

APPENDIX E

Transportation Documentation

Appendix E.1: ITE Trip Generation

General Office Building (710)

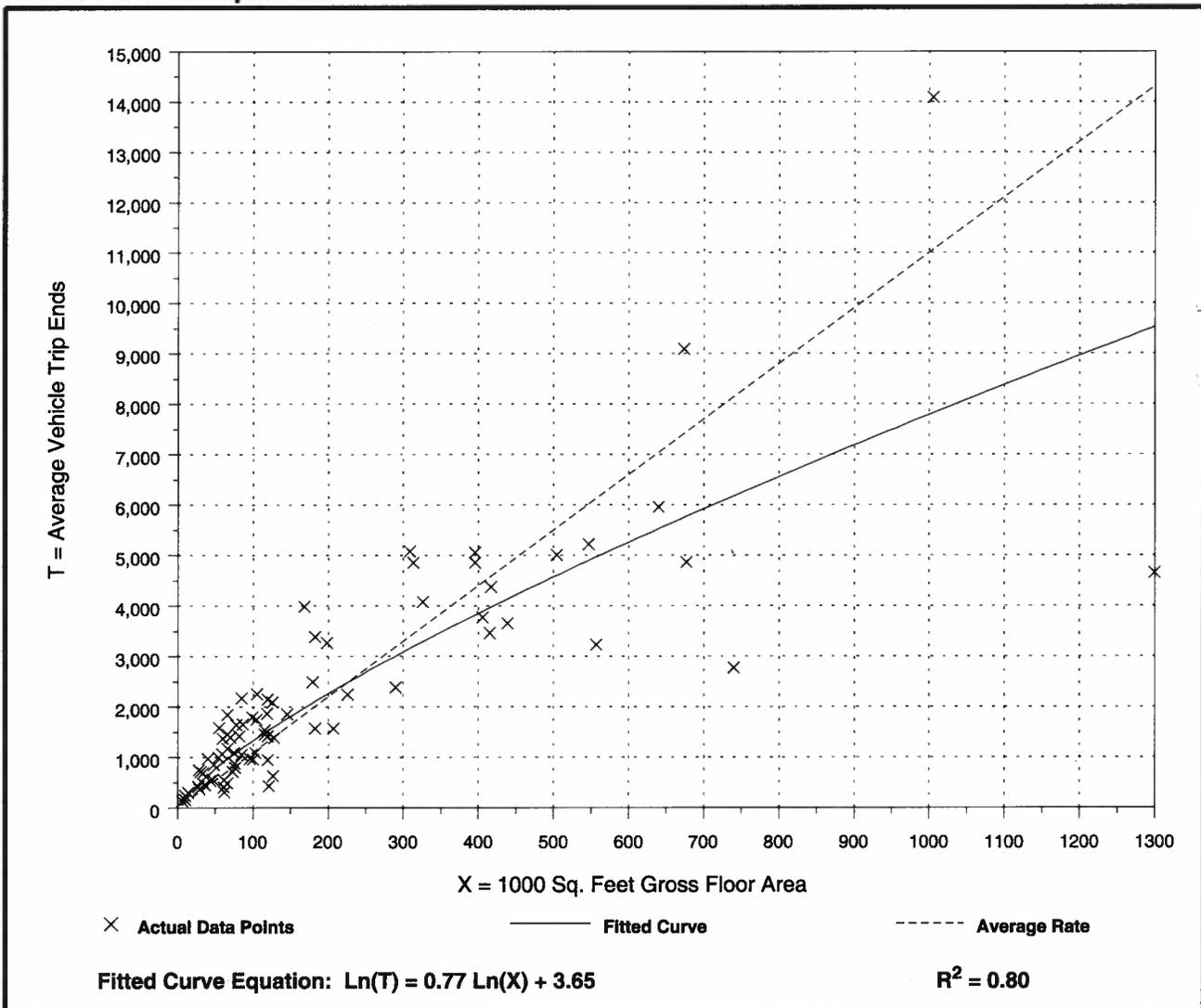
**Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday**

Number of Studies: 78
Average 1000 Sq. Feet GFA: 199
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
11.01	3.58 - 28.80	6.13

Data Plot and Equation



General Office Building (710)

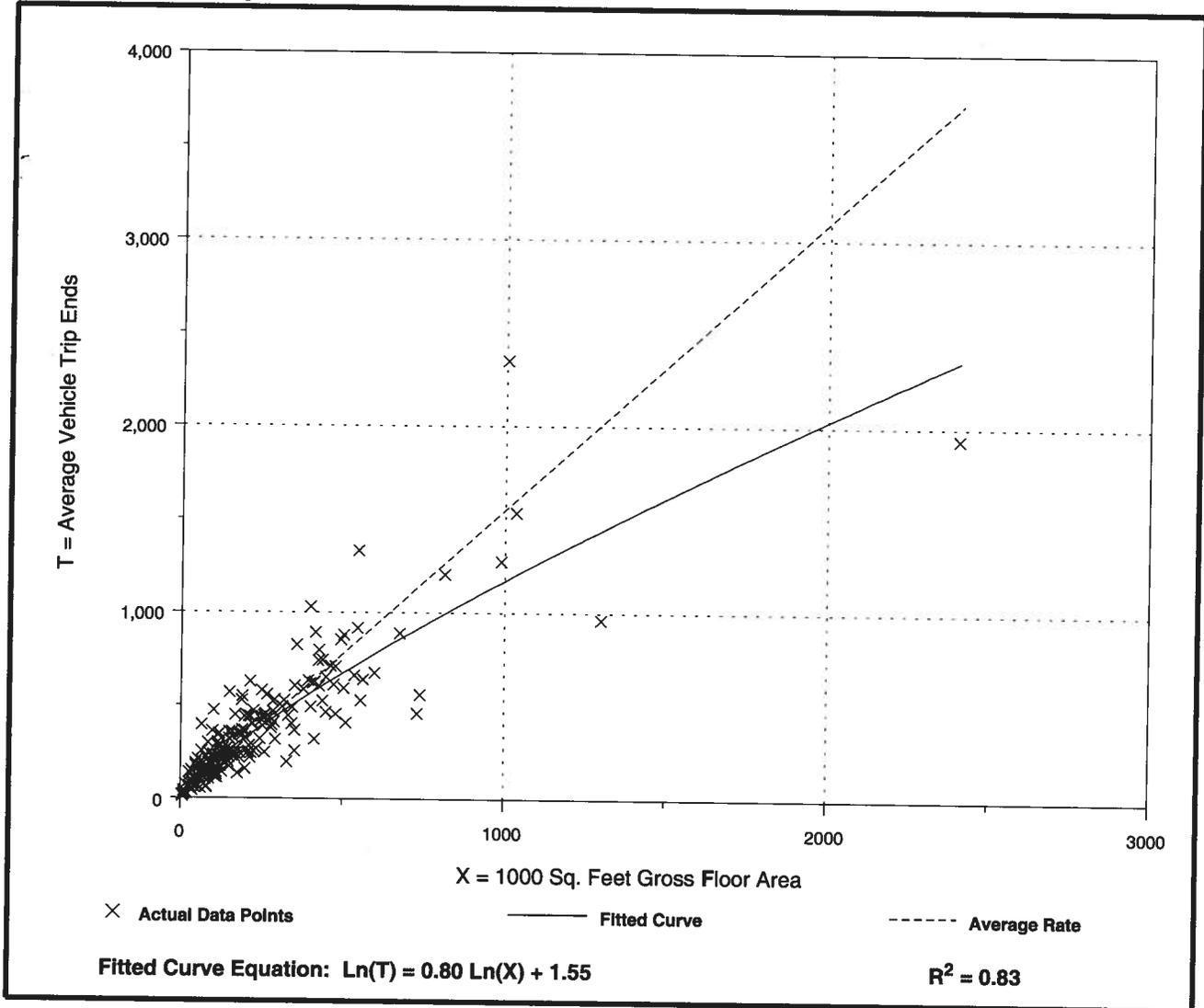
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
A.M. Peak Hour

Number of Studies: 217
 Average 1000 Sq. Feet GFA: 223
 Directional Distribution: 88% entering, 12% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.55	0.60 - 5.98	1.39

Data Plot and Equation



General Office Building (710)

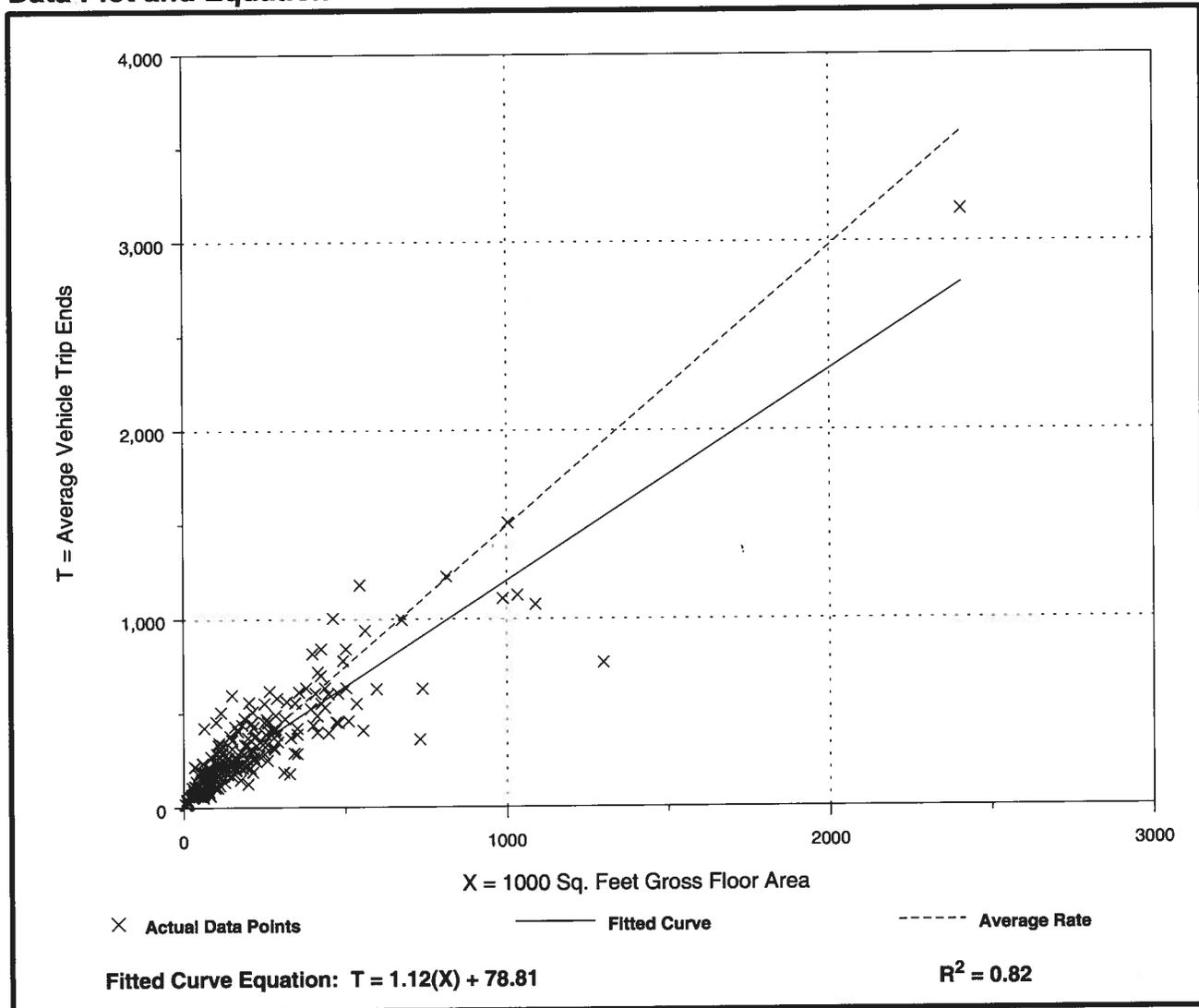
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
P.M. Peak Hour

Number of Studies: 235
 Average 1000 Sq. Feet GFA: 216
 Directional Distribution: 17% entering, 83% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.49	0.49 - 6.39	1.37

Data Plot and Equation



Hotel (310)

