

**Major Storm Water Management Plan  
(Major SWMP)  
For**

***County of San Diego Tract #5479  
At Buena Vista Drive, Vista CA***

**Preparation/Revision Date:  
March 27, 2013  
Revised September 11, 2013**

**Prepared for:**

Pacifica Real Estate Services Inc.  
PAS Investors LP  
5505 Cancha de Golf  
Rancho Santa Fe, CA 92091

**Prepared by:**

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The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan have been prepared under the direction of the following Registered Civil Engineer and meet the requirements of Regional Water Quality Control Board Order R9-2007-0001 and subsequent amendments.

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Ron Holloway RCE 29271

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Date

**SDC PDS RCVD 09-12-13  
TM5479RPL5**

The Major Stormwater Management Plan (Major SWMP) must be completed in its entirety and accompany applications to the County for a permit or approval associated with certain types of development projects. To determine whether your project is required to submit a Major or Minor SWMP, please reference the County's Stormwater Intake Form for Development Projects.

|   |  |
|---|--|
| Project Name:   | Buena Vista Drive, Vista CA                          |
| Project Location:   | Buena Vista Drive and Mar Vista Drive, Vista CA      |
| Permit Number (Land Development Projects):                    |  |
| Work Authorization Number (CIP only):                         |  |
| Applicant:  | PAS Investors LP                                     |
| Applicant's Address:  | 5505 Cancha de Golf<br>Rancho Santa Fe CA 92091      |
| Plan Prepared By ( <i>Leave blank if same as applicant</i> ): | Bha, Inc.  |
| Preparer's Address:   | 5115 Avenida Encinas, Suite L.<br>Carlsbad, CA 92008 |
| Date:   | July 19, 2013  |

The County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) (Ordinance No. 9926) requires all applications for a permit or approval associated with a Land Disturbance Activity to be accompanied by a Storm Water Management Plan (SWMP) (section 67.806.b). The purpose of the SWMP is to describe how the project will minimize the short and long-term impacts on receiving water quality. Projects that meet the criteria for a priority development project are required to prepare a Major SWMP.

Since the SWMP is a living document, revisions may be necessary during various stages of approval by the County. Please provide the approval information requested below.

| Project Stages | Does the SWMP need revisions? |    | If YES, Provide Revision Date | County Reviewer |
|----------------|-------------------------------|----|-------------------------------|-----------------|
|                | YES                           | NO |                               |                 |
|                |                               |    |                               |                 |
|                |                               |    |                               |                 |
|                |                               |    |                               |                 |

Instructions for a Major SWMP can be downloaded at <http://www.sdcounty.ca.gov/dpw/watersheds/susmp/susmp.html>

Completion of the following checklists and attachments will fulfill the requirements of a Major SWMP for the project listed above.

## STEP 1

### PRIORITY DEVELOPMENT PROJECT DETERMINATION

**TABLE 1: IS THE PROJECT IN ANY OF THESE CATEGORIES?**

|  |   |   |  |
|--|---|---|--|
| Yes<br><input checked="" type="checkbox"/> | No<br><input type="checkbox"/>            | A | Housing subdivisions of 10 or more dwelling units. Examples: single-family homes, multi-family homes, condominiums, and apartments.  |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | B | Commercial—greater than one acre. Any development other than heavy industry or residential. Examples: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.   |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | C | Heavy industry—greater than one acre. Examples: manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).   |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | D | Automotive repair shops. A facility categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, or 7536-7539.  |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | E | Restaurants. Any 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), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirements and hydromodification requirements.  |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | F | Hillside development greater than 5,000 square feet. Any development that creates 5,000 square feet of impervious surface and is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.  |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | G | Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. “Directly adjacent” means situated within 200 feet of the ESA. “Discharging directly to” means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands. |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | H | Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff.  |
| Yes<br><input checked="" type="checkbox"/> | No<br><input type="checkbox"/>            | I | Street, roads, highways, and freeways. Any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.   |
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | J | Retail Gasoline Outlets (RGOs) that are: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.   |

To use the table, review each definition A through J. If any of the definitions match, the project is a Priority Development Project. Note some thresholds are defined by square footage of impervious area created; others by the total area of the development. Please see special requirements for previously developed sites and project exemptions on page 6 of the County SUSMP.

## **STEP 2**

### **PROJECT STORMWATER QUALITY DETERMINATION**

Total Project Site Area 25.8 ac. (Acres or ft<sup>2</sup>)

Estimated amount of disturbed area: 14.3 ac. (Acres or ft<sup>2</sup>)

(If >1 acre, you must also provide a WDID number from the SWRCB)

WDID: **Will Be Provided**

Complete A through C and the calculations below to determine the amount of impervious surface on your project before and after construction.

A. Total size of project site: 25.8 ac. (Acres or ft<sup>2</sup>)

B. Total impervious area (including roof tops) before construction 0 ac. (Acres or ft<sup>2</sup>)

C. Total impervious area (including roof tops) after construction 3.8 ac. (Acres or ft<sup>2</sup>)

Calculate percent impervious before construction:  $B/A = \underline{0.0} \%$

Calculate percent impervious after construction:  $C/A = \underline{14.7} \%$

Please provide detailed descriptions regarding the following questions:

**TABLE 2: PROJECT SPECIFIC STORMWATER ANALYSIS**

|    |  |
|----|--|
| 1. | Please provide a brief description of the project.   |
|    | The County of San Diego Tract #5479 is located near the intersection of Mar Vista Drive and Buena Vista Drive in Vista, CA, approx. 1.1 miles west of CA-78 and the Mar Vista Drive exit. The project site is surrounded by mostly agricultural and low-density residential development. Proposed development includes 19 single family lots, private roads, and drainage improvements.  |
| 2. | Describe the current and proposed zoning and land use designation.   |
|    | The existing land use on the project site is Limited Agriculture. The proposed land-use for the project are Single Family Residences.  |
| 3. | Describe the pre-project and post-project topography of the project. (Show on Plan)  |
|    | Onsite topographic elevation ranges from 363 feet to 509 feet above mean sea level. The existing topography consists of slopes greater than 15%. Proposed grades slope similar to existing topography, with storm water discharging at the same locations as historical.   |
| 4. | Describe the soil classification, permeability, erodibility, and depth to groundwater for LID and Treatment BMP consideration. (Show on Plan) If infiltration BMPs are proposed, a Geotechnical Engineer must certify infiltration BMPs in Attachment E.   |
|    | The Project consists of a variety of soil types B, C and D. Soil Type D is prevalent and will be the design soil type in this report.  |
| 5. | Describe if contaminated or hazardous soils are within the project area. (Show on Plan)  |
|    | There is no evidence of contaminated or hazardous soils within the project area.   |
| 6. | Describe the existing site drainage and natural hydrologic features. (Show on Plan).   |
|    | There is a ridge dividing the site, forming 2 drainage basins that direct runoff to the northwest and to the south. The northwesterly basin drains to an existing creek bed that runs alongside Mar Vista Drive, then enters a culvert that crosses below Buena Vista Drive. The southerly basin sheet flows down a steep hillside to a detention basin constructed for an adjacent development called Gamboni Ranch, then enters (2) 27"-dia RCP pipe before flowing through a natural channel. |
| 7. | Describe site features and conditions that constrain, or provide opportunities for stormwater control, such as LID features.   |
|    | The steep slopes and Type D soil on-site model a high downstream runoff in the historical condition, which drives the bioretention basin design per the County of San Diego HMP. There is little soil infiltration potential, and no natural ponding areas.  |
| 8. | Is this project within the environmentally sensitive areas as defined on the maps in Appendix A of the <i>County of San Diego Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects</i> ?  |
|    | Yes <span style="margin-left: 150px;">No</span>  |
| 9. | Is this an emergency project? If yes, please provide a description below.  |
|    | Yes <span style="margin-left: 150px;">No</span>  |

## CHANNELS & DRAINAGES

Complete the following checklist to determine if the project includes work in channels.

**TABLE 3: CHANNEL & DRAINAGE ANALYSIS**

| No. | CRITERIA  | YES | NO | N/A | COMMENTS                          |
|-----|---|-----|----|-----|-----------------------------------|
| 1.  | Will the project include work in channels?  |     | X  |     | If YES go to 2<br>If NO go to 13. |
| 2.  | Will the project increase velocity or volume of downstream flow?  |     |    |     | If YES go to 6.                   |
| 3.  | Will the project discharge to unlined channels?   |     |    |     | If YES go to 6.                   |
| 4.  | Will the project increase potential sediment load of downstream flow?   |     |    |     | If YES go to 6.                   |
| 5.  | Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?   |     |    |     | If YES go to 8.                   |
| 6.  | Review channel lining materials and design for stream bank erosion.   |     |    |     | Continue to 7.                    |
| 7.  | Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.   |     |    |     | Continue to 8.                    |
| 8.  | Include, where appropriate, energy dissipation devices at culverts.   |     |    |     | Continue to 9.                    |
| 9.  | Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.  |     |    |     | Continue to 10.                   |
| 10. | Include, if appropriate, detention facilities to reduce peak discharges.  |     |    |     | Continue to 11.                   |
| 11. | “Hardening“ natural downstream areas to prevent erosion is not an acceptable technique for protecting channel slopes, unless pre-development conditions are determined to be so erosive that hardening would be required even in the absence of the proposed development. |     |    |     | Continue to 12.                   |
| 12. | Provide other design principles that are comparable and equally effective.  |     |    |     | Continue to 13.                   |
| 13. | End   | X   |    |     |                                   |

### TEMPORARY CONSTRUCTION BMPS

Please check the construction BMPs that may be implemented during construction of the project. The applicant will be responsible for the placement and maintenance of the BMPs incorporated into the final project design.

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Silt Fence                            | <input type="checkbox"/> Desilting Basin                           |
| <input checked="" type="checkbox"/> Fiber Rolls                           | <input checked="" type="checkbox"/> Gravel Bag Berm                |
| <input checked="" type="checkbox"/> Street Sweeping and Vacuuming         | <input type="checkbox"/> Sandbag Barrier                           |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection          | <input checked="" type="checkbox"/> Material Delivery and Storage  |
| <input checked="" type="checkbox"/> Stockpile Management                  | <input checked="" type="checkbox"/> Spill Prevention and Control   |
| <input checked="" type="checkbox"/> Solid Waste Management                | <input checked="" type="checkbox"/> Concrete Waste Management      |
| <input checked="" type="checkbox"/> Stabilized Construction Entrance/Exit | <input checked="" type="checkbox"/> Water Conservation Practices   |
| <input type="checkbox"/> Dewatering Operations                            | <input checked="" type="checkbox"/> Paving and Grinding Operations |
| <input checked="" type="checkbox"/> Vehicle and Equipment Maintenance     |  |
- Any minor slopes created incidental to construction and not subject to a major or minor grading permit shall be protected by covering with plastic or tarp prior to a rain event, and shall have vegetative cover reestablished within 180 days of completion of the slope and prior to final building approval.

**EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION**

Complete the checklist below to determine if a proposed project will pose an “exceptional threat to water quality,” and therefore require Advanced Treatment Best Management Practices during the construction phase.

**TABLE 4: EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION**

| No. | CRITERIA  | YES | NO   | INFORMATION   |
|-----|---|-----|--|---|
| 1.  | Is all or part of the proposed project site within 200 feet of waters named on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation and/or turbidity? Current 303d list may be obtained from the following site: <a href="http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/approved/r9_06_303d_req_tmdls.pdf">http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/approved/r9_06_303d_req_tmdls.pdf</a> |     | X  | If YES, continue to 2.<br>If NO, go to 5.   |
| 2.  | Will the project disturb more than 5 acres, including all phases of the development?  |     |  | If YES, continue to 3.<br>If NO, go to 5.   |
| 3.  | Will the project disturb slopes that are steeper than 4:1 (horizontal: vertical) with at least 10 feet of relief, and that drain toward the 303(d) listed receiving water for sedimentation and/or turbidity?   |     |  | If YES, continue to 4.<br>If NO, go to 5.   |
| 4.  | Will the project disturb soils with a predominance of USDA-NRCS Erosion factors $k_f$ greater than or equal to 0.4?   |     |  | If YES, continue to 6.<br>If NO, go to 5.   |
| 5.  | Project is not required to use Advanced Treatment BMPs.   | X   |  | Document for Project Files by referencing this checklist.   |
| 6.  | Project poses an “exceptional threat to water quality” and is required to use Advanced Treatment BMPs.  |     |  | Advanced Treatment BMPs must be consistent with WPO section 67.811(b)(20)(D) performance criteria |

**Exemption potentially available for projects that require advanced treatment:** Project proponent may perform a Revised Universal Soil Loss Equation, Version 2 (RUSLE 2), Modified Universal Soil Loss Equation (MUSLE), or similar analysis that demonstrates (to the County official’s satisfaction) that advanced treatment is not required.

