

# Major Storm Water Management Plan (Major SWMP)

For

**Tract No. 5456-RPL2**

Prepared: May 30, 2013

**Prepared for:**

Cielo 182 LLC  
1570 Linda Vista Drive  
San Marcos, CA 92069

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.

**Engineer of Work:**

  
Robert D. Dentino, RCE #45629

5-30-2013

Date

This Preliminary Major Storm Water Management Plan (SWMP) Report is prepared for County of San Diego to support the preliminary grading plans and tentative map for a proposed 19-lot subdivision with 18 lots of single family detached housing and one condominium lot recycling facility at 25568 Mesa Rock Road, in unincorporated Escondido in San Diego County, California.

**PROJECT / APPLICANT INFORMATION**

Project Name:	Tract No. 5456-RPL2
Permit Number (Land Development Projects):	
Work Authorization Number ( <b>CIP only</b> ):	NA
Applicant:	<b>Cielo 182 LLC</b>
Applicant's Address:	1570 Linda Vista Drive San Marcos, CA 92069
Plan Prepare By ( <i>Leave blank if same as applicant</i> ):	<b>Excel Engineering.</b> 440 State Place, Escondido CA92029
Date:	February 8, 2013

This Storm Water Management Plan is prepared for the County of San Diego, California.

This project is under County of San Diego Standard Urban Stormwater Mitigation Plan (SUSMP) March 25, 2010 requirements. The County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) (Ordinance No. 99926) 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.

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

**PROJECT DESCRIPTION**

The project site is located in unincorporated County of San Diego northwest of Del Dios Highway, east of Via Dora, and south of Cierro Del Sol northeast of Rancho Santa Fe (Assessor's Parcel Numbers 265-300-02, 03, and 05). The project is proposing to develop three different locations within the owner's parcels. Two locations will be developed into large tract single family residential communities (3 lots on the west side of the project and 15 lots on the east side of the project) and one location will be developed into condominium housing (single lot on the north portion of the project will be developed into 19 condo units). Roads, utilities, and rough pad grading will be performed as part of this development.

Normal uses of such a development will generate storm water runoff with the potential to carry pollutants to off-site tributaries. Linear configured bioretention swales are planned to be incorporated throughout the site to treat and detain runoff from impervious and landscaped areas.

**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 type="checkbox"/>	No <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 <input type="checkbox"/>	No <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 <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 type="checkbox"/>	No <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 <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 type="checkbox"/>	No <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 <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.

**Limited Exclusion:** Trenching and resurfacing work associated with utility projects are not considered Priority Development Projects. Parking lots, buildings and other structures associated with utility projects are subject to the WPO requirements if one or more of the criteria above are met.

## STEP 2

### PROJECT STORMWATER QUALITY DETERMINATION

Total Project Site Area 270.29 (Acres)

Estimated amount of disturbed acreage: 62.09 (Acres)

WDID: N/A (Preliminary)

A. Total size of project site: 270.29 (Acres)

B. Total impervious area (including roof tops) before construction 0 (Acres)

C. Total impervious area (including roof tops) after construction 7.05 (Acres)

Calculate percent impervious before construction:  $B/A = \underline{0}\%$

Calculate percent impervious after construction:  $C/A = \underline{2.60}\%$

Please provide detailed description regarding the following questions:

**Table 2: Project Specific Stormwater Analysis**

QUESTIONS / ANSWERS	
1.	Please provide a brief description of the project. <i>The project is proposing to develop three different locations within the owner's parcels. Two locations will be developed into large tract single family residential communities (3 lots on the west side of the project and 15 lots on the east side of the project) and one location will be developed into condominium housing (single lot on the north portion of the project will be developed into 19 condo units). Roads, utilities, and rough pad grading will be performed as part of this development.</i>
2.	Describe the current and proposed zoning and land use designation. <i>Existing Zoning – Country Estates, Open Space, and Planned Development per Rancho Cielo Specific Plan Category 21. Proposed – Same</i>
3.	Describe the pre-development and post-development topography of the project. (Show on Plan) <b>Pre-Development:</b> <i>The property is currently open, undeveloped space with steep slopes and several well-defined drainage paths. Please see the drainage report for this project to examine the overall project watershed.</i> <b>Post-Development:</b> <i>The topography and drainage of the overall project property is to remain largely unchanged, with the majority of the existing drainage basins being allowed to bypass the new development by use of headwall inlets collecting runoff at the uphill side of the proposed grading and routing it through to the downhill side of the project. Disturbed areas in all three portions of the development will be collected on site, routed through bioretention systems for treatment and flow control, and discharged largely to the original drainage basins encountered in the predeveloped condition. Please see the drainage report for this project to examine the overall project watershed.</i>
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. <i>The County of San Diego's "Soils Hydrologic Groups Map" as it appears in the June 2003 Hydrology Manual indicates that the project site is within soils group D. Depth of ground water is substantially deep. See the Geotechnical Report for this project.</i>
5.	Describe if contaminated or hazardous soils are within the project area (show on plan) <i>None (NA)</i>
6.	Describe the existing site drainage and natural hydrologic features <i>The project site is within the Pacific Shoreline - San Dieguito Hydrologic Unit (905.11), Solana Beach HA, with main upstream tributaries from Lake Hodges, Kit Carson Creek, and Green Valley Creek. The site is split into three major drainage basins (each basin specific to the three individual and unique development locations) with several subbasins within those three major drainage basins with well- defined drainage paths and localized depressions acting concentrated flow locations. Storm water generated by the site improvements will be collected, treated and released to its natural point of discharge – to all of the original drainage basin outflow points .</i>
7.	Describe site features and conditions that constrain, or provide opportunities for stormwater control, such as LID features.

<i>All LID features within the subdivision locations will be located within the road benches. The streets will be 24-foot wide paved width with a 32-foot wide road bench (allowing for 4' of width along the length of the road, on both sides, for LID facilities). The condominium lot will locate the LIDs within the roadway (on one side) as well as locations along the back of the lower portion of the development, and within the park area. This project proposes to install linear swale configured bioretention facilities throughout, utilizing any space necessary.</i>	
8.	Determine if this project is 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. The project is within an environmentally sensitive area as defined on the appendix 'A' map.	
9.	Determine if this is an emergency project.
No. Not an emergency project.	

### 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?	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If YES go to 6.
3.	Will the project discharge to unlined channels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" 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 checked="" type="checkbox"/>	If YES go to 8.
6.	Review channel lining materials and design for stream bank erosion.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If YES go to 7.
7.	Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continue to 8.
8.	Include, where appropriate, energy dissipation devices at culverts.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continue to 9.
9.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continue to 10.

10.	Include, if appropriate, detention facilities to reduce peak discharges.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continue to 13.
13.	End				

Table 3 Comments:

**The project does not include any channel work**

## TEMPORARY CONSTRUCTION BMPs

Please check the construction BMPs that may be used. The BMPs selected are those that will be implemented during construction of the project. The applicant is responsible for the placement and maintenance of the BMPs selected.

