

I. PROJECT DATA

Project Name _____ Project Address _____

APN _____ - _____ - _____

Applicant Name _____ Applicant Phone _____

Applicant Address _____

Type of Development

- Residential
- Commercial
- Industrial
- Mixed-Use
- Streets, Roads, Highways, Freeways, etc.
- Redevelopment Project, as defined by the Municipal Regional NPDES Permit (MRP): creating, adding and/or replacing exterior existing impervious surface on a site where some past development has occurred.
- Special Land Use Categories, as defined by MRP Provision C.3.b.ii.1: (1) auto service facilities¹, (2) retail gasoline outlets, (3) restaurants², (4) uncovered parking area (stand-alone or part of other project).

- Site Area _____ (sq. ft.)
- Disturbed Area _____ (sq. ft.)¹
- Existing Impervious Surface _____ (sq. ft.)
- Total New Impervious Surface (created and/or replaced) _____ (sq. ft.)²
- Total Surface Parking (includes top level of parking structure) _____ (sq. ft.)³

- ¹ If ≥ 1 acre (43,560 sq. ft.) disturbed land, see Section III.
- ² If $\geq 10,000$ sq. ft. of impervious surface added and/or replaced, see Section IV. If ≥ 1 acre (43,560 sq. ft.), see Sections IV and V.
- ³ If impervious surface associated with a Special Land Use Category (including any uncovered parking) $\geq 5,000$ sq. ft., refer to Section IV.

¹ Auto service facilities, described by Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, and 7536-7539

² Restaurants described by SIC code 5812

II. MINIMUM REQUIREMENTS FOR ALL PROJECTS – All projects must incorporate as many of the following measures as practical (check boxes that apply).

A. SITE DESIGN MEASURES. Project must incorporate the following measures to the maximum extent practicable:

- Protect sensitive areas, including wetland and riparian areas, and minimize changes to the natural topography.
- Minimize land disturbance and impervious surfaces (especially parking lots).
- Minimize impervious areas from being directly connected to the storm drain system (e.g., direct runoff from roof downspouts and other impervious surfaces to landscaped areas where feasible).
- Install rain barrel or cistern to capture and use rainwater for irrigation or other non-potable use.
- Design areas of “micro-detention” in landscaping to retain rainfall runoff onsite, where appropriate.
- Maximize permeability by clustering development and preserving open space, where appropriate.
- Concentrate development density, where appropriate, to reduce impervious surface on a watershed basis.
- Use permeable pavement surfaces where feasible.
- Use “Bay Friendly” landscape design (See *Bay-Friendly Landscape Guidelines - Sustainable Practices for the Landscape Professional*, www.bayfriendly.org).

B. SOURCE CONTROL MEASURES.

- Incorporate all applicable source control measures in the City’s Local Source Control Measures List at <http://www.menlopark.org/departments/pwk/SourceControl.pdf>.

Continued ⇒

C. PERMANENT STORMWATER TREATMENT CONTROL MEASURES. *Project must consider incorporating the following measures:*

- | | |
|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Vegetated swale³ <input type="checkbox"/> Vegetated buffer strip³ <input type="checkbox"/> Tree Well Filter³ <input type="checkbox"/> Flow-Through Planter Box³ <input type="checkbox"/> Bioretention Area/Rain Garden³ <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Green Roof | <ul style="list-style-type: none"> <input type="checkbox"/> Extended Detention Basin (dry)⁴ <input type="checkbox"/> Media filter⁴ <input type="checkbox"/> Hydrodynamic separator (For projects that receive final discretionary approval on or after 12/1/11, allowed only if part of a multi-step treatment process) <input type="checkbox"/> Manufactured drain insert (Not allowed unless part of a multi-step treatment process) <input type="checkbox"/> Other: _____ |
|--|---|

³ Regulated Projects (described in Section IV) will need to use Regional Water Board-approved soil specifications if project receives final discretionary approval on or after 12/1/11.

⁴ Not allowed in projects that receive final discretionary approval on or after 12/1/11.