### **STEP 3**

#### **HYDROMODIFICATION DETERMINATION**

The following questions provide a guide to collecting information relevant to hydromodification management plan (HMP) issues. If the project is exempt from the HMP criteria, please provide the supporting documentation in Attachment H. Please reference the full descriptions of the HMP exemptions located in Figure 1-1 of the County SUSMP.

**TABLE 5: HYDROMODIFICATION DETERMINATION**

|    | QUESTIONS   | YES | NO | Information   |
|----|---|-----|----|---|
| 1. | Will the project reduce the pre-project impervious area and are the unmitigated post-project outflows (outflows without detention routing) to each outlet location less as compared to the pre-project condition?   |     | X  | If NO, continue to 2.<br>If YES, go to 7.                                     |
| 2. | Would the project site discharge runoff directly to an exempt receiving water, such as the Pacific Ocean, San Diego Bay, an exempt reservoir, or a tidally-influenced area?   |     | X  | If NO, continue to 3.<br>If YES, go to 7.                                     |
| 3. | Would the project site discharge to a stabilized conveyance system, which has the capacity for the ultimate $Q_{10}$ , and extends to the Pacific Ocean, San Diego Bay, a tidally-influenced area, an exempt river reach or reservoir?  |     | X  | If NO, continue to 4.<br>If YES, go to 7.                                     |
| 4. | Does the contributing watershed area to which the project discharges have an impervious area percentage greater than 70 percent?  |     | X  | If NO, continue to 5.<br>If YES, go to 7.                                     |
| 5. | Is this an urban infill project which discharges to an existing hardened or rehabilitated conveyance system that extends beyond the “domain of analysis,” where the potential for cumulative impacts in the watershed are low, and the ultimate receiving channel has a “Low” susceptibility to erosion as defined in the SCCWRP channel assessment tool? |     | X  | If NO, continue to 6.<br>If YES, go to 7.                                     |
| 6. | Project is required to manage hydromodification impacts.  | X   |    | Reference Appendix G “Hydromodification Management Plan” of the County SUSMP. |
| 7. | Project is not required to manage hydromodification impacts.  |     |    | Hydromodification Exempt. Keep on file.                                       |

## STEP 4

### POLLUTANTS OF CONCERN DETERMINATION

#### WATERSHED

Please check the watershed(s) for the project.

|   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> San Juan 901     | <input type="checkbox"/> Santa Margarita 902 | <input type="checkbox"/> San Luis Rey 903 | <input checked="" type="checkbox"/> Carlsbad 904 |
| <input type="checkbox"/> San Dieguito 905 | <input type="checkbox"/> Penasquitos 906     | <input type="checkbox"/> San Diego 907    | <input type="checkbox"/> Sweetwater 909          |
| <input type="checkbox"/> Otay 910         | <input type="checkbox"/> Tijuana 911         | <input type="checkbox"/> Whitewater 719*  | <input type="checkbox"/> Clark 720*              |
| <input type="checkbox"/> West Salton 721* | <input type="checkbox"/> Anza Borrego 722*   | <input type="checkbox"/> Imperial 723*    |  |

[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml)

\*Projects located fully within these watersheds require only a Minor SWMP.

#### HYDROLOGIC SUB-AREA NAME AND BASIN NUMBER(S)

| Basin Number | Sub-Area Name |
|--------------|---------------|
| 9043100      | Los Monos HSA |
|              |               |

[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml)

**RECEIVING WATERS** that each project discharge point proposes to discharge to.

| RECEIVING WATERS<br>(river, creek, stream, etc.) | Hydrologic<br>Unit Basin<br>Number | Impairment(s) listed [303(d) listed<br>waters or waters with established<br>TMDLs ]. List the impairments<br>identified in <b>Table 7</b> . | Distance to<br>Project |
|--|------------------------------------|---|------------------------|
| Agua Hedionda Creek                              | 90431000                           | Manganese, Selenium, Sulfates, Total<br>Dissolved Solids, Indicator Bacteria,<br>Sedimentation/ Siltation                                   | 7 miles                |
|  |                                    |   |                        |
|  |                                    |   |                        |

[http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/docs/303dlists2006/epa/r9\\_06\\_303d\\_reqtmls.pdf](http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r9_06_303d_reqtmls.pdf)

#### GROUND WATERS

| Ground Waters | Hydrologic<br>Unit Basin<br>Number | MUN | AGR | IND | PROC | GWR | FRESH |
|---------------|------------------------------------|-----|-----|-----|------|-----|-------|
| Los Monos HSA | 90431000                           | ●   | ●   | ●   |      |     |       |
|               |                                    |     |     |     |      |     |       |
|               |                                    |     |     |     |      |     |       |

[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml)

+ Excepted from Municipal

● Existing Beneficial Use

○ Potential Beneficial Use

**PROJECT ANTICIPATED AND POTENTIAL POLLUTANTS**

Using Table 6, identify pollutants that are anticipated to be generated from the proposed priority project categories. Pollutants associated with any hazardous material sites that have been remediated or are not threatened by the proposed project are not considered a pollutant of concern.

**TABLE 6: ANTICIPATED AND POTENTIAL POLLUTANTS GENERATED BY LAND USE TYPE**

| <i>PDP Categories</i>                       | <i>General Pollutant Categories</i> |                  |              |                     |                |                             |                  |                    |                  |
|---|-------------------------------------|------------------|--------------|---------------------|----------------|-----------------------------|------------------|--------------------|------------------|
|   | Sediments                           | Nutrients        | Heavy Metals | Organic Compounds   | Trash & Debris | Oxygen Demanding Substances | Oil & Grease     | Bacteria & Viruses | Pesticides       |
| Detached Residential Development            | X                                   | X                |              |                     | X              | X                           | X                | X                  | X                |
| Attached Residential Development            | X                                   | X                |              |                     | X              | P <sup>(4)</sup>            | P <sup>(2)</sup> | P                  | X                |
| Commercial Development 1 acre or greater    | P <sup>(4)</sup>                    | P <sup>(4)</sup> |              | P <sup>(2)</sup>    | X              | P <sup>(5)</sup>            | X                | P <sup>(3)</sup>   | P <sup>(5)</sup> |
| Heavy industry /industrial development      | X                                   |                  | X            | X                   | X              | X                           | X                |                    |                  |
| Automotive Repair Shops                     |                                     |                  | X            | X <sup>(4)(5)</sup> | X              |                             | X                |                    |                  |
| Restaurants                                 |                                     |                  |              |                     | X              | X                           | X                | X                  |                  |
| Hillside Development >5,000-ft <sup>2</sup> | X                                   | X                |              |                     | X              | X                           | X                |                    | X                |
| Parking Lots                                | P <sup>(4)</sup>                    | P <sup>(4)</sup> | X            |                     | X              | P <sup>(4)</sup>            | X                |                    | P <sup>(4)</sup> |
| Retail Gasoline Outlets                     |                                     |                  | X            | X                   | X              | X                           | X                |                    |                  |
| Streets, Highways & Freeways                | X                                   | P <sup>(1)</sup> | X            | X <sup>(4)</sup>    | X              | P <sup>(5)</sup>            | X                |                    |                  |

X = anticipated

P = potential

- (1) A potential pollutant if landscaping exists on-site.
- (2) A potential pollutant if the project includes uncovered parking areas.
- (3) A potential pollutant if land use involves food or animal waste products.
- (4) Including petroleum hydrocarbons.
- (5) Including solvents.

**PROJECT POLLUTANTS OF CONCERN SUMMARY TABLE**

Please summarize the identified project pollutants-of-concern by checking the appropriate boxes in the table below and list any surface water impairments identified. Pollutants anticipated to be generated by the project, which are also causing impairment of receiving waters, shall be considered the primary pollutants of concern. For projects where no primary pollutants of concern exist, those pollutants identified as anticipated shall be considered secondary pollutants of concern.

**TABLE 7: PROJECT POLLUTANTS OF CONCERN**

| Pollutant Category          | Anticipated<br>(X) | Potential<br>(P) | Surface Water Impairments |
|-----------------------------|--------------------|------------------|---------------------------|
| Sediments                   | X                  |                  |                           |
| Nutrients                   | X                  |                  |                           |
| Heavy Metals                | X                  |                  |                           |
| Organic Compounds           | X                  |                  |                           |
| Trash & Debris              | X                  |                  |                           |
| Oxygen Demanding Substances | X                  |                  |                           |
| Oil & Grease                | X                  |                  |                           |
| Bacteria & Viruses          | X                  |                  |                           |
| Pesticides                  | X                  |                  |                           |

## **STEP 5**

### **LID AND SITE DESIGN STRATEGIES**

Each numbered item below is a Low Impact Development (LID) requirement of the WPO. Please check the box(s) under each number that best describes the LID BMP(s) and Site Design Strategies selected for this project. LID BMPs selected on this table will be typically represented as a self-retaining area, self-treating area, pervious pavement and greenroof, which, should be delineated in the Drainage Management Area map in Attachment C.

**TABLE 8: LID AND SITE DESIGN**

|   |
|---|
| 1. Conserve natural Areas, Soils, and Vegetation  |
| <input checked="" type="checkbox"/> Preserve well draining soils (Type A or B)  |
| <input checked="" type="checkbox"/> Preserve Significant Trees and shrubs where feasible  |
| <input checked="" type="checkbox"/> Preserve critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions- no proposed grading in open-space designated area |
| <input type="checkbox"/> Other. Description:  |
| 2. Minimize Disturbance to Natural Drainages  |
| <input checked="" type="checkbox"/> Set-back development envelope from drainages  |
| <input checked="" type="checkbox"/> Restrict heavy construction equipment access to planned green/open space areas  |
| <input type="checkbox"/> Other. Description:  |
| 3. Minimize and Disconnect Impervious Surfaces (see 5)  |
| <input type="checkbox"/> Clustered Lot Design   |
| <input checked="" type="checkbox"/> Items checked in 5  |
| <input checked="" type="checkbox"/> Other. Description: Driveways constructed to minimum width necessary to satisfy fire department regulations.  |
| 4. Minimize Soil Compaction   |
| <input checked="" type="checkbox"/> Restrict heavy construction equipment access to planned green/open space areas  |
| <input type="checkbox"/> Re-till soils compacted by construction vehicles/equipment   |
| <input checked="" type="checkbox"/> Collect & re-use upper soil layers of development site containing organic materials   |
| <input type="checkbox"/> Other. Description:  |
| 5. Drain Runoff from Impervious Surfaces to Pervious Areas  |
| <u>LID Street &amp; Road Design</u>   |
| <input checked="" type="checkbox"/> Curb-cuts to landscaping  |
| <input checked="" type="checkbox"/> Rural Swales  |
| <input type="checkbox"/> Concave Median   |

|   |  |
|---|--|
| <input checked="" type="checkbox"/>             | Cul-de-sac Landscaping Design  |
| <input type="checkbox"/>                        | Other. Description:  |
| <u>LID Parking Lot Design</u>                   |  |
| <input type="checkbox"/>                        | Permeable Pavements  |
| <input type="checkbox"/>                        | Curb-cuts to landscaping   |
| <input type="checkbox"/>                        | Other. Description: Parking lot runoff will be treated with a bioretention basin sized for treatment with Hydromodification per the SUSMP Table. |
| <u>LID Driveway, Sidewalk, Bike-path Design</u> |  |
| <input type="checkbox"/>                        | Permeable Pavements  |
| <input checked="" type="checkbox"/>             | Pitch pavements toward landscaping   |
| <input type="checkbox"/>                        | Other. Description:  |
| <u>LID Building Design</u>                      |  |
| <input type="checkbox"/>                        | Cisterns & Rain Barrels  |
| <input checked="" type="checkbox"/>             | Downspout to swale or landscaping  |
| <input type="checkbox"/>                        | Vegetated Roofs  |
| <input type="checkbox"/>                        | Other. Description:  |
| <u>LID Landscaping Design</u>                   |  |
| <input checked="" type="checkbox"/>             | Soil Amendments  |
| <input type="checkbox"/>                        | Reuse of Native Soils  |
| <input checked="" type="checkbox"/>             | Smart Irrigation Systems   |
| <input checked="" type="checkbox"/>             | Street Trees   |
| <input type="checkbox"/>                        | Other. Description:  |
| 6.  | Minimize erosion from slopes   |
| <input checked="" type="checkbox"/>             | Disturb existing slopes only when necessary  |
| <input checked="" type="checkbox"/>             | Minimize cut and fill areas to reduce slope lengths  |
| <input checked="" type="checkbox"/>             | Incorporate retaining walls to reduce steepness of slopes or to shorten slopes   |
| <input checked="" type="checkbox"/>             | Provide benches or terraces on high cut and fill slopes to reduce concentration of flows   |
| <input checked="" type="checkbox"/>             | Rounding and shaping slopes to reduce concentrated flow  |
| <input checked="" type="checkbox"/>             | Collect concentrated flows in stabilized drains and channels   |
| <input type="checkbox"/>                        | Other. Description:  |

## **STEP 6**

### **SOURCE CONTROL**

Please complete the checklist on the following pages to determine Source Control BMPs. Below is instruction on how to use the checklist. (Also see instructions on page 60 of the *SUSMP*)

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies and list in Table 9.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your Source Control Exhibit in Attachment B.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs into Table 9.
4. Use the format in Table 9 below to summarize the project Source Control BMPs. Incorporate all identified Source Control BMPs in your Source Control Exhibit in Attachment B.