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Silt Fence                            | <input checked="" 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 checked="" 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 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>	<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?	<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 checked="" type="checkbox"/>	Advanced Treatment BMPs must be consistent with WPO section 67.811(b)(20)(D) performance criteria

### **An 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 shows to the County official’s satisfaction that advanced treatment is not required

### STEP 3

## HYDRO MODIFICATION 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?	<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 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 Q10, and extends to the Pacific Ocean, San Diego Bay, a tidally-influenced area, and 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%?	<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 or 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 by 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 checked="" 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 checked="" type="checkbox"/> <b>San Dieguito 905</b>	<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)

Please provide the hydrologic sub-area and number(s)

Number	Name
905.11	Rancho Santa Fe HSA (Solana Beach HA)

[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 (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
San Dieguito River	905.11	Enterococcus, Fecal Coliform, Nitrogen, Phosphorus, Total Dissolved Solids, and Toxicity	~ 1mile

[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/tmdl/docs/303dlists2006/epa/r9\\_06\\_3\\_03d\\_reqtmlds.pdf](http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdl/docs/303dlists2006/epa/r9_06_3_03d_reqtmlds.pdf)

**GROUND WATERS**

GROUND WATERS	Hydrologic Unit Basin Number	MUN	AGR	IND	PROC	GWR	FRESH
San Dieguito River	905.11	<b>X</b>	<b>X</b>	<b>X</b>			

[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      **X** Existing Beneficial Use      **0** 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 <sup>2</sup>	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

**Note:**

**If other monitoring data that is relevant to the project is available. Please include Attachment C.**

**PROJECT POLLUTANTS OF CONCERN SUMMARY TABLE**

Please summarize the identified project pollutant 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**

<b>Pollutant Category</b>	<b>Anticipated (X)</b>	<b>Potential (P)</b>	<b>Surface Water Impairments</b>
<b>Sediments</b>	√		<b>Total Dissolved Solids</b>
<b>Nutrients</b>	√		<b>Phosphorus, Nitrogen</b>
<b>Heavy Metals</b>	√		
<b>Organic Compounds</b>	√		
<b>Trash &amp; Debris</b>	√		
<b>Oxygen Demanding Substances</b>	√		
<b>Oil &amp; Grease</b>	√		
<b>Bacteria &amp; Viruses</b>			<b>Enterococcus, Fecal Coliform</b>
<b>Pesticides</b>	√		<b>Toxicity</b>

**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**

<b>1. Conserve natural Areas, Soils, and Vegetation</b>
<input type="checkbox"/> Preserve well draining soils (Type A or B)
<input checked="" 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 type="checkbox"/> Other. Description:
<b>2. Minimize Disturbance to Natural Drainages</b>
<input 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:
<b>3. Minimize and Disconnect Impervious Surfaces (see 5)</b>
<input type="checkbox"/> Clustered Lot Design
<input checked="" type="checkbox"/> Items checked in 5?
<input type="checkbox"/> Other. Description:
<b>4. Minimize Soil Compaction-County LID Handbook 2.2.4</b>
<input checked="" type="checkbox"/> Restrict heavy construction equipment access to planned green/open space areas
<input checked="" type="checkbox"/> Re-till soils compacted by construction vehicles/equipment (landscaped areas)
<input checked="" type="checkbox"/> Collect & re-use upper soil layers of development site containing organic materials
<input type="checkbox"/> Other. Description:
<b>5. Drain Runoff from Impervious Surfaces to Pervious Areas-County LID Handbook 2.2.5</b>
<b>LID Street &amp; Road Design</b>
<input checked="" 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: Utilize bioretention system to treat flow from street and parking areas
<b>LID Parking Lot Design</b>
<input checked="" type="checkbox"/> Permeable Pavements
<input checked="" type="checkbox"/> Curb-cuts to landscaping

<input type="checkbox"/>	Other. Description:
<b>LID Driveway, Sidewalk, Bike-path Design</b>	
<input type="checkbox"/>	Permeable Pavements
<input checked="" type="checkbox"/>	Pitch pavements toward landscaping
<input type="checkbox"/>	Other. Description:
<b>LID Building Design</b>	
<input type="checkbox"/>	Cisterns & Rain Barrels
<input checked="" type="checkbox"/>	Downspout to swale
<input type="checkbox"/>	Vegetated Roofs
<input type="checkbox"/>	Other. Description:
<b>LID Landscaping Design</b>	
<input type="checkbox"/>	Soil Amendments
<input checked="" type="checkbox"/>	Reuse of Native Soils
<input checked="" type="checkbox"/>	Smart Irrigation Systems
<input type="checkbox"/>	Street Trees
<input type="checkbox"/>	Other. Description:
<b>6.</b>	<b>Minimize erosion from slopes</b>
<input checked="" type="checkbox"/>	Disturb existing slopes only when necessary
<input 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:

Note:

## 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 in 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. Permanent and Operational source control measures**

Potential source of runoff pollutants	Permanent Source control BMPs	Operational source control BMPs
1. On-site storm drain inlets	Mark inlets with the words “NO DUMPING!”	<ul style="list-style-type: none"> <li>▪ Maintain periodically repaint or replace inlet markings</li> <li>▪ Provide Stormwater pollution prevention information to new site owner or lessees.</li> <li>▪ 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></li> <li>▪ <b>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.”</b></li> </ul>
3. Landscape/ Outdoor Pesticide Use	<p><b>The final landscape plans will accomplish all of the following:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.</b></li> <li>▪ <b>Landscape is designed to minimize irrigation and runoff, to promote surface infiltration where appropriate,</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Maintain landscaping using minimum or no pesticides.</li> <li>▪ Apply building &amp; grounds maintenance as specified on SC-41 CA BMP handbooks.</li> <li>▪ IPM information will be provided for the new owners,</li> </ul>

	<p>and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.</p> <ul style="list-style-type: none"> <li>▪ Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.</li> <li>▪ Consider using pest-resistant plants, especially adjacent to hardscape.</li> <li>▪ To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.</li> </ul>	<p>lessees and operators.</p>
<p>5. Plazas, sidewalks, parking lots, and streets</p>		<ul style="list-style-type: none"> <li>▪ 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. Wash water containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.</li> </ul>

The project includes linear swale configured bioretention systems adjacent to paved areas which will be used to treat all stormwater from impervious surfaces. During high flows, these swales will convey surface drainage to onsite storm drain systems. The onsite storm drain systems outlet the drainage into a detention system at each point of compliance to reduce peaks 100-year flows below predeveloped conditions.

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	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in SUSMP Table and Narrative	4 Operational BMPs—Include in SUSMP Table and Narrative
<input checked="" type="checkbox"/> A. 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.	<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 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>  <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.
<input type="checkbox"/> D1. 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.

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	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in SUSMP Table and Narrative	4 Operational BMPs—Include in SUSMP Table 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.	State that final landscape plans will accomplish all of the following:  <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 checked="" 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 <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a>  <input checked="" type="checkbox"/> Provide IPM information to new owners, lessees and operators.
<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>

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	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in SUSMP Table and Narrative	4 Operational BMPs—Include in SUSMP Table and Narrative
<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.  <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 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"/>
<input 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 type="checkbox"/> State how site refuse will be handled and provide supporting detail to what is shown on plans.  <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:  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>

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	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in SUSMP Table and Narrative	4 Operational BMPs—Include in SUSMP Table and Narrative
<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 <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a>
<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"> <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>

<input type="checkbox"/> J. Vehicle and Equipment Cleaning	<input type="checkbox"/> Show on drawings as appropriate: <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>	<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): <ul style="list-style-type: none"> <li><input type="checkbox"/> Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.</li> <li><input type="checkbox"/> Car dealerships and similar may rinse cars with water only.</li> <li><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></li> </ul>
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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 Areas	<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.  <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 <sup>1</sup> .] The canopy [or cover] shall not drain onto the fueling area.		<input type="checkbox"/> The property owner shall dry sweep the fueling area routinely.  <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>
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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"/> 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.  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 type="checkbox"/>		<input type="checkbox"/> 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 <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a>  <input type="checkbox"/>
<input type="checkbox"/> N. Fire Sprinkler Test Water		<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>O. Miscellaneous Drain or Wash Water</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.</li> <li><input type="checkbox"/> 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> </ul> <p>Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.</p>	
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> P. Plazas, sidewalks, and parking lots.</li> </ul>			<ul style="list-style-type: none"> <li><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.</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.

<b>Will this project be utilizing the unified LID design procedure as described in Chapter 4 of the Local SUSMP? (If yes, please document in Attachment D following the steps in Chapter 4 of the County SUSMP)</b>	
<b>YES, THIS PROJECT WILL BE USING LIDs</b>	<b>No</b>
<b>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.</b>	

This project utilizes both the Unified LID design procedure as described in Chapter 4 of the Local SUSMP (see Attachment D) AND it uses the Hydromodification BMP Sizing Calculator to size the hydromodification facilities (see Attachment D)

- 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	
Nutrients	☒		X	X
Heavy Metals	☒		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**

Pollutants of Concern	Bioretention Facilities (LID)	Settling Basins (Dry Ponds)	Wet Ponds and Constructed Wetlands	Infiltration Facilities or Practices (LID)	Media Filters	High-rate biofilters	High-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	Med
Pollutants that tend to be dissolved following treatment	Medium	Low	Medium	High	Low	Low	Low	Low	Low

\*Shaded columns are the selected BMP type of treatment

Please check the box(s) that best describes the Treatment BMP(s) and/or LID BMP selected for this project.

