



**COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY DIVISION
GRADING AND DRAINAGE SECTION
STANDARD URBAN STORMWATER MITIGATION PLAN (SUSMP)**

CORRECTION SHEET

Urban and stormwater runoff is considered to be one of the largest sources of pollution to both local waterways and coastal areas of the United States. Los Angeles County was issued a National Pollutant Discharge Elimination System permit for municipal stormwater and urban runoff discharges within the County of Los Angeles on December 13, 2001, by the Los Angeles Regional Water Quality Control Board. Under this permit, the County is required to prohibit the discharge of pollutants from private property developments. Preventing these pollutants from entering stormwater discharge system will be accomplished by requiring the installation and maintenance of post-construction treatment control Best Management Practices (Bmp's) on qualifying projects.

PROJECT INFORMATION

_____ SITE ADDRESS	_____ CITY/LOCATION	_____ DISTRICT NO.	_____ GRADING/BUILDING PLAN CHECK NO.
_____ DESIGN ENGINEER/APPLICANT		_____ TELEPHONE NO.	
_____ OWNER/DEVELOPER		_____ TELEPHONE NO.	
_____ PLAN CHECKER		_____ ENTRY DATE	
_____ PROJECT DESCRIPTION/PROPOSED OCCUPANCY			

' The project as proposed is exempt from the requirements of the Development Construction provisions of the County NPDES permit.

The following is a list of new development and redevelopment projects/activities requiring the incorporation of Best Management Practices (BMP's) into the project plans. If the proposed new development or redevelopment and/or activity falls into one of these categories as indicated below, BMP's shall be incorporated into project plans to satisfy SUSMP requirements. Details of SUSMP provisions must be prepared and submitted as part of the project building or grading plans (see Section 106.4.3 of the Los Angeles County Building Code).

Project/Activities requiring BMP's under the SUSMP provisions:

- ' Single family hillside development.
"Hillside" means property located in an area where the development contemplates grading on any natural slope that is twenty-five percent or steeper.
- ' Industrial/Commercial development that creates an area of 100,000 square-feet or more of impermeable area.
- ' Retail gasoline outlet, gas station, or fuel dispensing.

- ' Automotive repair shop, automotive and/or equipment maintenance areas.
- ' Restaurant, outdoor food handling or processing.
- ' Parking lot creating 5,000 square feet or more of surface area, or with 25 or more parking spaces and potentially exposed to stormwater runoff.
- ' Projects located within, directly adjacent to, or directly tributary to an environmentally sensitive area.
- ' Automotive or equipment washing or cleaning area(s).
- ' Outdoor hazardous material, waste handling or storage.
- ' Commercial or industrial waste.
- ' Outdoor manufacturing areas such as equipment or product fabrication including welding, cutting, sawing, metal fabrication, assembly, application of paints, coatings, or finishes, pre-cast concrete fabrication, equipment or machinery repair and/or maintenance, etc.
- ' Outdoor horticulture activities.
- ' Animal slaughtering, animal confinement, pet care facilities, stables, kennels, etc.
- ' Ten or more unit homes.

! REDEVELOPMENT PROJECTS

"Redevelopment" means land-disturbing activity that results in creation, addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to, the expansion of a building footprint, addition or replacement of a structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety. Where redevelopment results in an alteration to less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to these SUSMP requirements, the Design Standards apply only to the alteration, and not to the entire development. Where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to the SUSMP requirements, the Design Standards apply to the entire project.

REDEVELOPMENT: Redevelopment projects covered under the project/activities categories indicated above may require BMP's under the SUSMP provisions. Your redevelopment project is:

- ' **Exempt:** (Impervious surface area replaced, added, or created is < 5,000 square feet)
Proposed improvements are less than 5,000 square feet or maintains original line and grade, and therefore, is exempt from SUSMP requirements.
- ' **BMP's to meet SUSMP requirements must be incorporated into Design Plans:**
(Impervious surface area replaced, added, or created is \geq 5,000 square feet.)
Proposed improvements are greater than or equal to 5,000 square feet and does not maintain original line and grade, and therefore, is subject to SUSMP requirements.

Your redevelopment project requires the following:

- ' **BMP's must be incorporated in project plans for the newly developed area only.**
Required when an alteration results in an increase of less than 50 percent of the impervious surfaces of the previously existing development, and the existing development was not subject to SUSMP requirements.
- ' **BMP's must be incorporated in project plans for the newly developed and existing areas.** Required when an alteration results in an increase of greater than 50 percent of the

impervious surfaces of the previously existing development.