**TABLE 9: PROJECT SOURCE CONTROL BMPS**

| <i>Potential source of runoff pollutants</i>   | <i>Permanent source control BMPs</i>  | <i>Operational source control BMPs</i>   |
|--|---|--|
| <p><b>D2. Landscape/ Outdoor Pesticide Use</b></p> <p><u>Note: Should be consistent with project landscape plan (if applicable).</u></p> | <p>State that final landscape plans will accomplish all of the following:</p> <p>Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.</p> <p>Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.</p> <p>Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.</p> <p>Consider using pest-resistant plants, especially adjacent to hardscape.</p> <p>To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.</p> | <p>Maintain landscaping using minimum or no pesticides.</p> <p>See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a></p> <p>Provide IPM information to new owners, lessees and operators.</p> |

|   |   |  |
|---|---|--|
| <p><b>A. On-site storm drain inlets</b></p> | <p>Mark all inlets with the words “No Dumping! Flows to Bay” or similar where feasible.</p> | <p>Maintain and periodically repaint or replace inlet markings.</p> <p>Provide stormwater pollution prevention information to new site owners, lessees, or operators.</p> <p>See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a></p> <p>Include the following in lease agreements: “Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains.”</p> |
|---|---|--|

Describe your specific Source Control BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting Source Control BMPs or substituting alternatives.

Proposed Source Control BMP's for this project include efficient landscaping design for the purpose of reducing the need for pesticide-use, minimizing irrigation and runoff, and appropriate plant selection for site conditions. Also, all on-site storm drain inlets will be marked “No Dumping! Flows to Bay” or similar. No Special conditions or situations exist that require special Source Control BMPs over and above those specified in Table 9.

| IF THESE SOURCES WILL BE ON THE PROJECT SITE ...                                       | ... THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs |  |   |
|--|--|--|---|
| 1<br>Potential Sources of Runoff Pollutants – List in Table 9                          | 2<br>Permanent Controls—Show on Source Control Exhibit, Attachment B           | 3<br>Permanent Controls—List in Table 9 and Narrative  | 4<br>Operational BMPs—Include in Table 9 and Narrative  |
| <input checked="" type="checkbox"/> <b>A.</b> On-site storm drain inlets               | <input checked="" type="checkbox"/> Locations of inlets.                       | <input checked="" type="checkbox"/> Mark all inlets with the words “No Dumping! Flows to Bay” or similar where feasible.   | <input checked="" type="checkbox"/> Maintain and periodically repaint or replace inlet markings.<br><input checked="" type="checkbox"/> Provide stormwater pollution prevention information to new site owners, lessees, or operators.<br><input checked="" type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a><br><input checked="" type="checkbox"/> Include the following in lease agreements: “Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains.” |
| <input type="checkbox"/> <b>B.</b> Interior floor drains and elevator shaft sump pumps |  | <input type="checkbox"/> State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer. | <input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.   |
| <input type="checkbox"/> <b>C.</b> Interior parking garages                            |  | <input type="checkbox"/> State that parking garage floor drains will be plumbed to the sanitary sewer.                     | <input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.   |

| IF THESE SOURCES WILL BE ON THE PROJECT SITE ...  | ... THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs  |  |   |
|---|---|--|---|
| 1<br>Potential Sources of Runoff Pollutants – List in Table 9   | 2<br>Permanent Controls—Show on Source Control Exhibit, Attachment B  | 3<br>Permanent Controls—List in Table 9 and Narrative  | 4<br>Operational BMPs—Include in Table 9 and Narrative  |
| <input type="checkbox"/> <b>D1.</b> Need for future indoor & structural pest control  |   | <input type="checkbox"/> Note building design features that discourage entry of pests.   | <input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.  |
| <input checked="" type="checkbox"/> <b>D2.</b> Landscape/ Outdoor Pesticide Use<br><u>Note: Should be consistent with project landscape plan (if applicable).</u> | <input checked="" type="checkbox"/> Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.<br><input checked="" type="checkbox"/> Show self-retaining landscape areas, if any.<br><input checked="" type="checkbox"/> Show stormwater treatment facilities. | <p>State that final landscape plans will accomplish all of the following:</p> <input checked="" type="checkbox"/> Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.<br><input checked="" type="checkbox"/> Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.<br><input checked="" type="checkbox"/> Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.<br><input checked="" type="checkbox"/> Consider using pest-resistant plants, especially adjacent to hardscape.<br><input checked="" type="checkbox"/> To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions. | <input checked="" type="checkbox"/> Maintain landscaping using minimum or no pesticides.<br><input checked="" type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a><br><input checked="" type="checkbox"/> Provide IPM information to new owners, lessees and operators. |

| IF THESE SOURCES WILL BE ON THE PROJECT SITE ...  | ... THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs   |  |  |
|---|--|--|--|
| 1<br>Potential Sources of Runoff Pollutants – List in Table 9                                   | 2<br>Permanent Controls—Show on Source Control Exhibit, Attachment B   | 3<br>Permanent Controls—List in Table 9 and Narrative  | 4<br>Operational BMPs—Include in Table 9 and Narrative   |
| <input type="checkbox"/> E. Pools, spas, ponds, decorative fountains, and other water features. | <input type="checkbox"/> Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet.  | <input type="checkbox"/> If the local municipality requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.                                 | <input type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-72, “Fountain and Pool Maintenance,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a> |
| <input type="checkbox"/> F. Food service  | <input type="checkbox"/> For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.<br><br><input type="checkbox"/> On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer. | <input type="checkbox"/> Describe the location and features of the designated cleaning area.<br><br><input type="checkbox"/> Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated. | <input type="checkbox"/>   |

| IF THESE SOURCES WILL BE ON THE PROJECT SITE ...              | ... THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs   |  |   |
|---|--|--|---|
| 1<br>Potential Sources of Runoff Pollutants – List in Table 9 | 2<br>Permanent Controls—Show on Source Control Exhibit, Attachment B   | 3<br>Permanent Controls—List in Table 9 and Narrative  | 4<br>Operational BMPs—Include in Table 9 and Narrative  |
| <input type="checkbox"/> <b>G. Refuse areas</b>               | <input type="checkbox"/> Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.<br><input type="checkbox"/> If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.<br><input type="checkbox"/> Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer. | <input type="checkbox"/> State how site refuse will be handled and provide supporting detail to what is shown on plans.<br><input type="checkbox"/> State that signs will be posted on or near dumpsters with the words “Do not dump hazardous materials here” or similar. | <input type="checkbox"/> State how the following will be implemented:<br>Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post “no hazardous materials” signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, “Waste Handling and Disposal” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a> |
| <input type="checkbox"/> <b>H. Industrial processes.</b>      | <input type="checkbox"/> Show process area.  | <input type="checkbox"/> If industrial processes are to be located on site, state: “All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.”   | <input type="checkbox"/> See Fact Sheet SC-10, “Non-Stormwater Discharges” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a>  |

| IF THESE SOURCES WILL BE ON THE PROJECT SITE ...   | ... THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs  |   |   |
|--|---|---|---|
| 1<br>Potential Sources of Runoff Pollutants – List in Table 9  | 2<br>Permanent Controls—Show on Source Control Exhibit, Attachment B  | 3<br>Permanent Controls—List in Table 9 and Narrative   | 4<br>Operational BMPs—Include in Table 9 and Narrative  |
| <input type="checkbox"/> I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.) | <input type="checkbox"/> Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.<br><input type="checkbox"/> Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.<br><input type="checkbox"/> Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site. | <input type="checkbox"/> Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.<br>Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for: <ul style="list-style-type: none"> <li>▪ Hazardous Waste Generation</li> <li>▪ Hazardous Materials Release Response and Inventory</li> <li>▪ California Accidental Release (CalARP)</li> <li>▪ Aboveground Storage Tank</li> <li>▪ Uniform Fire Code Article 80 Section 103(b) &amp; (c) 1991</li> <li>▪ Underground Storage Tank</li> </ul> | <input type="checkbox"/> See the Fact Sheets SC-31, “Outdoor Liquid Container Storage” and SC-33, “Outdoor Storage of Raw Materials ” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a> |

|  |   |   |   |
|--|---|---|---|
| <p><input type="checkbox"/> <b>J. Vehicle and Equipment Cleaning</b></p> | <p><input type="checkbox"/> Show on drawings as appropriate:</p> <p>(1) Commercial/industrial facilities having vehicle /equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.</p> <p>(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).</p> <p>(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.</p> <p>(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.</p> | <p><input type="checkbox"/> If a car wash area is not provided, describe measures taken to discourage on-site car washing and explain how these will be enforced.</p> | <p>Describe operational measures to implement the following (if applicable):</p> <p><input type="checkbox"/> Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.</p> <p><input type="checkbox"/> Car dealerships and similar may rinse cars with water only.</p> <p><input type="checkbox"/> See Fact Sheet SC-21, “Vehicle and Equipment Cleaning,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a></p> |
|--|---|---|---|

|  |   |  |  |
|--|---|--|--|
| <p><input type="checkbox"/> <b>K. Vehicle/Equipment Repair and Maintenance</b></p> | <p><input type="checkbox"/> Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.</p> <p><input type="checkbox"/> Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.</p> <p><input type="checkbox"/> Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.</p> | <p><input type="checkbox"/> State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.</p> <p><input type="checkbox"/> State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.</p> <p><input type="checkbox"/> State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.</p> | <p>In the SUSMP report, note that all of the following restrictions apply to use the site:</p> <p><input type="checkbox"/> No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.</p> <p>No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.</p> <p><input type="checkbox"/> No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.</p> |
|--|---|--|--|

|   |  |  |  |
|---|--|--|--|
| <p><input type="checkbox"/> <b>L. Fuel Dispensing Areas</b></p> | <p><input type="checkbox"/> Fueling areas<sup>1</sup> shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.</p> <p>Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area<sup>1</sup>.] The canopy [or cover] shall not drain onto the fueling area.</p> |  | <p><input type="checkbox"/> The property owner shall dry sweep the fueling area routinely.</p> <p><input type="checkbox"/> See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a></p> |
|---|--|--|--|

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<sup>1</sup> The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

|  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> <b>M. Loading Docks</b>             | <input type="checkbox"/> Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas should be drained to the sanitary sewer where feasible. Direct connections to storm drains from depressed loading docks are prohibited.<br><br><input type="checkbox"/> Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.<br><br><input type="checkbox"/> Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer. |  | <input type="checkbox"/> Move loaded and unloaded items indoors as soon as possible.<br><br><input type="checkbox"/> See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a> |
| <input type="checkbox"/> <b>N. Fire Sprinkler Test Water</b> |   | <input type="checkbox"/> Provide a means to drain fire sprinkler test water to the sanitary sewer. | <input type="checkbox"/> See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a>  |

|  |  |   |   |
|--|--|---|---|
| <p><b>O. Miscellaneous Drain or Wash Water</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Boiler drain lines</li> <li><input type="checkbox"/> Condensate drain lines</li> <li><input type="checkbox"/> Rooftop equipment</li> <li><input type="checkbox"/> Drainage sumps</li> <li><input type="checkbox"/> Roofing, gutters, and trim.</li> </ul> |  | <ul style="list-style-type: none"> <li><input type="checkbox"/> Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.</li> <li><input type="checkbox"/> Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.</li> <li><input type="checkbox"/> Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment.</li> <li><input type="checkbox"/> Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.</li> <li><input type="checkbox"/> Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.</li> </ul> |   |
| <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>P. Plazas, sidewalks, and parking lots.</b></li> </ul>  |  |   | <ul style="list-style-type: none"> <li><input type="checkbox"/> Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.</li> </ul> |

## STEP 7

### LID AND TREATMENT CONTROL SELECTION

A treatment control BMP and/or LID IMP must be selected to treat the project pollutants of concern identified in Table 7 “Project Pollutants of Concern”. A treatment control facility with a high or medium pollutant removal efficiency for the project’s most significant pollutant of concern shall be selected. It is recommended to use the design procedure in Chapter 4 of the SUSMP to meet NPDES permit LID requirements, treatment requirements, and flow control requirements. If your project does not utilize this approach, the project will need to demonstrate compliance with LID, treatment and hydromodification flow control requirements. Review Chapter 2 “Selection of Stormwater Treatment Facilities” in the SUSMP to assist in determining the appropriate treatment facility for your project.

|   |    |
|---|----|
| Will this project be utilizing the unified LID design procedure as described in Chapter 4 of the Local SUSMP? <i>(If yes, please document in Attachment D following the steps in Chapter 4 of the County SUSMP)</i>                             |    |
| Yes   | No |
| If this project is not utilizing the unified LID design procedure, please describe how the alternative treatment facilities will comply with applicable LID criteria, stormwater treatment criteria, and hydromodification management criteria. |    |
|   |    |

➤ Indicate the project pollutants of concern (POCs) from Table 7 in Column 2 below.

