

**Major Stormwater Management Plan
(Major SWMP)
For**

OTAY RANCH RESORT VILLAGE

**Preparation/Revision Date:
September 12, 2014**

Prepared for:

Baldwin & Sons	JPB Development
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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.




Alisa S. Vialpando, Principal, RCE #47945

9/12/14
Date

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:	Otay Ranch Resort Village
Project Location/ Address:	North East of Otay Lakes Road and Lower Otay Reservoir, County of San Diego
Permit Number (Land Development Projects):	
Work Authorization Number (CIP only):	
Applicant:	JPB Development and Baldwin & Sons
Applicant's Address:	<u>JPB Development:</u> 1392 E. Palomar Street, Ste 202, Chula Vista, CA 91913 <u>Baldwin & Sons:</u> 610 W. Ash Street, Ste 1500, San Diego, CA 92101
Plan Prepared By (<i>Leave blank if same as applicant</i>):	Hunsaker & Associates
Preparer's Address:	9707 Waples St, San Diego, CA 92121
Date:	9/12/2014

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		
Tentative Maps 5361 (A) & (B) (September 2014)		X		
Future Resort Site will require its own SWMP to address its onsite water quality treatment.		X		

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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	A	Housing subdivisions of 10 or more dwelling units. Examples: single-family homes, multi-family homes, condominiums, and apartments.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	B	Commercial—greater than one acre (total disturbed area). 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	C	Heavy industry—greater than one acre (total disturbed area). Examples: manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).
Yes <input type="checkbox"/>	No <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 <input checked="" type="checkbox"/>	No <input 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 <input checked="" type="checkbox"/>	No <input 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 <input checked="" type="checkbox"/>	No <input 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	H	Parking lots 5,000 square feet or more or with 15 or more (paved) parking spaces and potentially exposed to urban runoff.
Yes <input checked="" type="checkbox"/>	No <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 <input type="checkbox"/>	No <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 K. 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 1,917* (Acres or ft²)

Estimated amount of disturbed area: 795 (Acres or ft²)

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

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: 1,917* (Acres or ft²)

B. Total impervious area (including roof tops) before construction 15 (Acres or ft²)

C. Total impervious area (including roof tops) after construction 321 (Acres or ft²)

Calculate percent impervious before construction: $B/A = 0.8\%$

Calculate percent impervious after construction: $C/A = 16.74\%$

*Includes 1,869 acres of onsite area and 47.72 acres associated with Otay Lakes Road.

Please provide detailed descriptions regarding the following questions:

TABLE 2: PROJECT SPECIFIC STORMWATER ANALYSIS

1.	Please provide a brief description of the project.
<p>The land uses proposed by the Otay Ranch Resort Village (proposed Project) consist of single-family neighborhoods, a mixed use residential and commercial use neighborhood, a resort hotel with associated ancillary facilities, an elementary school site, a site for public safety facilities, open space, Preserve land, and park and recreational uses.</p> <p>The proposed specific plan includes approximately 525.0 acres designated for 1,881 single-family detached homes. Five single-family neighborhoods are planned with average densities ranging from 3.2 to 4.4 dwelling units per acre.</p> <p>A Multiple Use neighborhood of 14.1 acres is proposed to contain 57 residential units in either an attached or detached configuration. The Multiple Use area includes up to 20,000 square feet of commercial uses.</p> <p>Approximately 17.4 acres are identified for a resort hotel complex with a maximum of 200 guest rooms and up to 20,000 square feet of ancillary uses including meeting rooms, a conference center, offices, shops, and restaurants.</p> <p>The specific plan proposes to reserve a 2.1 acre public safety site and a 10.0 acre elementary school site.</p> <p>Nine parks are planned on 28.6 acres, the largest of which is a 10.3 acre public neighborhood park site. The remaining parks range from 1.3 acres to 2.9 acres.</p> <p>The Otay Ranch Resort Village planning area also includes about 144 acres of open space and approximately 1,089 acres of Preserve land. Open space generally consists of large manufactured slopes outside of neighborhoods and brush management areas. Preserve land is usually undisturbed lands or restored habitats set aside for dedication to the Otay Ranch Preserve Owner Manager in satisfaction of Otay Ranch RMP conveyance requirements.</p> <p>Internal circulation comprises about 39.0 acres of the planning area.</p> <p>The impact of development along and within Otay Lakes Road was also included with the hydrologic and hydraulic analysis of this drainage study as well as the water quality and hydromodification analysis of this study. Otay Lakes Road adjacent to Village 13 is approximately 4.15 miles long and accounts for approximately 47.72 acres of which about 30 acres is impervious surfaces such as pavement, curb, and sidewalk.</p> <p>The City of San Diego (which owns the Lower Otay Reservoir) considers the Lower Otay Reservoir a drinking water supply. Therefore, development projects upstream of the Reservoir have been conditioned to protect the Reservoir from storm water pollution. Thus, the proposed treatment approach has to comply with the City of San Diego's "Source Water Protection Guidelines, SWPG" located in Attachment K.</p> <p>According to Page 6 of the SWPG, the Project is a Tier 3 development that warrants the highest consideration for source water quality protection. Intensive BMP systems are</p>	