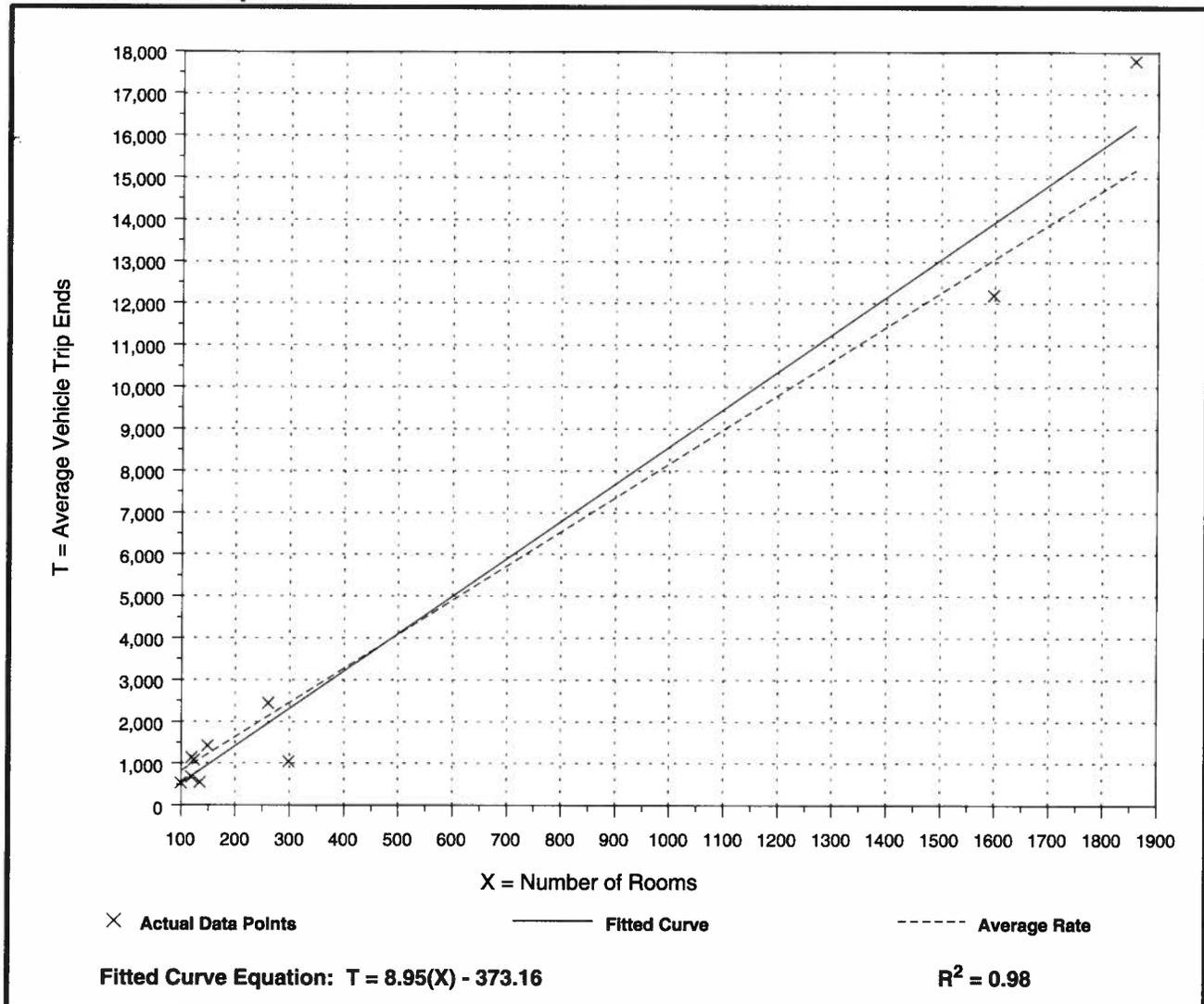
Average Vehicle Trip Ends vs: Rooms
On a: Weekday

Number of Studies: 10
Average Number of Rooms: 476
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.17	3.47 - 9.58	3.38

Data Plot and Equation



Hotel (310)

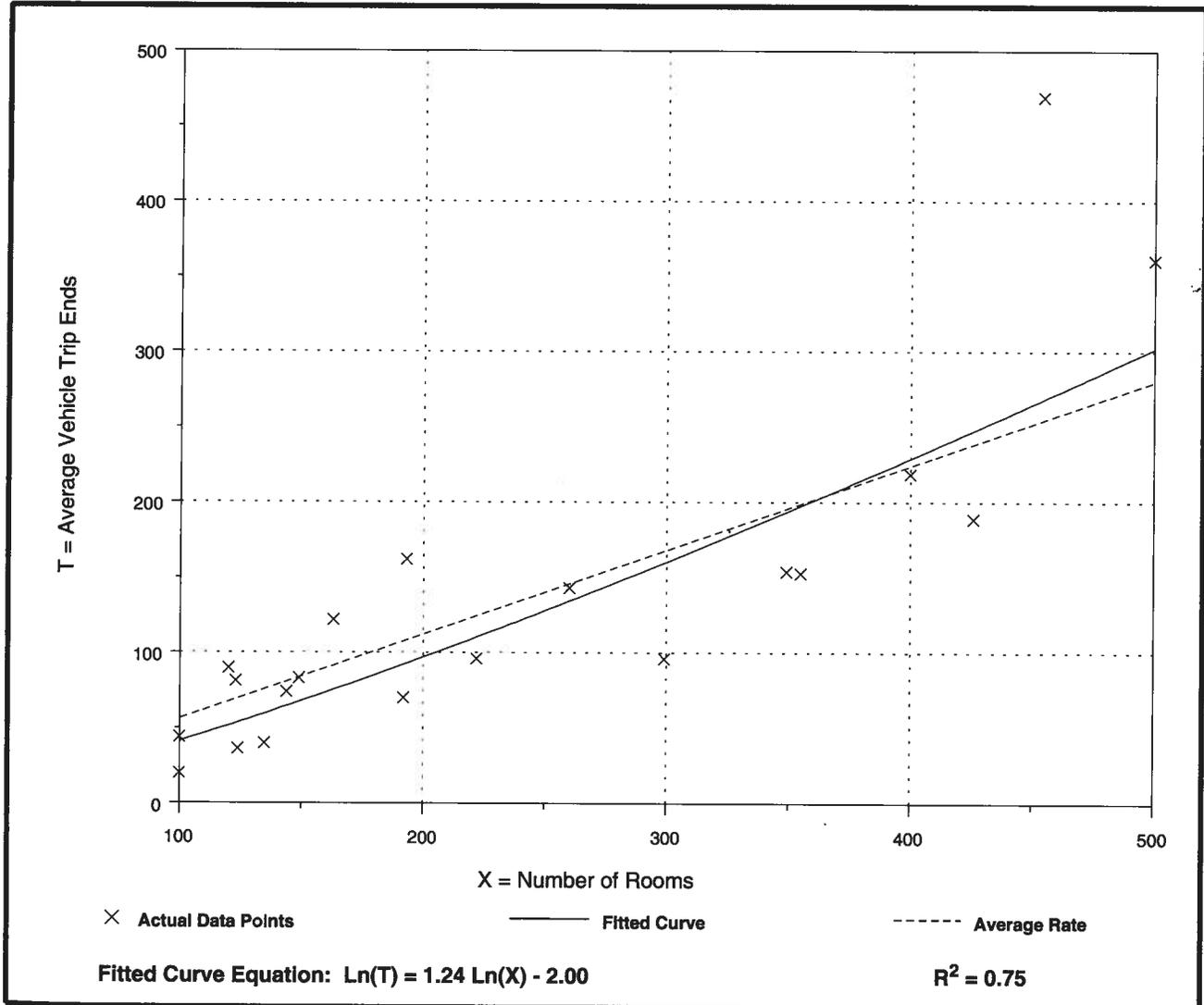
Average Vehicle Trip Ends vs: Rooms
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 20
 Average Number of Rooms: 240
 Directional Distribution: 61% entering, 39% exiting

Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.56	0.20 - 1.03	0.78

Data Plot and Equation



Hotel (310)

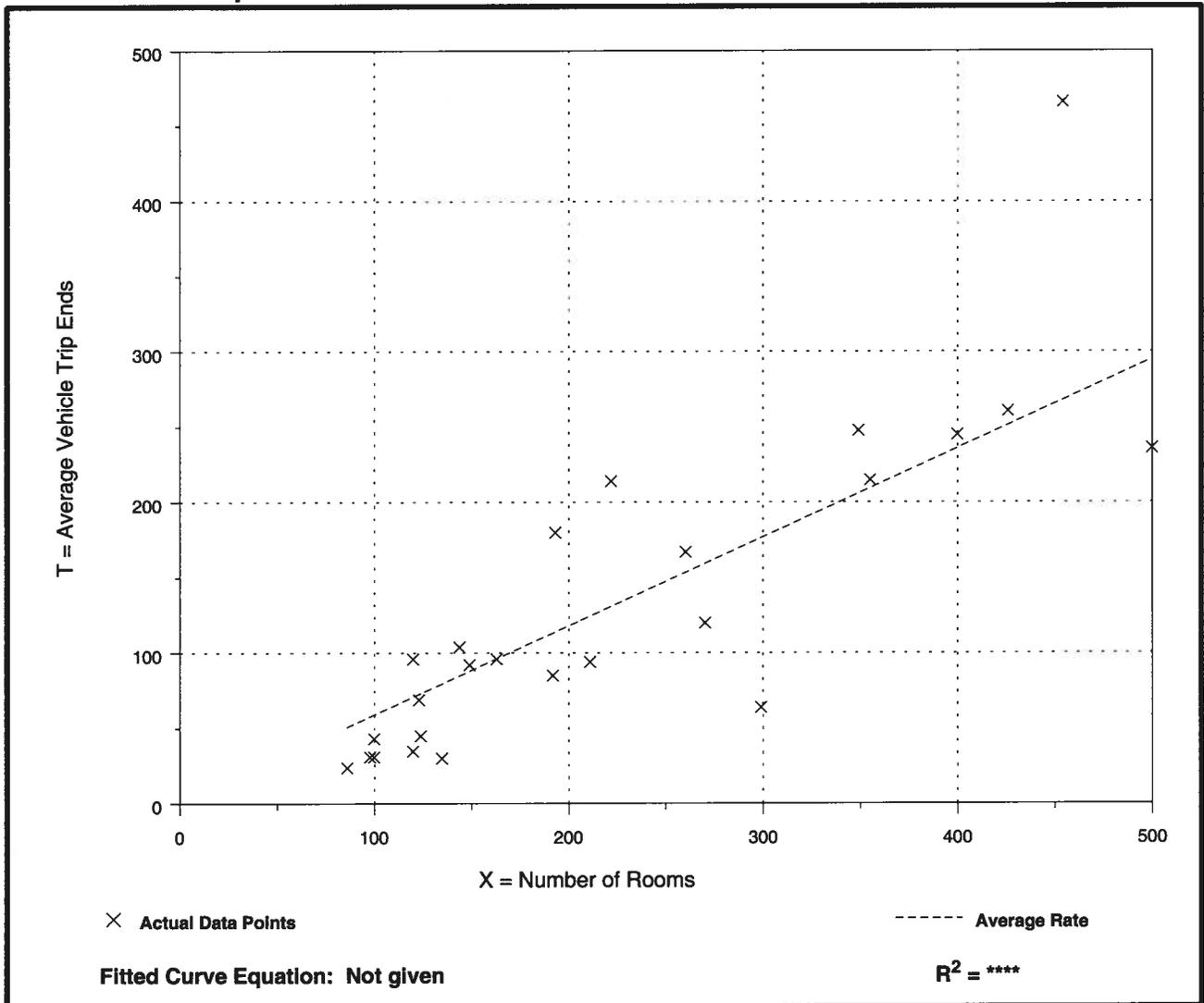
Average Vehicle Trip Ends vs: Rooms
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 25
 Average Number of Rooms: 224
 Directional Distribution: 53% entering, 47% exiting

Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.59	0.21 - 1.03	0.80

Data Plot and Equation



Quality Restaurant (931)

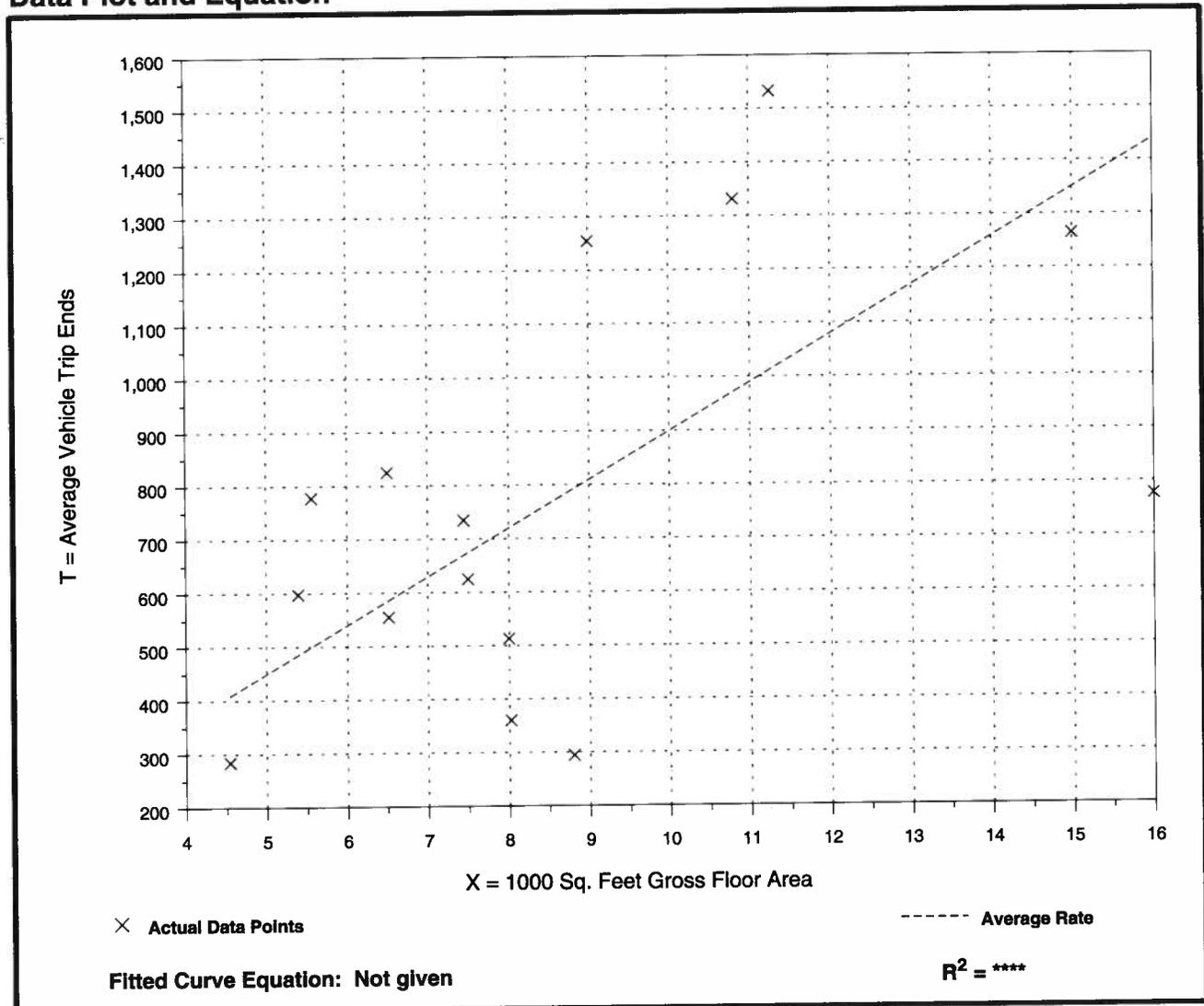
**Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday**