**TABLE 10: GROUPING OF POTENTIAL POLLUTANTS of Concern (POCs) by fate during stormwater treatment**

| Pollutant         | Check Project Specific POCs | Coarse Sediment and Trash | Pollutants that tend to associate with fine particles during treatment | Pollutants that tend to be dissolved following treatment |
|-------------------|-----------------------------|---------------------------|--|--|
| Sediment          | X                           | X                         | X  |  |
| Nutrients         | X                           |                           | X  | X  |
| Heavy Metals      | X                           |                           | X  |  |
| Organic Compounds | X                           |                           | X  |  |
| Trash & Debris    | X                           | X                         |  |  |
| Oxygen Demanding  | X                           |                           | X  |  |
| Bacteria          | X                           |                           | X  |  |
| Oil & Grease      | X                           |                           | X  |  |
| Pesticides        | X                           |                           | X  |  |

➤ Indicate the treatment facility(s) chosen for this project in the following table.

**TABLE 11: GROUPS OF POLLUTANTS and relative effectiveness of treatment facilities**

| Pollutants of Concern  | Bioretention Facilities (LID) | Settling Basins (Dry Ponds) | Wet Ponds and Constructed Wetlands | Infiltration Devices (LID) | Media Filters | Higher-rate biofilters | Higher-rate media-filters | Trash Racks & Hydro-dynamic Devices | Vegetated Swales |
|--|-------------------------------|-----------------------------|------------------------------------|----------------------------|---------------|------------------------|---------------------------|-------------------------------------|------------------|
| Coarse Sediment and Trash  | High                          | High                        | High                               | High                       | High          | High                   | High                      | High                                | High             |
| Pollutants that tend to associate with fine particles during treatment | High                          | High                        | High                               | High                       | High          | Medium                 | Medium                    | Low                                 | Medium           |
| Pollutants that tend to be dissolved following treatment               | Medium                        | Low                         | Medium                             | High                       | Low           | Low                    | Low                       | Low                                 | Low              |

➤ Please check the box(s) that best describes the Treatment Control BMP(s) and/or LID IMP selected for this project. Please check if the treatment facility is designed for water quality or hydromodification flow control.

**TABLE 12: PROJECT LID AND TC-BMPS**

| TCBMP Type  | Water Quality Treatment Only | Hydromodification Flow Control |
|---|------------------------------|--------------------------------|
| <b>Bioretention Facilities (LID)</b>  |                              |                                |
| <input checked="" type="checkbox"/> Bioretention area                             | X                            | X                              |
| <input type="checkbox"/> Flow-through Planter                                     |                              |                                |
| <input type="checkbox"/> Cistern with Bioretention                                |                              |                                |
| <b>Settling Basins (Dry Ponds)</b>  |                              |                                |
| <input type="checkbox"/> Extended/dry detention basin with grass/vegetated lining |                              |                                |
| <input type="checkbox"/> Extended/dry detention basin with impervious lining      |                              |                                |
| <b>Infiltration Devices (LID)</b>   |                              |                                |
| <input type="checkbox"/> Infiltration basin                                       |                              |                                |
| <input type="checkbox"/> Infiltration trench                                      |                              |                                |
| <input type="checkbox"/> Other _____  |                              |                                |
| <b>Wet Ponds and Constructed Wetlands</b>   |                              |                                |
| <input type="checkbox"/> Wet pond/basin (permanent pool)                          |                              |                                |
| <input type="checkbox"/> Constructed wetland                                      |                              |                                |
| <b>Vegetated Swales (LID<sup>(1)</sup>)</b>                                       |                              |                                |
| <input type="checkbox"/> Vegetated Swale  |                              |                                |
| <b>Media Filters</b>  |                              |                                |

|  |  |  |
|--|--|--|
| <input type="checkbox"/> Austin Sand Filter                                      |  |  |
| <input type="checkbox"/> Delaware Sand Filter                                    |  |  |
| <input type="checkbox"/> Multi-Chambered Treatment Train (MCTT)                  |  |  |
| <b>Higher-rate Biofilters</b>  |  |  |
| <input type="checkbox"/> Tree-pit-style unit                                     |  |  |
| <input type="checkbox"/> Other _____   |  |  |
| <b>Higher-rate Media Filters</b>   |  |  |
| <input type="checkbox"/> Vault-based filtration unit with replaceable cartridges |  |  |
| <input type="checkbox"/> Other _____   |  |  |
| <b>Hydrodynamic Separator Systems</b>  |  |  |
| <input type="checkbox"/> Swirl Concentrator                                      |  |  |
| <input type="checkbox"/> Cyclone Separator                                       |  |  |
| <b>Trash Racks</b>   |  |  |
| <input type="checkbox"/> Catch Basin Insert                                      |  |  |
| <input type="checkbox"/> Catch Basin Insert w/ Hydrocarbon boom                  |  |  |
| <input type="checkbox"/> Other _____   |  |  |

<sup>(1)</sup> Must be designed per SUSMP “Vegetated Swales” design criteria for water quality treatment credit (p. 65).

For design guidelines and calculations refer to Chapter 4 “Low Impact Development Design Guide” in the SUSMP. Please show all calculations and design sheets for all treatment control BMPs proposed in Attachment D.

➤ Create a Construction Plan SWMP Checklist for your project.

Instructions on how to fill out table

1. Number and list each measure or BMP you have specified in your SWMP in Columns 1 and Maintenance Category in Column 3 of the table. Leave Column 2 blank.
2. When you submit construction plans, duplicate the table (by photocopy or electronically). Now fill in Column 2, identifying the plan sheets where the BMPs are shown. List all plan sheets on which the BMP appears. **This table must be shown on the front sheet of the grading and improvement plans.**

| Stormwater Treatment Control BMPs and LID BMPs |       |                      |           |
|--|-------|----------------------|-----------|
| Description / Type                             | Sheet | Maintenance Category | Revisions |
| Bioretention Basin A                           |       | Second               |           |
| Bioretention Basin B                           |       | Second               |           |
|  |       |                      |           |
|  |       |                      |           |

BMP's approved as part of Stormwater Management Plan (SWMP) dated xx/xx/xx on file with DPW. Any changes to the above BMP's will require SWMP revision and Plan Change approvals.

- Please describe why the chosen treatment control BMP(s) was selected for this project. For projects utilizing a low performing BMP, please provide a **feasibility analysis** that demonstrates utilization of a treatment control BMP with a high or medium removal efficiency ranking is infeasible.

Bioretention Basins were chosen as the Treatment Control BMP for this project for their efficiency at removing the pollutants of concern, as well as their detention capacity for mitigating the anticipated storm water discharge to historical levels. See the Hydrology and Hydraulic Report for this project for calculations and specifications.

**Please provide the sizing design calculations for each Drainage Management Area in Attachment D.** Guidelines for design calculations are located in Chapter 4 of the County SUSMP. To assist in these calculations a BMP sizing calculator is available for use at the following location:  
[http://www.projectcleanwater.org/html/wg\\_susmp.html](http://www.projectcleanwater.org/html/wg_susmp.html)

## **STEP 8**

### **OPERATION AND MAINTENANCE**

➤ Please check the box that best describes the maintenance mechanism(s) for this project.

**TABLE 13: PROJECT BMP CATEGORY**

| CATEGORY            | SELECTED |    | BMP Description     |
|---------------------|----------|----|---------------------|
|                     | YES      | NO |                     |
| First <sup>1</sup>  |          | X  | Bioretention Basins |
| Second <sup>2</sup> | X        |    |                     |
| Third <sup>3</sup>  |          | X  |                     |
| Fourth <sup>4</sup> |          | X  |                     |

Note:

1. A maintenance notification will be required.
  2. A recorded maintenance agreement and access easement will be required.
  3. The project will be required to establish or be included in a watershed specific Community Facility District (CFD) for long-term maintenance.
  4. The developer would be required to dedicate the BMP (and the property on which it is located and any necessary access) to the County.
- Please list all individual LID and Treatment Control BMPs (TC-BMPs) incorporated into the project. Please ensure the “BMP Identifier” is consistent with the legend in Attachment C “Drainage Management Area Exhibit”. Please attach the record plan sheets upon completion of project and amend the Major SWMP where appropriate. For each type of LID or TC-BMP provide an inspection sheet in Attachment F “Maintenance Plan”.

**TABLE 14: PROJECT SPECIFIC LID AND TC-BMPs**

| BMP Identifier*:<br>(Identifier to match TC-BMPs on TC-BMP Table.) | Type               | Record Plan Page for TC-BMP | BMP Pollutant of Concern Efficiency (H,M,L) |
|--|--------------------|-----------------------------|---|
| A  | Bioretention basin |                             | H, H, M                                     |
| B  | Bioretention basin |                             | H, H, M                                     |
|  |                    |                             |   |
|  |                    |                             |   |
|  |                    |                             |   |
|  |                    |                             |   |

\* For location of BMP's, see approved Record Plan dated \_\_\_\_\_ plan (\_\_\_\_\_) sheet \_\_\_\_

➤ Responsible Party for Construction Phase:

Identify the parties responsible for the maintenance during the construction phase of the BMPs identified above and Source Controls specified in Attachment B.

|                                       |
|---------------------------------------|
| Developer Name:                       |
| Street Address:                       |
| City/State/Zip:                       |
| Email Address:                        |
| Phone Number:                         |
| Engineer of Work: Ron Holloway        |
| Engineer's Phone Number: 760-931-8700 |

➤ Responsible Party for Ongoing Maintenance:

Identify the parties responsible for long-term maintenance of the BMPs identified above and Source Controls specified in Attachment B. Include the appropriate written agreement with the entities responsible for O&M in Attachment F. Please see Chapter 5 "Stormwater Facility Maintenance" of the County SUSMP for appropriate maintenance mechanisms.

|  |
|--|
| Owner's Name: PAS Investors LP   |
| Street Address: 5505 Cancha de Golf  |
| City/State/Zip: Rancho Santa Fe, CA 92091  |
| Phone Number: 760-815-1182   |
| Email Address:   |
| *Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout. |

➤ Funding Source:

Provide the funding source or sources for long-term operation and maintenance of each BMP identified above. Please see Chapter 5 “Stormwater Facility Maintenance” of the County SUSMP for the appropriate funding source options. By certifying the Major SWMP the applicant is certifying that the funding responsibilities have been addressed and will be transferred to future owners.

Security to be provided to County of San Diego in the amount of \$23,507.28 per County SUSMP Chapter 5, in the form of a cash deposit, Letter of Credit, or other funding source acceptable to the County.

**ATTACHMENTS**

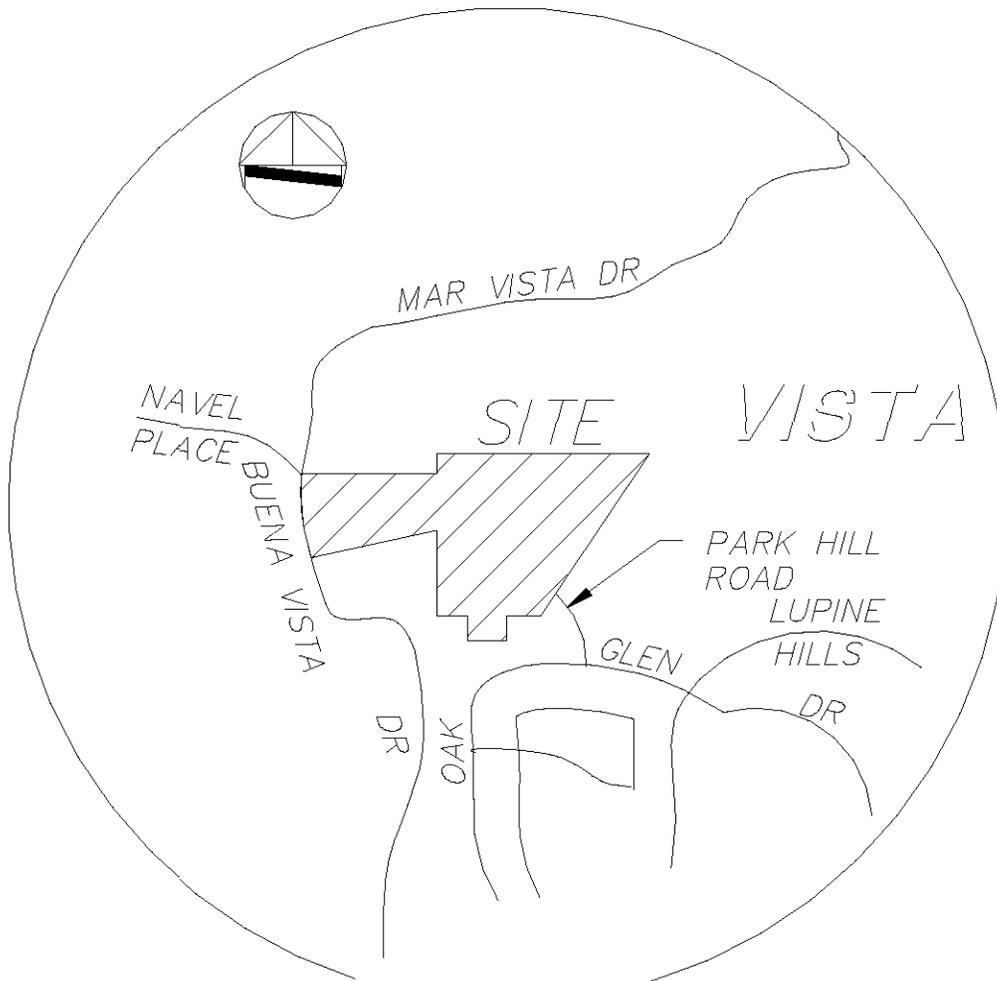
Please include the following attachments.