	<p>required as Treatment Control BMPs in addition to Project Design BMPs and Source Control BMPs.</p>
2.	<p>Describe the current and proposed zoning and land use designation.</p> <p>The existing zoning on the Project site is a combination of S-87, Limited Development, and S-88, Specific Plan Area. The project proposes to modify the boundary of the S-88 zone to reflect the development footprint and rezone preserve areas to S-80, Open Space.</p> <p>The Project site's existing Land Use designations are Specific Plan Area and Impact Sensitive. The project proposes to maintain these Land Use designations, but modify the boundaries to reflect the development footprint. As a result, areas proposed for development will be designated Specific Plan Area, and area proposed to be part of the preserve will be designated Impact Sensitive.</p>
3.	<p>Describe the pre-project and post-project topography of the project. (Show on Plan)</p> <p>The Otay Ranch Resort Village's planning area consists of a broad mesa sloping to the south, broken by several steep canyons draining from north to south. Portions of the relatively flat mesa extend north into the Jamul Mountains, becoming part of steeper slopes. Site elevations range from approximately 500 feet above mean sea level (AMSL) at the southern end of the property to approximately 1,500 feet AMSL in the northeastern portions. The project area lies within the watershed of the Otay River, a westerly flowing stream which drains an area of approximately 145 square miles. The site is upstream of Savage Dam, which creates the Lower Otay Reservoir.</p> <p>In the developed condition, the project area will drain in the same direction (southerly) toward the reservoir. Developed site topographies range from approximately 500 feet AMSL to 900 feet AMSL. The higher elevation portions of the Project site in the northeastern corner (up to 1,500 feet AMSL) are not proposed for development.</p>
4.	<p>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.</p> <p>According to the NRCS Web Soil Survey, the soil classification for the project is type "D", which is characterized as having low permeability.</p> <p>According to the NRCS Web Soil Survey, the majority of the site consists of loam or sandy loam with K factors between 0.17 and 0.2, which correlates with low erodibility. A small portion of the project along the western edge consists of silty loam, which has a K factor of 0.55 and is highly erodible.</p> <p>According to the NRCS Web Soil Survey, the depth to groundwater for the project area is greater than 200 cm (6.5 feet).</p>
5.	<p>Describe if contaminated or hazardous soils are within the project area. (Show on Plan)</p> <p>Since the land was undeveloped in the existing condition, hazardous soils are not expected to exist within the project boundaries. However, the project applicants prepared a Phase 1 Environmental Site Assessment which included a historic review of uses on the project site and several site tours. The Phase 1 ESA concluded the Project site does not contain contaminated soils.</p>

6.	Describe the existing site drainage and natural hydrologic features. (Show on Plan)
<p>Runoff from the project site currently flows to the Lower Otay Reservoir via one of 23 existing culverts under Otay Lakes Road. After routing through the reservoir, the runoff eventually discharges to the Otay River.</p> <p>All runoff from the proposed project will discharge to the Lower Otay Reservoir. Development from the site will not cause any diversion to or from the Lower Otay Reservoir watershed. Natural runoff from areas north of the project site will either be separated from the developed site runoff via separate storm drains (for large contributing areas) or combined with the treated flows and directed to one of the proposed Water Quality Basins. Most natural undeveloped areas will continue to drain directly into the Lower Otay Reservoir and not mix with runoff from the development until downstream of the proposed water quality basins.</p>	
7.	Describe site features and conditions that constrain, or provide opportunities for stormwater control, such as LID features.
<p>The large project area provides potential locations for water quality basins. However, the soils for the site are type “D”, which provide low infiltration, and limit the use of infiltration BMPs.</p>	
8.	<p>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>?</p>
<p style="text-align: center;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
9.	<p>Is this an emergency project? If yes, please provide a description below.</p>
<p style="text-align: center;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	
<p style="height: 40px;"></p>	

CHANNELS & DRAINAGES

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

TABLE 3: PROJECT SPECIFIC STORMWATER ANALYSIS

No.	CRITERIA	YES	NO	N/A	COMMENTS
1.	Will the project include work in channels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If YES go to 2 If NO go to 13.
2.	Will the project increase velocity or volume of downstream flow?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If YES go to 6.
3.	Will the project discharge to unlined channels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If YES go to 6.
4.	Will the project increase potential sediment load of downstream flow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If YES go to 8.
6.	Review channel lining materials and design for stream bank erosion.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Continue to 7.
7.	Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Continue to 8.
8.	Include, where appropriate, energy dissipation devices at culverts.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Continue to 9.
9.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Continue to 10.
10.	Include, if appropriate, detention facilities to reduce peak discharges.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continue to 12.
12.	Provide other design principles that are comparable and equally effective.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Continue to 13.
13.	End				

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 | |
| <input checked="" type="checkbox"/> 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: http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010/state_ir_reports/category5_report.shtml	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If YES, continue to 2. If NO, go to 5.
2.	Will the project disturb more than 5 acres, including all phases of the development?	<input type="checkbox"/>	<input type="checkbox"/>	If YES, continue to 3. 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?	<input type="checkbox"/>	<input type="checkbox"/>	If YES, continue to 4. 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? http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm	<input type="checkbox"/>	<input type="checkbox"/>	If YES, continue to 6. If NO, go to 5.
5.	Project is not required to use Advanced Treatment BMPs.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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.	<input type="checkbox"/>	<input type="checkbox"/>	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 is 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If NO, continue to 2. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If NO, continue to 3. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If NO, continue to 4. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If NO, continue to 5. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If NO, continue to 6. If YES, go to 7.
6.	Project is required to manage hydromodification impacts.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reference Appendix G "Hydromodification Management Plan" of the County SUSMP.
7.	Project is not required to manage hydromodification impacts.	<input type="checkbox"/>	<input type="checkbox"/>	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 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 checked="" 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

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

HYDROLOGIC SUB-AREA NAME AND NUMBER(S)

Basin Number	Sub-Area Name
910.31	Savage Hydrologic Sub Area

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 (river, lake, reservoir, etc.)	Hydrologic Unit Basin Number	Impairment(s) listed [303(d) listed waters or waters with established TMDLs]. List the impairments identified in Table 7 .	Distance to Project
Lower Otay Reservoir	910.31	Color, Iron, Manganese, Nitrogen, Ammonia, high pH, Salt	< 100 ft

http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r9_06_303d_reqtmdls.pdf

GROUND WATERS

Ground Waters	Hydrologic Unit Basin Number	MUN	AGR	IND	PROC	GWR	FRESH
	910.30	•	•	•			