D. EROSION and SEDIMENTATION CONTROL. *If the project involves any land disturbance, project plans must incorporate all of the following requirements:*

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Stabilize all denuded areas and install and maintain all temporary erosion and sediment controls continuously between October 15th and April 15th of each year, until permanent erosion control have been established. 2. Divert on-site runoff around exposed areas and diverting off-site runoff around the site (e.g., swales and dikes). 3. Prevent erosion and trapping sediment on-site, such as sediment basins or traps, earthen dikes or berms, silt fences, check dams, storm drain inlet protection, soil blankets or mats, covers for soil stock piles, and/or other measures. | <ol style="list-style-type: none"> 3. Provide notes, specifications, or attachments describing the following: <ol style="list-style-type: none"> a) Construction, operation and maintenance of erosion and sediment control measures, including inspection frequency; b) Methods and schedule for grading, excavation, filling, clearing of vegetation, and storage and disposal of excavated or cleared material; c) Specifications for vegetative cover and mulch, including methods and schedules for planting and fertilization; d) Provisions for temporary and/or permanent irrigation. |
|---|---|

E. CONSTRUCTION BMPs. *Project plans must incorporate all of the following BMPs as project notes. Additionally, project plans must include SMCWPPP's Construction BMP page, available for download at <http://www.flowstobay.org/documents/business/construction/SWPPP.pdf>*

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater. 2. Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, washwater or sediments, and non-stormwater discharges to storm drains and watercourses. 3. Use sediment controls or filtration to remove sediment when dewatering site and obtain all necessary permits. 4. Avoid cleaning, fueling, or maintaining vehicles on-site, except in a designated area where washwater is contained and treated. 5. Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses. | <ol style="list-style-type: none"> 6. Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate. 7. Perform clearing and earth moving activities only during dry weather. 8. Limit and time applications of pesticides and fertilizers to prevent polluted runoff. 9. Limit construction access routes and stabilize designated access points. 10. Avoid tracking dirt or other materials off-site; clean off-site paved areas and sidewalks using dry sweeping methods. 11. The Contractor shall train and provide instruction to all employees and subcontractors regarding construction BMPs. |
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III. CONSTRUCTION PROJECTS THAT DISTURB ≥ 1 ACRE OF AREA — *For all projects with 1 acre or more of disturbed area, applicants must file a Notice of Intent (NOI) with the State Water Resources Control Board to obtain coverage under the State General Construction Activity NPDES Permit, and must prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). Note: Completion of this checklist does not imply certification of the adequacy of the SWPPP by the municipality.*

1. A copy of the project's NOI and SWPPP shall be submitted to the engineering department prior to issuance of the building permit.
2. A copy of the project's NOI and SWPPP shall be kept on-site and made available for review by the City Engineering inspector upon request.

IV. REGULATED PROJECTS - *The following requirements apply to projects that add and/or replace 10,000 sq. ft. or more of impervious surface, and are therefore Regulated Projects under the Municipal Regional Stormwater Permit (MRP). These requirements will also apply to any Special Land Use Category project that adds and/or replaces 5,000 sq. ft. or more of impervious surface, if it receives final discretionary approval on or after December 1, 2011. These requirements do not apply to one single-family residence unless it is part of a larger plan of development.*

1. Incorporate site design measures (see Section IIA).
2. Incorporate all applicable source control measures listed in the municipality's Local Source Control Measures List.
3. Enter into an agreement of responsibility and funding for ongoing operation and maintenance of stormwater treatment measure(s).
4. Treatment measure design must be consistent with Vector Control Plan requirements (Appendix F of the C.3 Technical Guidelines - link at end of this section).
5. If project receives final discretionary approval on or after 12/1/11, the design volume of stormwater runoff must be infiltrated, evapotranspired and/or captured and reused, unless the City/County determines it is infeasible based on criteria and procedures it develops, in which case biotreatment (NOT vault-based treatment) may be used.
6. Hydraulically size stormwater treatment measures, as follows. (For more details see the C.3 Technical Guidance – link at end of this section).
 - A flow-based treatment measure hydraulically sized to manage the flow of runoff produced by a rain event equal to at least 0.2 inches per hour; or
 - A volume-based treatment measure hydraulically sized to capture 80 percent or more of the volume of annual runoff, using local rainfall data.
 - A treatment measure that uses a combination of flow and volume capacity, hydraulically sized to treat 80 percent or more of the total runoff over the life of the project, using local rainfall data.