AGENCY REFERRALS

- ' Submit and obtain approval from Environmental Programs Division, Industrial Waste Unit, for any structural BMP's selected to treat onsite pollutants for the proposed non-residential project. An annual operating permit may be required. Environmental Programs Division, Industrial Waste Unit - 900 S. Fremont, Annex Building, third floor, (626) 458-3517. Please contact Environmental Programs Division for required Fees and minimum submittal and requirements. Please note prior to obtaining approval from Environmental Programs Division the location and the design flows for all BMP's must be shown on plans and approved by Building and Safety.

- ' Obtain an encroachment permit for the proposed construction and/or discharge of drainage in road right of way. Construction Division, Permits Section - 900 S. Fremont, Alhambra, 8TH Floor, (626) 458-3129.

- ' Obtain a connection permit or approval for the proposed connection to the Los Angeles County Flood Control District Drain _____. Construction Division, Permits Section, 900 S. Fremont, Alhambra, 8TH Floor, (626) 458-3129.

- ' Obtain an encroachment/connection permit for the proposed construction/connection or discharge of drainage in road right of way. City of _____ / Caltrans . _____

- ' This project is located within the City of _____. Obtain approval from the City for SUSMP requirements. (Required for all Cities which do not contract this service from the Los Angeles County Department of Public Works).

- ' _____

HYDRAULIC and HYDROLOGY REQUIREMENTS

- ' Provide a hydrology analysis to determine the design flow rate (Q_{PM}) or Volume (V_M) for the first 3/4-inch of rainfall that must be treated. Attached is a simplified design chart which you may use for determining the design flow rate (Q_{PM}). The table assumes a time of concentration of 5 minutes. A substantial reduction in the design flow rate may be obtained by doing a more detailed analysis. If a more detailed hydrology study is desired, please refer to the Development Planning for Storm Water Management Manual, and the Los Angeles County Hydrology Manual. (See attached Reference 1.)

When calculating the time of concentration, calculations must show all variables used in the analysis. This includes identifying the longest overland flow path for the subarea (L).

- ' Submit site specific hydraulic calculations along with the recommended structural BMP

manufacturer's product specifications to verify the BMP will adequately handle the minimum design flow required for treatment. **Note: The proposed project improvements must provide the required minimum level of flood protection.**

- ' Provide Hydraulic analysis for the following: _____

- ' Outlet velocities from proposed drainage devices must be designed to minimize erosion. Energy dissipation is required for all devices. Calculations for the sizing of dissipaters must be provided. Soils analysis may be required to determine the site conditions and susceptibility to erosion.

GENERAL COMMENTS

- ' For building plans, all SUSMP requirements and associated details for the proprietary or non-proprietary **BMP's shall be shown on the building site plan. (Plan scale shall be 1"=40' or better.)**
- ' For grading plans, all SUSMP requirements and associated details for the proprietary or non-proprietary **BMP's shall be shown on the grading plans.**
- ' The project must mitigate the first 3/4-inch of rainfall for each storm event and be designed to minimize the introduction of pollutants from the site runoff into the stormwater conveyance system. (Reference 1)

In addition to those items required on the site grading and/or building drainage plans, the following SUSMP information shall be incorporated on the plans:

- ' Show the location of proposed BMP's on plans. All necessary manufacturer's installation notes and construction requirements and/or details must be included on the plans for all treatment and holding facilities. This includes model, size, material type, dimensions, volumetric capacity, and manufacture's treatment capacity.
- ' For non-proprietary BMP's, in addition to the items indicated above, provide details of all organic materials including plants, filter materials and specifications. Planting and irrigation details for any vegetated BMP must be indicated on the plans.
- ' Specify all elevations for proposed BMP's, inverts or flow lines as applicable.
- ' Specify on the plans for each drainage device, the total design flow, Q_{TOTAL} and the peak mitigation flow rate, Q_{PM} (See Reference 1 for additional information).
- ' Clearly show driveway/access road drainage and provide BMP's for treatment of driveway flows. Provide elevations, cross sections, or slopes as applicable.
- ' Show proposed drainage in paved areas. Provide spot elevations, slopes, and flow arrows to intended outlet(s). If offsite tributary flows are not included in onsite treatment, show how flows will be directed away from proposed BMP's. Provide topography, elevations, cross sections, slopes, and details as applicable.
- ' For commercial properties, all catch basins and inlets that discharge into an existing or proposed

storm drain must be labeled to discourage illegal dumping of pollutants. See attached stencil example of “No Dumping--Drains to Ocean.”