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 ⁽¹⁾	P ⁽²⁾	P	X
Commercial Development 1 acre or greater	P ⁽¹⁾	P ⁽¹⁾		P ⁽²⁾	X	P ⁽⁵⁾	X	P ⁽³⁾	P ⁽⁵⁾
Heavy industry /industrial development	X		X	X	X	X	X		
Automotive Repair Shops			X	X ⁽⁴⁾⁽⁵⁾	X		X		
Restaurants					X	X	X	X	
Hillside Development >5,000 ft ²	X	X			X	X	X		X
Parking Lots	P ⁽¹⁾	P ⁽¹⁾	X		X	P ⁽¹⁾	X		P ⁽¹⁾
Retail Gasoline Outlets			X	X	X	X	X		
Streets, highways & Freeways	X	P ⁽¹⁾	X	X ⁽⁴⁾	X	P ⁽⁵⁾	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 (X)	Potential (P)	Surface Water Impairments
Sediments	X		
Nutrients	X		Nitrogen (Algae), Ammonia
Heavy Metals	X		Iron, Manganese
Organic Compounds	X		
Trash & Debris	X		
Oxygen Demanding Substances	X		
Oil & Grease	X		
Bacteria & Viruses	X		
Pesticides	X		
Total Dissolved Solids		X	Salt

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 type="checkbox"/> Preserve well draining soils (Type A or B)
<input type="checkbox"/> Preserve Significant Trees
<input checked="" type="checkbox"/> Preserve critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions
<input checked="" type="checkbox"/> Other. Description: Preserve areas with natural drainage channels retained
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 checked="" type="checkbox"/> Clustered Lot Design
<input checked="" type="checkbox"/> Items checked in 5?
<input type="checkbox"/> Other. Description:
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 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 & Road Design</u>
<input type="checkbox"/> Curb-cuts to landscaping
<input checked="" type="checkbox"/> Rural Swales
<input type="checkbox"/> Concave Median
<input type="checkbox"/> Cul-de-sac Landscaping Design
<input checked="" type="checkbox"/> Other. Description: Street runoff to Filterra units (or approved equal) or bioretention areas.

<u>LID Parking Lot Design</u>
<input type="checkbox"/> Permeable Pavements
<input type="checkbox"/> Curb-cuts to landscaping
<input type="checkbox"/> Other. Description:
<u>LID Driveway, Sidewalk, Bike-path Design</u>
<input type="checkbox"/> Permeable Pavements
<input checked="" type="checkbox"/> Pitch pavements toward landscaping (on-lot swales, roadside bioretention areas)
<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 type="checkbox"/> Soil Amendments
<input checked="" 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 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>
On-site storm drain inlets	Mark all inlets with the words “No Dumping! Flows to Bay” or similar.	Maintain and periodically repaint or replace inlet markings.
Need for future indoor & structural pest control		Provide Integrated Pest Management information to owners, lessees, and operators.
Landscape/Outdoor Pesticide Use	<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>To insure successful establishment, select plants</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 www.cabmphandbooks.com.</p> <p>Provide IPM information to new owners, lessees and operators.</p>

	appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	
Plazas, sidewalks and parking lots.		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.
Pools, spas, ponds decorative fountains, and other water features.	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.	See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Food Service	Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	
Refuse Areas	State how site refuse will be handled and provide supporting detail to what is shown on plans. State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	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 www.cabmphandbooks.com
Loading Docks		Move loaded and unloaded items indoors as soon as possible

		See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Fire Sprinkler Test Water	Provide a means to drain fire sprinkler test water to the sanitary sewer.	See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Miscellaneous Drain or Wash Water: Condensate drain lines Rooftop equipment Roofing, gutters, and trim	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. Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment. Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
Plazas, sidewalks and parking lots.		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.

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.

All proposed storm drain inlets will have inlet stenciling to prevent any dumping of materials or addition of non-stormwater flows.

Homeowners will be encouraged to use native plants as part of their landscaping plan and avoid the use of fertilizers through the homeowners association and CC&R's.

Street sweeping will occur regularly to reduce sediment, trash, and debris from accumulating.

The future Resort Site will include many of the Source Control BMPs listed above such as those relating to plazas, sidewalks, parking lots, pools, ponds, food service, refuse areas, loading docks, fire sprinkler testing, condensate drain lines, and rooftop building equipment.

IF THESE SOURCES WILL BE ON THE PROJECT SITE...	...THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls – Show on Source Control Exhibit, Attachment B	3 Permanent Controls – List in Table 9 and Narrative	4 Operational BMPs – Include in Table 9 and Narrative
<input checked="" type="checkbox"/> A. On-site storm drain inlets	<input checked="" type="checkbox"/> Location 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. <input checked="" type="checkbox"/> Provide stormwater pollution prevention information to new site owners, lessees, or operators. <input type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com <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. 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"/> C. 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 SOURCES CONTROL BMPs		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls – Show on Source Control Exhibit, Attachment B	3 Permanent Controls – List in Table 9 and Narrative	4 Operational BMPs – Include in Table 9 and Narrative
<input checked="" type="checkbox"/> D1. Need for future indoor & structural pest control		<input type="checkbox"/> Note building design features that discourage entry of pests.	<input checked="" type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.

IF THESE SOURCES WILL BE ON THE PROJECT SITE...	...THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCES CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls – Show on Source Control Exhibit, Attachment B	3 Permanent Controls – List in Table 9 and Narrative	4 Operational BMPs – Include in Table 9 and Narrative
<input checked="" type="checkbox"/> D2. Landscape/ Outdoor Pesticide Use <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. <input checked="" type="checkbox"/> Show self-retaining landscape areas, if any. <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. <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. <input checked="" type="checkbox"/> Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. <input type="checkbox"/> Consider using pest-resistant plants, especially adjacent to hardscape. <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. <input checked="" type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com . <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 SOURCES CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls – Show on Source Control Exhibit, Attachment B	3 Permanent Controls – List in Table 9 and Narrative	4 Operational BMPs – Include in Table 9 and Narrative
<input checked="" 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 checked="" 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 checked="" type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-72, “Fountain and Pool Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<input checked="" 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. <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. <input checked="" 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.	