**Table 12. Project TCBMPS – BMPs designed to treat stormwater (e.g., LID and hydromod) shall be considered TCBMPS**

<b>Bioretention Facilities (LID)</b>	
<input checked="" type="checkbox"/>	Bioretention area
<input type="checkbox"/>	Flow-through Planter
<input type="checkbox"/>	Cistern with Bioretention Facility
<b>Basins</b>	
<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
<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>High-rate Biofilters</b>	
<input type="checkbox"/>	Tree-pit-style unit
<input type="checkbox"/>	Other _____
<b>High-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"/>	Other _____
<b>Trash Racks</b>	
<input type="checkbox"/>	Catch Basin Insert
<input type="checkbox"/>	Catch Basin Insert with Hydrocarbon boom
<input type="checkbox"/>	Other _____
<b>Self-treating or Self-Retaining Areas (LID)</b>	
<input checked="" type="checkbox"/>	Pervious Pavements
<input type="checkbox"/>	Vegetated Roofs
<input type="checkbox"/>	Other _____

<sup>(1)</sup> Must be designed 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 see all calculations and design sheets for all treatment facilities proposed in Attachment D.

**Construction Plan SWMP Checklist for North County Environmental Resources 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.

Treatment Control and LID BMP's <sup>1</sup>			
Description / Type	Sheet	Maintenance Category	Revisions
1. Linear Swale Configured Bioretention Systems		Category 1	
2. Detention Basins		Category 1	
<sup>1</sup> BMPs designed to treat stormwater (e.g., LID and hydromod) shall be considered TCBMPs			

\* BMP's approved as part of Stormwater Management Plan (SWMP) dated \_\_/\_\_/\_\_ 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 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 facility with a high or medium removal efficiency ranking is infeasible.

**Bioretention systems were chosen for this project to be able to treat the runoff through the infiltration medium and then be able to provide underground storage for the 0.1Q2 through Q10 flows. The large amount of road improvements in the project require a system that can be installed linearly and at the point of runoff generation and bioretention swales provide that sort of flexibility.**

## 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 <sup>1</sup>	yes		<i>Linear swale configured bio retention system &amp; underground gravel detention pit/vault</i>
Second <sup>2</sup>			
Third <sup>3</sup>			
Fourth <sup>4</sup>			

**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 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 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**

<b>Treatment Control BMPs (TCBMPs)<sup>1,2</sup></b> (List all from SWMP)		
<b>Lot Number Or Location</b>	<b>Description/Type</b>	<b>Sheet</b>
<b>Cielo II (lots 1 to 15)</b>		
<i>St “C” &amp; “D” (IMPs 1,2,3,4,5,6 &amp;7)</i>	<i>Linear Swale Configured Bioretention System</i>	
<i>Pads for lots 1 to 15 (DMAs 105, 112 through 122, 127, 136, and 137)</i>	<i>Settling Basins for Self-Retaining DMAs</i>	
<b>Lower Madura (lots 16 to 18)</b>		
<i>Driveway for lots 17 &amp; 18 (DMAs 101 &amp;105)</i>	<i>Linear Swale Configured Bioretention System</i>	
<i>St “B” (IMPs 1, 2, 5 &amp; 6)</i>	<i>Linear Swale Configured Bioretention System</i>	
<b>Upper Madura (lot 19)</b>		
<i>Driveway “A”, DMAs 108 through 112 (IMP 3)</i>	<i>Linear Swale Configured Bioretention System</i>	
<i>DMAs 104 &amp; 104A (IMP-1)</i>	<i>Linear Swale Configured Bioretention System</i>	
<i>DMAs 107 &amp; 107A (IMP-2)</i>	<i>Linear Swale Configured Bioretention System</i>	
<i>DMAs 113 &amp; 113A (IMP-4)</i>	<i>Linear Swale Configured Bioretention System</i>	
<i>DMAs 103 (IMP-5)</i>	<i>Linear Swale Configured Bioretention System</i>	
<sup>1</sup> All Priority Development Projects (PDPs) require a TCBMP.		
<sup>2</sup> BMPs designed to treat stormwater (e.g. LID and hydromod) shall be considered TCBMPs.		

\* For location of BMP’s, 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: CEILO 182, LLC

Contact : Warner Lusardi

Address: 1570 LINDA VISTA DRIVE

SAN MARCOS, CA 92078-3808

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

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

Engineer of Work: EXCEL ENGINEERING

Engineer's Phone Number: 760-745-8118

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: CEILO 182, LLC

Contact : Warner Lusardi

Address: 1570 LINDA VISTA DRIVE

SAN MARCOS, CA 92078-3808

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

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

\* 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.

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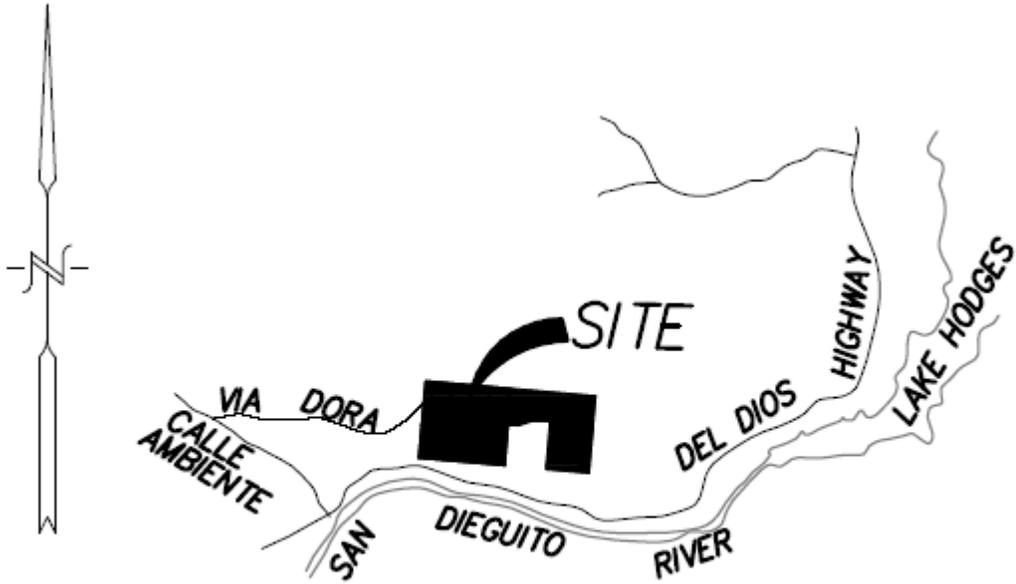
**ATTACHMENTS**

Please include the following attachments.

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

Note: Attachments B and C are combined.