Number of Studies: 15
Average 1000 Sq. Feet GFA: 9
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
89.95	33.41 - 139.80	36.81

Data Plot and Equation



Quality Restaurant (931)

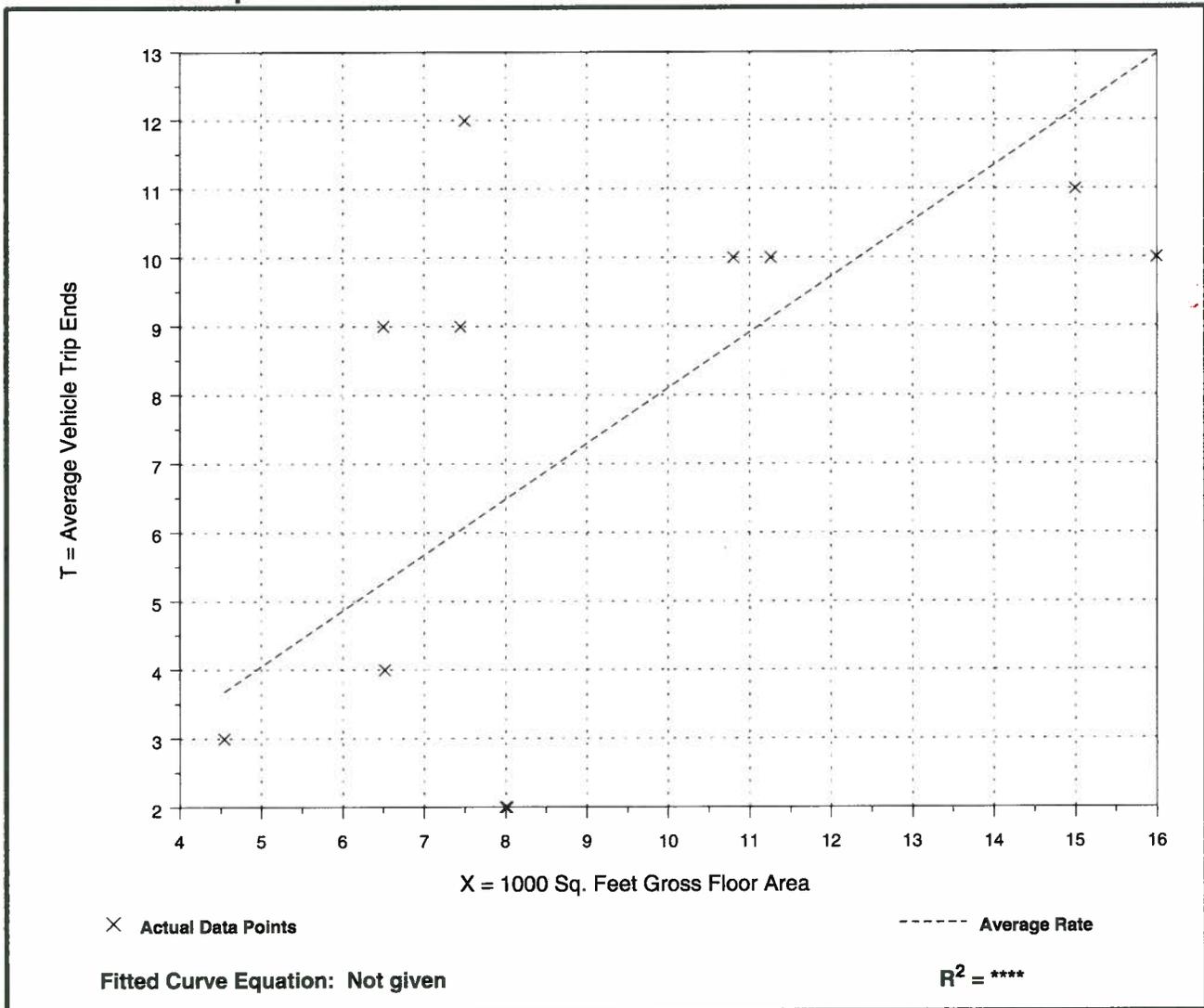
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 11
 Average 1000 Sq. Feet GFA: 9
 Directional Distribution: Not available

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.81	0.25 - 1.60	0.93

Data Plot and Equation



Specialty Retail Center (814)

**Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Leasable Area
On a: Weekday**

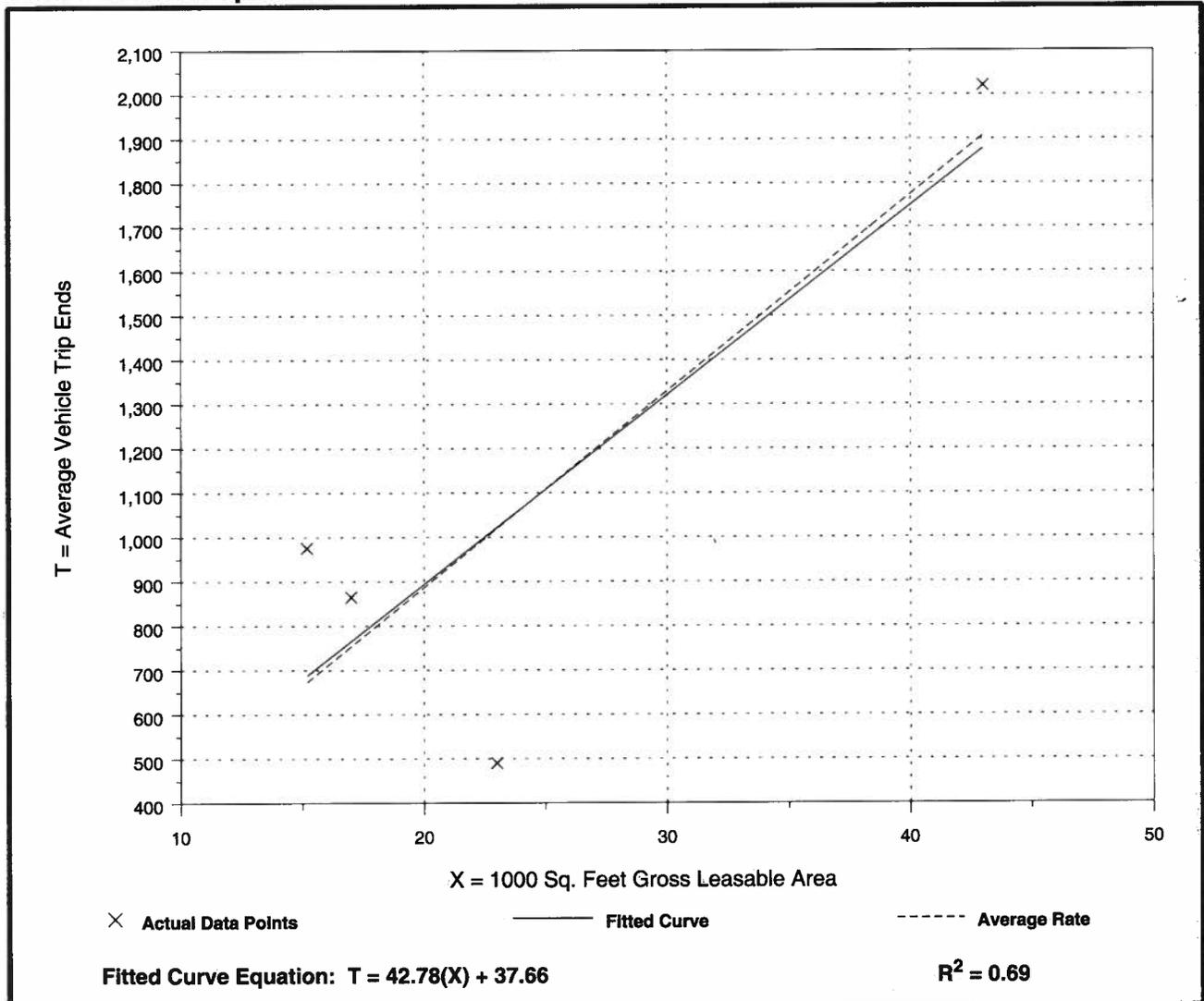
Number of Studies: 4
Average 1000 Sq. Feet GLA: 25
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Leasable Area

Average Rate	Range of Rates	Standard Deviation
44.32	21.30 - 64.21	15.52

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Specialty Retail Center (814)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Leasable Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 5
 Average 1000 Sq. Feet GLA: 69
 Directional Distribution: 44% entering, 56% exiting