IF THESE SOURCES WILL BE ON THE PROJECT SITE...	...THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCES CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls – Show on Source Control Exhibit, Attachment B	3 Permanent Controls – List in Table 9 and Narrative	4 Operational BMPs – Include in Table 9 and Narrative
<input checked="" type="checkbox"/> G. Refuse areas	<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. <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. <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 checked="" type="checkbox"/> State how site refuse will be handled and provide supporting detail to what is shown on plans. <input checked="" type="checkbox"/> State that signs will be posted on or near dumpsters with the words “Do not dump hazardous materials here” or similar.	<input checked="" type="checkbox"/> State how the following will be implemented: 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 www.cabmphandbooks.com
<input type="checkbox"/> H. Industrial processes.	<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 www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE...	...THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCES CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls – Show on Source Control Exhibit, Attachment B	3 Permanent Controls – List in Table 9 and Narrative	4 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. <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. <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. Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for: <ul style="list-style-type: none"> ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank 	<input type="checkbox"/> See Fact Sheet SC-31, “Outdoor Liquid Container Storage” and SC-33, “Outdoor Storage of Raw Materials” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

<input type="checkbox"/> J. Vehicle and Equipment Cleaning	<input type="checkbox"/> Show on drawings as appropriate: (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. (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 shutoff to discourage such use). (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. (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.	<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.	Describe operational measures to implement the following (if applicable): <input type="checkbox"/> Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. <input type="checkbox"/> Car dealerships and similar may rinse cars with water only. <input type="checkbox"/> See Fact Sheet SC-21, “Vehicle and Equipment Cleaning,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
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<input type="checkbox"/> K. Vehicle/Equipment Repair and Maintenance	<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. <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. <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.	<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. <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. <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>In the SUSMP report, note that all of the following restrictions apply to use the site:</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. <input type="checkbox"/> 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. <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.
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<input type="checkbox"/> L. Fuel Dispensing Area	<input type="checkbox"/> Fueling areas ¹ 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 <input type="checkbox"/> 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 ¹ .] The canopy [or cover] shall not drain onto the fueling area.		<input type="checkbox"/> The property owner shall sweep the fueling area routinely. <input type="checkbox"/> See the Business Guide Sheet, "Automotive Service - Service, Stations" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com .
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¹ 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 checked="" type="checkbox"/> M. Loading Docks	<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. <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. <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 checked="" type="checkbox"/> Move loaded and unloaded items indoors as soon as possible <input checked="" type="checkbox"/> See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<input checked="" type="checkbox"/> N. Fire Sprinkler Test Water		<input checked="" type="checkbox"/> Provide a means to drain fire sprinkler test water to the sanitary sewer.	<input checked="" type="checkbox"/> See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

<ul style="list-style-type: none"> <input type="checkbox"/> O. Miscellaneous Drain or Wash Water <input type="checkbox"/> Boiler drain lines <input checked="" type="checkbox"/> Condensate drain lines <input checked="" type="checkbox"/> Rooftop equipment <input type="checkbox"/> Drainage sumps <input checked="" type="checkbox"/> Roofing, gutters, and trim 		<ul style="list-style-type: none"> <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. <input checked="" 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. <input checked="" type="checkbox"/> Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment. <input type="checkbox"/> Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. <input checked="" type="checkbox"/> Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. 	
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> P. Plazas, sidewalks and parking lots. 			<ul style="list-style-type: none"> <input checked="" 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.

STEP 7

LID AND TREATMENT CONTROL SELECTION

A treatment control BMP and/or LID IMP facility 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>	
<u>Yes</u>	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.	
<p>The bioretention basins proposed for water quality treatment have been sized to treat the water quality flows based in accordance with the California Regional Water Quality Control Board Order R9-2007-0001. In preparation for the anticipated Order R9-2013-0001, addition retention capacity has been included in the preliminary design of each bioretention basin based on the site’s infeasibility to infiltrate and 1.5 times the design capture volume.</p>	

- 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	Course Sediment and Trash	Pollutants that tend to associate with fine particles during treatment	Pollutants that tend to be dissolved following treatment
Sediment		X	X	
Nutrients	X		X	X
Heavy Metals	X		X	
Organic Compounds			X	
Trash & Debris		X		
Oxygen Demanding			X	
Bacteria			X	
Oil & Grease			X	
Pesticides			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
Course 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. Check both boxes if the facility is designed for both water quality and hydromodification flow control.

TABLE 12: PROJECT TCBMPS – BMPs designed to treat stormwater (e.g., LID and hydromod) shall be considered TCMPBs.

TCMBP Type	Water Quality Treatment	Hydromodification Flow Control
Bioretention Facilities (LID)		
<input checked="" type="checkbox"/> Bioretention area	X	X (roadside bioretention areas)
<input type="checkbox"/> Flow-through Planter		
<input type="checkbox"/> Cistern with Bioretention Facility		
Basins		
<input type="checkbox"/> Extended / dry detention basin with grass / vegetated lining		
<input type="checkbox"/> Extended / dry detention basin with impervious lining		
<input type="checkbox"/> Underground Vault		
<input type="checkbox"/> Cistern		
Infiltration Devices (LID)		
<input type="checkbox"/> Infiltration basin		
<input type="checkbox"/> Infiltration trench		
<input type="checkbox"/> Other _____		
Wet Ponds and Constructed Wetlands		
<input type="checkbox"/> Wet pond / basin (permanent pool)		
<input type="checkbox"/> Constructed wetland		

Vegetated Swales (LID ⁽¹⁾)		
<input checked="" type="checkbox"/> Vegetated Swale	X	
Media Filters		
<input type="checkbox"/> Austin Sand Filter		
<input type="checkbox"/> Delaware Sand Filter		
<input type="checkbox"/> Multi-Chambered Treatment Train (MCTT)		
Higher-rate Biofilters		
<input type="checkbox"/> Tree-pit-style unit		
<input checked="" type="checkbox"/> Other: <u>Filterra unit or approved equal</u>	X	
Higher-rate Media Filters		
<input type="checkbox"/> Vault-based filtration unit with replaceable cartridges		
<input type="checkbox"/> Other _____		
Hydrodynamic Separator Systems		
<input type="checkbox"/> Swirl Concentrator		
<input type="checkbox"/> Other _____		
Trash Racks		
<input type="checkbox"/> Catch Basin Insert		
<input type="checkbox"/> Catch Basin Insert w/ Hydrocarbon boom		
<input type="checkbox"/> Other :		
Self-Retaining Areas (LID)		
<input type="checkbox"/> Permeable Pavements		
<input type="checkbox"/> Self-Retaining		
<input type="checkbox"/> Vegetated Roof		
<input checked="" type="checkbox"/> Other <u>Drought-tolerant landscaping</u>		

⁽¹⁾ Must be designated per SUSMP “Vegetated Swales” design criteria for water quality treatment credit (p. 102-103).