ATTACHMENT A  
PROJECT LOCATION MAP



***VICINITY MAP***

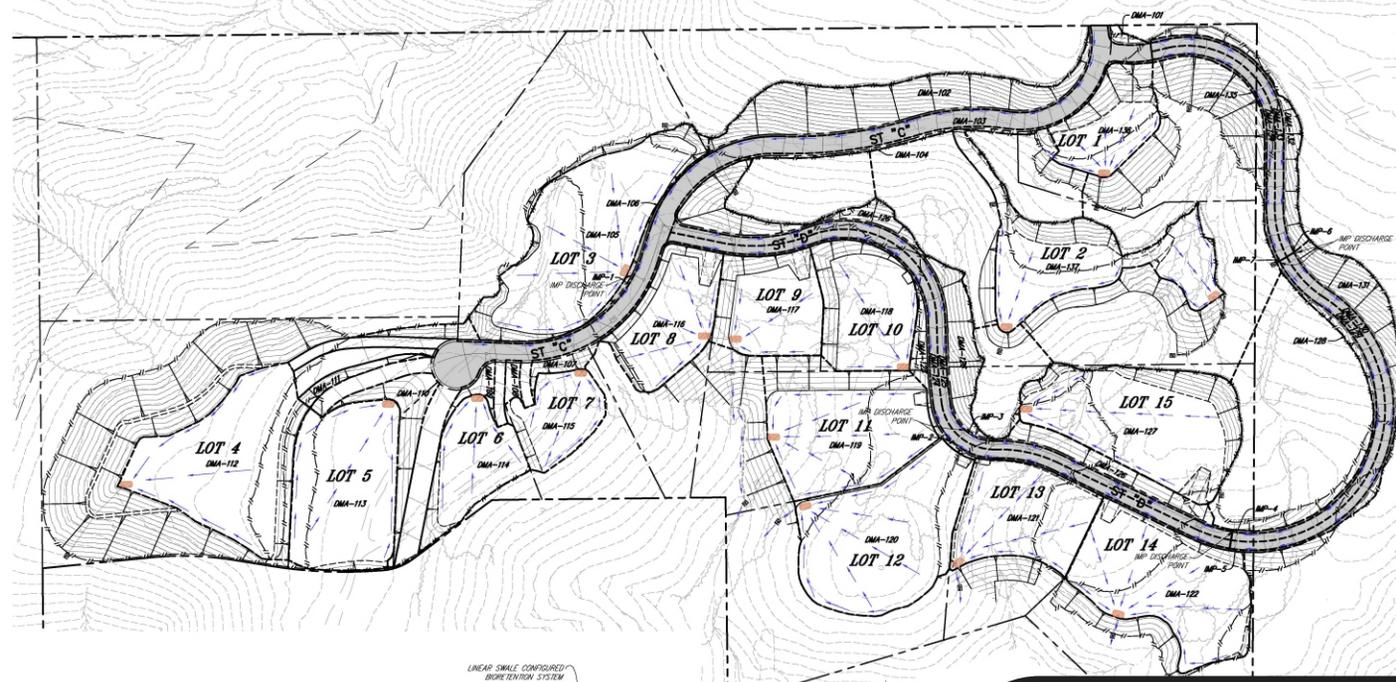
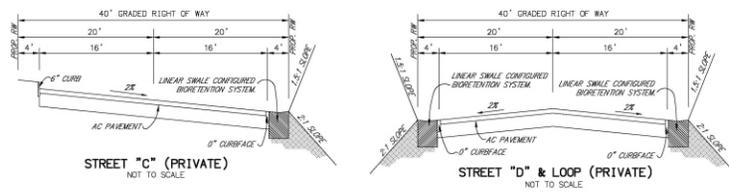
*NOT TO SCALE*

# ATTACHMENT B & C

## SOURCE CONTROL/DRAINAGE MANAGEMENT AREA (DMA) EXHIBITS

# DMA MAP

## CIELO II (LOTS 1 TO 15)



DRAINS TO IMP-1			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-101	1462.41	33.37	PERVIOUS
DMA-102	4613.09	105.32	PERVIOUS
DMA-103	3294.20	75.44	IMPERVIOUS
DMA-104	6228.26	142.44	PERVIOUS
DMA-105	8503.50	193.42	PERVIOUS
DMA-107	5126.24	117.43	PERVIOUS
DMA-108	2154.71	49.40	PERVIOUS
DMA-109	1750.00	39.95	PERVIOUS
DMA-110	1487.31	33.84	PERVIOUS
DMA-111	4364.12	99.62	PERVIOUS

DRAINS TO IMP-2			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-123	1084.02	24.63	PERVIOUS
DMA-124	22241.50	511.41	IMPERVIOUS

DRAINS TO IMP-3			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-125	22333.75	510.42	IMPERVIOUS
DMA-126	30047.42	691.44	PERVIOUS

DRAINS TO IMP-4			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-128	5472.25	125.43	PERVIOUS
DMA-129	12328.04	282.43	IMPERVIOUS

DRAINS TO IMP-5			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-130	12910.04	295.43	IMPERVIOUS
DMA-131	20469.09	469.43	PERVIOUS

DRAINS TO IMP-6			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-132	36344.15	830.43	PERVIOUS
DMA-133	91782.25	2101.43	IMPERVIOUS

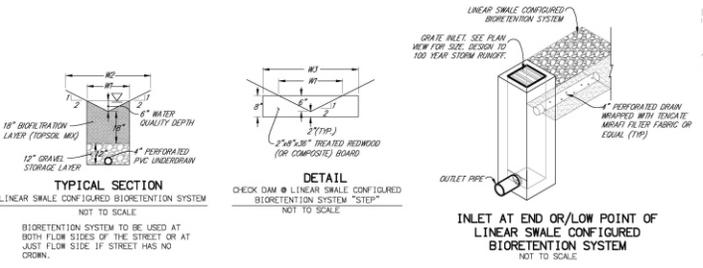
  

DRAINS TO IMP-7			
DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-134	8831.80	201.43	IMPERVIOUS
DMA-135	2614.86	59.62	PERVIOUS

SELF-RETAINING AREAS			
DMA #	AREA (SQ)	NOTE	
DMA-105	4381.68	PERVIOUS	
DMA-112	7330.69	PERVIOUS	
DMA-113	5329.44	PERVIOUS	
DMA-114	29058.91	PERVIOUS	
DMA-115	21538.14	PERVIOUS	
DMA-116	36308.45	PERVIOUS	
DMA-117	36348.46	PERVIOUS	
DMA-118	40216.18	PERVIOUS	
DMA-119	66583.58	PERVIOUS	
DMA-120	22294.79	PERVIOUS	
DMA-121	41306.16	PERVIOUS	
DMA-122	63171.11	PERVIOUS	
DMA-127	71326.16	PERVIOUS	
DMA-136	28719.80	PERVIOUS	
DMA-137	32555.27	PERVIOUS	

TCRMP, LID, & HYDROMODIFICATION FACILITIES			
NAME	REQUIRED AREA (SQ)	PROVIDED AREA (SQ)	FACILITY TYPE
IMP-1	6665	6760	TCRMP, LID & HYDROWOOD
IMP-2	6577	6781	TCRMP, LID & HYDROWOOD
IMP-3	1769	2733	TCRMP, LID & HYDROWOOD
IMP-4	1336	1491	TCRMP, LID & HYDROWOOD
IMP-5	971	1649	TCRMP, LID & HYDROWOOD
IMP-6	639	1297	TCRMP, LID & HYDROWOOD
IMP-7	747	1222	TCRMP, LID & HYDROWOOD



**PLEASE SEE INSERT  
POCKET FOR FULL SIZE  
EXHIBIT**



SCALE 1" = 100'



**LEGEND**

- DMA BOUNDARY
- DMA LABEL
- FLOW DIRECTION
- SETTLING BASIN DETAIL FOR THE SELF-RETAINING DMA

**TYPICAL SECTION**  
LINEAR SWALE CONFIGURED BIORETENTION SYSTEM  
NOT TO SCALE

BIORETENTION SYSTEM TO BE USED AT BOTH FLOW SIDES OF THE STREET OR AT LEAST FLOW SIDE, IF STREET HAS NO CURB.

