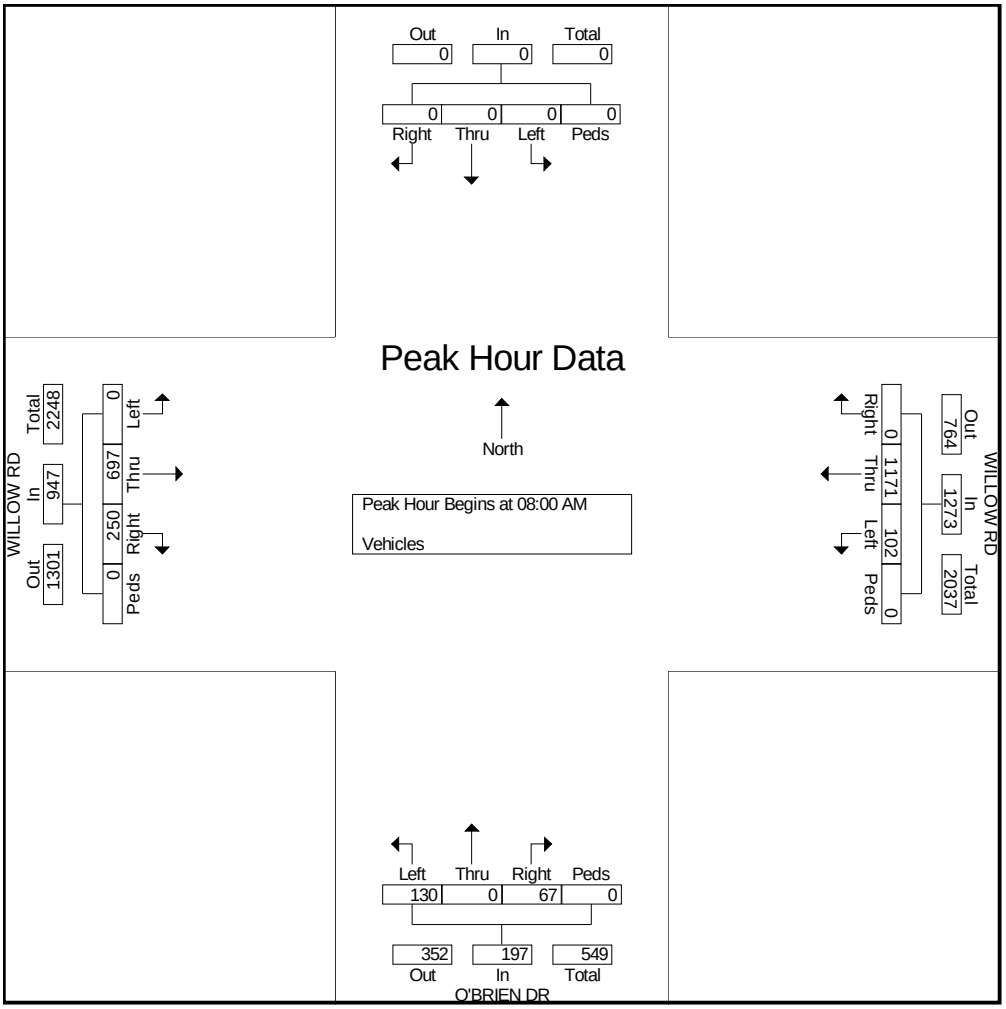

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File Name : 17PM FINAL
Site Code : 00000017
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Page No : 1

**Groups Printed- Vehicles**

| | Southbound | | | | | WILLOW RD Westbound | | | | | O'BRIEN DR Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 166 | 15 | 0 | 181 | 13 | 0 | 53 | 0 | 66 | 38 | 299 | 0 | 0 | 337 | 584 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 174 | 11 | 0 | 185 | 12 | 0 | 44 | 0 | 56 | 38 | 334 | 0 | 0 | 372 | 613 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 190 | 12 | 0 | 202 | 6 | 0 | 49 | 0 | 55 | 55 | 326 | 0 | 0 | 381 | 638 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 227 | 12 | 0 | 239 | 14 | 0 | 54 | 0 | 68 | 41 | 326 | 0 | 0 | 367 | 674 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 757 | 50 | 0 | 807 | 45 | 0 | 200 | 0 | 245 | 172 | 1285 | 0 | 0 | 1457 | 2509 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 205 | 25 | 0 | 230 | 10 | 0 | 66 | 0 | 76 | 40 | 347 | 0 | 0 | 387 | 693 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 234 | 16 | 0 | 250 | 12 | 0 | 52 | 0 | 64 | 57 | 355 | 0 | 0 | 412 | 726 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 208 | 18 | 0 | 226 | 7 | 0 | 48 | 0 | 55 | 51 | 360 | 0 | 0 | 411 | 692 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 241 | 14 | 0 | 255 | 6 | 0 | 44 | 0 | 50 | 56 | 351 | 0 | 0 | 407 | 712 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 888 | 73 | 0 | 961 | 35 | 0 | 210 | 0 | 245 | 204 | 1413 | 0 | 0 | 1617 | 2823 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 1645 | 123 | 0 | 1768 | 80 | 0 | 410 | 0 | 490 | 376 | 2698 | 0 | 0 | 3074 | 5332 |
| Apprch % | 0 | 0 | 0 | 0 | | 0 | 93 | 7 | 0 | | 16.3 | 0 | 83.7 | 0 | | 12.2 | 87.8 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 30.9 | 2.3 | 0 | 33.2 | 1.5 | 0 | 7.7 | 0 | 9.2 | 7.1 | 50.6 | 0 | 0 | 57.7 | |

| | Southbound | | | | | WILLOW RD Westbound | | | | | O'BRIEN DR Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 205 | 25 | 0 | 230 | 10 | 0 | 66 | 0 | 76 | 40 | 347 | 0 | 0 | 387 | 693 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 234 | 16 | 0 | 250 | 12 | 0 | 52 | 0 | 64 | 57 | 355 | 0 | 0 | 412 | 726 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 208 | 18 | 0 | 226 | 7 | 0 | 48 | 0 | 55 | 51 | 360 | 0 | 0 | 411 | 692 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 241 | 14 | 0 | 255 | 6 | 0 | 44 | 0 | 50 | 56 | 351 | 0 | 0 | 407 | 712 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 888 | 73 | 0 | 961 | 35 | 0 | 210 | 0 | 245 | 204 | 1413 | 0 | 0 | 1617 | 2823 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .921 | .730 | .000 | .942 | .729 | .000 | .795 | .000 | .806 | .895 | .981 | .000 | .000 | .981 | .972 |

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File Name : 17PM FINAL
Site Code : 00000017
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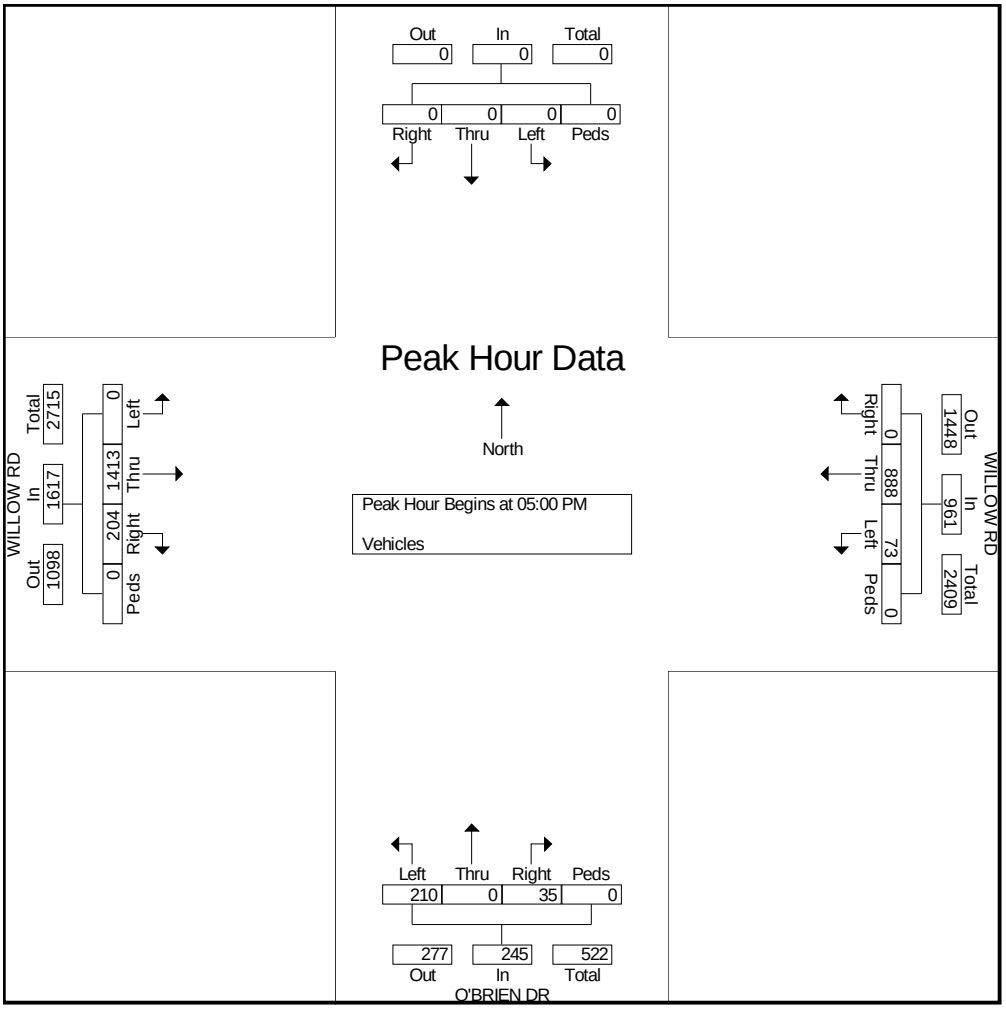

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***tdsbay@cs.com***

File Name : 18AM FINAL
Site Code : 00000018
Start Date : 11/16/2010
Page No : 1

**Groups Printed- Vehicles**

| | NEWBRIDGE ST Southbound | | | | | WILLOW RD Westbound | | | | | NEWBRIDGE ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 65 | 34 | 4 | 0 | 103 | 1 | 297 | 1 | 0 | 299 | 7 | 18 | 75 | 0 | 100 | 24 | 137 | 19 | 0 | 180 | 682 |
| 07:15 AM | 111 | 38 | 6 | 0 | 155 | 2 | 345 | 2 | 0 | 349 | 6 | 18 | 86 | 0 | 110 | 27 | 173 | 37 | 0 | 237 | 851 |
| 07:30 AM | 113 | 37 | 6 | 0 | 156 | 0 | 347 | 8 | 0 | 355 | 7 | 17 | 110 | 0 | 134 | 27 | 205 | 33 | 0 | 265 | 910 |
| 07:45 AM | 70 | 52 | 6 | 0 | 128 | 0 | 260 | 6 | 0 | 266 | 11 | 31 | 88 | 0 | 130 | 36 | 222 | 35 | 0 | 293 | 817 |
| Total | 359 | 161 | 22 | 0 | 542 | 3 | 1249 | 17 | 0 | 1269 | 31 | 84 | 359 | 0 | 474 | 114 | 737 | 124 | 0 | 975 | 3260 |
| 08:00 AM | 90 | 51 | 10 | 0 | 151 | 2 | 269 | 12 | 0 | 283 | 12 | 45 | 66 | 0 | 123 | 65 | 226 | 43 | 0 | 334 | 891 |
| 08:15 AM | 73 | 54 | 21 | 0 | 148 | 0 | 239 | 10 | 0 | 249 | 21 | 38 | 62 | 0 | 121 | 44 | 217 | 36 | 0 | 297 | 815 |
| 08:30 AM | 56 | 38 | 6 | 0 | 100 | 5 | 335 | 15 | 0 | 355 | 11 | 27 | 66 | 0 | 104 | 37 | 204 | 32 | 0 | 273 | 832 |
| 08:45 AM | 65 | 30 | 1 | 0 | 96 | 2 | 308 | 21 | 0 | 331 | 12 | 24 | 49 | 0 | 85 | 23 | 181 | 20 | 0 | 224 | 736 |
| Total | 284 | 173 | 38 | 0 | 495 | 9 | 1151 | 58 | 0 | 1218 | 56 | 134 | 243 | 0 | 433 | 169 | 828 | 131 | 0 | 1128 | 3274 |
| Grand Total | 643 | 334 | 60 | 0 | 1037 | 12 | 2400 | 75 | 0 | 2487 | 87 | 218 | 602 | 0 | 907 | 283 | 1565 | 255 | 0 | 2103 | 6534 |
| Apprch % | 62 | 32.2 | 5.8 | 0 | | 0.5 | 96.5 | 3 | 0 | | 9.6 | 24 | 66.4 | 0 | | 13.5 | 74.4 | 12.1 | 0 | | |
| Total % | 9.8 | 5.1 | 0.9 | 0 | 15.9 | 0.2 | 36.7 | 1.1 | 0 | 38.1 | 1.3 | 3.3 | 9.2 | 0 | 13.9 | 4.3 | 24 | 3.9 | 0 | 32.2 | |

| | NEWBRIDGE ST Southbound | | | | | WILLOW RD Westbound | | | | | NEWBRIDGE ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 111 | 38 | 6 | 0 | 155 | 2 | 345 | 2 | 0 | 349 | 6 | 18 | 86 | 0 | 110 | 27 | 173 | 37 | 0 | 237 | 851 |
| 07:30 AM | 113 | 37 | 6 | 0 | 156 | 0 | 347 | 8 | 0 | 355 | 7 | 17 | 110 | 0 | 134 | 27 | 205 | 33 | 0 | 265 | 910 |
| 07:45 AM | 70 | 52 | 6 | 0 | 128 | 0 | 260 | 6 | 0 | 266 | 11 | 31 | 88 | 0 | 130 | 36 | 222 | 35 | 0 | 293 | 817 |
| 08:00 AM | 90 | 51 | 10 | 0 | 151 | 2 | 269 | 12 | 0 | 283 | 12 | 45 | 66 | 0 | 123 | 65 | 226 | 43 | 0 | 334 | 891 |
| Total Volume | 384 | 178 | 28 | 0 | 590 | 4 | 1221 | 28 | 0 | 1253 | 36 | 111 | 350 | 0 | 497 | 155 | 826 | 148 | 0 | 1129 | 3469 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .850 | .856 | .700 | .000 | .946 | .500 | .880 | .583 | .000 | .882 | .750 | .617 | .795 | .000 | .927 | .596 | .914 | .860 | .000 | .845 | .953 |

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File Name : 18AM FINAL
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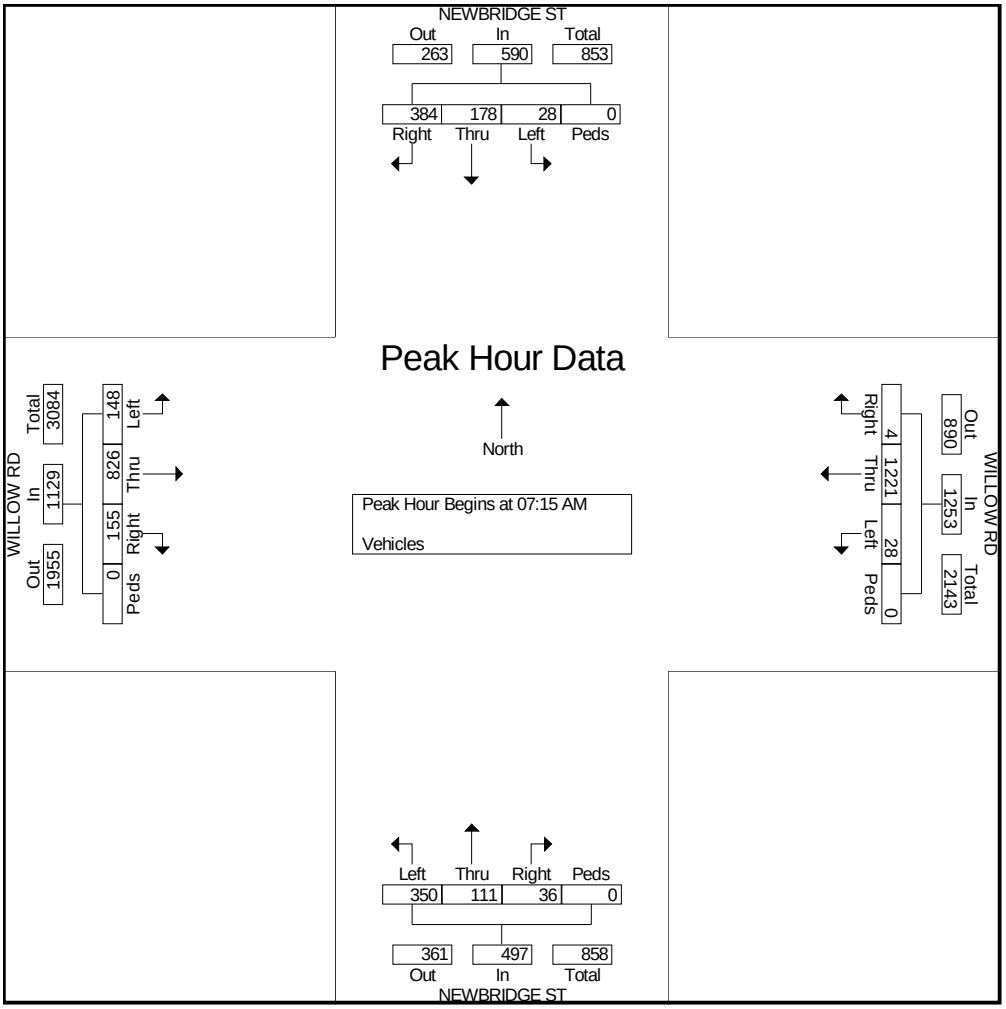

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File Name : 18PM FINAL
Site Code : 00000018
Start Date : 11/16/2010
Page No : 1

**Groups Printed- Vehicles**

| | NEWBRIDGE ST Southbound | | | | | WILLOW RD Westbound | | | | | NEWBRIDGE ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 45 | 40 | 5 | 0 | 90 | 12 | 184 | 27 | 0 | 223 | 8 | 32 | 62 | 0 | 102 | 60 | 311 | 73 | 0 | 444 | 859 |
| 04:15 PM | 58 | 33 | 3 | 0 | 94 | 2 | 180 | 18 | 0 | 200 | 11 | 42 | 62 | 0 | 115 | 88 | 327 | 76 | 0 | 491 | 900 |
| 04:30 PM | 50 | 36 | 6 | 0 | 92 | 5 | 213 | 31 | 0 | 249 | 11 | 33 | 59 | 0 | 103 | 67 | 348 | 63 | 0 | 478 | 922 |
| 04:45 PM | 45 | 34 | 11 | 0 | 90 | 10 | 231 | 19 | 0 | 260 | 17 | 46 | 72 | 0 | 135 | 70 | 318 | 77 | 0 | 465 | 950 |
| Total | 198 | 143 | 25 | 0 | 366 | 29 | 808 | 95 | 0 | 932 | 47 | 153 | 255 | 0 | 455 | 285 | 1304 | 289 | 0 | 1878 | 3631 |
| 05:00 PM | 51 | 41 | 9 | 0 | 101 | 5 | 223 | 21 | 0 | 249 | 14 | 29 | 51 | 0 | 94 | 71 | 359 | 85 | 0 | 515 | 959 |
| 05:15 PM | 59 | 36 | 9 | 0 | 104 | 9 | 261 | 13 | 0 | 283 | 14 | 56 | 69 | 0 | 139 | 90 | 322 | 87 | 0 | 499 | 1025 |
| 05:30 PM | 61 | 42 | 6 | 0 | 109 | 10 | 236 | 30 | 0 | 276 | 16 | 49 | 72 | 0 | 137 | 76 | 397 | 85 | 0 | 558 | 1080 |
| 05:45 PM | 48 | 47 | 14 | 0 | 109 | 10 | 255 | 38 | 0 | 303 | 11 | 36 | 56 | 0 | 103 | 102 | 358 | 66 | 0 | 526 | 1041 |
| Total | 219 | 166 | 38 | 0 | 423 | 34 | 975 | 102 | 0 | 1111 | 55 | 170 | 248 | 0 | 473 | 339 | 1436 | 323 | 0 | 2098 | 4105 |
| Grand Total | 417 | 309 | 63 | 0 | 789 | 63 | 1783 | 197 | 0 | 2043 | 102 | 323 | 503 | 0 | 928 | 624 | 2740 | 612 | 0 | 3976 | 7736 |
| Apprch % | 52.9 | 39.2 | 8 | 0 | | 3.1 | 87.3 | 9.6 | 0 | | 11 | 34.8 | 54.2 | 0 | | 15.7 | 68.9 | 15.4 | 0 | | |
| Total % | 5.4 | 4 | 0.8 | 0 | 10.2 | 0.8 | 23 | 2.5 | 0 | 26.4 | 1.3 | 4.2 | 6.5 | 0 | 12 | 8.1 | 35.4 | 7.9 | 0 | 51.4 | |

| | NEWBRIDGE ST Southbound | | | | | WILLOW RD Westbound | | | | | NEWBRIDGE ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 51 | 41 | 9 | 0 | 101 | 5 | 223 | 21 | 0 | 249 | 14 | 29 | 51 | 0 | 94 | 71 | 359 | 85 | 0 | 515 | 959 |
| 05:15 PM | 59 | 36 | 9 | 0 | 104 | 9 | 261 | 13 | 0 | 283 | 14 | 56 | 69 | 0 | 139 | 90 | 322 | 87 | 0 | 499 | 1025 |
| 05:30 PM | 61 | 42 | 6 | 0 | 109 | 10 | 236 | 30 | 0 | 276 | 16 | 49 | 72 | 0 | 137 | 76 | 397 | 85 | 0 | 558 | 1080 |
| 05:45 PM | 48 | 47 | 14 | 0 | 109 | 10 | 255 | 38 | 0 | 303 | 11 | 36 | 56 | 0 | 103 | 102 | 358 | 66 | 0 | 526 | 1041 |
| Total Volume | 219 | 166 | 38 | 0 | 423 | 34 | 975 | 102 | 0 | 1111 | 55 | 170 | 248 | 0 | 473 | 339 | 1436 | 323 | 0 | 2098 | 4105 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .898 | .883 | .679 | .000 | .970 | .850 | .934 | .671 | .000 | .917 | .859 | .759 | .861 | .000 | .851 | .831 | .904 | .928 | .000 | .940 | .950 |

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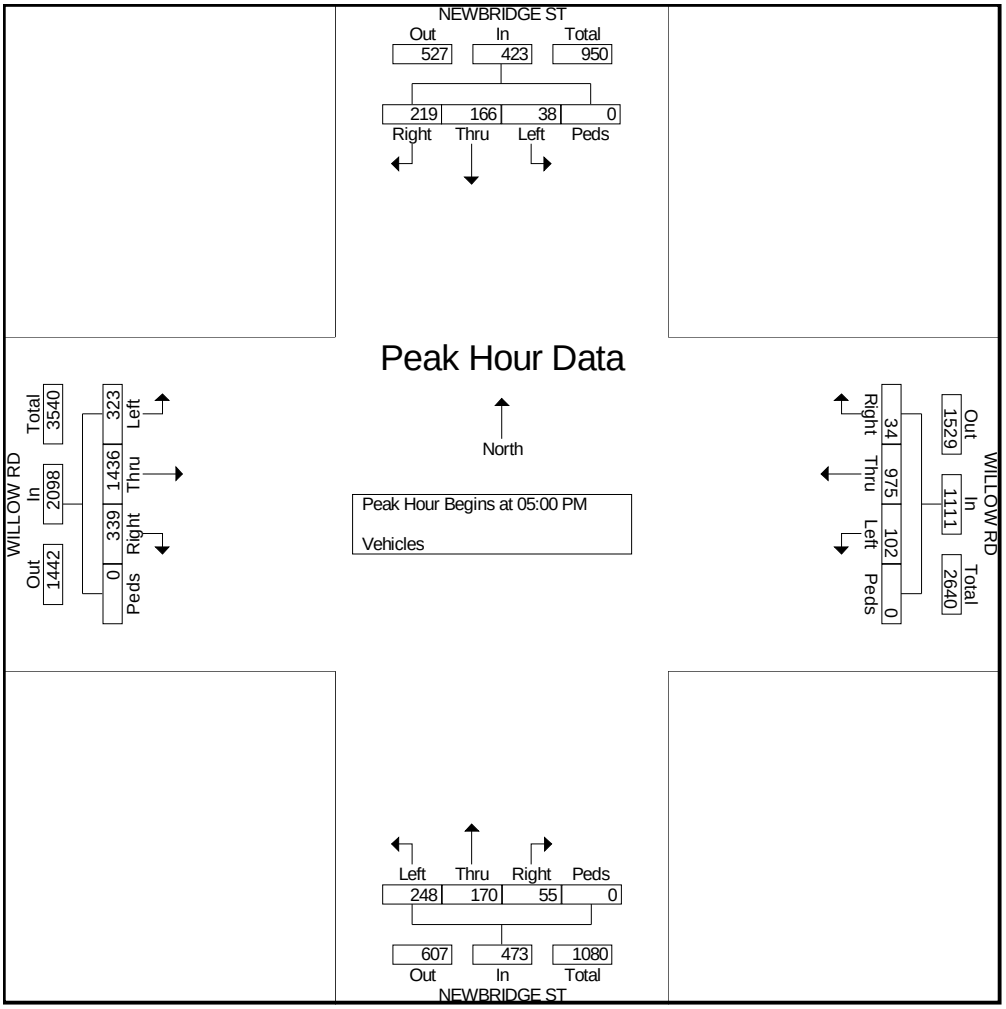

# Traffic Data Service

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File Name : 19AM FINAL
Site Code : 00000019
Start Date : 11/16/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAY RD Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 3 | 0 | 31 | 0 | 34 | 53 | 297 | 0 | 0 | 350 | 0 | 0 | 0 | 0 | 0 | 0 | 205 | 7 | 0 | 212 | 596 |
| 07:15 AM | 8 | 0 | 51 | 0 | 59 | 95 | 296 | 0 | 0 | 391 | 0 | 0 | 0 | 0 | 0 | 0 | 244 | 7 | 0 | 251 | 701 |
| 07:30 AM | 5 | 0 | 72 | 0 | 77 | 100 | 295 | 0 | 0 | 395 | 0 | 0 | 0 | 0 | 0 | 0 | 311 | 9 | 0 | 320 | 792 |
| 07:45 AM | 19 | 0 | 90 | 0 | 109 | 105 | 274 | 0 | 0 | 379 | 0 | 0 | 0 | 0 | 0 | 0 | 325 | 15 | 0 | 340 | 828 |
| Total | 35 | 0 | 244 | 0 | 279 | 353 | 1162 | 0 | 0 | 1515 | 0 | 0 | 0 | 0 | 0 | 0 | 1085 | 38 | 0 | 1123 | 2917 |
| 08:00 AM | 28 | 0 | 96 | 0 | 124 | 52 | 251 | 0 | 0 | 303 | 0 | 0 | 0 | 0 | 0 | 0 | 403 | 23 | 0 | 426 | 853 |
| 08:15 AM | 23 | 0 | 103 | 0 | 126 | 62 | 294 | 0 | 0 | 356 | 0 | 0 | 0 | 0 | 0 | 0 | 339 | 17 | 0 | 356 | 838 |
| 08:30 AM | 16 | 0 | 107 | 0 | 123 | 76 | 278 | 0 | 0 | 354 | 0 | 0 | 0 | 0 | 0 | 0 | 296 | 12 | 0 | 308 | 785 |
| 08:45 AM | 24 | 0 | 64 | 0 | 88 | 80 | 254 | 0 | 0 | 334 | 0 | 0 | 0 | 0 | 0 | 0 | 310 | 10 | 0 | 320 | 742 |
| Total | 91 | 0 | 370 | 0 | 461 | 270 | 1077 | 0 | 0 | 1347 | 0 | 0 | 0 | 0 | 0 | 0 | 1348 | 62 | 0 | 1410 | 3218 |
| Grand Total | 126 | 0 | 614 | 0 | 740 | 623 | 2239 | 0 | 0 | 2862 | 0 | 0 | 0 | 0 | 0 | 0 | 2433 | 100 | 0 | 2533 | 6135 |
| Apprch % | 17 | 0 | 83 | 0 | | 21.8 | 78.2 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 96.1 | 3.9 | 0 | | |
| Total % | 2.1 | 0 | 10 | 0 | 12.1 | 10.2 | 36.5 | 0 | 0 | 46.7 | 0 | 0 | 0 | 0 | 0 | 0 | 39.7 | 1.6 | 0 | 41.3 | |

| | BAY RD Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 5 | 0 | 72 | 0 | 77 | 100 | 295 | 0 | 0 | 395 | 0 | 0 | 0 | 0 | 0 | 0 | 311 | 9 | 0 | 320 | 792 |
| 07:45 AM | 19 | 0 | 90 | 0 | 109 | 105 | 274 | 0 | 0 | 379 | 0 | 0 | 0 | 0 | 0 | 0 | 325 | 15 | 0 | 340 | 828 |
| 08:00 AM | 28 | 0 | 96 | 0 | 124 | 52 | 251 | 0 | 0 | 303 | 0 | 0 | 0 | 0 | 0 | 0 | 403 | 23 | 0 | 426 | 853 |
| 08:15 AM | 23 | 0 | 103 | 0 | 126 | 62 | 294 | 0 | 0 | 356 | 0 | 0 | 0 | 0 | 0 | 0 | 339 | 17 | 0 | 356 | 838 |
| Total Volume | 75 | 0 | 361 | 0 | 436 | 319 | 1114 | 0 | 0 | 1433 | 0 | 0 | 0 | 0 | 0 | 0 | 1378 | 64 | 0 | 1442 | 3311 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .670 | .000 | .876 | .000 | .865 | .760 | .944 | .000 | .000 | .907 | .000 | .000 | .000 | .000 | .000 | .000 | .855 | .696 | .000 | .846 | .970 |

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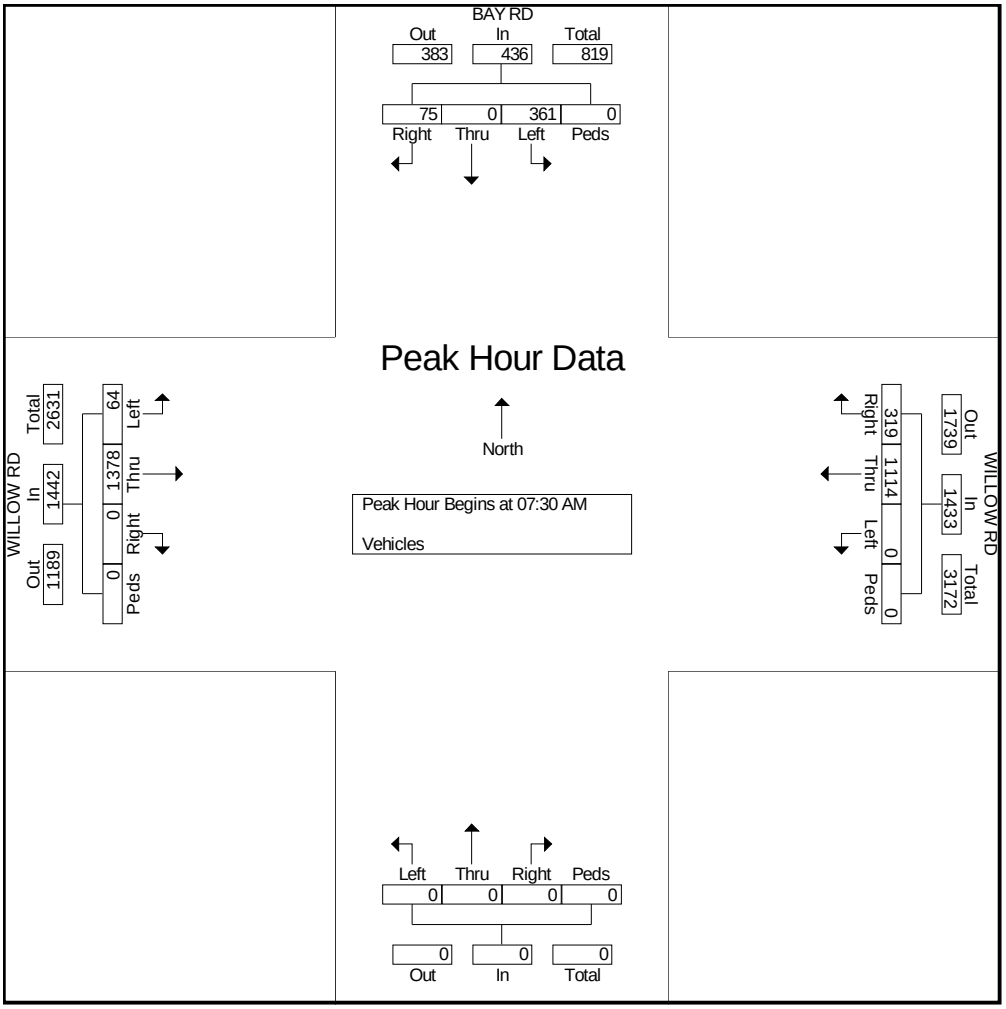

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File Name : 19PM FINAL
Site Code : 00000019
Start Date : 11/16/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAY RD Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 15 | 0 | 91 | 0 | 106 | 41 | 200 | 0 | 0 | 241 | 0 | 0 | 0 | 0 | 0 | 0 | 359 | 15 | 0 | 374 | 721 |
| 04:15 PM | 10 | 0 | 76 | 0 | 86 | 42 | 247 | 0 | 0 | 289 | 0 | 0 | 0 | 0 | 0 | 0 | 369 | 15 | 0 | 384 | 759 |
| 04:30 PM | 10 | 0 | 75 | 0 | 85 | 37 | 233 | 0 | 0 | 270 | 0 | 0 | 0 | 0 | 0 | 0 | 367 | 11 | 0 | 378 | 733 |
| 04:45 PM | 12 | 0 | 122 | 0 | 134 | 69 | 245 | 0 | 0 | 314 | 0 | 0 | 0 | 0 | 0 | 0 | 374 | 13 | 0 | 387 | 835 |
| Total | 47 | 0 | 364 | 0 | 411 | 189 | 925 | 0 | 0 | 1114 | 0 | 0 | 0 | 0 | 0 | 0 | 1469 | 54 | 0 | 1523 | 3048 |
| 05:00 PM | 14 | 0 | 95 | 0 | 109 | 55 | 272 | 0 | 0 | 327 | 0 | 0 | 0 | 0 | 0 | 0 | 354 | 16 | 0 | 370 | 806 |
| 05:15 PM | 15 | 0 | 99 | 0 | 114 | 58 | 258 | 0 | 0 | 316 | 0 | 0 | 0 | 0 | 0 | 0 | 362 | 7 | 0 | 369 | 799 |
| 05:30 PM | 13 | 0 | 100 | 0 | 113 | 73 | 286 | 0 | 0 | 359 | 0 | 0 | 0 | 0 | 0 | 0 | 346 | 4 | 0 | 350 | 822 |
| 05:45 PM | 21 | 0 | 73 | 0 | 94 | 53 | 298 | 0 | 0 | 351 | 0 | 0 | 0 | 0 | 0 | 0 | 320 | 22 | 0 | 342 | 787 |
| Total | 63 | 0 | 367 | 0 | 430 | 239 | 1114 | 0 | 0 | 1353 | 0 | 0 | 0 | 0 | 0 | 0 | 1382 | 49 | 0 | 1431 | 3214 |
| Grand Total | 110 | 0 | 731 | 0 | 841 | 428 | 2039 | 0 | 0 | 2467 | 0 | 0 | 0 | 0 | 0 | 0 | 2851 | 103 | 0 | 2954 | 6262 |
| Apprch % | 13.1 | 0 | 86.9 | 0 | | 17.3 | 82.7 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 96.5 | 3.5 | 0 | | |
| Total % | 1.8 | 0 | 11.7 | 0 | 13.4 | 6.8 | 32.6 | 0 | 0 | 39.4 | 0 | 0 | 0 | 0 | 0 | 0 | 45.5 | 1.6 | 0 | 47.2 | |

| | BAY RD Southbound | | | | | WILLOW RD Westbound | | | | | Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 12 | 0 | 122 | 0 | 134 | 69 | 245 | 0 | 0 | 314 | 0 | 0 | 0 | 0 | 0 | 0 | 374 | 13 | 0 | 387 | 835 |
| 05:00 PM | 14 | 0 | 95 | 0 | 109 | 55 | 272 | 0 | 0 | 327 | 0 | 0 | 0 | 0 | 0 | 0 | 354 | 16 | 0 | 370 | 806 |
| 05:15 PM | 15 | 0 | 99 | 0 | 114 | 58 | 258 | 0 | 0 | 316 | 0 | 0 | 0 | 0 | 0 | 0 | 362 | 7 | 0 | 369 | 799 |
| 05:30 PM | 13 | 0 | 100 | 0 | 113 | 73 | 286 | 0 | 0 | 359 | 0 | 0 | 0 | 0 | 0 | 0 | 346 | 4 | 0 | 350 | 822 |
| Total Volume | 54 | 0 | 416 | 0 | 470 | 255 | 1061 | 0 | 0 | 1316 | 0 | 0 | 0 | 0 | 0 | 0 | 1436 | 40 | 0 | 1476 | 3262 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .900 | .000 | .852 | .000 | .877 | .873 | .927 | .000 | .000 | .916 | .000 | .000 | .000 | .000 | .000 | .000 | .960 | .625 | .000 | .953 | .977 |

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Site Code : 00000019
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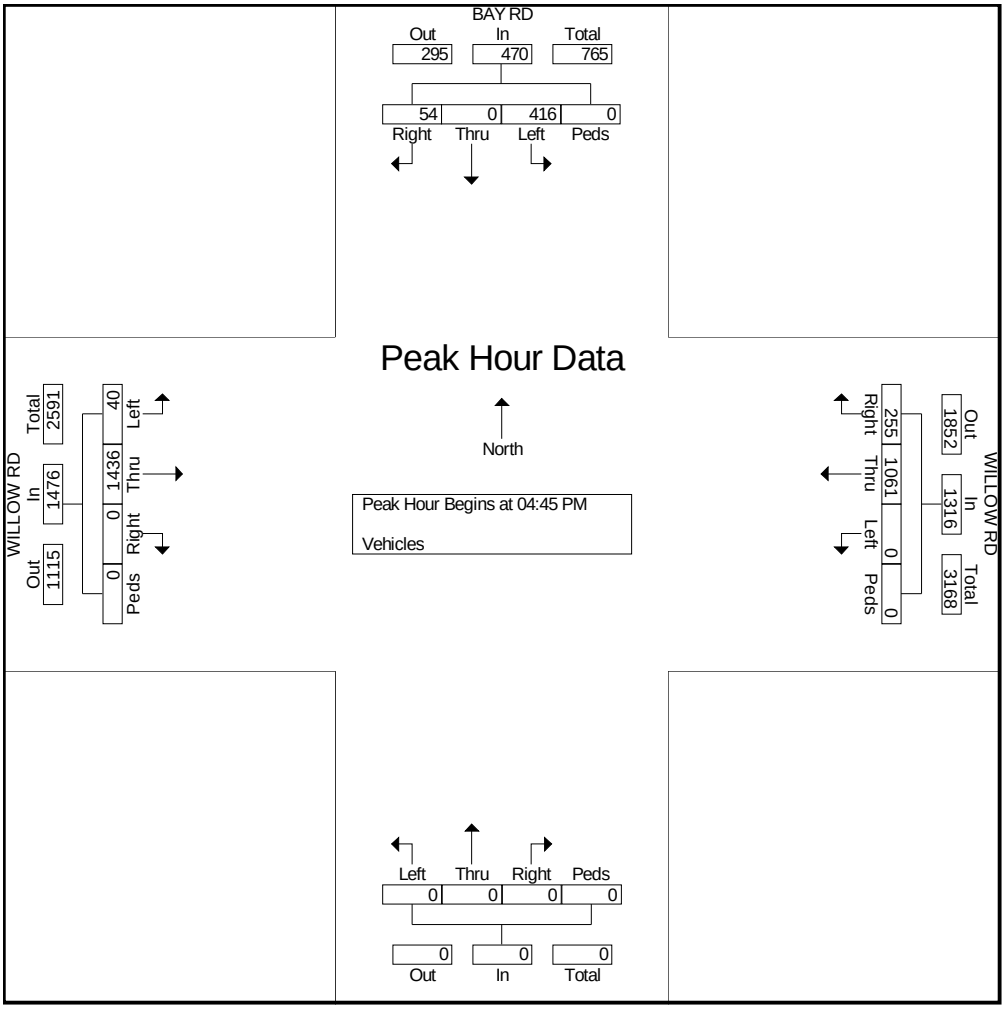

# Traffic Data Service

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File Name : 20AM FINAL
Site Code : 00000020
Start Date : 11/16/2010
Page No : 1

**Groups Printed- Vehicles**

| | HOSPITAL PZ Southbound | | | | | WILLOW RD Westbound | | | | | DURHAM ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 2 | 2 | 11 | 0 | 15 | 54 | 237 | 9 | 0 | 300 | 7 | 5 | 5 | 0 | 17 | 2 | 163 | 4 | 0 | 169 | 501 |
| 07:15 AM | 3 | 4 | 8 | 0 | 15 | 40 | 233 | 11 | 0 | 284 | 17 | 4 | 7 | 0 | 28 | 2 | 184 | 1 | 0 | 187 | 514 |
| 07:30 AM | 1 | 0 | 19 | 0 | 20 | 31 | 228 | 8 | 0 | 267 | 23 | 6 | 14 | 0 | 43 | 2 | 226 | 5 | 0 | 233 | 563 |
| 07:45 AM | 0 | 1 | 2 | 0 | 3 | 37 | 206 | 9 | 0 | 252 | 25 | 2 | 15 | 0 | 42 | 3 | 268 | 2 | 0 | 273 | 570 |
| Total | 6 | 7 | 40 | 0 | 53 | 162 | 904 | 37 | 0 | 1103 | 72 | 17 | 41 | 0 | 130 | 9 | 841 | 12 | 0 | 862 | 2148 |
| 08:00 AM | 0 | 0 | 4 | 0 | 4 | 42 | 192 | 13 | 0 | 247 | 46 | 2 | 19 | 0 | 67 | 1 | 251 | 3 | 0 | 255 | 573 |
| 08:15 AM | 1 | 1 | 13 | 0 | 15 | 32 | 224 | 11 | 0 | 267 | 31 | 6 | 14 | 0 | 51 | 3 | 256 | 2 | 0 | 261 | 594 |
| 08:30 AM | 0 | 1 | 9 | 0 | 10 | 24 | 226 | 16 | 0 | 266 | 25 | 5 | 10 | 0 | 40 | 1 | 231 | 5 | 0 | 237 | 553 |
| 08:45 AM | 0 | 1 | 14 | 0 | 15 | 33 | 197 | 11 | 0 | 241 | 32 | 2 | 14 | 0 | 48 | 2 | 223 | 6 | 0 | 231 | 535 |
| Total | 1 | 3 | 40 | 0 | 44 | 131 | 839 | 51 | 0 | 1021 | 134 | 15 | 57 | 0 | 206 | 7 | 961 | 16 | 0 | 984 | 2255 |
| Grand Total | 7 | 10 | 80 | 0 | 97 | 293 | 1743 | 88 | 0 | 2124 | 206 | 32 | 98 | 0 | 336 | 16 | 1802 | 28 | 0 | 1846 | 4403 |
| Apprch % | 7.2 | 10.3 | 82.5 | 0 | | 13.8 | 82.1 | 4.1 | 0 | | 61.3 | 9.5 | 29.2 | 0 | | 0.9 | 97.6 | 1.5 | 0 | | |
| Total % | 0.2 | 0.2 | 1.8 | 0 | 2.2 | 6.7 | 39.6 | 2 | 0 | 48.2 | 4.7 | 0.7 | 2.2 | 0 | 7.6 | 0.4 | 40.9 | 0.6 | 0 | 41.9 | |

| | HOSPITAL PZ Southbound | | | | | WILLOW RD Westbound | | | | | DURHAM ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 1 | 0 | 19 | 0 | 20 | 31 | 228 | 8 | 0 | 267 | 23 | 6 | 14 | 0 | 43 | 2 | 226 | 5 | 0 | 233 | 563 |
| 07:45 AM | 0 | 1 | 2 | 0 | 3 | 37 | 206 | 9 | 0 | 252 | 25 | 2 | 15 | 0 | 42 | 3 | 268 | 2 | 0 | 273 | 570 |
| 08:00 AM | 0 | 0 | 4 | 0 | 4 | 42 | 192 | 13 | 0 | 247 | 46 | 2 | 19 | 0 | 67 | 1 | 251 | 3 | 0 | 255 | 573 |
| 08:15 AM | 1 | 1 | 13 | 0 | 15 | 32 | 224 | 11 | 0 | 267 | 31 | 6 | 14 | 0 | 51 | 3 | 256 | 2 | 0 | 261 | 594 |
| Total Volume | 2 | 2 | 38 | 0 | 42 | 142 | 850 | 41 | 0 | 1033 | 125 | 16 | 62 | 0 | 203 | 9 | 1001 | 12 | 0 | 1022 | 2300 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .500 | .500 | .500 | .000 | .525 | .845 | .932 | .788 | .000 | .967 | .679 | .667 | .816 | .000 | .757 | .750 | .934 | .600 | .000 | .936 | .968 |

