
**STORM WATER DISCHARGES ASSOCIATED WITH
THORNTON AVIATION
7520 & 7530 HAYVENHURST AVE.
Van Nuys, CA 91406
WDID # TBD**

STANDARD URBAN STORM WATER MITIGATION PLAN

Prepared: September 29, 2008

Prepared For:
**CASTLE & COOKE AVIATION
7415 HAYVENHURST PLACE
VAN NUYS, CA 91406
(818) 988-8385**

Prepared By:



**TAIT & ASSOCIATES, INC.
701 N. PARKCENTER DRIVE
SANTA ANA, CA 92705
(714) 560-8200**

**STANDARD URBAN STORMWATER MITIGATION PLAN
(SUSMP)**

THORNTON AVIATION
7520 & 7530 HAYVENHURST AVE.
VAN NUYS, CALIFORNIA

Prepared for:

**CASTLE & COOKE AVIATION
7415 HAYVENHURST PLACE
VAN NUYS, CA 91406**

By:

**TAIT & ASSOCIATES, INC.
701 N. PARKCENTER DRIVE
SANTA ANA, CA 92705
(714) 560-8200**

Prepared: September 29, 2008

TABLE OF CONTENTS

SECTION 100 TITLE PAGE INFORMATION.....	1
SECTION 200 CERTIFICATION AND APPROVAL PAGE.....	2
200.1 SUSMP CERTIFICATION AND APPROVAL.....	2
SECTION 300 INTRODUCTION/PROJECT DESCRIPTION.....	3
SECTION 400 REFERENCE SECTION.....	3
SECTION 500 BODY OF SUSMP.....	4
500.1 PURPOSE AND OBJECTIVE.....	4
500.2 DEVELOPMENT CONSTRUCTION REQUIREMENTS.....	4
500.3.1 PEAK STORM WATER RUNOFF DISCHARGE RATES.....	4
500.3.2 CONSERVE NATURAL AREAS.....	4
500.3.3 MINIMIZE STORM WATER POLLUTANTS OF CONCERN.....	4
500.3.4 PROTECT SLOPES AND CHANNELS.....	4
500.3.5 PROVIDE STORM DRAIN SYSTEM STENCILING AND SIGNAGE.....	4
500.3.6 PROPERLY DESIGN OUTDOOR MATERIAL STORAGE AREAS.....	5
500.3.7 PROPERLY DESIGN TRASH STORAGE AREAS.....	5
500.3.8 PROVIDE PROOF OF ONGOING BMP MAINTENANCE.....	5
500.3.9 DESIGN STANDARDS FOR STRUCTURAL OR TREATMENT CONTROL BMPs.....	5
500.3.10 PROVISIONS APPLICABLE TO INDIVIDUAL PRIORITY PROJECT CATEGORIES.....	5
B. 100,000 SQUARE FEET INDUSTRIAL/COMMERCIAL DEVELOPMENTS.....	5
1. PROPERLY DESIGN LOADING/UNLOADING DOCK AREAS.....	5
2. PROPERLY DESIGN REPAIR/MAINTENANCE BAYS.....	5
3. PROPERLY DESIGN VEHICLE/EQUIPMENT WASH AREAS.....	5
C. RESTAURANTS.....	5
1. PROPERLY DESIGN EQUIPMENT/ACCESSORY WASH AREAS.....	5
F. PARKING LOTS.....	5
1. PROPERLY DESIGN PARKING AREAS.....	5
2. PROPERLY DESIGN TO LIMIT OIL CONTAMINATION AND PERFORM MAINTENANCE.....	6
500.3.11 WAIVER.....	6
500.3.12 MITIGATION FUNDING.....	6
500.3.13 LIMITATION ON USE OF INFILTRATION BMPs.....	6
500.3.14 ALTERNATIVE CERTIFICATION FOR STORM WATER TREATMENT MITIGATION.....	6
500.3.15 RESOURCES AND REFERENCES.....	6
SECTION 600 SUSMP ONGOING MAINTENANCE OF PERMANENT BMPs APPROVAL.....	7

SUSMP ATTACHMENTS

<i>Attachment A</i>	<i>Vicinity Map</i>
<i>Attachment B</i>	<i>Stormwater Pollution Control Locations</i>
<i>Attachment C</i>	<i>SUSMP Calculations & Simplified County Hydrology</i>
<i>Attachment D</i>	<i>Maintenance Recordation</i>
<i>Attachment E</i>	<i>Filtration Information</i>
<i>Attachment F</i>	<i>Watershed Information</i>
<i>Attachment G</i>	<i>Additional Information</i>

SECTION 100

TITLE PAGE INFORMATION

Project Name: Thornton Aviation
Van Nuys, California
GR# TBD

Developer: Castle & Cooke Aviation
7415 Hayvenhurst Place
Van Nuys, CA 91406
(818) 988-8385

Job Site Address: 7520 & 7530 Hayvenhurst Ave.
Van Nuys, CA 91406

Person Responsible for Implementing the SUSMP:

Castle & Cooke Aviation
7415 Hayvenhurst Place
Van Nuys, CA 91406
(818) 988-8385

Preparation Date: September 29, 2008

Revision Date:

SECTION 200 SUSMP CERTIFICATION AND APPROVAL PAGE

200.1 SUSMP CERTIFICATION AND APPROVAL

Project Name: Thornton Aviation

To be completed by Preparer

Preparer's Certification: "I certify that this document and all attachments thereto were prepared under my direction or supervision. I further certify that the information contained herein is true and accurate to the best of my knowledge. "

Preparer: TAIT & ASSOCIATES, INC.
JACOB VANDERVIS, P.E.
PROJECT MANAGER

_____ Date

Developer's Approval of the Standard Urban Stormwater Mitigation Plan

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief true, accurate and complete."

_____ Developer's Signature

_____ Date

_____ Developer's Name and Title

_____ Developer's Phone Number

SECTION 300 INTRODUCTION/PROJECT DESCRIPTION

Project Location: The proposed site is located on 1.49-acres in the City of Van Nuys, County of Los Angeles, California. The site is currently on the Van Nuys Airport. The bordering street around the site is Hayvenhurst Avenue to the west. The general location of the site is located in Attachment A.

Project Description: Within the property are two existing hangars and a small paved area on the southwest of the site. The proposed site will consist of one large hangar and an office support building. The drainage pattern will be kept similar to the existing pattern, the change will be within the storm water that goes to the flow line east of the site, this will be minimized and 90% will convey to Hayvenhurst Avenue.