Note: the C.3 Technical Guidance may be downloaded at www.flowstobay.org/bs_new_development.php.

V. HYDROMODIFICATION MANAGEMENT PROJECTS – *If your project creates and/or replaces one (1) acre or more of impervious surface, it may be considered a Hydromodification Management (HM) Project under the Municipal Regional Stormwater Permit (MRP). The agency may complete an HM Applicability Form, to determine if HM controls are required. For more information on HM, go to www.flowstobay.org/bs_new_development.php. The following requirement applies to HM Projects that are located in areas subject to HM:*

1. Use a flow duration stormwater control measure designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations. The Bay Area Hydrology Model (BAHM) has been developed to size flow duration controls. See www.bayareahydrology.com.

Approved by:

_____]
Engineering

_____]
date



ENGINEERING DIVISION

701 Laurel Street / Menlo Park, CA 94025-3483
 (650) 330-6740 / Fax (650) 327-5497
<http://www.menlopark.org>

**IMPERVIOUS AREA WORKSHEET
 FOR NEW DEVELOPMENT AND REDEVELOPEMENT PROJECTS**

To comply with the City of Menlo Park Stormwater Ordinance 859 (Chapter 7.42) and the NPDES Permit issued by the California State Water Board, project applicants must report changes in impervious surface area resulting from their new development or redevelopment projects within the city. Therefore all new project applicants shall complete this worksheet, submit it to Engineering for plan review and include the relevant data on the site design plans.

Imperviousness refers to the inability of a surface to absorb water. Higher imperviousness causes more water to run off the surface. Imperviousness reduces the amount of ground water recharge and increases the amount of storm water flowing to local creeks and the Bay. Excessive stormwater causes erosion of creek banks and flooding. Storm water also carries pollutants normally found in pesticides, herbicides, engine oil, copper from brake dust, etc.

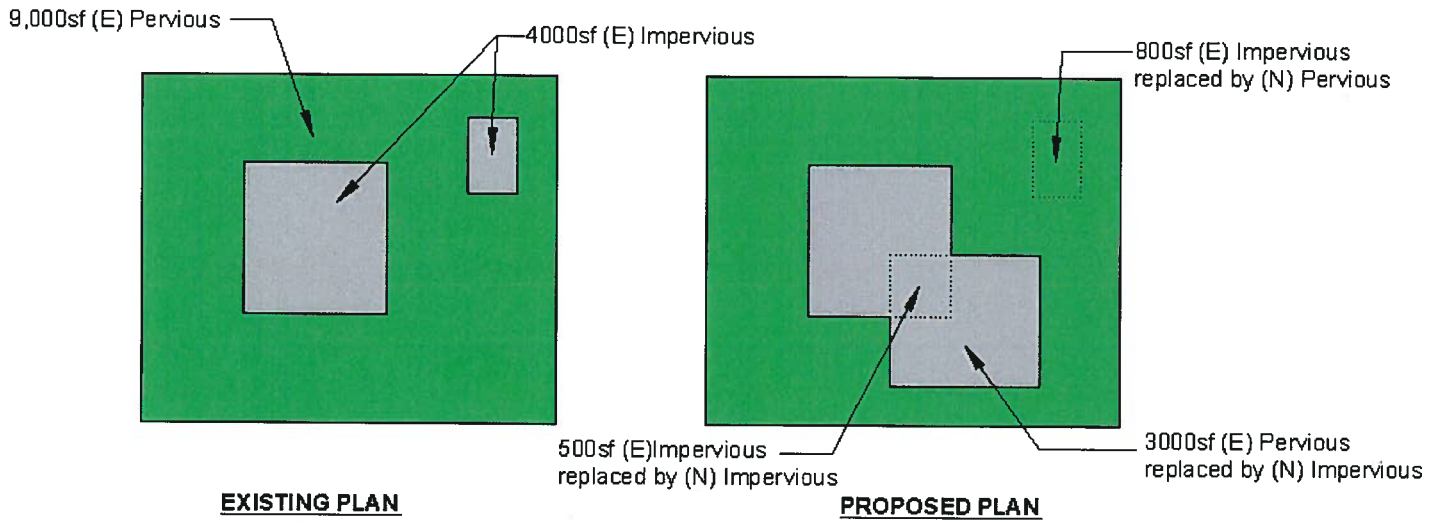
Impervious Surface is defined in this worksheet as any modified surface that **reduces** the land's natural ability to infiltrate or pass water into the soil. This includes any surface that causes storm water to run off in greater quantities than it would have under natural soil conditions given the same rain intensity.