Trip Generation per 1000 Sq. Feet Gross Leasable Area

Average Rate	Range of Rates	Standard Deviation
2.71	2.03 - 5.16	1.83

Data Plot and Equation

Caution - Use Carefully - Small Sample Size

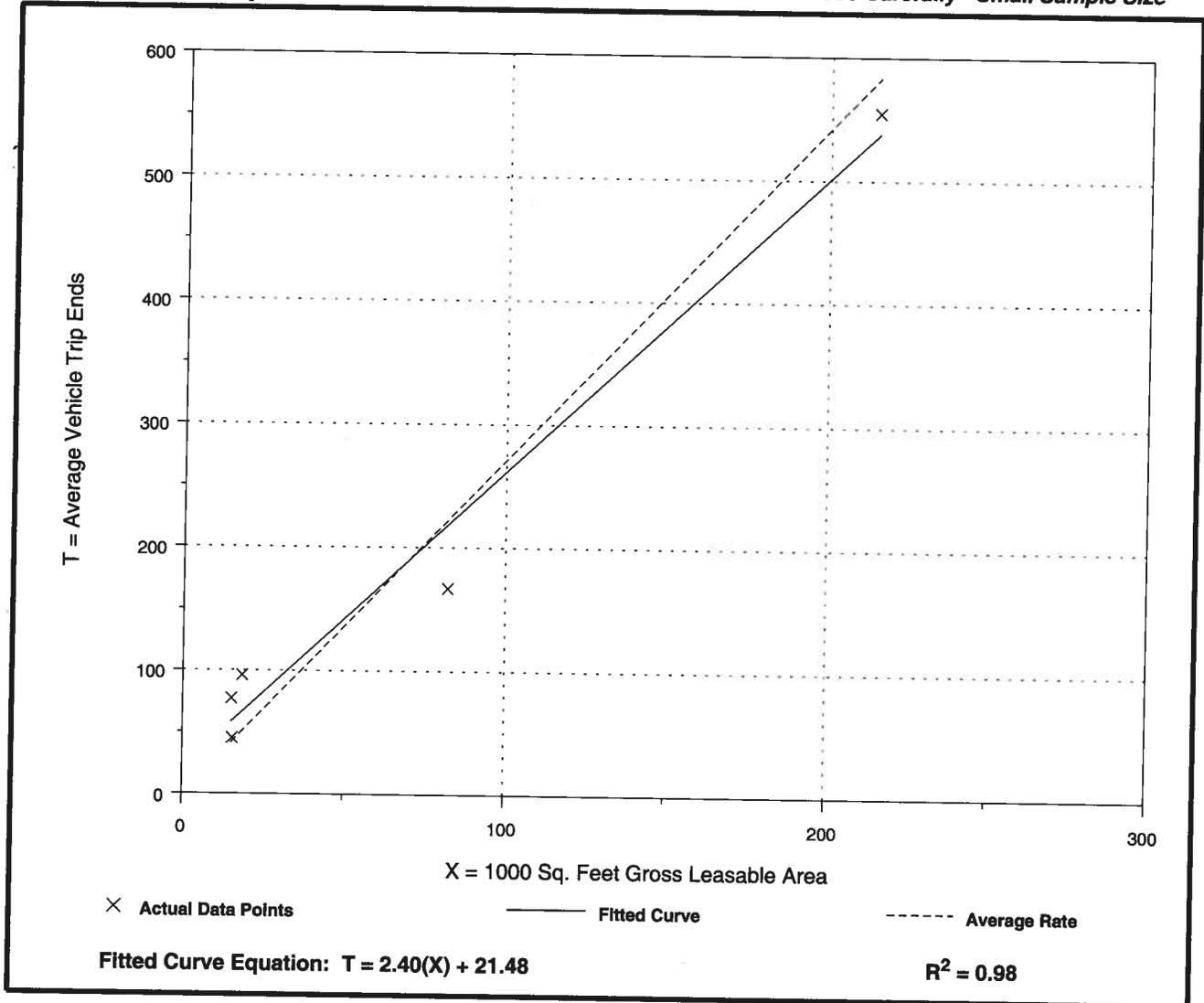


Table 2-5 Recommended Time-of-Day Factors for Weekdays

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.
Shopping Center—Typical	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%
	Peak December	Customer	1%	5%	15%	30%	55%	75%	90%	100%
	Late December	Customer	1%	5%	10%	20%	40%	65%	90%	100%
Fine/Casual Dining	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%
	Customer	—	—	—	—	15%	40%	75%	75%	65%
Family Restaurant	Employee	—	20%	50%	75%	90%	90%	90%	90%	90%
	Customer	25%	50%	60%	75%	85%	90%	100%	90%	50%
Fast Food	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%
	Customer	5%	10%	20%	30%	55%	85%	100%	100%	90%
Nightclub	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%
	Customer	—	—	—	—	—	—	—	—	—
Cineplex—Typical	Employee	—	—	—	5%	5%	5%	5%	10%	10%
	Customer	—	—	—	—	—	—	20%	45%	55%
	Late December	Customer	—	—	—	—	—	35%	60%	75%
Performing Arts Theater	Employee	—	—	—	—	—	—	50%	60%	60%
	Customer	—	—	—	1%	1%	1%	1%	1%	1%
Arena	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%
	Customer	—	—	—	1%	1%	1%	1%	1%	1%
Stadium	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%
	Customer	—	—	—	1%	1%	1%	5%	5%	5%
Health Club	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%
	Customer	70%	40%	40%	70%	70%	80%	60%	70%	70%
Convention Center	Employee	75%	75%	75%	75%	75%	75%	75%	75%	75%
	Visitor	—	—	50%	100%	100%	100%	100%	100%	100%
Hotel—Business	Employee	5%	30%	33%	33%	100%	100%	100%	100%	100%
	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%
Hotel—Leisure	Employee	95%	95%	90%	80%	70%	70%	65%	65%	70%
	Guest	—	10%	30%	10%	10%	5%	100%	100%	33%
Restaurant/Lounge	Employee	—	—	30%	60%	60%	60%	65%	65%	65%
	Customer	—	—	50%	100%	100%	100%	100%	100%	100%
Conference/Banquet	Employee	5%	30%	90%	90%	100%	100%	100%	100%	100%
	Customer	—	—	50%	100%	100%	100%	100%	100%	100%
Residential	Guest	—	10%	20%	20%	20%	20%	20%	20%	20%
	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%
Residential	Resident	100%	90%	85%	80%	75%	70%	65%	70%	70%
	Visitor	—	1%	20%	60%	100%	45%	15%	45%	100%
Office	Employee	3%	30%	75%	95%	100%	100%	90%	90%	100%
	Visitor	—	—	90%	90%	100%	100%	30%	90%	100%
Medical/Dental Office	Employee	—	—	60%	100%	100%	100%	100%	100%	100%
	Customer	—	—	50%	90%	100%	50%	50%	50%	70%
Bank	Employee	—	—	60%	100%	100%	100%	100%	100%	100%

n.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source
6	90%	90%	95%	95%	95%	80%	50%	30%	10%	—	1
6	100%	95%	85%	80%	75%	65%	50%	30%	10%	—	1
%	100%	95%	85%	70%	55%	40%	25%	15%	5%	—	1
%	100%	100%	95%	95%	95%	90%	75%	40%	15%	—	2
%	40%	50%	75%	95%	100%	100%	100%	95%	75%	25%	2
%	75%	75%	100%	100%	100%	100%	100%	100%	85%	35%	2
%	45%	45%	75%	80%	80%	80%	60%	55%	50%	25%	2
%	75%	75%	95%	95%	95%	95%	80%	65%	65%	35%	2
%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5%	3
%	70%	60%	70%	90%	90%	60%	40%	30%	20%	20%	2
—	—	—	—	25%	50%	75%	100%	100%	100%	100%	2
1%	10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2
5%	55%	55%	60%	60%	80%	100%	100%	80%	65%	40%	2, 6
5%	80%	80%	80%	70%	80%	100%	100%	85%	70%	55%	2, 6
1%	75%	75%	100%	100%	100%	100%	100%	100%	70%	50%	2
1%	1%	1%	1%	1%	25%	100%	100%	—	—	—	2
3%	30%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
1%	1%	1%	1%	10%	25%	100%	100%	85%	—	—	2
0%	30%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
5%	5%	5%	5%	10%	50%	100%	100%	85%	25%	—	2
0%	30%	30%	30%	100%	100%	100%	100%	100%	25%	10%	2
10%	70%	80%	90%	100%	90%	80%	70%	35%	10%	—	2, 4
75%	75%	75%	100%	100%	75%	50%	20%	20%	20%	—	2, 4
10%	100%	100%	100%	50%	30%	30%	10%	—	—	—	2
10%	100%	90%	70%	40%	25%	20%	20%	5%	—	—	2
50%	60%	65%	70%	75%	75%	80%	85%	95%	100%	100%	5
70%	70%	75%	80%	85%	85%	90%	95%	95%	100%	100%	2
33%	10%	10%	30%	55%	60%	70%	67%	60%	40%	30%	5, 3
65%	65%	65%	100%	100%	100%	100%	100%	50%	—	—	2
00%	100%	100%	100%	50%	30%	30%	10%	—	—	—	2
00%	100%	90%	70%	40%	20%	20%	20%	20%	10%	5%	2
20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%	2
00%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	2
100%	45%	15%	10%	5%	2%	1%	—	—	—	—	2
100%	100%	90%	50%	25%	10%	7%	3%	1%	—	—	3
100%	100%	90%	80%	67%	30%	15%	—	—	—	—	2
100%	100%	100%	100%	67%	30%	15%	—	—	—	—	2
70%	50%	80%	100%	—	—	—	—	—	—	—	3
100%	100%	100%	100%	—	—	—	—	—	—	—	2

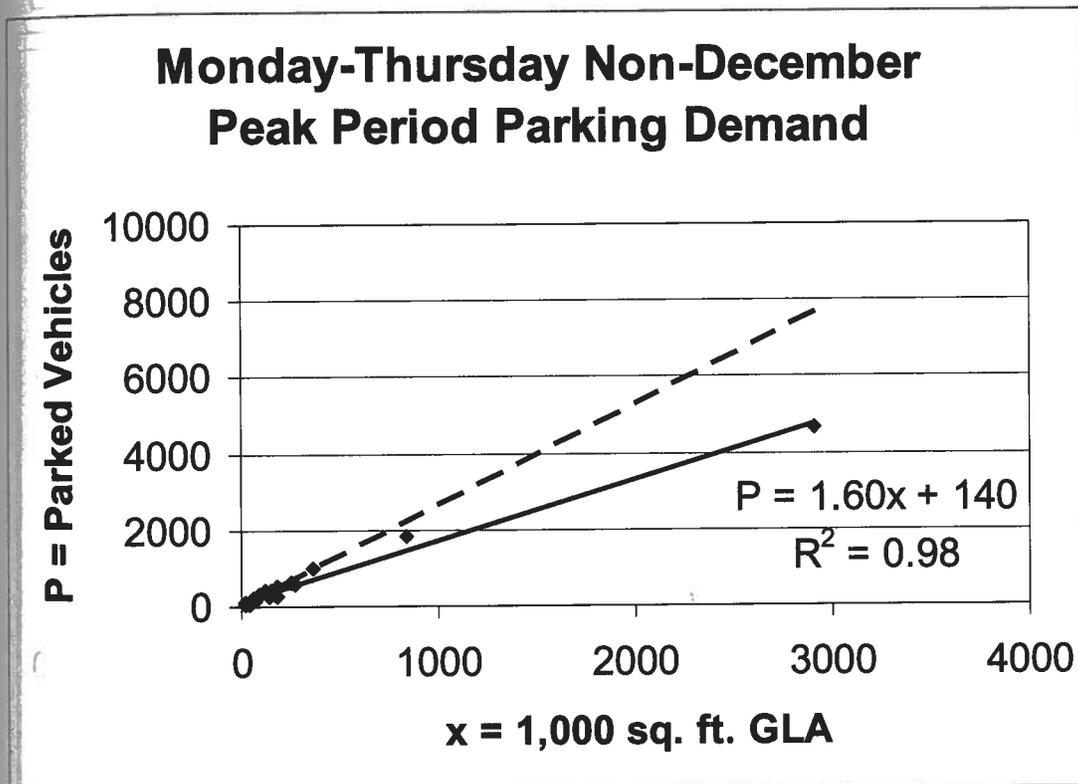
Sources:

1. Confidential data provided by shopping center managers.
2. Developed by team members.
3. *Parking Generation*, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004).
4. John W. Dorsett, "Parking Requirements for Health Clubs," *The Parking Professional*, April 2004.
5. Gerald Salzman, "Hotel Parking: How Much Is Enough?" *Urban Land*, January 1988.
6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001.

Land Use: 820 Shopping Center

**Average Peak Period Parking Demand vs: 1,000 sq. ft. GLA
On a: Monday through Thursday (Non-December)**

Statistic	Peak Period Demand
Peak Period	11:00–3:00 p.m.; 6:00–7:00 p.m.
Number of Study Sites	19
Average Size of Study Sites	331,000 sq. ft. GLA
Average Peak Period Parking Demand	2.65 vehicles per 1,000 sq. ft. GLA
Standard Deviation	0.98
Coefficient of Variation	37%
Range	1.33–5.58 vehicles per 1,000 sq. ft. GLA
85th Percentile	3.35 vehicles per 1,000 sq. ft. GLA
33rd Percentile	2.26 vehicles per 1,000 sq. ft. GLA

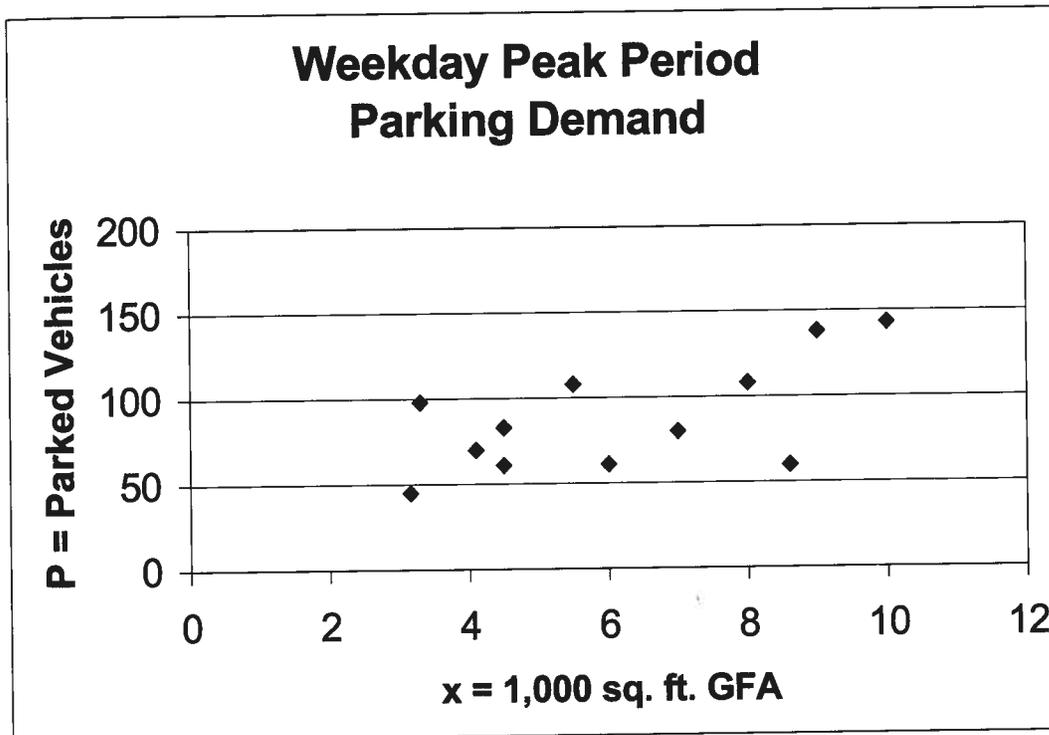


◆ Actual Data Points — Fitted Curve - - - - Average Rate

Land Use: 931 Quality Restaurant

Average Peak Period Parking Demand vs: 1,000 sq. ft. GFA On a Weekday

Statistic	Peak Period Demand
Peak Period	7:00–8:00 p.m.
Number of Study Sites	12
Average Size of Study Sites	6,100 sq. ft. GFA
Average Peak Period Parking Demand	15.4 vehicles per 1,000 sq. ft. GFA
Standard Deviation	5.7
Coefficient of Variation	37%
Range	7.0–29.7 vehicles per 1,000 sq. ft. GFA
85th Percentile	18.9 vehicles per 1,000 sq. ft. GFA
33rd Percentile	13.5 vehicles per 1,000 sq. ft. GFA