- ' Direct rooftop runoff to pervious areas such as yards, vegetated open channels, or areas where practical. Provide BMP solution for treatment of roof runoff.
- ' Add the following SUSMP notes to the site grading and/or building drainage plans.

SUSMP NOTES:

1. Determine and provide the pre and post development pervious and impervious areas created by the proposed development. Show the following on Plans:

POST DEVELOPMENT		
Impervious Area	_____	Acres,
Pervious Area	_____	Acres,
PRE DEVELOPMENT		
Impervious Area	_____	Acres,
Pervious Area	_____	Acres,

2. All structural BMP's shall be accessible for inspection and maintenance.
3. Prior to commencement of any work within the road right of way and/or connection to County maintained storm drain, an encroachment permit from Construction Division, Permit Section is required, (626) 458-3129.
4. Prior to commencement of any work and/or discharge of drainage to a watercourse, a permit from both the California Department of Fish and Game and U.S. Army Corps of Engineers may be required.

5. **STATEMENT OF UNDERSTANDING**

As the _____ of the project, I have reviewed the Development Planning for Storm Water Management–A manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), and have proposed the implementation of the permanent Best Management Practices (BMP's) applicable to effectively minimize the negative impacts of the project's stormwater runoff. The selected BMP's will be installed per the approved plans and as recommended by the product manufacturer as applicable.

CERTIFICATIONS AND PROOF ON ONGOING MAINTENANCE

' Project Civil Engineer/Architect must complete the **STATEMENT OF UNDERSTANDING**, see SUSMP general note number 7 that must be signed and added to proposed plans.

' Provide recorded and certified copies of the attached **MAINTENANCE AGREEMENT FOR SUSMP DEVICES** to provide for ongoing operation and maintenance of SUSMP devices, refer to attached agreement.

' _____

DESIGN SUGGESTIONS

- ! Examples of BMP's can be found in the attached reference list.
- ! Wherever practical, use natural drainage areas/systems to convey flows.
- ! Utilize permeable materials for sidewalks, driveways, and parking lots where practicable.
- ! Employ the use of detention basins, infiltration basins, and infiltration trenches where applicable.
- ! Concentrate or cluster proposed developments on portions of site while leaving the greatest area of land in a natural undisturbed condition.
- ! Conserve natural areas by minimizing the amount of site clearing and grading of native vegetation required for development.
- ! Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree

areas, and promoting the use of native and/or drought tolerant plants.

- ! Promote natural vegetation by using parking lot islands and other landscaped areas.
- ! Preserve riparian areas and wetlands.

AREAS OF SPECIAL ATTENTION

The items indicated below for commercial developments are reviewed by Environmental Programs Division, Industrial Waste Unit. The following requirements are provided for reference only:

Properly Design Material Storage Areas:

- ! Provide a roof above the material storage area. If the roof structure does not include side walls, then the roof's overhang must extend a minimum of 20 percent of the roof's height. Elimination of roof cover will be reviewed on a case-by-case basis.
- ! The storage area must be paved and sufficiently impervious to contain leaks and spills. Provide and show on plans all storage areas for chemicals and/or waste materials stored at the subject facility, with a tank/drum schedule indicating tank capacities, materials of construction, and contents. Provision for spill containment is required where such materials may potentially enter the sewer system, storm drain, or contaminate the soil. Spill containment should be designed for the volume of the largest tank or 10 percent of the drum total (whichever is greater), plus 6 inches of rainfall over the containment area (if outdoors). Submit a typical detail of the containment curb and specify the materials of construction.
- ! All tanks containing incompatible materials such as acids, bases, reactive or flammable materials must have separate spill containment systems.
- ! Interior wall and floors within all spill containment areas shall be cleaned, repaired and sealed with an epoxy or equivalent type sealant which is compatible with the materials located within said areas. Provide manufacturer's literature of selected sealant and indicate on drawings areas to be sealed.
- ! The contact joint for spill containment walls or dikes constructed on existing concrete, masonry or asphalt shall be bonded to the existing surface. Provide manufacturer's literature of the selected bonding agent and indicate on drawings areas to be bonded.
- ! Materials collected in the spill containment area must be controlled until a determination is made regarding their quality and legal disposal method.

Properly Design Loading/Unloading Areas:

- ! Provide a roof above the loading dock area. If the roof structure doesn't include side walls, then the roof's overhang must extend a minimum of 20 percent of the roof's height. Elimination of the roof cover will be reviewed on a case-by-case basis.
- ! Design drainage to minimize stormwater runoff onto loading/unloading area.

- ! Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

Properly Design Repair/Maintenance Bays:

- ! Repair/maintenance bays must be indoors or designed in such a way that does not allow stormwater runoff onto the wash bay.
- ! Design repair/maintenance bay drainage system to capture all wash water, leaks and spills. Show on plans all proposed drain connections for collection and disposal. Direct connection of the repair/maintenance bay outlet drain to the storm drain system is prohibited.
- ! If wastewater is generated, the person responsible for the discharge must file for an Industrial Waste Disposal Permit.

Properly Design Vehicle/Equipment Wash Areas:

- ! Vehicle/equipment wash areas are subject to Industrial Waste Discharge Permit plan review.
- ! Vehicle/equipment wash areas shall be provided with a clarifier and a sample box. The discharge must be routed to the sanitary sewer line. Details, as applicable, must be indicated on plans.
- ! Provide a roof above the vehicle/equipment wash area. If the roof structure does not include side walls, then the roof's overhang must extend a minimum of 20 percent of the roof's height. Elimination of the roof cover will be reviewed on a case-by-case basis.
- ! If a cover is not feasible, provide an approved rainwater diversion system along with a clarifier and a sample box (County Standard Plan 2043-0, enclosed). Diverted flow may require pretreatment, verification of pollutant removal and/or storage prior to discharge to the storm drain.

Properly Design Fueling Areas:

- ! The fuel dispensing area must be covered with a roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.
- ! Fuel dispensing areas must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
- ! Propose a spill collection and cleanup maintenance plan for the fueling area. Flows from washing down of the fueling area entering the storm drain system is prohibited.

Properly Design Refuse Collection Areas:

- ! If drains are proposed in the refuse collection area, these shall be connected to the sanitary sewer with proper pretreatment facilities. Surrounding areas shall be graded to drain away from the refuse collection area.
- ! Drainage from adjoining roofs must be diverted away from the refuse collection area.

! Refuse collection areas must be screened or walled to prevent off-site transport of refuse.

Properly Design Parking Areas:

! Infiltration runoff which may potentially contaminate soil is not acceptable.

! Provide a pretreatment facility to treat stormwater flows prior to entering the storm drain system.

REFERENCES

1. Development Planning for Storm Water Management, A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works
2. California Stormwater Best Management Practices Handbook
3. Caltrans Stormwater Quality Handbook: Planning and Design Staff Guide
4. Manual for Stormwater Management in Washington State
5. The Maryland Stormwater Design Manual
6. Florida Development Manual: A Guide to Sound Land and Water Management
7. Denver Urban Storm Drainage Criteria Manual
8. USEPA Report No. EPA-840-B-92-002

APPENDIX

APPENDIX 1 3/4" PEAK MITIGATED FLOW RATE (Q_{pm})

(Page A-1 to A-4)

The attached simplified tables calculate the Peak Mitigated Flow Rate (Q_{pm}) for a time of concentration of 5 minutes for various percent imperviousness. This table is intended to be used as a design guide. A more detailed analysis may be desired for larger projects with higher time of concentrations.

APPENDIX 2 SUSMP MAINTENANCE COVENANT

(Page A-5)

The purpose of the SUSMP Maintenance Covenant is to ensure that all current and future owners of a development are made aware that the site contains SUSMP BMP's that must remain operational and be maintained. The covenant shall be recorded against the subject property. COVENANT MUST BE SIGNED, NOTARIZED, AND RECORDED. Applicant must provide copy of the recorded document stamped by the County Recorder's office.

RECORDATION is the responsibility of the applicant. The main Recorder's office is located at 12400 Imperial Highway in the City of Norwalk. Additional branch offices for recording documents are available.

Information for the County Recorder's offices can be obtained on the Internet at <http://regrec.co.la.ca.us/main.htm> or by calling (562) 462-2125 for more information.

APPENDIX 3 EXAMPLES OF BMP'S

(Page A-6)

This Appendix contains example BMP's and design suggestions that may be incorporated into the project to satisfy the requirement for minimizing the release of pollutants from each new development. Additional examples may be found in reference one on the enclosed list .

APPENDIX 5 STENCIL FOR LABELING OF INLETS INTO DRAINAGE SYSTEM

(Page A-7)

Inlets to closed storm drains must be clearly labeled that dumping of improper materials into stormwater conveyance system is prohibited. The attached "No Dumping-This Drains to Ocean" graphical icon is acceptable for stenciling or labeling of drain inlets.