Estimated Construction Start and Finish: Start: Spring 2009 Finish: Spring 2010

SECTION 400 REFERENCE SECTION

The following documents are made a part of this SUSMP by reference:

Project Grading Plans
Prepared by: TAIT & ASSOCIATES, INC.
701 PARKCENTER DRIVE
SANTA ANA, CA 92705

SECTION 500 BODY OF SUSMP

500.1 PURPOSES AND OBJECTIVE

- *The purpose and objective of this SUSMP is to:*
 - *Effectively prohibit non-storm water discharges into the storm drain.*
 - *Reduce the discharge of pollutants into the storm water to the maximum extent practical (MEP).*

500.2 DEVELOPMENT CONSTRUCTION REQUIREMENTS

The WDID number for this project is TBD.

The Contractor and Owner have been made aware that the selected BMPs must be installed, monitored and maintained to ensure their effectiveness. They have also been notified that grading during the wet season (October 1 through April 15) requires the Contractor to conduct and document self on-site inspections during rain events exceeding 0.1 inch over a 24 hour period and susceptible slopes shall be covered. The inspector must also inspect the project weekly during the rainy season to ensure compliance.

500.3.1 PEAK STORM WATER RUNOFF DISCHARGE RATES

This condition is not applicable since there is limited potential for downstream erosion.

500.3.2 CONSERVE NATURAL AREAS

No natural areas remain on this site. This site will promote natural vegetation by the use of parking lot islands and additional landscaped areas. Trees and other vegetation will be planted in these areas to increase water infiltration into the native soil and reduce the imperviousness of the site.

500.3.3 MINIMIZE STORM WATER POLLUTANTS OF CONCERN

The site has been designed to collect site runoff and minimize pollutants by having the discharge from impervious areas directed through treatment system. The use of Kristar FloGard Downspout Filters will treat the associated storm water on the roof, the parking lot area south of the hangar and the run-on collected in a U-gutter north of the site will be treated with a FloGard Trash and Debris Guard with a Fossil Rock pouch for Hydrocarbon removal. A bioswale will be utilized to treat the portion of the parking lot west of the Hangar. The site eventually discharges to the Bull Creek, Los Angeles River Reach 6, Los Angeles River Reach 5, Reach 4, Reach 3, Reach 2, Reach 1 and Los Angeles River/Long Beach Inner Harbor, which are on the 303(d) list for California. Refer to Attachment F for additional information. The pollutants of concern for these rivers are as follows: coliform bacteria, cyanide, diazinon, trash, oil, dichloroethane/vinylidene chloride, tetrachloroethylene/PCE, trichloroethylene/TCE, copper, DDT, PCBs, Sediment Toxicity, Zinc, benthic community effects and beach closures. Pollutants of concern will be removed by the bioswale prior to entering the public storm drain system or the ground water table.

500.3.4 PROTECT SLOPES AND CHANNELS

This project does not have unlined channels onsite or slopes of a magnitude to require specific treatment.

500.3.5 PROVIDE STORM DRAIN SYSTEM STENCILING AND SIGNAGE

This project does not contain any drain inlets or catch basins therefore will not need stenciling or signage.

500.3.6 PROPERLY DESIGN OUTDOOR MATERIAL STORAGE AREAS

Outdoor material storage is in one location on this site at the northwest corner. Additional information can be found in Attachment G “Outdoor Material Storage Areas”.

500.3.7 PROPERLY DESIGN TRASH STORAGE AREAS

The projects trash enclosure is designed with a lid. The external trash enclosure is designed with a wall and grade breaks to divert storm water from the surrounding area diverted away from the trash area. Location is shown on Attachment B. Additional information can be found in Attachment G “Trash Storage Areas”.

500.3.8 PROVIDE PROOF OF ONGOING BMP MAINTENANCE

The developer shall provide proof that the maintenance requirements of permanent features have been recorded against the title of the property with the County Recorder. The covenant & agreement is included in Attachment D.

The developer shall submit reports of ongoing maintenance of permanent BMP’s at least once a year and ensure that maintenance is a condition of property transfer. Developer approval of these requirements is included in Section 600.1.

500.3.9 DESIGN STANDARDS FOR STRUCTURAL OR TREATMENT CONTROL BMPs

The volume has been determined for the 0.75 – inch storm event using the County Method taken from the Los Angeles County Department of Public Works “Standard Urban Storm Water Mitigation Plan. The site treatment will be designed using a Flow Based Treatment Control BMP in the form of multiple Downspout Filters located on the buildings. The flow of runoff produced from a rain event will be equal to at least 0.239 inches per hour intensity. For calculations see Attachment C. For downspout filter locations and Flo-Guard trash & debris guard refer to the projects grading plans and Attachment B “BMP Locations”.

500.3.10 PROVISIONS APPLICABLE TO INDIVIDUAL PRIORITY PROJECT CATEGORIES

B. 100,000 SQUARE FEET INDUSTRIAL/COMMERCIAL DEVELOPMENTS

1. PROPERLY DESIGN LOADING/UNLOADING DOCK AREAS

This project does not contain any loading/unloading dock areas.

2. PROPERLY DESIGN REPAIR/MAINTENANCE BAYS

This project does not contain any repair/maintenance bays.

3. PROPERLY DESIGN VEHICLE/EQUIPMENT WASH AREAS

This project does not contain vehicle/equipment wash areas.

C. RESTAURANTS

1. PROPERLY DESIGN EQUIPMENT/ACCESSORY WASH AREAS

This project does not contain any restaurants.

F. PARKING LOTS

1. PROPERLY DESIGN PARKING AREA

The parking lots associated with the project are designed to treat the site runoff before discharging to the public storm drain system through the use of a bioswale for infiltration and a FloGard Trash & Debris Guard with Fossil Rock pouch. For information on bioswales and FloGard BMP, see Attachment E.

2. PROPERLY DESIGN TO LIMIT OIL CONTAMINATION AND PERFORM MAINTENANCE

The parking lots associated with the project are heavily used with more than 25 parking spaces. The accumulated oil, grease, and water insoluble hydrocarbons on-site will be carried to the bioswale and to the FloGard BMP. The combination of these two BMP's will remove pollutants of concern prior to entering the on-site detention system. Refer to Attachment E for more information.

500.3.11 WAIVER

There is no waiver requested at this time.

500.3.12 MITIGATION FUNDING

There is no mitigation funding requested at this time.

500.3.13 LIMITATION ON USE OF INFILTRATION BMPs

At this time, infiltration will not be allowed until a phase 2 report has been prepared to illustrate the potential impacts of infiltrating stormwater.

500.3.14 ALTERNATIVE CERTIFICATION FOR STORM WATER TREATMENT MITIGATION

There is no alternative certification proposed at this time.