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 and LID BMPs				
Description / Type	Sheet		Maintenance Category	Revisions
	TM 5361 (A)	TM 5361 (B)		
Water quality bioretention basins	6,7,9	7,8,10, 11	2	
Roadside bioretention areas	6	6, 10	1	
Filtterra Units or Approved Equal	6, 9	6,7,8, 10,11	2	

* 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 project 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.

- **Vegetated swales**
LID: The proposed on-lot drainage swales proposed for each lot will receive primary pollutants of concern such as nutrients in the form of dead plants or leaves, and fertilizers. Since fertilizers will be minimized for this project through source control, and yard swales have high pollutant removal efficiency for coarse items (such as leaves or plants), the proposed swales will provide high to medium pollutant removal efficiency for coarse and fine particles. Treatment of dissolved particles from lots will be provided by the proposed downstream water quality basins.
- **Roadside Bioretention Areas**
Vegetated bioretention areas are proposed as roadside treatment measures. Vegetated bioretention areas used for treatment control along roadsides will include an engineered fill layer for maximum pollutant removal. This ‘bioretention’ subbase will provide a “High” pollutant removal efficiency for pollutants such as coarse sediment and trash and fine particles. Medium pollutant efficiency is attained for dissolved particles.
- **Water quality basins** are proposed throughout the project and receive runoff from the majority of areas with proposed development. Due to the low natural infiltration rates of the project area type “D” soils, infiltration is not recommended for the proposed basins. Each basin is designed to receive at least the 85th percentile storm. Typically, the larger storms will bypass through the storm drain system and travel directly to the Lower Otay Reservoir. A couple of basins will be designed to accept the peak flow and allow its respective riser to regulate the appropriate water quality treatment. Each basin will have a riser as overflow protection with an open orifice located at the basin bottom. As stated within the March 2010 County of San Diego SUSMP, drawdown times for each basin will be limited to a maximum of 96 hours.

Bioretention basins provide “High” pollutant removal efficiency for all pollutants, except those that tend to be dissolved. This means that the proposed water quality basins have high pollutant removal efficiency for the primary pollutants of concern for this project, with the exception of dissolved nutrients. Bioretention facilities provide a medium pollutant efficiency for pollutants that tend to be dissolved.
- **Filtterra units or Approved Equal** will be placed along Otay Lakes Road, a portion of Strada Piazza, and a portion of the residential area that is not tributary to a water quality basin. Filtterra units come in a range of sizes that can accept flow from drainage areas ranging from 0.22 acres to 0.98 acres, assuming the drainage area has a “C” coefficient of approximately 0.85. The preliminary calculations included in this study show how many units would be needed if the smallest capacity unit was selected, compared with the largest capacity unit. According to Table 11, Filtterra units have high pollutant removal efficiency for coarse sediment and trash, medium pollutant removal efficiency for fine particles, and low pollutant removal efficiency for dissolved particles.

- According to the County of San Diego SUSMP, nutrients come mostly from fertilizers or from natural minerals that are dislodged from eroded soils. Additionally, nutrients can come from leaves, or dead plants. Nutrients from fertilizers and eroded soils are already dissolved and can only be reduced by preventing them from entering runoff. Nutrients from leaves or dead plants become dissolved once they are allowed to sit in water and degrade.

The proposed swales, roadside bioretention areas, water quality basins, and street sweeping source control BMPs will prevent the larger sources of nutrients (such as leaves) from entering the Lower Otay Reservoir. Dissolved nutrients in the form of fertilizers will be reduced through the proposed source control BMPs encouraging homeowners and the homeowners association to minimize their use. Furthermore, eroded soils will be minimized according to the hydromodification analysis provided at the end of this study.

- All 85th percentile calculations and BMP specifications are shown in Attachment D.
- All proposed BMPs for this project either meet or exceed the design recommendations set forth in the City of San Diego's "Source Water Protection Guidelines, SWPG", which are located in Attachment K.
- The Otay Water District (OWD) will supply the irrigation water for the proposed project. The main sources of water to the OWD are the Twin Oaks, Helix, and Skinner Reservoirs. According to the 2013 Consumer Confidence Report, total dissolved solids (TDS) from these three treatment plants were between 370 ppm and 410 ppm.

Surface runoff from the proposed project will enter the Lower Otay Reservoir, which is then treated by the Lower Otay Reservoir Treatment Plant and sent for distribution to the City of San Diego. According to the City of San Diego 2013 Annual Drinking Water Quality Report, the average TDS concentration from the Lower Otay Reservoir was 564 ppm.

As previously mentioned, water quality results show that the highest TDS concentration in the OWD potable water that will be used to irrigate the proposed project is 410 ppm, which is lower than the average TDS concentration of 564 ppm at the Lower Otay Treatment Plant outfall. Overall, runoff from the proposed development contributes a small portion of the total Lower Otay Reservoir volume (approximately 10 percent). It is expected that some additional TDS contribution will occur through human activity on the project site. In response to this, source control BMPs will be utilized to educate both homeowners and the homeowners association by discouraging fertilizers and car washing at home and encouraging the use of native plants for landscaping and the use of public car washing facilities. Furthermore, the development of this project will reduce the amount of natural open space, which will decrease the TDS that was occurring through natural erosion processes in the existing condition. See Attachment L for related Lower Otay Reservoir Salt and Nutrient Loading correspondence with the City of San Diego.