Typical Pervious and Impervious Surfaces	
Pervious Surfaces	Impervious Surfaces
Lawn/Vegetal Cover	Rooftops
Soil	Compacted Soil or Aggregate
Sand	Paved Walkways
Ponds	Swimming Pools
Streams/Creeks	Patios
Unpaved Gravel Driveways	Asphalt/Concrete
Pervious Concrete	Permanent Structures
Pervious Asphalt	Sidewalks
Permeable Pavers (Unit Pavers)*	Cobbles
Gravel Bed	

*Permeable pavers are considered impervious if the underlying substrate is highly compacted soil or impermeable aggregate.

SAMPLE CALCULATION

SAMPLE 13,000 SF LOT PROJECT



IMPERVIOUS AREA SUMMARY

Total Area of Parcel	=	A	<u>13,000</u>	ft ²
Existing Pervious Area	=	B	<u>9,000</u>	ft ²
Existing Impervious Area	=	C	<u>4,000</u>	ft ²
Existing % Impervious	=	C ÷ A x 100 =	D	<u>30.8</u> %
Existing Impervious Area To Be Replaced W/ New Impervious Area	=	E	<u>500</u>	ft ²
Existing Pervious Area To Be Replaced W/ New Imperivious Area	=	F	<u>3,000</u>	ft ²
New Impervious Area (Creating and/or Replacing) If greater than 10,000sqft, a hydrology report must be submitted	=	E + F =	G	<u>3,500</u> ft ²
Existing Impervious Area To Be Replaced W/ New Pervious Area	=	H	<u>800</u>	ft ²
Net Change In Impervious Area Input negative (-) number if the net change is negative	=	F - H =	I	<u>2,200</u> ft ²
Proposed Pervious Area	=	B - I =	J	<u>6,800</u> ft ²
Proposed Impervious Area Verify that J + K = A	=	C + I =	K	<u>6,200</u> ft ²
Proposed % Impervious	=	K ÷ A x 100 =	L	<u>47.7</u> %

IMPERVIOUS AREA WORKSHEET

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Return this completed form, with plan set, to the City of Menlo Park Engineering Division.

Date: _____ APN: _____

Property Address: _____

Project Description: _____

Contact Name: _____

Contact Telephone Number: _____

Contact Email: _____

Title And Sheet# of Submitted Drawing used For Calculations: _____

Land Use (Circle One):

Residential Commercial Industrial Professional Roadway

Drainage Basin (Circle One):

(See the *Hydrology Report Requirements* for a Drainage Basin map.)

Atherton Creek San Francisquito Creek San Francisco Bay

I certify that the calculations below accurately reflect the proposed changes and final impervious surfaces for the above project.

Calculations Performed By (Print): _____

Title: _____

Calculations Performed By (Signature): _____

Date: _____

IMPERVIOUS AREA WORKSHEET

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IMPERVIOUS AREA CALCULATION

Total Area of Parcel	=	A _____	ft ²
Existing Pervious Area	=	B _____	ft ²
Existing Impervious Area	=	C _____	ft ²
Existing % Impervious	=	$C \div A \times 100 = D$ _____ %	
Existing Impervious Area To Be Replaced W/ New Impervious Area	=	E _____	ft ²
Existing Pervious Area To Be Replaced W/ New Impervious Area	=	F _____	ft ²
New Impervious Area (Creating and/or Replacing)	=	$E + F =$	G _____ ft ²
If G is greater than 10,000 square feet, a hydrology report shall be submitted to Engineering.			
Existing Impervious Area To Be Replaced W/ New Pervious Area	=	H _____	ft ²
Net Change In Impervious Area	=	$F - H =$	I _____ ft ²
Input negative (-) number if the F (net change) is negative			
Proposed Pervious Area	=	$B - I =$	J _____ ft ²
Proposed Impervious Area	=	$C + I =$	K _____ ft ²
Verify that $J + K = A$			
Proposed % Impervious	=	$K \div A \times 100 = L$ _____ %	