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File Name : 20AM FINAL
Site Code : 00000020
Start Date : 11/16/2010
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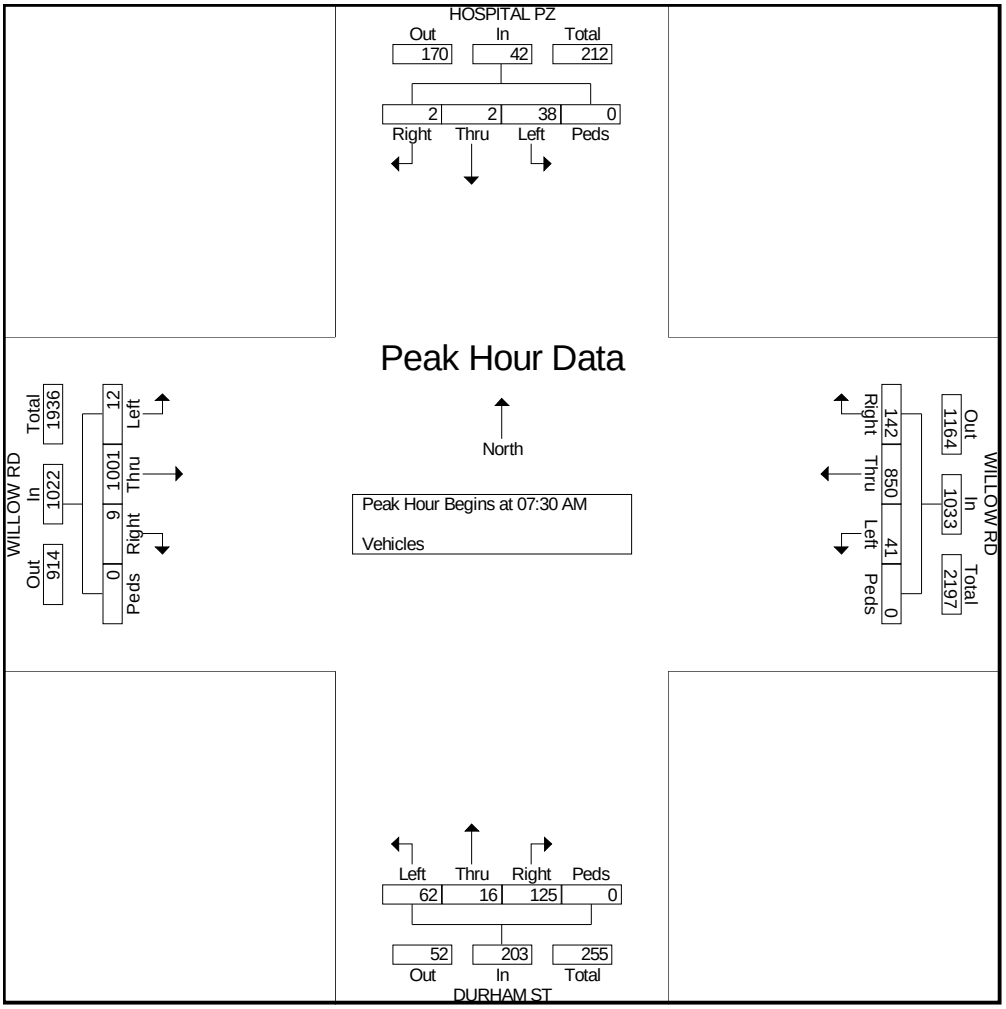

# Traffic Data Service

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File Name : 20PM FINAL
Site Code : 00000020
Start Date : 11/16/2010
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**Groups Printed- Vehicles**

| | HOSPITAL PZ Southbound | | | | | WILLOW RD Westbound | | | | | DURHAM ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 7 | 1 | 57 | 0 | 65 | 6 | 162 | 15 | 0 | 183 | 17 | 4 | 7 | 0 | 28 | 2 | 275 | 1 | 0 | 278 | 554 |
| 04:15 PM | 6 | 2 | 34 | 0 | 42 | 11 | 170 | 32 | 0 | 213 | 25 | 0 | 8 | 0 | 33 | 5 | 294 | 2 | 0 | 301 | 589 |
| 04:30 PM | 1 | 1 | 63 | 0 | 65 | 9 | 174 | 24 | 0 | 207 | 16 | 1 | 5 | 0 | 22 | 2 | 238 | 3 | 0 | 243 | 537 |
| 04:45 PM | 7 | 1 | 28 | 0 | 36 | 17 | 185 | 24 | 0 | 226 | 20 | 1 | 12 | 0 | 33 | 2 | 281 | 2 | 0 | 285 | 580 |
| Total | 21 | 5 | 182 | 0 | 208 | 43 | 691 | 95 | 0 | 829 | 78 | 6 | 32 | 0 | 116 | 11 | 1088 | 8 | 0 | 1107 | 2260 |
| 05:00 PM | 9 | 1 | 35 | 0 | 45 | 16 | 206 | 25 | 0 | 247 | 23 | 2 | 9 | 0 | 34 | 5 | 291 | 0 | 0 | 296 | 622 |
| 05:15 PM | 9 | 0 | 30 | 0 | 39 | 5 | 187 | 19 | 0 | 211 | 28 | 2 | 9 | 0 | 39 | 0 | 277 | 3 | 0 | 280 | 569 |
| 05:30 PM | 6 | 3 | 29 | 0 | 38 | 13 | 240 | 22 | 0 | 275 | 14 | 2 | 3 | 0 | 19 | 3 | 276 | 6 | 0 | 285 | 617 |
| 05:45 PM | 0 | 1 | 20 | 0 | 21 | 6 | 231 | 28 | 0 | 265 | 26 | 1 | 4 | 0 | 31 | 3 | 256 | 2 | 0 | 261 | 578 |
| Total | 24 | 5 | 114 | 0 | 143 | 40 | 864 | 94 | 0 | 998 | 91 | 7 | 25 | 0 | 123 | 11 | 1100 | 11 | 0 | 1122 | 2386 |
| Grand Total | 45 | 10 | 296 | 0 | 351 | 83 | 1555 | 189 | 0 | 1827 | 169 | 13 | 57 | 0 | 239 | 22 | 2188 | 19 | 0 | 2229 | 4646 |
| Apprch % | 12.8 | 2.8 | 84.3 | 0 | | 4.5 | 85.1 | 10.3 | 0 | | 70.7 | 5.4 | 23.8 | 0 | | 1 | 98.2 | 0.9 | 0 | | |
| Total % | 1 | 0.2 | 6.4 | 0 | 7.6 | 1.8 | 33.5 | 4.1 | 0 | 39.3 | 3.6 | 0.3 | 1.2 | 0 | 5.1 | 0.5 | 47.1 | 0.4 | 0 | 48 | |

| | HOSPITAL PZ Southbound | | | | | WILLOW RD Westbound | | | | | DURHAM ST Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 7 | 1 | 28 | 0 | 36 | 17 | 185 | 24 | 0 | 226 | 20 | 1 | 12 | 0 | 33 | 2 | 281 | 2 | 0 | 285 | 580 |
| 05:00 PM | 9 | 1 | 35 | 0 | 45 | 16 | 206 | 25 | 0 | 247 | 23 | 2 | 9 | 0 | 34 | 5 | 291 | 0 | 0 | 296 | 622 |
| 05:15 PM | 9 | 0 | 30 | 0 | 39 | 5 | 187 | 19 | 0 | 211 | 28 | 2 | 9 | 0 | 39 | 0 | 277 | 3 | 0 | 280 | 569 |
| 05:30 PM | 6 | 3 | 29 | 0 | 38 | 13 | 240 | 22 | 0 | 275 | 14 | 2 | 3 | 0 | 19 | 3 | 276 | 6 | 0 | 285 | 617 |
| Total Volume | 31 | 5 | 122 | 0 | 158 | 51 | 818 | 90 | 0 | 959 | 85 | 7 | 33 | 0 | 125 | 10 | 1125 | 11 | 0 | 1146 | 2388 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .861 | .417 | .871 | .000 | .878 | .750 | .852 | .900 | .000 | .872 | .759 | .875 | .688 | .000 | .801 | .500 | .966 | .458 | .000 | .968 | .960 |

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File Name : 20PM FINAL
Site Code : 00000020
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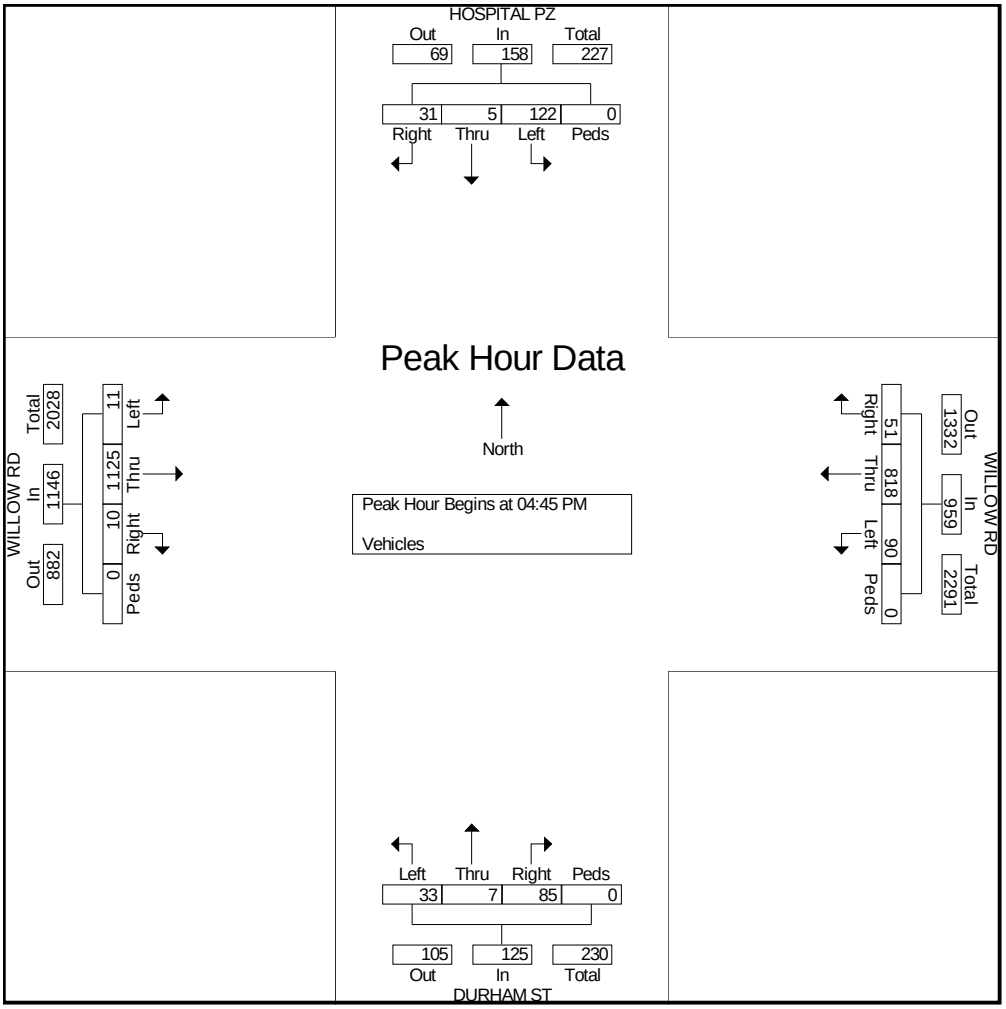

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File Name : 21AM FINAL
Site Code : 00000021
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | COLEMAN AVE Southbound | | | | | WILLOW RD Westbound | | | | | COLEMAN AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 3 | 0 | 23 | 0 | 26 | 15 | 221 | 1 | 0 | 237 | 1 | 0 | 0 | 0 | 1 | 0 | 137 | 2 | 0 | 139 | 403 |
| 07:15 AM | 4 | 0 | 31 | 0 | 35 | 10 | 239 | 3 | 0 | 252 | 0 | 0 | 1 | 0 | 1 | 1 | 163 | 3 | 0 | 167 | 455 |
| 07:30 AM | 9 | 0 | 37 | 0 | 46 | 10 | 205 | 1 | 0 | 216 | 2 | 0 | 0 | 0 | 2 | 0 | 195 | 0 | 0 | 195 | 459 |
| 07:45 AM | 6 | 0 | 31 | 0 | 37 | 14 | 227 | 4 | 0 | 245 | 2 | 1 | 1 | 0 | 4 | 3 | 236 | 3 | 0 | 242 | 528 |
| Total | 22 | 0 | 122 | 0 | 144 | 49 | 892 | 9 | 0 | 950 | 5 | 1 | 2 | 0 | 8 | 4 | 731 | 8 | 0 | 743 | 1845 |
| 08:00 AM | 5 | 0 | 42 | 0 | 47 | 26 | 192 | 0 | 0 | 218 | 0 | 0 | 0 | 0 | 0 | 1 | 238 | 8 | 0 | 247 | 512 |
| 08:15 AM | 25 | 5 | 34 | 0 | 64 | 10 | 192 | 1 | 0 | 203 | 2 | 0 | 2 | 0 | 4 | 1 | 221 | 6 | 0 | 228 | 499 |
| 08:30 AM | 12 | 1 | 35 | 0 | 48 | 12 | 243 | 1 | 0 | 256 | 4 | 2 | 0 | 0 | 6 | 0 | 197 | 0 | 0 | 197 | 507 |
| 08:45 AM | 7 | 0 | 46 | 0 | 53 | 14 | 227 | 1 | 0 | 242 | 1 | 0 | 2 | 0 | 3 | 0 | 191 | 5 | 0 | 196 | 494 |
| Total | 49 | 6 | 157 | 0 | 212 | 62 | 854 | 3 | 0 | 919 | 7 | 2 | 4 | 0 | 13 | 2 | 847 | 19 | 0 | 868 | 2012 |
| Grand Total | 71 | 6 | 279 | 0 | 356 | 111 | 1746 | 12 | 0 | 1869 | 12 | 3 | 6 | 0 | 21 | 6 | 1578 | 27 | 0 | 1611 | 3857 |
| Apprch % | 19.9 | 1.7 | 78.4 | 0 | | 5.9 | 93.4 | 0.6 | 0 | | 57.1 | 14.3 | 28.6 | 0 | | 0.4 | 98 | 1.7 | 0 | | |
| Total % | 1.8 | 0.2 | 7.2 | 0 | 9.2 | 2.9 | 45.3 | 0.3 | 0 | 48.5 | 0.3 | 0.1 | 0.2 | 0 | 0.5 | 0.2 | 40.9 | 0.7 | 0 | 41.8 | |

| | COLEMAN AVE Southbound | | | | | WILLOW RD Westbound | | | | | COLEMAN AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 6 | 0 | 31 | 0 | 37 | 14 | 227 | 4 | 0 | 245 | 2 | 1 | 1 | 0 | 4 | 3 | 236 | 3 | 0 | 242 | 528 |
| 08:00 AM | 5 | 0 | 42 | 0 | 47 | 26 | 192 | 0 | 0 | 218 | 0 | 0 | 0 | 0 | 0 | 1 | 238 | 8 | 0 | 247 | 512 |
| 08:15 AM | 25 | 5 | 34 | 0 | 64 | 10 | 192 | 1 | 0 | 203 | 2 | 0 | 2 | 0 | 4 | 1 | 221 | 6 | 0 | 228 | 499 |
| 08:30 AM | 12 | 1 | 35 | 0 | 48 | 12 | 243 | 1 | 0 | 256 | 4 | 2 | 0 | 0 | 6 | 0 | 197 | 0 | 0 | 197 | 507 |
| Total Volume | 48 | 6 | 142 | 0 | 196 | 62 | 854 | 6 | 0 | 922 | 8 | 3 | 3 | 0 | 14 | 5 | 892 | 17 | 0 | 914 | 2046 |
| % App. Total | 24.5 | 3.1 | 72.4 | 0 | | 6.7 | 92.6 | 0.7 | 0 | | 57.1 | 21.4 | 21.4 | 0 | | 0.5 | 97.6 | 1.9 | 0 | | |
| PHF | .480 | .300 | .845 | .000 | .766 | .596 | .879 | .375 | .000 | .900 | .500 | .375 | .375 | .000 | .583 | .417 | .937 | .531 | .000 | .925 | .969 |

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File Name : 21AM FINAL
Site Code : 00000021
Start Date : 11/10/2010
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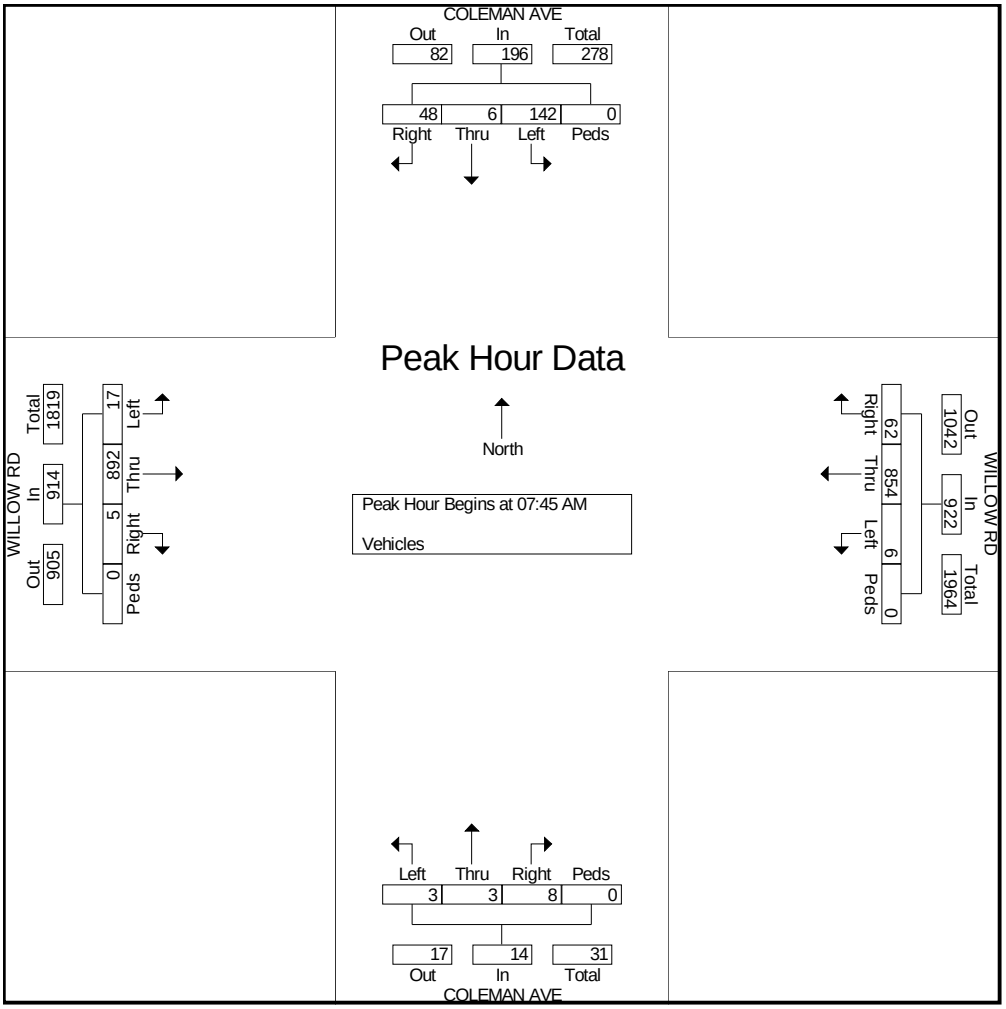

# Traffic Data Service

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File Name : 21PM FINAL
Site Code : 00000021
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | COLEMAN AVE Southbound | | | | | WILLOW RD Westbound | | | | | COLEMAN AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 9 | 2 | 24 | 0 | 35 | 19 | 166 | 5 | 0 | 190 | 4 | 4 | 5 | 0 | 13 | 5 | 260 | 2 | 0 | 267 | 505 |
| 04:15 PM | 5 | 3 | 20 | 0 | 28 | 16 | 152 | 5 | 0 | 173 | 4 | 3 | 1 | 0 | 8 | 0 | 253 | 4 | 0 | 257 | 466 |
| 04:30 PM | 6 | 0 | 18 | 0 | 24 | 14 | 166 | 1 | 0 | 181 | 0 | 2 | 0 | 0 | 2 | 0 | 263 | 5 | 0 | 268 | 475 |
| 04:45 PM | 6 | 1 | 19 | 0 | 26 | 17 | 203 | 2 | 0 | 222 | 2 | 0 | 1 | 0 | 3 | 2 | 274 | 0 | 0 | 276 | 527 |
| Total | 26 | 6 | 81 | 0 | 113 | 66 | 687 | 13 | 0 | 766 | 10 | 9 | 7 | 0 | 26 | 7 | 1050 | 11 | 0 | 1068 | 1973 |
| 05:00 PM | 8 | 2 | 28 | 0 | 38 | 21 | 188 | 2 | 0 | 211 | 2 | 1 | 1 | 0 | 4 | 2 | 279 | 6 | 0 | 287 | 540 |
| 05:15 PM | 5 | 2 | 17 | 0 | 24 | 23 | 202 | 2 | 0 | 227 | 2 | 4 | 3 | 0 | 9 | 2 | 255 | 5 | 0 | 262 | 522 |
| 05:30 PM | 11 | 2 | 25 | 0 | 38 | 30 | 202 | 1 | 0 | 233 | 2 | 4 | 8 | 0 | 14 | 2 | 274 | 6 | 0 | 282 | 567 |
| 05:45 PM | 11 | 0 | 22 | 0 | 33 | 35 | 203 | 0 | 0 | 238 | 1 | 2 | 0 | 0 | 3 | 0 | 275 | 7 | 0 | 282 | 556 |
| Total | 35 | 6 | 92 | 0 | 133 | 109 | 795 | 5 | 0 | 909 | 7 | 11 | 12 | 0 | 30 | 6 | 1083 | 24 | 0 | 1113 | 2185 |
| Grand Total | 61 | 12 | 173 | 0 | 246 | 175 | 1482 | 18 | 0 | 1675 | 17 | 20 | 19 | 0 | 56 | 13 | 2133 | 35 | 0 | 2181 | 4158 |
| Apprch % | 24.8 | 4.9 | 70.3 | 0 | | 10.4 | 88.5 | 1.1 | 0 | | 30.4 | 35.7 | 33.9 | 0 | | 0.6 | 97.8 | 1.6 | 0 | | |
| Total % | 1.5 | 0.3 | 4.2 | 0 | 5.9 | 4.2 | 35.6 | 0.4 | 0 | 40.3 | 0.4 | 0.5 | 0.5 | 0 | 1.3 | 0.3 | 51.3 | 0.8 | 0 | 52.5 | |

| | COLEMAN AVE Southbound | | | | | WILLOW RD Westbound | | | | | COLEMAN AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 8 | 2 | 28 | 0 | 38 | 21 | 188 | 2 | 0 | 211 | 2 | 1 | 1 | 0 | 4 | 2 | 279 | 6 | 0 | 287 | 540 |
| 05:15 PM | 5 | 2 | 17 | 0 | 24 | 23 | 202 | 2 | 0 | 227 | 2 | 4 | 3 | 0 | 9 | 2 | 255 | 5 | 0 | 262 | 522 |
| 05:30 PM | 11 | 2 | 25 | 0 | 38 | 30 | 202 | 1 | 0 | 233 | 2 | 4 | 8 | 0 | 14 | 2 | 274 | 6 | 0 | 282 | 567 |
| 05:45 PM | 11 | 0 | 22 | 0 | 33 | 35 | 203 | 0 | 0 | 238 | 1 | 2 | 0 | 0 | 3 | 0 | 275 | 7 | 0 | 282 | 556 |
| Total Volume | 35 | 6 | 92 | 0 | 133 | 109 | 795 | 5 | 0 | 909 | 7 | 11 | 12 | 0 | 30 | 6 | 1083 | 24 | 0 | 1113 | 2185 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .795 | .750 | .821 | .000 | .875 | .779 | .979 | .625 | .000 | .955 | .875 | .688 | .375 | .000 | .536 | .750 | .970 | .857 | .000 | .970 | .963 |

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File Name : 21PM FINAL
Site Code : 00000021
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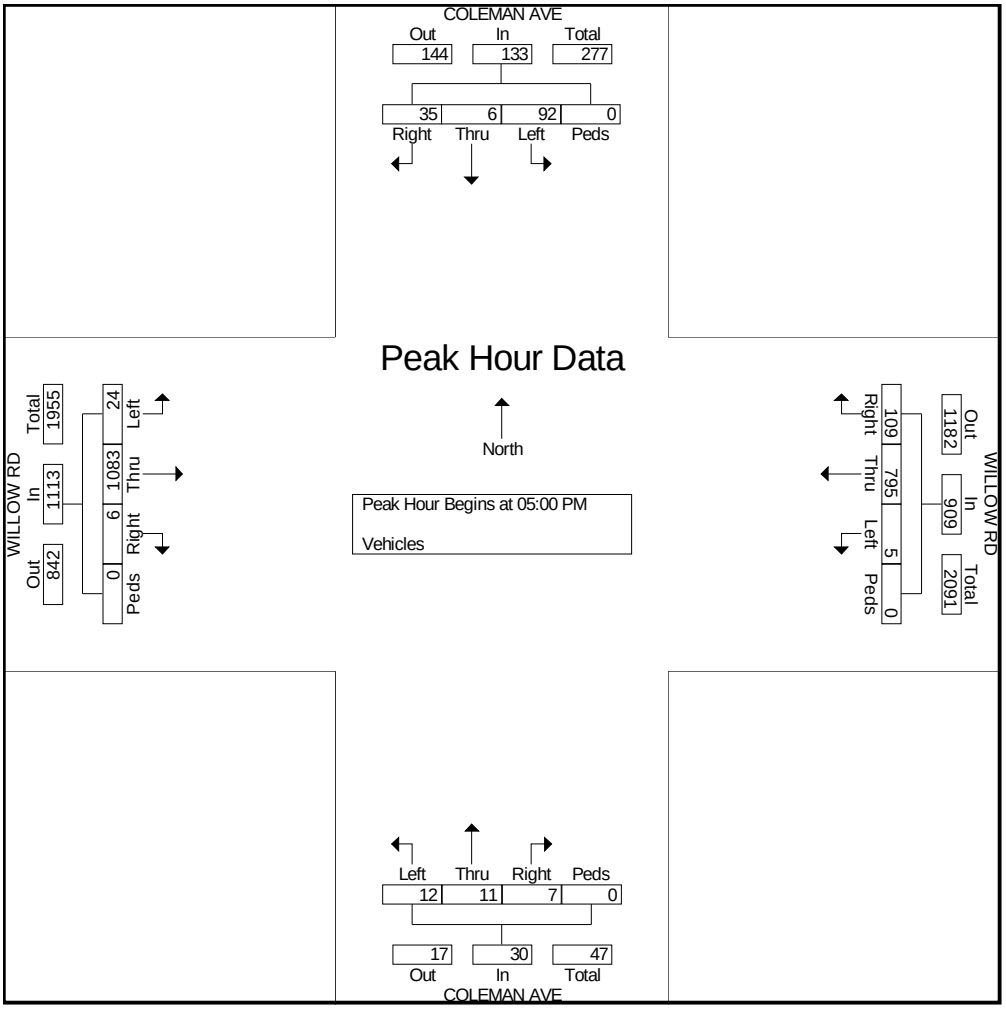

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File Name : 22AM FINAL
Site Code : 00000022
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | GILBERT AVE Southbound | | | | | WILLOW RD Westbound | | | | | GILBERT AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 2 | 1 | 8 | 0 | 11 | 3 | 220 | 4 | 0 | 227 | 14 | 0 | 12 | 0 | 26 | 4 | 121 | 1 | 0 | 126 | 390 |
| 07:15 AM | 0 | 1 | 3 | 0 | 4 | 2 | 237 | 10 | 0 | 249 | 20 | 5 | 15 | 0 | 40 | 8 | 135 | 0 | 0 | 143 | 436 |
| 07:30 AM | 3 | 2 | 6 | 0 | 11 | 2 | 204 | 6 | 0 | 212 | 23 | 7 | 22 | 0 | 52 | 13 | 179 | 1 | 0 | 193 | 468 |
| 07:45 AM | 3 | 5 | 4 | 0 | 12 | 1 | 227 | 12 | 0 | 240 | 29 | 15 | 35 | 0 | 79 | 14 | 220 | 0 | 0 | 234 | 565 |
| Total | 8 | 9 | 21 | 0 | 38 | 8 | 888 | 32 | 0 | 928 | 86 | 27 | 84 | 0 | 197 | 39 | 655 | 2 | 0 | 696 | 1859 |
| 08:00 AM | 0 | 14 | 6 | 0 | 20 | 2 | 187 | 13 | 0 | 202 | 45 | 43 | 23 | 0 | 111 | 28 | 208 | 2 | 0 | 238 | 571 |
| 08:15 AM | 2 | 17 | 12 | 0 | 31 | 1 | 208 | 11 | 0 | 220 | 19 | 13 | 19 | 0 | 51 | 20 | 191 | 2 | 0 | 213 | 515 |
| 08:30 AM | 2 | 5 | 9 | 0 | 16 | 1 | 247 | 5 | 0 | 253 | 29 | 14 | 24 | 0 | 67 | 10 | 175 | 0 | 0 | 185 | 521 |
| 08:45 AM | 3 | 9 | 5 | 0 | 17 | 0 | 260 | 5 | 0 | 265 | 19 | 13 | 25 | 0 | 57 | 14 | 175 | 1 | 0 | 190 | 529 |
| Total | 7 | 45 | 32 | 0 | 84 | 4 | 902 | 34 | 0 | 940 | 112 | 83 | 91 | 0 | 286 | 72 | 749 | 5 | 0 | 826 | 2136 |
| Grand Total | 15 | 54 | 53 | 0 | 122 | 12 | 1790 | 66 | 0 | 1868 | 198 | 110 | 175 | 0 | 483 | 111 | 1404 | 7 | 0 | 1522 | 3995 |
| Apprch % | 12.3 | 44.3 | 43.4 | 0 | | 0.6 | 95.8 | 3.5 | 0 | | 41 | 22.8 | 36.2 | 0 | | 7.3 | 92.2 | 0.5 | 0 | | |
| Total % | 0.4 | 1.4 | 1.3 | 0 | 3.1 | 0.3 | 44.8 | 1.7 | 0 | 46.8 | 5 | 2.8 | 4.4 | 0 | 12.1 | 2.8 | 35.1 | 0.2 | 0 | 38.1 | |

| | GILBERT AVE Southbound | | | | | WILLOW RD Westbound | | | | | GILBERT AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 3 | 5 | 4 | 0 | 12 | 1 | 227 | 12 | 0 | 240 | 29 | 15 | 35 | 0 | 79 | 14 | 220 | 0 | 0 | 234 | 565 |
| 08:00 AM | 0 | 14 | 6 | 0 | 20 | 2 | 187 | 13 | 0 | 202 | 45 | 43 | 23 | 0 | 111 | 28 | 208 | 2 | 0 | 238 | 571 |
| 08:15 AM | 2 | 17 | 12 | 0 | 31 | 1 | 208 | 11 | 0 | 220 | 19 | 13 | 19 | 0 | 51 | 20 | 191 | 2 | 0 | 213 | 515 |
| 08:30 AM | 2 | 5 | 9 | 0 | 16 | 1 | 247 | 5 | 0 | 253 | 29 | 14 | 24 | 0 | 67 | 10 | 175 | 0 | 0 | 185 | 521 |
| Total Volume | 7 | 41 | 31 | 0 | 79 | 5 | 869 | 41 | 0 | 915 | 122 | 85 | 101 | 0 | 308 | 72 | 794 | 4 | 0 | 870 | 2172 |
| % App. Total | 8.9 | 51.9 | 39.2 | 0 | | 0.5 | 95 | 4.5 | 0 | | 39.6 | 27.6 | 32.8 | 0 | | 8.3 | 91.3 | 0.5 | 0 | | |
| PHF | .583 | .603 | .646 | .000 | .637 | .625 | .880 | .788 | .000 | .904 | .678 | .494 | .721 | .000 | .694 | .643 | .902 | .500 | .000 | .914 | .951 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
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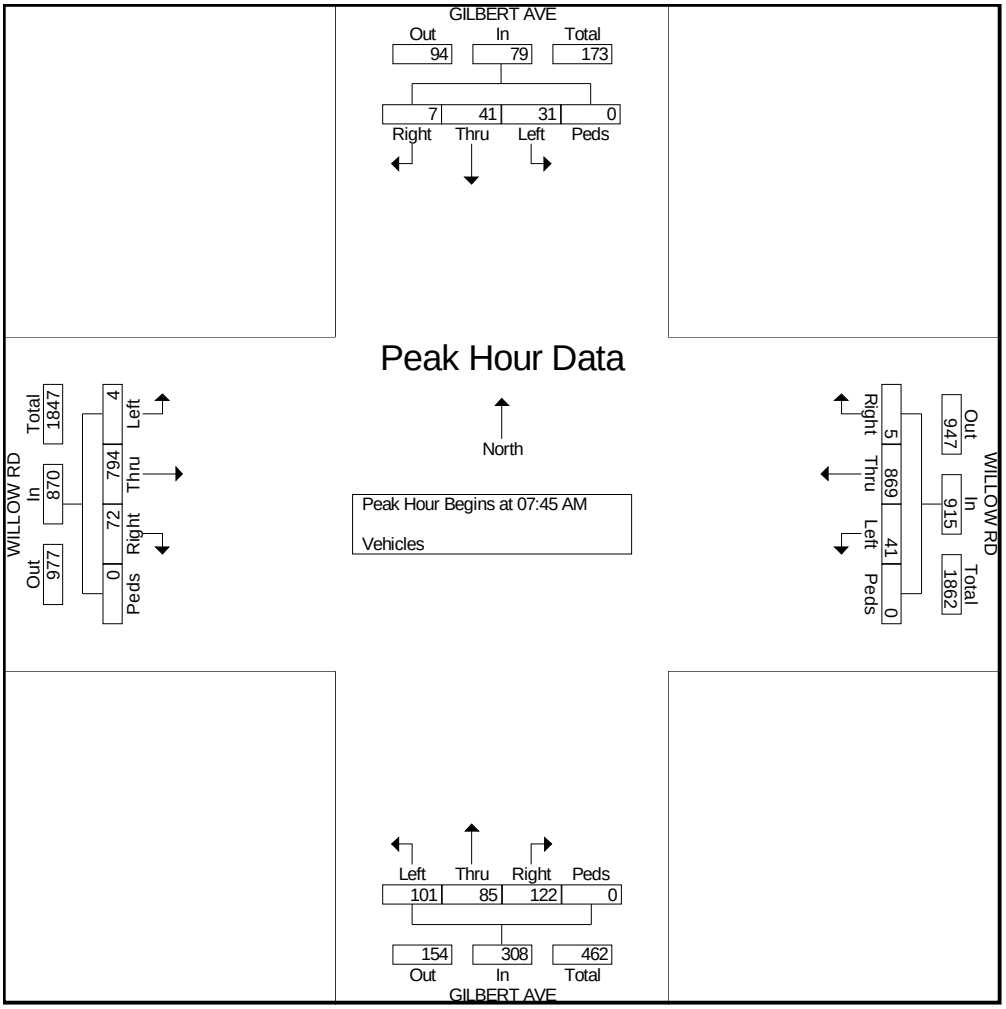
File Name : 22AM FINAL
Site Code : 00000022
Start Date : 11/10/2010
Page No : 2



Traffic Data Service
Campbell, CA
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***tdsbay@cs.com***

File Name : 22PM FINAL
Site Code : 00000022
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | GILBERT AVE Southbound | | | | | WILLOW RD Westbound | | | | | GILBERT AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 1 | 5 | 0 | 6 | 5 | 172 | 13 | 0 | 190 | 11 | 10 | 18 | 0 | 39 | 16 | 253 | 1 | 0 | 270 | 505 |
| 04:15 PM | 2 | 4 | 4 | 0 | 10 | 1 | 155 | 9 | 0 | 165 | 19 | 6 | 16 | 0 | 41 | 18 | 230 | 0 | 0 | 248 | 464 |
| 04:30 PM | 1 | 5 | 7 | 0 | 13 | 5 | 147 | 12 | 0 | 164 | 17 | 5 | 33 | 0 | 55 | 8 | 237 | 1 | 0 | 246 | 478 |
| 04:45 PM | 1 | 2 | 6 | 0 | 9 | 1 | 196 | 12 | 0 | 209 | 17 | 4 | 16 | 0 | 37 | 10 | 256 | 1 | 0 | 267 | 522 |
| Total | 4 | 12 | 22 | 0 | 38 | 12 | 670 | 46 | 0 | 728 | 64 | 25 | 83 | 0 | 172 | 52 | 976 | 3 | 0 | 1031 | 1969 |
| 05:00 PM | 1 | 6 | 9 | 0 | 16 | 3 | 198 | 10 | 0 | 211 | 16 | 5 | 18 | 0 | 39 | 12 | 232 | 1 | 0 | 245 | 511 |
| 05:15 PM | 1 | 7 | 6 | 0 | 14 | 6 | 182 | 8 | 0 | 196 | 23 | 11 | 22 | 0 | 56 | 5 | 232 | 0 | 0 | 237 | 503 |
| 05:30 PM | 1 | 11 | 10 | 0 | 22 | 2 | 238 | 9 | 0 | 249 | 16 | 7 | 26 | 0 | 49 | 7 | 255 | 1 | 0 | 263 | 583 |
| 05:45 PM | 1 | 6 | 4 | 0 | 11 | 6 | 214 | 10 | 0 | 230 | 20 | 8 | 26 | 0 | 54 | 12 | 250 | 2 | 0 | 264 | 559 |
| Total | 4 | 30 | 29 | 0 | 63 | 17 | 832 | 37 | 0 | 886 | 75 | 31 | 92 | 0 | 198 | 36 | 969 | 4 | 0 | 1009 | 2156 |
| Grand Total | 8 | 42 | 51 | 0 | 101 | 29 | 1502 | 83 | 0 | 1614 | 139 | 56 | 175 | 0 | 370 | 88 | 1945 | 7 | 0 | 2040 | 4125 |
| Apprch % | 7.9 | 41.6 | 50.5 | 0 | | 1.8 | 93.1 | 5.1 | 0 | | 37.6 | 15.1 | 47.3 | 0 | | 4.3 | 95.3 | 0.3 | 0 | | |
| Total % | 0.2 | 1 | 1.2 | 0 | 2.4 | 0.7 | 36.4 | 2 | 0 | 39.1 | 3.4 | 1.4 | 4.2 | 0 | 9 | 2.1 | 47.2 | 0.2 | 0 | 49.5 | |

| | GILBERT AVE Southbound | | | | | WILLOW RD Westbound | | | | | GILBERT AVE Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 1 | 6 | 9 | 0 | 16 | 3 | 198 | 10 | 0 | 211 | 16 | 5 | 18 | 0 | 39 | 12 | 232 | 1 | 0 | 245 | 511 |
| 05:15 PM | 1 | 7 | 6 | 0 | 14 | 6 | 182 | 8 | 0 | 196 | 23 | 11 | 22 | 0 | 56 | 5 | 232 | 0 | 0 | 237 | 503 |
| 05:30 PM | 1 | 11 | 10 | 0 | 22 | 2 | 238 | 9 | 0 | 249 | 16 | 7 | 26 | 0 | 49 | 7 | 255 | 1 | 0 | 263 | 583 |
| 05:45 PM | 1 | 6 | 4 | 0 | 11 | 6 | 214 | 10 | 0 | 230 | 20 | 8 | 26 | 0 | 54 | 12 | 250 | 2 | 0 | 264 | 559 |
| Total Volume | 4 | 30 | 29 | 0 | 63 | 17 | 832 | 37 | 0 | 886 | 75 | 31 | 92 | 0 | 198 | 36 | 969 | 4 | 0 | 1009 | 2156 |
| % App. Total | 6.3 | 47.6 | 46 | 0 | | 1.9 | 93.9 | 4.2 | 0 | | 37.9 | 15.7 | 46.5 | 0 | | 3.6 | 96 | 0.4 | 0 | | |
| PHF | 1.000 | .682 | .725 | .000 | .716 | .708 | .874 | .925 | .000 | .890 | .815 | .705 | .885 | .000 | .884 | .750 | .950 | .500 | .000 | .955 | .925 |

Traffic Data Service
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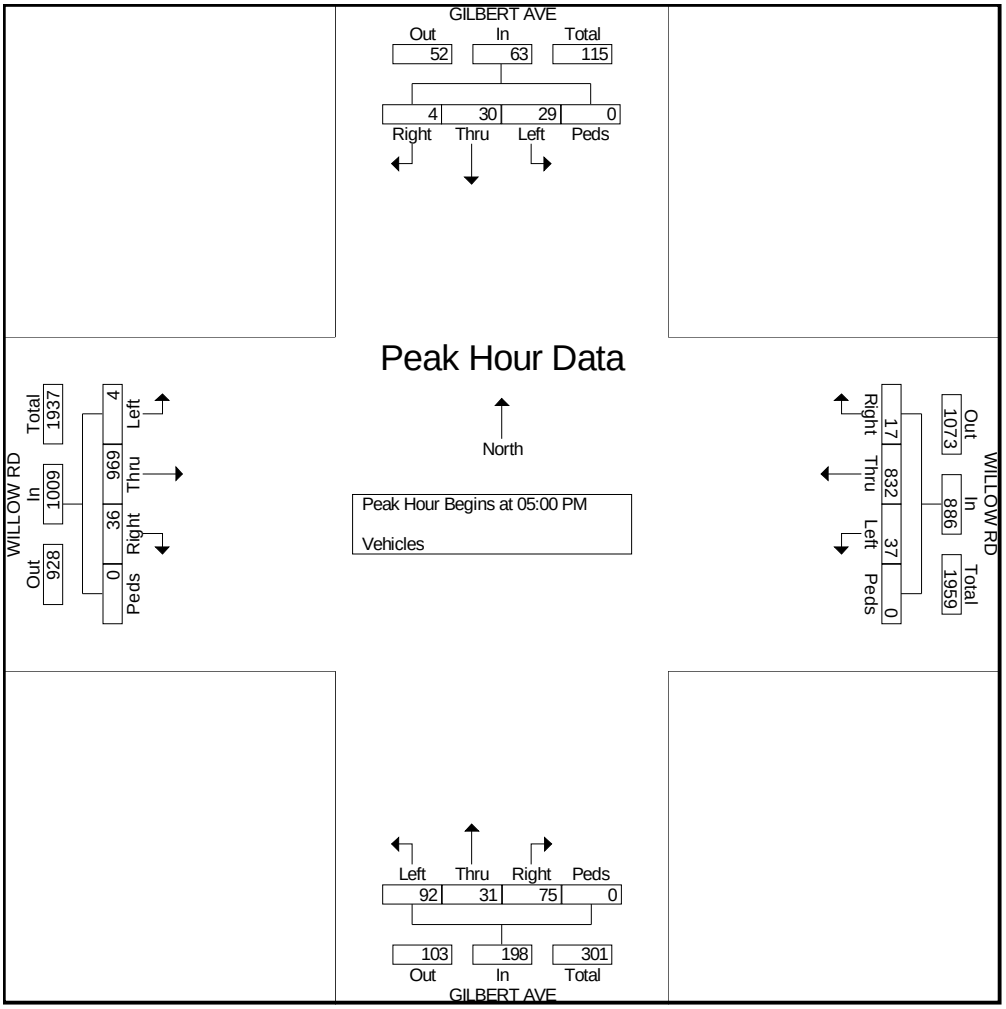
File Name : 22PM FINAL
Site Code : 00000022
Start Date : 11/10/2010
Page No : 2