In summary, the proposed development is not expected to cause adverse effects to the Lower

Otay Reservoir due to the low percentage contribution of runoff to the reservoir, the lower TDS concentration in the project irrigation water compared with the TDS at the treatment plant outfall, the use of source control BMPs, and the decrease in overall erosion potential due to reduced natural areas.

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.

Outfall	Tributary Area (acres)	Q_{wq}[*] (cfs)	V_{wq}[*] (ft³)
BASIN 1	205.0		176,600
BASIN 2	135.0		74,904
BASIN 3	318.7		305,679
BASIN 4	116.1		159,655
BASIN 5	92.3		114,903
BASIN 6	8.4		7,989
BASIN 7	122.5		103,086
CULVERT 1a	29.6	0.8 ^{***}	
CULVERT 1b	6.2	0.3 ^{***}	
CULVERT 2	31.8	0.4 ^{***}	
CULVERT 4	15.9	1.3 ^{***}	
CULVERT 6 ^{**}	205.0	--	--
CULVERT 7	653.0	1.08 ^{***}	
CULVERT 9	133.1	0.70 ^{***}	
CULVERT 12	8.5	0.4 ^{***}	
CULVERT 14	10.7	0.5 ^{***}	
CULVERT 15	241.6	1.0 ^{***}	
CULVERT 16	129.6	0.7 ^{***}	
CULVERT 18	996.2	5.8 ^{***}	
CULVERT 19	4.5	0.2 ^{***}	
CULVERT 20	20.6	0.2 ^{***}	

*Cells that have been left blank are not applicable for the BMP proposed.

**Culvert 6 is the outlet for treated flows from Basin 1

***Applicable to untreated street portion only.

STEP 8

OPERATION AND MAINTENANCE

- ▶ Please check the box that best describes the maintenance mechanism(s) for this project. The recorded maintenance agreement shall be included in the Maintenance Plan for this project (Attachment F).

TABLE 13: PROJECT BMP CATEGORY

CATEGORY	SELECTED		BMP Description
	YES	NO	
First ¹	X		On-lot (LID) Swales
Second ²	X		Water Quality Basins, Roadside Bioretention Areas, Filterra Units or approved equal
Third ³			
Fourth ⁴			

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 (TCBMPs) incorporated into the project. Please attach the record plan sheets upon completion of project and amend the Major SWMP where appropriate. For each type of LID or TCBMP provide an inspection sheet in Attachment F “Maintenance Plan”. Replicate Table 14 in Attachment G once the TCBMP has been constructed.

TABLE 14: PROJECT SPECIFIC LID AND TCBMPS

Treatment Control BMPs (TCBMPs) ^{1,2} (List all from SWMP)			
Lot Number or Location	Description/Type	Sheet	
		TM 5361 (A)	TM 5361 (B)
ROADSIDE BIORETENTION AREAS	TC/ -BMP	6	6, 10
FILTERRA UNITS or Approved Equal	TC-BMP	6,9	6,7,8, 10,11
WQ BASINS	TC-BMP	6,7,9	7,8,10, 11

¹ All Priority Development Projects (PDPs) require a TCBMP.
² BMPs designed to treat stormwater (e.g. LID and hydromod) shall be considered TCBMPs.

*For location of BMPs, see approved Record Plan dated XX/XX/XX, plan (TYPE) sheet (#).

► Responsible Party for the Construction Phase:

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

Developer's Name: <u>Baldwin & Sons</u> Address: <u>610 West Ash Street, Suite 1500</u> City : <u>San Diego</u> State: <u>CA</u> Zip: <u>92101</u> Email Address: Phone Number: <u>(619) 234-4050</u> Engineer of Work: <u>Alisa Vialpando</u> Engineer's Phone Number: <u>(858) 558-4500</u>	Developer's Name: <u>JPB Development</u> Address: <u>1392 E. Palomar St., Suite 202</u> City : <u>Chula Vista</u> State: <u>CA</u> Zip: <u>91913</u> Email Address: Phone Number: <u>(619) 240-7861</u> Engineer of Work: <u>Alisa Vialpando</u> Engineer's Phone Number: <u>(858) 558-4500</u>
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► 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: <u>Baldwin & Sons</u> Address: <u>610 West Ash Street, Suite 1500</u> City: <u>San Diego</u> State: <u>CA</u> Zip: <u>92101</u> Email Address: Phone Number: <u>(619) 234-4050</u>	Owner's Name: <u>JPB Development</u> Address: <u>1392 E. Palomar St., Suite 202</u> City: <u>Chula Vista</u> State: <u>CA</u> Zip: <u>91913</u> Email Address: Phone Number: <u>(619) 240-7861</u>
* 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.

Funding will be the responsibility of the developer(s) until the project is completed. At that time, funding for all water quality treatment BMPs within the public right-of-way is provided by the Homeowners Association for the Otay Ranch Resort Village development. The HOA will be responsible to perform the maintenance activities and ensure adequate funding into perpetuity.

Additionally, a BMP Maintenance Agreement with Easement will be entered into with the County of San Diego which will accomplish three objectives. The easement will be dedicated on the final map. The agreement will commit the land to being used only for purposes of the BMP; the agreement will include an obligation by the landowner to maintain the facilities in accordance with this Storm Water Management Plan (which would be passed on to future purchasers or successors of the landowner as a covenant). The final map will include an easement giving the County the right to enter onto the land for access to inspect the BMPs.