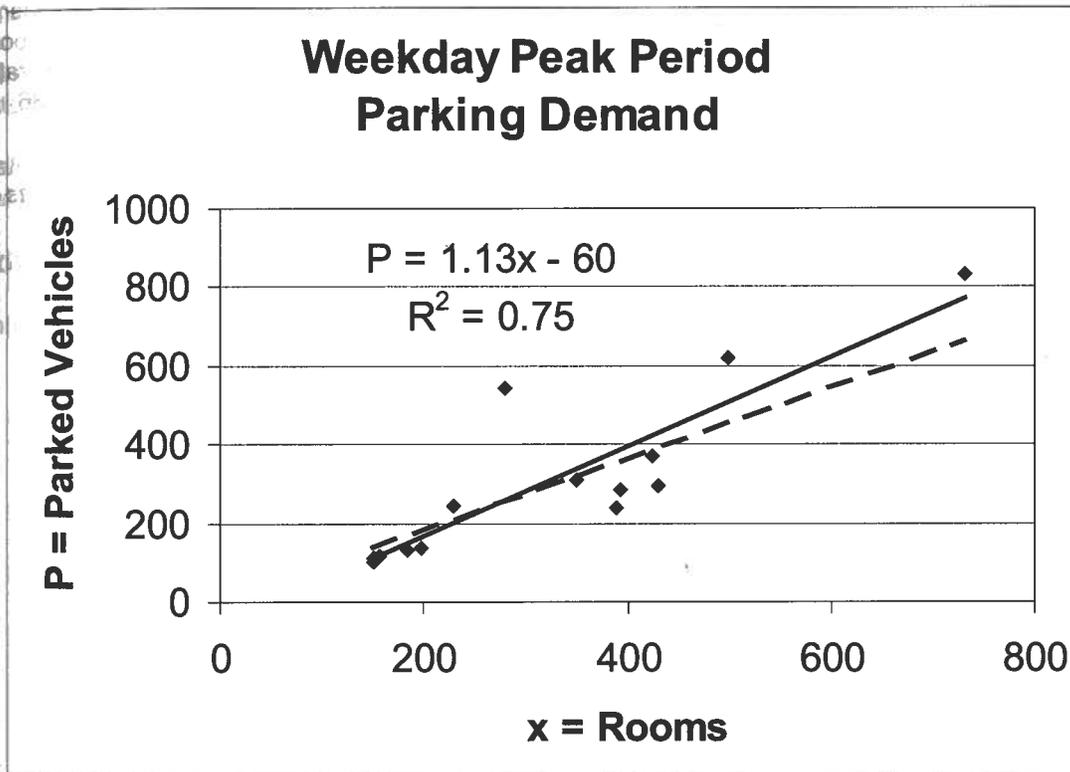


◆ Actual Data Points

Land Use: 310 Hotel

Average Peak Period Parking Demand vs: Rooms On a Weekday

Statistic	Peak Period Demand
Peak Period	12:00–1:00 p.m.; 7:00–10:00 p.m.; 11:00 p.m.–5:00 a.m.
Number of Study Sites	14
Average Size of Study Sites	340 rooms
Average Peak Period Parking Demand	0.91 vehicles per room
Standard Deviation	0.35
Coefficient of Variation	39%
Range	0.61–1.94 vehicles per room
85th Percentile	1.14 vehicles per room
33rd Percentile	0.72 vehicles per room

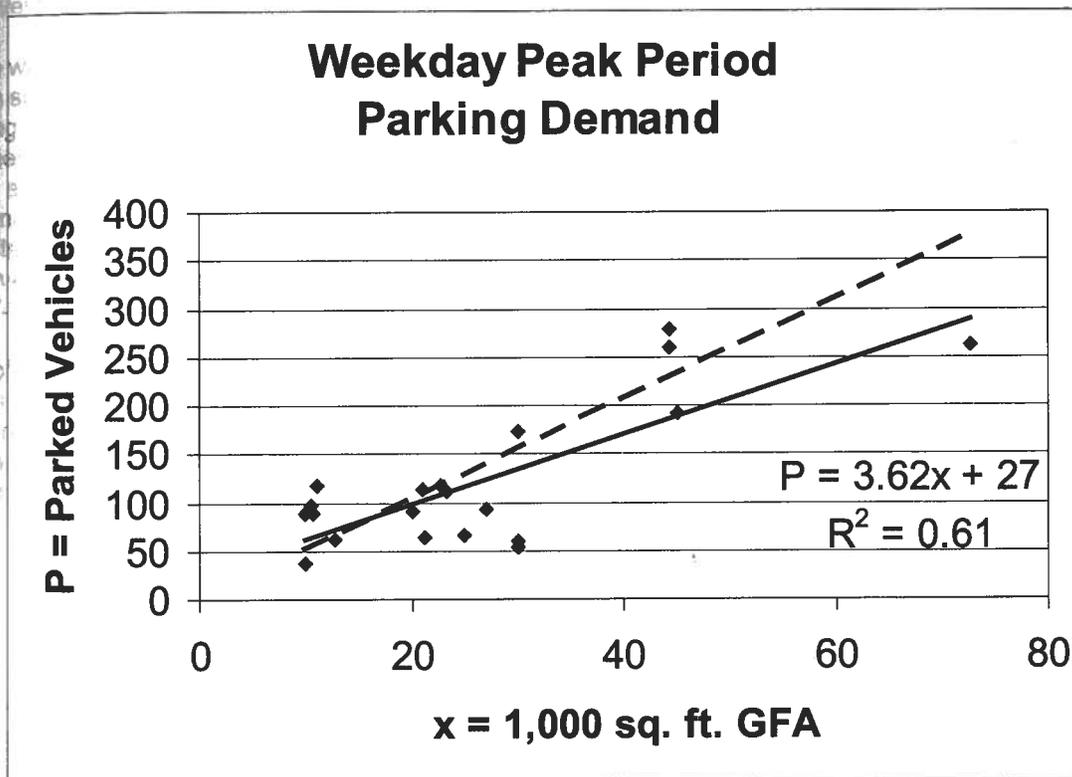


◆ Actual Data Points — Fitted Curve - - - Average Rate

Land Use: 492 Health/Fitness Club

Average Peak Period Parking Demand vs: 1,000 sq. ft. GFA On a: Weekday

Statistic	Peak Period Demand
Peak Period	6:00–7:00 p.m.
Number of Study Sites	20
Average Size of Study Sites	26,000 sq. ft. GFA
Average Peak Period Parking Demand	5.19 vehicles per 1,000 sq. ft. GFA
Standard Deviation	2.43
Coefficient of Variation	47%
95% Confidence Interval	4.13–6.25 vehicles per 1,000 sq. ft. GFA
Range	1.77–10.56 vehicles per 1,000 sq. ft. GFA
85th Percentile	8.27 vehicles per 1,000 sq. ft. GFA
33rd Percentile	3.85 vehicles per 1,000 sq. ft. GFA

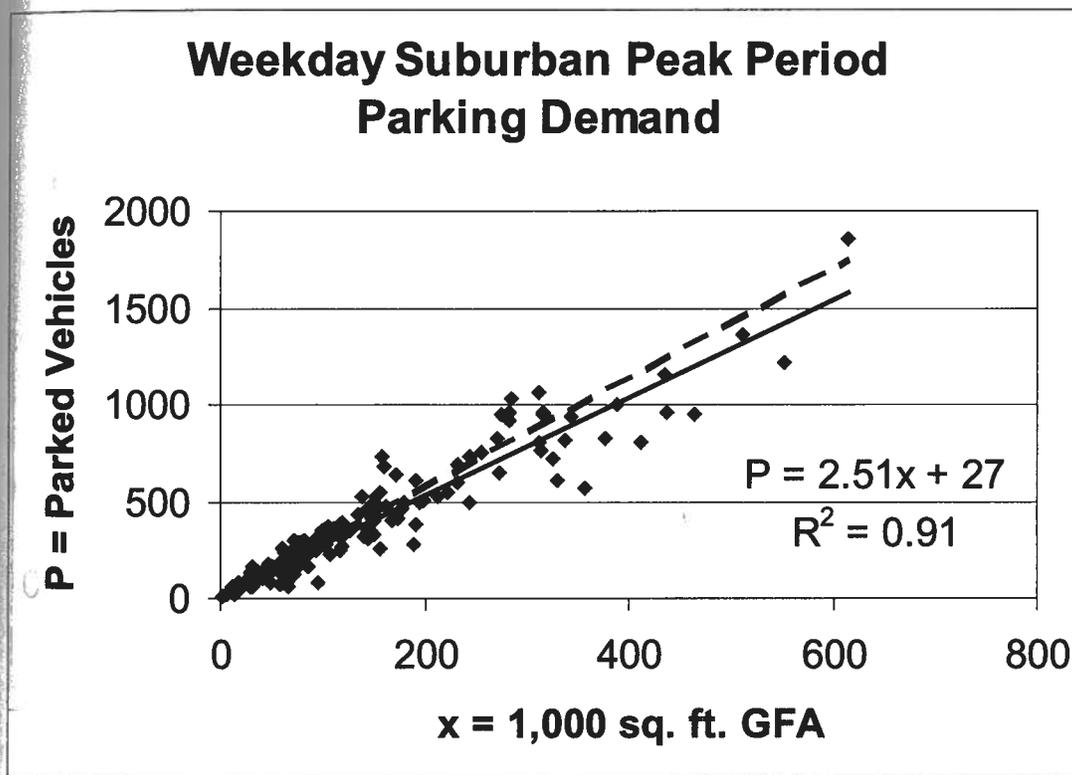


◆ Actual Data Points — Fitted Curve - - - Average Rate

Land Use: 701 Office Building

Average Peak Period Parking Demand vs: 1,000 sq. ft. GFA
On a: Weekday
Location: Suburban

Statistic	Peak Period Demand
Peak Period	9:00 a.m.–12:00 p.m.; 2:00–4:00 p.m.
Number of Study Sites	173
Average Size of Study Sites	136,000 sq. ft. GFA
Average Peak Period Parking Demand	2.84 vehicles per 1,000 sq. ft. GFA
Standard Deviation	0.72
Coefficient of Variation	25%
95% Confidence Interval	2.73–2.95 vehicles per 1,000 sq. ft. GFA
Range	0.86–5.58 vehicles per 1,000 sq. ft. GFA
85th Percentile	3.44 vehicles per 1,000 sq. ft. GFA
33rd Percentile	2.57 vehicles per 1,000 sq. ft. GFA



◆ Actual Data Points

— Fitted Curve

---- Average Rate

Appendix E.2: ITE Parking Generation

3rd Edition

Parking Generation



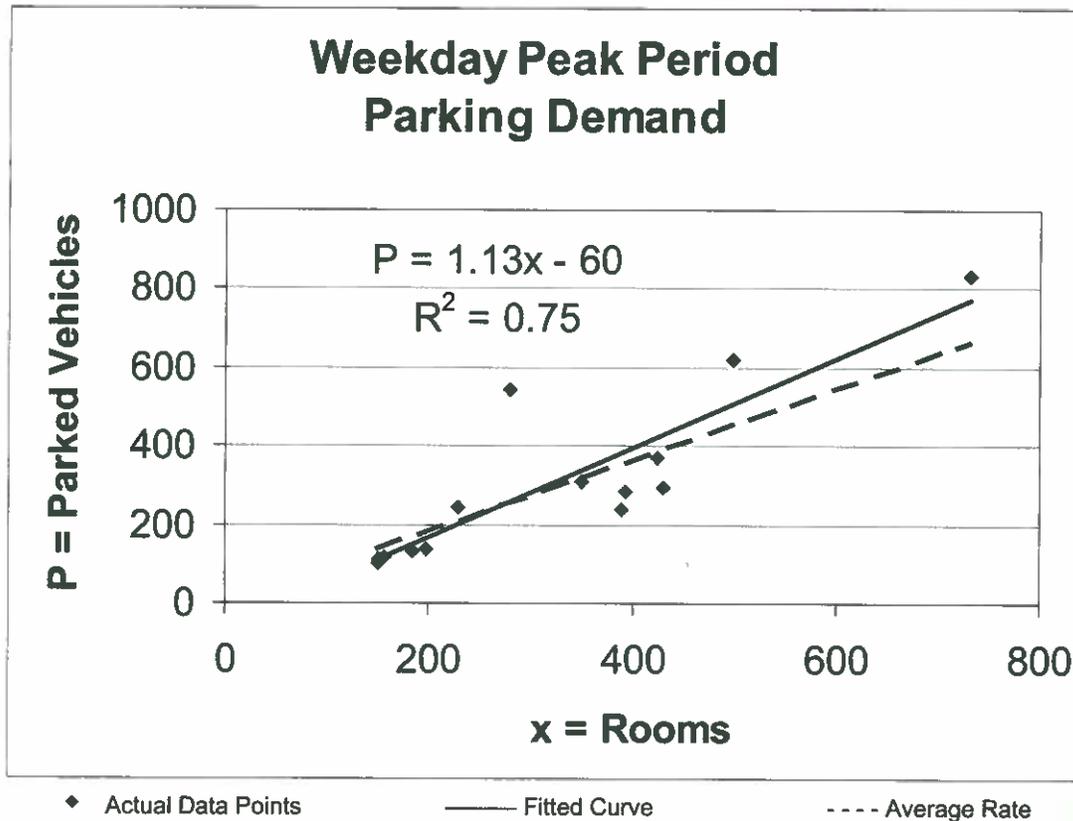
Author: Ransford S. McCourt, P.E., PTOE
Technical Editor: Kevin G. Hooper, P.E.