Traffic Data Service
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***tdsbay@cs.com***

File Name : 10AM FINAL
Site Code : 00000010
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | WILLOW RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 30 | 55 | 0 | 85 | 123 | 11 | 79 | 0 | 213 | 43 | 25 | 7 | 0 | 75 | 13 | 26 | 1 | 0 | 40 | 413 |
| 07:15 AM | 1 | 43 | 60 | 0 | 104 | 121 | 15 | 106 | 0 | 242 | 53 | 54 | 13 | 0 | 120 | 15 | 32 | 2 | 0 | 49 | 515 |
| 07:30 AM | 5 | 40 | 85 | 0 | 130 | 132 | 15 | 86 | 0 | 233 | 62 | 82 | 10 | 0 | 154 | 17 | 43 | 2 | 0 | 62 | 579 |
| 07:45 AM | 3 | 69 | 100 | 0 | 172 | 143 | 15 | 104 | 0 | 262 | 66 | 69 | 11 | 0 | 146 | 26 | 40 | 7 | 0 | 73 | 653 |
| Total | 9 | 182 | 300 | 0 | 491 | 519 | 56 | 375 | 0 | 950 | 224 | 230 | 41 | 0 | 495 | 71 | 141 | 12 | 0 | 224 | 2160 |
| 08:00 AM | 1 | 81 | 117 | 0 | 199 | 125 | 17 | 82 | 0 | 224 | 68 | 84 | 24 | 0 | 176 | 26 | 51 | 1 | 0 | 78 | 677 |
| 08:15 AM | 3 | 84 | 100 | 0 | 187 | 106 | 15 | 111 | 0 | 232 | 59 | 96 | 19 | 0 | 174 | 38 | 41 | 2 | 0 | 81 | 674 |
| 08:30 AM | 3 | 88 | 91 | 0 | 182 | 120 | 17 | 123 | 0 | 260 | 52 | 93 | 13 | 0 | 158 | 27 | 34 | 6 | 0 | 67 | 667 |
| 08:45 AM | 5 | 91 | 87 | 0 | 183 | 119 | 19 | 110 | 0 | 248 | 44 | 84 | 20 | 0 | 148 | 30 | 35 | 2 | 0 | 67 | 646 |
| Total | 12 | 344 | 395 | 0 | 751 | 470 | 68 | 426 | 0 | 964 | 223 | 357 | 76 | 0 | 656 | 121 | 161 | 11 | 0 | 293 | 2664 |
| Grand Total | 21 | 526 | 695 | 0 | 1242 | 989 | 124 | 801 | 0 | 1914 | 447 | 587 | 117 | 0 | 1151 | 192 | 302 | 23 | 0 | 517 | 4824 |
| Apprch % | 1.7 | 42.4 | 56 | 0 | | 51.7 | 6.5 | 41.8 | 0 | | 38.8 | 51 | 10.2 | 0 | | 37.1 | 58.4 | 4.4 | 0 | | |
| Total % | 0.4 | 10.9 | 14.4 | 0 | 25.7 | 20.5 | 2.6 | 16.6 | 0 | 39.7 | 9.3 | 12.2 | 2.4 | 0 | 23.9 | 4 | 6.3 | 0.5 | 0 | 10.7 | |

| | MIDDLEFIELD RD Southbound | | | | | WILLOW RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 3 | 69 | 100 | 0 | 172 | 143 | 15 | 104 | 0 | 262 | 66 | 69 | 11 | 0 | 146 | 26 | 40 | 7 | 0 | 73 | 653 |
| 08:00 AM | 1 | 81 | 117 | 0 | 199 | 125 | 17 | 82 | 0 | 224 | 68 | 84 | 24 | 0 | 176 | 26 | 51 | 1 | 0 | 78 | 677 |
| 08:15 AM | 3 | 84 | 100 | 0 | 187 | 106 | 15 | 111 | 0 | 232 | 59 | 96 | 19 | 0 | 174 | 38 | 41 | 2 | 0 | 81 | 674 |
| 08:30 AM | 3 | 88 | 91 | 0 | 182 | 120 | 17 | 123 | 0 | 260 | 52 | 93 | 13 | 0 | 158 | 27 | 34 | 6 | 0 | 67 | 667 |
| Total Volume | 10 | 322 | 408 | 0 | 740 | 494 | 64 | 420 | 0 | 978 | 245 | 342 | 67 | 0 | 654 | 117 | 166 | 16 | 0 | 299 | 2671 |
| % App. Total | 1.4 | 43.5 | 55.1 | 0 | | 50.5 | 6.5 | 42.9 | 0 | | 37.5 | 52.3 | 10.2 | 0 | | 39.1 | 55.5 | 5.4 | 0 | | |
| PHF | .833 | .915 | .872 | .000 | .930 | .864 | .941 | .854 | .000 | .933 | .901 | .891 | .698 | .000 | .929 | .770 | .814 | .571 | .000 | .923 | .986 |

Traffic Data Service
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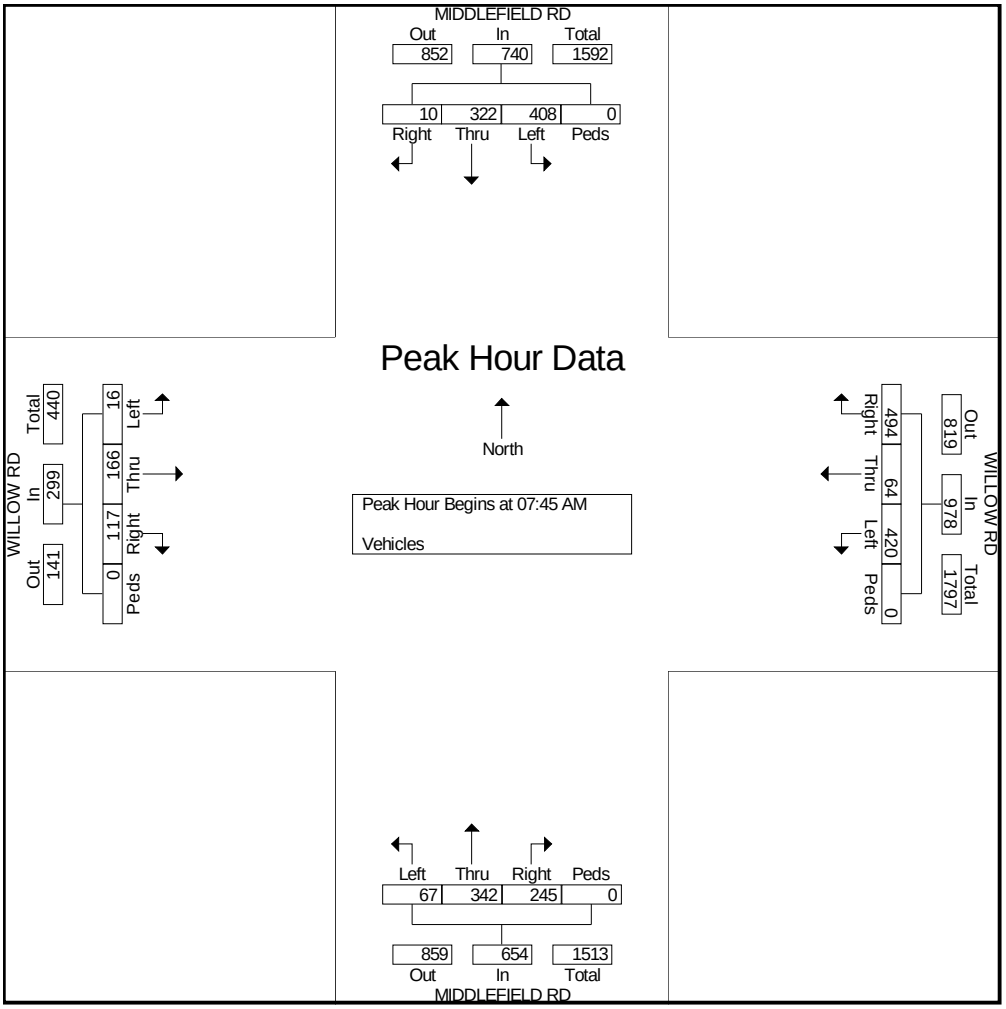
File Name : 10AM FINAL
Site Code : 00000010
Start Date : 11/10/2010
Page No : 2



# All Traffic Data

(916) 771-8700

CITY OF MENLOW PARK

File Name : 11-7184-001 WILLOW-MIDDLEFIELD
Site Code : 00000000
Start Date : 5/3/2011
Page No : 1

**Groups Printed- Unshifted**

| | WILLOW RD. Southbound | | | | MIDDLEFIELD RD. Westbound | | | | WILLOW RD. Northbound | | | | MIDDLEFIELD RD. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 08:30 | 91 | 16 | 97 | 204 | 18 | 83 | 50 | 151 | 5 | 42 | 17 | 64 | 97 | 93 | 0 | 190 | 609 |
| 08:45 | 88 | 19 | 65 | 172 | 11 | 83 | 56 | 150 | 4 | 22 | 24 | 50 | 90 | 121 | 3 | 214 | 586 |
| Total | 179 | 35 | 162 | 376 | 29 | 166 | 106 | 301 | 9 | 64 | 41 | 114 | 187 | 214 | 3 | 404 | 1195 |
| 09:00 | 79 | 16 | 54 | 149 | 15 | 77 | 61 | 153 | 3 | 25 | 20 | 48 | 81 | 111 | 6 | 198 | 548 |
| 09:15 | 97 | 11 | 66 | 174 | 19 | 64 | 44 | 127 | 3 | 27 | 12 | 42 | 70 | 79 | 6 | 155 | 498 |
| 09:30 | 106 | 16 | 88 | 210 | 17 | 57 | 47 | 121 | 3 | 22 | 10 | 35 | 61 | 75 | 1 | 137 | 503 |
| 09:45 | 84 | 19 | 68 | 171 | 10 | 76 | 42 | 128 | 6 | 23 | 17 | 46 | 100 | 83 | 2 | 185 | 530 |
| Total | 366 | 62 | 276 | 704 | 61 | 274 | 194 | 529 | 15 | 97 | 59 | 171 | 312 | 348 | 15 | 675 | 2079 |
| 10:00 | 104 | 18 | 57 | 179 | 14 | 54 | 41 | 109 | 5 | 28 | 12 | 45 | 82 | 64 | 7 | 153 | 486 |
| 10:15 | 87 | 13 | 71 | 171 | 17 | 56 | 51 | 124 | 1 | 28 | 16 | 45 | 57 | 79 | 3 | 139 | 479 |
| Grand Total | 736 | 128 | 566 | 1430 | 121 | 550 | 392 | 1063 | 30 | 217 | 128 | 375 | 638 | 705 | 28 | 1371 | 4239 |
| Apprch % | 51.5 | 9 | 39.6 | | 11.4 | 51.7 | 36.9 | | 8 | 57.9 | 34.1 | | 46.5 | 51.4 | 2 | | |
| Total % | 17.4 | 3 | 13.4 | 33.7 | 2.9 | 13 | 9.2 | 25.1 | 0.7 | 5.1 | 3 | 8.8 | 15.1 | 16.6 | 0.7 | 32.3 | |

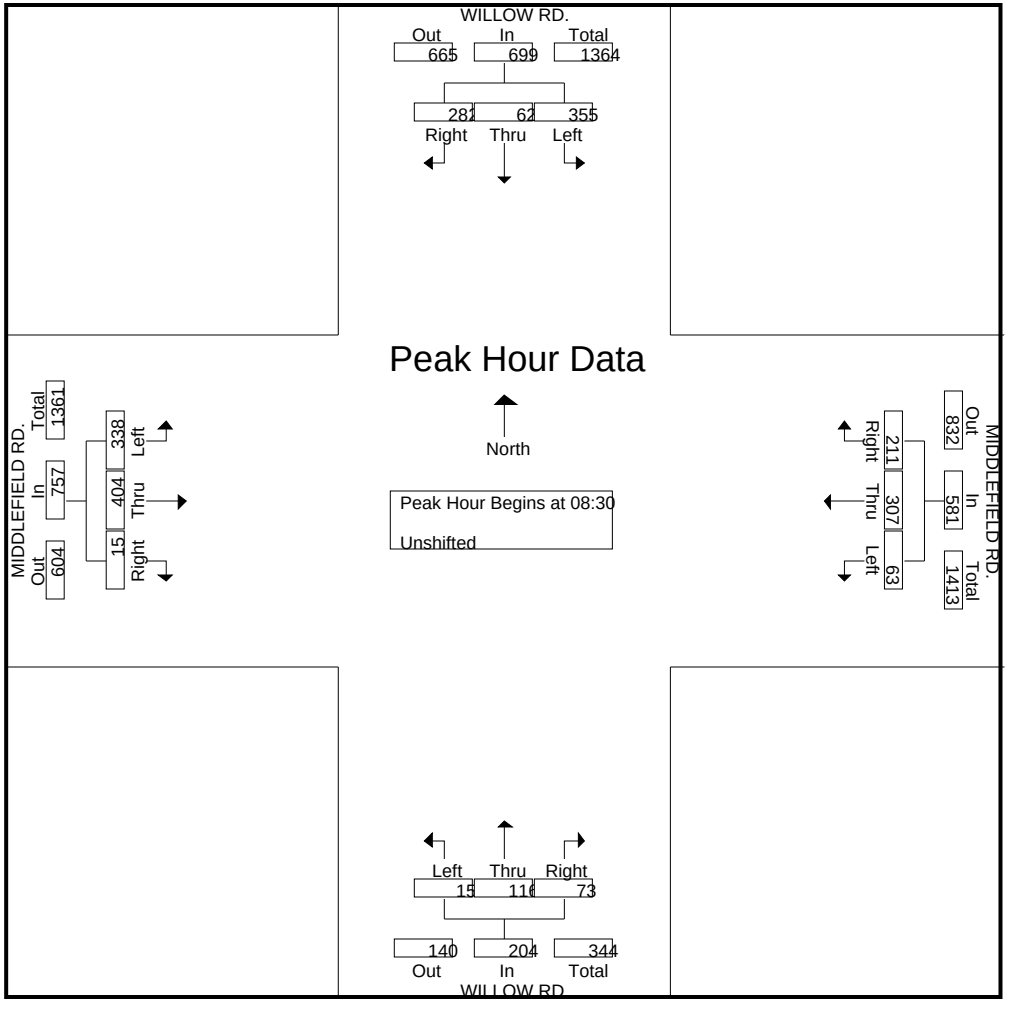
| | WILLOW RD. Southbound | | | | MIDDLEFIELD RD. Westbound | | | | WILLOW RD. Northbound | | | | MIDDLEFIELD RD. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 08:30 to 10:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:30 | | | | | | | | | | | | | | | | | |
| 08:30 | 91 | 16 | **97** | **204** | 18 | **83** | 50 | 151 | **5** | **42** | 17 | **64** | **97** | 93 | 0 | 190 | **609** |
| 08:45 | 88 | **19** | 65 | 172 | 11 | 83 | 56 | 150 | 4 | 22 | **24** | 50 | 90 | **121** | 3 | **214** | 586 |
| 09:00 | 79 | 16 | 54 | 149 | 15 | 77 | **61** | **153** | 3 | 25 | 20 | 48 | 81 | 111 | **6** | 198 | 548 |
| 09:15 | **97** | 11 | 66 | 174 | **19** | 64 | 44 | 127 | 3 | 27 | 12 | 42 | 70 | 79 | 6 | 155 | 498 |
| Total Volume | 355 | 62 | 282 | 699 | 63 | 307 | 211 | 581 | 15 | 116 | 73 | 204 | 338 | 404 | 15 | 757 | 2241 |
| % App. Total | 50.8 | 8.9 | 40.3 | | 10.8 | 52.8 | 36.3 | | 7.4 | 56.9 | 35.8 | | 44.6 | 53.4 | 2 | | |
| PHF | .915 | .816 | .727 | .857 | .829 | .925 | .865 | .949 | .750 | .690 | .760 | .797 | .871 | .835 | .625 | .884 | .920 |

# All Traffic Data

(916) 771-8700

CITY OF MENLOW PARK

File Name : 11-7184-001 WILLOW-MIDDLEFIELD
Site Code : 00000000
Start Date : 5/3/2011
Page No : 2



# Traffic Data Service

Campbell, CA

**(408) 377-2988**

***tdsbay@cs.com***


File Name : 10PM FINAL
Site Code : 00000010
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | WILLOW RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 5 | 75 | 133 | 0 | 213 | 93 | 21 | 60 | 0 | 174 | 91 | 94 | 12 | 0 | 197 | 31 | 46 | 3 | 0 | 80 | 664 |
| 04:15 PM | 3 | 88 | 118 | 0 | 209 | 79 | 23 | 74 | 0 | 176 | 104 | 107 | 20 | 0 | 231 | 30 | 26 | 4 | 0 | 60 | 676 |
| 04:30 PM | 4 | 79 | 106 | 0 | 189 | 103 | 18 | 58 | 0 | 179 | 118 | 89 | 31 | 0 | 238 | 37 | 56 | 11 | 0 | 104 | 710 |
| 04:45 PM | 4 | 85 | 101 | 0 | 190 | 97 | 20 | 82 | 0 | 199 | 143 | 110 | 20 | 0 | 273 | 43 | 43 | 10 | 0 | 96 | 758 |
| Total | 16 | 327 | 458 | 0 | 801 | 372 | 82 | 274 | 0 | 728 | 456 | 400 | 83 | 0 | 939 | 141 | 171 | 28 | 0 | 340 | 2808 |
| 05:00 PM | 5 | 107 | 129 | 0 | 241 | 98 | 28 | 84 | 0 | 210 | 97 | 115 | 21 | 0 | 233 | 31 | 38 | 3 | 0 | 72 | 756 |
| 05:15 PM | 7 | 111 | 117 | 0 | 235 | 97 | 25 | 105 | 0 | 227 | 126 | 89 | 22 | 0 | 237 | 41 | 37 | 11 | 0 | 89 | 788 |
| 05:30 PM | 3 | 110 | 130 | 0 | 243 | 118 | 22 | 111 | 0 | 251 | 125 | 124 | 34 | 0 | 283 | 43 | 52 | 12 | 0 | 107 | 884 |
| 05:45 PM | 2 | 72 | 93 | 0 | 167 | 107 | 19 | 77 | 0 | 203 | 95 | 120 | 17 | 0 | 232 | 46 | 49 | 3 | 0 | 98 | 700 |
| Total | 17 | 400 | 469 | 0 | 886 | 420 | 94 | 377 | 0 | 891 | 443 | 448 | 94 | 0 | 985 | 161 | 176 | 29 | 0 | 366 | 3128 |
| Grand Total | 33 | 727 | 927 | 0 | 1687 | 792 | 176 | 651 | 0 | 1619 | 899 | 848 | 177 | 0 | 1924 | 302 | 347 | 57 | 0 | 706 | 5936 |
| Apprch % | 2 | 43.1 | 54.9 | 0 | | 48.9 | 10.9 | 40.2 | 0 | | 46.7 | 44.1 | 9.2 | 0 | | 42.8 | 49.2 | 8.1 | 0 | | |
| Total % | 0.6 | 12.2 | 15.6 | 0 | 28.4 | 13.3 | 3 | 11 | 0 | 27.3 | 15.1 | 14.3 | 3 | 0 | 32.4 | 5.1 | 5.8 | 1 | 0 | 11.9 | |

| | MIDDLEFIELD RD Southbound | | | | | WILLOW RD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | WILLOW RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 4 | 85 | 101 | 0 | 190 | 97 | 20 | 82 | 0 | 199 | 143 | 110 | 20 | 0 | 273 | 43 | 43 | 10 | 0 | 96 | 758 |
| 05:00 PM | 5 | 107 | 129 | 0 | 241 | 98 | 28 | 84 | 0 | 210 | 97 | 115 | 21 | 0 | 233 | 31 | 38 | 3 | 0 | 72 | 756 |
| 05:15 PM | 7 | 111 | 117 | 0 | 235 | 97 | 25 | 105 | 0 | 227 | 126 | 89 | 22 | 0 | 237 | 41 | 37 | 11 | 0 | 89 | 788 |
| 05:30 PM | 3 | 110 | 130 | 0 | 243 | 118 | 22 | 111 | 0 | 251 | 125 | 124 | 34 | 0 | 283 | 43 | 52 | 12 | 0 | 107 | 884 |
| Total Volume | 19 | 413 | 477 | 0 | 909 | 410 | 95 | 382 | 0 | 887 | 491 | 438 | 97 | 0 | 1026 | 158 | 170 | 36 | 0 | 364 | 3186 |
| % App. Total | 2.1 | 45.4 | 52.5 | 0 | | 46.2 | 10.7 | 43.1 | 0 | | 47.9 | 42.7 | 9.5 | 0 | | 43.4 | 46.7 | 9.9 | 0 | | |
| PHF | .679 | .930 | .917 | .000 | .935 | .869 | .848 | .860 | .000 | .883 | .858 | .883 | .713 | .000 | .906 | .919 | .817 | .750 | .000 | .850 | .901 |

Traffic Data Service
Campbell, CA
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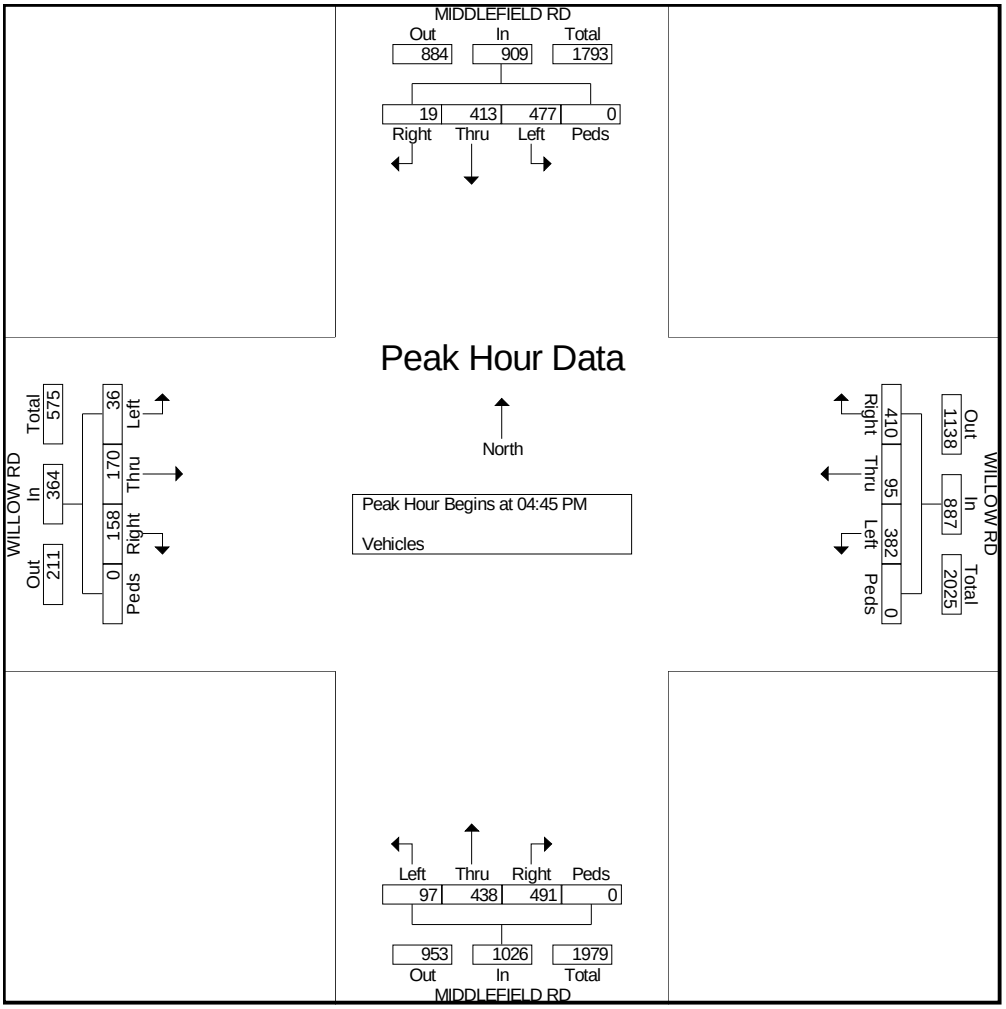
File Name : 10PM FINAL
Site Code : 00000010
Start Date : 11/10/2010
Page No : 2



Traffic Data Service
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***tdsbay@cs.com***

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 11 | 195 | 0 | 0 | 206 | 0 | 0 | 0 | 0 | 0 | 0 | 661 | 293 | 0 | 954 | 78 | 0 | 29 | 0 | 107 | 1267 |
| 07:15 AM | 14 | 248 | 0 | 0 | 262 | 0 | 0 | 0 | 0 | 0 | 0 | 770 | 403 | 0 | 1173 | 85 | 0 | 34 | 0 | 119 | 1554 |
| 07:30 AM | 28 | 248 | 0 | 0 | 276 | 0 | 0 | 0 | 0 | 0 | 0 | 759 | 361 | 0 | 1120 | 101 | 0 | 42 | 0 | 143 | 1539 |
| 07:45 AM | 49 | 196 | 0 | 0 | 245 | 0 | 0 | 0 | 0 | 0 | 0 | 705 | 378 | 0 | 1083 | 107 | 0 | 54 | 0 | 161 | 1489 |
| Total | 102 | 887 | 0 | 0 | 989 | 0 | 0 | 0 | 0 | 0 | 0 | 2895 | 1435 | 0 | 4330 | 371 | 0 | 159 | 0 | 530 | 5849 |
| 08:00 AM | 50 | 220 | 0 | 0 | 270 | 0 | 0 | 0 | 0 | 0 | 0 | 718 | 362 | 0 | 1080 | 108 | 0 | 41 | 0 | 149 | 1499 |
| 08:15 AM | 61 | 220 | 0 | 0 | 281 | 0 | 0 | 0 | 0 | 0 | 0 | 700 | 440 | 0 | 1140 | 113 | 0 | 42 | 0 | 155 | 1576 |
| 08:30 AM | 52 | 247 | 0 | 0 | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 650 | 380 | 0 | 1030 | 94 | 0 | 27 | 0 | 121 | 1450 |
| 08:45 AM | 33 | 235 | 0 | 0 | 268 | 0 | 0 | 0 | 0 | 0 | 0 | 703 | 333 | 0 | 1036 | 85 | 0 | 21 | 0 | 106 | 1410 |
| Total | 196 | 922 | 0 | 0 | 1118 | 0 | 0 | 0 | 0 | 0 | 0 | 2771 | 1515 | 0 | 4286 | 400 | 0 | 131 | 0 | 531 | 5935 |
| Grand Total | 298 | 1809 | 0 | 0 | 2107 | 0 | 0 | 0 | 0 | 0 | 0 | 5666 | 2950 | 0 | 8616 | 771 | 0 | 290 | 0 | 1061 | 11784 |
| Apprch % | 14.1 | 85.9 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 65.8 | 34.2 | 0 | | 72.7 | 0 | 27.3 | 0 | | |
| Total % | 2.5 | 15.4 | 0 | 0 | 17.9 | 0 | 0 | 0 | 0 | 0 | 0 | 48.1 | 25 | 0 | 73.1 | 6.5 | 0 | 2.5 | 0 | 9 | |

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 28 | 248 | 0 | 0 | 276 | 0 | 0 | 0 | 0 | 0 | 0 | 759 | 361 | 0 | 1120 | 101 | 0 | 42 | 0 | 143 | 1539 |
| 07:45 AM | 49 | 196 | 0 | 0 | 245 | 0 | 0 | 0 | 0 | 0 | 0 | 705 | 378 | 0 | 1083 | 107 | 0 | 54 | 0 | 161 | 1489 |
| 08:00 AM | 50 | 220 | 0 | 0 | 270 | 0 | 0 | 0 | 0 | 0 | 0 | 718 | 362 | 0 | 1080 | 108 | 0 | 41 | 0 | 149 | 1499 |
| 08:15 AM | 61 | 220 | 0 | 0 | 281 | 0 | 0 | 0 | 0 | 0 | 0 | 700 | 440 | 0 | 1140 | 113 | 0 | 42 | 0 | 155 | 1576 |
| Total Volume | 188 | 884 | 0 | 0 | 1072 | 0 | 0 | 0 | 0 | 0 | 0 | 2882 | 1541 | 0 | 4423 | 429 | 0 | 179 | 0 | 608 | 6103 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .770 | .891 | .000 | .000 | .954 | .000 | .000 | .000 | .000 | .000 | .000 | .949 | .876 | .000 | .970 | .949 | .000 | .829 | .000 | .944 | .968 |

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Site Code : 00000001
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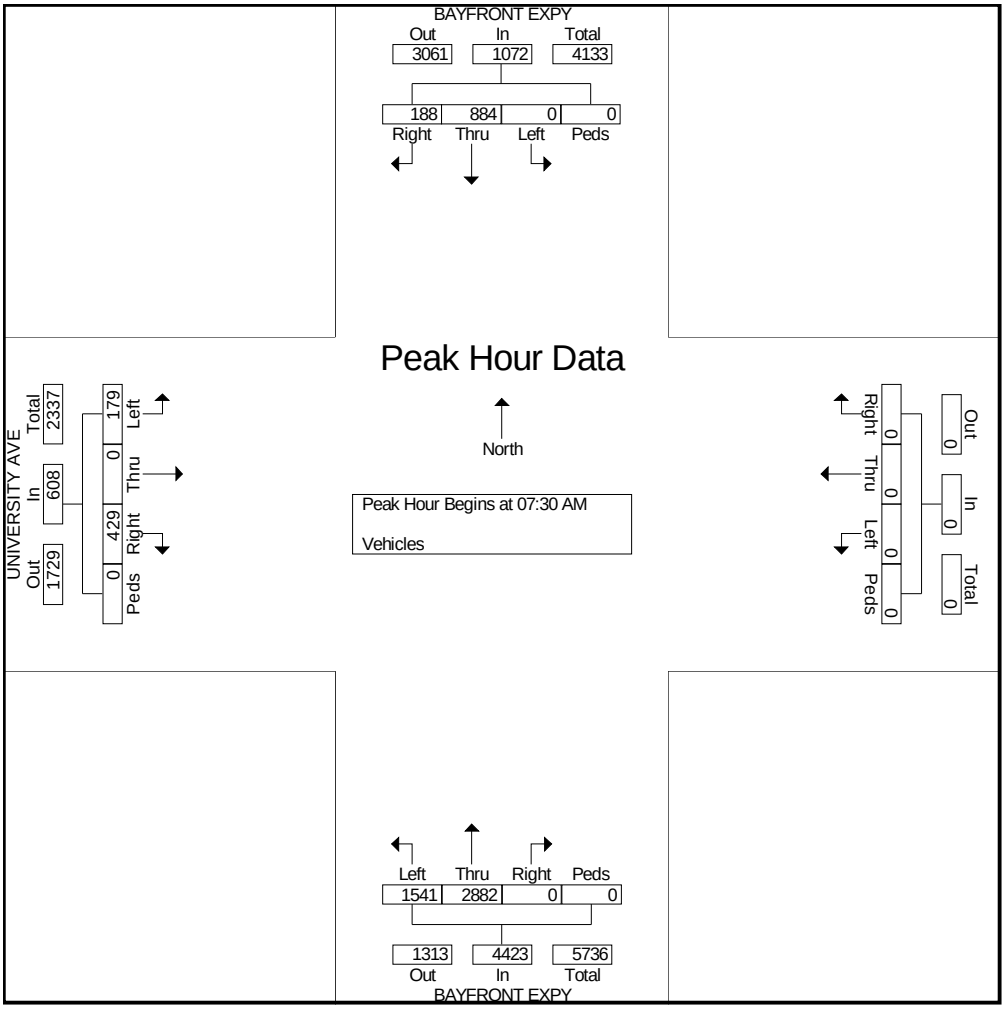

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***tdsbay@cs.com***

File Name : 1PM FINAL
Site Code : 00000001
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 28 | 734 | 0 | 0 | 762 | 0 | 0 | 0 | 0 | 0 | 0 | 185 | 99 | 0 | 284 | 306 | 0 | 12 | 0 | 318 | 1364 |
| 04:15 PM | 24 | 822 | 0 | 0 | 846 | 0 | 0 | 0 | 0 | 0 | 0 | 206 | 86 | 0 | 292 | 359 | 0 | 15 | 0 | 374 | 1512 |
| 04:30 PM | 22 | 792 | 0 | 0 | 814 | 0 | 0 | 0 | 0 | 0 | 0 | 231 | 98 | 0 | 329 | 399 | 0 | 19 | 0 | 418 | 1561 |
| 04:45 PM | 28 | 775 | 0 | 0 | 803 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 76 | 0 | 287 | 361 | 0 | 17 | 0 | 378 | 1468 |
| Total | 102 | 3123 | 0 | 0 | 3225 | 0 | 0 | 0 | 0 | 0 | 0 | 833 | 359 | 0 | 1192 | 1425 | 0 | 63 | 0 | 1488 | 5905 |
| 05:00 PM | 32 | 824 | 0 | 0 | 856 | 0 | 0 | 0 | 0 | 0 | 0 | 233 | 81 | 0 | 314 | 415 | 0 | 20 | 0 | 435 | 1605 |
| 05:15 PM | 24 | 920 | 0 | 0 | 944 | 0 | 0 | 0 | 0 | 0 | 0 | 249 | 95 | 0 | 344 | 425 | 0 | 15 | 0 | 440 | 1728 |
| 05:30 PM | 40 | 887 | 0 | 0 | 927 | 0 | 0 | 0 | 0 | 0 | 0 | 258 | 101 | 0 | 359 | 412 | 0 | 13 | 0 | 425 | 1711 |
| 05:45 PM | 31 | 857 | 0 | 0 | 888 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 100 | 0 | 328 | 415 | 0 | 12 | 0 | 427 | 1643 |
| Total | 127 | 3488 | 0 | 0 | 3615 | 0 | 0 | 0 | 0 | 0 | 0 | 968 | 377 | 0 | 1345 | 1667 | 0 | 60 | 0 | 1727 | 6687 |
| Grand Total | 229 | 6611 | 0 | 0 | 6840 | 0 | 0 | 0 | 0 | 0 | 0 | 1801 | 736 | 0 | 2537 | 3092 | 0 | 123 | 0 | 3215 | 12592 |
| Apprch % | 3.3 | 96.7 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 71 | 29 | 0 | | 96.2 | 0 | 3.8 | 0 | | |
| Total % | 1.8 | 52.5 | 0 | 0 | 54.3 | 0 | 0 | 0 | 0 | 0 | 0 | 14.3 | 5.8 | 0 | 20.1 | 24.6 | 0 | 1 | 0 | 25.5 | |

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 32 | 824 | 0 | 0 | 856 | 0 | 0 | 0 | 0 | 0 | 0 | 233 | 81 | 0 | 314 | 415 | 0 | 20 | 0 | 435 | 1605 |
| 05:15 PM | 24 | 920 | 0 | 0 | 944 | 0 | 0 | 0 | 0 | 0 | 0 | 249 | 95 | 0 | 344 | 425 | 0 | 15 | 0 | 440 | 1728 |
| 05:30 PM | 40 | 887 | 0 | 0 | 927 | 0 | 0 | 0 | 0 | 0 | 0 | 258 | 101 | 0 | 359 | 412 | 0 | 13 | 0 | 425 | 1711 |
| 05:45 PM | 31 | 857 | 0 | 0 | 888 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 100 | 0 | 328 | 415 | 0 | 12 | 0 | 427 | 1643 |
| Total Volume | 127 | 3488 | 0 | 0 | 3615 | 0 | 0 | 0 | 0 | 0 | 0 | 968 | 377 | 0 | 1345 | 1667 | 0 | 60 | 0 | 1727 | 6687 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .794 | .948 | .000 | .000 | .957 | .000 | .000 | .000 | .000 | .000 | .000 | .938 | .933 | .000 | .937 | .981 | .000 | .750 | .000 | .981 | .967 |

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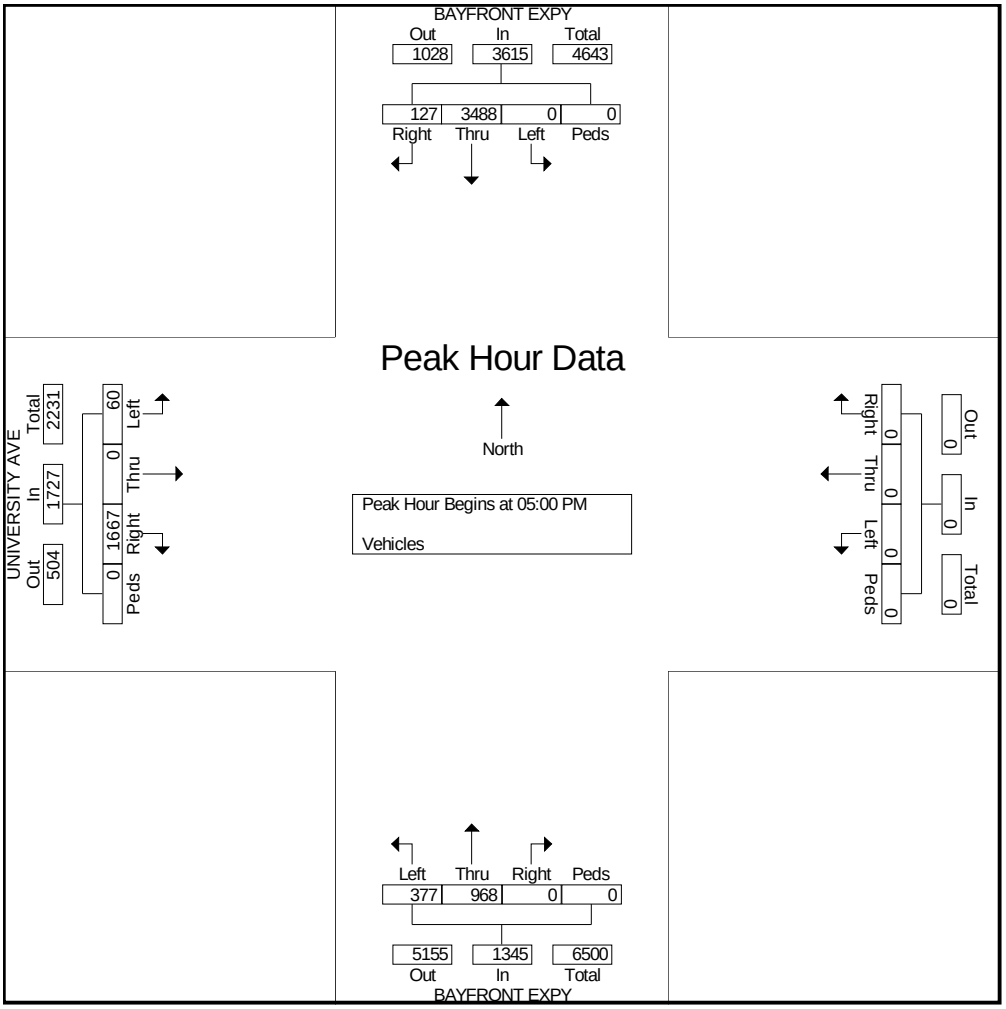

# Traffic Data Service

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File Name : 2AM FINAL
Site Code : 00000002
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**Groups Printed- Vehicles**

| | O'BRIEN DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 0 | 3 | 0 | 3 | 12 | 253 | 0 | 0 | 265 | 0 | 0 | 0 | 0 | 0 | 0 | 92 | 9 | 0 | 101 | 369 |
| 07:15 AM | 3 | 0 | 1 | 0 | 4 | 7 | 322 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 8 | 0 | 133 | 466 |
| 07:30 AM | 9 | 0 | 4 | 0 | 13 | 12 | 345 | 0 | 0 | 357 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 12 | 0 | 135 | 505 |
| 07:45 AM | 5 | 0 | 4 | 0 | 9 | 13 | 348 | 0 | 0 | 361 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 18 | 0 | 160 | 530 |
| Total | 17 | 0 | 12 | 0 | 29 | 44 | 1268 | 0 | 0 | 1312 | 0 | 0 | 0 | 0 | 0 | 0 | 482 | 47 | 0 | 529 | 1870 |
| 08:00 AM | 2 | 0 | 5 | 0 | 7 | 16 | 321 | 0 | 0 | 337 | 0 | 0 | 0 | 0 | 0 | 0 | 119 | 20 | 0 | 139 | 483 |
| 08:15 AM | 6 | 0 | 9 | 0 | 15 | 5 | 327 | 0 | 0 | 332 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 18 | 0 | 160 | 507 |
| 08:30 AM | 12 | 0 | 5 | 0 | 17 | 6 | 315 | 0 | 0 | 321 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | 22 | 0 | 126 | 464 |
| 08:45 AM | 6 | 0 | 8 | 0 | 14 | 12 | 319 | 0 | 0 | 331 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 16 | 0 | 140 | 485 |
| Total | 26 | 0 | 27 | 0 | 53 | 39 | 1282 | 0 | 0 | 1321 | 0 | 0 | 0 | 0 | 0 | 0 | 489 | 76 | 0 | 565 | 1939 |
| Grand Total | 43 | 0 | 39 | 0 | 82 | 83 | 2550 | 0 | 0 | 2633 | 0 | 0 | 0 | 0 | 0 | 0 | 971 | 123 | 0 | 1094 | 3809 |
| Apprch % | 52.4 | 0 | 47.6 | 0 | | 3.2 | 96.8 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 88.8 | 11.2 | 0 | | |
| Total % | 1.1 | 0 | 1 | 0 | 2.2 | 2.2 | 66.9 | 0 | 0 | 69.1 | 0 | 0 | 0 | 0 | 0 | 0 | 25.5 | 3.2 | 0 | 28.7 | |

| | O'BRIEN DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 9 | 0 | 4 | 0 | 13 | 12 | 345 | 0 | 0 | 357 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 12 | 0 | 135 | 505 |
| 07:45 AM | 5 | 0 | 4 | 0 | 9 | 13 | 348 | 0 | 0 | 361 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 18 | 0 | 160 | 530 |
| 08:00 AM | 2 | 0 | 5 | 0 | 7 | 16 | 321 | 0 | 0 | 337 | 0 | 0 | 0 | 0 | 0 | 0 | 119 | 20 | 0 | 139 | 483 |
| 08:15 AM | 6 | 0 | 9 | 0 | 15 | 5 | 327 | 0 | 0 | 332 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 18 | 0 | 160 | 507 |
| Total Volume | 22 | 0 | 22 | 0 | 44 | 46 | 1341 | 0 | 0 | 1387 | 0 | 0 | 0 | 0 | 0 | 0 | 526 | 68 | 0 | 594 | 2025 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .611 | .000 | .611 | .000 | .733 | .719 | .963 | .000 | .000 | .961 | .000 | .000 | .000 | .000 | .000 | .000 | .926 | .850 | .000 | .928 | .955 |