3/4 INCH - PEAK MITIGATED FLOW RATE (Q_{PM})

TC=5 MINUTES

SOIL TYPE	% Impervious						
	40	50	60	70	80	90	100
	Qpm=ACRES x Value Shown						
002	0.308	0.325	0.341	0.357	0.373	0.389	0.406
003	0.189	0.225	0.261	0.297	0.334	0.370	0.406
004	0.197	0.232	0.267	0.302	0.336	0.371	0.406
005	0.189	0.225	0.261	0.297	0.334	0.370	0.406
006	0.243	0.270	0.297	0.325	0.352	0.379	0.406
007	0.189	0.225	0.261	0.297	0.334	0.370	0.406
008	0.330	0.343	0.355	0.368	0.380	0.393	0.406
009	0.235	0.264	0.292	0.320	0.349	0.377	0.406
010	0.189	0.225	0.261	0.297	0.334	0.370	0.406
011	0.246	0.273	0.299	0.326	0.352	0.379	0.406
012	0.357	0.365	0.373	0.381	0.389	0.398	0.406
013	0.189	0.225	0.261	0.297	0.334	0.370	0.406
014	0.189	0.225	0.261	0.297	0.334	0.370	0.406
015	0.189	0.225	0.261	0.297	0.334	0.370	0.406
016	0.206	0.239	0.272	0.306	0.339	0.372	0.406
017	0.268	0.291	0.314	0.337	0.360	0.383	0.406
018	0.189	0.225	0.261	0.297	0.334	0.370	0.406
019	0.189	0.225	0.261	0.297	0.334	0.370	0.406
020	0.189	0.225	0.261	0.297	0.334	0.370	0.406
021	0.189	0.225	0.261	0.297	0.334	0.370	0.406
022	0.199	0.233	0.268	0.302	0.337	0.371	0.406
023	0.198	0.232	0.267	0.302	0.336	0.371	0.406
024	0.189	0.225	0.261	0.297	0.334	0.370	0.406
025	0.320	0.335	0.349	0.363	0.377	0.391	0.406
026	0.189	0.225	0.261	0.297	0.334	0.370	0.406
027	0.189	0.225	0.261	0.297	0.334	0.370	0.406
028	0.189	0.225	0.261	0.297	0.334	0.370	0.406
029	0.303	0.320	0.338	0.355	0.372	0.389	0.406
030	0.189	0.225	0.261	0.297	0.334	0.370	0.406
031	0.189	0.225	0.261	0.297	0.334	0.370	0.406
032	0.234	0.262	0.291	0.320	0.348	0.377	0.406
033	0.189	0.225	0.261	0.297	0.334	0.370	0.406
034	0.265	0.288	0.312	0.335	0.359	0.382	0.406
035	0.189	0.225	0.261	0.297	0.334	0.370	0.406
036	0.280	0.301	0.322	0.343	0.364	0.385	0.406
037	0.189	0.225	0.261	0.297	0.334	0.370	0.406
038	0.189	0.225	0.261	0.297	0.334	0.370	0.406
039	0.259	0.283	0.308	0.332	0.357	0.381	0.406
040	0.268	0.291	0.314	0.337	0.360	0.383	0.406
041	0.189	0.225	0.261	0.297	0.334	0.370	0.406
042	0.247	0.274	0.300	0.327	0.353	0.379	0.406
043	0.189	0.225	0.261	0.297	0.334	0.370	0.406
044	0.304	0.321	0.338	0.355	0.372	0.389	0.406
045	0.189	0.225	0.261	0.297	0.334	0.370	0.406