500.3.15 RESOURCES AND REFERENCES

1. California Storm Water Best Management Practices Handbooks (2003) for construction activity, Municipal, and Industrial/Commercial

Presents a description of a large variety of Structural BMPs, Treatment Control, BMPs and Source Control BMPs

Los Angeles County Department of Public Works
Cashiers Office
900 S. Fremont Ave.
Alhambra, CA 91803
626-458-6959
or purchased on-line @ www.cabmphandbooks.com

**SECTION 600 SUSMP ONGOING MAINTENANCE OF PERMANENT BMPs
APPROVAL**

Project Name: Thornton Aviation

Developer's Acceptance of Responsibility

"We hereby accept responsibility for maintenance of all Best Management Practices (BMPs) and submittals of reports of ongoing maintenance until the time the property is transferred. We accept responsibility to ensure all future transfers of the property to an owner shall have conditions requiring the recipient to assume responsibility for the maintenance of BMPs. The condition of transfer will include provisions requiring the owner to conduct maintenance inspections at least once a year and retain proof of inspections and will include printed educational material indicating locations of storm water facilities and how maintenance can be performed with the first trust deed transfers. BMP located in a common area will be maintained by an association and the CC&R's will include maintenance requirements."

Developer's Signature

Date

Developer's Name

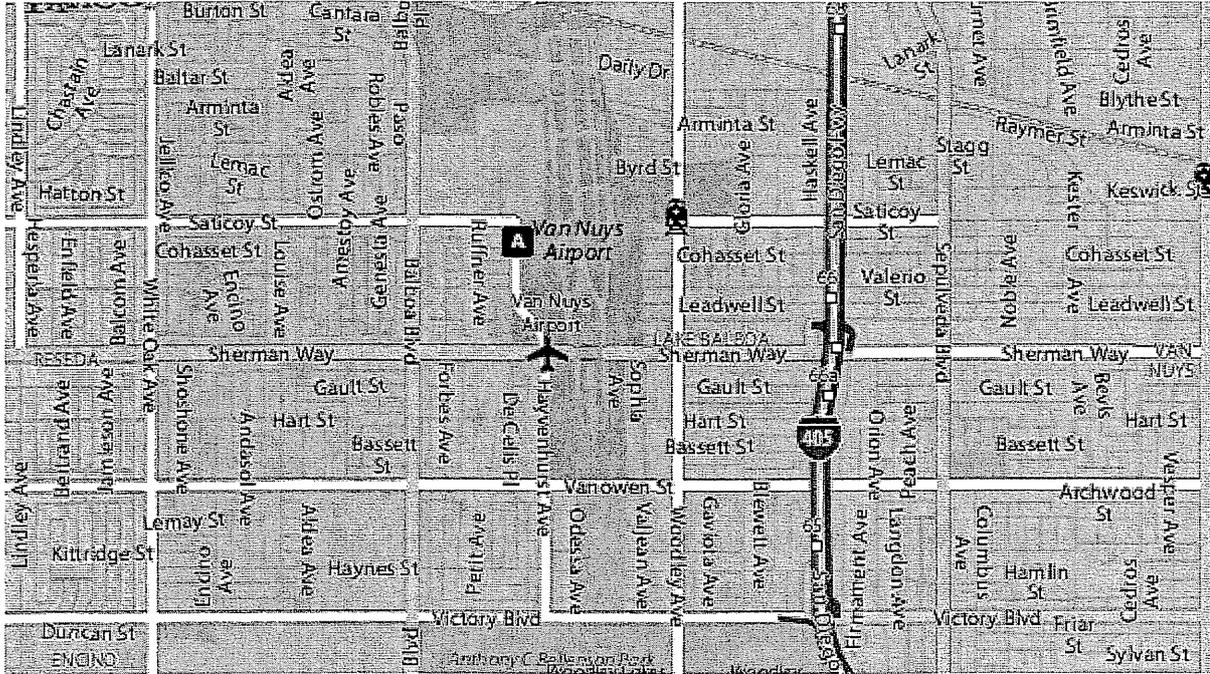
Developer's Phone Number

ATTACHMENT A
Vicinity Map

Following Page

VICINITY MAP

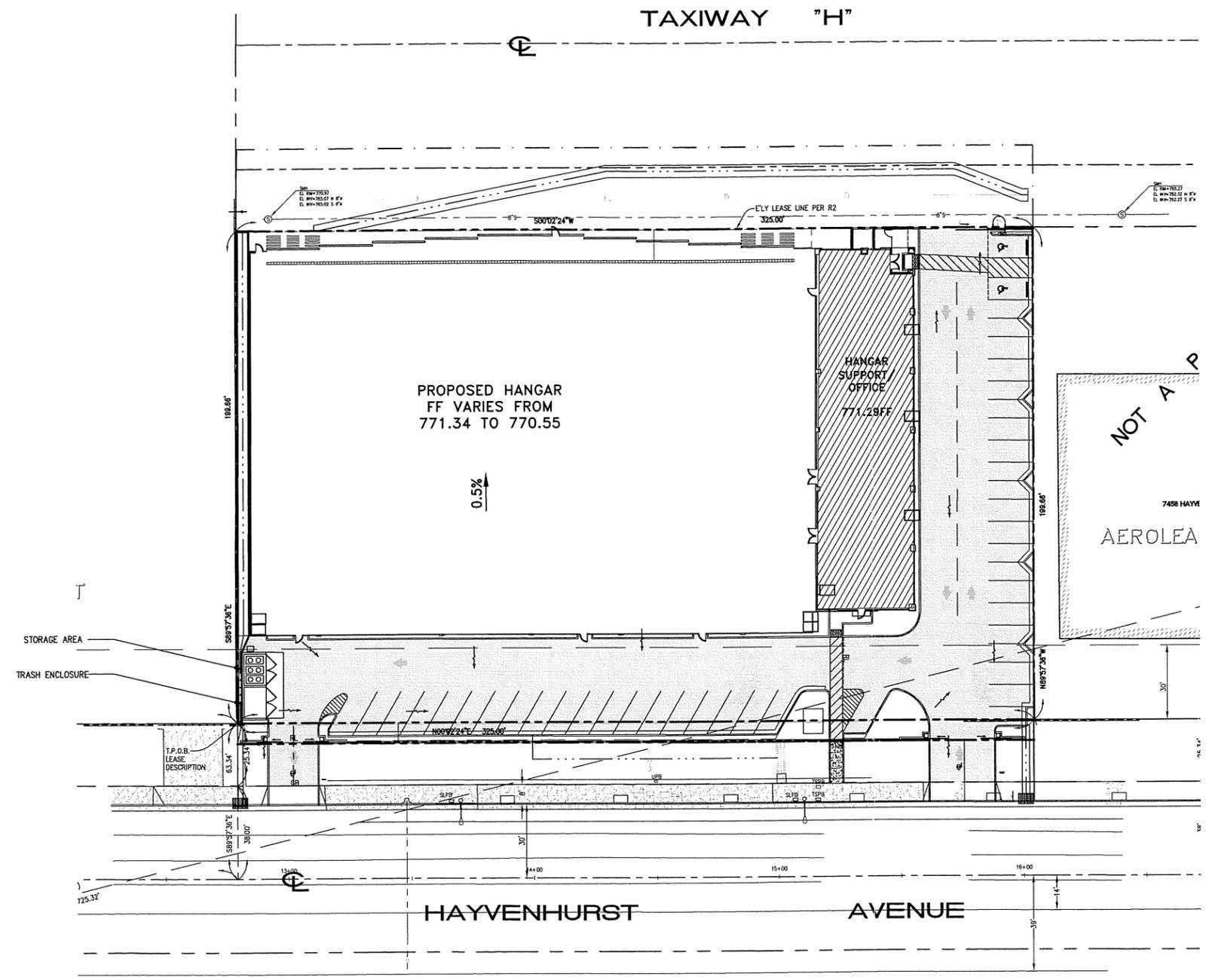
NTS



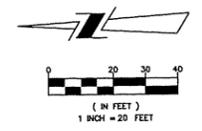
A= Site (7520 & 7530 Hayvenhurst Avenue)

ATTACHMENT B
Stormwater Pollution Control Locations

Following Page



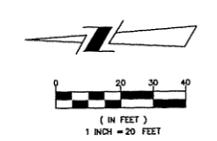
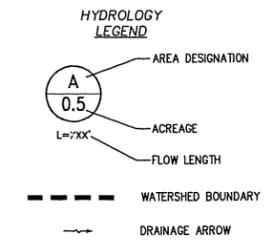
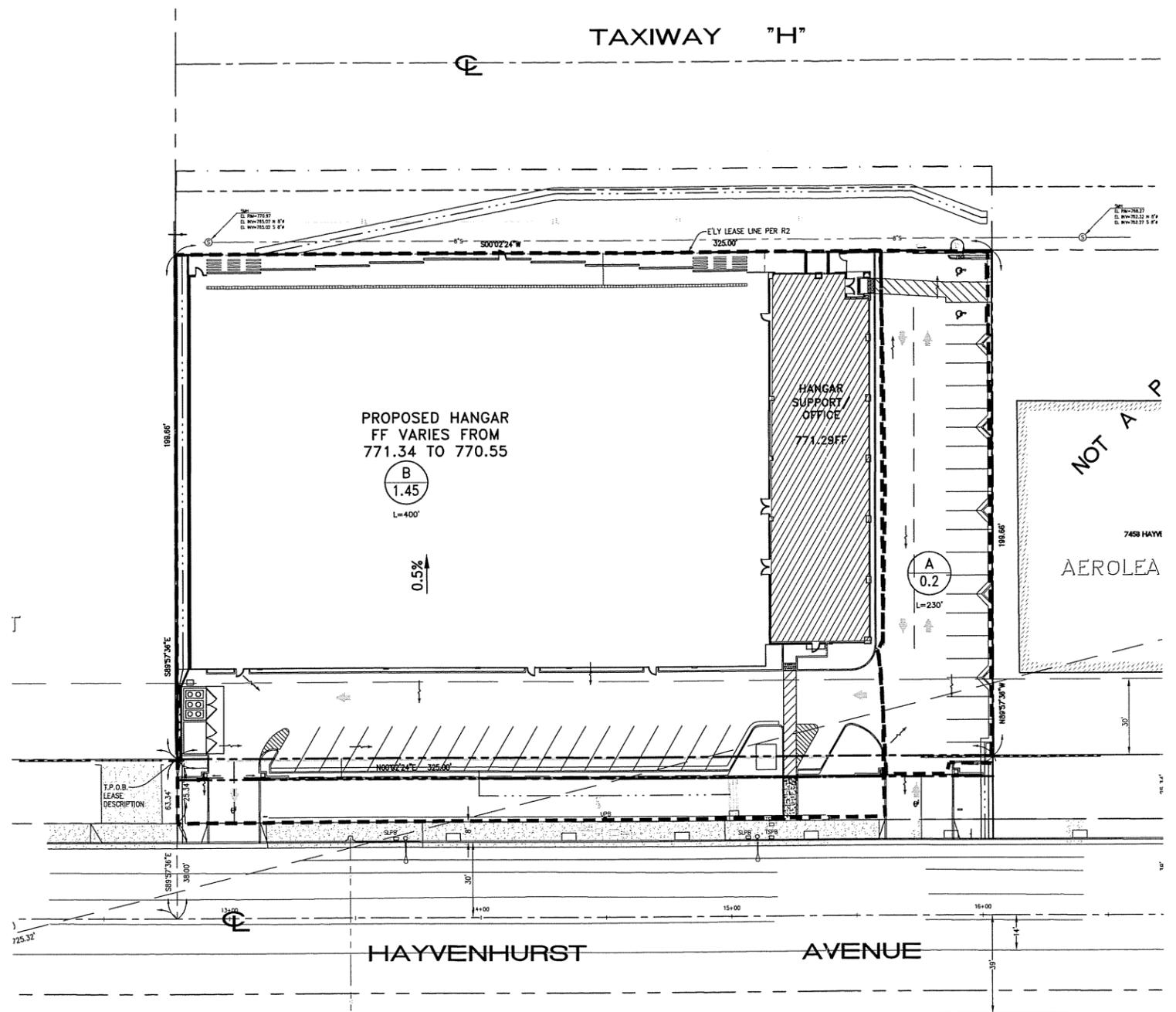
- BMP LEGEND**
- FLOGARD DOWNSPOUT FILTERS-B
 - BIOSWALE
 - ▨ FLOGARD TRASH & DEBRIS GUARD WITH FOSSIL ROCK POUCE



<p>BMP LOCATIONS</p> <p>THORNTON AVIATION 7350 & 7350A HAYVENHURST BLVD C/O CASTLE & COOKE AVIATION 7415 HAYVENHURST PLACE WANAHA, CA 91488</p>		<p>Tait & Associates, Inc. Engineering - Architecture - Environmental 1714 9th Street, Suite 200 San Diego, CA 92101 (619) 594-0200 • (619) 594-0211 fax</p>	
<p>DATE: 02-28-08 CHECKED: J.V. DATE: _____ DATE: _____ JOB NO: SP6594</p>	<p>DATE: _____ DATE: _____ DATE: _____</p>	<p>DATE: _____ DATE: _____ DATE: _____</p>	<p>DATE: _____ DATE: _____ DATE: _____</p>
<p>OF</p>	<p>DESCRIPTION</p>	<p>REVISIONS</p>	<p>DESCRIPTION</p>