**DETAIL**  
CHECK DMA # LINEAR SWALE CONFIGURED BIORETENTION SYSTEM "STEP"  
NOT TO SCALE

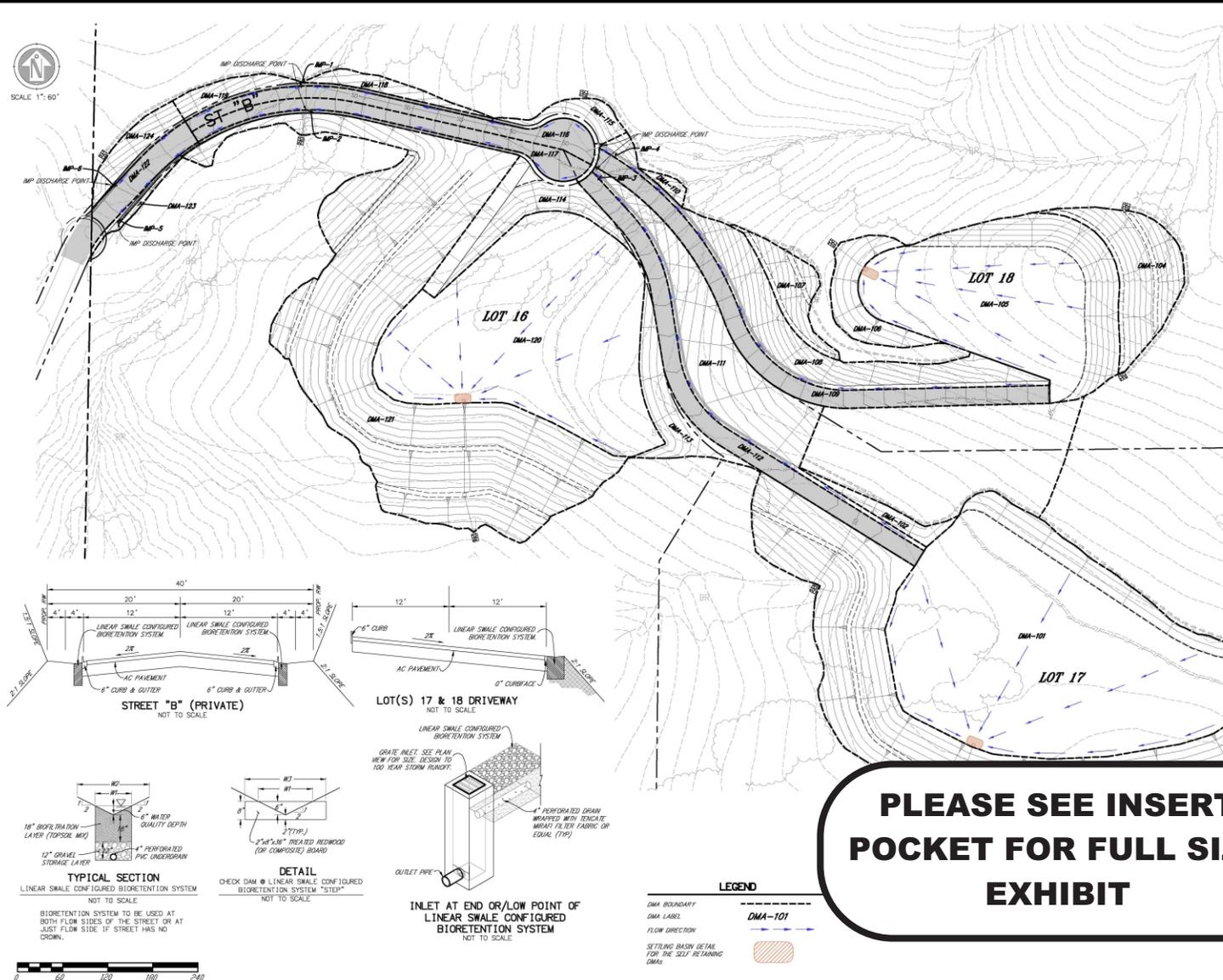
**INLET AT END OR/LOW POINT OF LINEAR SWALE CONFIGURED BIORETENTION SYSTEM**  
NOT TO SCALE

**TYPICAL SETTLING BASIN FOR THE SELF RETAINING AREAS**  
NOT TO SCALE

THESE SETTLING BASINS ARE TEMPORARY UNTIL THE PADS ARE DEVELOPED. THE DEVELOPMENT OF THE PADS WILL PROCEED THEIR OWN HYDROMODIFICATION/WATER QUALITY REQUIREMENTS.

# DMA MAP LOWER MADURA (LOTS 16 TO 18)

SCALE 1" = 60'



**DRAINS TO IMP-1**

DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-115	4345.11 SQ	0.100 AC	PERVIOUS
DMA-116	10080.62 SQ	0.245 AC	IMPERVIOUS
DMA-119	5745.83 SQ	0.118 AC	PERVIOUS

**DRAINS TO IMP-2**

DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-114	14947.22 SQ	0.363 AC	PERVIOUS
DMA-117	9988.06 SQ	0.259 AC	IMPERVIOUS

**DRAINS TO IMP-3**

DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-111	30233.83 SQ	0.748 AC	PERVIOUS
DMA-112	17073.37 SQ	0.376 AC	PERVIOUS

**DRAINS TO IMP-4**

DMA #	AREA (SQ)	AREA (AC)	NOTE
DMA-108	24080.17 SQ	0.587 AC	PERVIOUS
DMA-109	18080.33 SQ	0.415 AC	IMPERVIOUS

**DRAINS TO IMP-5 & 6**

DMA #	AREA (SQ)	NOTE
DMA-122	5941.84 SQ	IMPERVIOUS
DMA-123	1646.47 SQ	PERVIOUS
DMA-124	5283.14 SQ	PERVIOUS

**SELF-TREATING AREAS**

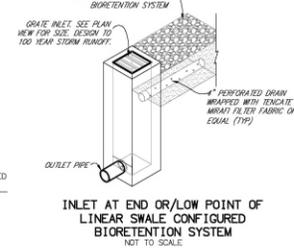
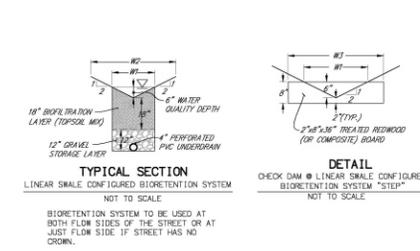
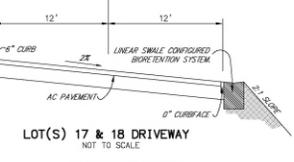
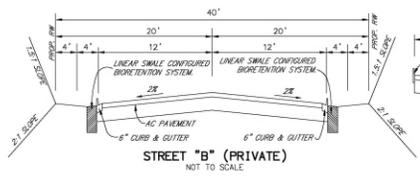
DMA #	AREA (SQ)	NOTE
DMA-102	3373.88 SQ	PERVIOUS
DMA-103	8132.49 SQ	PERVIOUS
DMA-104	15020.11 SQ	PERVIOUS
DMA-105	8328.54 SQ	PERVIOUS
DMA-107	7075.07 SQ	PERVIOUS
DMA-109	10080.62 SQ	PERVIOUS
DMA-113	8234.40 SQ	PERVIOUS
DMA-118	3488.00 SQ	PERVIOUS
DMA-121	11018.12 SQ	PERVIOUS

**SELF-RETAINING AREAS**

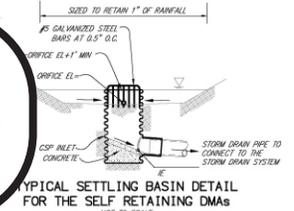
DMA #	AREA (SQ)	NOTE
DMA-101	111782.42 SQ	PERVIOUS
DMA-120	38238.22 SQ	PERVIOUS
DMA-120	78244.63 SQ	PERVIOUS

**TORMP, LID & HYDROMODIFICATION FACILITIES**

NAME	REQUIRED AREA (SQ)	PROVIDED AREA (SQ)	FACILITY TYPE
IMP-1	729	809	TORMP, LID & HYDROWOOD
IMP-2	745	257	TORMP, LID & HYDROWOOD
IMP-3	1293	1489	TORMP, LID & HYDROWOOD
IMP-4	1335	1351	TORMP, LID & HYDROWOOD
IMP-5	1293	1489	TORMP, LID & HYDROWOOD
IMP-6	1335	1351	TORMP, LID & HYDROWOOD



**PLEASE SEE INSERT POCKET FOR FULL SIZE EXHIBIT**



THESE SETTLING BASINS ARE TEMPORARILY UNTIL THE PASSES ARE DEVELOPED. THE DEVELOPMENT OF THE PASSES WILL TRIGGER THEIR OWN HYDROMODIFICATION/PAVING QUALITY REQUIREMENTS.