Institute of Transportation Engineers

Land Use: 310 Hotel

Average Peak Period Parking Demand vs: Rooms On a: Weekday

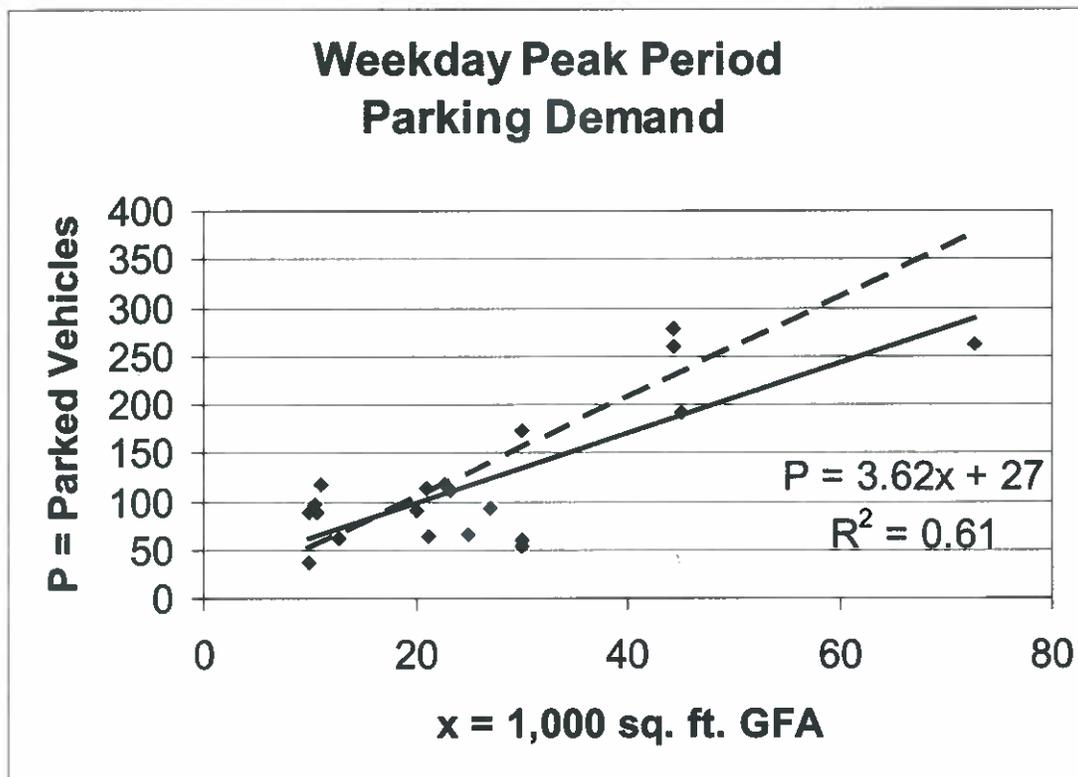
Statistic	Peak Period Demand
Peak Period	12:00–1:00 p.m.; 7:00–10:00 p.m.; 11:00 p.m.–5:00 a.m.
Number of Study Sites	14
Average Size of Study Sites	340 rooms
Average Peak Period Parking Demand	0.91 vehicles per room
Standard Deviation	0.35
Coefficient of Variation	39%
Range	0.61–1.94 vehicles per room
85th Percentile	1.14 vehicles per room
33rd Percentile	0.72 vehicles per room



Land Use: 492 Health/Fitness Club

**Average Peak Period Parking Demand vs: 1,000 sq. ft. GFA
On a: Weekday**

Statistic	Peak Period Demand
Peak Period	6:00–7:00 p.m.
Number of Study Sites	20
Average Size of Study Sites	26,000 sq. ft. GFA
Average Peak Period Parking Demand	5.19 vehicles per 1,000 sq. ft. GFA
Standard Deviation	2.43
Coefficient of Variation	47%
95% Confidence Interval	4.13–6.25 vehicles per 1,000 sq. ft. GFA
Range	1.77–10.56 vehicles per 1,000 sq. ft. GFA
85th Percentile	8.27 vehicles per 1,000 sq. ft. GFA
33rd Percentile	3.85 vehicles per 1,000 sq. ft. GFA



◆ Actual Data Points

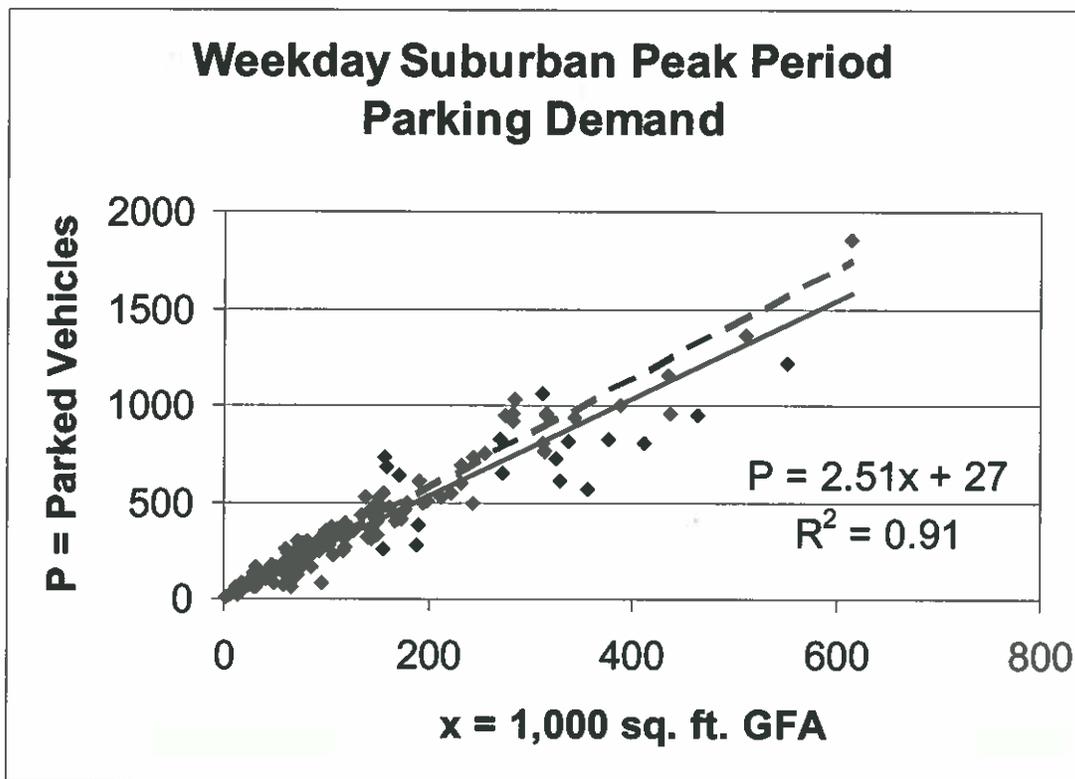
— Fitted Curve

---- Average Rate

Land Use: 701 Office Building

Average Peak Period Parking Demand vs: 1,000 sq. ft. GFA
On a: Weekday
Location: Suburban

Statistic	Peak Period Demand
Peak Period	9:00 a.m.–12:00 p.m.; 2:00–4:00 p.m.
Number of Study Sites	173
Average Size of Study Sites	136,000 sq. ft. GFA
Average Peak Period Parking Demand	2.84 vehicles per 1,000 sq. ft. GFA
Standard Deviation	0.72
Coefficient of Variation	25%
95% Confidence Interval	2.73–2.95 vehicles per 1,000 sq. ft. GFA
Range	0.86–5.58 vehicles per 1,000 sq. ft. GFA
85th Percentile	3.44 vehicles per 1,000 sq. ft. GFA
33rd Percentile	2.57 vehicles per 1,000 sq. ft. GFA

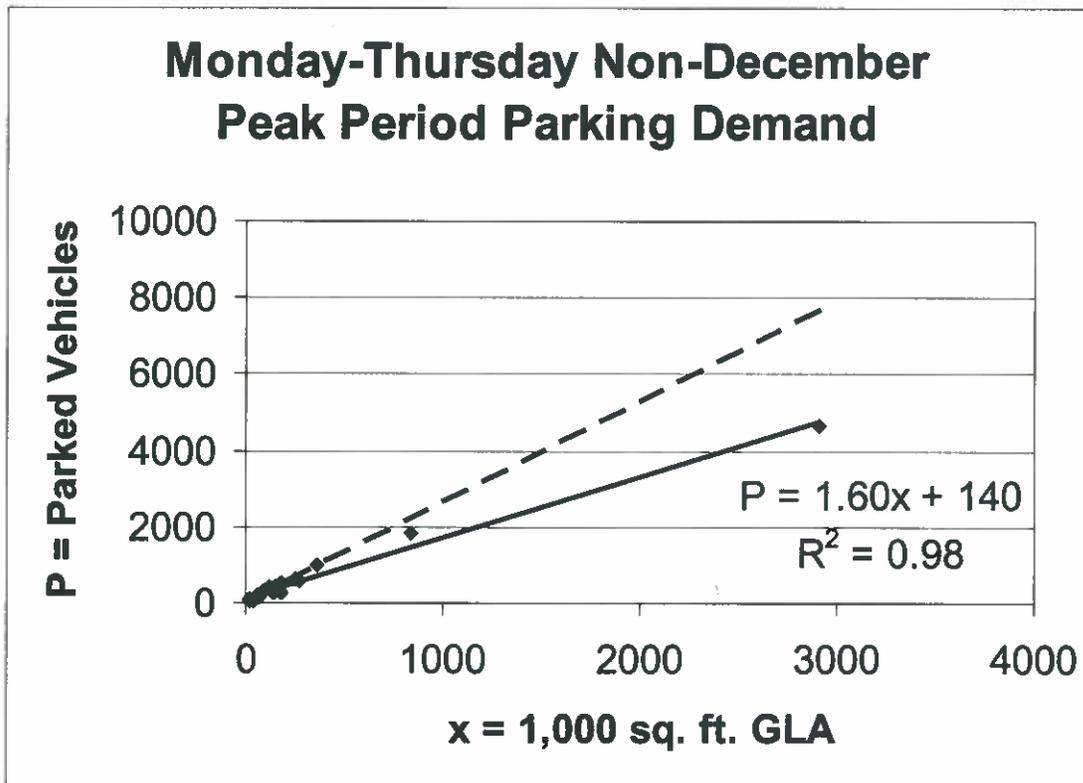


◆ Actual Data Points — Fitted Curve - - - Average Rate

Land Use: 820 Shopping Center

**Average Peak Period Parking Demand vs: 1,000 sq. ft. GLA
On a: Monday through Thursday (Non-December)**

Statistic	Peak Period Demand
Peak Period	11:00–3:00 p.m.; 6:00–7:00 p.m.
Number of Study Sites	19
Average Size of Study Sites	331,000 sq. ft. GLA
Average Peak Period Parking Demand	2.65 vehicles per 1,000 sq. ft. GLA
Standard Deviation	0.98
Coefficient of Variation	37%
Range	1.33–5.58 vehicles per 1,000 sq. ft. GLA
85th Percentile	3.35 vehicles per 1,000 sq. ft. GLA
33rd Percentile	2.26 vehicles per 1,000 sq. ft. GLA

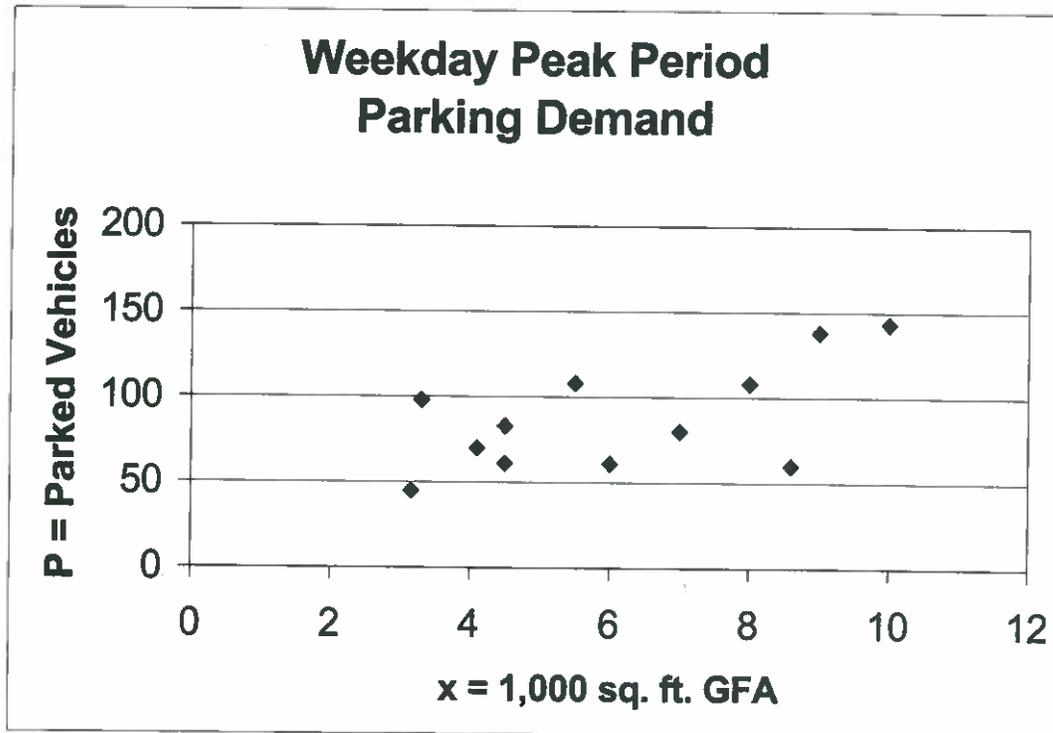


◆ Actual Data Points — Fitted Curve - - - Average Rate

Land Use: 931 Quality Restaurant

Average Peak Period Parking Demand vs: 1,000 sq. ft. GFA On a Weekday

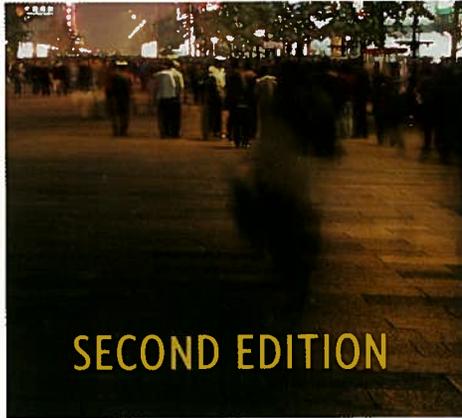
Statistic	Peak Period Demand
Peak Period	7:00–8:00 p.m.
Number of Study Sites	12
Average Size of Study Sites	6,100 sq. ft. GFA
Average Peak Period Parking Demand	15.4 vehicles per 1,000 sq. ft. GFA
Standard Deviation	5.7
Coefficient of Variation	37%
Range	7.0–29.7 vehicles per 1,000 sq. ft. GFA
85th Percentile	18.9 vehicles per 1,000 sq. ft. GFA
33rd Percentile	13.5 vehicles per 1,000 sq. ft. GFA