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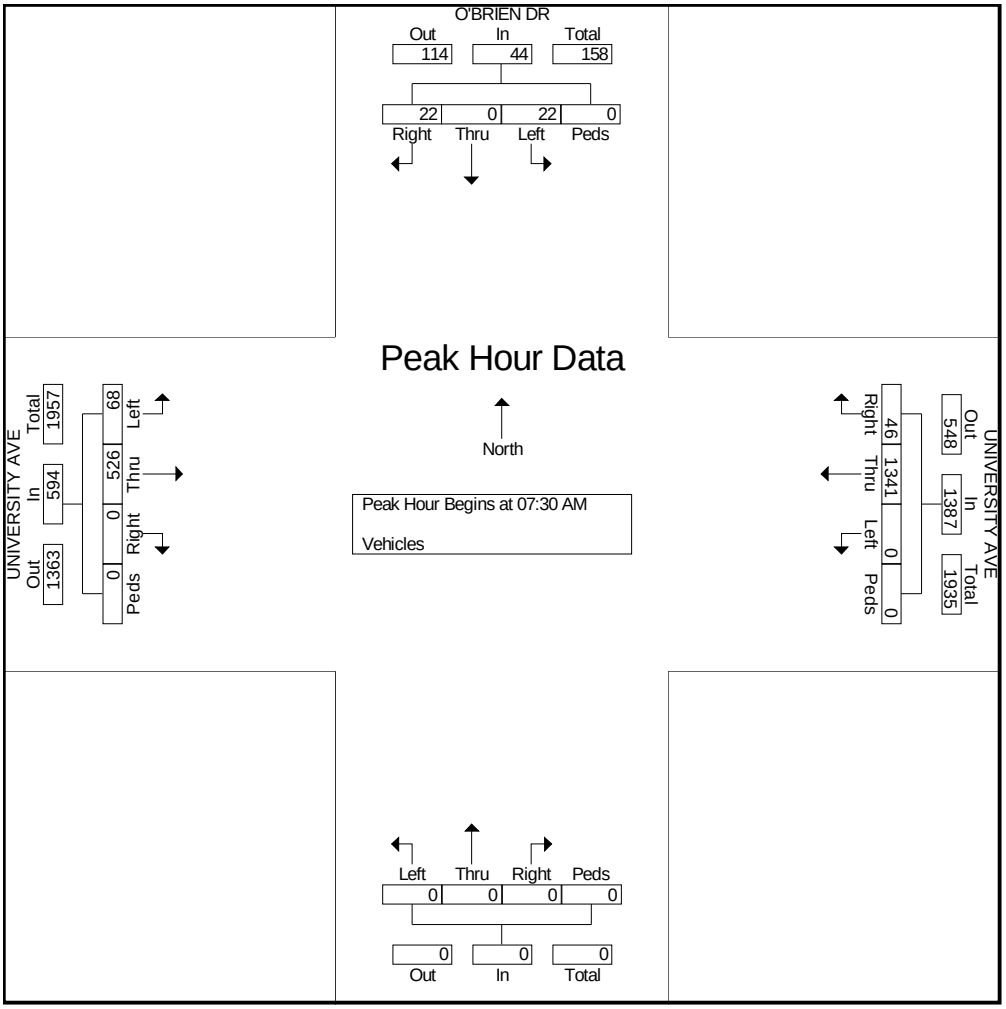

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File Name : 2PM FINAL
Site Code : 00000002
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**Groups Printed- Vehicles**

| | O-BRIEN DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 17 | 0 | 17 | 0 | 34 | 3 | 107 | 0 | 0 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 339 | 3 | 0 | 342 | 486 |
| 04:15 PM | 7 | 0 | 16 | 0 | 23 | 5 | 110 | 0 | 0 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 381 | 5 | 0 | 386 | 524 |
| 04:30 PM | 16 | 0 | 28 | 0 | 44 | 3 | 110 | 0 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 425 | 3 | 0 | 428 | 585 |
| 04:45 PM | 22 | 0 | 18 | 0 | 40 | 2 | 99 | 0 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 0 | 414 | 4 | 0 | 418 | 559 |
| Total | 62 | 0 | 79 | 0 | 141 | 13 | 426 | 0 | 0 | 439 | 0 | 0 | 0 | 0 | 0 | 0 | 1559 | 15 | 0 | 1574 | 2154 |
| 05:00 PM | 32 | 0 | 35 | 0 | 67 | 5 | 120 | 0 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 364 | 8 | 0 | 372 | 564 |
| 05:15 PM | 29 | 0 | 39 | 0 | 68 | 6 | 125 | 0 | 0 | 131 | 0 | 0 | 0 | 0 | 0 | 0 | 396 | 5 | 0 | 401 | 600 |
| 05:30 PM | 20 | 0 | 33 | 0 | 53 | 6 | 117 | 0 | 0 | 123 | 0 | 0 | 0 | 0 | 0 | 0 | 341 | 4 | 0 | 345 | 521 |
| 05:45 PM | 20 | 0 | 20 | 0 | 40 | 5 | 121 | 0 | 0 | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 411 | 5 | 0 | 416 | 582 |
| Total | 101 | 0 | 127 | 0 | 228 | 22 | 483 | 0 | 0 | 505 | 0 | 0 | 0 | 0 | 0 | 0 | 1512 | 22 | 0 | 1534 | 2267 |
| Grand Total | 163 | 0 | 206 | 0 | 369 | 35 | 909 | 0 | 0 | 944 | 0 | 0 | 0 | 0 | 0 | 0 | 3071 | 37 | 0 | 3108 | 4421 |
| Apprch % | 44.2 | 0 | 55.8 | 0 | | 3.7 | 96.3 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 98.8 | 1.2 | 0 | | |
| Total % | 3.7 | 0 | 4.7 | 0 | 8.3 | 0.8 | 20.6 | 0 | 0 | 21.4 | 0 | 0 | 0 | 0 | 0 | 0 | 69.5 | 0.8 | 0 | 70.3 | |

| | O-BRIEN DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 16 | 0 | 28 | 0 | 44 | 3 | 110 | 0 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 425 | 3 | 0 | 428 | 585 |
| 04:45 PM | 22 | 0 | 18 | 0 | 40 | 2 | 99 | 0 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 0 | 414 | 4 | 0 | 418 | 559 |
| 05:00 PM | 32 | 0 | 35 | 0 | 67 | 5 | 120 | 0 | 0 | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 364 | 8 | 0 | 372 | 564 |
| 05:15 PM | 29 | 0 | 39 | 0 | 68 | 6 | 125 | 0 | 0 | 131 | 0 | 0 | 0 | 0 | 0 | 0 | 396 | 5 | 0 | 401 | 600 |
| Total Volume | 99 | 0 | 120 | 0 | 219 | 16 | 454 | 0 | 0 | 470 | 0 | 0 | 0 | 0 | 0 | 0 | 1599 | 20 | 0 | 1619 | 2308 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .773 | .000 | .769 | .000 | .805 | .667 | .908 | .000 | .000 | .897 | .000 | .000 | .000 | .000 | .000 | .000 | .941 | .625 | .000 | .946 | .962 |

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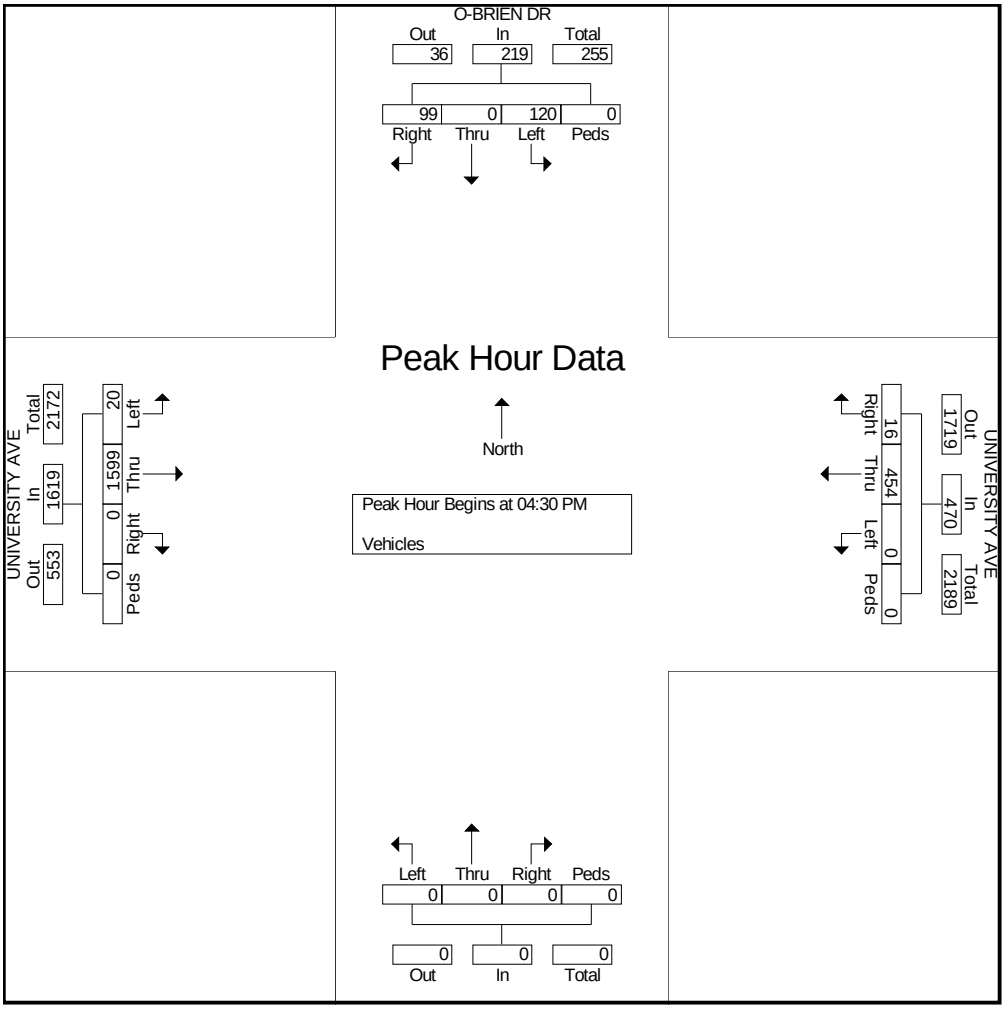

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Site Code : 00000003
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**Groups Printed- Vehicles**

| | KAVANAUGH DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | NOTRE DAME AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 7 | 4 | 1 | 0 | 12 | 2 | 263 | 1 | 0 | 266 | 6 | 2 | 16 | 0 | 24 | 4 | 98 | 3 | 0 | 105 | 407 |
| 07:15 AM | 11 | 6 | 1 | 0 | 18 | 3 | 307 | 0 | 0 | 310 | 3 | 1 | 5 | 0 | 9 | 7 | 124 | 2 | 0 | 133 | 470 |
| 07:30 AM | 9 | 3 | 1 | 0 | 13 | 3 | 347 | 1 | 0 | 351 | 4 | 4 | 12 | 0 | 20 | 10 | 135 | 4 | 0 | 149 | 533 |
| 07:45 AM | 14 | 3 | 0 | 0 | 17 | 13 | 328 | 3 | 0 | 344 | 4 | 13 | 7 | 0 | 24 | 10 | 151 | 8 | 0 | 169 | 554 |
| Total | 41 | 16 | 3 | 0 | 60 | 21 | 1245 | 5 | 0 | 1271 | 17 | 20 | 40 | 0 | 77 | 31 | 508 | 17 | 0 | 556 | 1964 |
| 08:00 AM | 12 | 7 | 3 | 0 | 22 | 5 | 310 | 4 | 0 | 319 | 6 | 10 | 7 | 0 | 23 | 8 | 154 | 16 | 0 | 178 | 542 |
| 08:15 AM | 9 | 8 | 4 | 0 | 21 | 4 | 317 | 17 | 0 | 338 | 6 | 10 | 6 | 0 | 22 | 15 | 142 | 12 | 0 | 169 | 550 |
| 08:30 AM | 8 | 4 | 2 | 0 | 14 | 2 | 324 | 1 | 0 | 327 | 3 | 8 | 7 | 0 | 18 | 5 | 133 | 7 | 0 | 145 | 504 |
| 08:45 AM | 8 | 3 | 1 | 0 | 12 | 7 | 335 | 2 | 0 | 344 | 0 | 6 | 6 | 0 | 12 | 3 | 125 | 4 | 0 | 132 | 500 |
| Total | 37 | 22 | 10 | 0 | 69 | 18 | 1286 | 24 | 0 | 1328 | 15 | 34 | 26 | 0 | 75 | 31 | 554 | 39 | 0 | 624 | 2096 |
| Grand Total | 78 | 38 | 13 | 0 | 129 | 39 | 2531 | 29 | 0 | 2599 | 32 | 54 | 66 | 0 | 152 | 62 | 1062 | 56 | 0 | 1180 | 4060 |
| Apprch % | 60.5 | 29.5 | 10.1 | 0 | | 1.5 | 97.4 | 1.1 | 0 | | 21.1 | 35.5 | 43.4 | 0 | | 5.3 | 90 | 4.7 | 0 | | |
| Total % | 1.9 | 0.9 | 0.3 | 0 | 3.2 | 1 | 62.3 | 0.7 | 0 | 64 | 0.8 | 1.3 | 1.6 | 0 | 3.7 | 1.5 | 26.2 | 1.4 | 0 | 29.1 | |

| | KAVANAUGH DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | NOTRE DAME AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 9 | 3 | 1 | 0 | 13 | 3 | 347 | 1 | 0 | 351 | 4 | 4 | 12 | 0 | 20 | 10 | 135 | 4 | 0 | 149 | 533 |
| 07:45 AM | 14 | 3 | 0 | 0 | 17 | 13 | 328 | 3 | 0 | 344 | 4 | 13 | 7 | 0 | 24 | 10 | 151 | 8 | 0 | 169 | 554 |
| 08:00 AM | 12 | 7 | 3 | 0 | 22 | 5 | 310 | 4 | 0 | 319 | 6 | 10 | 7 | 0 | 23 | 8 | 154 | 16 | 0 | 178 | 542 |
| 08:15 AM | 9 | 8 | 4 | 0 | 21 | 4 | 317 | 17 | 0 | 338 | 6 | 10 | 6 | 0 | 22 | 15 | 142 | 12 | 0 | 169 | 550 |
| Total Volume | 44 | 21 | 8 | 0 | 73 | 25 | 1302 | 25 | 0 | 1352 | 20 | 37 | 32 | 0 | 89 | 43 | 582 | 40 | 0 | 665 | 2179 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .786 | .656 | .500 | .000 | .830 | .481 | .938 | .368 | .000 | .963 | .833 | .712 | .667 | .000 | .927 | .717 | .945 | .625 | .000 | .934 | .983 |

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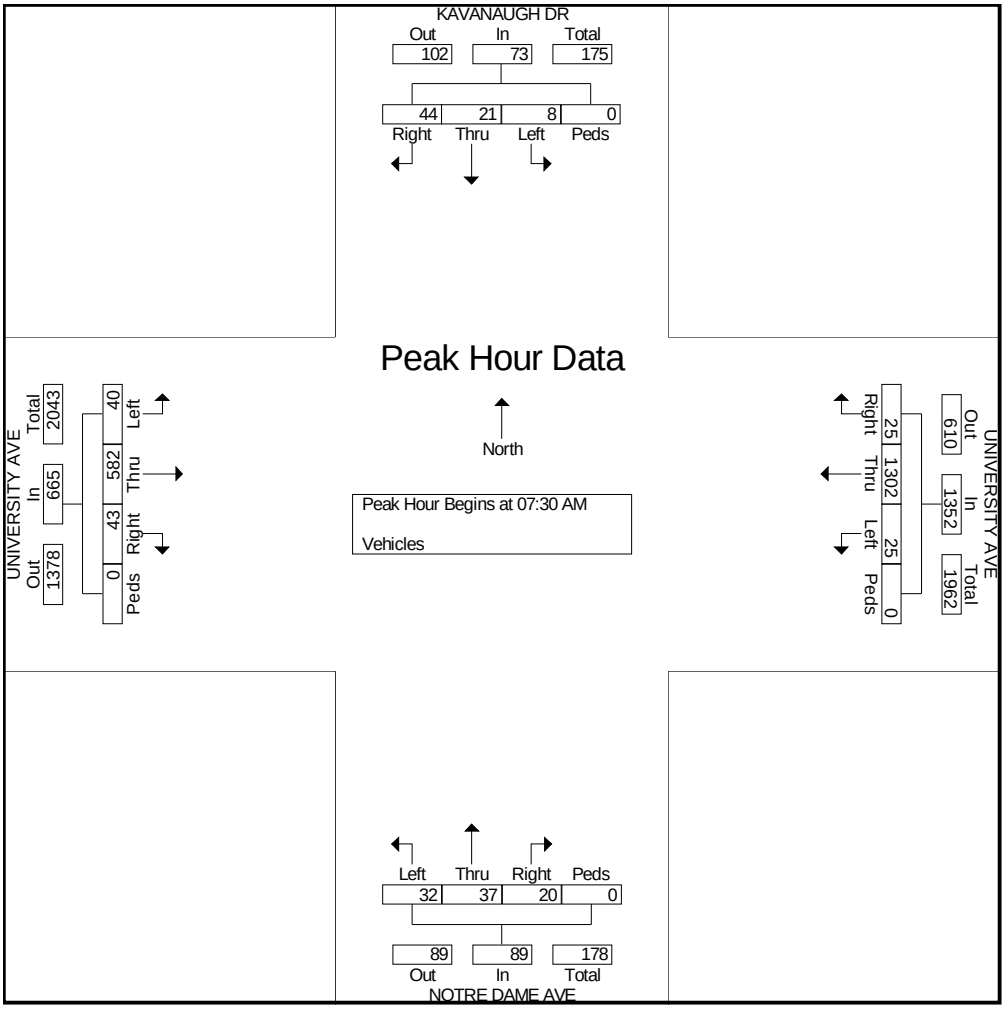

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File Name : 3PM FINAL
Site Code : 00000003
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Page No : 1

**Groups Printed- Vehicles**

| | KAVANAUGH DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | NOTRE DAME AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 18 | 3 | 4 | 0 | 25 | 5 | 118 | 6 | 0 | 129 | 6 | 9 | 12 | 0 | 27 | 6 | 338 | 13 | 0 | 357 | 538 |
| 04:15 PM | 8 | 5 | 2 | 0 | 15 | 4 | 103 | 3 | 0 | 110 | 3 | 8 | 12 | 0 | 23 | 3 | 390 | 9 | 0 | 402 | 550 |
| 04:30 PM | 18 | 8 | 6 | 0 | 32 | 2 | 124 | 2 | 0 | 128 | 2 | 9 | 6 | 0 | 17 | 3 | 410 | 9 | 0 | 422 | 599 |
| 04:45 PM | 18 | 5 | 4 | 0 | 27 | 4 | 107 | 1 | 0 | 112 | 3 | 6 | 9 | 0 | 18 | 5 | 416 | 5 | 0 | 426 | 583 |
| Total | 62 | 21 | 16 | 0 | 99 | 15 | 452 | 12 | 0 | 479 | 14 | 32 | 39 | 0 | 85 | 17 | 1554 | 36 | 0 | 1607 | 2270 |
| 05:00 PM | 28 | 10 | 2 | 0 | 40 | 3 | 141 | 10 | 0 | 154 | 5 | 3 | 16 | 0 | 24 | 5 | 362 | 7 | 0 | 374 | 592 |
| 05:15 PM | 18 | 6 | 7 | 0 | 31 | 4 | 155 | 5 | 0 | 164 | 2 | 13 | 4 | 0 | 19 | 6 | 391 | 5 | 0 | 402 | 616 |
| 05:30 PM | 17 | 8 | 2 | 0 | 27 | 7 | 132 | 8 | 0 | 147 | 3 | 8 | 5 | 0 | 16 | 4 | 341 | 8 | 0 | 353 | 543 |
| 05:45 PM | 18 | 5 | 5 | 0 | 28 | 4 | 130 | 0 | 0 | 134 | 4 | 5 | 12 | 0 | 21 | 3 | 400 | 4 | 0 | 407 | 590 |
| Total | 81 | 29 | 16 | 0 | 126 | 18 | 558 | 23 | 0 | 599 | 14 | 29 | 37 | 0 | 80 | 18 | 1494 | 24 | 0 | 1536 | 2341 |
| Grand Total | 143 | 50 | 32 | 0 | 225 | 33 | 1010 | 35 | 0 | 1078 | 28 | 61 | 76 | 0 | 165 | 35 | 3048 | 60 | 0 | 3143 | 4611 |
| Apprch % | 63.6 | 22.2 | 14.2 | 0 | | 3.1 | 93.7 | 3.2 | 0 | | 17 | 37 | 46.1 | 0 | | 1.1 | 97 | 1.9 | 0 | | |
| Total % | 3.1 | 1.1 | 0.7 | 0 | 4.9 | 0.7 | 21.9 | 0.8 | 0 | 23.4 | 0.6 | 1.3 | 1.6 | 0 | 3.6 | 0.8 | 66.1 | 1.3 | 0 | 68.2 | |

| | KAVANAUGH DR Southbound | | | | | UNIVERSITY AVE Westbound | | | | | NOTRE DAME AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 18 | 8 | 6 | 0 | 32 | 2 | 124 | 2 | 0 | 128 | 2 | 9 | 6 | 0 | 17 | 3 | 410 | 9 | 0 | 422 | 599 |
| 04:45 PM | 18 | 5 | 4 | 0 | 27 | 4 | 107 | 1 | 0 | 112 | 3 | 6 | 9 | 0 | 18 | 5 | 416 | 5 | 0 | 426 | 583 |
| 05:00 PM | 28 | 10 | 2 | 0 | 40 | 3 | 141 | 10 | 0 | 154 | 5 | 3 | 16 | 0 | 24 | 5 | 362 | 7 | 0 | 374 | 592 |
| 05:15 PM | 18 | 6 | 7 | 0 | 31 | 4 | 155 | 5 | 0 | 164 | 2 | 13 | 4 | 0 | 19 | 6 | 391 | 5 | 0 | 402 | 616 |
| Total Volume | 82 | 29 | 19 | 0 | 130 | 13 | 527 | 18 | 0 | 558 | 12 | 31 | 35 | 0 | 78 | 19 | 1579 | 26 | 0 | 1624 | 2390 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .732 | .725 | .679 | .000 | .813 | .813 | .850 | .450 | .000 | .851 | .600 | .596 | .547 | .000 | .813 | .792 | .949 | .722 | .000 | .953 | .970 |

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File Name : 3PM FINAL
Site Code : 00000003
Start Date : 11/9/2010
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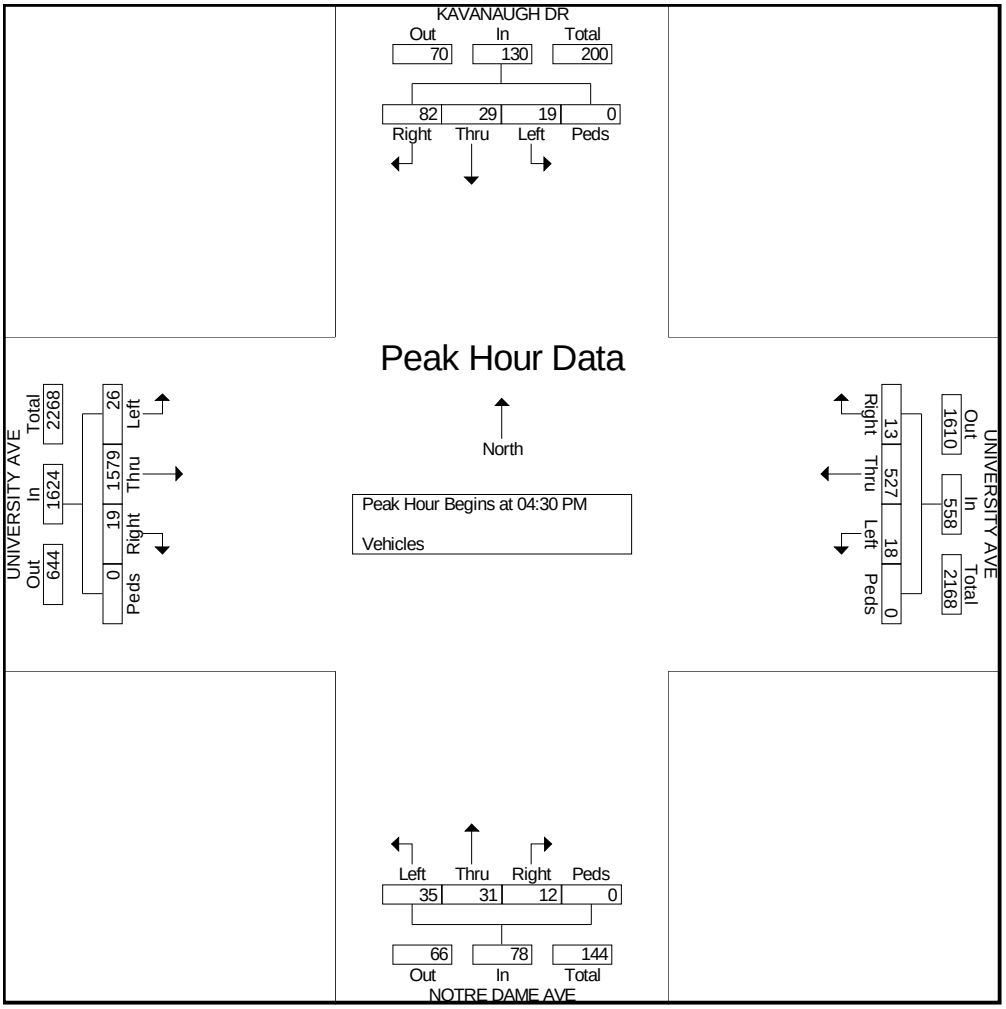

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File Name : 4AM FINAL
Site Code : 00000004
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | BAY RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | BAY RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 20 | 42 | 17 | 0 | 79 | 10 | 236 | 13 | 0 | 259 | 11 | 27 | 42 | 0 | 80 | 11 | 81 | 11 | 0 | 103 | 521 |
| 07:15 AM | 18 | 30 | 10 | 0 | 58 | 18 | 293 | 15 | 0 | 326 | 30 | 33 | 38 | 0 | 101 | 21 | 101 | 25 | 0 | 147 | 632 |
| 07:30 AM | 19 | 59 | 12 | 0 | 90 | 13 | 287 | 22 | 0 | 322 | 25 | 56 | 29 | 0 | 110 | 25 | 99 | 24 | 0 | 148 | 670 |
| 07:45 AM | 11 | 56 | 14 | 0 | 81 | 6 | 283 | 21 | 0 | 310 | 37 | 65 | 18 | 0 | 120 | 12 | 134 | 39 | 0 | 185 | 696 |
| Total | 68 | 187 | 53 | 0 | 308 | 47 | 1099 | 71 | 0 | 1217 | 103 | 181 | 127 | 0 | 411 | 69 | 415 | 99 | 0 | 583 | 2519 |
| 08:00 AM | 29 | 41 | 8 | 0 | 78 | 21 | 248 | 23 | 0 | 292 | 23 | 63 | 29 | 0 | 115 | 20 | 118 | 39 | 0 | 177 | 662 |
| 08:15 AM | 27 | 40 | 16 | 0 | 83 | 9 | 297 | 31 | 0 | 337 | 28 | 41 | 32 | 0 | 101 | 21 | 146 | 39 | 0 | 206 | 727 |
| 08:30 AM | 33 | 47 | 21 | 0 | 101 | 15 | 281 | 20 | 0 | 316 | 9 | 38 | 39 | 0 | 86 | 15 | 116 | 25 | 0 | 156 | 659 |
| 08:45 AM | 14 | 42 | 7 | 0 | 63 | 4 | 311 | 29 | 0 | 344 | 19 | 19 | 13 | 0 | 51 | 12 | 108 | 16 | 0 | 136 | 594 |
| Total | 103 | 170 | 52 | 0 | 325 | 49 | 1137 | 103 | 0 | 1289 | 79 | 161 | 113 | 0 | 353 | 68 | 488 | 119 | 0 | 675 | 2642 |
| Grand Total | 171 | 357 | 105 | 0 | 633 | 96 | 2236 | 174 | 0 | 2506 | 182 | 342 | 240 | 0 | 764 | 137 | 903 | 218 | 0 | 1258 | 5161 |
| Apprch % | 27 | 56.4 | 16.6 | 0 | | 3.8 | 89.2 | 6.9 | 0 | | 23.8 | 44.8 | 31.4 | 0 | | 10.9 | 71.8 | 17.3 | 0 | | |
| Total % | 3.3 | 6.9 | 2 | 0 | 12.3 | 1.9 | 43.3 | 3.4 | 0 | 48.6 | 3.5 | 6.6 | 4.7 | 0 | 14.8 | 2.7 | 17.5 | 4.2 | 0 | 24.4 | |

| | BAY RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | BAY RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 19 | 59 | 12 | 0 | 90 | 13 | 287 | 22 | 0 | 322 | 25 | 56 | 29 | 0 | 110 | 25 | 99 | 24 | 0 | 148 | 670 |
| 07:45 AM | 11 | 56 | 14 | 0 | 81 | 6 | 283 | 21 | 0 | 310 | 37 | 65 | 18 | 0 | 120 | 12 | 134 | 39 | 0 | 185 | 696 |
| 08:00 AM | 29 | 41 | 8 | 0 | 78 | 21 | 248 | 23 | 0 | 292 | 23 | 63 | 29 | 0 | 115 | 20 | 118 | 39 | 0 | 177 | 662 |
| 08:15 AM | 27 | 40 | 16 | 0 | 83 | 9 | 297 | 31 | 0 | 337 | 28 | 41 | 32 | 0 | 101 | 21 | 146 | 39 | 0 | 206 | 727 |
| Total Volume | 86 | 196 | 50 | 0 | 332 | 49 | 1115 | 97 | 0 | 1261 | 113 | 225 | 108 | 0 | 446 | 78 | 497 | 141 | 0 | 716 | 2755 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .741 | .831 | .781 | .000 | .922 | .583 | .939 | .782 | .000 | .935 | .764 | .865 | .844 | .000 | .929 | .780 | .851 | .904 | .000 | .869 | .947 |

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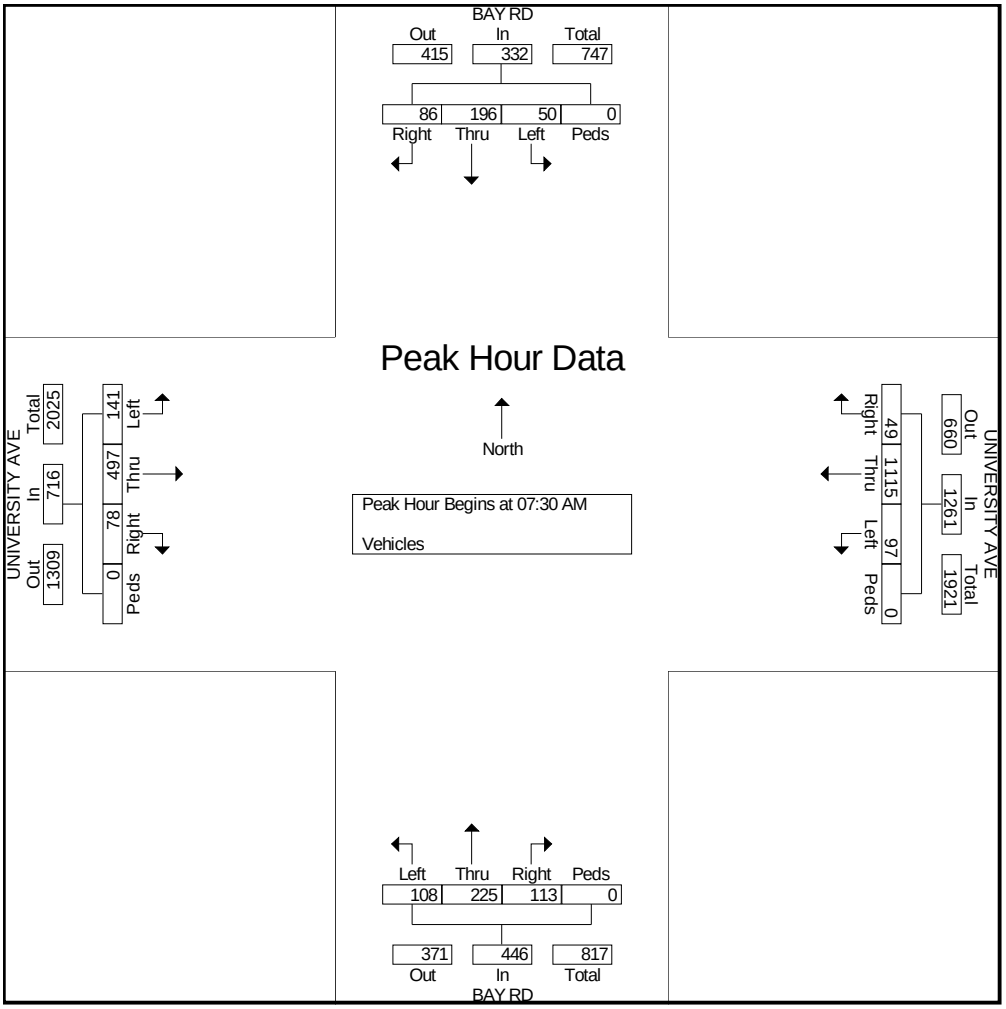
File Name : 4AM FINAL
Site Code : 00000004
Start Date : 11/9/2010
Page No : 2



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**File Name : 4PM FINAL**
**Site Code : 00000004**
**Start Date : 11/9/2010**
**Page No : 1**

**Groups Printed- Vehicles**

| | BAY RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | BAY RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 35 | 54 | 19 | 0 | 108 | 1 | 106 | 31 | 0 | 138 | 55 | 62 | 46 | 0 | 163 | 33 | 287 | 14 | 0 | 334 | 743 |
| 04:15 PM | 26 | 46 | 23 | 0 | 95 | 7 | 131 | 36 | 0 | 174 | 81 | 53 | 36 | 0 | 170 | 24 | 322 | 24 | 0 | 370 | 809 |
| 04:30 PM | 33 | 59 | 22 | 0 | 114 | 12 | 136 | 26 | 0 | 174 | 87 | 49 | 25 | 0 | 161 | 20 | 354 | 25 | 0 | 399 | 848 |
| 04:45 PM | 23 | 56 | 33 | 0 | 112 | 15 | 119 | 27 | 0 | 161 | 75 | 51 | 39 | 0 | 165 | 33 | 327 | 24 | 0 | 384 | 822 |
| Total | 117 | 215 | 97 | 0 | 429 | 35 | 492 | 120 | 0 | 647 | 298 | 215 | 146 | 0 | 659 | 110 | 1290 | 87 | 0 | 1487 | 3222 |
| 05:00 PM | 25 | 76 | 20 | 0 | 121 | 12 | 137 | 39 | 0 | 188 | 87 | 50 | 45 | 0 | 182 | 11 | 299 | 26 | 0 | 336 | 827 |
| 05:15 PM | 29 | 71 | 19 | 0 | 119 | 10 | 148 | 27 | 0 | 185 | 96 | 69 | 41 | 0 | 206 | 23 | 311 | 18 | 0 | 352 | 862 |
| 05:30 PM | 28 | 73 | 30 | 0 | 131 | 4 | 148 | 34 | 0 | 186 | 80 | 53 | 38 | 0 | 171 | 14 | 270 | 31 | 0 | 315 | 803 |
| 05:45 PM | 22 | 54 | 23 | 0 | 99 | 5 | 137 | 23 | 0 | 165 | 90 | 58 | 38 | 0 | 186 | 12 | 306 | 13 | 0 | 331 | 781 |
| Total | 104 | 274 | 92 | 0 | 470 | 31 | 570 | 123 | 0 | 724 | 353 | 230 | 162 | 0 | 745 | 60 | 1186 | 88 | 0 | 1334 | 3273 |
| Grand Total | 221 | 489 | 189 | 0 | 899 | 66 | 1062 | 243 | 0 | 1371 | 651 | 445 | 308 | 0 | 1404 | 170 | 2476 | 175 | 0 | 2821 | 6495 |
| Apprch % | 24.6 | 54.4 | 21 | 0 | | 4.8 | 77.5 | 17.7 | 0 | | 46.4 | 31.7 | 21.9 | 0 | | 6 | 87.8 | 6.2 | 0 | | |
| Total % | 3.4 | 7.5 | 2.9 | 0 | 13.8 | 1 | 16.4 | 3.7 | 0 | 21.1 | 10 | 6.9 | 4.7 | 0 | 21.6 | 2.6 | 38.1 | 2.7 | 0 | 43.4 | |

| | BAY RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | BAY RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 33 | 59 | 22 | 0 | 114 | 12 | 136 | 26 | 0 | 174 | 87 | 49 | 25 | 0 | 161 | 20 | 354 | 25 | 0 | 399 | 848 |
| 04:45 PM | 23 | 56 | 33 | 0 | 112 | 15 | 119 | 27 | 0 | 161 | 75 | 51 | 39 | 0 | 165 | 33 | 327 | 24 | 0 | 384 | 822 |
| 05:00 PM | 25 | 76 | 20 | 0 | 121 | 12 | 137 | 39 | 0 | 188 | 87 | 50 | 45 | 0 | 182 | 11 | 299 | 26 | 0 | 336 | 827 |
| 05:15 PM | 29 | 71 | 19 | 0 | 119 | 10 | 148 | 27 | 0 | 185 | 96 | 69 | 41 | 0 | 206 | 23 | 311 | 18 | 0 | 352 | 862 |
| Total Volume | 110 | 262 | 94 | 0 | 466 | 49 | 540 | 119 | 0 | 708 | 345 | 219 | 150 | 0 | 714 | 87 | 1291 | 93 | 0 | 1471 | 3359 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .833 | .862 | .712 | .000 | .963 | .817 | .912 | .763 | .000 | .941 | .898 | .793 | .833 | .000 | .867 | .659 | .912 | .894 | .000 | .922 | .974 |

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File Name : 4PM FINAL
Site Code : 00000004
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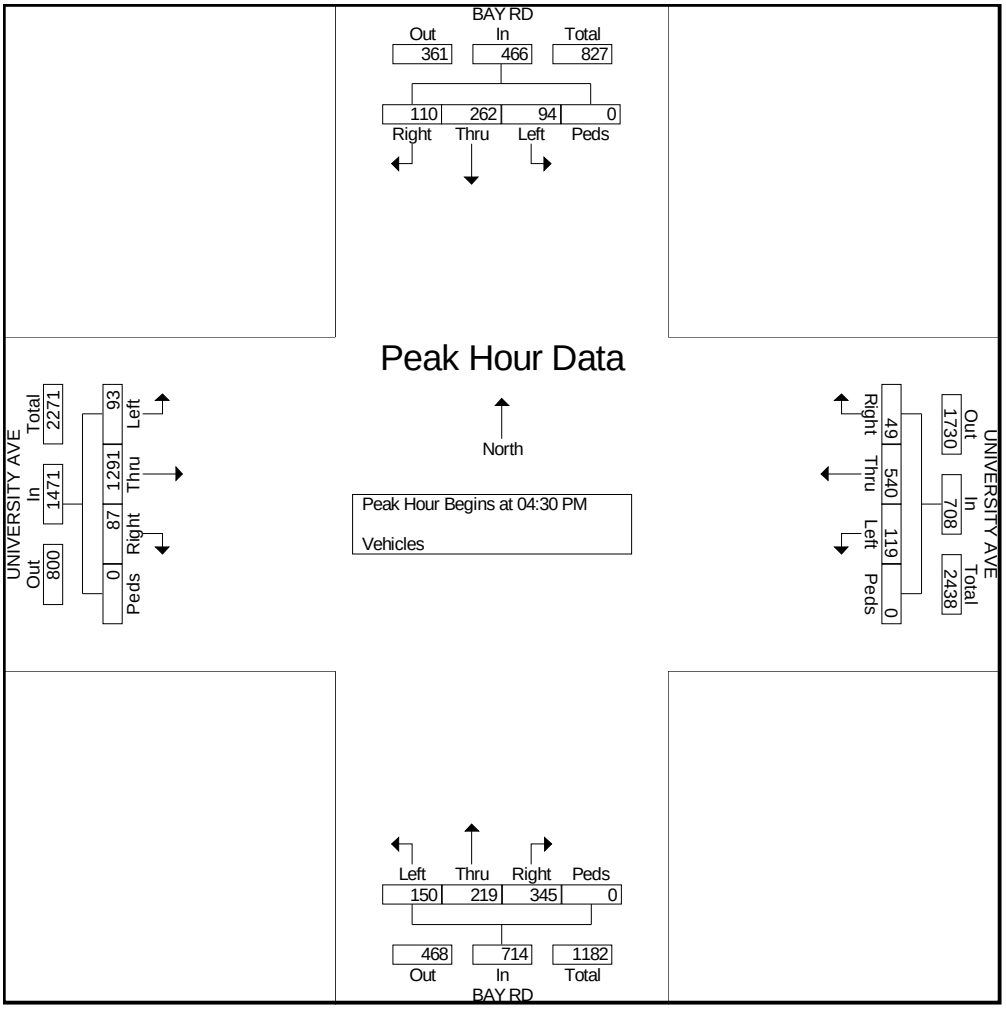

# Traffic Data Service

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File Name : 5AM FINAL
Site Code : 00000005
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Page No : 1

**Groups Printed- Vehicles**

| | RUNNYMEDE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | RUNNYMEDE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 1 | 8 | 2 | 0 | 11 | 6 | 275 | 12 | 0 | 293 | 8 | 13 | 6 | 0 | 27 | 8 | 86 | 0 | 0 | 94 | 425 |
| 07:15 AM | 3 | 21 | 3 | 0 | 27 | 15 | 309 | 30 | 0 | 354 | 5 | 33 | 18 | 0 | 56 | 19 | 125 | 4 | 0 | 148 | 585 |
| 07:30 AM | 0 | 17 | 7 | 0 | 24 | 21 | 334 | 21 | 0 | 376 | 2 | 37 | 14 | 0 | 53 | 17 | 132 | 2 | 0 | 151 | 604 |
| 07:45 AM | 5 | 22 | 5 | 0 | 32 | 18 | 301 | 27 | 0 | 346 | 3 | 22 | 12 | 0 | 37 | 14 | 153 | 3 | 0 | 170 | 585 |
| Total | 9 | 68 | 17 | 0 | 94 | 60 | 1219 | 90 | 0 | 1369 | 18 | 105 | 50 | 0 | 173 | 58 | 496 | 9 | 0 | 563 | 2199 |
| 08:00 AM | 21 | 9 | 2 | 0 | 32 | 12 | 286 | 23 | 0 | 321 | 3 | 28 | 10 | 0 | 41 | 9 | 168 | 7 | 0 | 184 | 578 |
| 08:15 AM | 30 | 11 | 2 | 0 | 43 | 10 | 325 | 17 | 0 | 352 | 4 | 18 | 11 | 0 | 33 | 8 | 173 | 6 | 0 | 187 | 615 |
| 08:30 AM | 19 | 10 | 2 | 0 | 31 | 8 | 328 | 25 | 0 | 361 | 2 | 13 | 10 | 0 | 25 | 5 | 136 | 1 | 0 | 142 | 559 |
| 08:45 AM | 6 | 13 | 3 | 0 | 22 | 6 | 319 | 22 | 0 | 347 | 2 | 14 | 16 | 0 | 32 | 8 | 128 | 0 | 0 | 136 | 537 |
| Total | 76 | 43 | 9 | 0 | 128 | 36 | 1258 | 87 | 0 | 1381 | 11 | 73 | 47 | 0 | 131 | 30 | 605 | 14 | 0 | 649 | 2289 |
| Grand Total | 85 | 111 | 26 | 0 | 222 | 96 | 2477 | 177 | 0 | 2750 | 29 | 178 | 97 | 0 | 304 | 88 | 1101 | 23 | 0 | 1212 | 4488 |
| Apprch % | 38.3 | 50 | 11.7 | 0 | | 3.5 | 90.1 | 6.4 | 0 | | 9.5 | 58.6 | 31.9 | 0 | | 7.3 | 90.8 | 1.9 | 0 | | |
| Total % | 1.9 | 2.5 | 0.6 | 0 | 4.9 | 2.1 | 55.2 | 3.9 | 0 | 61.3 | 0.6 | 4 | 2.2 | 0 | 6.8 | 2 | 24.5 | 0.5 | 0 | 27 | |

| | RUNNYMEDE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | RUNNYMEDE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 17 | 7 | 0 | 24 | 21 | 334 | 21 | 0 | 376 | 2 | 37 | 14 | 0 | 53 | 17 | 132 | 2 | 0 | 151 | 604 |
| 07:45 AM | 5 | 22 | 5 | 0 | 32 | 18 | 301 | 27 | 0 | 346 | 3 | 22 | 12 | 0 | 37 | 14 | 153 | 3 | 0 | 170 | 585 |
| 08:00 AM | 21 | 9 | 2 | 0 | 32 | 12 | 286 | 23 | 0 | 321 | 3 | 28 | 10 | 0 | 41 | 9 | 168 | 7 | 0 | 184 | 578 |
| 08:15 AM | 30 | 11 | 2 | 0 | 43 | 10 | 325 | 17 | 0 | 352 | 4 | 18 | 11 | 0 | 33 | 8 | 173 | 6 | 0 | 187 | 615 |
| Total Volume | 56 | 59 | 16 | 0 | 131 | 61 | 1246 | 88 | 0 | 1395 | 12 | 105 | 47 | 0 | 164 | 48 | 626 | 18 | 0 | 692 | 2382 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .467 | .670 | .571 | .000 | .762 | .726 | .933 | .815 | .000 | .928 | .750 | .709 | .839 | .000 | .774 | .706 | .905 | .643 | .000 | .925 | .968 |