TC=5 MINUTES

SOIL TYPE	% Impervious						
	40	50	60	70	80	90	100
	Qpm=ACRES x Value Shown						
046	0.189	0.225	0.261	0.297	0.334	0.370	0.406
047	0.206	0.239	0.272	0.306	0.339	0.372	0.406
048	0.189	0.225	0.261	0.297	0.334	0.370	0.406
049	0.229	0.258	0.288	0.317	0.347	0.376	0.406
050	0.275	0.297	0.318	0.340	0.362	0.384	0.406
051	0.189	0.225	0.261	0.297	0.334	0.370	0.406
052	0.189	0.225	0.261	0.297	0.334	0.370	0.406
053	0.189	0.225	0.261	0.297	0.334	0.370	0.406
054	0.189	0.225	0.261	0.297	0.334	0.370	0.406
055	0.189	0.225	0.261	0.297	0.334	0.370	0.406
056	0.230	0.259	0.288	0.318	0.347	0.376	0.406
057	0.189	0.225	0.261	0.297	0.334	0.370	0.406
058	0.189	0.225	0.261	0.297	0.334	0.370	0.406
059	0.223	0.253	0.284	0.314	0.345	0.375	0.406
060	0.189	0.225	0.261	0.297	0.334	0.370	0.406
061	0.189	0.225	0.261	0.297	0.334	0.370	0.406
062	0.189	0.225	0.261	0.297	0.334	0.370	0.406
063	0.189	0.225	0.261	0.297	0.334	0.370	0.406
064	0.247	0.273	0.300	0.326	0.353	0.379	0.406
065	0.303	0.320	0.337	0.354	0.371	0.389	0.406
066	0.208	0.241	0.274	0.307	0.340	0.373	0.406
067	0.189	0.225	0.261	0.297	0.334	0.370	0.406
068	0.201	0.235	0.269	0.303	0.338	0.372	0.406
069	0.197	0.231	0.266	0.301	0.336	0.371	0.406
070	0.219	0.250	0.281	0.312	0.343	0.375	0.406
071	0.259	0.284	0.308	0.332	0.357	0.381	0.406
072	0.189	0.225	0.261	0.297	0.334	0.370	0.406
073	0.189	0.225	0.261	0.297	0.334	0.370	0.406
074	0.189	0.225	0.261	0.297	0.334	0.370	0.406
075	0.189	0.225	0.261	0.297	0.334	0.370	0.406
076	0.189	0.225	0.261	0.297	0.334	0.370	0.406
077	0.189	0.225	0.261	0.297	0.334	0.370	0.406
078	0.189	0.225	0.261	0.297	0.334	0.370	0.406
079	0.203	0.237	0.270	0.304	0.338	0.372	0.406
080	0.189	0.225	0.261	0.297	0.334	0.370	0.406
081	0.229	0.258	0.288	0.317	0.347	0.376	0.406
082	0.189	0.225	0.261	0.297	0.334	0.370	0.406
083	0.189	0.225	0.261	0.297	0.334	0.370	0.406
084	0.189	0.225	0.261	0.297	0.334	0.370	0.406
085	0.189	0.225	0.261	0.297	0.334	0.370	0.406
086	0.189	0.225	0.261	0.297	0.334	0.370	0.406
087	0.189	0.225	0.261	0.297	0.334	0.370	0.406
088	0.189	0.225	0.261	0.297	0.334	0.370	0.406
089	0.214	0.246	0.278	0.310	0.342	0.374	0.406
090	0.282	0.302	0.323	0.344	0.364	0.385	0.406

TC=5 MINUTES

SOIL TYPE	% Impervious						
	40	50	60	70	80	90	100
	Qpm=ACRES x Value Shown						
091	0.270	0.293	0.316	0.338	0.361	0.383	0.406
092	0.293	0.312	0.330	0.349	0.368	0.387	0.406
093	0.211	0.244	0.276	0.308	0.341	0.373	0.406
094	0.300	0.317	0.335	0.353	0.370	0.388	0.406
095	0.282	0.302	0.323	0.344	0.364	0.385	0.406
096	0.189	0.225	0.261	0.297	0.334	0.370	0.406
097	0.215	0.247	0.279	0.310	0.342	0.374	0.406
098	0.257	0.282	0.307	0.331	0.356	0.381	0.406
099	0.250	0.276	0.302	0.328	0.354	0.380	0.406
100	0.189	0.225	0.261	0.297	0.334	0.370	0.406
101	0.189	0.225	0.261	0.297	0.334	0.370	0.406
102	0.244	0.271	0.298	0.325	0.352	0.379	0.406
103	0.220	0.251	0.282	0.313	0.344	0.375	0.406
104	0.189	0.225	0.261	0.297	0.334	0.370	0.406
105	0.200	0.235	0.269	0.303	0.337	0.371	0.406
106	0.189	0.225	0.261	0.297	0.334	0.370	0.406
107	0.267	0.290	0.313	0.336	0.359	0.383	0.406
108	0.319	0.333	0.348	0.362	0.377	0.391	0.406
109	0.227	0.257	0.287	0.316	0.346	0.376	0.406
110	0.314	0.329	0.345	0.360	0.375	0.390	0.406
111	0.197	0.232	0.267	0.302	0.336	0.371	0.406
112	0.247	0.273	0.300	0.326	0.353	0.379	0.406
113	0.210	0.243	0.275	0.308	0.341	0.373	0.406
114	0.199	0.233	0.268	0.302	0.337	0.371	0.406
115	0.268	0.291	0.314	0.337	0.360	0.383	0.406
116	0.189	0.225	0.261	0.297	0.334	0.370	0.406
117	0.326	0.339	0.352	0.366	0.379	0.392	0.406
118	0.189	0.225	0.261	0.297	0.334	0.370	0.406
119	0.189	0.225	0.261	0.297	0.334	0.370	0.406
120	0.189	0.225	0.261	0.297	0.334	0.370	0.406
121	0.189	0.225	0.261	0.297	0.334	0.370	0.406
122	0.189	0.225	0.261	0.297	0.334	0.370	0.406
123	0.276	0.298	0.319	0.341	0.362	0.384	0.406
124	0.189	0.225	0.261	0.297	0.334	0.370	0.406
125	0.189	0.225	0.261	0.297	0.334	0.370	0.406
126	0.189	0.225	0.261	0.297	0.334	0.370	0.406
127	0.189	0.225	0.261	0.297	0.334	0.370	0.406
128	0.189	0.225	0.261	0.297	0.334	0.370	0.406
129	0.189	0.225	0.261	0.297	0.334	0.370	0.406
130	0.189	0.225	0.261	0.297	0.334	0.370	0.406
131	0.189	0.225	0.261	0.297	0.334	0.370	0.406
132	0.189	0.225	0.261	0.297	0.334	0.370	0.406
133	0.226	0.256	0.286	0.316	0.346	0.376	0.406
134	0.189	0.225	0.261	0.297	0.334	0.370	0.406
135	0.225	0.255	0.285	0.315	0.346	0.376	0.406