|   | <b>ATTACHMENT</b>  | <b>COMPLETED</b> | <b>N/A</b> |
|---|--|------------------|------------|
| A | Project Location Map   | x                |            |
| B | Source Control Exhibit   | x                |            |
| C | Drainage Management Area (DMA) Exhibit   | x                |            |
| D | BMP Sizing Design Calculations (Water Quality and Hydromodification) and TC-BMP/IMP Design Details | x                |            |
| E | Geotechnical Certification Sheet   |                  | x          |
| F | Maintenance Plan   | x                |            |
| G | Treatment Control BMP Certification (due at project completion)                                    | x                |            |
| H | HMP Study  |                  | x          |
| I | Geomorphic Assessment  |                  | x          |
| J | HMP Exemption Documentation  |                  | x          |
| K | Addendum   | x                |            |

**Note:** Attachments B and C may be combined.

# ATTACHMENT A

## Project Location Map



**VICINITY MAP**  
NTS

## **ATTACHMENT B**

**See Drainage Management Area Map Exhibit for Source Control  
Exhibit**

# **ATTACHMENT C**

## **Drainage Management Area (DMA) and Source Control Exhibit**



# ATTACHMENT D

## Sizing Design Calculations and TC-BMP/LID Design Details

### Hydromodification Calculations

| DMA 1        | DMA Area (sq ft) | Post-Project surface type | DMA Runoff Factor | DMA Area x runoff factor | Soil Type  | Slope                | Rain Gauge                | Low-Flow Threshold |   |    |    |       |        |       |
|--------------|------------------|---------------------------|-------------------|--------------------------|--|----------------------|---------------------------|--------------------|---|----|----|-------|--------|-------|
|              |                  |                           |                   |                          | D  | Steep                | Oceanside                 | 0.1Q2              |   |    |    |       |        |       |
| Lot 1        | 4,300            | imp                       | 1.0               | 4300                     | <b><u>Bioretention Plus Hydromod</u></b>   |                      |                           |                    |   |    |    |       |        |       |
|              | 34,514           | ldsp                      | 0.1               | 3451.4                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 2        | 4,300            | imp                       | 1.0               | 4300                     | <table border="1" style="margin: auto;"> <thead> <tr> <th>A</th> <th>V1</th> <th>V2</th> </tr> </thead> <tbody> <tr> <td>0.065</td> <td>0.0542</td> <td>0.039</td> </tr> </tbody> </table> |                      |                           |                    | A | V1 | V2 | 0.065 | 0.0542 | 0.039 |
|              | A                | V1                        | V2                |                          |  |                      |                           |                    |   |    |    |       |        |       |
| 0.065        | 0.0542           | 0.039                     |                   |                          |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 3        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 24,656           | ldsp                      | 0.1               | 2465.6                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 4        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 22,921           | ldsp                      | 0.1               | 2292.1                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 5        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 20,232           | ldsp                      | 0.1               | 2023.2                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 6        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 17,083           | ldsp                      | 0.1               | 1708.3                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 7        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 14,288           | ldsp                      | 0.1               | 1428.8                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 8        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 16,093           | ldsp                      | 0.1               | 1609.3                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 9        | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 17,550           | ldsp                      | 0.1               | 1755                     |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 10       | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 16,209           | ldsp                      | 0.1               | 1620.9                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 11       | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 16,385           | ldsp                      | 0.1               | 1638.5                   |  |                      |                           |                    |   |    |    |       |        |       |
| Lot 12       | 4,300            | imp                       | 1.0               | 4300                     |  |                      |                           |                    |   |    |    |       |        |       |
|              | 16,903           | ldsp                      | 0.1               | 1690.3                   |  |                      |                           |                    |   |    |    |       |        |       |
| Street       | 53456            | imp                       | 1.0               | 53456                    | <b>IMP Sizing Factor, A1</b>   | <b>Min Area (sf)</b> | <b>Proposed Area (sf)</b> | <b>IMP Name</b>    |   |    |    |       |        |       |
|              | 20,915           | ldsp                      | 0.1               | 2091.5                   |  |                      |                           |                    |   |    |    |       |        |       |
| <b>Total</b> | <b>369,484</b>   |                           | <b>Total</b>      | <b>131498.8</b>          | 0.065  | 8547.4               | 8662                      | <b>Basin A</b>     |   |    |    |       |        |       |
|              |                  |                           |                   |                          | <b>IMP Sizing Factor, V1</b>   | <b>Min Volume</b>    | <b>Proposed Volume</b>    |                    |   |    |    |       |        |       |
|              |                  |                           | <b>Total</b>      | <b>131498.8</b>          | 0.0542   | 7127.2               | 7218.0                    | <b>Basin A</b>     |   |    |    |       |        |       |

| <b>DMA 2</b> | <b>DMA Area (sq ft)</b> | <b>Post-Project surface type</b> | <b>DMA Runoff Factor</b> | <b>DMA Area x runoff factor</b> |                              |                   |                        |                 |
|--------------|-------------------------|----------------------------------|--------------------------|---------------------------------|------------------------------|-------------------|------------------------|-----------------|
| Lot 13       | 5,000                   | imp                              | 1.0                      | 5000                            |                              |                   |                        |                 |
|              | 24,447                  | ldsp                             | 0.1                      | 2444.7                          |                              |                   |                        |                 |
| Lot 14       | 7,000                   | imp                              | 1.0                      | 7000                            |                              |                   |                        |                 |
|              | 43,149                  | ldsp                             | 0.1                      | 4314.9                          |                              |                   |                        |                 |
| Lot 15       | 4,300                   | imp                              | 1.0                      | 4300                            |                              |                   |                        |                 |
|              | 7,706                   | ldsp                             | 0.1                      | 770.6                           |                              |                   |                        |                 |
| Lot 16       | 4,300                   | imp                              | 1.0                      | 4300                            |                              |                   |                        |                 |
|              | 15,340                  | ldsp                             | 0.1                      | 1534                            |                              |                   |                        |                 |
| Lot 17       | 4,300                   | imp                              | 1.0                      | 4300                            |                              |                   |                        |                 |
|              | 18,520                  | ldsp                             | 0.1                      | 1852                            |                              |                   |                        |                 |
| Lot 18       | 4,300                   | imp                              | 1.0                      | 4300                            |                              |                   |                        |                 |
|              | 22,940                  | ldsp                             | 0.1                      | 2294                            |                              |                   |                        |                 |
| Lot 19       | 4,300                   | imp                              | 1.0                      | 4300                            |                              |                   |                        |                 |
|              | 18,640                  | ldsp                             | 0.1                      | 1864                            |                              |                   |                        |                 |
| Street       | 16,254                  | imp                              | 1.0                      | 16254                           | <b>IMP Sizing Factor, A1</b> | <b>Min Area</b>   | <b>Proposed Area</b>   | <b>IMP Name</b> |
|              | 10584                   | ldsp                             | 0.1                      | 1058.4                          |                              |                   |                        |                 |
| <b>Total</b> | <b>211,080</b>          |                                  | <b>Total</b>             | <b>65886.6</b>                  | <b>0.065</b>                 | <b>4282.6</b>     | <b>4286</b>            | <b>Basin B</b>  |
|              |                         |                                  |                          |                                 | <b>IMP Sizing Factor, V1</b> | <b>Min Volume</b> | <b>Proposed Volume</b> |                 |
|              |                         |                                  | <b>Total</b>             | <b>65886.6</b>                  | <b>0.0542</b>                | <b>3571.1</b>     | <b>3572.0</b>          | <b>Basin B</b>  |

**(from Hydrology and Hydraulic Report, Storage and Capacity Calculations...)**

**Table 2.0- Detention Flow Results Summary**

| Basin | Q <sub>IN</sub> | Q <sub>OUT</sub> | ΔQ    | Max Depth (ft) |
|-------|-----------------|------------------|-------|----------------|
| A     | 9.98            | 1.62             | 8.36  | 0.91           |
| B     | 6.10            | 2.72             | 3.38  | 1.33           |
| Total | 16.08           | 4.34             | 11.74 |                |

**Table 2.1- Catch Basin Type F Inlet Opening Capacity Calculator**

Using V-Notch Weir Formula equation (6-9)  $Q=2.5\text{tan}(\theta/2)(H^{2.5})$  [San Diego County Drainage Design Manual], where  $\theta=127^\circ$ .

| Depth (ft) | H (ft) | Q (cfs) | Q x 2 Inlets |
|------------|--------|---------|--------------|
| 0.9        | 0.067  | 0.01    | 0.01         |
| 1          | 0.167  | 0.06    | 0.11         |
| 1.1        | 0.267  | 0.18    | 0.37         |
| 1.2        | 0.367  | 0.41    | 0.81         |
| 1.3        | 0.467  | 0.74    | 1.48         |
| 1.4        | 0.567  | 1.21    | 2.41         |
| 1.5        | 0.667  | 1.81    | 3.62         |

**Table 2.2- Flow Through Engineered Soil Layer, Q=KIA**

$A_{\text{BASIN A}} \text{ (sf)} = 8662$                        $K \text{ (in/hr)} = 5$

$A_{\text{BASIN B}} \text{ (sf)} = 4286$

| Depth (ft) | I, Hydraulic Gradient | Q <sub>BASIN A</sub> (cfs) | Q <sub>BASIN B</sub> (cfs) |
|------------|-----------------------|----------------------------|----------------------------|
| 0.0        | 1.000                 | 1.003                      | 0.496                      |
| 0.1        | 1.060                 | 1.063                      | 0.526                      |
| 0.2        | 1.120                 | 1.123                      | 0.556                      |
| 0.3        | 1.180                 | 1.183                      | 0.585                      |
| 0.4        | 1.240                 | 1.243                      | 0.615                      |
| 0.5        | 1.300                 | 1.303                      | 0.645                      |
| 0.6        | 1.360                 | 1.363                      | 0.675                      |
| 0.7        | 1.420                 | 1.424                      | 0.704                      |
| 0.8        | 1.480                 | 1.484                      | 0.734                      |
| 0.9        | 1.540                 | 1.544                      | 0.764                      |
| 1.0        | 1.600                 | 1.604                      | 0.794                      |
| 1.1        | 1.660                 | 1.664                      | 0.823                      |
| 1.2        | 1.720                 | 1.724                      | 0.853                      |
| 1.3        | 1.780                 | 1.785                      | 0.883                      |
| 1.4        | 1.840                 | 1.845                      | 0.913                      |
| 1.5        | 1.900                 | 1.905                      | 0.943                      |

**Table 2.3- Flow of 1"-dia Drain Down Orifice at Base of V2 Storage Layer (TYP of 2)**

| Basin Depth | Orifice Area (sf) | Head (ft) | Coefficient | Q discharge (cfs) |
|-------------|-------------------|-----------|-------------|-------------------|
| 0.1         | 0.00545           | 2.6       | 0.603       | 0.043             |
| 0.2         | 0.00545           | 2.7       | 0.603       | 0.043             |
| 0.3         | 0.00545           | 2.8       | 0.603       | 0.044             |
| 0.4         | 0.00545           | 2.9       | 0.603       | 0.045             |
| 0.5         | 0.00545           | 3         | 0.603       | 0.046             |
| 0.6         | 0.00545           | 3.1       | 0.603       | 0.046             |
| 0.7         | 0.00545           | 3.2       | 0.603       | 0.047             |
| 0.8         | 0.00545           | 3.3       | 0.603       | 0.048             |
| 0.9         | 0.00545           | 3.4       | 0.603       | 0.049             |
| 1           | 0.00545           | 3.5       | 0.603       | 0.049             |
| 1.1         | 0.00545           | 3.6       | 0.603       | 0.050             |
| 1.2         | 0.00545           | 3.7       | 0.603       | 0.051             |
| 1.3         | 0.00545           | 3.8       | 0.603       | 0.051             |
| 1.4         | 0.00545           | 3.9       | 0.603       | 0.052             |
| 1.5         | 0.00545           | 4         | 0.603       | 0.053             |