◆ Actual Data Points

Appendix E.3: ULI Shared Parking

SHARED PARKING



SECOND EDITION

 Urban Land
Institute


International Council
of Shopping Centers

Table 2-5 Recommended Time-of-Day Factors for Weekdays

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.
Shopping Center—Typical	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%
	Peak December	1%	5%	15%	30%	55%	75%	90%	100%	100%
	Late December	1%	5%	10%	20%	40%	65%	90%	100%	100%
Fine/Casual Dining	Customer	—	—	—	—	15%	40%	75%	75%	65%
	Employee	—	20%	50%	75%	90%	90%	90%	90%	90%
Family Restaurant	Customer	25%	50%	60%	75%	85%	90%	100%	90%	50%
	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%
Fast Food	Customer	5%	10%	20%	30%	55%	85%	100%	100%	90%
	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%
Nightclub	Customer	—	—	—	—	—	—	—	—	—
	Employee	—	—	—	5%	5%	5%	5%	10%	10%
Cineplex—Typical	Customer	—	—	—	—	—	—	20%	45%	55%
	Late December	—	—	—	—	—	—	35%	60%	75%
	Employee	—	—	—	—	—	—	50%	60%	60%
Performing Arts Theater	Customer	—	—	—	1%	1%	1%	1%	1%	1%
	No matinee	—	10%	10%	20%	20%	20%	30%	30%	30%
Arena	Customer	—	—	—	1%	1%	1%	1%	1%	1%
	No matinee	—	10%	10%	20%	20%	20%	30%	30%	30%
Stadium	Customer	—	—	—	1%	1%	1%	5%	5%	5%
	8 p.m. start	—	10%	10%	20%	20%	20%	30%	30%	30%
Health Club	Customer	70%	40%	40%	70%	70%	80%	60%	70%	70%
	Employee	75%	75%	75%	75%	75%	75%	75%	75%	75%
Convention Center	Visitor	—	—	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	33%	33%	100%	100%	100%	100%	100%
Hotel—Business	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%
Hotel—Leisure	Guest	95%	95%	90%	80%	70%	70%	65%	65%	70%
Restaurant/Lounge	Customer	—	10%	30%	10%	10%	5%	100%	100%	33%
Conference/Banquet	Customer	—	—	30%	60%	60%	60%	65%	65%	65%
Convention	Customer	—	—	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	90%	90%	100%	100%	100%	100%	100%
Residential	Guest	—	10%	20%	20%	20%	20%	20%	20%	20%
Residential	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%
Residential	Resident	100%	90%	85%	80%	75%	70%	65%	70%	70%
Office	Visitor	—	1%	20%	60%	100%	45%	15%	45%	100%
Office	Employee	3%	30%	75%	95%	100%	100%	90%	90%	100%
Medical/Dental Office	Visitor	—	—	90%	90%	100%	100%	30%	90%	100%
	Employee	—	—	60%	100%	100%	100%	100%	100%	100%
Bank	Customer	—	—	50%	90%	100%	50%	50%	50%	70%
	Employee	—	—	60%	100%	100%	100%	100%	100%	100%

3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source
90%	90%	95%	95%	95%	80%	50%	30%	10%	—	1
100%	95%	85%	80%	75%	65%	50%	30%	10%	—	1
100%	95%	85%	70%	55%	40%	25%	15%	5%	—	1
100%	100%	95%	95%	95%	90%	75%	40%	15%	—	2
40%	50%	75%	95%	100%	100%	100%	95%	75%	25%	2
75%	75%	100%	100%	100%	100%	100%	100%	85%	35%	2
45%	45%	75%	80%	80%	80%	60%	55%	50%	25%	2
75%	75%	95%	95%	95%	95%	80%	65%	65%	35%	2
60%	55%	60%	85%	80%	50%	30%	20%	10%	5%	3
70%	60%	70%	90%	90%	60%	40%	30%	20%	20%	2
—	—	—	25%	50%	75%	100%	100%	100%	100%	2
10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2
55%	55%	60%	60%	80%	100%	100%	80%	65%	40%	2,6
80%	80%	80%	70%	80%	100%	100%	85%	70%	55%	2,6
75%	75%	100%	100%	100%	100%	100%	100%	70%	50%	2
1%	1%	1%	1%	25%	100%	100%	—	—	—	2
30%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
1%	1%	1%	10%	25%	100%	100%	85%	—	—	2
30%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
5%	5%	5%	10%	50%	100%	100%	85%	25%	—	2
30%	30%	30%	100%	100%	100%	100%	100%	25%	10%	2
70%	80%	90%	100%	90%	80%	70%	35%	10%	—	2,4
75%	75%	100%	100%	75%	50%	20%	20%	20%	—	2,4
100%	100%	100%	50%	30%	30%	10%	—	—	—	2
100%	90%	70%	40%	25%	20%	20%	5%	—	—	2
60%	65%	70%	75%	75%	80%	85%	95%	100%	100%	5
70%	75%	80%	85%	85%	90%	95%	95%	100%	100%	2
10%	10%	30%	55%	60%	70%	67%	60%	40%	30%	5,3
65%	65%	100%	100%	100%	100%	100%	50%	—	—	2
100%	100%	100%	50%	30%	30%	10%	—	—	—	2
100%	90%	70%	40%	20%	20%	20%	20%	10%	5%	2
20%	20%	40%	60%	100%	100%	100%	100%	80%	50%	2
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	2
45%	15%	10%	5%	2%	1%	—	—	—	—	2
100%	90%	50%	25%	10%	7%	3%	1%	—	—	3
100%	90%	80%	67%	30%	15%	—	—	—	—	2
100%	100%	100%	67%	30%	15%	—	—	—	—	2
50%	80%	100%	—	—	—	—	—	—	—	3
100%	100%	100%	—	—	—	—	—	—	—	2

- Sources:**
1. Confidential data provided by shopping center managers.
 2. Developed by team members.
 3. *Parking Generation*, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004).
 4. John W. Dorsett, "Parking Requirements for Health Clubs," *The Parking Professional*, April 2004.
 5. Gerald Salzman, "Hotel Parking: How Much Is Enough?" *Urban Land*, January 1988.
 6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001.

Table 2-6

Recommended Time-of-Day Factors for Weekends

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.
Shopping Center—Typical	Customer	1%	5%	10%	30%	50%	65%	80%	90%	100%
	Peak December	1%	5%	10%	35%	60%	70%	85%	95%	100%
	Late December	1%	5%	10%	20%	40%	60%	80%	95%	100%
Fine/Casual Dining	Customer	—	—	—	—	—	15%	50%	55%	45%
	Employee	—	20%	30%	60%	75%	75%	75%	75%	75%
Family Restaurant	Customer	10%	25%	45%	70%	90%	90%	100%	85%	65%
	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%
Fast Food	Customer	5%	10%	20%	30%	55%	85%	100%	100%	90%
	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%
Nightclub	Customer	—	—	—	—	—	—	—	—	—
	Employee	—	—	—	5%	5%	5%	5%	10%	10%
Cineplex—Typical	Customer	—	—	—	—	—	—	20%	45%	55%
	Late December	—	—	—	—	—	—	35%	60%	75%
	Employee	—	—	—	—	—	—	50%	60%	60%
Performing Arts Theater With matinee	Customer	—	—	—	1%	1%	1%	1%	17%	67%
	Employee	—	10%	10%	20%	20%	20%	30%	100%	100%
Arena (two shows)	Customer	—	—	—	1%	1%	1%	1%	25%	95%
	Employee	—	10%	10%	20%	20%	20%	30%	100%	100%
Stadium (1 p.m. start; see weekday for evening game)	Customer	—	—	1%	1%	5%	5%	50%	100%	100%
	Employee	—	5%	10%	20%	30%	30%	100%	100%	100%
Health Club	Customer	80%	45%	35%	50%	35%	50%	50%	30%	25%
	Employee	50%	50%	50%	50%	50%	50%	50%	50%	50%
Convention Center	Visitor	—	—	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	33%	33%	100%	100%	100%	100%	100%
Hotel—Business	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%
Hotel—Leisure	Guest	95%	95%	90%	80%	70%	70%	65%	65%	70%
Restaurant/Lounge	Customer	—	10%	30%	10%	10%	5%	100%	100%	33%
Conference/Banquet	Customer	—	—	30%	60%	60%	60%	65%	65%	65%
Convention	Customer	—	—	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	90%	90%	100%	100%	100%	100%	100%
Residential	Guest	—	20%	20%	20%	20%	20%	20%	20%	20%
Residential	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%
Residential	Resident	100%	90%	85%	80%	75%	70%	65%	70%	70%
Office	Visitor	—	20%	60%	80%	90%	100%	90%	80%	60%
Office	Employee	—	20%	60%	80%	90%	100%	90%	80%	60%
Medical/Dental Office	Visitor	—	—	90%	90%	100%	100%	30%	—	—
	Employee	—	—	60%	100%	100%	100%	100%	—	—
Bank	Customer	—	—	25%	40%	75%	100%	90%	—	—
	Employee	—	—	90%	100%	100%	100%	100%	—	—

3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source
100%	95%	90%	80%	75%	65%	50%	35%	15%	—	1
100%	95%	90%	80%	75%	65%	50%	35%	15%	—	1
100%	95%	85%	70%	60%	50%	30%	20%	10%	—	1
100%	100%	95%	85%	80%	75%	65%	45%	15%	—	2
45%	45%	60%	90%	95%	100%	90%	90%	90%	50%	2
75%	75%	100%	100%	100%	100%	100%	100%	85%	50%	2
40%	45%	60%	70%	70%	65%	30%	25%	15%	10%	2
75%	75%	95%	95%	95%	95%	80%	65%	65%	35%	2
60%	55%	60%	85%	80%	50%	30%	20%	10%	5%	3
70%	60%	70%	90%	90%	60%	40%	30%	20%	20%	2
—	—	—	25%	50%	75%	100%	100%	100%	100%	2
10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2
55%	55%	60%	60%	80%	100%	100%	100%	80%	50%	2,6
80%	80%	80%	70%	80%	100%	100%	100%	85%	70%	2,6
75%	75%	100%	100%	100%	100%	100%	100%	70%	50%	2
67%	1%	1%	1%	25%	100%	100%	—	—	—	2
100%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
95%	81%	1%	1%	25%	100%	100%	—	—	—	2
100%	100%	30%	100%	100%	100%	100%	30%	10%	5%	2
85%	25%	—	—	—	—	—	—	—	—	2
100%	25%	10%	5%	5%	—	—	—	—	—	2
30%	55%	100%	95%	60%	30%	10%	1%	1%	—	2,4
50%	75%	100%	100%	75%	50%	20%	20%	20%	—	2,4
100%	100%	100%	50%	30%	30%	10%	—	—	—	2
100%	90%	70%	40%	25%	20%	20%	5%	—	—	2
60%	65%	70%	75%	75%	80%	85%	95%	100%	100%	5
70%	75%	80%	85%	85%	90%	95%	95%	100%	100%	2
10%	10%	30%	55%	60%	70%	67%	60%	40%	30%	5
65%	65%	100%	100%	100%	100%	100%	50%	—	—	5
100%	100%	100%	50%	30%	30%	10%	—	—	—	2
100%	90%	75%	60%	55%	55%	55%	45%	45%	30%	5
20%	20%	40%	60%	100%	100%	100%	100%	80%	50%	2
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	2
40%	20%	10%	5%	—	—	—	—	—	—	2
40%	20%	10%	5%	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	2

Sources:

1. Confidential data provided by shopping center managers.
2. Developed by team members.
3. *Parking Generation*, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004).
4. John W. Dorsett, "Parking Requirements for Health Clubs," *The Parking Professional*, April 2004.
5. Gerald Salzman, "Hotel Parking: How Much Is Enough?" *Urban Land*, January 1988.
6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001.

**Appendix E.4: Memorandum from DKS Associates to
Justin Murphy, City of Menlo Park (March 2010)**

MEMORANDUM

TO: Justin Murphy, City of Menlo Park
 FROM: Paul Stanis, DKS Associates
 DATE: March 9, 2010
 SUBJECT: Transportation Mitigation Phasing P 05121-000

This memo details the potential impacts an additional option for the Menlo Gateway Project related to the phasing of transportation mitigations associated to the phasing of construction of the buildings. This phased mitigation option, referred to as Alternative 6 in this memo for consistency with similar analysis in the Draft EIR, would include a full buildout of the Independence site while the Constitution site would remain the same under existing conditions. The methodology for the additional analysis followed that described in the Menlo Gateway Development EIR Administrative Draft Report dated June 24, 2009.

For Alternative 6, the trip generation for the Independence site is shown in **Table 1**. Alternative 6 would include 200,000 sf of office space, a hotel with 230 rooms, a 67,467 sf health club, a 6,947 sf restaurant, and 3,000 sf of retail space. These proposed uses would replace the existing 63,360 sf of office space currently on the site. As shown, Alternative 6 would generate a total of 566 trips during the AM peak hour, 657 trips during the PM peak hour, and 6,657 daily trips.