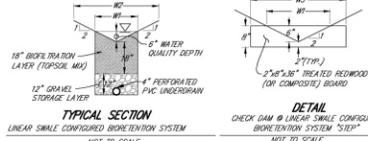


# DMA MAP

## UPPER MADURA (LOT 19)



SCALE 1" = 30'



**TYPICAL SECTION**  
 LINEAR SWALE CONFIGURED BIORETENTION SYSTEM  
 NOT TO SCALE

**DETAIL**  
 CHECK DAM @ LINEAR SWALE CONFIGURED BIORETENTION SYSTEM "STEP"  
 NOT TO SCALE

BIORETENTION SYSTEM TO BE USED AT BOTH FLOW SIDES OF THE STREET OR AT JUST FLOW SIDE IF STREET HAS NO DRAIN.

**DRAINS TO IMP-1**

DMA #	AREA (SQ FT)	AREA (AC)	NOTE
DMA-104	4313.99 SF	0.104 AC	IMPERVIOUS
DMA-104	15326.71 SF	0.342 AC	PERVIOUS

**DRAINS TO IMP-2**

DMA #	AREA (SQ FT)	AREA (AC)	NOTE
DMA-107	32040.86 SF	0.630 AC	IMPERVIOUS
DMA-107A	25227.30 SF	0.480 AC	PERVIOUS

**DRAINS TO IMP-3**

DMA #	AREA (SQ FT)	AREA (AC)	NOTE
DMA-108	24528.97 SF	0.553 AC	IMPERVIOUS
DMA-108	26424.58 SF	0.101 AC	PERVIOUS
DMA-109	190.72 SF	0.004 AC	IMPERVIOUS
DMA-111	27622.52 SF	0.108 AC	PERVIOUS
DMA-112	32416.67 SF	0.606 AC	IMPERVIOUS
DMA-124	18819.14 SF	0.388 AC	PERVIOUS

**DRAINS TO IMP-4**

DMA #	AREA (SQ FT)	AREA (AC)	NOTE
DMA-113	12396.03 SF	0.281 AC	IMPERVIOUS
DMA-124	11597.35 SF	0.266 AC	PERVIOUS

**DRAINS TO IMP-5**

DMA #	AREA (SQ FT)	AREA (AC)	NOTE
DMA-103	9114.2 SF	0.207 AC	IMPERVIOUS

**TICMP, LID & HYDROMODIFICATION FACILITIES**

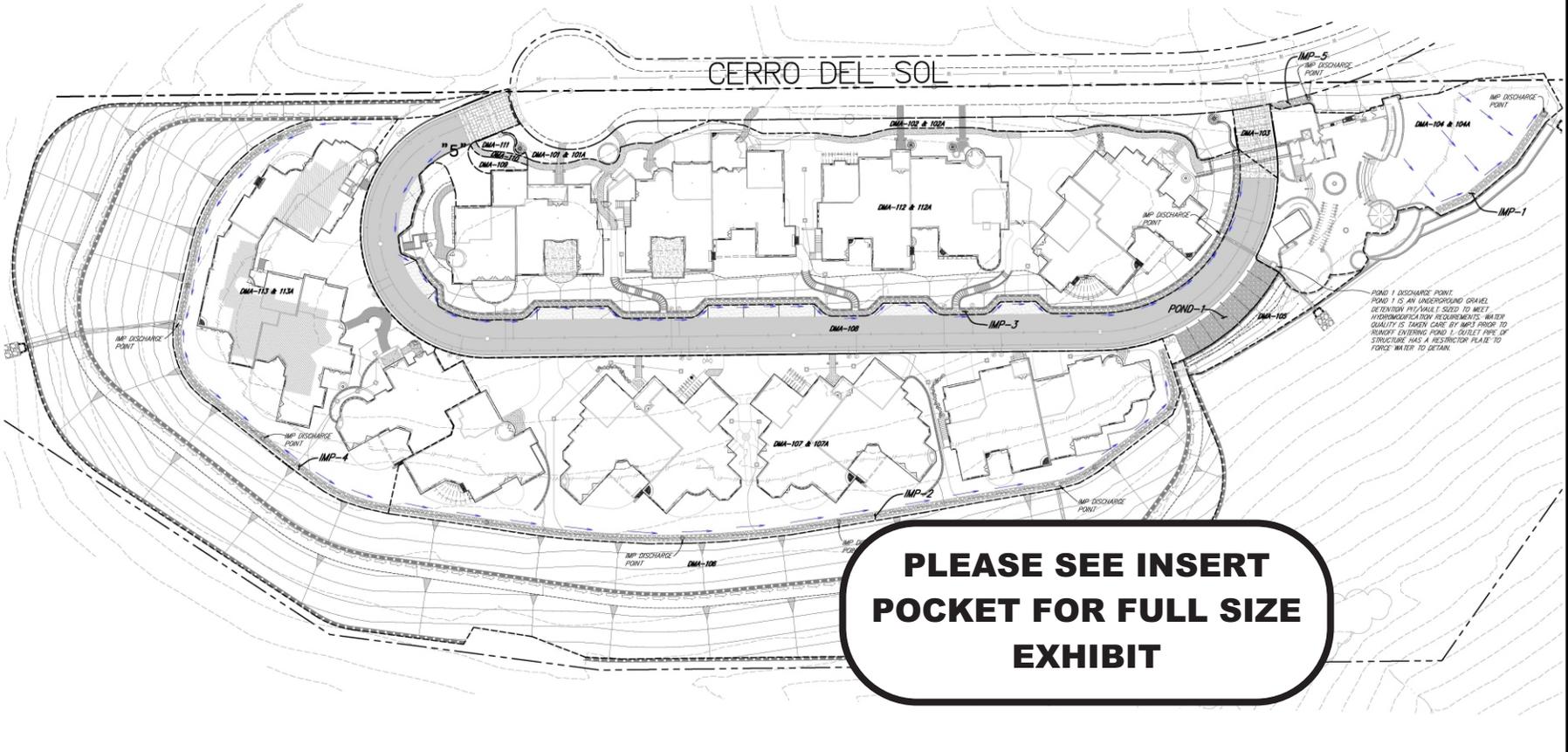
NAME	REQUIRED AREA (SQ FT)	PROPOSED AREA (SQ FT)	FACILITY TYPE
IMP-1	362	365	TICMP, LID & HYDROMOD
IMP-2	2083	2244	TICMP, LID & HYDROMOD
IMP-3	2626	2540	TICMP, LID ONLY
IMP-4	221	1415	TICMP, LID & HYDROMOD
IMP-5	362	365	TICMP, LID & HYDROMOD
POND-1	1130	1288	HYDROMOD ONLY

**BYPASS**

DMA #	AREA (SQ FT)	NOTE
DMA-105	1882.65 SF	PERVIOUS
DMA-106	8488.73 SF	PERVIOUS

**SELF-TREATING AREAS**

DMA #	AREA (SQ FT)	NOTE
DMA-101	141.89 SF	LANDSCAPE PERVIOUS
DMA-102A	1321.04 SF	LANDSCAPE PERVIOUS
DMA-102	132.71 SF	LANDSCAPE PERVIOUS
DMA-102A	3257.31 SF	LANDSCAPE PERVIOUS



**PLEASE SEE INSERT  
POCKET FOR FULL SIZE  
EXHIBIT**

POND 1 DISCHARGE POINT  
 POND 1 IS AN UNDERGROUND GRAVEL  
 DETENTION PIT/VALE 1 SIZED TO MEET  
 HYDROMODIFICATION REQUIREMENTS. WATER  
 QUALITY IS TAKEN CARE OF BY IMP3 PRIOR TO  
 TRAPPIER ENTERING POND 1. SILENT PIPE OF  
 STRUCTURE HAS A RESTRICTOR FLAP TO  
 FORCE WATER TO DETAIL.