ATTACHMENT C
SUSMP Calculations & Simplified County Hydrology

Following Pages



	Tait & Associates, Inc. <small>Engineering - Architecture - Environmental</small> <small>701 North Park Avenue, Suite 200</small> <small>Van Nuys, CA 91411</small> <small>(818) 708-2000 (714) 882-8311 Fax</small> <small>www.tait.com</small>					
CONCEPTUAL HYDROLOGY MAP						
THORNTON AVIATION <small>1804 S. VAN NUYS AVENUE, SUITE 200</small> <small>VAN NUYS, CA 91411</small>						
C/O CASTLE & COOKE AVIATION <small>17400 VAN NUYS, CA 91406</small>						
<small>DRAWN S.R.</small> <small>DATE: 02-26-08</small> <small>ED: J.V.</small> <small>DATE: 03-11-08</small> <small>REVISION #:</small> <small>DATE:</small> <small>JOB NO: SP6584</small>						
OF						
REVISIONS	NO.	DESCRIPTION	BY	DATE	CHK	IND

AREA A

At (total)	0.110 acres
Ai (impervious)	0.110 acres
Ap (pervious)	0.000 acres
Au	0.000 acres
Type of Development	Commercial
Predominant Soil Type #	18
% of Project Impervious	100.00 %
% of Project Pervious	0.00 %
% of Project Contributing Undeveloped Area	0.00 %
IMP (Proportion Impervious)	1.000
Tc (initial)	12 min
Ix (initial)	0.297 in/hr
Cu	0.38
Cd	0.900
Length	136 LF
Slope	1.400 %

Tc (calculated)	11.74 min.
Intensity	0.239 in/hr
Qpm	0.024 cfs
Vm	269.53 ft³

AREA C

At (total)	0.100 acres
Ai (impervious)	0.100 acres
Ap (pervious)	0.000 acres
Au	0.000 acres
Type of Development	Commercial
Predominant Soil Type #	18
% of Project Impervious	100.00 %
% of Project Pervious	0.00 %
% of Project Contributing Undeveloped Area	0.00 %
IMP (Proportion Impervious)	1.000
Tc (initial)	9 min
Ix (initial)	0.339 in/hr
Cu	0.38
Cd	0.900
Length	95 LF
Slope	1.400 %

Tc (calculated)	9.21 min.
Intensity	0.323 in/hr
Qpm	0.029 cfs
Vm	245.03 ft³

AREA B

At (total)	1.450 acres
Ai (impervious)	1.310 acres
Ap (pervious)	0.140 acres
Au	0.000 acres
Type of Development	Commercial
Predominant Soil Type #	18
% of Project Impervious	90.00 %
% of Project Pervious	10.00 %
% of Project Contributing Undeveloped Area	0.00 %
IMP (Proportion Impervious)	0.900
Tc (initial)	26 min
Ix (initial)	0.206 in/hr
Cu	0.38
Cd	0.848
Length	440 LF
Slope	1.400 %

Tc (calculated)	25.80 min.
Intensity	0.297 in/hr
Qpm	0.368 cfs
Vm	3354.66 ft³

STANDARD URBAN STORM WATER MITIGATION PLAN
FOR LOS ANGELES COUNTY AND CITIES IN LOS ANGELES COUNTY

LOS ANGELES COUNTY URBAN RUNOFF AND STORM WATER NPDES PERMIT

STANDARD URBAN STORM WATER MITIGATION PLAN

BACKGROUND

The municipal storm water National Pollutant Discharge Elimination System (NPDES) permit (Los Angeles County Permit) issued to Los Angeles County and 85 cities (Permittees) by the Los Angeles Regional Water Quality Control Board (Regional Board) on July 15, 1996, required the development and implementation of a program addressing storm water pollution issues in development planning for private projects. The same requirements are applicable to the City of Long Beach under its separate municipal storm water permit (City of Long Beach MS4 Permit), which was issued on June 30, 1999.

On December 13, 2001, the Regional Board issued a new NPDES Permit to the County of Los Angeles and 84 Permittees. The Program is being updated based on the 2001 Permit.

The requirement to implement a program for development planning is based on, federal and state statutes including: Section 402 (p) of the Clean Water Act, Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990, and the California Water Code. The Clean Water Act amendments of 1987 established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES program. The primary objectives of the municipal storm water program requirements are to:

1. Effectively prohibit non-storm water discharges, and
2. Reduce the discharge of pollutants from storm water conveyance systems to the Maximum Extent Practicable (MEP) statutory standard.

The Standard Urban Storm Water Mitigation Plan (SUSMP) was developed as part of the municipal storm water program to address storm water pollution from new Development and Redevelopment by the private sector. This SUSMP contains a list of the minimum required Best Management Practices (BMPs) that must be used for a designated project. Additional BMPs may be required by ordinance or code adopted by the Permittee and applied generally or on a case by case basis. The Permittees are required to adopt the requirements set herein in their own SUSMP. Developers must incorporate appropriate SUSMP requirements into their project plans. Each Permittee will approve the project plan as part of the development plan approval process and prior to issuing building and grading permits for the projects covered by the SUSMP

requirements.

All projects that fall into one of nine categories are identified in the 2001 Los Angeles County MS4 Permit as requiring SUSMPs. These categories are:

- Single-family hillside home (only development of one acre or more of surface area is subject to the SUSMP numerical design criteria requirement);
- Ten or more unit homes (including single family homes, multifamily homes, condominiums, and apartments);
- A 100,000 or more square feet of impervious surface area industrial/commercial developments;
- Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539);
- Retail gasoline outlets;
- Restaurants (SIC 5812);
- Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces;
- Redevelopment projects in subject categories that meet Redevelopment thresholds; and
- Location within or directly adjacent to or discharging directly to an environmentally sensitive area.

The City of Long Beach permit requires SUSMP for the following categories only: (i) 10-99 home subdivisions; (ii) 100 or more subdivisions; (iii) 100,000 or more square foot commercial developments; and (iv) Projects located adjacent to or discharging to environmentally sensitive areas. For the remaining five categories, equivalent requirements have been included directly in the City of Long Beach Storm Water Management Plan.

Permittees shall have amended codes and ordinances, if necessary, not later than August 1, 2002, to give legal effect to the SUSMP requirements. The SUSMP requirements for projects identified herein took effect on September 2, 2002.

DEFINITIONS

“100,000 Square Foot Commercial Development” means any commercial development that creates at least 100,000 square feet of impermeable area, including parking areas. “Automotive Repair Shop” means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

“Best Management Practice (BMP)” means methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharge including storm water. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

“Commercial Development” means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, multi-apartment buildings, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

“Directly Connected Impervious Area (DCIA)” means the area covered by a building, impermeable pavement, and/ or other impervious surfaces, which drains directly into the storm drain without first flowing across permeable land area (e.g. lawns).