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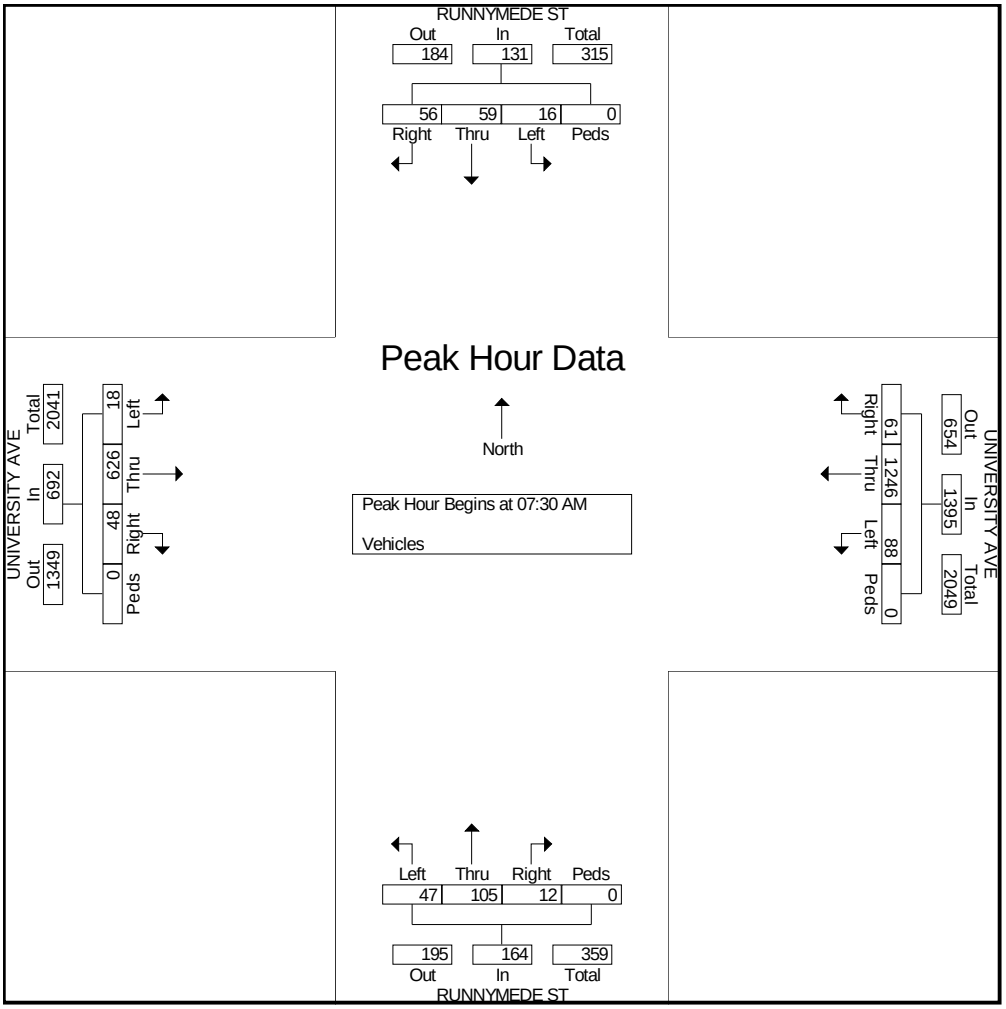

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File Name : 5PM FINAL
Site Code : 00000005
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vehicles**

| | RUNNYMEDE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | RUNNYMEDE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 7 | 19 | 3 | 0 | 29 | 9 | 179 | 9 | 0 | 197 | 12 | 13 | 7 | 0 | 32 | 26 | 313 | 4 | 0 | 343 | 601 |
| 04:15 PM | 9 | 16 | 1 | 0 | 26 | 4 | 151 | 6 | 0 | 161 | 27 | 15 | 13 | 0 | 55 | 20 | 329 | 5 | 0 | 354 | 596 |
| 04:30 PM | 7 | 16 | 7 | 0 | 30 | 4 | 168 | 11 | 0 | 183 | 17 | 23 | 22 | 0 | 62 | 24 | 323 | 11 | 0 | 358 | 633 |
| 04:45 PM | 14 | 15 | 5 | 0 | 34 | 0 | 182 | 6 | 0 | 188 | 12 | 23 | 20 | 0 | 55 | 21 | 317 | 3 | 0 | 341 | 618 |
| Total | 37 | 66 | 16 | 0 | 119 | 17 | 680 | 32 | 0 | 729 | 68 | 74 | 62 | 0 | 204 | 91 | 1282 | 23 | 0 | 1396 | 2448 |
| 05:00 PM | 3 | 18 | 2 | 0 | 23 | 6 | 194 | 15 | 0 | 215 | 10 | 38 | 21 | 0 | 69 | 12 | 312 | 9 | 0 | 333 | 640 |
| 05:15 PM | 6 | 23 | 4 | 0 | 33 | 5 | 194 | 9 | 0 | 208 | 19 | 21 | 18 | 0 | 58 | 20 | 335 | 13 | 0 | 368 | 667 |
| 05:30 PM | 4 | 20 | 6 | 0 | 30 | 6 | 223 | 14 | 0 | 243 | 18 | 27 | 19 | 0 | 64 | 25 | 300 | 4 | 0 | 329 | 666 |
| 05:45 PM | 5 | 25 | 8 | 0 | 38 | 7 | 149 | 9 | 0 | 165 | 18 | 23 | 23 | 0 | 64 | 17 | 292 | 7 | 0 | 316 | 583 |
| Total | 18 | 86 | 20 | 0 | 124 | 24 | 760 | 47 | 0 | 831 | 65 | 109 | 81 | 0 | 255 | 74 | 1239 | 33 | 0 | 1346 | 2556 |
| Grand Total | 55 | 152 | 36 | 0 | 243 | 41 | 1440 | 79 | 0 | 1560 | 133 | 183 | 143 | 0 | 459 | 165 | 2521 | 56 | 0 | 2742 | 5004 |
| Apprch % | 22.6 | 62.6 | 14.8 | 0 | | 2.6 | 92.3 | 5.1 | 0 | | 29 | 39.9 | 31.2 | 0 | | 6 | 91.9 | 2 | 0 | | |
| Total % | 1.1 | 3 | 0.7 | 0 | 4.9 | 0.8 | 28.8 | 1.6 | 0 | 31.2 | 2.7 | 3.7 | 2.9 | 0 | 9.2 | 3.3 | 50.4 | 1.1 | 0 | 54.8 | |

| | RUNNYMEDE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | RUNNYMEDE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 14 | 15 | 5 | 0 | 34 | 0 | 182 | 6 | 0 | 188 | 12 | 23 | 20 | 0 | 55 | 21 | 317 | 3 | 0 | 341 | 618 |
| 05:00 PM | 3 | 18 | 2 | 0 | 23 | 6 | 194 | 15 | 0 | 215 | 10 | 38 | 21 | 0 | 69 | 12 | 312 | 9 | 0 | 333 | 640 |
| 05:15 PM | 6 | 23 | 4 | 0 | 33 | 5 | 194 | 9 | 0 | 208 | 19 | 21 | 18 | 0 | 58 | 20 | 335 | 13 | 0 | 368 | 667 |
| 05:30 PM | 4 | 20 | 6 | 0 | 30 | 6 | 223 | 14 | 0 | 243 | 18 | 27 | 19 | 0 | 64 | 25 | 300 | 4 | 0 | 329 | 666 |
| Total Volume | 27 | 76 | 17 | 0 | 120 | 17 | 793 | 44 | 0 | 854 | 59 | 109 | 78 | 0 | 246 | 78 | 1264 | 29 | 0 | 1371 | 2591 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .482 | .826 | .708 | .000 | .882 | .708 | .889 | .733 | .000 | .879 | .776 | .717 | .929 | .000 | .891 | .780 | .943 | .558 | .000 | .931 | .971 |

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Site Code : 00000005
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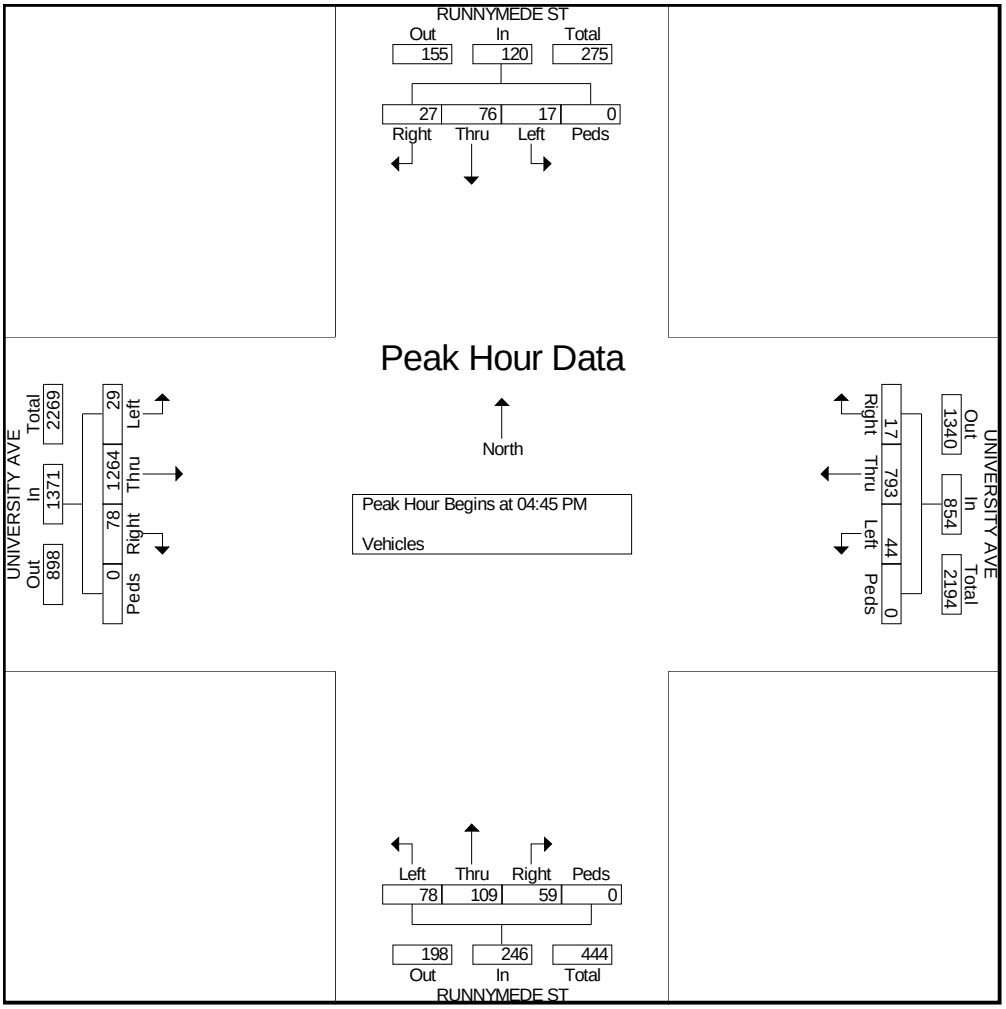


# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-003 UNIVERSITY-BELL
Site Code : 00000000
Start Date : 6/8/2011
Page No : 1

**Groups Printed- Unshifted**

| | UNIVERSITY AVE. Southbound | | | | BELL ST. Westbound | | | | UNIVERSITY AVE. Northbound | | | | BELL ST. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 07:00 | 2 | 223 | 6 | 231 | 6 | 14 | 2 | 22 | 0 | 148 | 2 | 150 | 0 | 5 | 3 | 8 | 411 |
| 07:15 | 6 | 241 | 5 | 252 | 8 | 15 | 3 | 26 | 2 | 167 | 3 | 172 | 2 | 9 | 2 | 13 | 463 |
| 07:30 | 5 | 256 | 6 | 267 | 9 | 17 | 3 | 29 | 2 | 176 | 5 | 183 | 1 | 8 | 3 | 12 | 491 |
| 07:45 | 6 | 271 | 8 | 285 | 13 | 21 | 4 | 38 | 3 | 189 | 6 | 198 | 2 | 13 | 4 | 19 | 540 |
| Total | 19 | 991 | 25 | 1035 | 36 | 67 | 12 | 115 | 7 | 680 | 16 | 703 | 5 | 35 | 12 | 52 | 1905 |
| 08:00 | 4 | 221 | 2 | 227 | 7 | 16 | 3 | 26 | 2 | 192 | 3 | 197 | 3 | 15 | 4 | 22 | 472 |
| 08:15 | 1 | 304 | 7 | 312 | 3 | 25 | 0 | 28 | 6 | 141 | 9 | 156 | 0 | 15 | 2 | 17 | 513 |
| 08:30 | 5 | 337 | 7 | 349 | 5 | 7 | 3 | 15 | 4 | 135 | 8 | 147 | 2 | 9 | 2 | 13 | 524 |
| 08:45 | 5 | 368 | 8 | 381 | 3 | 11 | 3 | 17 | 3 | 146 | 4 | 153 | 2 | 4 | 3 | 9 | 560 |
| Total | 15 | 1230 | 24 | 1269 | 18 | 59 | 9 | 86 | 15 | 614 | 24 | 653 | 7 | 43 | 11 | 61 | 2069 |
| 16:00 | 4 | 166 | 3 | 173 | 9 | 13 | 18 | 40 | 5 | 247 | 14 | 266 | 5 | 11 | 7 | 23 | 502 |
| 16:15 | 5 | 198 | 5 | 208 | 17 | 9 | 6 | 32 | 7 | 286 | 7 | 300 | 5 | 13 | 9 | 27 | 567 |
| 16:30 | 10 | 203 | 7 | 220 | 15 | 20 | 11 | 46 | 13 | 352 | 16 | 381 | 0 | 18 | 9 | 27 | 674 |
| 16:45 | 8 | 187 | 5 | 200 | 15 | 19 | 14 | 48 | 9 | 319 | 23 | 351 | 8 | 16 | 4 | 28 | 627 |
| Total | 27 | 754 | 20 | 801 | 56 | 61 | 49 | 166 | 34 | 1204 | 60 | 1298 | 18 | 58 | 29 | 105 | 2370 |
| 17:00 | 9 | 184 | 5 | 198 | 17 | 24 | 6 | 47 | 9 | 335 | 27 | 371 | 2 | 19 | 3 | 24 | 640 |
| 17:15 | 10 | 213 | 5 | 228 | 13 | 20 | 7 | 40 | 11 | 316 | 21 | 348 | 1 | 15 | 6 | 22 | 638 |
| 17:30 | 6 | 203 | 6 | 215 | 20 | 21 | 9 | 50 | 4 | 306 | 21 | 331 | 2 | 15 | 3 | 20 | 616 |
| 17:45 | 9 | 187 | 9 | 205 | 19 | 15 | 13 | 47 | 4 | 304 | 17 | 325 | 2 | 13 | 9 | 24 | 601 |
| Total | 34 | 787 | 25 | 846 | 69 | 80 | 35 | 184 | 28 | 1261 | 86 | 1375 | 7 | 62 | 21 | 90 | 2495 |
| Grand Total | 95 | 3762 | 94 | 3951 | 179 | 267 | 105 | 551 | 84 | 3759 | 186 | 4029 | 37 | 198 | 73 | 308 | 8839 |
| Apprch % | 2.4 | 95.2 | 2.4 | | 32.5 | 48.5 | 19.1 | | 2.1 | 93.3 | 4.6 | | 12 | 64.3 | 23.7 | | |
| Total % | 1.1 | 42.6 | 1.1 | 44.7 | 2 | 3 | 1.2 | 6.2 | 1 | 42.5 | 2.1 | 45.6 | 0.4 | 2.2 | 0.8 | 3.5 | |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-003 UNIVERSITY-BELL
Site Code : 00000000
Start Date : 6/8/2011
Page No : 2

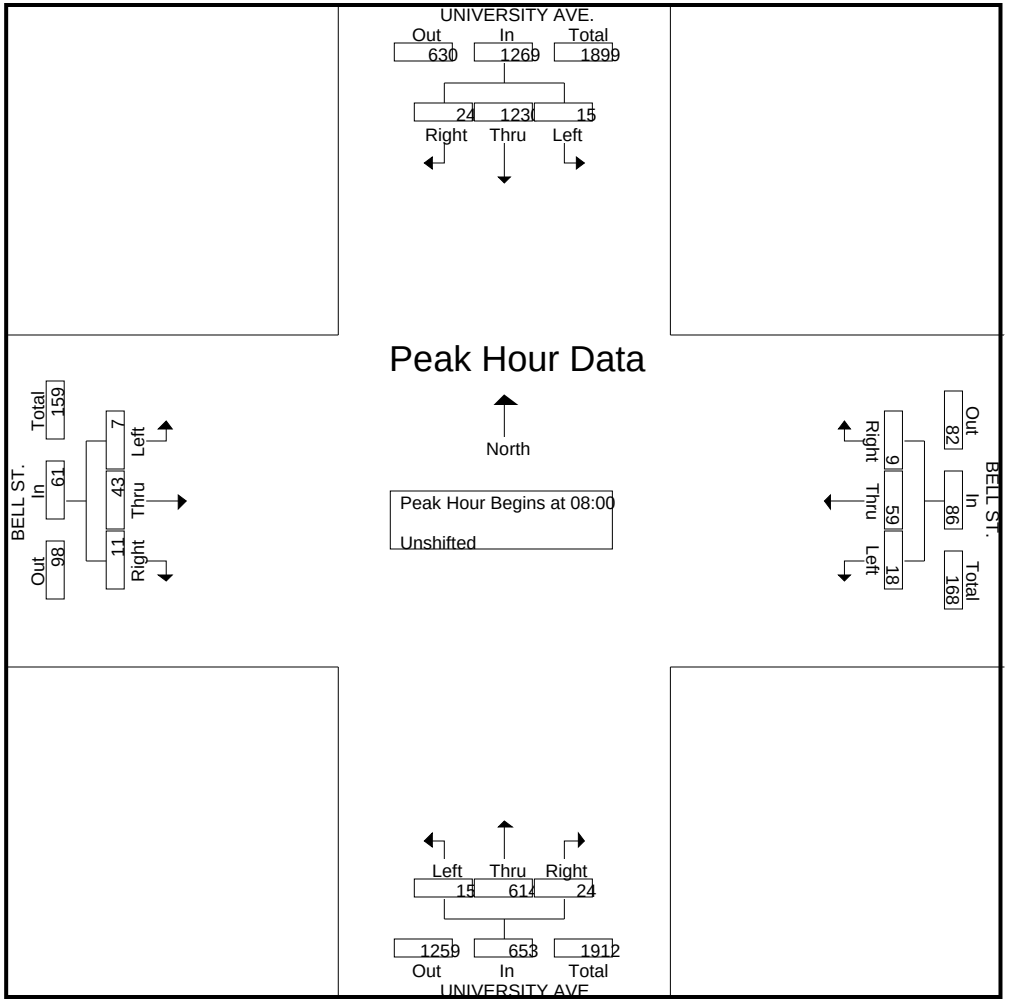
| | UNIVERSITY AVE. Southbound | | | | BELL ST. Westbound | | | | UNIVERSITY AVE. Northbound | | | | BELL ST. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 | | | | | | | | | | | | | | | | | |
| 08:00 | 4 | 221 | 2 | 227 | **7** | 16 | **3** | 26 | 2 | **192** | 3 | **197** | **3** | **15** | **4** | **22** | 472 |
| 08:15 | 1 | 304 | 7 | 312 | 3 | **25** | 0 | **28** | **6** | 141 | **9** | 156 | 0 | 15 | 2 | 17 | 513 |
| 08:30 | **5** | 337 | 7 | 349 | 5 | 7 | 3 | 15 | 4 | 135 | 8 | 147 | 2 | 9 | 2 | 13 | 524 |
| 08:45 | 5 | **368** | **8** | **381** | 3 | 11 | 3 | 17 | 3 | 146 | 4 | 153 | 2 | 4 | 3 | 9 | **560** |
| Total Volume | 15 | 1230 | 24 | 1269 | 18 | 59 | 9 | 86 | 15 | 614 | 24 | 653 | 7 | 43 | 11 | 61 | 2069 |
| % App. Total | 1.2 | 96.9 | 1.9 | | 20.9 | 68.6 | 10.5 | | 2.3 | 94 | 3.7 | | 11.5 | 70.5 | 18 | | |
| PHF | .750 | .836 | .750 | .833 | .643 | .590 | .750 | .768 | .625 | .799 | .667 | .829 | .583 | .717 | .688 | .693 | .924 |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-003 UNIVERSITY-BELL
Site Code : 00000000
Start Date : 6/8/2011
Page No : 3



# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-003 UNIVERSITY-BELL
Site Code : 00000000
Start Date : 6/8/2011
Page No : 4

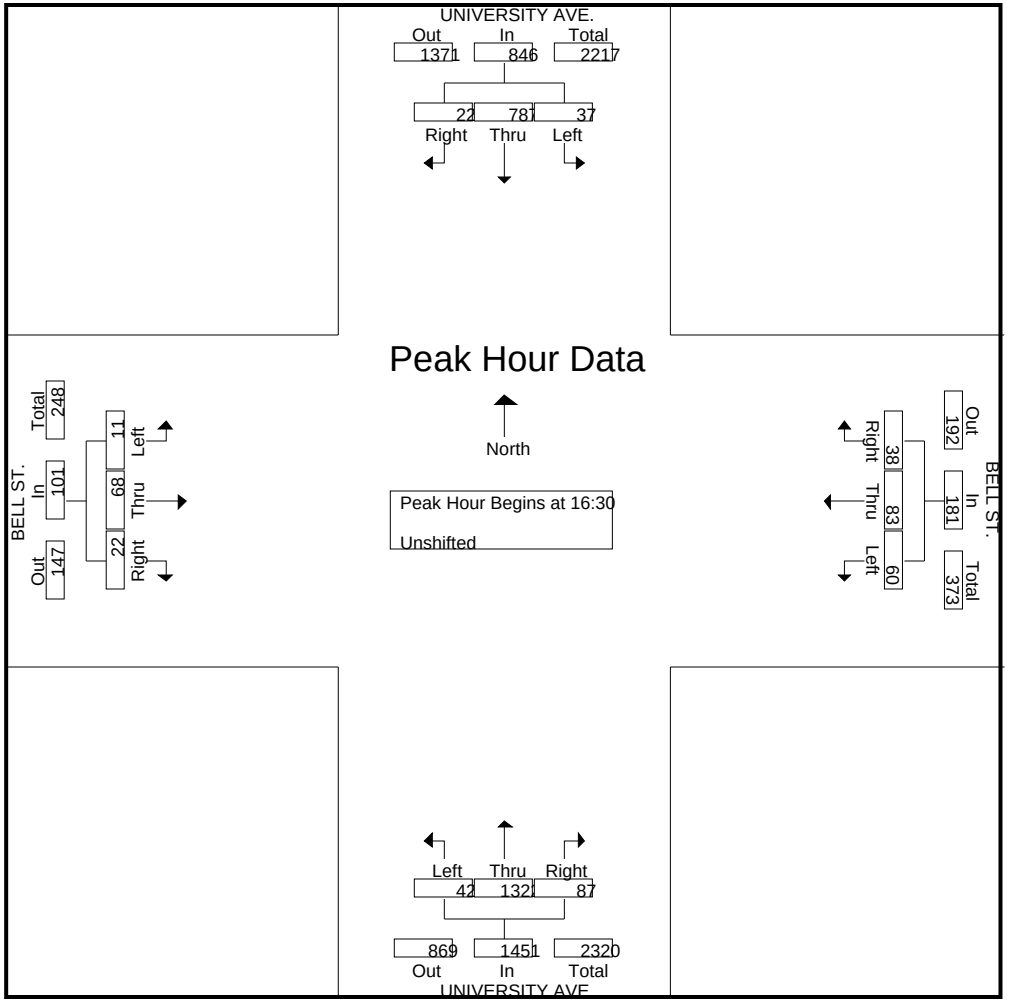
| | UNIVERSITY AVE. Southbound | | | | BELL ST. Westbound | | | | UNIVERSITY AVE. Northbound | | | | BELL ST. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | |
| 16:30 | **10** | 203 | **7** | 220 | 15 | 20 | 11 | 46 | **13** | **352** | 16 | **381** | 0 | 18 | **9** | 27 | **674** |
| 16:45 | 8 | 187 | 5 | 200 | 15 | 19 | **14** | **48** | 9 | 319 | 23 | 351 | **8** | 16 | 4 | **28** | 627 |
| 17:00 | 9 | 184 | 5 | 198 | **17** | **24** | 6 | 47 | 9 | 335 | **27** | 371 | 2 | **19** | 3 | 24 | 640 |
| 17:15 | 10 | **213** | 5 | **228** | 13 | 20 | 7 | 40 | 11 | 316 | 21 | 348 | 1 | 15 | 6 | 22 | 638 |
| Total Volume | 37 | 787 | 22 | 846 | 60 | 83 | 38 | 181 | 42 | 1322 | 87 | 1451 | 11 | 68 | 22 | 101 | 2579 |
| % App. Total | 4.4 | 93 | 2.6 | | 33.1 | 45.9 | 21 | | 2.9 | 91.1 | 6 | | 10.9 | 67.3 | 21.8 | | |
| PHF | .925 | .924 | .786 | .928 | .882 | .865 | .679 | .943 | .808 | .939 | .806 | .952 | .344 | .895 | .611 | .902 | .957 |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-003 UNIVERSITY-BELL
Site Code : 00000000
Start Date : 6/8/2011
Page No : 5



Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 6AM FINAL
Site Code : 00000006
Start Date : 11/9/2010
Page No : 1

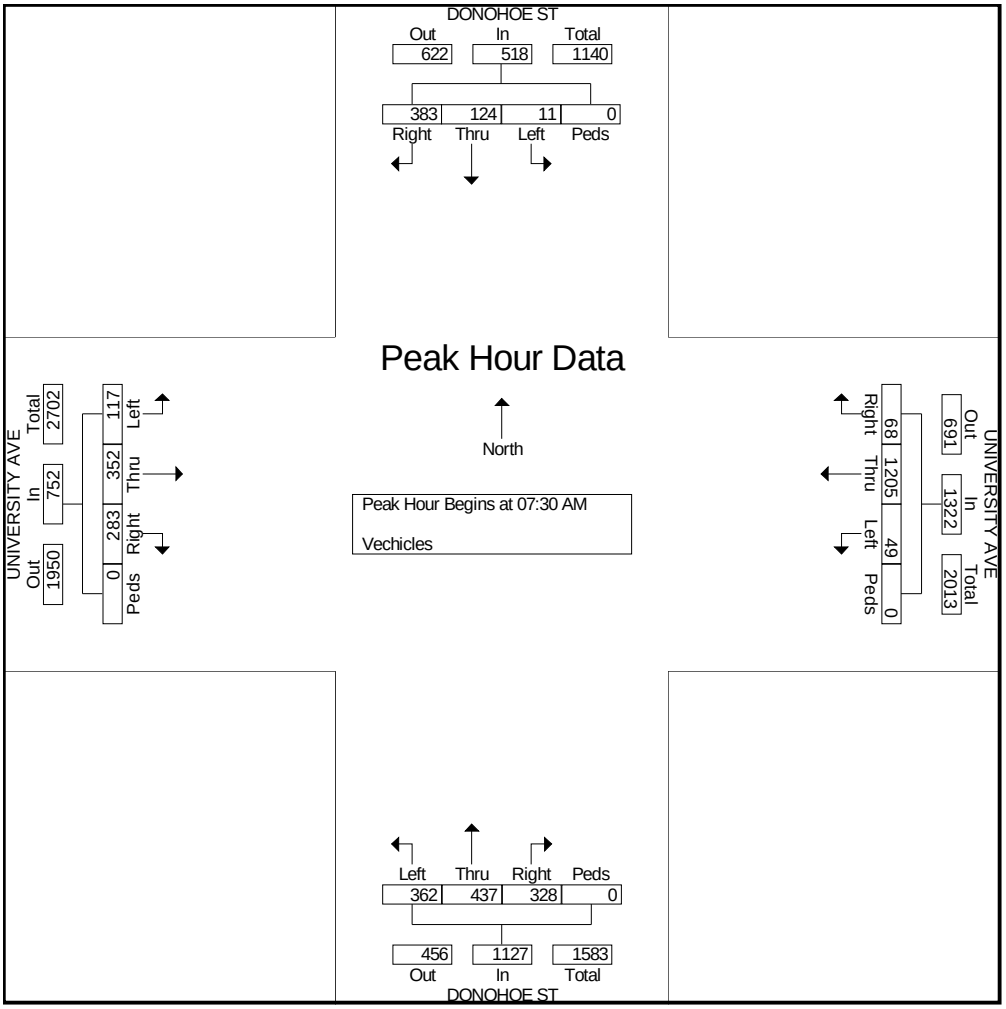
**Groups Printed- Vechicles**

| | DONOHOE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | DONOHOE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 66 | 22 | 5 | 0 | 93 | 21 | 239 | 15 | 0 | 275 | 49 | 113 | 50 | 0 | 212 | 58 | 32 | 23 | 0 | 113 | 693 |
| 07:15 AM | 74 | 27 | 5 | 0 | 106 | 20 | 293 | 6 | 0 | 319 | 70 | 122 | 92 | 0 | 284 | 82 | 66 | 20 | 0 | 168 | 877 |
| 07:30 AM | 120 | 36 | 2 | 0 | 158 | 23 | 294 | 8 | 0 | 325 | 67 | 122 | 86 | 0 | 275 | 58 | 87 | 22 | 0 | 167 | 925 |
| 07:45 AM | 102 | 28 | 2 | 0 | 132 | 12 | 284 | 8 | 0 | 304 | 76 | 109 | 119 | 0 | 304 | 75 | 93 | 24 | 0 | 192 | 932 |
| Total | 362 | 113 | 14 | 0 | 489 | 76 | 1110 | 37 | 0 | 1223 | 262 | 466 | 347 | 0 | 1075 | 273 | 278 | 89 | 0 | 640 | 3427 |
| 08:00 AM | 83 | 30 | 3 | 0 | 116 | 14 | 306 | 15 | 0 | 335 | 79 | 107 | 90 | 0 | 276 | 73 | 87 | 45 | 0 | 205 | 932 |
| 08:15 AM | 78 | 30 | 4 | 0 | 112 | 19 | 321 | 18 | 0 | 358 | 106 | 99 | 67 | 0 | 272 | 77 | 85 | 26 | 0 | 188 | 930 |
| 08:30 AM | 52 | 30 | 5 | 0 | 87 | 28 | 306 | 14 | 0 | 348 | 85 | 106 | 57 | 0 | 248 | 80 | 50 | 22 | 0 | 152 | 835 |
| 08:45 AM | 61 | 32 | 8 | 0 | 101 | 22 | 277 | 10 | 0 | 309 | 76 | 107 | 55 | 0 | 238 | 59 | 46 | 13 | 0 | 118 | 766 |
| Total | 274 | 122 | 20 | 0 | 416 | 83 | 1210 | 57 | 0 | 1350 | 346 | 419 | 269 | 0 | 1034 | 289 | 268 | 106 | 0 | 663 | 3463 |
| Grand Total | 636 | 235 | 34 | 0 | 905 | 159 | 2320 | 94 | 0 | 2573 | 608 | 885 | 616 | 0 | 2109 | 562 | 546 | 195 | 0 | 1303 | 6890 |
| Apprch % | 70.3 | 26 | 3.8 | 0 | | 6.2 | 90.2 | 3.7 | 0 | | 28.8 | 42 | 29.2 | 0 | | 43.1 | 41.9 | 15 | 0 | | |
| Total % | 9.2 | 3.4 | 0.5 | 0 | 13.1 | 2.3 | 33.7 | 1.4 | 0 | 37.3 | 8.8 | 12.8 | 8.9 | 0 | 30.6 | 8.2 | 7.9 | 2.8 | 0 | 18.9 | |

| | DONOHOE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | DONOHOE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 120 | 36 | 2 | 0 | 158 | 23 | 294 | 8 | 0 | 325 | 67 | 122 | 86 | 0 | 275 | 58 | 87 | 22 | 0 | 167 | 925 |
| 07:45 AM | 102 | 28 | 2 | 0 | 132 | 12 | 284 | 8 | 0 | 304 | 76 | 109 | 119 | 0 | 304 | 75 | 93 | 24 | 0 | 192 | 932 |
| 08:00 AM | 83 | 30 | 3 | 0 | 116 | 14 | 306 | 15 | 0 | 335 | 79 | 107 | 90 | 0 | 276 | 73 | 87 | 45 | 0 | 205 | 932 |
| 08:15 AM | 78 | 30 | 4 | 0 | 112 | 19 | 321 | 18 | 0 | 358 | 106 | 99 | 67 | 0 | 272 | 77 | 85 | 26 | 0 | 188 | 930 |
| Total Volume | 383 | 124 | 11 | 0 | 518 | 68 | 1205 | 49 | 0 | 1322 | 328 | 437 | 362 | 0 | 1127 | 283 | 352 | 117 | 0 | 752 | 3719 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .798 | .861 | .688 | .000 | .820 | .739 | .938 | .681 | .000 | .923 | .774 | .895 | .761 | .000 | .927 | .919 | .946 | .650 | .000 | .917 | .998 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 6AM FINAL
Site Code : 00000006
Start Date : 11/9/2010
Page No : 2



Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 6PM FINAL
Site Code : 00000006
Start Date : 11/9/2010
Page No : 1

**Groups Printed- Vechicles**

| | DONOHOE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | DONOHOE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 29 | 27 | 13 | 0 | 69 | 32 | 168 | 14 | 0 | 214 | 158 | 104 | 73 | 0 | 335 | 113 | 187 | 37 | 0 | 337 | 955 |
| 04:15 PM | 55 | 38 | 12 | 0 | 105 | 46 | 144 | 14 | 0 | 204 | 168 | 122 | 71 | 0 | 361 | 117 | 196 | 60 | 0 | 373 | 1043 |
| 04:30 PM | 59 | 38 | 5 | 0 | 102 | 46 | 144 | 23 | 0 | 213 | 175 | 121 | 59 | 0 | 355 | 104 | 193 | 55 | 0 | 352 | 1022 |
| 04:45 PM | 49 | 53 | 8 | 0 | 110 | 39 | 163 | 30 | 0 | 232 | 154 | 129 | 85 | 0 | 368 | 125 | 191 | 55 | 0 | 371 | 1081 |
| Total | 192 | 156 | 38 | 0 | 386 | 163 | 619 | 81 | 0 | 863 | 655 | 476 | 288 | 0 | 1419 | 459 | 767 | 207 | 0 | 1433 | 4101 |
| 05:00 PM | 57 | 35 | 4 | 0 | 96 | 48 | 145 | 23 | 0 | 216 | 153 | 117 | 70 | 0 | 340 | 129 | 188 | 73 | 0 | 390 | 1042 |
| 05:15 PM | 69 | 42 | 10 | 0 | 121 | 38 | 185 | 32 | 0 | 255 | 150 | 131 | 65 | 0 | 346 | 146 | 206 | 49 | 0 | 401 | 1123 |
| 05:30 PM | 49 | 45 | 10 | 0 | 104 | 48 | 170 | 30 | 0 | 248 | 142 | 108 | 95 | 0 | 345 | 140 | 199 | 40 | 0 | 379 | 1076 |
| 05:45 PM | 32 | 48 | 7 | 0 | 87 | 25 | 151 | 27 | 0 | 203 | 144 | 95 | 76 | 0 | 315 | 135 | 157 | 46 | 0 | 338 | 943 |
| Total | 207 | 170 | 31 | 0 | 408 | 159 | 651 | 112 | 0 | 922 | 589 | 451 | 306 | 0 | 1346 | 550 | 750 | 208 | 0 | 1508 | 4184 |
| Grand Total | 399 | 326 | 69 | 0 | 794 | 322 | 1270 | 193 | 0 | 1785 | 1244 | 927 | 594 | 0 | 2765 | 1009 | 1517 | 415 | 0 | 2941 | 8285 |
| Apprch % | 50.3 | 41.1 | 8.7 | 0 | | 18 | 71.1 | 10.8 | 0 | | 45 | 33.5 | 21.5 | 0 | | 34.3 | 51.6 | 14.1 | 0 | | |
| Total % | 4.8 | 3.9 | 0.8 | 0 | 9.6 | 3.9 | 15.3 | 2.3 | 0 | 21.5 | 15 | 11.2 | 7.2 | 0 | 33.4 | 12.2 | 18.3 | 5 | 0 | 35.5 | |

| | DONOHOE ST Southbound | | | | | UNIVERSITY AVE Westbound | | | | | DONOHOE ST Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 49 | 53 | 8 | 0 | 110 | 39 | 163 | 30 | 0 | 232 | 154 | 129 | 85 | 0 | 368 | 125 | 191 | 55 | 0 | 371 | 1081 |
| 05:00 PM | 57 | 35 | 4 | 0 | 96 | 48 | 145 | 23 | 0 | 216 | 153 | 117 | 70 | 0 | 340 | 129 | 188 | 73 | 0 | 390 | 1042 |
| 05:15 PM | 69 | 42 | 10 | 0 | 121 | 38 | 185 | 32 | 0 | 255 | 150 | 131 | 65 | 0 | 346 | 146 | 206 | 49 | 0 | 401 | 1123 |
| 05:30 PM | 49 | 45 | 10 | 0 | 104 | 48 | 170 | 30 | 0 | 248 | 142 | 108 | 95 | 0 | 345 | 140 | 199 | 40 | 0 | 379 | 1076 |
| Total Volume | 224 | 175 | 32 | 0 | 431 | 173 | 663 | 115 | 0 | 951 | 599 | 485 | 315 | 0 | 1399 | 540 | 784 | 217 | 0 | 1541 | 4322 |
| % App. Total | 52 | 40.6 | 7.4 | 0 | | 18.2 | 69.7 | 12.1 | 0 | | 42.8 | 34.7 | 22.5 | 0 | | 35 | 50.9 | 14.1 | 0 | | |
| PHF | .812 | .825 | .800 | .000 | .890 | .901 | .896 | .898 | .000 | .932 | .972 | .926 | .829 | .000 | .950 | .925 | .951 | .743 | .000 | .961 | .962 |

Traffic Data Service
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File Name : 6PM FINAL
Site Code : 00000006
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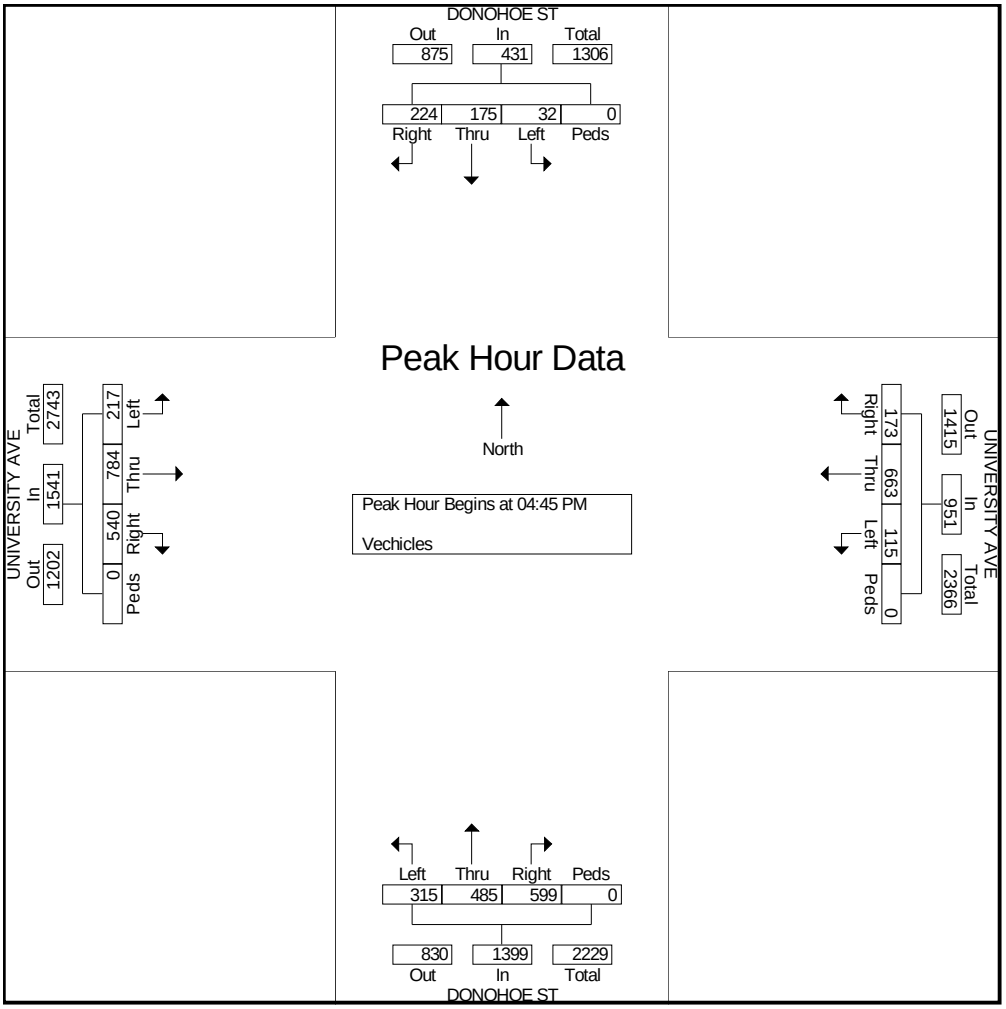
Page No : 2



# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-001 CAPITOL-DONOHUE
Site Code : 00000000
Start Date : 6/8/2011
Page No : 1

**Groups Printed- Unshifted**

| | CAPITOL AVE. Southbound | | | | DONOHUE ST. Westbound | | | | US-101 NB OFF RAMP Northbound | | | | DONOHUE ST. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 07:00 | 0 | 0 | 5 | 5 | 0 | 158 | 1 | 159 | 86 | 0 | 43 | 129 | 0 | 123 | 0 | 123 | 416 |
| 07:15 | 0 | 0 | 10 | 10 | 0 | 178 | 1 | 179 | 75 | 0 | 28 | 103 | 0 | 116 | 0 | 116 | 408 |
| 07:30 | 0 | 0 | 22 | 22 | 0 | 232 | 3 | 235 | 87 | 0 | 48 | 135 | 0 | 109 | 0 | 109 | 501 |
| 07:45 | 0 | 0 | 42 | 42 | 0 | 214 | 1 | 215 | 87 | 0 | 27 | 114 | 0 | 119 | 0 | 119 | 490 |
| Total | 0 | 0 | 79 | 79 | 0 | 782 | 6 | 788 | 335 | 0 | 146 | 481 | 0 | 467 | 0 | 467 | 1815 |
| 08:00 | 0 | 0 | 28 | 28 | 0 | 206 | 1 | 207 | 104 | 0 | 24 | 128 | 0 | 124 | 0 | 124 | 487 |
| 08:15 | 0 | 0 | 21 | 21 | 0 | 185 | 3 | 188 | 87 | 0 | 41 | 128 | 0 | 99 | 0 | 99 | 436 |
| 08:30 | 0 | 0 | 27 | 27 | 0 | 185 | 1 | 186 | 96 | 0 | 32 | 128 | 0 | 138 | 0 | 138 | 479 |
| 08:45 | 0 | 0 | 14 | 14 | 0 | 136 | 1 | 137 | 87 | 0 | 29 | 116 | 0 | 110 | 0 | 110 | 377 |
| Total | 0 | 0 | 90 | 90 | 0 | 712 | 6 | 718 | 374 | 0 | 126 | 500 | 0 | 471 | 0 | 471 | 1779 |
| 16:00 | 0 | 0 | 3 | 3 | 0 | 259 | 6 | 265 | 125 | 0 | 44 | 169 | 0 | 184 | 0 | 184 | 621 |
| 16:15 | 0 | 0 | 1 | 1 | 0 | 218 | 1 | 219 | 185 | 0 | 64 | 249 | 0 | 172 | 0 | 172 | 641 |
| 16:30 | 0 | 0 | 4 | 4 | 0 | 195 | 6 | 201 | 188 | 0 | 65 | 253 | 0 | 206 | 0 | 206 | 664 |
| 16:45 | 0 | 0 | 6 | 6 | 0 | 206 | 2 | 208 | 172 | 0 | 68 | 240 | 0 | 207 | 0 | 207 | 661 |
| Total | 0 | 0 | 14 | 14 | 0 | 878 | 15 | 893 | 670 | 0 | 241 | 911 | 0 | 769 | 0 | 769 | 2587 |
| 17:00 | 0 | 0 | 5 | 5 | 0 | 193 | 7 | 200 | 202 | 0 | 58 | 260 | 0 | 180 | 0 | 180 | 645 |
| 17:15 | 0 | 0 | 1 | 1 | 0 | 208 | 4 | 212 | 203 | 0 | 86 | 289 | 0 | 190 | 0 | 190 | 692 |
| 17:30 | 0 | 0 | 1 | 1 | 0 | 193 | 13 | 206 | 170 | 0 | 75 | 245 | 0 | 203 | 0 | 203 | 655 |
| 17:45 | 0 | 0 | 5 | 5 | 0 | 169 | 8 | 177 | 196 | 0 | 68 | 264 | 0 | 195 | 0 | 195 | 641 |
| Total | 0 | 0 | 12 | 12 | 0 | 763 | 32 | 795 | 771 | 0 | 287 | 1058 | 0 | 768 | 0 | 768 | 2633 |
| Grand Total | 0 | 0 | 195 | 195 | 0 | 3135 | 59 | 3194 | 2150 | 0 | 800 | 2950 | 0 | 2475 | 0 | 2475 | 8814 |
| Apprch % | 0 | 0 | 100 | | 0 | 98.2 | 1.8 | | 72.9 | 0 | 27.1 | | 0 | 100 | 0 | | |
| Total % | 0 | 0 | 2.2 | 2.2 | 0 | 35.6 | 0.7 | 36.2 | 24.4 | 0 | 9.1 | 33.5 | 0 | 28.1 | 0 | 28.1 | |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-001 CAPITOL-DONOHUE
Site Code : 00000000
Start Date : 6/8/2011
Page No : 2