TC=5 MINUTES

SOIL TYPE	% Impervious						
	40	50	60	70	80	90	100
	Q _{pm} =ACRES x Value Shown						
136	0.189	0.225	0.261	0.297	0.334	0.370	0.406
137	0.207	0.240	0.273	0.306	0.339	0.373	0.406
138	0.189	0.225	0.261	0.297	0.334	0.370	0.406
139	0.298	0.316	0.334	0.352	0.370	0.388	0.406
140	0.189	0.225	0.261	0.297	0.334	0.370	0.406
141	0.189	0.225	0.261	0.297	0.334	0.370	0.406
142	0.189	0.225	0.261	0.297	0.334	0.370	0.406
143	0.189	0.225	0.261	0.297	0.334	0.370	0.406
144	0.189	0.225	0.261	0.297	0.334	0.370	0.406
145	0.189	0.225	0.261	0.297	0.334	0.370	0.406
146	0.189	0.225	0.261	0.297	0.334	0.370	0.406
147	0.189	0.225	0.261	0.297	0.334	0.370	0.406
148	0.189	0.225	0.261	0.297	0.334	0.370	0.406
149	0.189	0.225	0.261	0.297	0.334	0.370	0.406
150	0.189	0.225	0.261	0.297	0.334	0.370	0.406
151	0.243	0.270	0.297	0.325	0.352	0.379	0.406
152	0.189	0.225	0.261	0.297	0.334	0.370	0.406
153	0.189	0.225	0.261	0.297	0.334	0.370	0.406
154	0.201	0.236	0.270	0.304	0.338	0.372	0.406
155	0.189	0.225	0.261	0.297	0.334	0.370	0.406
156	0.189	0.225	0.261	0.297	0.334	0.370	0.406
157	0.189	0.225	0.261	0.297	0.334	0.370	0.406
158	0.189	0.225	0.261	0.297	0.334	0.370	0.406
159	0.189	0.225	0.261	0.297	0.334	0.370	0.406
160	0.189	0.225	0.261	0.297	0.334	0.370	0.406
161	0.189	0.225	0.261	0.297	0.334	0.370	0.406
162	0.212	0.245	0.277	0.309	0.341	0.373	0.406
163	0.300	0.318	0.335	0.353	0.370	0.388	0.406
164	0.192	0.228	0.263	0.299	0.334	0.370	0.406
165	0.189	0.225	0.261	0.297	0.334	0.370	0.406
166	0.189	0.225	0.261	0.297	0.334	0.370	0.406
167	0.249	0.275	0.301	0.327	0.353	0.380	0.406
168	0.189	0.225	0.261	0.297	0.334	0.370	0.406
169	0.233	0.261	0.290	0.319	0.348	0.377	0.406
170	0.189	0.225	0.261	0.297	0.334	0.370	0.406
171	0.193	0.229	0.264	0.300	0.335	0.370	0.406
172	0.189	0.225	0.261	0.297	0.334	0.370	0.406