“Environmentally Sensitive Area” means an area “in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments” (California Public Resources Code § 30107.5). Areas subject to storm water mitigation requirements are: areas designated as Significant Ecological by the County of Los Angeles (Los Angeles County Significant Areas Study, Los Angeles County Department of Regional Planning (1976) and amendments); an area designated as a Significant Natural Area by the California Department of Fish and Game’s Significant Natural Areas Program, provided that area has been field verified by the Department of Fish and Game; an area listed in the Basin Plan as supporting the “Rare, Threatened, or Endangered Species (RARE)” beneficial use; and an area identified by a Permittee as environmentally sensitive.

“Greater than (>) 9 unit home subdivision” means any subdivision being developed for 10 or more 10 single-family or multi-family dwelling units.

“Hillside” means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is twenty-five percent or greater.

“Infiltration” means the downward entry of water into the surface of the soil.

“New Development” means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

“Parking Lot” means land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces.

“Redevelopment” means a) land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. 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 post development storm water quality control requirements, the entire project must be mitigated. Where Redevelopment results in an alteration to less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, only the alteration must be mitigated, and not the entire development. b) Redevelopment 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. c) Existing single-family structures are exempt from the Redevelopment requirements.

“Restaurant” means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption. (SIC code 5812).

“Retail Gasoline Outlet” means any facility engaged in selling gasoline and lubricating oils.

“Source Control BMP” means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

“Storm Event” means a rainfall event that produces more than 0.1 inch of precipitation and that, which is separated from the previous storm event by at least 72 hours of dry weather.

“Structural BMP” means any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both Treatment Control BMPs and Source Control BMPs.

“Treatment” means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media adsorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

“Treatment Control BMP” means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process.

CONFLICTS WITH LOCAL PRACTICES

Where provisions of the SUSMP requirements conflict with established local codes, (e.g., specific language of signage used on storm drain stenciling), the Permittee may continue the local practice and modify the SUSMP to be consistent with the code, except that to the extent that the standards in the SUSMP are more stringent than those under local codes, such more stringent standards shall apply.

SUSMP PROVISIONS APPLICABLE TO ALL CATEGORIES

REQUIREMENTS

1. PEAK STORM WATER RUNOFF DISCHARGE RATES

Post-development peak storm water runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion.

2. CONSERVE NATURAL AREAS

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Concentrate or cluster Development on portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- 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.

3. MINIMIZE STORM WATER POLLUTANTS OF CONCERN

Storm water runoff from a site has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm water conveyance system. The development must be designed so as to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system as approved by the building official. Pollutants of concern, consist of any pollutants that exhibit one or more of the following characteristics: current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water, elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant are at a concentrations or loads considered potentially toxic to humans and/or flora and fauna.

In meeting this specific requirement, "minimization of the pollutants of concern" will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the Maximum Extent Practicable. Those BMPs best suited for that purpose are those listed in the *California Storm Water Best Management Practices Handbooks*; *Caltrans Storm Water Quality Handbook: Planning and Design Staff Guide*; *Manual for Storm Water Management in Washington State*; *The Maryland Stormwater Design Manual*; *Florida Development Manual: A Guide to Sound Land and Water Management*; *Denver Urban Storm Drainage Criteria Manual*,

Volume 3 – Best Management Practices and Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, USEPA Report No. EPA-840-B-92-002, as “likely to have significant impact” beneficial to water quality for targeted pollutants that are of concern at the site in question. However, it is possible that a combination of BMPs not so designated, may in a particular circumstance, be better suited to maximize the reduction of the pollutants.

Examples of BMPs that can be used for minimizing the introduction of pollutants of concern generated from site runoff are identified in Table 2. Any BMP not specifically approved by the Regional Board in Resolution No. 99-03, “Approving Best Management Practices for Municipal Storm Water and Urban Runoff Programs in Los Angeles County”, for development planning may be used if they have been recommended in one of the above references.

4. PROTECT SLOPES AND CHANNELS

Project plans must include BMPs consistent with local codes and ordinances and the SUSMP to decrease the potential of slopes and/or channels from eroding and impacting storm water runoff:

- Convey runoff safely from the tops of slopes and stabilize disturbed slopes.
- Utilize natural drainage systems to the maximum extent practicable
- Control or reduce or eliminate flow to natural drainage systems to the maximum extent practicable
- Stabilize permanent channel crossings.
- Vegetate slopes with native or drought tolerant vegetation.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion, with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers and the California Department of Fish and Game

5. PROVIDE STORM DRAIN SYSTEM STENCILING AND SIGNAGE

Storm drain stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets. The stencil contains a brief statement that prohibits the dumping of improper materials into the storm water conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message.

- All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: “NO DUMPING – DRAINS TO OCEAN”) and/or graphical icons to discourage illegal dumping.
- Signs and prohibitive language and/or graphical icons, which prohibit illegal

dumping, must be posted at public access points along channels and creeks within the project area.

- Legibility of stencils and signs must be maintained.

6. PROPERLY DESIGN OUTDOOR MATERIAL STORAGE AREAS

Outdoor material storage areas refer to storage areas or storage facilities solely for the storage of materials. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the storm water conveyance system. Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system, the following Structural or Treatment BMPs are required:

- Materials with the potential to contaminate storm water must be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm water conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.
- The storage area must be paved and sufficiently impervious to contain leaks and spills.
- The storage area must have a roof or awning to minimize collection of storm water within the secondary containment area.

7. PROPERLY DESIGN TRASH STORAGE AREAS

A trash storage area refers to an area where a trash receptacle or receptacles are located for use as a repository for solid wastes.

Loose trash and debris can be easily transported by the forces of water or wind into nearby storm drain inlets, channels, and/or creeks. All trash container areas must meet the following Structural or Treatment Control BMP requirements (individual single family residences are exempt from these requirements):

- Trash container areas must have drainage from adjoining roofs and pavement diverted around the area(s).
- Trash container areas must be screened or walled to prevent off-site transport of trash.

8. PROVIDE PROOF OF ONGOING BMP MAINTENANCE

Improper maintenance is one of the most common reasons why water quality controls will not function as designed or which may cause the system to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly. As part of project review, if a project applicant has included or is required to include, Structural or Treatment Control BMPs in project plans, the Permittee shall require that the applicant provide verification of maintenance provisions through such means as may be appropriate, including, but not limited to legal agreements, covenants, CEQA mitigation requirements and/or Conditional Use Permits.

For all properties, the verification will include the developer's signed statement, as part of the project application, accepting responsibility for all structural and treatment control BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance. The transfer of property to a private or public owner must have conditions requiring the recipient to assume responsibility for maintenance of any Structural or Treatment Control BMP to be included in the sales or lease agreement for that property, and will be the owner's responsibility. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all Structural or Treatment Control BMPs at least once a year and retain proof of inspection. For residential properties where the Structural or Treatment Control BMPs are located within a common area which will be maintained by a homeowner's association, language regarding the responsibility for maintenance must be included in the projects conditions, covenants and restrictions (CC&Rs). Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the Permittee can provide. The transfer of this information shall also be required with any subsequent sale of the property.