**Table 2.4- Basin Outflow and Storage Capacity Calculations**

Basin A- Bottom Basin Area (sf) = 8662

| Elev  | Depth | Vlume acre-ft | Outflow | Volume CF |
|-------|-------|---------------|---------|-----------|
| 374   | 0     | 0.124         | 0       | 5412.88   |
| 374.1 | 0.1   | 0.144         | 1.11    | 6275.20   |
| 374.2 | 0.2   | 0.164         | 1.17    | 7129.76   |
| 374.3 | 0.3   | 0.183         | 1.23    | 7976.56   |
| 374.4 | 0.4   | 0.202         | 1.29    | 8815.60   |
| 374.5 | 0.5   | 0.221         | 1.35    | 9646.88   |
| 374.6 | 0.6   | 0.240         | 1.41    | 10470.40  |
| 374.7 | 0.7   | 0.259         | 1.47    | 11286.16  |
| 374.8 | 0.8   | 0.278         | 1.53    | 12094.16  |
| 374.9 | 0.9   | 0.296         | 1.60    | 12894.40  |
| 375   | 1     | 0.314         | 1.77    | 13686.88  |
| 375.1 | 1.1   | 0.332         | 2.08    | 14471.60  |
| 375.2 | 1.2   | 0.350         | 2.59    | 15248.56  |
| 375.3 | 1.3   | 0.368         | 3.32    | 16017.76  |
| 375.4 | 1.4   | 0.385         | 4.31    | 16779.20  |
| 375.5 | 1.5   | 0.402         | 5.58    | 17532.88  |

Basin B- Bottom Basin Area (sf) = 4286

| Elev  | Depth | Vlume acre-ft | Outflow | Volume CF |
|-------|-------|---------------|---------|-----------|
| 416   | 0     | 0.061         | 0       | 2678.32   |
| 416.1 | 0.1   | 0.071         | 0.57    | 3103.38   |
| 416.2 | 0.2   | 0.081         | 0.60    | 3521.36   |
| 416.3 | 0.3   | 0.090         | 0.63    | 3932.26   |
| 416.4 | 0.4   | 0.100         | 0.66    | 4336.08   |
| 416.5 | 0.5   | 0.109         | 0.69    | 4732.82   |
| 416.6 | 0.6   | 0.118         | 0.72    | 5122.48   |
| 416.7 | 0.7   | 0.126         | 0.75    | 5505.06   |
| 416.8 | 0.8   | 0.135         | 0.78    | 5880.56   |
| 416.9 | 0.9   | 0.143         | 0.82    | 6248.98   |
| 417   | 1     | 0.152         | 0.96    | 6610.32   |
| 417.1 | 1.1   | 0.160         | 1.24    | 6964.58   |
| 417.2 | 1.2   | 0.168         | 1.72    | 7311.76   |
| 417.3 | 1.3   | 0.176         | 2.42    | 7651.86   |
| 417.4 | 1.4   | 0.183         | 3.38    | 7984.88   |
| 417.5 | 1.5   | 0.191         | 4.62    | 8310.82   |

**Table 2.5- Drawdown Calculations**

Using Darcy's Law to calculate time required to drain 10" of pond depth in largest basin:

|       |   |
|-------|---|
| 8662  | Basin Bottom Area (sf):   |
| 12894 | Basin Volume @ 10" Depth (cf):                                  |
| 1.66  | Depth of Engineered Soil above Outlet Point (ft):               |
| 5     | Assumed Soil Hydraulic Conductivity in Engineered Soil (in/hr): |

$Q = KIA$ ; where  $I$  = Hydraulic Gradient above outlet point

|      |                                |
|------|--------------------------------|
| 1.51 | Q at outlet point (cfs)        |
| 2.38 | Drawdown Time (hrs) < 72 hrs ✓ |

**ATTACHMENT E**  
**Geotechnical Certification Sheet**

*N/A, No Infiltration BMP's Proposed*

# ATTACHMENT F

## Maintenance Plan

- I. Purpose and scope
- II. Inspection, Maintenance Log and Self-Verification Forms
- III. Updates, Revisions and Errata
- IV. Introduction
- V. Responsibility for Maintenance
  - A. General
  - B. Staff Training Program
  - C. Records
  - D. Safety
- VI. Summary of Drainage Areas and Stormwater Facilities
  - A. Drainage Areas
  - B. Treatment and Flow-Control Facilities
- VII. Facility Documentation
- VIII. Maintenance Schedule or Matrix
  - A. Maintenance Schedule for each facility with specific requirements
  - B. Service Agreement Information

### **I. Purpose and Scope**

This section was prepared based on the Section 5 of County of San Diego Standard Urban Stormwater Mitigation Plan (SUSMP). The goal is to insure that the Project proponent accepts responsibility for all facilities maintenance, repair, and replacement from the time they are constructed until the ownership and maintenance responsibilities is formally transferred to the new owner. Facilities shall be maintained in perpetuity and comply with the County's self-inspection, reporting, and verification requirements.

### **II. Inspection, Maintenance Log and Self-Verification Forms**

Fill the forms on the following pages for each BMP using the maintenance schedule here and the inspection-maintenance checklists in Section VII. These forms shall be signed by the responsible party and sent to the County of San Diego along with any photo or inspection checklists on the annual basis. Use the Exhibit in Attachments B and C for the location of BMPs. (Make duplicate copies of these forms and fill out those, not the original ones.)

### **III. Updates, Revisions and Errata**

This maintenance plan is a living document and based on the changes made by maintenance personnel, such as replacement of mechanical equipments, addition maintenance procedure shall be added and maintenance plan shall be kept up to date.

Please add the revisions and updates to the maintenance plan to this section if any, these revisions maybe transmitted to the County at any time. However, at a minimum, updates to the maintenance plan must accompany the annual inspection report.

### **IV. Introduction**

The proposed project is the development of 19 Single Family Residence lots with private street and storm drain improvements. The total disturbed area will be 14.3 ac on a 25.8 gross acre site. This project is located in the County of San Diego, at the intersection of Mar Vista Drive and Buena Vista Drive in Vista, CA.

Based on the LID and Treatment Control BMPs design, this project is divided to 2 drainage management areas. All outflows within these basins confluence at a historical discharge point, as per the Existing Condition Hydrology.

### **V. Responsibility for Maintenance**

#### **A. General**

PAS Investors LP will enter into a Stormwater Facilities Maintenance Agreement (SWFMA) with the County of San Diego to maintain designated facilities herein this section for the West Dougherty Street project.

The SWFMA will serve as the mechanism to ensure that proper inspection and maintenance is done in an efficient and timely manner.

#### **Responsible Party**

PAS Investors LP  
5505 Cancha de Golf  
Rancho Santa Fe, CA 92091

PAS Investors LP will have the direct responsibility for maintenance of Stormwater controls. He should be the designated contact with County of San Diego inspectors and should sign self-inspection reports and any correspondence with the County regarding verification inspections.

Whenever the property is sold and whenever designated individual change, immediately the updated contact information must be provided to the County of San Diego.

#### **B. Staff Training Program**

Staff training and education program shall be carried out twice a year, once prior to the rainy season (October 15) and once during the early dry season (April).

The inspection and maintenance training program consists of the operation and function of the bioretention basins, and vegetated swale. Please refer to the sections VI and VII for fact sheets and checklists.

It is the responsibility of PAS Investors LP to convey the maintenance and inspection information to the employees. Maintenance personnel must be qualified to properly maintain Stormwater management facilities. Inadequately trained personnel can cause additional problems resulting in additional maintenance costs.

### **C. Records**

PAS Investors LP shall retain education, inspection, and maintenance forms and documents for at least five (5) years.

### **D. Safety**

Keep safety considerations at the forefront of inspection procedures at all times. Likely hazards should be anticipated and avoided. Never enter a confined space (outlet structure, manhole, etc) without proper training or equipment. A confined space should never be entered without at least one additional person present. If a toxic or flammable substance is discovered, leave the immediate area and contact the local Sheriff at 911.

Potentially dangerous (e.g., fuel, chemicals, hazardous materials) substances found in the areas must be referred to the local Sheriff's Office immediately for response by the Hazardous Materials Unit. The emergency contact number is 911.

Vertical drops may be encountered in areas located within and around the facility. Avoid walking on top of retaining walls or other structures that have a significant vertical drop. If a vertical drop is identified within the pond that is greater than 48" in height, make the appropriate note/comment on the maintenance inspection form.

## **VI. Summary of Drainage Areas and Stormwater Facilities**

### **A. Drainage Areas**

This Project is divided into 2 Drainage Management Areas which each will be drained into a treatment control facility. See the Exhibits in Attachment B and C for the location of the BMPs and DMAs.

**Basin 1** receives runoff from Lots 1-12 plus adjacent landscaping and street surface area via street catch basins, curb inlets and storm drains below the street. The outlet of Basin A is connected to a catch basin near the northwestern property corner, then connected via storm drain pipe to an existing culvert beneath Buena Vista Dr with a Storm Drain Cleanout.

**Basin 2** receives runoff from Lots 13-19 and their adjacent street and landscaping area. The outlet of Basin 2 flows to an existing detention basin with (2) 27"-dia RCP pipes, draining to a natural westerly-flowing channel.

See the Tables in Attachment D for DMAs pervious & impervious square footage and calculations.

## **B. Treatment and Flow-Control Facilities**

There will be different Treatment BMPs proposed for this project to treat the storm water from this project to the maximum extent practicable. Runoffs from rooftops, driveways, and street surfaces will be treated by the bioretention facilities. The treated runoff from these bioretention basins will percolate into the existing ground.

See the Exhibit in Attachment B and C for the location of BMPs.

**The bioretention facilities** are designed to treat and detain runoff and allow percolation into the underlying soil. Pollutants are removed as the runoff passes through the soil layer and the underlying layer of gravel or drain rock. There will be an overflow outlet, which conveys flows that exceed the capacity of the planter. All the basins for this Project are sized based on the Section 4 of the County of San Diego SUSMP. See the calculation and sizing tables in Attachment D.

## **VII. Facility Documentation**

Please see the following pages regarding the BMPs details and maintenance fact sheets.

## **VIII. Maintenance Schedule and Checklist**

Fill out the Checklists in the following pages for each BMP. The Required Maintenance activities are at the end of this section. Send these checklist along with the required County self-verification forms to County of San Diego.

At the discretion of the Project proponent, a qualified Stormwater company may be hired to perform the required inspection and maintenance and provide necessary reports.

**Date:** \_\_\_\_\_

**To:** **County Counsel**  
**Attention:** **Shiri Hoffman, Senior Deputy County Counsel**

**From:** \_\_\_\_\_, **DPW Land Development Project Manager**

**Subject:** **Request and INSTRUCTIONS for Preparation of Stormwater Facilities Maintenance Agreement (Revision 7-23-09)**

**\*\* Please Note: These Agreements are NOT "Standard Forms" and cannot be prepared by staff, private parties, or anyone other than a County Counsel attorney.**

---

Please provide the following information, to enable County Counsel to prepare a form of "STORMWATER FACILITIES MAINTENANCE AGREEMENT, WITH EASEMENT AND COVENANTS":

# Done Information to be Inserted

[1] ✓ County staff document custodian to receive document after recording will be **Jerry Moriarty** at (O336), unless another name / mail stop are provided:

\_\_\_\_\_  
Name of Custodian

\_\_\_\_\_  
Mail Stop

[2] ✓ Provide applicable Project **Reference Number(s)**:

Tentative Map: TM\_\_\_\_\_

Tentative Parcel Map: TPM\_\_\_\_\_

Grading Plan / Grading Permit: L-\_\_\_\_\_

Major Use Permit: MUP\_\_\_\_\_

Site Plan: STP\_\_\_\_\_

[3] ✓ Provide EXACT **name of Owner** [This must be word-for-word, letter-for-letter identical to vesting title information]:

\_\_\_\_\_  
PAS Investors LP

Name of Owner

[4] ✓ Indicate the status of the Owner:

a natural person; or

✓ a business entity.

If the Owner is a business entity, then please indicate what type ("a California Corporation", "a [other state] Corporation", "a California General Partnership", "a California Limited Partnership" or "a California Limited Liability Company"):

“a California Corporation”

Type of Owner's Business Entity

[5]  Create and attach an “Exhibit A”, which is an accurate Legal Description of the property involved in the entire project

[6] ✓ Provide brief Description of Type of Project [E.g. "a 100-unit residential subdivision"]:

A 19-unit residential subdivision with private streets.

Project Description

[7]  Provide official name, number and date of plan or drawing which shows the BMPs in detail [“Improvement Plans”, "Site Plan", "Grading Plans" etc.]:

Type of Plan

Plan Number

Plan Date

[8]  Create and attach an “Exhibit B”, using the format of Attachment 2 (“BMP MAINTENANCE PROGRAM”) as an example.