ATTACHMENTS

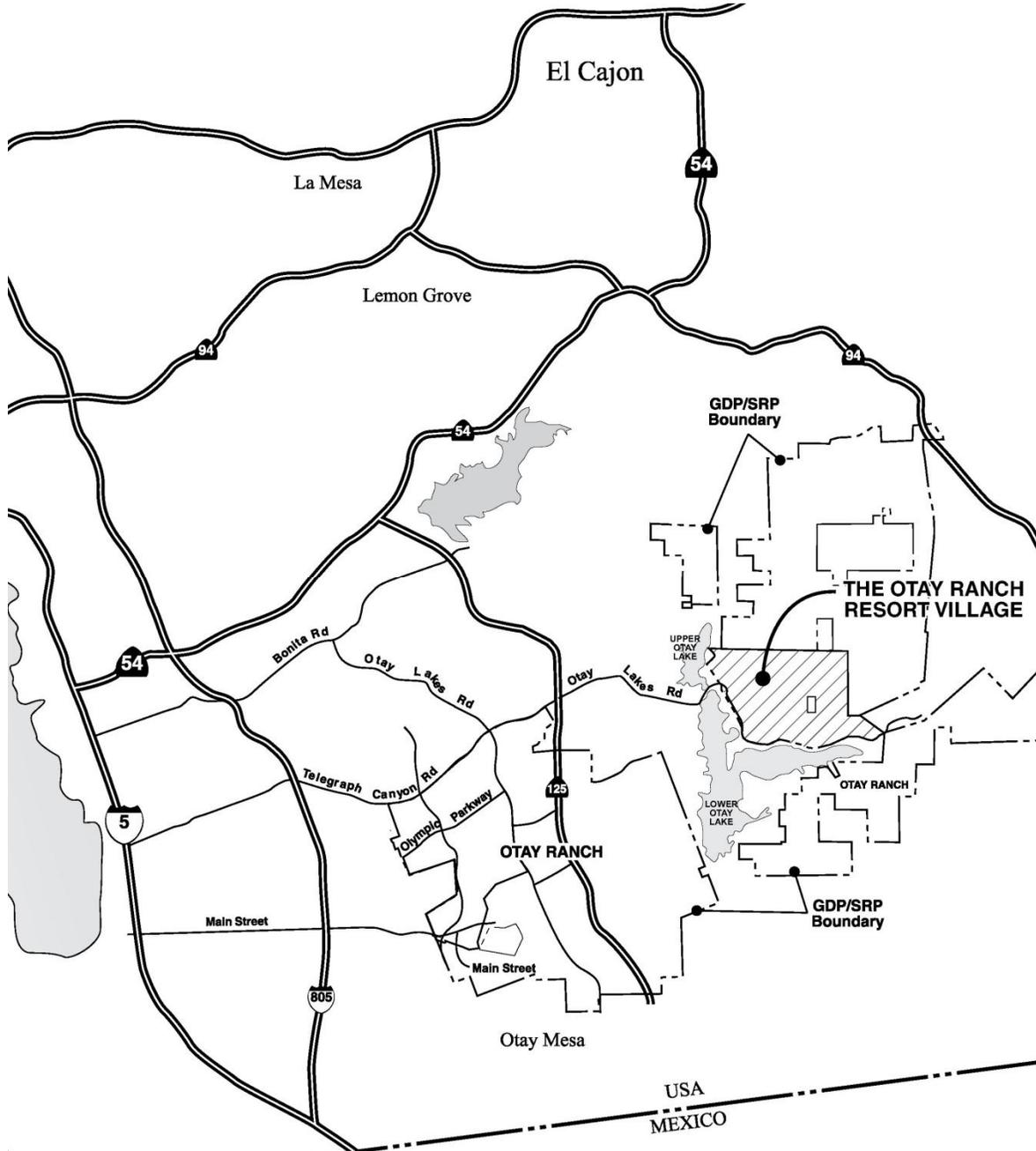
Please include the following attachments.

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

Note: Attachments B and C may be combined.