If Structural or Treatment Control BMPs are located within a public area proposed for transfer, they will be the responsibility of the developer until they are accepted for transfer by the County or other appropriate public agency. Structural or Treatment Control BMPs proposed for transfer must meet design standards adopted by the public entity for the BMP installed and should be approved by the County or other appropriate public agency prior to its installation.

9. DESIGN STANDARDS FOR STRUCTURAL OR TREATMENT CONTROL BMPs

Structural or Treatment control BMPs selected for use at any of the following categories of planning development project shall meet the design standards of this Section unless specifically exempted:

- a) Single-family hillside residential developments of one acre or more of surface area;

- b) Housing developments (includes single family homes, multifamily homes, condominium, and apartments) of ten units or more;
- c) A 100,000 square feet or more impervious surface area industrial/commercial development;
- d) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7538) [5,000 square feet or more of surface area];
- e) Retail gasoline outlets [5,000 square feet or more impervious surface area and with projected Average Daily Traffic (ADT) of 100 or more vehicles]. Subsurface Treatment Control BMPs which may endanger public safety (i.e., create an explosive environment) are considered not appropriate;
- f) Restaurants (SIC 5812) [5,000 square feet or more of surface area];
- g) Parking lot 5,000 square feet or more of surface area or with 25 or more parking spaces;
- h) Projects located in, adjacent to or discharging directly to an ESA that meet the following threshold conditions:
 - (1) Discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat; and
 - (2) Create 2,500 square feet or more of impervious surface area.
- i) Redevelopment projects in subject categories that meet Redevelopment thresholds.

Post-construction Structural or Treatment Control BMPs shall be designed to:

A. Mitigate (infiltrate or treat) storm water runoff from either:

- a) Volumetric Treatment Control BMP
 - (1) The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998), or
 - (2) The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (1993), or
 - (3) The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
 - (4) The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

Or

- b) Flow Based Treatment Control BMP
 - (1) The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or
 - (2) The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County, or
 - (3) The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

AND

- B. Control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.

Limited Exclusion

Restaurants, where the land area for development or redevelopment is less than 5,000 square feet, are excluded from the numerical Structural or Treatment Control BMP design standard requirement only.

10. PROVISIONS APPLICABLE TO INDIVIDUAL PRIORITY PROJECT CATEGORIES

REQUIREMENTS

A. SINGLE-FAMILY HILLSIDE HOME

- (1) Conserve natural areas;
- (2) Protect slopes and channels;
- (3) Provide storm drain system stenciling and signage;
- (4) Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability; and
- (5) Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability

B. 100,000 SQUARE FEET INDUSTRIAL/COMMERCIAL DEVELOPMENTS

1. PROPERLY DESIGN LOADING/UNLOADING DOCK AREAS

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
- Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

2. PROPERLY DESIGN REPAIR/MAINTENANCE BAYS

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- Repair/maintenance bays must be indoors or designed in such a way that do not allow storm water runoff or contact with storm water runoff.
- Design a repair/maintenance bay drainage system to capture all washwater, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

3. PROPERLY DESIGN VEHICLE/EQUIPMENT WASH AREAS

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. The area in the site design must be:

- Self-contained and/ or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer.

C. RESTAURANTS

1. PROPERLY DESIGN EQUIPMENT/ACCESSORY WASH AREAS

The activity of outdoor equipment/accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

- Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer.
- If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer.

D. RETAIL GASOLINE OUTLETS

1. PROPERLY DESIGN FUELING AREA

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

- The fuel dispensing area must be covered with an overhanging 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.
- The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
- The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.
- At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

E. AUTOMOTIVE REPAIR SHOPS

1. PROPERLY DESIGN FUELING AREA

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. Therefore, design plans, which include fueling areas, must contain the following:

- The fuel dispensing area should be covered with an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area.
- The fuel dispensing areas must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
- The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water.
- At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

2. PROPERLY DESIGN REPAIR/MAINTENANCE BAYS

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.
- Design a repair/maintenance bay drainage system to capture all wash-water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

3. PROPERLY DESIGN VEHICLE/EQUIPMENT WASH AREAS

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:

- Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility.

4. PROPERLY DESIGN LOADING/UNLOADING DOCK AREAS

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
- Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

F. PARKING LOTS

1. PROPERLY DESIGN PARKING AREA

Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor-vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

- Reduce impervious land coverage of parking areas
- Infiltrate runoff before it reaches storm drain system.
- Treat runoff before it reaches storm drain system

2. PROPERLY DESIGN TO LIMIT OIL CONTAMINATION AND PERFORM MAINTENANCE

Parking lots may accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks.

- Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g. fast food outlets, lots with 25 or more parking spaces , sports event parking lots, shopping malls, grocery stores, discount warehouse stores)
- Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal, and system fouling and plugging prevention control

11. WAIVER

A Permittee may, through adoption of an ordinance or code incorporating the treatment requirements of the SUSMP, provide for a waiver from the requirement if impracticability for a specific property can be established. A waiver of impracticability shall be granted only when all other Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability include, (i) extreme limitations of space for treatment on a redevelopment project, (ii) unfavorable or unstable soil conditions at a site to attempt infiltration, and (iii) risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than 10 feet from the soil surface. Any other justification for impracticability must be separately petitioned by the Permittee and submitted to the Regional Board for consideration. The Regional Board may consider approval of the waiver justification or may delegate the authority to approve a class of waiver justifications to the Regional Board Executive Officer. The supplementary waiver justification becomes recognized and effective only after approval by the Regional Board or the Regional Board Executive Officer. A waiver granted by a Permittee to any development or redevelopment project may be revoked by the Regional Board Executive Officer for cause and with proper notice upon petition.

12. MITIGATION FUNDING

The Permittees may propose a management framework, for endorsement by the Regional Board Executive Officer, to support regional or sub-regional solutions to storm water pollution, where any of the following situations occur:

- a) A waiver for impracticability is granted
- b) Legislative funds become available;
- c) Off-site mitigation is required because of loss of environmental habitat; or
- d) An approved watershed management plan or a regional storm water mitigation plan exists that incorporates an equivalent or improved strategy for storm water mitigation.

13. LIMITATION ON USE OF INFILTRATION BMPs

Three factors significantly influence the potential for storm water to contaminate ground water. They are (i) pollutant mobility, (ii) pollutant abundance in storm water, (iii) and soluble fraction of pollutant. The risk of contamination of groundwater may be reduced by pretreatment of storm water. A discussion of limitations and guidance for infiltration practices is contained in, *Potential Groundwater Contamination from Intentional and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994)*.