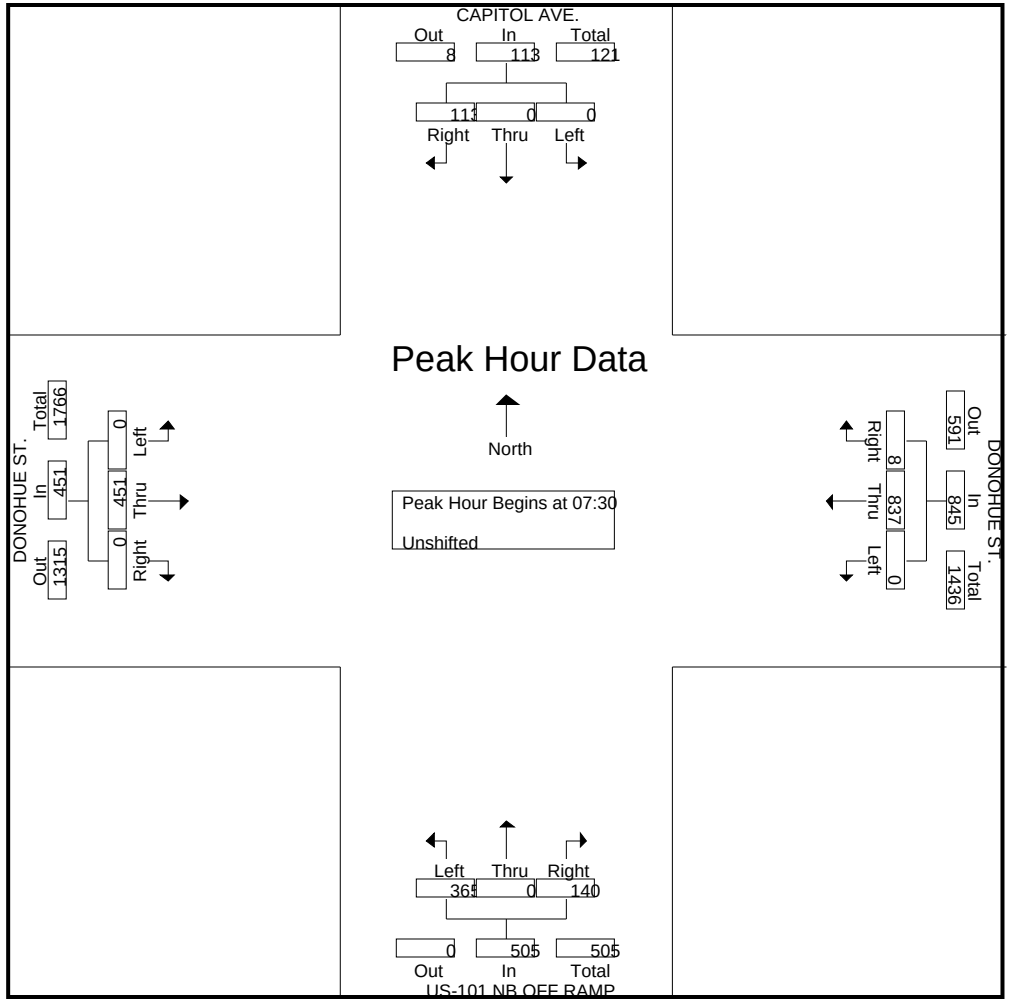
| | CAPITOL AVE. Southbound | | | | DONOHUE ST. Westbound | | | | US-101 NB OFF RAMP Northbound | | | | DONOHUE ST. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 0 | 22 | 22 | 0 | **232** | **3** | **235** | 87 | 0 | **48** | **135** | 0 | 109 | 0 | 109 | **501** |
| 07:45 | 0 | 0 | **42** | **42** | 0 | 214 | 1 | 215 | 87 | 0 | 27 | 114 | 0 | 119 | 0 | 119 | 490 |
| 08:00 | 0 | 0 | 28 | 28 | 0 | 206 | 1 | 207 | **104** | 0 | 24 | 128 | 0 | **124** | 0 | **124** | 487 |
| 08:15 | 0 | 0 | 21 | 21 | 0 | 185 | 3 | 188 | 87 | 0 | 41 | 128 | 0 | 99 | 0 | 99 | 436 |
| Total Volume | 0 | 0 | 113 | 113 | 0 | 837 | 8 | 845 | 365 | 0 | 140 | 505 | 0 | 451 | 0 | 451 | 1914 |
| % App. Total | 0 | 0 | 100 | | 0 | 99.1 | 0.9 | | 72.3 | 0 | 27.7 | | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .673 | .673 | .000 | .902 | .667 | .899 | .877 | .000 | .729 | .935 | .000 | .909 | .000 | .909 | .955 |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-001 CAPITOL-DONOHUE
Site Code : 00000000
Start Date : 6/8/2011
Page No : 3



# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-001 CAPITOL-DONOHUE
Site Code : 00000000
Start Date : 6/8/2011
Page No : 4

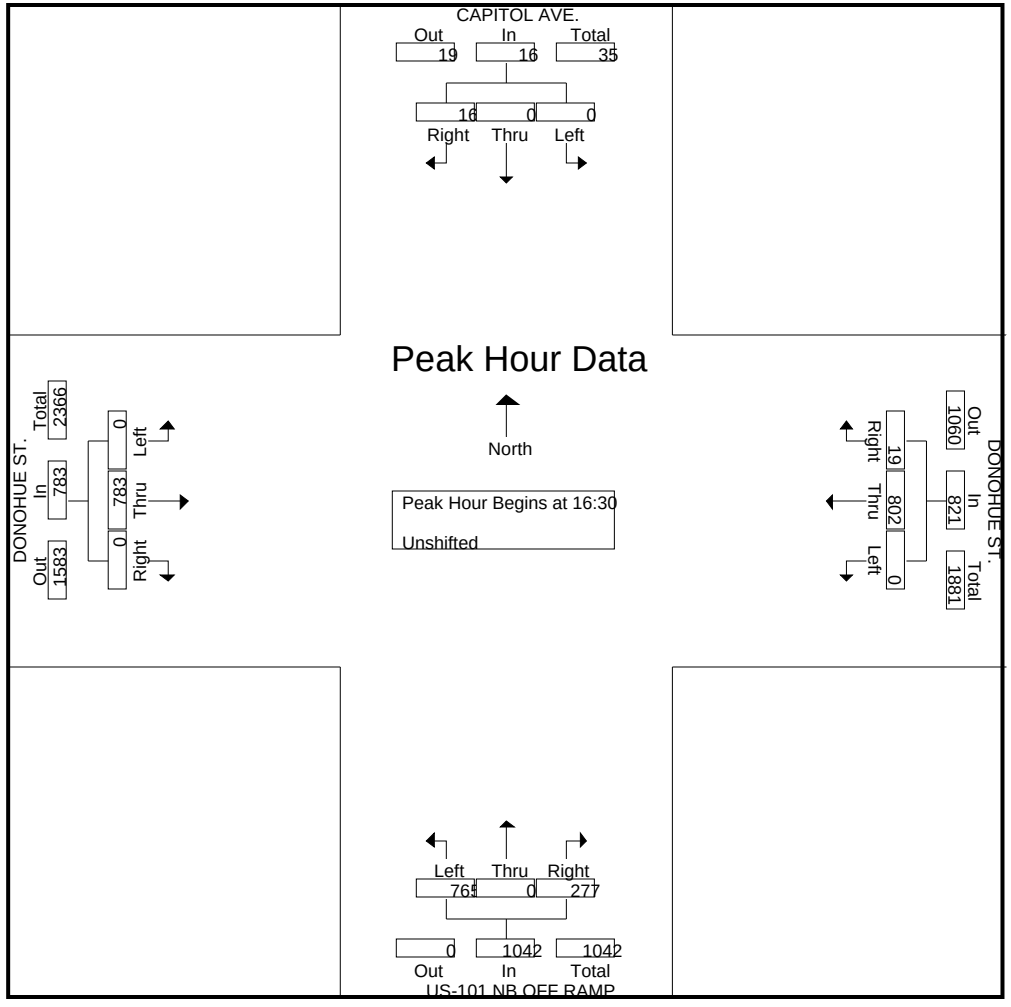
| | CAPITOL AVE. Southbound | | | | DONOHUE ST. Westbound | | | | US-101 NB OFF RAMP Northbound | | | | DONOHUE ST. Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | |
| 16:30 | 0 | 0 | 4 | 4 | 0 | 195 | 6 | 201 | 188 | 0 | 65 | 253 | 0 | 206 | 0 | 206 | 664 |
| 16:45 | 0 | 0 | **6** | **6** | 0 | 206 | 2 | 208 | 172 | 0 | 68 | 240 | 0 | **207** | 0 | **207** | 661 |
| 17:00 | 0 | 0 | 5 | 5 | 0 | 193 | **7** | 200 | 202 | 0 | 58 | 260 | 0 | 180 | 0 | 180 | 645 |
| 17:15 | 0 | 0 | 1 | 1 | 0 | **208** | 4 | **212** | **203** | 0 | **86** | **289** | 0 | 190 | 0 | 190 | **692** |
| Total Volume | 0 | 0 | 16 | 16 | 0 | 802 | 19 | 821 | 765 | 0 | 277 | 1042 | 0 | 783 | 0 | 783 | 2662 |
| % App. Total | 0 | 0 | 100 | | 0 | 97.7 | 2.3 | | 73.4 | 0 | 26.6 | | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .667 | .667 | .000 | .964 | .679 | .968 | .942 | .000 | .805 | .901 | .000 | .946 | .000 | .946 | .962 |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-001 CAPITOL-DONOHUE
Site Code : 00000000
Start Date : 6/8/2011
Page No : 5



# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-002 UNIVERSITY-US101 SB
Site Code : 00000000
Start Date : 6/8/2011
Page No : 1

**Groups Printed- Unshifted**

| | UNIVERSITY AVE. Southbound | | | | US-101 SB RAMPS Westbound | | | | UNIVERSITY AVE. Northbound | | | | Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| 07:00 | 162 | 234 | 0 | 396 | 78 | 0 | 61 | 139 | 0 | 147 | 58 | 205 | 0 | 0 | 0 | 0 | 740 |
| 07:15 | 224 | 286 | 0 | 510 | 80 | 0 | 60 | 140 | 0 | 171 | 71 | 242 | 0 | 0 | 0 | 0 | 892 |
| 07:30 | 194 | 373 | 0 | 567 | 62 | 0 | 54 | 116 | 0 | 233 | 87 | 320 | 0 | 0 | 0 | 0 | 1003 |
| 07:45 | 192 | 359 | 0 | 551 | 99 | 0 | 66 | 165 | 0 | 170 | 73 | 243 | 0 | 0 | 0 | 0 | 959 |
| Total | 772 | 1252 | 0 | 2024 | 319 | 0 | 241 | 560 | 0 | 721 | 289 | 1010 | 0 | 0 | 0 | 0 | 3594 |
| 08:00 | 182 | 429 | 0 | 611 | 65 | 0 | 58 | 123 | 0 | 255 | 97 | 352 | 0 | 0 | 0 | 0 | 1086 |
| 08:15 | 199 | 376 | 0 | 575 | 88 | 0 | 43 | 131 | 0 | 187 | 105 | 292 | 0 | 0 | 0 | 0 | 998 |
| 08:30 | 225 | 363 | 0 | 588 | 65 | 0 | 53 | 118 | 0 | 216 | 104 | 320 | 0 | 0 | 0 | 0 | 1026 |
| 08:45 | 196 | 338 | 0 | 534 | 77 | 0 | 56 | 133 | 0 | 151 | 120 | 271 | 0 | 0 | 0 | 0 | 938 |
| Total | 802 | 1506 | 0 | 2308 | 295 | 0 | 210 | 505 | 0 | 809 | 426 | 1235 | 0 | 0 | 0 | 0 | 4048 |
| 16:00 | 54 | 248 | 0 | 302 | 159 | 0 | 101 | 260 | 0 | 238 | 28 | 266 | 0 | 0 | 0 | 0 | 828 |
| 16:15 | 105 | 282 | 0 | 387 | 120 | 0 | 63 | 183 | 0 | 302 | 64 | 366 | 0 | 0 | 0 | 0 | 936 |
| 16:30 | 104 | 232 | 0 | 336 | 71 | 0 | 93 | 164 | 0 | 347 | 105 | 452 | 0 | 0 | 0 | 0 | 952 |
| 16:45 | 128 | 218 | 0 | 346 | 73 | 0 | 125 | 198 | 0 | 343 | 93 | 436 | 0 | 0 | 0 | 0 | 980 |
| Total | 391 | 980 | 0 | 1371 | 423 | 0 | 382 | 805 | 0 | 1230 | 290 | 1520 | 0 | 0 | 0 | 0 | 3696 |
| 17:00 | 113 | 215 | 0 | 328 | 89 | 0 | 102 | 191 | 0 | 360 | 95 | 455 | 0 | 0 | 0 | 0 | 974 |
| 17:15 | 139 | 249 | 0 | 388 | 58 | 0 | 99 | 157 | 0 | 361 | 85 | 446 | 0 | 0 | 0 | 0 | 991 |
| 17:30 | 107 | 245 | 0 | 352 | 85 | 0 | 113 | 198 | 0 | 327 | 115 | 442 | 0 | 0 | 0 | 0 | 992 |
| 17:45 | 97 | 245 | 0 | 342 | 64 | 0 | 91 | 155 | 0 | 307 | 93 | 400 | 0 | 0 | 0 | 0 | 897 |
| Total | 456 | 954 | 0 | 1410 | 296 | 0 | 405 | 701 | 0 | 1355 | 388 | 1743 | 0 | 0 | 0 | 0 | 3854 |
| Grand Total | 2421 | 4692 | 0 | 7113 | 1333 | 0 | 1238 | 2571 | 0 | 4115 | 1393 | 5508 | 0 | 0 | 0 | 0 | 15192 |
| Apprch % | 34 | 66 | 0 | | 51.8 | 0 | 48.2 | | 0 | 74.7 | 25.3 | | 0 | 0 | 0 | | |
| Total % | 15.9 | 30.9 | 0 | 46.8 | 8.8 | 0 | 8.1 | 16.9 | 0 | 27.1 | 9.2 | 36.3 | 0 | 0 | 0 | 0 | |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-002 UNIVERSITY-US101 SB
Site Code : 00000000
Start Date : 6/8/2011
Page No : 2

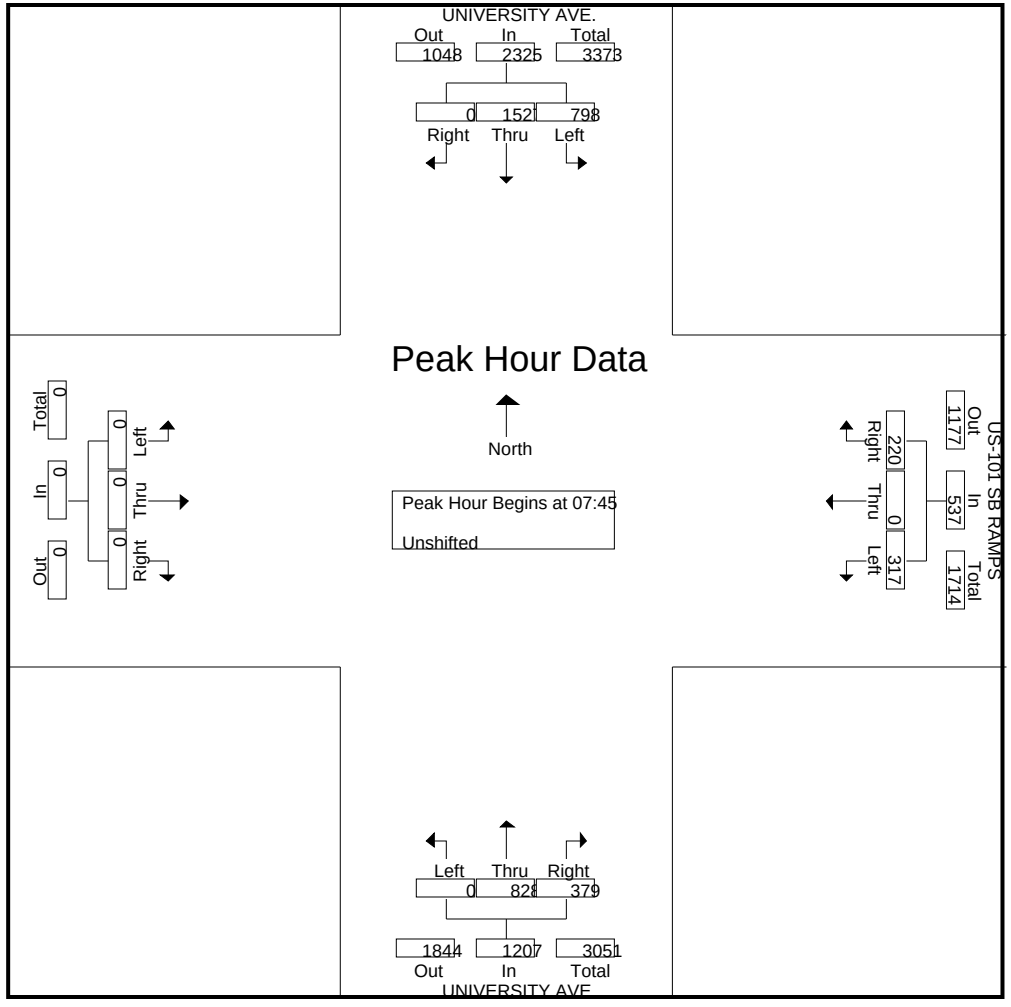
| | UNIVERSITY AVE. Southbound | | | | US-101 SB RAMPS Westbound | | | | UNIVERSITY AVE. Northbound | | | | Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 | | | | | | | | | | | | | | | | | |
| 07:45 | 192 | 359 | 0 | 551 | **99** | 0 | **66** | **165** | 0 | 170 | 73 | 243 | 0 | 0 | 0 | 0 | 959 |
| 08:00 | 182 | **429** | 0 | **611** | 65 | 0 | 58 | 123 | 0 | **255** | 97 | **352** | 0 | 0 | 0 | 0 | **1086** |
| 08:15 | 199 | 376 | 0 | 575 | 88 | 0 | 43 | 131 | 0 | 187 | **105** | 292 | 0 | 0 | 0 | 0 | 998 |
| 08:30 | **225** | 363 | 0 | 588 | 65 | 0 | 53 | 118 | 0 | 216 | 104 | 320 | 0 | 0 | 0 | 0 | 1026 |
| Total Volume | 798 | 1527 | 0 | 2325 | 317 | 0 | 220 | 537 | 0 | 828 | 379 | 1207 | 0 | 0 | 0 | 0 | 4069 |
| % App. Total | 34.3 | 65.7 | 0 | | 59 | 0 | 41 | | 0 | 68.6 | 31.4 | | 0 | 0 | 0 | | |
| PHF | .887 | .890 | .000 | .951 | .801 | .000 | .833 | .814 | .000 | .812 | .902 | .857 | .000 | .000 | .000 | .000 | .937 |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-002 UNIVERSITY-US101 SB
Site Code : 00000000
Start Date : 6/8/2011
Page No : 3



# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-002 UNIVERSITY-US101 SB
Site Code : 00000000
Start Date : 6/8/2011
Page No : 4

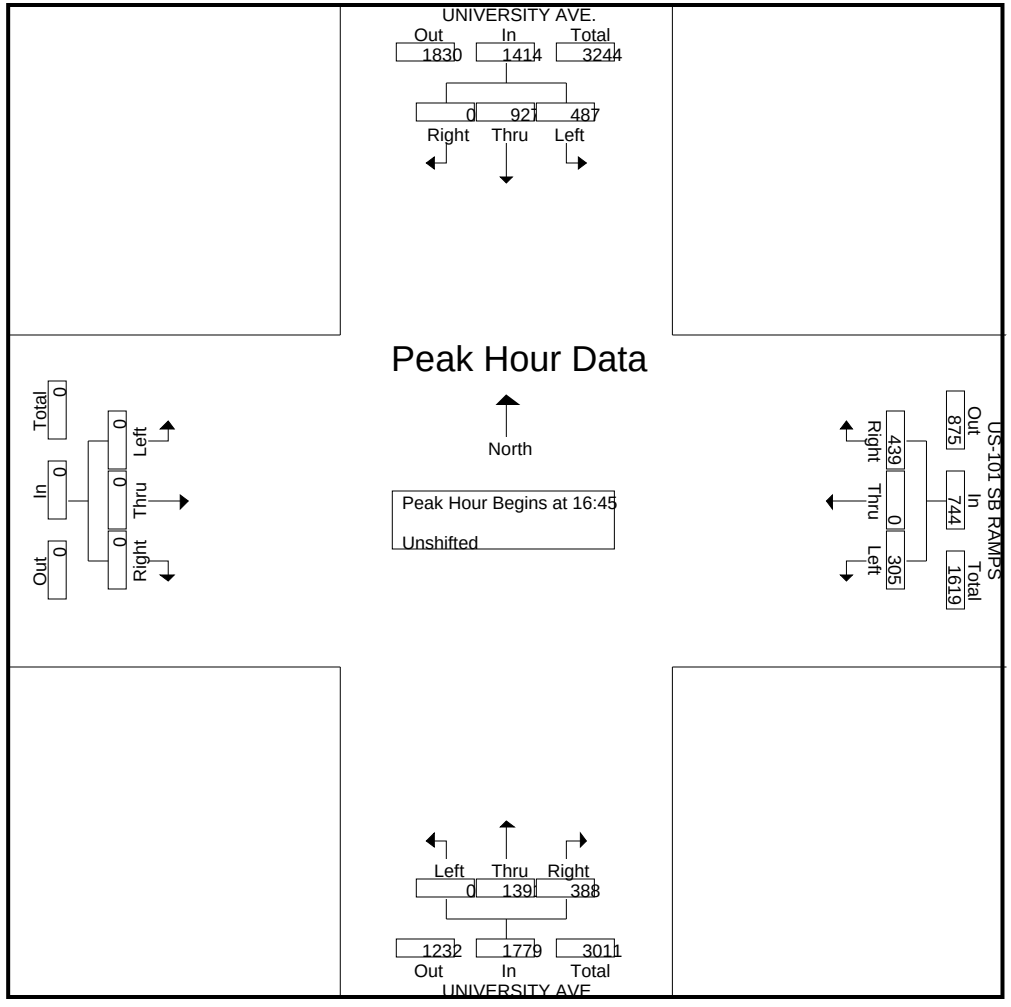
| | UNIVERSITY AVE. Southbound | | | | US-101 SB RAMPS Westbound | | | | UNIVERSITY AVE. Northbound | | | | Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:45 | | | | | | | | | | | | | | | | | |
| 16:45 | 128 | 218 | 0 | 346 | 73 | 0 | **125** | **198** | 0 | 343 | 93 | 436 | 0 | 0 | 0 | 0 | 980 |
| 17:00 | 113 | 215 | 0 | 328 | **89** | 0 | 102 | 191 | 0 | 360 | 95 | **455** | 0 | 0 | 0 | 0 | 974 |
| 17:15 | **139** | **249** | 0 | **388** | 58 | 0 | 99 | 157 | 0 | **361** | 85 | 446 | 0 | 0 | 0 | 0 | 991 |
| 17:30 | 107 | 245 | 0 | 352 | 85 | 0 | 113 | 198 | 0 | 327 | **115** | 442 | 0 | 0 | 0 | 0 | **992** |
| Total Volume | 487 | 927 | 0 | 1414 | 305 | 0 | 439 | 744 | 0 | 1391 | 388 | 1779 | 0 | 0 | 0 | 0 | 3937 |
| % App. Total | 34.4 | 65.6 | 0 | | 41 | 0 | 59 | | 0 | 78.2 | 21.8 | | 0 | 0 | 0 | | |
| PHF | .876 | .931 | .000 | .911 | .857 | .000 | .878 | .939 | .000 | .963 | .843 | .977 | .000 | .000 | .000 | .000 | .992 |

# All Traffic Data

(916) 771-8700

CITY OF MENLO PARK

File Name : 11-7274-002 UNIVERSITY-US101 SB
Site Code : 00000000
Start Date : 6/8/2011
Page No : 5



# Traffic Data Service

Campbell, CA

**(408) 377-2988**

***tdsbay@cs.com***


File Name : 7AM FINAL
Site Code : 00000007
Start Date : 11/9/2010
Page No : 1

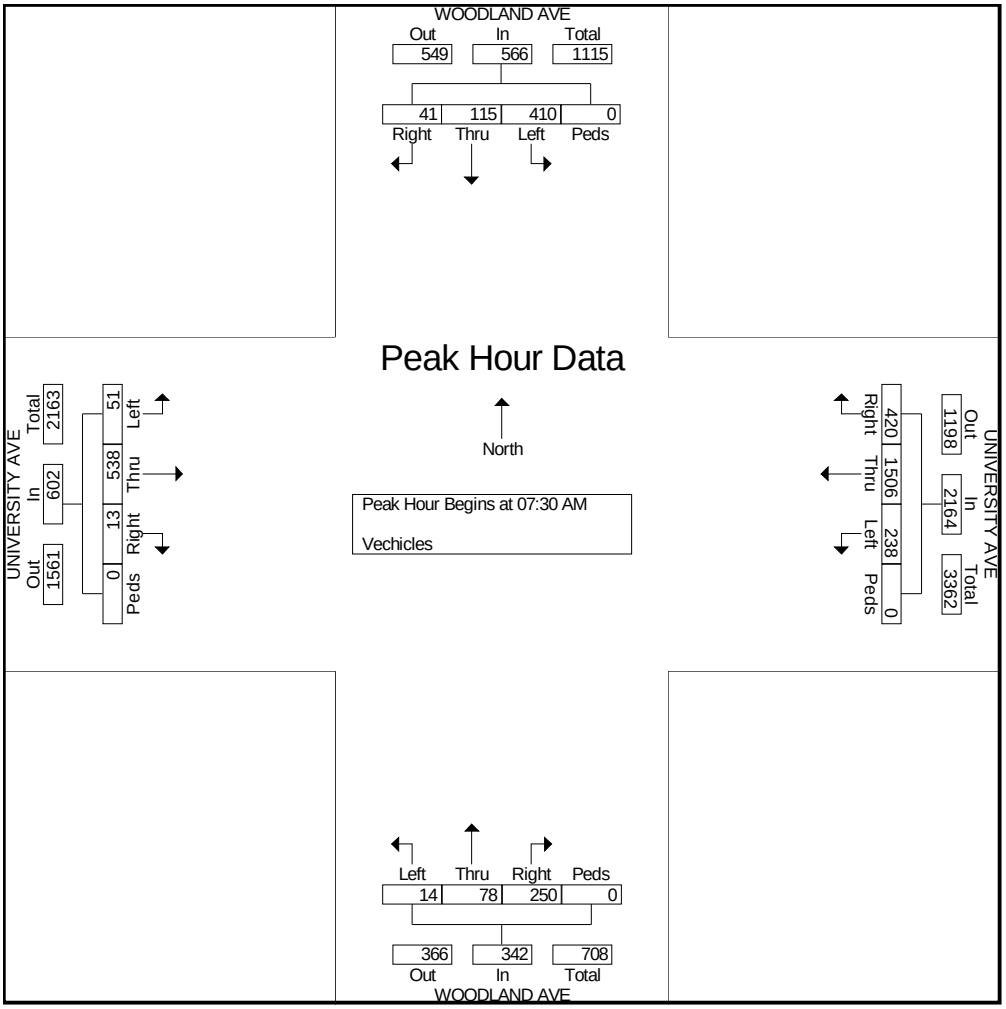
**Groups Printed- Vechicles**

| | WOODLAND AVE Southbound | | | | | UNIVERSITY AVE Westbound | | | | | WOODLAND AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 17 | 8 | 92 | 0 | 117 | 71 | 276 | 35 | 0 | 382 | 61 | 16 | 6 | 0 | 83 | 1 | 64 | 4 | 0 | 69 | 651 |
| 07:15 AM | 7 | 10 | 83 | 0 | 100 | 73 | 277 | 54 | 0 | 404 | 68 | 13 | 11 | 0 | 92 | 3 | 89 | 18 | 0 | 110 | 706 |
| 07:30 AM | 7 | 21 | 98 | 0 | 126 | 72 | 345 | 81 | 0 | 498 | 69 | 20 | 5 | 0 | 94 | 2 | 130 | 8 | 0 | 140 | 858 |
| 07:45 AM | 12 | 17 | 90 | 0 | 119 | 120 | 383 | 56 | 0 | 559 | 56 | 16 | 3 | 0 | 75 | 6 | 135 | 16 | 0 | 157 | 910 |
| Total | 43 | 56 | 363 | 0 | 462 | 336 | 1281 | 226 | 0 | 1843 | 254 | 65 | 25 | 0 | 344 | 12 | 418 | 46 | 0 | 476 | 3125 |
| 08:00 AM | 17 | 67 | 137 | 0 | 221 | 115 | 423 | 48 | 0 | 586 | 56 | 10 | 4 | 0 | 70 | 3 | 126 | 18 | 0 | 147 | 1024 |
| 08:15 AM | 5 | 10 | 85 | 0 | 100 | 113 | 355 | 53 | 0 | 521 | 69 | 32 | 2 | 0 | 103 | 2 | 147 | 9 | 0 | 158 | 882 |
| 08:30 AM | 6 | 16 | 106 | 0 | 128 | 112 | 256 | 74 | 0 | 442 | 45 | 8 | 4 | 0 | 57 | 8 | 139 | 18 | 0 | 165 | 792 |
| 08:45 AM | 6 | 11 | 63 | 0 | 80 | 68 | 284 | 71 | 0 | 423 | 31 | 17 | 2 | 0 | 50 | 1 | 138 | 33 | 0 | 172 | 725 |
| Total | 34 | 104 | 391 | 0 | 529 | 408 | 1318 | 246 | 0 | 1972 | 201 | 67 | 12 | 0 | 280 | 14 | 550 | 78 | 0 | 642 | 3423 |
| Grand Total | 77 | 160 | 754 | 0 | 991 | 744 | 2599 | 472 | 0 | 3815 | 455 | 132 | 37 | 0 | 624 | 26 | 968 | 124 | 0 | 1118 | 6548 |
| Apprch % | 7.8 | 16.1 | 76.1 | 0 | | 19.5 | 68.1 | 12.4 | 0 | | 72.9 | 21.2 | 5.9 | 0 | | 2.3 | 86.6 | 11.1 | 0 | | |
| Total % | 1.2 | 2.4 | 11.5 | 0 | 15.1 | 11.4 | 39.7 | 7.2 | 0 | 58.3 | 6.9 | 2 | 0.6 | 0 | 9.5 | 0.4 | 14.8 | 1.9 | 0 | 17.1 | |

| | WOODLAND AVE Southbound | | | | | UNIVERSITY AVE Westbound | | | | | WOODLAND AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 7 | 21 | 98 | 0 | 126 | 72 | 345 | 81 | 0 | 498 | 69 | 20 | 5 | 0 | 94 | 2 | 130 | 8 | 0 | 140 | 858 |
| 07:45 AM | 12 | 17 | 90 | 0 | 119 | 120 | 383 | 56 | 0 | 559 | 56 | 16 | 3 | 0 | 75 | 6 | 135 | 16 | 0 | 157 | 910 |
| 08:00 AM | 17 | 67 | 137 | 0 | 221 | 115 | 423 | 48 | 0 | 586 | 56 | 10 | 4 | 0 | 70 | 3 | 126 | 18 | 0 | 147 | 1024 |
| 08:15 AM | 5 | 10 | 85 | 0 | 100 | 113 | 355 | 53 | 0 | 521 | 69 | 32 | 2 | 0 | 103 | 2 | 147 | 9 | 0 | 158 | 882 |
| Total Volume | 41 | 115 | 410 | 0 | 566 | 420 | 1506 | 238 | 0 | 2164 | 250 | 78 | 14 | 0 | 342 | 13 | 538 | 51 | 0 | 602 | 3674 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .603 | .429 | .748 | .000 | .640 | .875 | .890 | .735 | .000 | .923 | .906 | .609 | .700 | .000 | .830 | .542 | .915 | .708 | .000 | .953 | .897 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 7AM FINAL
Site Code : 00000007
Start Date : 11/9/2010
Page No : 2



Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 7PM FINAL
Site Code : 00000007
Start Date : 11/9/2010
Page No : 1

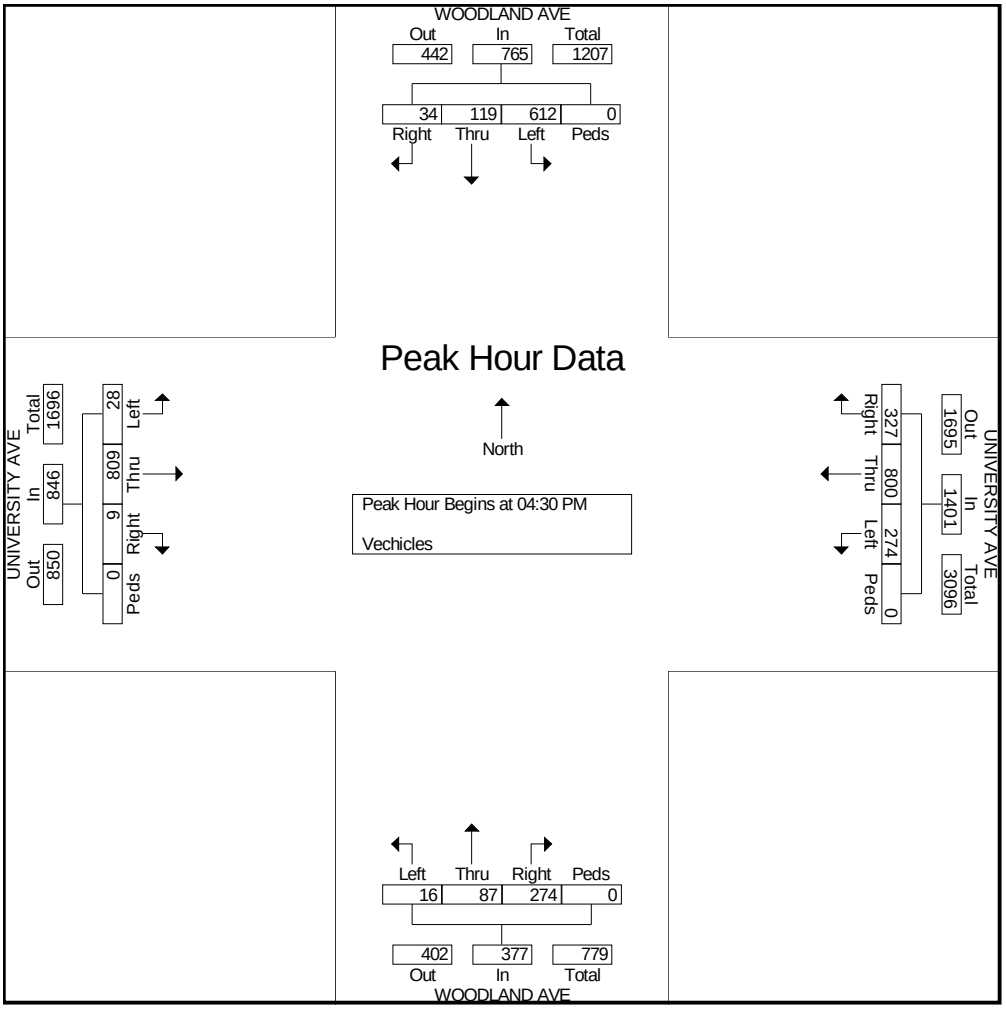
**Groups Printed- Vechicles**

| | WOODLAND AVE Southbound | | | | | UNIVERSITY AVE Westbound | | | | | WOODLAND AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 9 | 15 | 128 | 0 | 152 | 82 | 187 | 76 | 0 | 345 | 73 | 24 | 6 | 0 | 103 | 5 | 209 | 5 | 0 | 219 | 819 |
| 04:15 PM | 6 | 14 | 127 | 0 | 147 | 71 | 206 | 53 | 0 | 330 | 84 | 21 | 6 | 0 | 111 | 5 | 205 | 7 | 0 | 217 | 805 |
| 04:30 PM | 7 | 31 | 157 | 0 | 195 | 92 | 245 | 59 | 0 | 396 | 53 | 25 | 5 | 0 | 83 | 4 | 190 | 10 | 0 | 204 | 878 |
| 04:45 PM | 6 | 28 | 138 | 0 | 172 | 74 | 223 | 76 | 0 | 373 | 68 | 26 | 2 | 0 | 96 | 2 | 214 | 9 | 0 | 225 | 866 |
| Total | 28 | 88 | 550 | 0 | 666 | 319 | 861 | 264 | 0 | 1444 | 278 | 96 | 19 | 0 | 393 | 16 | 818 | 31 | 0 | 865 | 3368 |
| 05:00 PM | 12 | 26 | 154 | 0 | 192 | 93 | 164 | 64 | 0 | 321 | 64 | 18 | 3 | 0 | 85 | 2 | 169 | 1 | 0 | 172 | 770 |
| 05:15 PM | 9 | 34 | 163 | 0 | 206 | 68 | 168 | 75 | 0 | 311 | 89 | 18 | 6 | 0 | 113 | 1 | 236 | 8 | 0 | 245 | 875 |
| 05:30 PM | 20 | 18 | 142 | 0 | 180 | 69 | 215 | 85 | 0 | 369 | 75 | 21 | 3 | 0 | 99 | 6 | 153 | 11 | 0 | 170 | 818 |
| 05:45 PM | 14 | 15 | 124 | 0 | 153 | 53 | 203 | 65 | 0 | 321 | 80 | 22 | 2 | 0 | 104 | 4 | 215 | 15 | 0 | 234 | 812 |
| Total | 55 | 93 | 583 | 0 | 731 | 283 | 750 | 289 | 0 | 1322 | 308 | 79 | 14 | 0 | 401 | 13 | 773 | 35 | 0 | 821 | 3275 |
| Grand Total | 83 | 181 | 1133 | 0 | 1397 | 602 | 1611 | 553 | 0 | 2766 | 586 | 175 | 33 | 0 | 794 | 29 | 1591 | 66 | 0 | 1686 | 6643 |
| Apprch % | 5.9 | 13 | 81.1 | 0 | | 21.8 | 58.2 | 20 | 0 | | 73.8 | 22 | 4.2 | 0 | | 1.7 | 94.4 | 3.9 | 0 | | |
| Total % | 1.2 | 2.7 | 17.1 | 0 | 21 | 9.1 | 24.3 | 8.3 | 0 | 41.6 | 8.8 | 2.6 | 0.5 | 0 | 12 | 0.4 | 24 | 1 | 0 | 25.4 | |

| | WOODLAND AVE Southbound | | | | | UNIVERSITY AVE Westbound | | | | | WOODLAND AVE Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 7 | 31 | 157 | 0 | 195 | 92 | 245 | 59 | 0 | 396 | 53 | 25 | 5 | 0 | 83 | 4 | 190 | 10 | 0 | 204 | 878 |
| 04:45 PM | 6 | 28 | 138 | 0 | 172 | 74 | 223 | 76 | 0 | 373 | 68 | 26 | 2 | 0 | 96 | 2 | 214 | 9 | 0 | 225 | 866 |
| 05:00 PM | 12 | 26 | 154 | 0 | 192 | 93 | 164 | 64 | 0 | 321 | 64 | 18 | 3 | 0 | 85 | 2 | 169 | 1 | 0 | 172 | 770 |
| 05:15 PM | 9 | 34 | 163 | 0 | 206 | 68 | 168 | 75 | 0 | 311 | 89 | 18 | 6 | 0 | 113 | 1 | 236 | 8 | 0 | 245 | 875 |
| Total Volume | 34 | 119 | 612 | 0 | 765 | 327 | 800 | 274 | 0 | 1401 | 274 | 87 | 16 | 0 | 377 | 9 | 809 | 28 | 0 | 846 | 3389 |
| % App. Total | 4.4 | 15.6 | 80 | 0 | | 23.3 | 57.1 | 19.6 | 0 | | 72.7 | 23.1 | 4.2 | 0 | | 1.1 | 95.6 | 3.3 | 0 | | |
| PHF | .708 | .875 | .939 | .000 | .928 | .879 | .816 | .901 | .000 | .884 | .770 | .837 | .667 | .000 | .834 | .563 | .857 | .700 | .000 | .863 | .965 |

Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 7PM FINAL
Site Code : 00000007
Start Date : 11/9/2010
Page No : 2