# ATTACHMENT D

BMP SIZING DESIGN CALCULATIONS (WATER QUALITY AND  
HYDROMODIFICATION) AND TCBMP/IMP DESIGN DETAILS

### Project Summary

Project Name	Cielo (TM 1-29-13)
Project Applicant	Cielo 182 LLC
Jurisdiction	County of San Diego
Parcel (APN)	Tract No. 5456-RPL3
Hydrologic Unit	San Dieguito

### Compliance Basin Summary

Basin Name:	Cielo De Lusardi II
Receiving Water:	Southeastern outlet - Outfall 4
Rainfall Basin	Oceanside
Mean Annual Precipitation (inches)	13.3
Project Basin Area (acres):	9.16
Watershed Area (acres):	0.00
SCCWRP Lateral Channel Susceptibility (H, M, L):	
SCCWRP Vertical Channel Susceptibility (H, M, L):	
Overall Channel Susceptibility (H, M, L):	HIGH
Lower Flow Threshold (% of 2-Year Flow):	0.1

### Drainage Management Area Summary

ID	Type	BMP ID	Description	Area (ac)	Pre-Project Cover	Post Surface Type	Drainage Soil	Slope
24135	Drains to LID	BMP 1	DMA-101	0.03	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...)	Steep (greater 10%)
24144	Drains to LID	BMP 1	DMA-103	2.13	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...)	Steep (greater 10%)
24147	Drains to LID	BMP 1	DMA-104	0.14	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...)	Steep (greater 10%)
24149	Drains to LID	BMP 1	DMA-106	0.19	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...)	Steep (greater 10%)
24151	Drains to LID	BMP 1	DMA-107	0.11	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...)	Steep (greater 10%)
24154	Drains to LID	BMP 1	DMA-108	0.04	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...)	Steep (greater 10%)

24180	Drains to LID	BMP 1	DMA-109	0.08	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24181	Drains to LID	BMP 1	DMA-110	0.34	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24182	Drains to LID	BMP 1	DMA-111	0.1	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24185	Drains to LID	BMP 1	DMA-102	1.13	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24187	Drains to LID	BMP 2	DMA-123	0.25	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24188	Drains to LID	BMP 2	DMA-124	0.51	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24190	Drains to LID	BMP 3	DMA-125	0.51	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24191	Drains to LID	BMP 3	DMA-126	1.14	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24192	Drains to LID	BMP 4	DMA-128	0.12	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24193	Drains to LID	BMP 4	DMA-129	0.28	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24194	Drains to LID	BMP 5	DMA-130	0.29	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24195	Drains to LID	BMP 5	DMA-131	0.47	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24196	Drains to LID	BMP 6	DMA-132	0.21	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24197	Drains to LID	BMP 6	DMA-133	0.21	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24198	Drains to LID	BMP 7	DMA-134	0.20	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24199	Drains to LID	BMP 7	DMA-135	0.6	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)

**LID Facility Summary**

BMP ID	Type	Description	Plan Area (sqft)	Volume 1 (cft)	Volume 2 (cft)	Orifice Flow (cfs)	Orifice Size (inch)
BMP 1	Bioretention	IMP-1	6665	5557	3999	0.105	2.00
BMP 2	Bioretention	IMP-2	1517	1265	910	0.018	0.7
BMP 3	Bioretention	IMP-3	1769	1475	1061	0.040	1.00

BMP 4	Bioretention	IMP-4	836	697	502	0.01	0.5
BMP 5	Bioretention	IMP-5	971	809	582	0.018	0.7
BMP 6	Bioretention	IMP-6	659	549	395	0.010	0.5
BMP 7	Bioretention	IMP-7	747	623	448	0.019	0.7

LUSARDI MADERA UPPER 19  
Required Treatment Area Calculations

MADURA UPPER 19

Areas Draining to IMPs

DRAINS TO IMP-3 (TREATMENT ONLY)						
DMA Name	Area (square feet)	Post-project	DMA Runoff	DMA Area x runoff	Soil Type	IMP Name
					D	3
108	24,509.00	impervious	1	24,509.00		
109	298.00	landscape	0.1	29.80		
110	161.00	impervious	1	161.00		
111	278.00	landscape	0.1	27.80		
112	39,245.00	impervious	1	39,245.00		
112A	16,819.00	landscape	0.1	1,681.90		
					IMP Sizing Factor	Calculated Imp Area
						Provided IMP Area
Total Area	81,310.00		<b>Total</b>	65,654.50	<b>0.04</b>	2,626.18
						<b>2,628</b> IMP Area

### Project Summary

Project Name	Cielo (TM 1-29-13)
Project Applicant	Cielo 182 LLC
Jurisdiction	County of San Diego
Parcel (APN)	Tract No. 5456-RPL3
Hydrologic Unit	San Dieguito

### Compliance Basin Summary

Basin Name:	Madura Upper 19
Receiving Water:	Outfalls to Natural Slope
Rainfall Basin	Oceanside
Mean Annual Precipitation (inches)	13.3
Project Basin Area (acres):	4.02
Watershed Area (acres):	0.00
SCCWRP Lateral Channel Susceptibility (H, M, L):	
SCCWRP Vertical Channel Susceptibility (H, M, L):	
Overall Channel Susceptibility (H, M, L):	HIGH
Lower Flow Threshold (% of 2-Year Flow):	0.1

### Drainage Management Area Summary

ID	Type	BMP ID	Description	Area (ac)	Pre-Project Cover	Post Surface Type	Drainage Soil	Slope
24226	Drains to LID	BMP 1	DMA-104	0.10	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Steep (greater 10%)
24239	Drains to LID	BMP 1	DMA-104A	0.24	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Steep (greater 10%)
24240	Drains to LID	BMP 2	DMA-107	0.69	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Steep (greater 10%)
24241	Drains to LID	BMP 2	DMA-107A	0.46	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Steep (greater 10%)
24245	Drains to LID	BMP 4	DMA-113	0.39	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Steep (greater 10%)
24246	Drains to LID	BMP 4	DMA-113A	0.26	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Steep (greater 10%)

24247	Drains to Pond	BMP 1	DMA-108	0.56				
24248	Drains to Pond	BMP 1	DMA-109	0.00				
24249	Drains to Pond	BMP 1	DMA-110	0.00				
24250	Drains to Pond	BMP 1	DMA-111	0.00				
24252	Drains to Pond	BMP 1	DMA-112	0.90				
24253	Drains to Pond	BMP 1	DMA-112A	0.38				

**LID Facility Summary**

BMP ID	Type	Description	Plan Area (sqft)	Volume 1(cft)	Volume 2(cft)	Orifice Flow (cfs)	Orifice Size (inch)
BMP 1	Bioretention	IMP-1	362	302	217	0.008	0.4
BMP 2	Bioretention	IMP-2	2083	1737	1250	0.028	0.8
BMP 4	Bioretention	IMP-4	723	602	433	0.009	0.5

**Project Summary**

Project Name	Cielo (TM 1-29-13)
Project Applicant	Cielo 182 LLC
Jurisdiction	County of San Diego
Parcel (APN)	Treat No. 5456-RPL3
Hydrologic Unit	San Dieguito

**Compliance Basin Summary**

Basin Name:	Madura Upper 19
Receiving Water:	Outfalls to Natural Slope
Rainfall Basin	Oceanside
Mean Annual Precipitation (Inches)	13.3
Project Basin Area (acres):	4.02
Watershed Area (acres):	0.00
SCCWRP Lateral Channel Susceptibility (H, M, L):	
SCCWRP Vertical Channel Susceptibility (H, M, L):	
Overall Channel Susceptibility (H, M, L):	HIGH
Lower Flow Threshold (% of 2-Year Flow):	0.1

**Drainage Management Area Summary**

ID	Type	BMP ID	Description	Area (ac)	Pre-Project Cover	Post Surface Type	Drainage Soil	Slope
24226	Drains to LID	BMP 1	DMA-104	0.10	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24239	Drains to LID	BMP 1	DMA-104A	0.24	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24240	Drains to LID	BMP 2	DMA-107	0.69	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24241	Drains to LID	BMP 2	DMA-107A	0.46	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24245	Drains to LID	BMP 4	DMA-113	0.39	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24246	Drains to LID	BMP 4	DMA-113A	0.26	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24247	Drains to Pond	BMP 1	DMA-108	0.56	Pervious (Pre)		Type D (high runoff - clay soil...	Steep (greater 10%)
24248	Drains to Pond	BMP 1	DMA-109	0.00	Pervious (Pre)		Type D (high runoff - clay soil...	Steep (greater 10%)
24249	Drains to Pond	BMP 1	DMA-110	0.00	Pervious (Pre)		Type D (high runoff - clay soil...	Steep (greater 10%)
24250	Drains to Pond	BMP 1	DMA-111	0.00	Pervious (Pre)		Type D (high runoff - clay soil...	Steep (greater 10%)
24252	Drains to Pond	BMP 1	DMA-112	0.90	Pervious (Pre)		Type D (high runoff - clay soil...	Steep (greater 10%)
24253	Drains to Pond	BMP 1	DMA-112A	0.38	Pervious (Pre)		Type D (high runoff - clay soil...	Steep (greater 10%)