In addition, the distance of the groundwater table from the infiltration BMP may also be a factor determining the risk of contamination. A water table distance separation of ten

feet depth in California presumptively poses negligible risk for storm water not associated with industrial activity or high vehicular traffic.

Infiltration BMPs are not recommended for areas of industrial activity or areas subject to high vehicular traffic (25,000 or greater average daily traffic (ADT) on main roadway or 15,000 or more ADT on any intersecting roadway) unless appropriate pretreatment is provided to ensure groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

14. ALTERNATIVE CERTIFICATION FOR STORM WATER TREATMENT MITIGATION

In lieu of conducting detailed BMP review to verify Structural or Treatment Control BMPs adequacy, a Permittee may elect to accept a signed certification from a Civil Engineer or a Licensed Architect registered in the State of California, that the plan meets the criteria established herein. The Permittee is encouraged to verify that certifying person(s) have been trained on BMP design for water quality, not more than two years prior to the signature date. Training conducted by an organization with storm water BMP design expertise (e.g., a University, American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, or the California Water Environment Association) may be considered qualifying.

15. RESOURCES AND REFERENCE

TABLE 3-1

SUGGESTED RESOURCES	HOW TO GET A COPY
<p><i>Start at the Source</i> (1999) by Bay Area Stormwater Management Agencies Association</p> <p>Detailed discussion of permeable pavements and alternative driveway designs presented.</p>	<p>Bay Area Stormwater Management Agencies Association 2101 Webster Street Suite 500 Oakland, CA 510-286-1255</p>
<p><i>Design of Stormwater Filtering Systems</i> (1996) by Richard A. Claytor and Thomas R. Schuler</p> <p>Presents detailed engineering guidance on ten different storm water-filtering systems.</p>	<p>Center for Watershed Protection 8391 Main Street Ellicott City, MD 21043 410-461-8323</p>

<i>Better Site Design: A Handbook for Changing Development Rules in Your Community</i> (1998)	Center for Watershed Protection 8391 Main Street Ellicott City, MD 21043 410-461-8323
Presents guidance for different model development alternatives.	
<i>Design Manual for Use of Bioretention in Stormwater Management</i> (1993)	Prince George's County Watershed Protection Branch 9400 Peppercorn Place, Suite 600 Landover, MD 20785
Presents guidance for designing bioretention facilities.	
<i>Operation, Maintenance and Management of Stormwater Management</i> (1997)	Watershed Management Institute, Inc. 410 White Oak Drive Crawfordville, FL 32327 850-926-5310
Provides a thorough look at stormwater practices including, planning and design considerations, programmatic and regulatory aspects, maintenance considerations, and costs.	
<i>California Storm Water Best Management Practices Handbooks</i> (1993) for Construction Activity, Municipal, and Industrial/Commercial	Los Angeles County Department of Public Works Cashiers Office 900 S. Fremont Avenue Alhambra, CA 91803 626-458-6959
Presents a description of a large variety of Structural BMPs, Treatment Control, BMPs and Source Control BMPs	
<i>Second Nature: Adapting LA's Landscape for Sustainable Living</i> (1999) by Tree People	Tree People 12601 Mullholland Drive Beverly Hills, CA 90210 818-753-4600 (?)
Detailed discussion of BMP designs presented to conserve water, improve water quality, and achieve flood protection.	
<i>Florida Development Manual: A Guide to Sound Land and Water Management</i> (1988)	Florida Department of the Environment 2600 Blairstone Road, Mail Station 3570 Tallahassee, FL 32399 850-921-9472
Presents detailed guidance for designing BMPs	
<i>Stormwater Management in Washington State</i> (1999) Vols. 1-5	Department of Printing State of Washington Department of Ecology P.O. Box 798 Olympia, WA 98507-0798 360-407-7529
Presents detailed guidance on BMP design for new development and construction.	
<i>Maryland Stormwater Design Manual</i> (1999)	Maryland Department of the Environment 2500 Broening Highway Baltimore, MD 21224 410-631-3000
Presents guidance for designing storm water BMPs	

<p><i>Texas Nonpoint Source Book – Online Module</i> (1998)www.txnpsbook.org</p> <p>Presents BMP design and guidance information on-line</p>	<p>Texas Statewide Storm Water Quality Task Force North Central Texas Council of Governments 616 Six Flags Drive Arlington, TX 76005 817-695-9150</p>
<p><i>Urban Storm Drainage, Criteria Manual – Volume 3, Best Management Practices</i> (1999)</p> <p>Presents guidance for designing BMPs</p>	<p>Urban Drainage and Flood Control District 2480 West 26th Avenue, Suite 156-B Denver, CO 80211 303-455-6277</p>
<p><i>Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters</i> (1993) Report No. EPA-840-B-92-002.</p> <p>Provides an overview of, planning and design considerations, programmatic and regulatory aspects, maintenance considerations, and costs.</p>	<p>National Technical Information Service U.S. Department of Commerce Springfield, VA 22161 800-553-6847</p>
<p><i>National Stormwater Best Management Practices (BMP) Database, Version 1.0</i></p> <p>Provides data on performance and evaluation of storm water BMPs</p>	<p>American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 703-296-6000</p>
<p><i>Caltrans Storm Water Quality Handbook: Planning and Design Staff Guide (Best Management Practices Handbooks</i> (1998)</p> <p>Presents guidance for design of storm water BMPs</p>	<p>California Department of Transportation P.O. Box 942874 Sacramento, CA 94274-0001 916-653-2975</p>

TABLE 3-2

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 Table 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 storm water 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

TABLE 3-3

HABITAT PROTECTION IN THE LOS ANGELES COUNTY AREA

Agency:

Los Angeles County Department of Regional Planning

Designation:

Significant Ecological Areas (SEA)

Definitions:

Significant Ecological Areas (SEAs) are areas that have been identified by the Los Angeles County General Plan as containing unique or unusual species assemblages, or areas of habitat that are rapidly declining in the Los Angeles County. The SEAs were established to protect a special or sometimes unique collection of habitats and species from loss due to encroachment and human disturbances. However, SEAs are not intended to function as isolated preservation areas.

Affected Areas:

(See Figure 1)

Agency:

Los Angeles Regional Water Quality Control Board

Designation:

Rare, Threatened, or Endangered Species (RARE)

Definitions:

An area listed in the Los Angeles Basin Plan as supporting the "RARE, Threatened, or Endangered Species (RARE)" beneficial use.

Affected Areas:

(See Table 3A)

Agency:

California Department of Fish & Game

Designation:

Significant Natural Area

Definition:

An area designated by the California Department of Fish and Game's Significant Natural Areas Progra.

Affected Area:

N/A

FIGURE 1

SIGNIFICANT ECOLOGICAL AREAS IN LOS ANGELES COUNTY