Traffic Data Service
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 8AM FINAL
Site Code : 00000008
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vechicles**

| | MIDDLEFIELD RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 13 | 26 | 24 | 0 | 63 | 27 | 121 | 28 | 0 | 176 | 8 | 34 | 6 | 0 | 48 | 5 | 42 | 0 | 0 | 47 | 334 |
| 07:15 AM | 17 | 50 | 4 | 0 | 71 | 28 | 143 | 13 | 0 | 184 | 13 | 34 | 2 | 0 | 49 | 3 | 42 | 4 | 0 | 49 | 353 |
| 07:30 AM | 15 | 58 | 14 | 0 | 87 | 34 | 135 | 16 | 0 | 185 | 5 | 43 | 2 | 0 | 50 | 3 | 63 | 6 | 0 | 72 | 394 |
| 07:45 AM | 14 | 68 | 16 | 0 | 98 | 24 | 161 | 12 | 0 | 197 | 8 | 55 | 2 | 0 | 65 | 4 | 52 | 10 | 0 | 66 | 426 |
| Total | 59 | 202 | 58 | 0 | 319 | 113 | 560 | 69 | 0 | 742 | 34 | 166 | 12 | 0 | 212 | 15 | 199 | 20 | 0 | 234 | 1507 |
| 08:00 AM | 11 | 85 | 27 | 0 | 123 | 22 | 167 | 24 | 0 | 213 | 7 | 57 | 3 | 0 | 67 | 10 | 59 | 2 | 0 | 71 | 474 |
| 08:15 AM | 23 | 93 | 26 | 0 | 142 | 21 | 148 | 18 | 0 | 187 | 20 | 73 | 11 | 0 | 104 | 3 | 61 | 3 | 0 | 67 | 500 |
| 08:30 AM | 19 | 102 | 21 | 0 | 142 | 26 | 152 | 14 | 0 | 192 | 12 | 69 | 15 | 0 | 96 | 3 | 62 | 5 | 0 | 70 | 500 |
| 08:45 AM | 9 | 111 | 18 | 0 | 138 | 26 | 117 | 17 | 0 | 160 | 12 | 65 | 8 | 0 | 85 | 8 | 46 | 5 | 0 | 59 | 442 |
| Total | 62 | 391 | 92 | 0 | 545 | 95 | 584 | 73 | 0 | 752 | 51 | 264 | 37 | 0 | 352 | 24 | 228 | 15 | 0 | 267 | 1916 |
| Grand Total | 121 | 593 | 150 | 0 | 864 | 208 | 1144 | 142 | 0 | 1494 | 85 | 430 | 49 | 0 | 564 | 39 | 427 | 35 | 0 | 501 | 3423 |
| Apprch % | 14 | 68.6 | 17.4 | 0 | | 13.9 | 76.6 | 9.5 | 0 | | 15.1 | 76.2 | 8.7 | 0 | | 7.8 | 85.2 | 7 | 0 | | |
| Total % | 3.5 | 17.3 | 4.4 | 0 | 25.2 | 6.1 | 33.4 | 4.1 | 0 | 43.6 | 2.5 | 12.6 | 1.4 | 0 | 16.5 | 1.1 | 12.5 | 1 | 0 | 14.6 | |

| | MIDDLEFIELD RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 11 | 85 | 27 | 0 | 123 | 22 | 167 | 24 | 0 | 213 | 7 | 57 | 3 | 0 | 67 | 10 | 59 | 2 | 0 | 71 | 474 |
| 08:15 AM | 23 | 93 | 26 | 0 | 142 | 21 | 148 | 18 | 0 | 187 | 20 | 73 | 11 | 0 | 104 | 3 | 61 | 3 | 0 | 67 | 500 |
| 08:30 AM | 19 | 102 | 21 | 0 | 142 | 26 | 152 | 14 | 0 | 192 | 12 | 69 | 15 | 0 | 96 | 3 | 62 | 5 | 0 | 70 | 500 |
| 08:45 AM | 9 | 111 | 18 | 0 | 138 | 26 | 117 | 17 | 0 | 160 | 12 | 65 | 8 | 0 | 85 | 8 | 46 | 5 | 0 | 59 | 442 |
| Total Volume | 62 | 391 | 92 | 0 | 545 | 95 | 584 | 73 | 0 | 752 | 51 | 264 | 37 | 0 | 352 | 24 | 228 | 15 | 0 | 267 | 1916 |
| % App. Total | 11.4 | 71.7 | 16.9 | 0 | | 12.6 | 77.7 | 9.7 | 0 | | 14.5 | 75 | 10.5 | 0 | | 9 | 85.4 | 5.6 | 0 | | |
| PHF | .674 | .881 | .852 | .000 | .960 | .913 | .874 | .760 | .000 | .883 | .638 | .904 | .617 | .000 | .846 | .600 | .919 | .750 | .000 | .940 | .958 |

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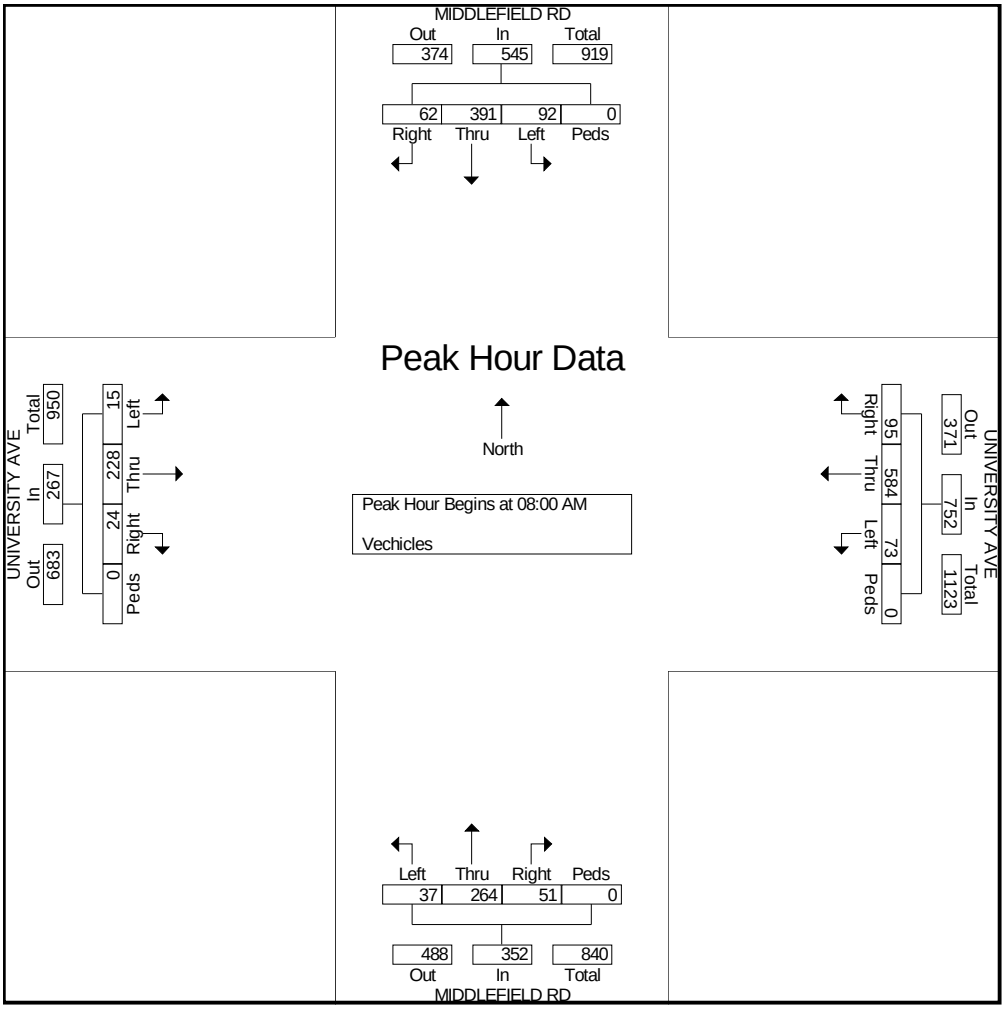

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Site Code : 00000008
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**Groups Printed- Vechicles**

| | MIDDLEFIELD RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 10 | 73 | 32 | 0 | 115 | 19 | 91 | 18 | 0 | 128 | 33 | 86 | 14 | 0 | 133 | 8 | 92 | 9 | 0 | 109 | 485 |
| 04:15 PM | 8 | 79 | 20 | 0 | 107 | 21 | 104 | 14 | 0 | 139 | 32 | 92 | 12 | 0 | 136 | 6 | 78 | 11 | 0 | 95 | 477 |
| 04:30 PM | 14 | 84 | 24 | 0 | 122 | 27 | 98 | 17 | 0 | 142 | 6 | 85 | 3 | 0 | 94 | 7 | 68 | 22 | 0 | 97 | 455 |
| 04:45 PM | 24 | 89 | 20 | 0 | 133 | 12 | 90 | 16 | 0 | 118 | 18 | 81 | 8 | 0 | 107 | 6 | 83 | 13 | 0 | 102 | 460 |
| Total | 56 | 325 | 96 | 0 | 477 | 79 | 383 | 65 | 0 | 527 | 89 | 344 | 37 | 0 | 470 | 27 | 321 | 55 | 0 | 403 | 1877 |
| 05:00 PM | 19 | 95 | 21 | 0 | 135 | 25 | 120 | 9 | 0 | 154 | 25 | 112 | 6 | 0 | 143 | 8 | 86 | 22 | 0 | 116 | 548 |
| 05:15 PM | 19 | 101 | 17 | 0 | 137 | 19 | 99 | 24 | 0 | 142 | 25 | 97 | 9 | 0 | 131 | 3 | 91 | 10 | 0 | 104 | 514 |
| 05:30 PM | 25 | 96 | 22 | 0 | 143 | 19 | 112 | 17 | 0 | 148 | 19 | 94 | 7 | 0 | 120 | 7 | 80 | 9 | 0 | 96 | 507 |
| 05:45 PM | 13 | 92 | 22 | 0 | 127 | 25 | 111 | 21 | 0 | 157 | 17 | 74 | 8 | 0 | 99 | 5 | 71 | 18 | 0 | 94 | 477 |
| Total | 76 | 384 | 82 | 0 | 542 | 88 | 442 | 71 | 0 | 601 | 86 | 377 | 30 | 0 | 493 | 23 | 328 | 59 | 0 | 410 | 2046 |
| Grand Total | 132 | 709 | 178 | 0 | 1019 | 167 | 825 | 136 | 0 | 1128 | 175 | 721 | 67 | 0 | 963 | 50 | 649 | 114 | 0 | 813 | 3923 |
| Apprch % | 13 | 69.6 | 17.5 | 0 | | 14.8 | 73.1 | 12.1 | 0 | | 18.2 | 74.9 | 7 | 0 | | 6.2 | 79.8 | 14 | 0 | | |
| Total % | 3.4 | 18.1 | 4.5 | 0 | 26 | 4.3 | 21 | 3.5 | 0 | 28.8 | 4.5 | 18.4 | 1.7 | 0 | 24.5 | 1.3 | 16.5 | 2.9 | 0 | 20.7 | |

| | MIDDLEFIELD RD Southbound | | | | | UNIVERSITY AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | UNIVERSITY AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 19 | 95 | 21 | 0 | 135 | 25 | 120 | 9 | 0 | 154 | 25 | 112 | 6 | 0 | 143 | 8 | 86 | 22 | 0 | 116 | 548 |
| 05:15 PM | 19 | 101 | 17 | 0 | 137 | 19 | 99 | 24 | 0 | 142 | 25 | 97 | 9 | 0 | 131 | 3 | 91 | 10 | 0 | 104 | 514 |
| 05:30 PM | 25 | 96 | 22 | 0 | 143 | 19 | 112 | 17 | 0 | 148 | 19 | 94 | 7 | 0 | 120 | 7 | 80 | 9 | 0 | 96 | 507 |
| 05:45 PM | 13 | 92 | 22 | 0 | 127 | 25 | 111 | 21 | 0 | 157 | 17 | 74 | 8 | 0 | 99 | 5 | 71 | 18 | 0 | 94 | 477 |
| Total Volume | 76 | 384 | 82 | 0 | 542 | 88 | 442 | 71 | 0 | 601 | 86 | 377 | 30 | 0 | 493 | 23 | 328 | 59 | 0 | 410 | 2046 |
| % App. Total | 14 | 70.8 | 15.1 | 0 | | 14.6 | 73.5 | 11.8 | 0 | | 17.4 | 76.5 | 6.1 | 0 | | 5.6 | 80 | 14.4 | 0 | | |
| PHF | .760 | .950 | .932 | .000 | .948 | .880 | .921 | .740 | .000 | .957 | .860 | .842 | .833 | .000 | .862 | .719 | .901 | .670 | .000 | .884 | .933 |

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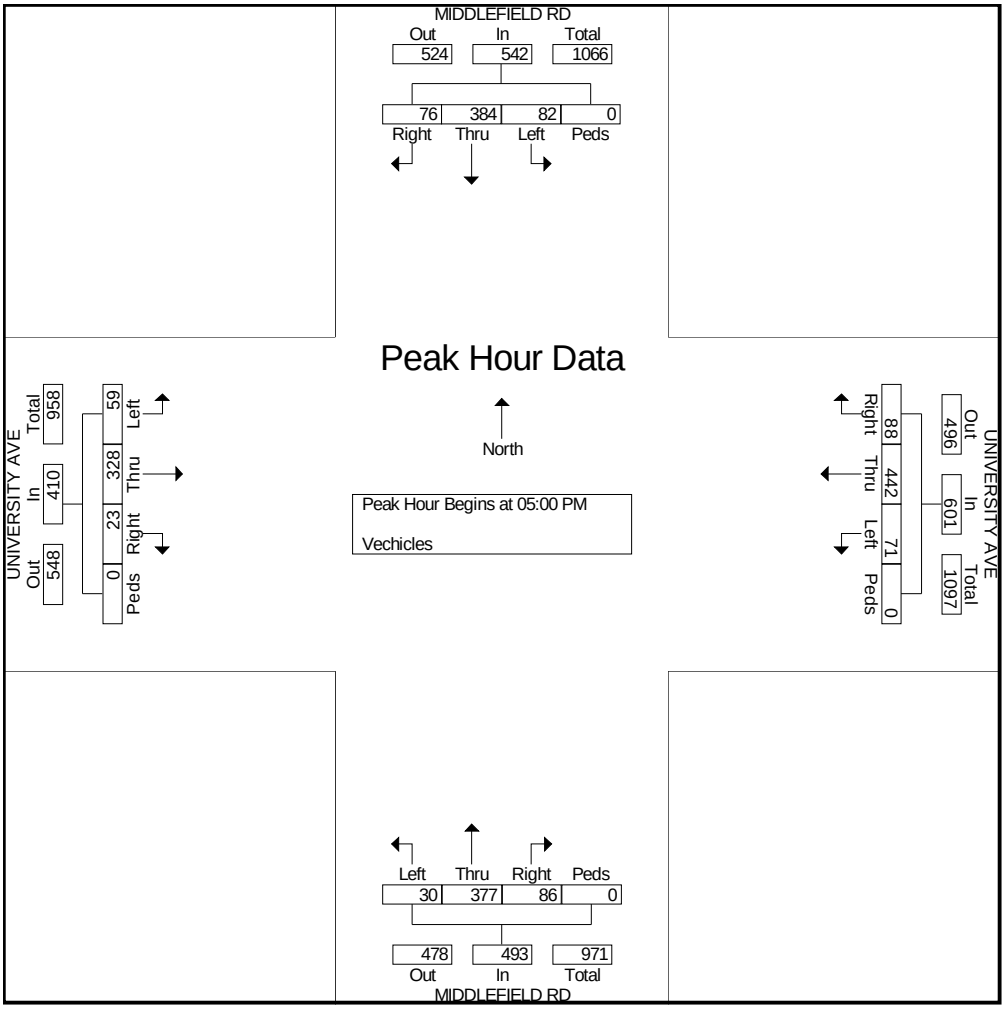

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File Name : 24AM FINAL
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Page No : 1

**Groups Printed- Vechicles**

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHRYSLER DR Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 7 | 158 | 0 | 0 | 165 | 0 | 0 | 0 | 0 | 0 | 0 | 462 | 8 | 0 | 470 | 3 | 0 | 16 | 0 | 19 | 654 |
| 07:15 AM | 2 | 183 | 0 | 0 | 185 | 0 | 0 | 0 | 0 | 0 | 0 | 543 | 12 | 0 | 555 | 1 | 0 | 15 | 0 | 16 | 756 |
| 07:30 AM | 8 | 216 | 0 | 0 | 224 | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 12 | 0 | 624 | 2 | 0 | 33 | 0 | 35 | 883 |
| 07:45 AM | 6 | 254 | 0 | 0 | 260 | 0 | 0 | 0 | 0 | 0 | 0 | 670 | 10 | 0 | 680 | 0 | 0 | 37 | 0 | 37 | 977 |
| Total | 23 | 811 | 0 | 0 | 834 | 0 | 0 | 0 | 0 | 0 | 0 | 2287 | 42 | 0 | 2329 | 6 | 0 | 101 | 0 | 107 | 3270 |
| 08:00 AM | 6 | 292 | 0 | 0 | 298 | 0 | 0 | 0 | 0 | 0 | 0 | 529 | 13 | 0 | 542 | 2 | 0 | 15 | 0 | 17 | 857 |
| 08:15 AM | 11 | 272 | 0 | 0 | 283 | 0 | 0 | 0 | 0 | 0 | 0 | 551 | 10 | 0 | 561 | 2 | 0 | 18 | 0 | 20 | 864 |
| 08:30 AM | 9 | 247 | 0 | 0 | 256 | 0 | 0 | 0 | 0 | 0 | 0 | 484 | 10 | 0 | 494 | 2 | 0 | 18 | 0 | 20 | 770 |
| 08:45 AM | 3 | 251 | 0 | 0 | 254 | 0 | 0 | 0 | 0 | 0 | 0 | 510 | 9 | 0 | 519 | 3 | 0 | 9 | 0 | 12 | 785 |
| Total | 29 | 1062 | 0 | 0 | 1091 | 0 | 0 | 0 | 0 | 0 | 0 | 2074 | 42 | 0 | 2116 | 9 | 0 | 60 | 0 | 69 | 3276 |
| Grand Total | 52 | 1873 | 0 | 0 | 1925 | 0 | 0 | 0 | 0 | 0 | 0 | 4361 | 84 | 0 | 4445 | 15 | 0 | 161 | 0 | 176 | 6546 |
| Apprch % | 2.7 | 97.3 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 98.1 | 1.9 | 0 | | 8.5 | 0 | 91.5 | 0 | | |
| Total % | 0.8 | 28.6 | 0 | 0 | 29.4 | 0 | 0 | 0 | 0 | 0 | 0 | 66.6 | 1.3 | 0 | 67.9 | 0.2 | 0 | 2.5 | 0 | 2.7 | |

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHRYSLER DR Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 8 | 216 | 0 | 0 | 224 | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 12 | 0 | 624 | 2 | 0 | 33 | 0 | 35 | 883 |
| 07:45 AM | 6 | 254 | 0 | 0 | 260 | 0 | 0 | 0 | 0 | 0 | 0 | 670 | 10 | 0 | 680 | 0 | 0 | 37 | 0 | 37 | 977 |
| 08:00 AM | 6 | 292 | 0 | 0 | 298 | 0 | 0 | 0 | 0 | 0 | 0 | 529 | 13 | 0 | 542 | 2 | 0 | 15 | 0 | 17 | 857 |
| 08:15 AM | 11 | 272 | 0 | 0 | 283 | 0 | 0 | 0 | 0 | 0 | 0 | 551 | 10 | 0 | 561 | 2 | 0 | 18 | 0 | 20 | 864 |
| Total Volume | 31 | 1034 | 0 | 0 | 1065 | 0 | 0 | 0 | 0 | 0 | 0 | 2362 | 45 | 0 | 2407 | 6 | 0 | 103 | 0 | 109 | 3581 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .705 | .885 | .000 | .000 | .893 | .000 | .000 | .000 | .000 | .000 | .000 | .881 | .865 | .000 | .885 | .750 | .000 | .696 | .000 | .736 | .916 |

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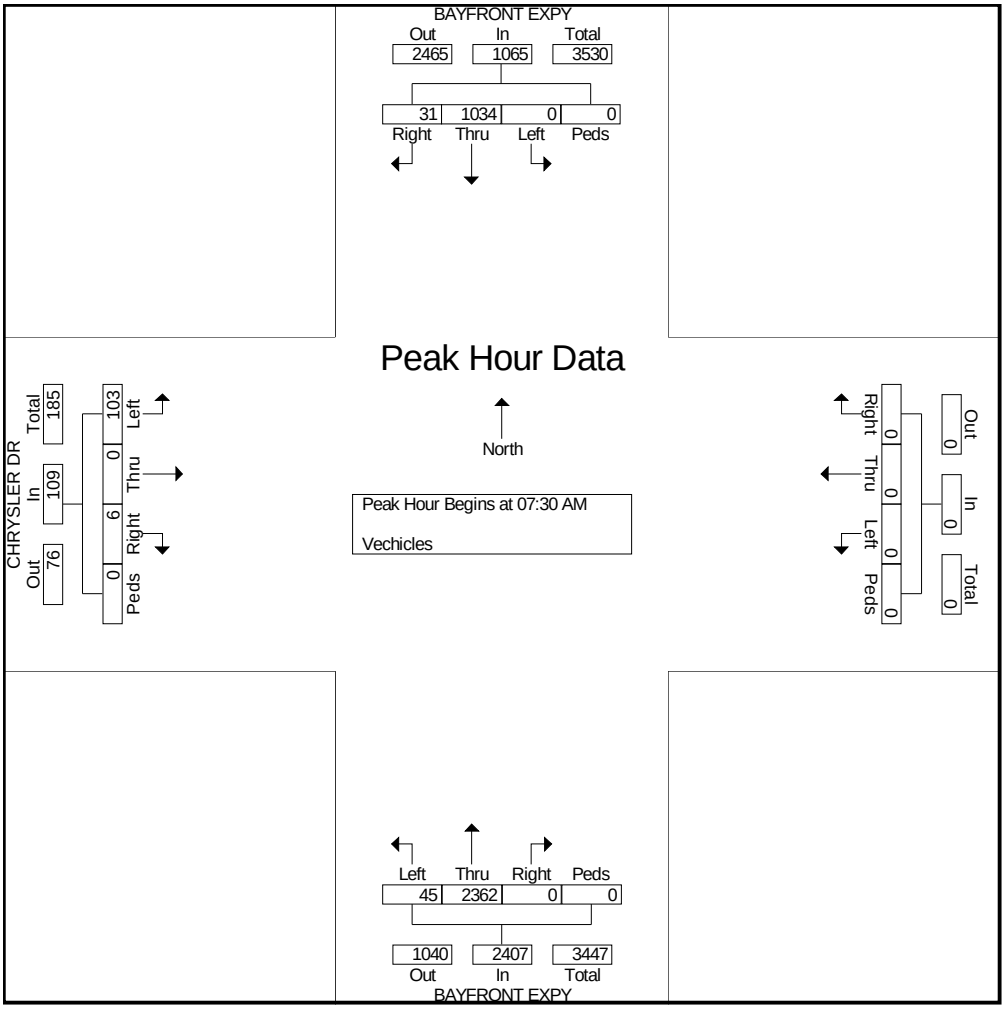

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**Groups Printed- Vechicles**

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHRYSLER DR Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 2 | 427 | 0 | 0 | 429 | 0 | 0 | 0 | 0 | 0 | 0 | 185 | 4 | 0 | 189 | 9 | 0 | 78 | 0 | 87 | 705 |
| 04:15 PM | 3 | 526 | 0 | 0 | 529 | 0 | 0 | 0 | 0 | 0 | 0 | 216 | 0 | 0 | 216 | 8 | 0 | 59 | 0 | 67 | 812 |
| 04:30 PM | 4 | 489 | 0 | 0 | 493 | 0 | 0 | 0 | 0 | 0 | 0 | 205 | 1 | 0 | 206 | 21 | 0 | 84 | 0 | 105 | 804 |
| 04:45 PM | 4 | 510 | 0 | 0 | 514 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 4 | 0 | 205 | 14 | 0 | 67 | 0 | 81 | 800 |
| Total | 13 | 1952 | 0 | 0 | 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 807 | 9 | 0 | 816 | 52 | 0 | 288 | 0 | 340 | 3121 |
| 05:00 PM | 5 | 558 | 0 | 0 | 563 | 0 | 0 | 0 | 0 | 0 | 0 | 226 | 2 | 0 | 228 | 20 | 0 | 109 | 0 | 129 | 920 |
| 05:15 PM | 5 | 591 | 0 | 0 | 596 | 0 | 0 | 0 | 0 | 0 | 0 | 255 | 3 | 0 | 258 | 22 | 0 | 81 | 0 | 103 | 957 |
| 05:30 PM | 2 | 576 | 0 | 0 | 578 | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 1 | 0 | 251 | 20 | 0 | 77 | 0 | 97 | 926 |
| 05:45 PM | 3 | 531 | 0 | 0 | 534 | 0 | 0 | 0 | 0 | 0 | 0 | 169 | 3 | 0 | 172 | 2 | 0 | 62 | 0 | 64 | 770 |
| Total | 15 | 2256 | 0 | 0 | 2271 | 0 | 0 | 0 | 0 | 0 | 0 | 900 | 9 | 0 | 909 | 64 | 0 | 329 | 0 | 393 | 3573 |
| Grand Total | 28 | 4208 | 0 | 0 | 4236 | 0 | 0 | 0 | 0 | 0 | 0 | 1707 | 18 | 0 | 1725 | 116 | 0 | 617 | 0 | 733 | 6694 |
| Apprch % | 0.7 | 99.3 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 99 | 1 | 0 | | 15.8 | 0 | 84.2 | 0 | | |
| Total % | 0.4 | 62.9 | 0 | 0 | 63.3 | 0 | 0 | 0 | 0 | 0 | 0 | 25.5 | 0.3 | 0 | 25.8 | 1.7 | 0 | 9.2 | 0 | 11 | |

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHRYSLER DR Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 4 | 510 | 0 | 0 | 514 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 4 | 0 | 205 | 14 | 0 | 67 | 0 | 81 | 800 |
| 05:00 PM | 5 | 558 | 0 | 0 | 563 | 0 | 0 | 0 | 0 | 0 | 0 | 226 | 2 | 0 | 228 | 20 | 0 | 109 | 0 | 129 | 920 |
| 05:15 PM | 5 | 591 | 0 | 0 | 596 | 0 | 0 | 0 | 0 | 0 | 0 | 255 | 3 | 0 | 258 | 22 | 0 | 81 | 0 | 103 | 957 |
| 05:30 PM | 2 | 576 | 0 | 0 | 578 | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 1 | 0 | 251 | 20 | 0 | 77 | 0 | 97 | 926 |
| Total Volume | 16 | 2235 | 0 | 0 | 2251 | 0 | 0 | 0 | 0 | 0 | 0 | 932 | 10 | 0 | 942 | 76 | 0 | 334 | 0 | 410 | 3603 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .800 | .945 | .000 | .000 | .944 | .000 | .000 | .000 | .000 | .000 | .000 | .914 | .625 | .000 | .913 | .864 | .000 | .766 | .000 | .795 | .941 |

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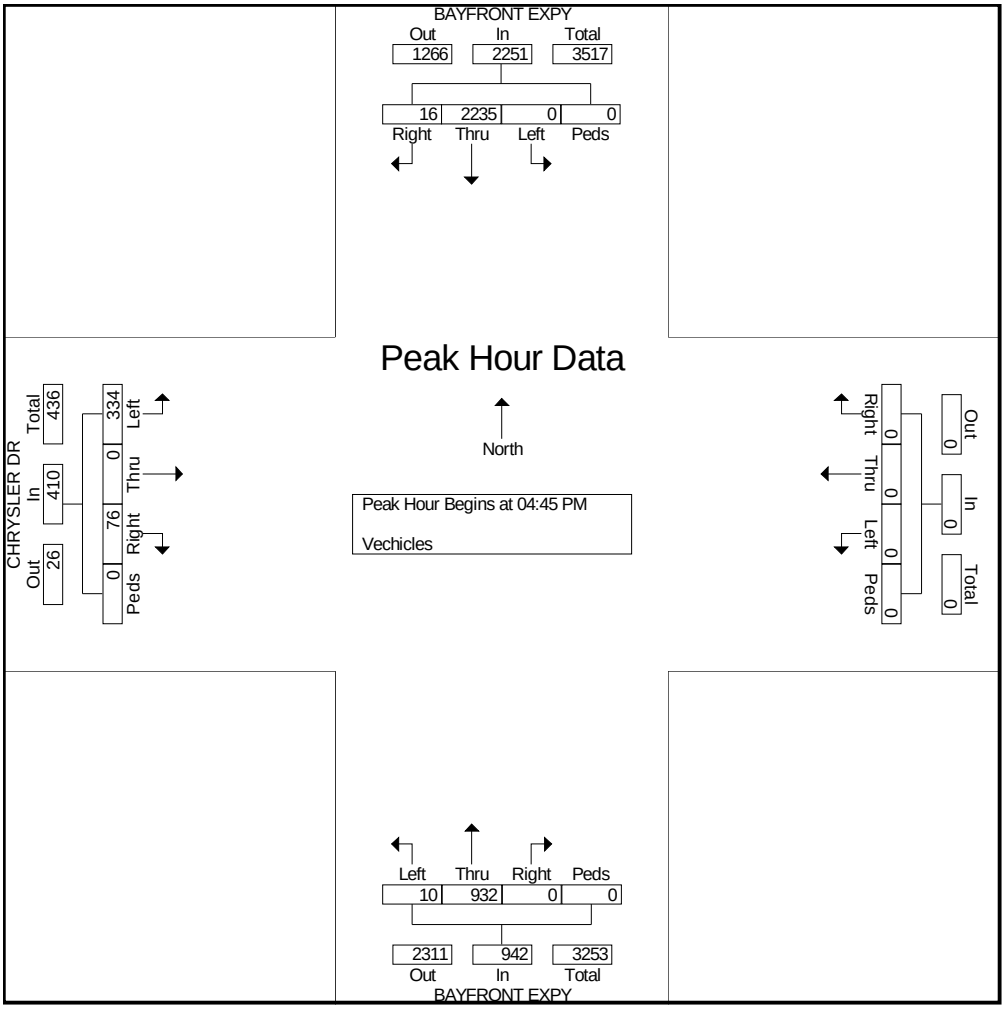

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Site Code : 00000023
Start Date : 11/16/2010
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**Groups Printed- Vehicles**

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHILCO ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 23 | 137 | 0 | 0 | 160 | 0 | 0 | 0 | 0 | 0 | 0 | 397 | 25 | 0 | 422 | 10 | 0 | 43 | 0 | 53 | 635 |
| 07:15 AM | 38 | 153 | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 0 | 0 | 524 | 31 | 0 | 555 | 5 | 0 | 57 | 0 | 62 | 808 |
| 07:30 AM | 27 | 193 | 0 | 0 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 539 | 33 | 0 | 572 | 5 | 0 | 59 | 0 | 64 | 856 |
| 07:45 AM | 63 | 194 | 0 | 0 | 257 | 0 | 0 | 0 | 0 | 0 | 0 | 580 | 37 | 0 | 617 | 12 | 0 | 63 | 0 | 75 | 949 |
| Total | 151 | 677 | 0 | 0 | 828 | 0 | 0 | 0 | 0 | 0 | 0 | 2040 | 126 | 0 | 2166 | 32 | 0 | 222 | 0 | 254 | 3248 |
| 08:00 AM | 51 | 236 | 0 | 0 | 287 | 0 | 0 | 0 | 0 | 0 | 0 | 482 | 35 | 0 | 517 | 2 | 0 | 53 | 0 | 55 | 859 |
| 08:15 AM | 55 | 228 | 0 | 0 | 283 | 0 | 0 | 0 | 0 | 0 | 0 | 469 | 41 | 0 | 510 | 12 | 0 | 43 | 0 | 55 | 848 |
| 08:30 AM | 38 | 227 | 0 | 0 | 265 | 0 | 0 | 0 | 0 | 0 | 0 | 496 | 39 | 0 | 535 | 4 | 0 | 45 | 0 | 49 | 849 |
| 08:45 AM | 24 | 242 | 0 | 0 | 266 | 0 | 0 | 0 | 0 | 0 | 0 | 509 | 43 | 0 | 552 | 12 | 0 | 26 | 0 | 38 | 856 |
| Total | 168 | 933 | 0 | 0 | 1101 | 0 | 0 | 0 | 0 | 0 | 0 | 1956 | 158 | 0 | 2114 | 30 | 0 | 167 | 0 | 197 | 3412 |
| Grand Total | 319 | 1610 | 0 | 0 | 1929 | 0 | 0 | 0 | 0 | 0 | 0 | 3996 | 284 | 0 | 4280 | 62 | 0 | 389 | 0 | 451 | 6660 |
| Apprch % | 16.5 | 83.5 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 93.4 | 6.6 | 0 | | 13.7 | 0 | 86.3 | 0 | | |
| Total % | 4.8 | 24.2 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 4.3 | 0 | 64.3 | 0.9 | 0 | 5.8 | 0 | 6.8 | |

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHILCO ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 27 | 193 | 0 | 0 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 539 | 33 | 0 | 572 | 5 | 0 | 59 | 0 | 64 | 856 |
| 07:45 AM | 63 | 194 | 0 | 0 | 257 | 0 | 0 | 0 | 0 | 0 | 0 | 580 | 37 | 0 | 617 | 12 | 0 | 63 | 0 | 75 | 949 |
| 08:00 AM | 51 | 236 | 0 | 0 | 287 | 0 | 0 | 0 | 0 | 0 | 0 | 482 | 35 | 0 | 517 | 2 | 0 | 53 | 0 | 55 | 859 |
| 08:15 AM | 55 | 228 | 0 | 0 | 283 | 0 | 0 | 0 | 0 | 0 | 0 | 469 | 41 | 0 | 510 | 12 | 0 | 43 | 0 | 55 | 848 |
| Total Volume | 196 | 851 | 0 | 0 | 1047 | 0 | 0 | 0 | 0 | 0 | 0 | 2070 | 146 | 0 | 2216 | 31 | 0 | 218 | 0 | 249 | 3512 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .778 | .901 | .000 | .000 | .912 | .000 | .000 | .000 | .000 | .000 | .000 | .892 | .890 | .000 | .898 | .646 | .000 | .865 | .000 | .830 | .925 |

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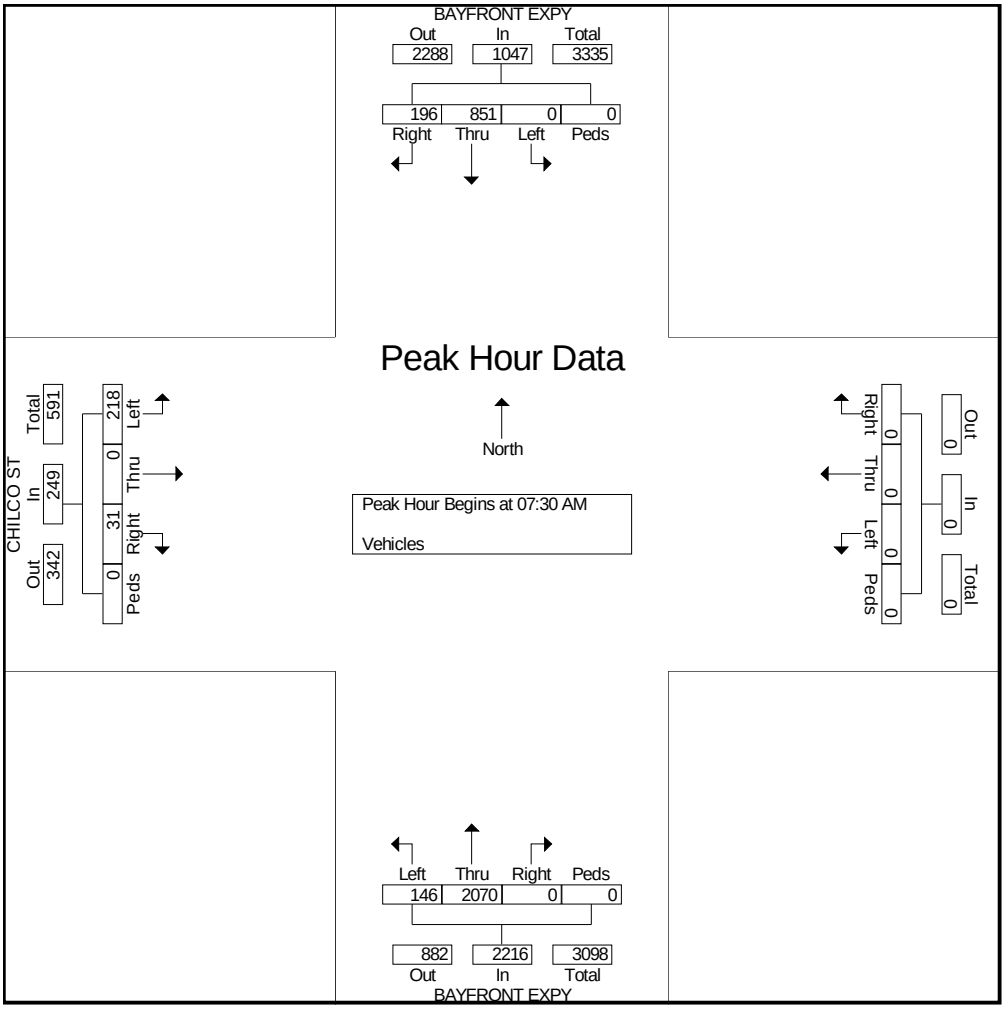

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File Name : 23PM FINAL
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**Groups Printed- Vehicles**

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHILCO ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 36 | 395 | 0 | 0 | 431 | 0 | 0 | 0 | 0 | 0 | 0 | 154 | 6 | 0 | 160 | 44 | 0 | 44 | 0 | 88 | 679 |
| 04:15 PM | 44 | 478 | 0 | 0 | 522 | 0 | 0 | 0 | 0 | 0 | 0 | 179 | 3 | 0 | 182 | 38 | 0 | 36 | 0 | 74 | 778 |
| 04:30 PM | 36 | 454 | 0 | 0 | 490 | 0 | 0 | 0 | 0 | 0 | 0 | 182 | 10 | 0 | 192 | 47 | 0 | 45 | 0 | 92 | 774 |
| 04:45 PM | 39 | 481 | 0 | 0 | 520 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | 4 | 0 | 184 | 48 | 0 | 41 | 0 | 89 | 793 |
| Total | 155 | 1808 | 0 | 0 | 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 695 | 23 | 0 | 718 | 177 | 0 | 166 | 0 | 343 | 3024 |
| 05:00 PM | 33 | 546 | 0 | 0 | 579 | 0 | 0 | 0 | 0 | 0 | 0 | 175 | 5 | 0 | 180 | 47 | 0 | 54 | 0 | 101 | 860 |
| 05:15 PM | 43 | 556 | 0 | 0 | 599 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 4 | 0 | 240 | 37 | 0 | 45 | 0 | 82 | 921 |
| 05:30 PM | 45 | 543 | 0 | 0 | 588 | 0 | 0 | 0 | 0 | 0 | 0 | 192 | 1 | 0 | 193 | 54 | 0 | 50 | 0 | 104 | 885 |
| 05:45 PM | 44 | 468 | 0 | 0 | 512 | 0 | 0 | 0 | 0 | 0 | 0 | 155 | 3 | 0 | 158 | 47 | 0 | 36 | 0 | 83 | 753 |
| Total | 165 | 2113 | 0 | 0 | 2278 | 0 | 0 | 0 | 0 | 0 | 0 | 758 | 13 | 0 | 771 | 185 | 0 | 185 | 0 | 370 | 3419 |
| Grand Total | 320 | 3921 | 0 | 0 | 4241 | 0 | 0 | 0 | 0 | 0 | 0 | 1453 | 36 | 0 | 1489 | 362 | 0 | 351 | 0 | 713 | 6443 |
| Apprch % | 7.5 | 92.5 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 97.6 | 2.4 | 0 | | 50.8 | 0 | 49.2 | 0 | | |
| Total % | 5 | 60.9 | 0 | 0 | 65.8 | 0 | 0 | 0 | 0 | 0 | 0 | 22.6 | 0.6 | 0 | 23.1 | 5.6 | 0 | 5.4 | 0 | 11.1 | |

| | BAYFRONT EXPY Southbound | | | | | Westbound | | | | | BAYFRONT EXPY Northbound | | | | | CHILCO ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:45 PM | 39 | 481 | 0 | 0 | 520 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | 4 | 0 | 184 | 48 | 0 | 41 | 0 | 89 | 793 |
| 05:00 PM | 33 | 546 | 0 | 0 | 579 | 0 | 0 | 0 | 0 | 0 | 0 | 175 | 5 | 0 | 180 | 47 | 0 | 54 | 0 | 101 | 860 |
| 05:15 PM | 43 | 556 | 0 | 0 | 599 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 4 | 0 | 240 | 37 | 0 | 45 | 0 | 82 | 921 |
| 05:30 PM | 45 | 543 | 0 | 0 | 588 | 0 | 0 | 0 | 0 | 0 | 0 | 192 | 1 | 0 | 193 | 54 | 0 | 50 | 0 | 104 | 885 |
| Total Volume | 160 | 2126 | 0 | 0 | 2286 | 0 | 0 | 0 | 0 | 0 | 0 | 783 | 14 | 0 | 797 | 186 | 0 | 190 | 0 | 376 | 3459 |
| % App. Total | | | | | | | | | | | | | | | | | | | | | |
| PHF | .889 | .956 | .000 | .000 | .954 | .000 | .000 | .000 | .000 | .000 | .000 | .829 | .700 | .000 | .830 | .861 | .000 | .880 | .000 | .904 | .939 |

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File Name : 23PM FINAL
Site Code : 00000023
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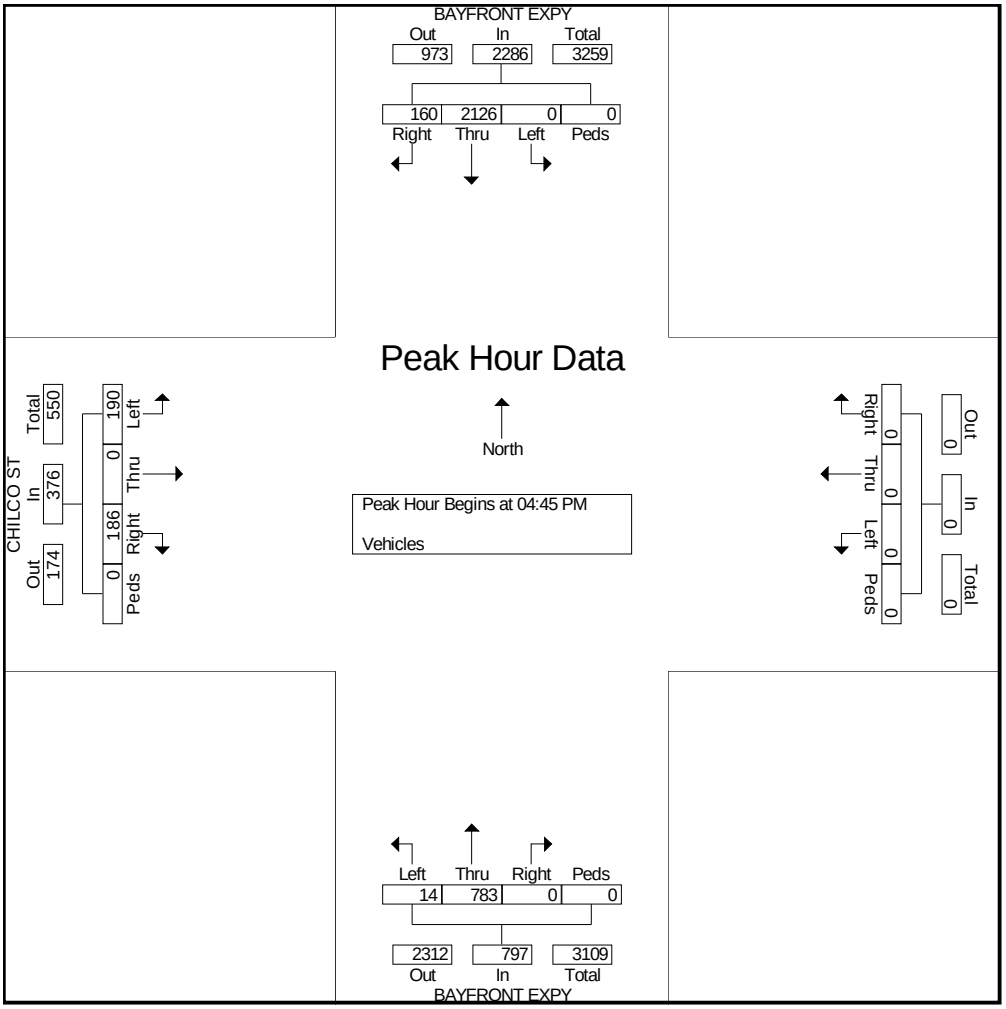

Traffic Data Service
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***tdsbay@cs.com***