**Pond Facility Summary**

Scenario	Description	Bottom Area (sqft)	Top Area (sqft)	Depth (ft)	Volume (cft)	Low Orifice (in)	Low Invert (ft)	High Orifice (in)	High Invert (ft)	Weir Length (ft)	Weir Invert (ft)	Facility Soil	Drawdown (hrs)
Design A	POND-1	50	82	4	264.5	1.2	0.00	6.00	2.5	4.00	3.5	D	6.00
Design A	POND-1	1000	1130	4	4260.9	1.2	0.00	6.00	2.5	4.00	3.5	D	34.00
Design A	POND-1	50	82	4	264.5	1.2	0.00	6.00	2.5	4.00	3.5	D	6.00
Design A	POND-1	1000	1130	4	4260.9	1.2	0.00	6.00	2.5	4.00	3.5	D	34.00
Design C	IMP-3 (POND-1)	1000	1130	4	4260.9	1.2	0.00	6.00	2.5	4.00	3.5	D	34.00

### Project Summary

Project Name	Cielo (TM 1-29-13)
Project Applicant	Cielo 182 LLC
Jurisdiction	County of San Diego
Parcel (APN)	Tract No. 5456-RPL3
Hydrologic Unit	San Dieguito

### Compliance Basin Summary

Basin Name:	Rancho Cielo Madura
Receiving Water:	Channel west of Pads - Outfall 1
Rainfall Basin	Oceanside
Mean Annual Precipitation (inches)	13.3
Project Basin Area (acres):	3.26
Watershed Area (acres):	0.00
SCCWRP Lateral Channel Susceptibility (H, M, L):	
SCCWRP Vertical Channel Susceptibility (H, M, L):	
Overall Channel Susceptibility (H, M, L):	HIGH
Lower Flow Threshold (% of 2-Year Flow):	0.1

### Drainage Management Area Summary

ID	Type	BMP ID	Description	Area (ac)	Pre-Project Cover	Post Surface Type	Drainage Soil	Slope
24263	Drains to LID	BMP 1	DMA-115	0.01	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24264	Drains to LID	BMP 1	DMA-116	0.24	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24265	Drains to LID	BMP 1	DMA-119	0.11	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24266	Drains to LID	BMP 2	DMA-114	0.34	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)
24267	Drains to LID	BMP 2	DMA-117	0.22	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soil...	Steep (greater 10%)
24268	Drains to LID	BMP 3	DMA-111	0.64	Pervious (Pre)	Landscaping	Type D (high runoff - clay soil...	Steep (greater 10%)

24269	Drains to LID	BMP 3	DMA-112	0.39	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Steep (greater 10%)
24270	Drains to LID	BMP 4	DMA-108	0.56	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Steep (greater 10%)
24271	Drains to LID	BMP 4	DMA-109	0.41	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Steep (greater 10%)

**LID Facility Summary**

BMP ID	Type	Description	Plan Area (sqft)	Volume 1 (cft)	Volume 2 (cft)	Orifice Flow (cfs)	Orifice Size (inch)
BMP 1	Bioretention	IMP-1	729	608	437	0.009	0.5
BMP 2	Bioretention	IMP-2	745	621	447	0.014	0.6
BMP 3	Bioretention	IMP-3	1293	1078	776	0.025	0.8
BMP 4	Bioretention	IMP-4	1335	1113	801	0.024	0.8

# ATTACHMENT E

## GEOTECHNICAL CERTIFICATION SHEET

The design of stormwater treatment and other control measures proposed in this plan requiring specific soil infiltration characteristics and/or geological conditions has been reviewed and approved by a registered Civil Engineer, Geotechnical Engineer, or Geologist in the State of California.

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Name and registration #

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Date

# ATTACHMENT F

## MAINTENANCE PLAN

The following is a general outline to create your project specific Maintenance Plan. A Maintenance Plan is a living document and field conditions may require modifications to the Maintenance Plan.

I. Inspection, Maintenance Log and Self-Verification Forms (Examples are provided in Appendix F of the San Diego County SUSMP)

II. Updates, Revisions and Errata

III. Introduction

A. Narrative overview describing the site; drainage areas, routing, and discharge points; and treatment facilities.

IV. Responsibility for Maintenance

A. General

- (1) Name and contact information for responsible individual(s).
- (2) Organization chart or charts showing organization of the maintenance function and location within the overall organization.
- (3) Insert a copy of the recorded maintenance agreement.
- (4) Maintenance Funding
  - (1) Sources of funds for maintenance
  - (2) Budget category or line item
  - (3) Description of procedure and process for ensuring adequate funding for maintenance

B. Staff Training Program

C. Records

D. Safety

V. Summary of Drainage Areas and Stormwater Facilities

A. Drainage Areas

- (1) Drawings showing pervious and impervious areas (copied or adapted from initial SWMP).
- (2) Designation and description of each drainage area and how flow is routed to the corresponding facility.

B. Treatment and Flow-Control Facilities

- (1) Drawings showing location and type of each facility
  - (2) General description of each facility (Consider a table if more than two facilities)
- (1) Area drained and routing of discharge.
  - (2) Facility type and size

VI. Facility Documentation

- A. “As-built” drawings of each facility (design drawings in the draft Plan)
- B. Manufacturer’s data, manuals, and maintenance requirements for pumps, mechanical or electrical equipment, and proprietary facilities (include a “placeholder” in the draft plan for information not yet available).
- C. Specific operation and maintenance concerns and troubleshooting

#### VII. Maintenance Schedule or Matrix

A. Maintenance Schedule for each facility with specific requirements for:

- (1) Routine inspection and maintenance
- (2) Annual inspection and maintenance
- (3) Inspection and maintenance after major storms

#### B. Service Agreement Information

Assemble and make copies of your maintenance plan. One copy must be submitted to the County, and at least one copy kept on-site. Here are some suggestions for formatting the maintenance plan:

- Format plans to 8½" x 11" to facilitate duplication, filing, and handling.
- Include the revision date in the footer on each page.
- Scan graphics and incorporate with text into a single electronic file. Keep the electronic file backed-up so that copies of the maintenance plan can be made if the hard copy is lost or damaged.

# 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 \_\_\_\_\_

Project Name \_\_\_\_\_

Location / Address \_\_\_\_\_

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

**Responsible Party for Construction Phase**

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

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

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

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

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

Engineer of Work: \_\_\_\_\_

Engineer's Phone Number: \_\_\_\_\_

**Responsible Party for Ongoing Maintenance**

Owner's Name(s)\* \_\_\_\_\_

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

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

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

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

\* 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.

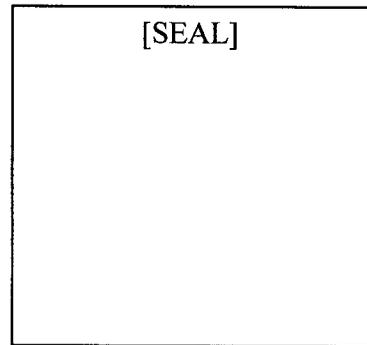
Professional Engineer's Printed Name:

\_\_\_\_\_

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)

# ATTACHMENT I

## Geomorphic Assessment

**(Contact County staff immediately if you are planning to conduct a Geomorphic Assessment. A Geomorphic Assessment must be performed if the project is using a "Medium" low flow threshold of  $0.3Q_2$  or a "High" low flow threshold of  $0.5Q_2$ .)**

# **ATTACHMENT J**

## **HMP Exemption Documentation** (if applicable)

# **ATTACHMENT K**

## **Addendum**