EXAMPLE: FOR A 3 ACRE SITE, SOIL TYPE 150, COMMERCIAL PROPERTY WITH 90% IMPERVIOUSNESS

$$Q_{PM} = (3.0) \text{ ACRES } \times 0.370 = 1.11 \text{ CFS}$$

RECORDING REQUESTED BY AND MAIL TO:

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY DIVISION
900 S. FREMONT AVENUE, 3RD FLOOR
ALHAMBRA, CA 91803-1331

Space above this line is for Recorder's use

MAINTENANCE COVENANT FOR STANDARD URBAN STORMWATER MITIGATION (SUSMP) REQUIREMENTS

Pursuant to Section 106.4.3 of the County of Los Angeles Building Code and Title 12, Chapter 12.8 of the Los Angeles County Code relating to the control of pollutants carried by stormwater runoff, structural and/or treatment control Best Management Practices (BMP's) have been installed on the following property:

LEGAL DESCRIPTION

ASSESSOR'S ID # _____ TRACT NO. _____ LOT NO. _____

ADDRESS: _____

I (we) _____, hereby certify that I (we) am (are) the legal owner(s) of
(Legal Name of Property Owners)

property indicated above, and as such owners for the mutual benefit of future purchasers, their heirs, successors, and assigns, do hereby fix the following protective conditions to which their property, or portions thereof, shall be held, sold and/or conveyed.

That owner(s) shall maintain the drainage devices such as paved swales, bench drains, inlets, catch basins, downdrains, pipes, and water quality devices on the property indicated above and as shown on plans permitted by the Los Angeles County Department of Public Works, in a good and functional condition to safeguard the property owners and adjoining properties from damage and pollution.

That owner(s) shall conduct maintenance inspection of all Structural or Treatment Control BMP's on the property at least once a year and retain proof of the inspection. Said maintenance inspection shall verify the legibility of all required stencils and signs and shall repaint and label as necessary.

That owner(s) shall provide printed educational materials with any sale of the property which provide information on what stormwater management facilities are present, the type(s) and location(s) of maintenance signs that are required, and how the necessary maintenance can be performed.

Owner(s):

By: _____ Date: _____

By: _____ Date: _____

(PLEASE ATTACH NOTARY)

EXAMPLE BEST MANAGEMENT PRACTICES (BMPs)

The following are examples of BMPs that can be used for minimizing the introduction of pollutants of concern that may result in significant impacts, generated from site runoff to the storm water conveyance system. (See Reference 1: Suggested resources for additional sources of information):

- \$ Provide reduced width sidewalks and incorporate landscaped buffer areas between sidewalks and streets. However, sidewalk widths must still comply with regulations for the Americans with Disabilities Act and other life safety requirements.
- Design residential streets for the minimum required pavement widths needed to comply with all zoning and applicable ordinances to support travel lanes; on-street parking; emergency, maintenance, and service vehicle access; sidewalks; and vegetated open channels.
- Comply with all zoning and applicable ordinances to minimize the number of residential street cul-de-sacs and incorporate landscaped areas to reduce their impervious cover. The radius of cul-de-sacs should be the minimum required to accommodate emergency and maintenance vehicles. Alternative turnarounds should be considered.
- Use permeable materials for private sidewalks, driveways, parking lots, or interior roadway surfaces (examples: hybrid lots, parking groves, permeable overflow parking, etc.).
- Use open space development that incorporates smaller lot sizes.
- Reduce building density.
- Comply with all zoning and applicable ordinances to reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together.
- Comply with all zoning and applicable ordinances to reduce the overall imperviousness associated with parking lots by providing compact car spaces, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spillover parking areas.
- Direct rooftop runoff to pervious areas such as yards, open channels, or vegetated areas, and avoid routing rooftop runoff to the roadway or the stormwater conveyance system.
- Vegetated swales and strips
- Extended/dry detention basins
- Infiltration basin
- Infiltration trenches
- Wet ponds
- Constructed wetlands
- Oil/Water separators
- Catch basin inserts
- Continuous flow deflection/separation systems
- Storm drain inserts
- Media filtration
- Bioretention facility
- Dry-wells
- Cisterns
- Foundation planting
- Catch basin screens
- Normal flow storage/separation systems
- Clarifiers
- Filtration systems
- Primary waste water treatment systems