Existing Uses	Land Use Code	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Existing Office Use – Independence (63,360 sf)	710	-86	-12	-98	-16	-78	-94	-698
Proposed Uses								
<i>Independence Site</i>								
Proposed Office (200,000 sf)	710	273	37	310	51	247	298	2,202
Proposed Hotel (230 rooms)	310	79	50	129	72	64	136	1,879
Proposed Health Club (69,467 sf)	Survey	158	61	219	131	126	258	2,517
Proposed Restaurant (6,947 sf)	931	3	3	6	35	17	52	625
Proposed Retail (3,000 sf)	814	-	-	-	4	5	8	133
Total for Independence Site		512	151	664	292	459	751	7,355
Total Net New Trips		426	139	566	276	381	657	6,657

Notes:

The existing trip credit represents the occupied office space on the Independence site.
 The analysis has been conducted with the slightly larger health club size of 76,420 sf which was based on an earlier site plan.
 To maintain a conservative analysis, the traffic analysis was not rerun with the smaller health club size.

Near Term plus Project Alternative 6 Condition

Table 2 compares the Near Term Condition, Near Term plus Alternative 6 Condition, and Near Term plus Project Condition. Alternative 6 would result in potential impacts to two local approaches during the AM peak hour:

- Willow Road / Newbridge Street
- Bayfront Expressway / Haven Avenue

Additionally, one local approach during the PM peak hour would experience a potential impact:

- Bayfront Expressway / Willow Road

As a reference, for the Near Term with Project condition, potential impacts would occur at one intersection and three local approaches during the AM peak hour and one intersection and two local approaches during the PM peak hour.

Long Term plus Project Alternative 6 Condition

Table 3 details the results for the Long Term plus Alternative 6 analysis in the context of the Long Term Condition and Long Term plus Project Condition. As shown in the table, Alternative 6 would result in potential impacts at one local approach during the AM peak hour:

- Bayfront Expressway / Haven Avenue

During the PM peak hour, two intersections would have potentially significant impacts – Marsh Road / Bohannon Drive and Marsh Rd / Middlefield Road. Additionally, two local approaches would experience potential impacts during the PM peak hour:

- Bayfront Expressway / Willow Road
- Bayfront Expressway / Chrysler Drive

For the Long Term plus Project Condition, potential impacts would occur at two intersections and two local approaches during the AM peak hour and four intersections and four local approaches during the PM peak hour.

Table 2 – Near Term plus Project Alternative 6 Peak Hour Level of Service

Study Intersection	Near-Term - No Project Condition				Near-Term plus Project Alternative 6				Near-Term plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay ^a	LOS ^b	Delay	Delay	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Marsh Rd/Bay Rd	18.4	B	15.6	B	18.8	B	15.5	B	20.0	B	15.6	B
2. Marsh Rd/Scott Dr	22.2	C	27.8	C	22.2	C	28.3	C	22.4	C	30.3	C
3. Marsh Rd/Bohannon Dr	27.3	C	34.4	C	27.3	C	35.3	D	27.5	C	38.3	D
4. Willow Rd/Bay Rd	16.6	B	15.0	B	16.7	B	15.1	B	16.8	B	15.2	B
5. Willow Rd/Newbridge St	37.2	D	35.0	D	37.3	D	35.0	C	37.4	D	35.0	D
Critical Local Approaches ^c	71.7/63.0	E/E	72.9/71.9	E/E	71.9/ 63.9	E/E	73.0/72.0	E/E	71.9/ 66.5	E/E	73.1/72.1	E/E
6. Willow Rd/O'Brien Dr	10.9	B	10.1	B	10.9	B	10.1	B	11.0	B	10.2	B
Critical Local Approaches ^c	42.5/N.A.	D/N.A.	47.3/N.A.	D/N.A.	42.5/N.A.	D/N.A.	47.3/N.A.	D/N.A.	42.6/N.A.	D/N.A.	47.6/N.A.	D/N.A.
7. Willow Rd/Ivy Dr	10.7	B	12.6	B	10.7	B	12.6	B	10.8	B	12.7	B
Critical Local Approaches ^c	N.A./40.2	N.A./D	N.A./39.2	N.A./D	N.A./40.2	N.A./D	N.A./39.2	N.A./D	N.A./40.6	N.A./D	N.A./39.5	N.A./D
8. Willow Rd/Hamilton Ave	19.0	B	21.0	C	19.0	B	21.0	C	19.1	B	21.2	C
Critical Local Approaches ^c	35.0/43.1	C/D	40.5/32.7	D/C	35.0/43.1	C/D	40.5/32.7	D/C	35.0/43.4	D/D	40.9/32.8	D/C
9. Bayfront Expressway/Willow Rd	25.7	C	57.5	E	25.7	C	59.1	E	25.6	C	62.3	E
Critical Local Approaches ^c	N.A./61.0	N.A./E	N.A./131.7	N.A./F	N.A./61.0	N.A./E	N.A./134.8	N.A./F	N.A./61.0	N.A./E	N.A./140.3	N.A./F
10. Bayfront Expressway/University Ave	7.6	A	25.3	C	7.7	A	26.1	C	7.9	A	29.4	C

- Notes: a. Delay = average delay per vehicle for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
b. LOS = Level of service, represents average for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
c. Delay values greater than 90 seconds are not accurately predictable due to limitations of the analysis equations.
d. See Appendix B for definitions of LOS for signalized and unsignalized intersections
e. Average delay for Eastbound/Westbound or Northbound/Southbound critical movements for local approaches.

Table 2 – Near Term plus Project Alternative 6 Peak Hour Level of Service

Study Intersection	Near-Term - No Project Condition				Near-Term plus Project Alternative 6				Near-Term plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay ^a	LOS ^b	Delay ^a	LOS ^b	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11. Bayfront Expressway/Chilco St Critical Local Approaches ^e	12.4	B	12.4	B	13.3	B	13.0	B	14.8	B	15.4	B
12. Bayfront Expressway/Chrysler Dr Critical Local Approaches ^e	54.6/N.A.	D/N.A.	52.7/N.A.	D/N.A.	55.0/N.A.	D/N.A.	52.7/N.A.	D/N.A.	56.0/N.A.	E/N.A.	52.0/N.A.	D/N.A.
13. Bayfront Expressway/Haven Ave Critical Local Approaches ^e	8.1	A	19.1	B	13.2	B	30.2	C	17.2	B	68.0	E
14. Marsh Rd/US 101 SB Off-Ramp	61.5/N.A.	E/N.A.	47.0/N.A.	D/N.A.	55.3/N.A.	E/N.A.	47.5/N.A.	D/N.A.	53.1/N.A.	D/N.A.	89.0/N.A.	F/N.A.
15. Marsh Rd/US 101 NB Off-Ramp	17.5	B	32.8	C	17.6	B	32.1	C	17.8	B	31.4	C
16. Marsh Rd/Middlefield Rd (Atherton)	79.2/N.A.	E/N.A.	88.9/N.A.	F/N.A.	81.5/N.A.	F/N.A.	88.9/N.A.	F/N.A.	83.6/N.A.	F/N.A.	90.9/N.A.	F/N.A.
17. Independence Dr/Marsh Rd	19.1	B	18.9	B	19.6	B	20.1	C	20.6	C	21.6	C
18. Independence Dr/Constitution Dr	12.3	B	14.6	B	14.2	B	15.5	B	21.2	B	16.2	B
19. Independence Dr/Chrysler Dr	27.0	C	36.5	D	29.2	C	41.8	D	33.5	D	51.7	D
20. Constitution Dr /Chrysler Dr	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
21. Constitution./Chilco St	17.3	C	10.0	A	22.7	C	11.2	A	85.7	F	12.8	B
	9.0	A	9.4	A	10.0	B	12.2	A	10.0	A	12.2	B
	8.3	A	9.3	A	9.1	A	16.4	A	10.9	B	83.0	F
	9.8	A	8.9	A	9.9	A	9.2	A	10.2	B	9.9	A

- Notes:
- a. Delay = average delay per vehicle for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
 - b. LOS = Level of service, represents average for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
 - c. Delay values greater than 90 seconds are not accurately predictable due to limitations of the analysis equations.
 - d. See Appendix B for definitions of LOS for signalized and unsignalized intersections
 - e. Average delay for Eastbound/Westbound or Northbound/Southbound critical movements for local approaches.

Table 3 – Long Term plus Project Alternative 6 Peak Hour Level of Service

Study Intersection	Long-Term - No Project Condition				Long-Term plus Project Alternative 6				Long-Term plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay ^a	LOS ^b	Delay	Delay	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Marsh Rd/Bay Rd	24.8	C	19.4	B	26.7	C	19.8	B	30.6	C	20.0	B
2. Marsh Rd/Scott Dr	29.5	C	43.3	D	30.2	C	47.1	D	30.7	C	54.4	D
3. Marsh Rd/Bohannon Dr	47.2	D	55.9	E	48.7	D	60.3	E	48.9	D	68.7	E
4. Willow Rd/Bay Rd	21.0	C	18.2	B	21.2	C	18.3	B	21.2	C	18.3	B
5. Willow Rd/Newbridge St	63.0	E	55.4	E	63.2	E	55.5	E	63.5	E	55.5	E
Critical Local Approaches ^e	116.5/108.5	F/F	112.4/110.9	F/F	116.7/108.6	F/F	112.6/111	F/F	116.7/108.6	F/F	112.8/111.3	F/F
6. Willow Rd/O'Brien Dr	12.4	B	12.8	B	12.4	B	12.8	B	12.4	B	12.8	B
Critical Local Approaches ^e	47.1/N.A.	D/N.A.	57.4/N.A.	E/N.A.	47.1/N.A.	D/N.A.	57.4/N.A.	E/N.A.	47.1/N.A.	D/N.A.	57.4/N.A.	E/N.A.
7. Willow Rd/Ivy Dr	13.4	B	15.8	B	13.4	B	15.8	B	13.4	B	15.8	B
Critical Local Approaches ^e	N.A./50.5	N.A./D	N.A./50.0	N.A./D	N.A./50.5	N.A./D	N.A./50.0	N.A./D	N.A./50.5	N.A./D	N.A./50.0	N.A./D
8. Willow Rd/Hamilton Ave	22.7	C	26.1	C	22.7	C	26.1	C	22.7	C	26.1	C
Critical Local Approaches ^e	35.9/53.8	D/D	55.4/34.3	E/C	35.9/53.8	D/D	55.4/34.3	E/C	35.9/53.8	D/D	55.4/34.3	E/C
9. Bayfront Expressway/Willow Rd	30.4	C	117.1	F	30.4	C	119.8	F	30.4	C	125.4	F
Critical Local Approaches ^e	N.A./61.2	N.A./E	N.A./202.1	N.A./F	N.A./61.2	N.A./E	N.A./ 205.8	N.A./F	N.A./61.2	N.A./E	N.A./ 212.9	N.A./F
10. Bayfront Expressway/University Ave	11.0	B	71.3	E	11.4	B	74.5	E	12.5	B	80.9	F

- Notes: a. Delay = average delay per vehicle for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
b. LOS = Level of service, represents average for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
c. Delay values greater than 90 seconds are not accurately predictable due to limitations of the analysis equations.
d. See Appendix B for definitions of LOS for signalized and unsignalized intersections
e. Average delay for Eastbound/Westbound or Northbound/Southbound critical movements for local approaches.

Table 3 – Long Term plus Project Alternative 6 Peak Hour Level of Service

Study Intersection	Long-Term - No Project Condition				Long-Term plus Project Alternative 6				Long-Term plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay ^a	LOS ^b	Delay ^a	LOS ^b	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11. Bayfront Expressway/Chilco St Critical Local Approaches ^e	14.4	B	14.3	B	15.2	B	15.0	B	16.6	B	17.3	B
12. Bayfront Expressway/Chrysler Dr Critical Local Approaches ^e	62.2/N.A.	E/N.A.	59.0/N.A.	D/N.A.	62.8/N.A.	E/N.A.	59.6/N.A.	D/N.A.	64.0/N.A.	E/N.A.	60.3/N.A.	E/N.A.
13. Bayfront Expressway/Haven Ave Critical Local Approaches ^e	9.3	A	23.6	C	14.3	B	45.8	D	18.2	B	108.7	F
14. Marsh Rd/US 101 SB Off-Ramp	69.7/N.A.	E/N.A.	59.3/N.A.	E/N.A.	64.5/N.A.	E/N.A.	80.3/N.A.	F/N.A.	62.9/N.A.	E/N.A.	149.9/N.A.	F/N.A.
15. Marsh Rd/US 101 NB Off-Ramp	21.5	C	70.5	E	22.0	C	70.0	E	22.3	C	69.8	E
16. Marsh Rd/Middlefield Rd (Atherton)	98.9/N.A.	F/N.A.	137.9/N.A.	F/N.A.	103.0/N.A.	F/N.A.	138.0/N.A.	F/N.A.	106.1/N.A.	E/N.A.	139.0/N.A.	F/N.A.
17. Independence Dr/Marsh Rd	39.7	D	38.1	D	41.2	D	44.3	D	42.4	D	48.4	D
18. Independence Dr/Constitution Dr	14.0	B	40.5	D	17.0	B	46.3	D	35.2	D	47.2	D
19. Independence Dr/Chrysler Dr	38.6	D	68.1	E	44.8	D	78.9	E	54.0	D	92.0	F
20. Constitution Dr /Chrysler Dr	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
21. Constitution./Chilco St	21.6	C	10.5	B	29.2	A	11.8	A	138.3	F	13.5	B
	9.2	A	9.6	A	10.3	A	12.9	A	10.3	A	12.9	B
	8.9	A	10.4	B	9.8	A	23.0	A	12.1	B	114.0	F
	11.0	B	9.4	A	11.1	A	10.0	A	11.5	B	10.9	B

- Notes:
- a. Delay = average delay per vehicle for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
 - b. LOS = Level of service, represents average for signalized and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.
 - c. Delay values greater than 90 seconds are not accurately predictable due to limitations of the analysis equations.
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