[9] Advise us whether the on-site easement to be granted to the County to access and maintain the BMPs, covers:

the entire project property; or

✓ a smaller area

If “a smaller area” is checked, then create and provide an Exhibit C, being a legal description of the access and maintenance area (Exhibit C will be a copy of the Final Map showing all easements)

- [10]  If a private off-site easement or right of way is used to access the PROPERTY, please provide the following information about the off-site easement:

\_\_\_\_\_  
Date of Easement

\_\_\_\_\_  
Grantor of Easement

\_\_\_\_\_  
Grantee of Easement

\_\_\_\_\_  
Date Easement Was Recorded

\_\_\_\_\_  
Recording File/Page No. or Document No.

- ALSO, please attach a copy of the Easement and a copy of a "plan view" drawing showing the Easement, if available.

- [11] Advise us whether the owner will provide as security:

a Letter of Credit; or  a Cash Deposit

- [12]  Specify the amount of the security:

\$ 23,507.28

- [13]  Provide Name and Address of the person who the Owner designates as his/her/its Agent for administration of the Agreement and receipt of notices:

Name: Daniel Hayden

Address: 5505 Cancha de Golf, Rancho Santa Fe, CA 92091

- [14] Advise us whether or not the project is a **Common Interest Development**:

No  Yes

- [15]  Provide the Name(s) and title(s) of **persons who will sign** agreement for the Owner:



| BMP: Bioretention Area<br>MAINTENANCE ACTIVITIES |   |   |   |  |                                 |                 |                         |                                      |  |                          |  |                           |                          |
|--|---|---|---|--|---------------------------------|-----------------|-------------------------|--------------------------------------|--|--------------------------|--|---------------------------|--------------------------|
| ROUTINE ACTION                                   | MAINTENANCE INDICATOR   | FIELD MEASUREMENT   | MEASUREMENT FREQUENCY                                   | MAINTENANCE ACTIVITY   | Frequency (# of times per year) | Hours per Event | Average Labor Crew Size | Avg. (Pro-Rated) Labor Rate/Hr. (\$) | Equipment                              | Equipment Cost/Hour (\$) | Materials & Incidentals Cost or Disposal Cost/Event (\$) | Total cost per visit (\$) | Total cost per year (\$) |
| Vegetation Management for Aesthetics (optional)  | Average vegetation height greater than 12-inches, emergence of trees or woody vegetation,   | Visual observation and random measurements through out the side slope area                      | Annually, prior to start of wet season                  | Cut vegetation to an average height of 6-inches and remove trimmings. Remove any trees, or woody vegetation.   | 1.0                             | 2.0             | 2                       | \$ 74.97                             | Utility Truck                          | \$ 14.39                 | \$ 50.00   | \$ 379                    | \$ 379                   |
| Soil Repair                                      | Evidence of erosion   | Visual observation  | Annually, prior to start of wet season                  | Reseed/revegetate barren spots prior to wet season.  | 1.0                             | 4.0             | 2                       | \$ 74.97                             | Utility Truck                          | \$ 14.39                 | \$ 150.00  | \$ 807                    | \$ 807                   |
| Standing Water                                   | Standing water for more than 96 hrs   | Visual observation  | Annually, 96 hours after a target storm (0.60 in) event | Drain facility. Corrective action prior to wet season. Consult engineers if immediate solution is not evident. | 1.0                             | 1.0             | 2                       | \$ 74.97                             | Utility Truck                          | \$ 14.39                 |  | \$ 164                    | \$ 164                   |
| Trash and Debris                                 | Trash and Debris present  | Visual observation  | Annually, prior to start of wet season                  | Remove and dispose of trash and debris   | 1.0                             | 2.0             | 2                       | \$ 74.97                             | Utility Truck                          | \$ 14.39                 |  | \$ 329                    | \$ 329                   |
| Sediment Management                              | Sediment depth exceeds 10% of the facility design   | Measure depth at apparent maximum and minimum accumulation of sediment. Calculate average depth | Annually, prior to start of wet season                  | Remove and properly dispose of sediment. Regrade if necessary. (expected every 2 years)                        | 0.5                             | 8.0             | 2                       | \$ 74.97                             | Utility Truck, 10-15 yd Truck, Backhoe | \$ 56.02                 | \$ 400.00  | \$ 2,048                  | \$ 1,024                 |
| Underdrains                                      | Evidence of Clogging  | Visual Observation  | Annually, prior to start of wet season                  | Corrective action prior to wet season. Consult engineers if immediate solution is not evident.                 | 1.0                             | 0.5             | 2                       | \$ 74.97                             | Utility Truck                          | \$ 14.39                 |  | \$ 82                     | \$ 82                    |
| General Maintenance Inspection                   | Inlet structures, outlet structures, side slopes or other features damaged, significant erosion, burrows, emergence of trees or woody vegetation, graffiti or vandalism, fence damage, etc. | Visual observation  | Annually, prior to start of wet season                  | Corrective action prior to wet season. Consult engineers if immediate solution is not evident.                 | 1.0                             | 1.0             | 2                       | \$ 74.97                             | Utility Truck                          | \$ 14.39                 |  | \$ 164                    | \$ 164                   |
| Reporting  |   |   |   |  | 1.0                             | 3.0             | 1                       | \$ 74.97                             |  |                          |  | \$ 225                    | \$ 225                   |
| <b>Average Annual Total</b>                      |   |   |   |  |                                 | <b>32.0</b>     |                         |                                      |  |                          |  |                           | <b>\$ 3,174</b>          |

|            |            |
|------------|------------|
| Labor Rate | \$74.97/hr |
|------------|------------|

| Equipment      | Equipment Cost |
|----------------|----------------|
| Utility Truck  | \$14.39/hr     |
| 10-15 yd truck | \$28.27/hr     |
| Backhoe        | \$13.36/hr     |
| Vactor         | \$62.70/hr     |

|                                      |             |                 |
|--------------------------------------|-------------|-----------------|
| <b>Small Bioretention (500 sf)</b>   | <b>32.0</b> | <b>\$ 3,174</b> |
| <b>Medium Bioretention (2000 sf)</b> | <b>44.0</b> | <b>\$ 4,078</b> |
| <b>Large Bioretention (4000 sf)</b>  | <b>68.0</b> | <b>\$ 5,877</b> |

| Security Cost for Tract 5479: |           |                  |
|-------------------------------|-----------|------------------|
| Basin Size:                   | Count:    | Cost per year:   |
| Large                         | 2         | \$ 11,753.64     |
|                               |           | x 2 years        |
| <b>Total Security Cost:</b>   | <b>\$</b> | <b>23,507.28</b> |

# Stormwater Facility Operation and Maintenance Fact Sheet

## ► **BIORETENTION FACILITIES**

These facilities remove pollutants primarily by filtering runoff slowly through aerobic, biologically active soil. Routine maintenance is needed to ensure that flow is unobstructed, that erosion is prevented, and that soils are held together by plant roots and are biologically active. Typical maintenance consists of the following:

- Inspect **inlets** for channels, exposure of soils, or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.
- Inspect **outlets** for erosion or plugging.
- Inspect **side slopes** for evidence of instability or erosion and correct as necessary.
- Observe the surface of bioretention facility soil for uniform **percolation** throughout. If portions of the bioretention facility do not drain within 24 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.
- Confirm that **check dams** and **flow spreaders** are in place and level and that rivulets and channelization are effectively prevented.
- Examine the **vegetation** to ensure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. When mowing, remove no more than  $\frac{1}{3}$  height of grasses. Confirm that irrigation is adequate and not excessive and that sprays do not directly enter overflow grates. Replace dead plants and remove noxious and invasive vegetation.
- Abate any potential **vectors** by filling holes in the ground in and around the bioretention facility and by insuring that there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the San Diego County Vector Control Program for information and advice. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

# ATTACHMENT G

## Treatment Control BMP Certification for DPW Permitted Land Development Projects



# County of San Diego

## DEPARTMENT OF PUBLIC WORKS

### Treatment Control BMP Certification for DPW Permitted Land Development Projects

Permit Number (e.g. L-grading) \_\_\_\_\_ HSU Watershed Agua Hedionda Creek 90431000

Project Name Buena Vista Drive, Vista CA. County of San Diego Tract #5479

Location / Address Intersection of Mar Vista Dr and Buena Vista Dr, Vista CA

Maintenance Notification/Agreement No.: \_\_\_\_\_

#### Responsible Party for Construction Phase

Developer's Name: \_\_\_\_\_

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Engineer of Work: Ron Holloway

Engineer's Phone Number: 760-931-8700

#### Responsible Party for Ongoing Maintenance

Owner's Name(s)\* PAS Invextors LP

Address: 5505 Cancha de Golf

City Rancho Santa Fe State CA Zip 92091

Email Address: \_\_\_\_\_

Phone Number: 760-815-1182

\* Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.



**For Applicant to submit to PDCI:**

- Copy of the final accepted SWMP and any accepted addendum.
- Copy of the most current plan showing the Stormwater TCBMP Table, plans/cross-section sheets of the TCBMPs and the location of each verified as-built TCBMP.
- Photograph of each TCBMP.
- Copy of the approved TCBMP maintenance agreement and associated security

By signing below, I certify that the treatment control BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the County reserves the right to inspect the above BMPs to verify compliance with the approved plans and Watershed Protection Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

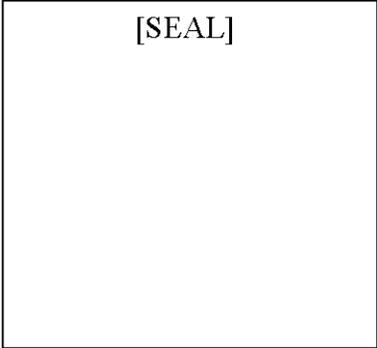
Professional Engineer's Printed Name:

    **Ronald L. Holloway**    

Professional Engineer's Signed Name:

\_\_\_\_\_

Date: \_\_\_\_\_





# ATTACHMENT H

## HMP Study

**(Contact County staff to determine if this should be a separate report from the Major SWMP)**

### *HMP Compliance Required*

*Hydro-modification Calculations shown in Attachment D*

*See Hydrology and Hydraulic Report for this project for further calculations  
and HMP Compliance details*

# **ATTACHMENT I**

## **Geomorphic Assessment**

*N/A, Not in the Scope of this Report*

# **ATTACHMENT J**

## **HMP Exemption Documentation**

*N/A, HMP Compliance Required*

# **ATTACHMENT K**

## **Addendum**

## Table 2-5. BENEFICIAL USES OF GROUND WATERS

| Ground Water             | Hydrologic Unit Basin Number | BENEFICIAL USE |     |     |      |      |      |
|--------------------------|------------------------------|----------------|-----|-----|------|------|------|
|                          |                              | MUN            | AGR | IND | PROC | FRSH | GW R |
| CARLSBAD HYDROLOGIC UNIT | 4.00                         |                |     |     |      |      |      |
| Loma Alta                | HA <sup>2</sup>              | 4.10           | +   |     | ●    |      |      |
| Buena Vista Creek        | HA                           | 4.20           |     |     |      |      |      |
| El Salto                 | HSA <sup>2</sup>             | 4.21           | ●   | ●   | ○    |      |      |
| Vista                    | HSA                          | 4.22           | ●   | ●   | ●    |      |      |
| Agua Hedionda            | HA                           | 4.30           |     |     |      |      |      |
| Los Monos                | HSA <sup>2</sup>             | 4.31           | ●   | ●   | ●    |      |      |
| Los Monos                | HSA <sup>6</sup>             | 4.31           | ○   | ○   | ○    |      |      |
| Los Monos                | HSA <sup>6</sup>             | 4.31           | ○   | ●   | ○    |      |      |
| Buena                    | HSA                          | 4.32           | ●   | ●   | ●    |      |      |

- 2 These beneficial uses do not apply westerly of the easterly boundary of the right-of-way of Interstate 5 and this area is excepted from the sources of drinking water policy. The beneficial uses for the remainder of the hydrologic area are as shown.
- 5 These beneficial uses designations apply to the portion of HSA 4.31 bounded on the west by the easterly boundary of Interstate Highway 5 right-of-way; on the east by the easterly boundary of El Camino Real; and on the north by a line extending along the southerly edge of Agua Hedionda Lagoon to the easterly end of the lagoon, thence in an easterly direction to Evans Point, thence easterly to El Camino Real along the ridge lines separating Letterbox Canyon and the area draining to the Marcario Canyon.
- 6 These beneficial uses apply to the portion of HSA 4.31 tributary to Agua Hedionda Creek downstream from the El Camino Real crossing, except lands tributary to Marcario Canyon (located directly southerly of Evans Point, land directly south of Agua Hedionda Lagoon, and areas west of Interstate Highway 5).