ATTACHMENT A

Project Location Map

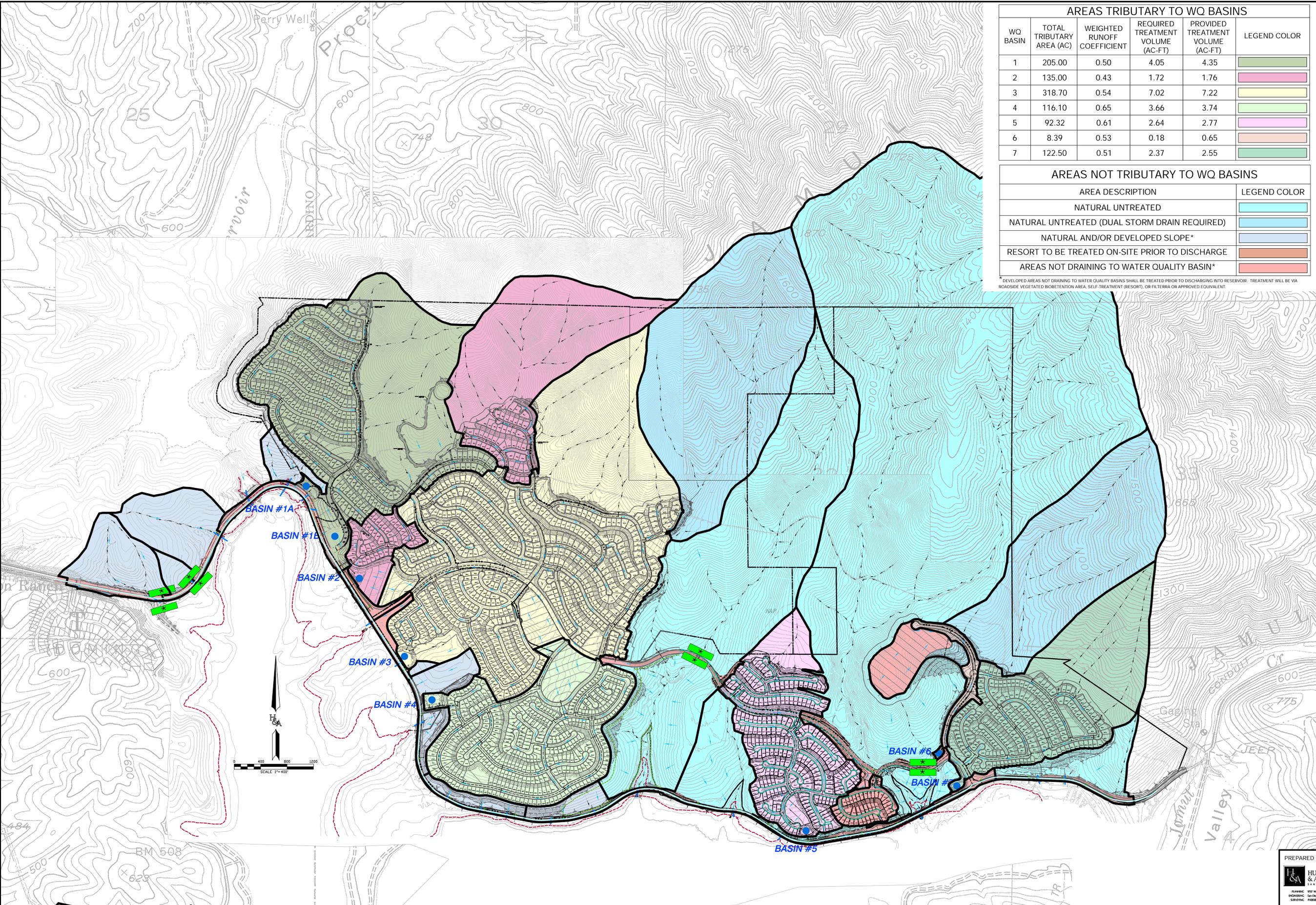


ATTACHMENT B

Source Control Exhibit (SEE ATTACHMENT C)

ATTACHMENT C

Drainage Management Area (DMA) Exhibit

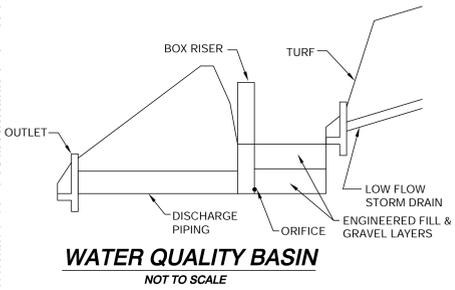


AREAS TRIBUTARY TO WQ BASINS					
WQ BASIN	TOTAL TRIBUTARY AREA (AC)	WEIGHTED RUNOFF COEFFICIENT	REQUIRED TREATMENT VOLUME (AC-FT)	PROVIDED TREATMENT VOLUME (AC-FT)	LEGEND COLOR
1	205.00	0.50	4.05	4.35	[Green]
2	135.00	0.43	1.72	1.76	[Pink]
3	318.70	0.54	7.02	7.22	[Yellow]
4	116.10	0.65	3.66	3.74	[Light Green]
5	92.32	0.61	2.64	2.77	[Purple]
6	8.39	0.53	0.18	0.65	[Orange]
7	122.50	0.51	2.37	2.55	[Dark Green]

AREAS NOT TRIBUTARY TO WQ BASINS	
AREA DESCRIPTION	LEGEND COLOR
NATURAL UNTREATED	[Light Blue]
NATURAL UNTREATED (DUAL STORM DRAIN REQUIRED)	[Medium Blue]
NATURAL AND/OR DEVELOPED SLOPE*	[Light Purple]
RESORT TO BE TREATED ON-SITE PRIOR TO DISCHARGE	[Orange]
AREAS NOT DRAINING TO WATER QUALITY BASIN*	[Red]

* DEVELOPED AREAS NOT DRAINING TO WATER QUALITY BASINS SHALL BE TREATED PRIOR TO DISCHARGING INTO RESERVOIR. TREATMENT WILL BE VIA ROADSIDE VEGETATED BIORETENTION AREA, SELF-TREATMENT (RESORT), OR FILTERRA OR APPROVED EQUIVALENT.

- SITE DESIGN BMP'S & LOW IMPACT DESIGN**
- MINIMIZE IMPERVIOUS FOOTPRINT
- *CLUSTERED LOT DESIGN*
 - MINIMIZE EROSION FROM SLOPES
 - MINIMIZE DISTURBANCE TO NATURAL DRAINAGES
 - MINIMIZE SOIL COMPACTION
 - DRAIN RUNOFF FROM IMPERVIOUS AREAS TO PERVIOUS AREAS
- *CURB CUTS TO LANDSCAPING*
- *VEGETATED SWALES*
 - CONSERVE NATURAL AREAS & DRAINAGES
- TREATMENT CONTROL BMP'S**
- WATER QUALITY BASIN
 - VEGETATED ROADSIDE BIORETENTION AREA
 - FILTERRA UNIT OR APPROVED EQUAL
- SOURCE CONTROL BMP'S**
- STORM DRAIN INLET STENCILING
 - LANDSCAPE/OUTDOOR PESTICIDE USE
 - INTEGRATE PEST MANAGEMENT INFORMATION
 - STREET SWEEPING WILL OCCUR REGULARLY
 - NOTE IN PLANS THE POOL TO BE PLUMBED TO SANITARY SEWER
 - DESCRIBE ITEMS TO BE CLEANED IN FACILITY AND HOW IT HAS BEEN SIZED
 - PROVIDE ADEQUATE NUMBER OF REFUSE RECEPTACLES
 - MOVE LOADED AND UNLOADED ITEMS INDOORS
 - DRAIN FIRE SPRINKLER TEST WATER TO SANITARY SEWER
 - CONDENSATE DRAIN LINES MAY NOT DISCHARGE TO STORM DRAIN SYSTEM
 - ROOFTOP MOUNTED EQUIPMENT SHALL BE ROOFED
 - AVOID ROOFING, GUTTERS, AND TRIM MADE OF COPPER OR UNPROTECTED METALS



- LEGEND:**
- WATER QUALITY BASIN
 - FILTERRA UNIT OR APPROVED EQUAL
 - CULVERT LOCATION ALONG OTAY LAKES RD
 - - - RESERVOIR WATER SURFACE ELEVATION 490.7
 - ROADSIDE BIORETENTION AREA

R:\0982\Myo\ACAD\09828 Proposed Condition Watershed Map.dwg\Nov-18-2014\1330

ATTACHMENT D

Sizing Design Calculations and TCBMP/LID Design Details

(Provide BMP Sizing Calculator results and/or continuous simulation modeling results, if applicable)