File Name : 12AM FINAL
Site Code : 00000012
Start Date : 11/10/2010
Page No : 1

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | RAVENSWOOD AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 11 | 47 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 81 | 0 | 128 | 49 | 0 | 12 | 0 | 61 | 247 |
| 07:15 AM | 21 | 50 | 0 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 102 | 0 | 174 | 55 | 0 | 17 | 0 | 72 | 317 |
| 07:30 AM | 18 | 65 | 0 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 127 | 0 | 247 | 84 | 0 | 13 | 0 | 97 | 427 |
| 07:45 AM | 15 | 72 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 127 | 0 | 244 | 127 | 0 | 21 | 0 | 148 | 479 |
| Total | 65 | 234 | 0 | 0 | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 356 | 437 | 0 | 793 | 315 | 0 | 63 | 0 | 378 | 1470 |
| 08:00 AM | 17 | 120 | 0 | 0 | 137 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 112 | 0 | 225 | 153 | 0 | 18 | 0 | 171 | 533 |
| 08:15 AM | 15 | 83 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 113 | 0 | 183 | 132 | 0 | 26 | 0 | 158 | 439 |
| 08:30 AM | 22 | 94 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | 106 | 0 | 208 | 109 | 0 | 28 | 0 | 137 | 461 |
| 08:45 AM | 12 | 101 | 0 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | 133 | 0 | 214 | 167 | 0 | 11 | 0 | 178 | 505 |
| Total | 66 | 398 | 0 | 0 | 464 | 0 | 0 | 0 | 0 | 0 | 0 | 366 | 464 | 0 | 830 | 561 | 0 | 83 | 0 | 644 | 1938 |
| Grand Total | 131 | 632 | 0 | 0 | 763 | 0 | 0 | 0 | 0 | 0 | 0 | 722 | 901 | 0 | 1623 | 876 | 0 | 146 | 0 | 1022 | 3408 |
| Apprch % | 17.2 | 82.8 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 44.5 | 55.5 | 0 | | 85.7 | 0 | 14.3 | 0 | | |
| Total % | 3.8 | 18.5 | 0 | 0 | 22.4 | 0 | 0 | 0 | 0 | 0 | 0 | 21.2 | 26.4 | 0 | 47.6 | 25.7 | 0 | 4.3 | 0 | 30 | |

| | MIDDLEFIELD RD Southbound | | | | | Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | RAVENSWOOD AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 17 | 120 | 0 | 0 | 137 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 112 | 0 | 225 | 153 | 0 | 18 | 0 | 171 | 533 |
| 08:15 AM | 15 | 83 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 113 | 0 | 183 | 132 | 0 | 26 | 0 | 158 | 439 |
| 08:30 AM | 22 | 94 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | 106 | 0 | 208 | 109 | 0 | 28 | 0 | 137 | 461 |
| 08:45 AM | 12 | 101 | 0 | 0 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | 133 | 0 | 214 | 167 | 0 | 11 | 0 | 178 | 505 |
| Total Volume | 66 | 398 | 0 | 0 | 464 | 0 | 0 | 0 | 0 | 0 | 0 | 366 | 464 | 0 | 830 | 561 | 0 | 83 | 0 | 644 | 1938 |
| % App. Total | 14.2 | 85.8 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 44.1 | 55.9 | 0 | | 87.1 | 0 | 12.9 | 0 | | |
| PHF | .750 | .829 | .000 | .000 | .847 | .000 | .000 | .000 | .000 | .000 | .000 | .810 | .872 | .000 | .922 | .840 | .000 | .741 | .000 | .904 | .909 |

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File Name : 12AM FINAL
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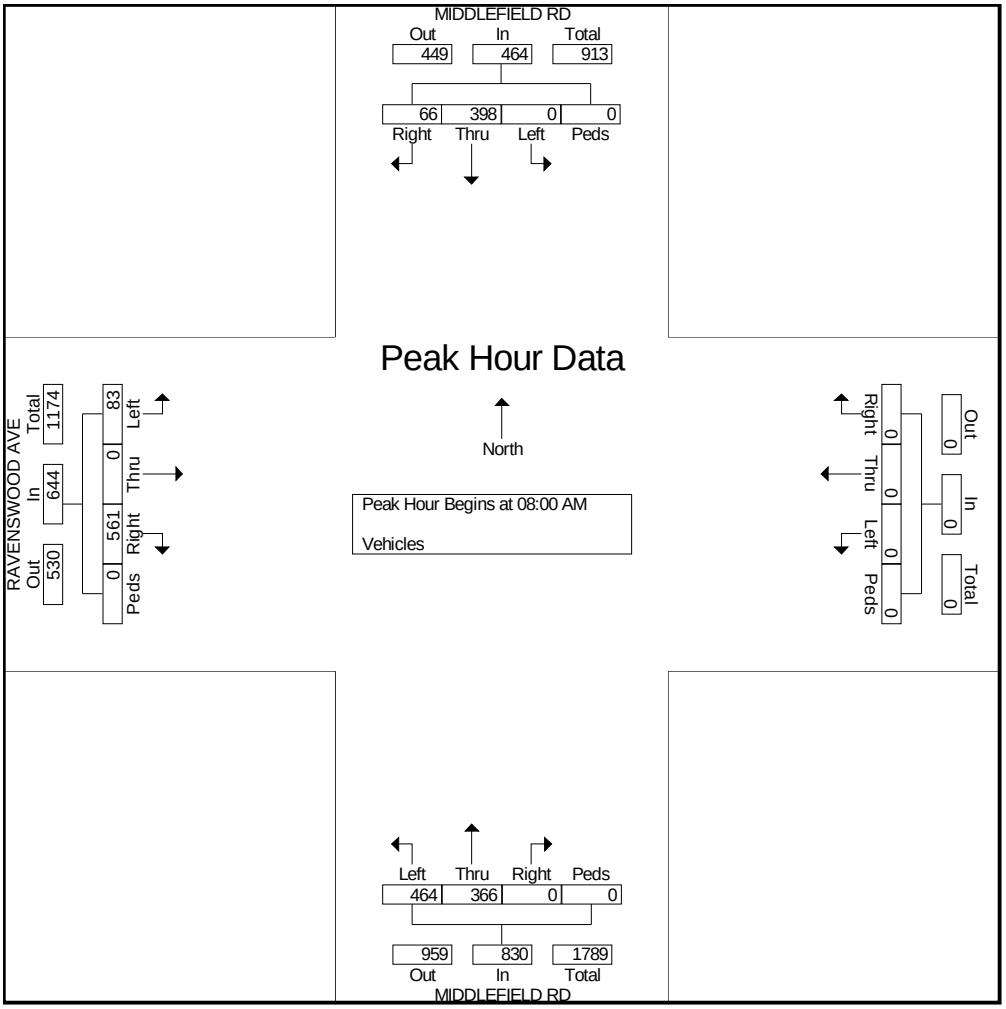

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File Name : 12PM FINAL
Site Code : 00000012
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Page No : 1

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | RAVENSWOOD AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 15 | 85 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 118 | 0 | 251 | 145 | 0 | 43 | 0 | 188 | 539 |
| 04:15 PM | 19 | 87 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 109 | 0 | 249 | 131 | 0 | 40 | 0 | 171 | 526 |
| 04:30 PM | 28 | 81 | 0 | 0 | 109 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 108 | 0 | 239 | 130 | 0 | 79 | 0 | 209 | 557 |
| 04:45 PM | 16 | 90 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 103 | 0 | 240 | 140 | 0 | 62 | 0 | 202 | 548 |
| Total | 78 | 343 | 0 | 0 | 421 | 0 | 0 | 0 | 0 | 0 | 0 | 541 | 438 | 0 | 979 | 546 | 0 | 224 | 0 | 770 | 2170 |
| 05:00 PM | 19 | 100 | 0 | 0 | 119 | 0 | 0 | 0 | 0 | 0 | 0 | 147 | 116 | 0 | 263 | 165 | 0 | 57 | 0 | 222 | 604 |
| 05:15 PM | 20 | 100 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 138 | 0 | 275 | 158 | 0 | 65 | 0 | 223 | 618 |
| 05:30 PM | 34 | 115 | 0 | 0 | 149 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 117 | 0 | 263 | 185 | 0 | 76 | 0 | 261 | 673 |
| 05:45 PM | 19 | 42 | 0 | 0 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 116 | 0 | 252 | 197 | 0 | 59 | 0 | 256 | 569 |
| Total | 92 | 357 | 0 | 0 | 449 | 0 | 0 | 0 | 0 | 0 | 0 | 566 | 487 | 0 | 1053 | 705 | 0 | 257 | 0 | 962 | 2464 |
| Grand Total | 170 | 700 | 0 | 0 | 870 | 0 | 0 | 0 | 0 | 0 | 0 | 1107 | 925 | 0 | 2032 | 1251 | 0 | 481 | 0 | 1732 | 4634 |
| Apprch % | 19.5 | 80.5 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 54.5 | 45.5 | 0 | | 72.2 | 0 | 27.8 | 0 | | |
| Total % | 3.7 | 15.1 | 0 | 0 | 18.8 | 0 | 0 | 0 | 0 | 0 | 0 | 23.9 | 20 | 0 | 43.8 | 27 | 0 | 10.4 | 0 | 37.4 | |

| | MIDDLEFIELD RD Southbound | | | | | Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | RAVENSWOOD AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 19 | 100 | 0 | 0 | 119 | 0 | 0 | 0 | 0 | 0 | 0 | 147 | 116 | 0 | 263 | 165 | 0 | 57 | 0 | 222 | 604 |
| 05:15 PM | 20 | 100 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 138 | 0 | 275 | 158 | 0 | 65 | 0 | 223 | 618 |
| 05:30 PM | 34 | 115 | 0 | 0 | 149 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 117 | 0 | 263 | 185 | 0 | 76 | 0 | 261 | 673 |
| 05:45 PM | 19 | 42 | 0 | 0 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 116 | 0 | 252 | 197 | 0 | 59 | 0 | 256 | 569 |
| Total Volume | 92 | 357 | 0 | 0 | 449 | 0 | 0 | 0 | 0 | 0 | 0 | 566 | 487 | 0 | 1053 | 705 | 0 | 257 | 0 | 962 | 2464 |
| % App. Total | 20.5 | 79.5 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 53.8 | 46.2 | 0 | | 73.3 | 0 | 26.7 | 0 | | |
| PHF | .676 | .776 | .000 | .000 | .753 | .000 | .000 | .000 | .000 | .000 | .000 | .963 | .882 | .000 | .957 | .895 | .000 | .845 | .000 | .921 | .915 |

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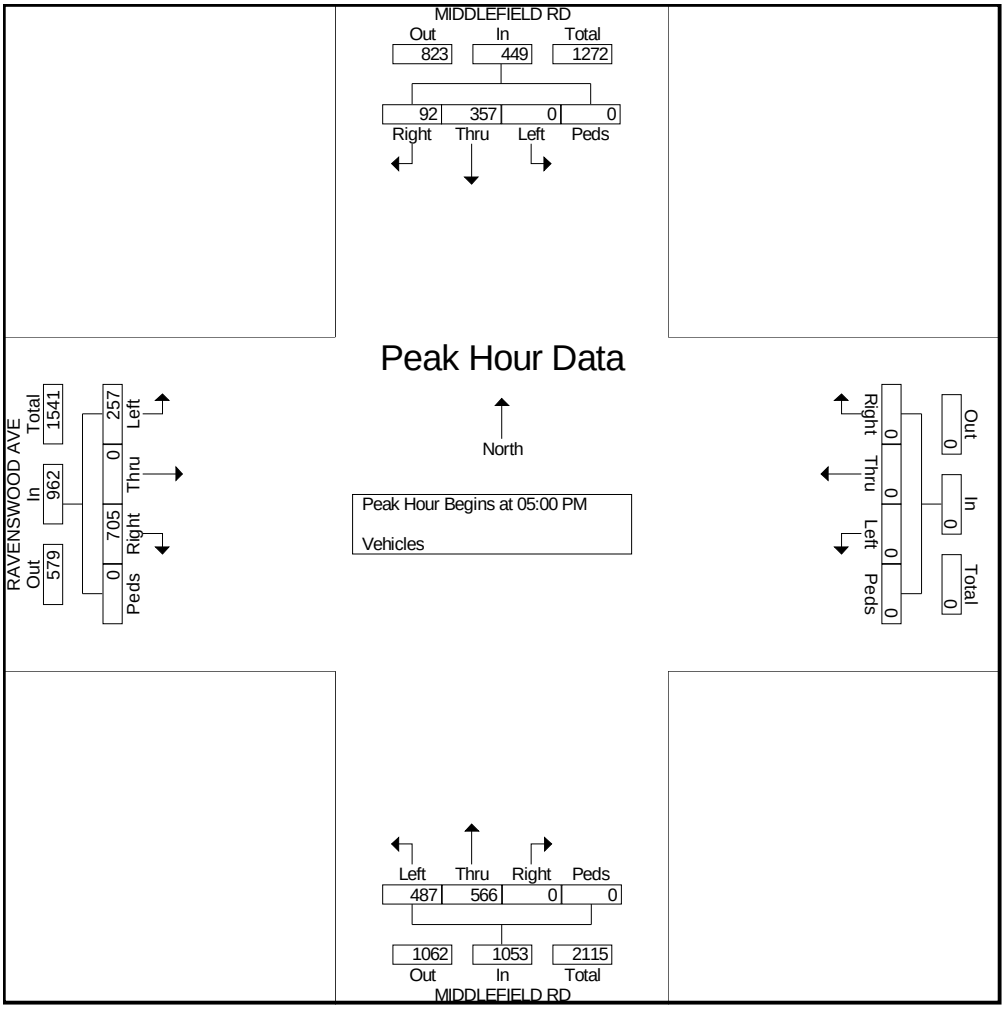

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Site Code : 00000011
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Page No : 1

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | RINGWOOD AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | D ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 19 | 78 | 13 | 0 | 110 | 29 | 9 | 3 | 0 | 41 | 2 | 111 | 12 | 0 | 125 | 1 | 0 | 0 | 0 | 1 | 277 |
| 07:15 AM | 13 | 88 | 5 | 0 | 106 | 55 | 8 | 10 | 0 | 73 | 8 | 135 | 6 | 0 | 149 | 1 | 1 | 1 | 0 | 3 | 331 |
| 07:30 AM | 7 | 137 | 13 | 0 | 157 | 48 | 11 | 10 | 0 | 69 | 9 | 203 | 6 | 0 | 218 | 0 | 0 | 1 | 0 | 1 | 445 |
| 07:45 AM | 12 | 155 | 35 | 0 | 202 | 73 | 10 | 25 | 0 | 108 | 10 | 193 | 9 | 0 | 212 | 3 | 0 | 1 | 0 | 4 | 526 |
| Total | 51 | 458 | 66 | 0 | 575 | 205 | 38 | 48 | 0 | 291 | 29 | 642 | 33 | 0 | 704 | 5 | 1 | 3 | 0 | 9 | 1579 |
| 08:00 AM | 22 | 195 | 55 | 0 | 272 | 48 | 13 | 28 | 0 | 89 | 15 | 181 | 14 | 0 | 210 | 1 | 2 | 0 | 0 | 3 | 574 |
| 08:15 AM | 17 | 186 | 30 | 0 | 233 | 63 | 13 | 32 | 0 | 108 | 12 | 131 | 19 | 0 | 162 | 0 | 1 | 1 | 0 | 2 | 505 |
| 08:30 AM | 18 | 154 | 36 | 0 | 208 | 55 | 10 | 23 | 0 | 88 | 12 | 166 | 16 | 0 | 194 | 2 | 0 | 2 | 0 | 4 | 494 |
| 08:45 AM | 11 | 174 | 71 | 0 | 256 | 75 | 17 | 40 | 0 | 132 | 10 | 145 | 8 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 551 |
| Total | 68 | 709 | 192 | 0 | 969 | 241 | 53 | 123 | 0 | 417 | 49 | 623 | 57 | 0 | 729 | 3 | 3 | 3 | 0 | 9 | 2124 |
| Grand Total | 119 | 1167 | 258 | 0 | 1544 | 446 | 91 | 171 | 0 | 708 | 78 | 1265 | 90 | 0 | 1433 | 8 | 4 | 6 | 0 | 18 | 3703 |
| Apprch % | 7.7 | 75.6 | 16.7 | 0 | | 63 | 12.9 | 24.2 | 0 | | 5.4 | 88.3 | 6.3 | 0 | | 44.4 | 22.2 | 33.3 | 0 | | |
| Total % | 3.2 | 31.5 | 7 | 0 | 41.7 | 12 | 2.5 | 4.6 | 0 | 19.1 | 2.1 | 34.2 | 2.4 | 0 | 38.7 | 0.2 | 0.1 | 0.2 | 0 | 0.5 | |

| | MIDDLEFIELD RD Southbound | | | | | RINGWOOD AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | D ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 22 | 195 | 55 | 0 | 272 | 48 | 13 | 28 | 0 | 89 | 15 | 181 | 14 | 0 | 210 | 1 | 2 | 0 | 0 | 3 | 574 |
| 08:15 AM | 17 | 186 | 30 | 0 | 233 | 63 | 13 | 32 | 0 | 108 | 12 | 131 | 19 | 0 | 162 | 0 | 1 | 1 | 0 | 2 | 505 |
| 08:30 AM | 18 | 154 | 36 | 0 | 208 | 55 | 10 | 23 | 0 | 88 | 12 | 166 | 16 | 0 | 194 | 2 | 0 | 2 | 0 | 4 | 494 |
| 08:45 AM | 11 | 174 | 71 | 0 | 256 | 75 | 17 | 40 | 0 | 132 | 10 | 145 | 8 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 551 |
| Total Volume | 68 | 709 | 192 | 0 | 969 | 241 | 53 | 123 | 0 | 417 | 49 | 623 | 57 | 0 | 729 | 3 | 3 | 3 | 0 | 9 | 2124 |
| % App. Total | 7 | 73.2 | 19.8 | 0 | | 57.8 | 12.7 | 29.5 | 0 | | 6.7 | 85.5 | 7.8 | 0 | | 33.3 | 33.3 | 33.3 | 0 | | |
| PHF | .773 | .909 | .676 | .000 | .891 | .803 | .779 | .769 | .000 | .790 | .817 | .860 | .750 | .000 | .868 | .375 | .375 | .375 | .000 | .563 | .925 |

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File Name : 11AM FINAL
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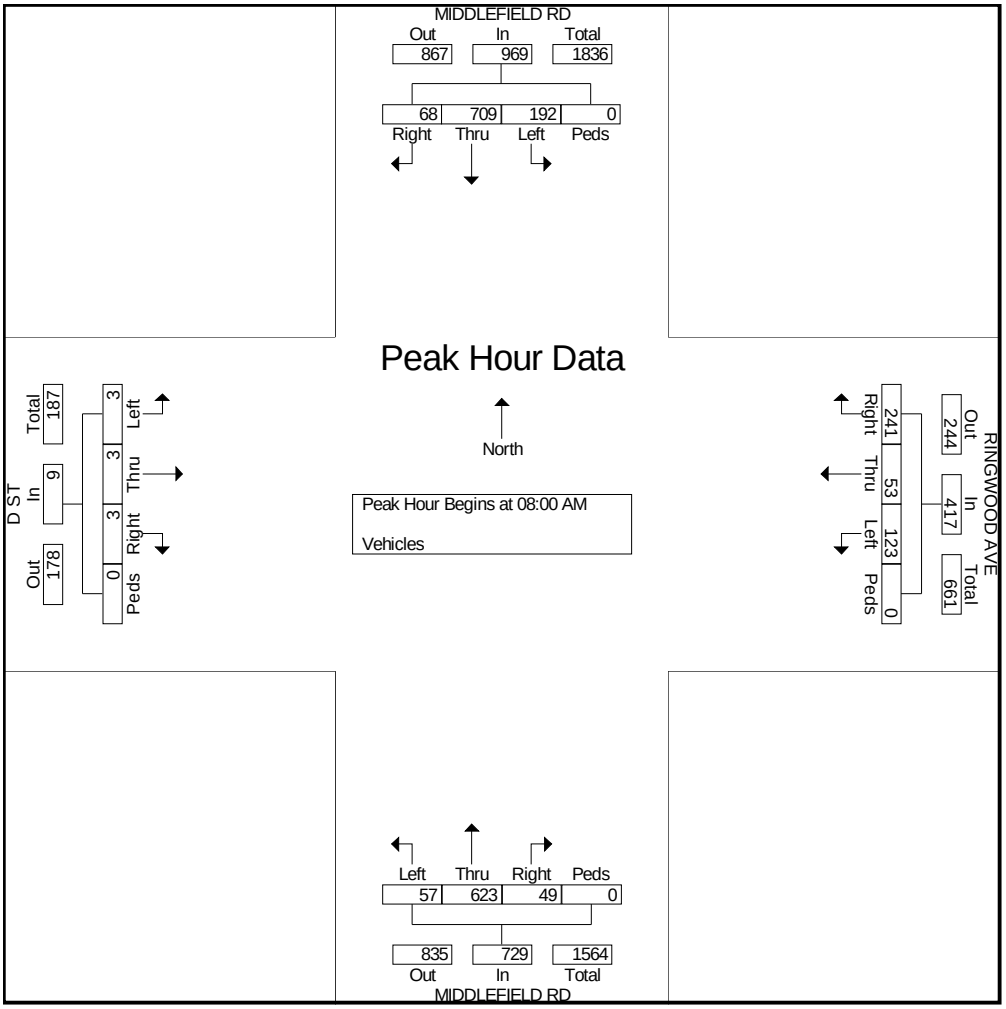

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**File Name : 11PM FINAL**
**Site Code : 00000011**
**Start Date : 11/10/2010**
**Page No : 1**

**Groups Printed- Vehicles**

| | MIDDLEFIELD RD Southbound | | | | | RINGWOOD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | D ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 6 | 149 | 68 | 0 | 223 | 38 | 0 | 11 | 0 | 49 | 24 | 201 | 1 | 0 | 226 | 6 | 23 | 11 | 0 | 40 | 538 |
| 04:15 PM | 2 | 166 | 57 | 0 | 225 | 49 | 0 | 12 | 0 | 61 | 17 | 183 | 2 | 0 | 202 | 8 | 12 | 13 | 0 | 33 | 521 |
| 04:30 PM | 2 | 150 | 54 | 0 | 206 | 32 | 0 | 7 | 0 | 39 | 12 | 190 | 1 | 0 | 203 | 11 | 10 | 22 | 0 | 43 | 491 |
| 04:45 PM | 2 | 162 | 70 | 0 | 234 | 31 | 0 | 9 | 0 | 40 | 26 | 185 | 4 | 0 | 215 | 8 | 15 | 20 | 0 | 43 | 532 |
| Total | 12 | 627 | 249 | 0 | 888 | 150 | 0 | 39 | 0 | 189 | 79 | 759 | 8 | 0 | 846 | 33 | 60 | 66 | 0 | 159 | 2082 |
| 05:00 PM | 6 | 172 | 68 | 0 | 246 | 51 | 3 | 15 | 0 | 69 | 23 | 203 | 5 | 0 | 231 | 12 | 27 | 21 | 0 | 60 | 606 |
| 05:15 PM | 9 | 154 | 96 | 0 | 259 | 67 | 1 | 13 | 0 | 81 | 25 | 189 | 9 | 1 | 224 | 18 | 24 | 30 | 0 | 72 | 636 |
| 05:30 PM | 7 | 174 | 84 | 0 | 265 | 71 | 3 | 17 | 0 | 91 | 30 | 192 | 18 | 0 | 240 | 20 | 12 | 12 | 0 | 44 | 640 |
| 05:45 PM | 14 | 128 | 108 | 0 | 250 | 77 | 1 | 28 | 0 | 106 | 49 | 177 | 17 | 0 | 243 | 12 | 13 | 12 | 0 | 37 | 636 |
| Total | 36 | 628 | 356 | 0 | 1020 | 266 | 8 | 73 | 0 | 347 | 127 | 761 | 49 | 1 | 938 | 62 | 76 | 75 | 0 | 213 | 2518 |
| Grand Total | 48 | 1255 | 605 | 0 | 1908 | 416 | 8 | 112 | 0 | 536 | 206 | 1520 | 57 | 1 | 1784 | 95 | 136 | 141 | 0 | 372 | 4600 |
| Apprch % | 2.5 | 65.8 | 31.7 | 0 | | 77.6 | 1.5 | 20.9 | 0 | | 11.5 | 85.2 | 3.2 | 0.1 | | 25.5 | 36.6 | 37.9 | 0 | | |
| Total % | 1 | 27.3 | 13.2 | 0 | 41.5 | 9 | 0.2 | 2.4 | 0 | 11.7 | 4.5 | 33 | 1.2 | 0 | 38.8 | 2.1 | 3 | 3.1 | 0 | 8.1 | |

| | MIDDLEFIELD RD Southbound | | | | | RINGWOOD Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | D ST Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 6 | 172 | 68 | 0 | 246 | 51 | 3 | 15 | 0 | 69 | 23 | 203 | 5 | 0 | 231 | 12 | 27 | 21 | 0 | 60 | 606 |
| 05:15 PM | 9 | 154 | 96 | 0 | 259 | 67 | 1 | 13 | 0 | 81 | 25 | 189 | 9 | 1 | 224 | 18 | 24 | 30 | 0 | 72 | 636 |
| 05:30 PM | 7 | 174 | 84 | 0 | 265 | 71 | 3 | 17 | 0 | 91 | 30 | 192 | 18 | 0 | 240 | 20 | 12 | 12 | 0 | 44 | 640 |
| 05:45 PM | 14 | 128 | 108 | 0 | 250 | 77 | 1 | 28 | 0 | 106 | 49 | 177 | 17 | 0 | 243 | 12 | 13 | 12 | 0 | 37 | 636 |
| Total Volume | 36 | 628 | 356 | 0 | 1020 | 266 | 8 | 73 | 0 | 347 | 127 | 761 | 49 | 1 | 938 | 62 | 76 | 75 | 0 | 213 | 2518 |
| % App. Total | 3.5 | 61.6 | 34.9 | 0 | | 76.7 | 2.3 | 21 | 0 | | 13.5 | 81.1 | 5.2 | 0.1 | | 29.1 | 35.7 | 35.2 | 0 | | |
| PHF | .643 | .902 | .824 | .000 | .962 | .864 | .667 | .652 | .000 | .818 | .648 | .937 | .681 | .250 | .965 | .775 | .704 | .625 | .000 | .740 | .984 |

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File Name : 11PM FINAL
Site Code : 00000011
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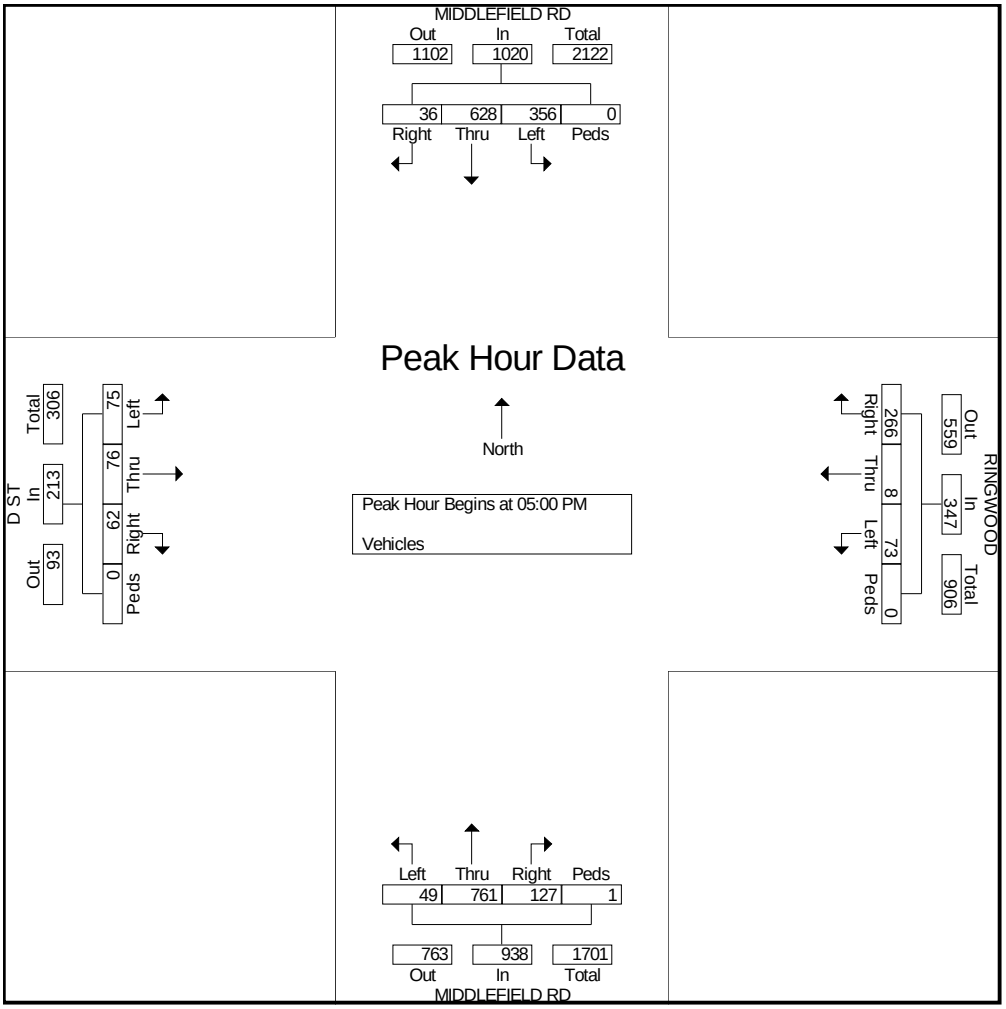

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Site Code : 00000009
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Page No : 1

**Groups Printed- Vechicles**

| | MIDDLEFIELD RD Southbound | | | | | LYTTON AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | LYTTON AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 63 | 46 | 0 | 0 | 109 | 0 | 5 | 0 | 0 | 5 | 0 | 38 | 15 | 0 | 53 | 15 | 1 | 19 | 0 | 35 | 202 |
| 07:15 AM | 90 | 58 | 0 | 0 | 148 | 2 | 16 | 0 | 0 | 18 | 1 | 49 | 23 | 0 | 73 | 7 | 1 | 33 | 0 | 41 | 280 |
| 07:30 AM | 70 | 84 | 1 | 0 | 155 | 3 | 23 | 1 | 0 | 27 | 0 | 46 | 29 | 0 | 75 | 7 | 14 | 39 | 0 | 60 | 317 |
| 07:45 AM | 107 | 103 | 2 | 0 | 212 | 1 | 31 | 0 | 0 | 32 | 2 | 60 | 22 | 0 | 84 | 5 | 4 | 36 | 0 | 45 | 373 |
| Total | 330 | 291 | 3 | 0 | 624 | 6 | 75 | 1 | 0 | 82 | 3 | 193 | 89 | 0 | 285 | 34 | 20 | 127 | 0 | 181 | 1172 |
| 08:00 AM | 74 | 109 | 1 | 0 | 184 | 2 | 29 | 1 | 0 | 32 | 3 | 67 | 30 | 0 | 100 | 6 | 5 | 28 | 0 | 39 | 355 |
| 08:15 AM | 99 | 123 | 2 | 0 | 224 | 0 | 26 | 1 | 0 | 27 | 1 | 88 | 27 | 0 | 116 | 13 | 13 | 25 | 0 | 51 | 418 |
| 08:30 AM | 85 | 129 | 3 | 0 | 217 | 1 | 20 | 3 | 0 | 24 | 3 | 74 | 30 | 0 | 107 | 10 | 11 | 35 | 0 | 56 | 404 |
| 08:45 AM | 97 | 129 | 1 | 0 | 227 | 2 | 22 | 1 | 0 | 25 | 1 | 85 | 28 | 0 | 114 | 16 | 5 | 26 | 0 | 47 | 413 |
| Total | 355 | 490 | 7 | 0 | 852 | 5 | 97 | 6 | 0 | 108 | 8 | 314 | 115 | 0 | 437 | 45 | 34 | 114 | 0 | 193 | 1590 |
| Grand Total | 685 | 781 | 10 | 0 | 1476 | 11 | 172 | 7 | 0 | 190 | 11 | 507 | 204 | 0 | 722 | 79 | 54 | 241 | 0 | 374 | 2762 |
| Apprch % | 46.4 | 52.9 | 0.7 | 0 | | 5.8 | 90.5 | 3.7 | 0 | | 1.5 | 70.2 | 28.3 | 0 | | 21.1 | 14.4 | 64.4 | 0 | | |
| Total % | 24.8 | 28.3 | 0.4 | 0 | 53.4 | 0.4 | 6.2 | 0.3 | 0 | 6.9 | 0.4 | 18.4 | 7.4 | 0 | 26.1 | 2.9 | 2 | 8.7 | 0 | 13.5 | |

| | MIDDLEFIELD RD Southbound | | | | | LYTTON AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | LYTTON AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | | | | | | | | | |
| 08:00 AM | 74 | 109 | 1 | 0 | 184 | 2 | 29 | 1 | 0 | 32 | 3 | 67 | 30 | 0 | 100 | 6 | 5 | 28 | 0 | 39 | 355 |
| 08:15 AM | 99 | 123 | 2 | 0 | 224 | 0 | 26 | 1 | 0 | 27 | 1 | 88 | 27 | 0 | 116 | 13 | 13 | 25 | 0 | 51 | 418 |
| 08:30 AM | 85 | 129 | 3 | 0 | 217 | 1 | 20 | 3 | 0 | 24 | 3 | 74 | 30 | 0 | 107 | 10 | 11 | 35 | 0 | 56 | 404 |
| 08:45 AM | 97 | 129 | 1 | 0 | 227 | 2 | 22 | 1 | 0 | 25 | 1 | 85 | 28 | 0 | 114 | 16 | 5 | 26 | 0 | 47 | 413 |
| Total Volume | 355 | 490 | 7 | 0 | 852 | 5 | 97 | 6 | 0 | 108 | 8 | 314 | 115 | 0 | 437 | 45 | 34 | 114 | 0 | 193 | 1590 |
| % App. Total | 41.7 | 57.5 | 0.8 | 0 | | 4.6 | 89.8 | 5.6 | 0 | | 1.8 | 71.9 | 26.3 | 0 | | 23.3 | 17.6 | 59.1 | 0 | | |
| PHF | .896 | .950 | .583 | .000 | .938 | .625 | .836 | .500 | .000 | .844 | .667 | .892 | .958 | .000 | .942 | .703 | .654 | .814 | .000 | .862 | .951 |

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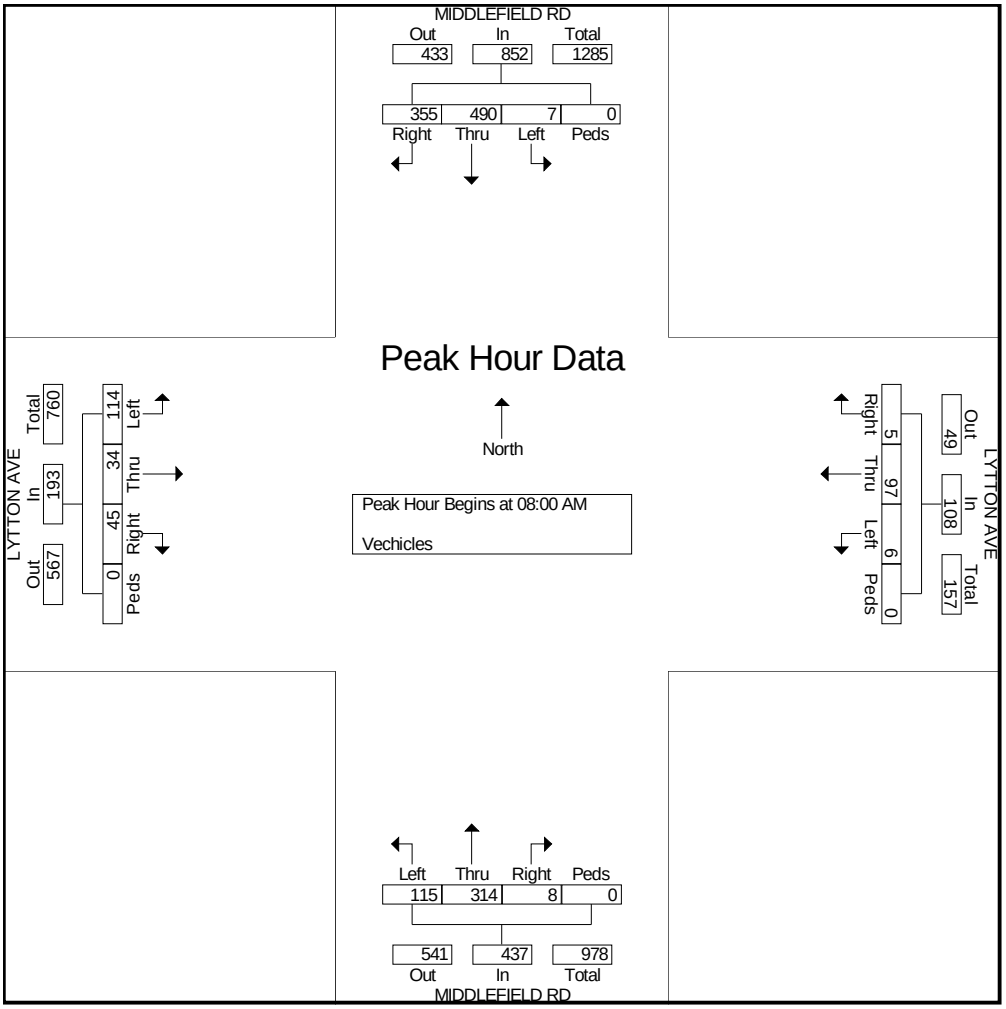
Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 9AM FINAL
Site Code : 00000009
Start Date : 11/10/2010
Page No : 2



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**Groups Printed- Vechicles**

| | MIDDLEFIELD RD Southbound | | | | | LYTTON AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | LYTTON AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 53 | 77 | 6 | 0 | 136 | 1 | 11 | 0 | 0 | 12 | 3 | 98 | 15 | 0 | 116 | 33 | 37 | 84 | 0 | 154 | 418 |
| 04:15 PM | 45 | 92 | 7 | 0 | 144 | 1 | 12 | 0 | 0 | 13 | 1 | 101 | 30 | 0 | 132 | 15 | 20 | 66 | 0 | 101 | 390 |
| 04:30 PM | 28 | 93 | 5 | 0 | 126 | 3 | 12 | 1 | 0 | 16 | 4 | 109 | 24 | 0 | 137 | 21 | 45 | 107 | 0 | 173 | 452 |
| 04:45 PM | 45 | 121 | 3 | 0 | 169 | 3 | 11 | 0 | 0 | 14 | 7 | 118 | 16 | 0 | 141 | 13 | 34 | 85 | 0 | 132 | 456 |
| Total | 171 | 383 | 21 | 0 | 575 | 8 | 46 | 1 | 0 | 55 | 15 | 426 | 85 | 0 | 526 | 82 | 136 | 342 | 0 | 560 | 1716 |
| 05:00 PM | 38 | 115 | 2 | 0 | 155 | 3 | 6 | 2 | 0 | 11 | 6 | 124 | 20 | 0 | 150 | 23 | 33 | 116 | 0 | 172 | 488 |
| 05:15 PM | 36 | 120 | 9 | 0 | 165 | 3 | 15 | 3 | 0 | 21 | 5 | 104 | 21 | 0 | 130 | 21 | 43 | 101 | 0 | 165 | 481 |
| 05:30 PM | 48 | 163 | 8 | 0 | 219 | 4 | 15 | 2 | 0 | 21 | 5 | 126 | 27 | 0 | 158 | 11 | 29 | 104 | 0 | 144 | 542 |
| 05:45 PM | 41 | 110 | 5 | 0 | 156 | 2 | 19 | 0 | 0 | 21 | 11 | 103 | 21 | 0 | 135 | 23 | 30 | 98 | 0 | 151 | 463 |
| Total | 163 | 508 | 24 | 0 | 695 | 12 | 55 | 7 | 0 | 74 | 27 | 457 | 89 | 0 | 573 | 78 | 135 | 419 | 0 | 632 | 1974 |
| Grand Total | 334 | 891 | 45 | 0 | 1270 | 20 | 101 | 8 | 0 | 129 | 42 | 883 | 174 | 0 | 1099 | 160 | 271 | 761 | 0 | 1192 | 3690 |
| Apprch % | 26.3 | 70.2 | 3.5 | 0 | | 15.5 | 78.3 | 6.2 | 0 | | 3.8 | 80.3 | 15.8 | 0 | | 13.4 | 22.7 | 63.8 | 0 | | |
| Total % | 9.1 | 24.1 | 1.2 | 0 | 34.4 | 0.5 | 2.7 | 0.2 | 0 | 3.5 | 1.1 | 23.9 | 4.7 | 0 | 29.8 | 4.3 | 7.3 | 20.6 | 0 | 32.3 | |

| | MIDDLEFIELD RD Southbound | | | | | LYTTON AVE Westbound | | | | | MIDDLEFIELD RD Northbound | | | | | LYTTON AVE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | | | | | |
| 05:00 PM | 38 | 115 | 2 | 0 | 155 | 3 | 6 | 2 | 0 | 11 | 6 | 124 | 20 | 0 | 150 | 23 | 33 | 116 | 0 | 172 | 488 |
| 05:15 PM | 36 | 120 | 9 | 0 | 165 | 3 | 15 | 3 | 0 | 21 | 5 | 104 | 21 | 0 | 130 | 21 | 43 | 101 | 0 | 165 | 481 |
| 05:30 PM | 48 | 163 | 8 | 0 | 219 | 4 | 15 | 2 | 0 | 21 | 5 | 126 | 27 | 0 | 158 | 11 | 29 | 104 | 0 | 144 | 542 |
| 05:45 PM | 41 | 110 | 5 | 0 | 156 | 2 | 19 | 0 | 0 | 21 | 11 | 103 | 21 | 0 | 135 | 23 | 30 | 98 | 0 | 151 | 463 |
| Total Volume | 163 | 508 | 24 | 0 | 695 | 12 | 55 | 7 | 0 | 74 | 27 | 457 | 89 | 0 | 573 | 78 | 135 | 419 | 0 | 632 | 1974 |
| % App. Total | 23.5 | 73.1 | 3.5 | 0 | | 16.2 | 74.3 | 9.5 | 0 | | 4.7 | 79.8 | 15.5 | 0 | | 12.3 | 21.4 | 66.3 | 0 | | |
| PHF | .849 | .779 | .667 | .000 | .793 | .750 | .724 | .583 | .000 | .881 | .614 | .907 | .824 | .000 | .907 | .848 | .785 | .903 | .000 | .919 | .911 |

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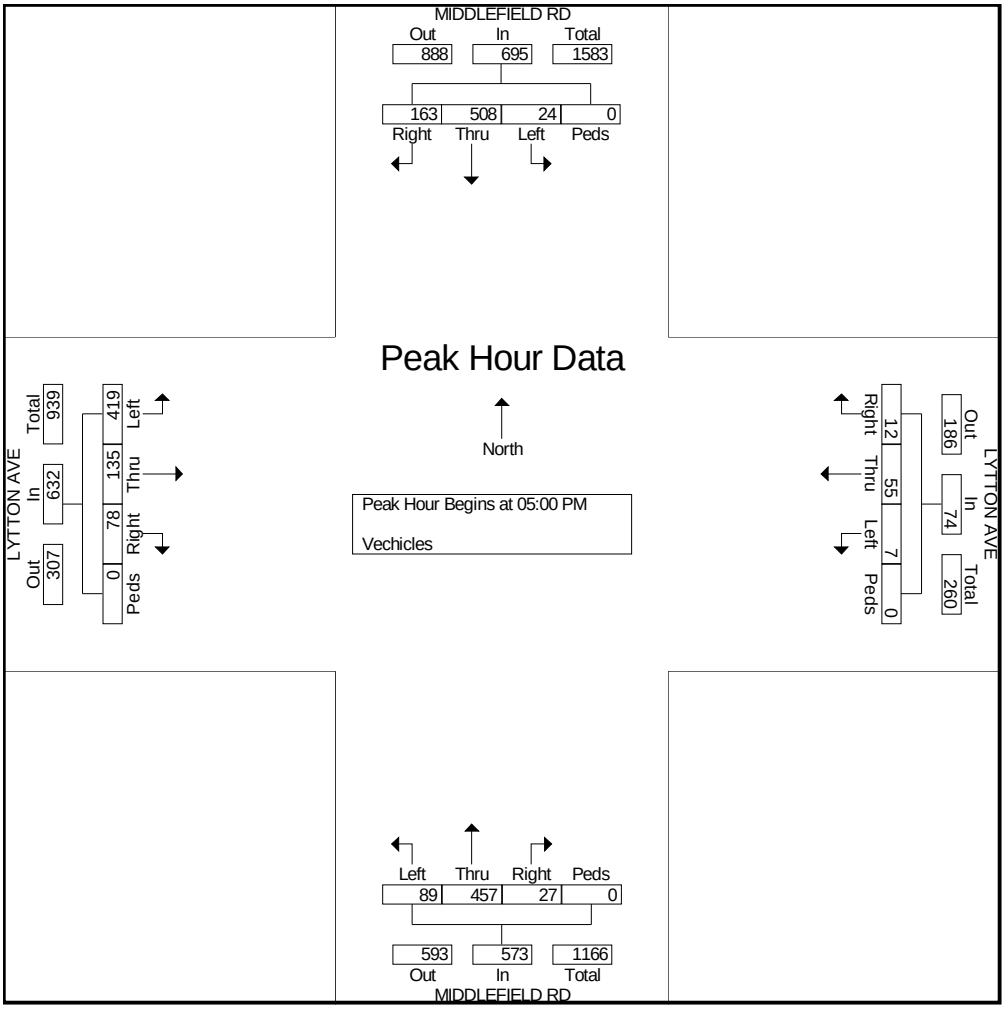
File Name : 9PM FINAL
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