- Existing Beneficial Use
- Potential Beneficial Use
- + Excepted from MUN (see text)

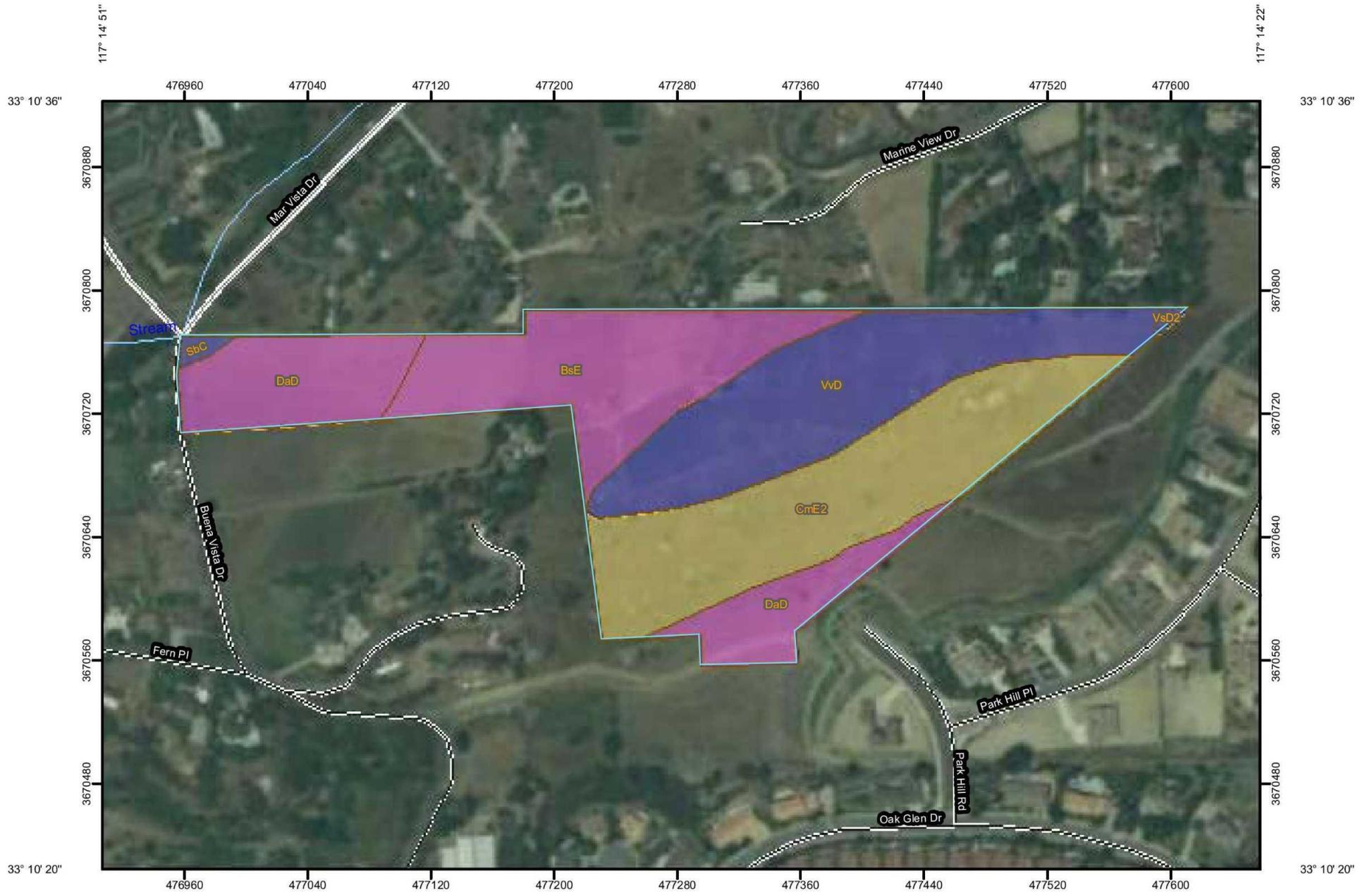
# 2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS REQUIRING TMDLS

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

USEPA APPROVAL DATE: JUNE 28, 2007

| REGION | TYPE | NAME                 | CALWATER WATERSHED | POLLUTANT/STRESSOR  | POTENTIAL SOURCES         | ESTIMATED SIZE AFFECTED | PROPOSED TMDL COMPLETION |
|--------|------|----------------------|--------------------|---|---------------------------|-------------------------|--------------------------|
| 9      | R    | Agua Hedionda Creek  | 90431000           | Manganese   |                           | 7 Miles                 | 2019                     |
|        |      |                      |                    |   | Source Unknown            |                         |                          |
|        |      |                      |                    | Selenium  |                           | 7 Miles                 | 2019                     |
|        |      |                      |                    |   | Source Unknown            |                         |                          |
|        |      |                      |                    | Sulfates  |                           | 7 Miles                 | 2019                     |
|        |      |                      |                    |   | Source Unknown            |                         |                          |
|        |      |                      |                    | Total Dissolved Solids  |                           | 7 Miles                 | 2019                     |
|        |      |                      |                    |   | Urban Runoff/Storm Sewers |                         |                          |
|        |      |                      |                    |   | Unknown Nonpoint Source   |                         |                          |
|        |      |                      |                    |   | Unknown point source      |                         |                          |
| 9      | E    | Agua Hedionda Lagoon | 90431000           | Indicator bacteria  |                           | 6.8 Acres               | 2006                     |
|        |      |                      |                    |   | Nonpoint/Point Source     |                         |                          |
|        |      |                      |                    | Sedimentation/Siltation   |                           | 6.8 Acres               | 2019                     |
|        |      |                      |                    |   | Nonpoint/Point Source     |                         |                          |
| 9      | R    | Aliso Creek          | 90113000           | Indicator bacteria  |                           | 19 Miles                | 2005                     |
|        |      |                      |                    | <i>This listing for indicator bacteria applies to the Aliso Creek mainstem and all the major tributaries of Aliso Creek which are Sulphur Creek, Wood Canyon, Aliso Hills Canyon, Dairy Fork, and English Canyon.</i> |                           |                         |                          |
|        |      |                      |                    |   | Urban Runoff/Storm Sewers |                         |                          |
|        |      |                      |                    |   | Unknown point source      |                         |                          |
|        |      |                      |                    |   | Nonpoint/Point Source     |                         |                          |
|        |      |                      |                    | Phosphorus  |                           | 19 Miles                | 2019                     |
|        |      |                      |                    | <i>This listing for phosphorus applies to the Aliso Creek mainstem and all the major tributaries of Aliso Creek which are Sulphur Creek, Wood Canyon, Aliso Hills Canyon, Dairy Fork, and English Canyon.</i>         |                           |                         |                          |
|        |      |                      |                    |   | Urban Runoff/Storm Sewers |                         |                          |
|        |      |                      |                    |   | Unknown Nonpoint Source   |                         |                          |
|        |      |                      |                    |   | Unknown point source      |                         |                          |

Hydrologic Soil Group—San Diego County Area, California



Map Scale: 1:3,570 if printed on A size (8.5" x 11") sheet.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Units

### Soil Ratings

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

### Political Features

 Cities

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

## MAP INFORMATION

Map Scale: 1:3,570 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 11N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California  
Survey Area Data: Version 6, Dec 17, 2007

Date(s) aerial images were photographed: 6/7/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Hydrologic Soil Group— Summary by Map Unit — San Diego County Area, California (CA638) |  |        |              |                |  |
|--|--|--------|--------------|----------------|--|
| Map unit symbol  | Map unit name  | Rating | Acres in AOI | Percent of AOI |  |
| BSE  | Bosanko clay, 15 to 30 percent slopes                            | D      | 4.0          | 22.4%          |  |
| CmE2   | Cieneba rocky coarse sandy loam, 9 to 30 percent slopes , eroded | C      | 5.4          | 30.4%          |  |
| Dad  | Diablo clay, 9 to 15 percent slopes                              | D      | 3.3          | 18.7%          |  |
| SbC  | Salinas clay loam, 2 to 9 percent slopes                         | B      | 0.1          | 0.6%           |  |
| VsD2   | Vista coarse sandy loam, 9 to 15 percent slopes, eroded          | B      | 0.0          | 0.2%           |  |
| VVD  | Vista rocky coarse sandy loam, 5 to 15 percent slopes            | B      | 4.9          | 27.7%          |  |
| <b>Totals for Area of Interest</b>   |  |        | <b>17.7</b>  | <b>100.0%</b>  |  |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

**CHAPTER 4: LID DESIGN GUIDE**

|       |   |          |            |       |        |        |
|-------|---|----------|------------|-------|--------|--------|
| 0.1Q2 | D | Steep    | Oceanside  | 0.065 | 0.0542 | 0.0390 |
| 0.1Q2 | A | Flat     | L Wohlford | 0.050 | 0.0417 | N/A    |
| 0.1Q2 | A | Moderate | L Wohlford | 0.045 | 0.0375 | N/A    |
| 0.1Q2 | A | Steep    | L Wohlford | 0.040 | 0.0333 | N/A    |
| 0.1Q2 | B | Flat     | L Wohlford | 0.090 | 0.0750 | N/A    |
| 0.1Q2 | B | Moderate | L Wohlford | 0.085 | 0.0708 | N/A    |
| 0.1Q2 | B | Steep    | L Wohlford | 0.065 | 0.0542 | N/A    |
| 0.1Q2 | C | Flat     | L Wohlford | 0.110 | 0.0917 | 0.0660 |
| 0.1Q2 | C | Moderate | L Wohlford | 0.110 | 0.0917 | 0.0660 |
| 0.1Q2 | C | Steep    | L Wohlford | 0.090 | 0.0750 | 0.0540 |
| 0.1Q2 | D | Flat     | L Wohlford | 0.100 | 0.0833 | 0.0600 |
| 0.1Q2 | D | Moderate | L Wohlford | 0.100 | 0.0833 | 0.0600 |
| 0.1Q2 | D | Steep    | L Wohlford | 0.075 | 0.0625 | 0.0450 |

$Q_2$  = 2-year pre-project flow rate based upon partial duration analysis of long-term hourly rainfall records  
 $Q_{10}$  = 10-year pre-project flow rate based upon partial duration analysis of long-term hourly rainfall records  
A = Surface area sizing factor  
 $V_1$  = Surface volume sizing factor  
 $V_2$  = Subsurface volume sizing factor

## Table 2-2. BENEFICIAL USES OF INLAND SURFACE WATERS

| Inland Surface Waters <sup>1, 2</sup> | Hydrologic Unit Basin Number | BENEFICIAL USE                 |     |     |      |    |      |     |      |      |     |     |     |      |      |      |
|---------------------------------------|------------------------------|--------------------------------|-----|-----|------|----|------|-----|------|------|-----|-----|-----|------|------|------|
|                                       |                              | MUN                            | AGR | IND | PROC | GR | FRSH | POW | REC1 | REC2 | BIO | WAR | COL | WILD | RARE | SPWN |
| San Diego County Coastal Streams      |                              |                                |     |     |      |    |      |     |      |      |     |     |     |      |      |      |
| Loma Alta Creek                       | 4.10                         | +                              |     |     |      |    |      |     | ○    | ●    |     | ●   |     | ●    |      |      |
| <i>Loma Alta Slough</i>               | 4.10                         | See Coastal Waters – Table 2-3 |     |     |      |    |      |     |      |      |     |     |     |      |      |      |
| <i>Buena Vista Lagoon</i>             | 4.21                         | See Coastal Waters – Table 2-3 |     |     |      |    |      |     |      |      |     |     |     |      |      |      |
| Buena Vista Creek                     | 4.22                         | +                              | ●   | ●   |      |    |      |     | ●    | ●    |     | ●   |     | ●    |      |      |
| Buena Vista Creek                     | 4.21                         | +                              | ●   | ●   |      |    |      |     | ●    | ●    |     | ●   |     | ●    | ●    |      |
| <i>Agua Hedionda</i>                  | 4.31                         | See Coastal Waters – Table 2-3 |     |     |      |    |      |     |      |      |     |     |     |      |      |      |
| Agua Hedionda Creek                   | 4.32                         | ●                              | ●   | ●   |      |    |      |     | ●    | ●    |     | ●   |     | ●    |      |      |
| Buena Creek                           | 4.32                         | ●                              | ●   | ●   |      |    |      |     | ●    | ●    |     | ●   |     | ●    |      |      |
| Agua Hedionda Creek                   | 4.31                         | ●                              | ●   | ●   |      |    |      |     | ●    | ●    | ●   | ●   |     | ●    |      |      |
| Letterbox canyon                      | 4.31                         | ●                              | ●   | ●   |      |    |      |     | ●    | ●    |     | ●   |     | ●    |      |      |
| Canyon de las Encinas                 | 4.40                         | +                              |     |     |      |    |      |     | ○    | ●    |     | ●   |     | ●    |      |      |
| Cottonwood Creek                      | 4.51                         | +                              | ●   |     |      |    |      |     | ●    | ●    |     | ●   |     | ●    |      |      |
| Moonlight Creek                       | 4.51                         | +                              | ●   |     |      |    |      |     | ●    | ●    |     | ●   |     | ●    |      |      |

● Existing Beneficial Use

○ Potential Beneficial Use

⊕ Exempted from MUN (See Text)

<sup>1</sup> Waterbodies are listed multiple times if they cross hydrologic area or sub area boundaries.

<sup>2</sup> Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.