

(INSERT PERMIT APPLICATION NUMBERS)

CITY OF OCEANSIDE ENGINEERING DIVISION
PRIORITY DEVELOPMENT PROJECT STORM WATER QUALITY MANAGEMENT PLAN FOR PROJECT NAME
ENGINEER OF WORK Wet Signature, Wet Date, Stamp

PREPARED FOR:

APPLICANT NAME

ADDRESS

CITY, STATE ZIP CODE

TELEPHONE NUMBER

PREPARED BY:

ENGINEER-OF-WORK

ADDRESS

CITY, STATE ZIP CODE

TELEPHONE NUMBER



How to Use This Template

This template, assembled by GHD Inc. on behalf of the City of Oceanside, is for the development of Storm Water Quality Management Plans (SWQMPs) for Priority Development Projects (PDPs) proposed within Oceanside, CA. It is based on requirements set forth in the Regional Water Quality Control Board's National Pollutant Discharge Elimination System MS4 Permit that covers the San Diego Region (Order No. R9-2013-0001).

All references within the template refer to the City of Oceanside BMP Design Manual dated February 2016 (Manual). Use of this template in conjunction with the Manual is intended to help a project applicant develop a SWQMP compliant with City of Oceanside and MS4 Permit requirements.

Template Date: February 16, 2016

Assembled By:



Quick Reference Guide

Item	Project Information
Project Name	Click here to enter text.
Application Number(s)	Click here to enter text.
Project Address	Click here to enter text.
Total Parcel Area	sq. ft.
Project Description	<p>Project description should touch briefly on all of the following elements;</p> <ul style="list-style-type: none"> • Project size • Existing site use and cover • Proposed site use and cover
Proposed Disturbed Area	sq. ft.
Created or Replaced Impervious	sq. ft.
Project Hydrologic Unit Watershed	<input type="checkbox"/> Santa Maria <input type="checkbox"/> San Luis Rey <input type="checkbox"/> Carlsbad
Required to implement HMP	<input type="checkbox"/> Yes <input type="checkbox"/> No



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CERTIFICATION PAGE

Project Name: [Insert Project Name]
Permit Application Number: [Insert Permit Application Number]

I hereby declare that I am the Engineer in Responsible Charge of design of storm water BMPs for this project, and that I have exercised responsible charge over the design of the project as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the requirements of the City of Oceanside BMP Design Manual, which is based on the requirements of San Diego Regional Water Quality Control Board Order No. R9-2013-0001 (MS4 Permit).

I have read and understand that the City has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable source control and site design BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

As Engineer of Work, I agree to indemnify, defend, and hold harmless the City of Oceanside, its officers, agents, and employees from any and all liability, claims, damages, or injuries to any person or property which might arise from the negligent acts, errors, or omissions of the Engineer of Work, my employees, agents or consultants.

Engineer of Work's Signature, PE Number & Expiration Date

[Insert Engineers Name] _____
Print Name

[Insert Company Name] _____
Company

[Insert Date] _____
Date

Engineer's Seal:



SUBMITTAL RECORD

Use this Table to keep a record of submittals of this SWQMP. Each time the SWQMP is re-submitted, provide the date and status of the project. In last column indicate changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Submittal Number	Date	Project Status	Changes
1	[MM/DD/YY]	<input type="checkbox"/> Preliminary Design/ Planning/ CEQA <input type="checkbox"/> Final Design	Initial Submittal
2	[MM/DD/YY]	<input type="checkbox"/> Preliminary Design/ Planning/ CEQA <input type="checkbox"/> Final Design	Click here to enter text.
3	[MM/DD/YY]	<input type="checkbox"/> Preliminary Design/ Planning/ CEQA <input type="checkbox"/> Final Design	Click here to enter text.
4	[MM/DD/YY]	<input type="checkbox"/> Preliminary Design/ Planning/ CEQA <input type="checkbox"/> Final Design	Click here to enter text.



Placeholder – Project Vicinity Map



Applicability of Permanent, Post-Construction Storm Water BMP Requirements (Storm Water Intake Form for all Development Permit Applications)	Form I-1
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Project Identification

Project Name:	
Permit Application Number:	Date:

Determination of Requirements

The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short summary of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.

Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". Refer to the manual sections and/or separate forms referenced in each step below.

Step	Answer	Progression
Step 1: Is the project a "development project"? See Section 1.3 of the manual for guidance.	<input type="checkbox"/> Yes	Go to Step 2.
	<input type="checkbox"/> No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.

Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):

Step 2: Is the project a Standard Project, PDP, or exception to PDP definitions? To answer this item, see Section 1.4 of the manual <i>in its entirety</i> for guidance, AND complete Form I-2, Project Type Determination.	<input type="checkbox"/> Standard Project	Stop. Standard Project requirements apply, including Standard Project SWQMP.
	<input type="checkbox"/> PDP	PDP requirements apply, including PDP SWQMP. Go to Step 3.
	<input type="checkbox"/> Exception to PDP definitions	Stop. Standard Project requirements apply. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.

Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:



Step	Answer	Progression
Step 3. Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the manual for guidance.	<input type="checkbox"/> Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	<input type="checkbox"/> No	BMP Design Manual PDP requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval, and identify requirements (<i>not required if prior lawful approval does not apply</i>):		
Step 4. Do hydromodification control requirements apply? See Section 1.6 of the manual for guidance.	<input type="checkbox"/> Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	<input type="checkbox"/> No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification control requirements do <u>not</u> apply:		
Step 5. Does protection of critical coarse sediment yield areas apply? See Section 6.2 of the manual for guidance.	<input type="checkbox"/> Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	<input type="checkbox"/> No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.
Discussion / justification if protection of critical coarse sediment yield areas does <u>not</u> apply:		



Project Type Determination Checklist		Form I-2	
Project Information			
Project Name:			
Permit Application Number:			
Project Type Determination: Standard Project or PDP			
The project is (select one): New Development Redevelopment			
The total proposed newly created or replaced impervious area is: _____ ft ² (_____) acres			
Is the project in any of the following categories, (a) through (f)?			
Yes <input type="checkbox"/>	No <input type="checkbox"/>	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input type="checkbox"/>	No <input type="checkbox"/>	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input type="checkbox"/>	No <input type="checkbox"/>	(c)	<p>New and redevelopment projects that create 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses:</p> <ul style="list-style-type: none"> (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption SIC code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.



Form I-2 Page 2 of 2

Yes <input type="checkbox"/>	No <input type="checkbox"/>	(d)	<p>New or redevelopment projects that create or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). “Discharging directly to” includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).</p> <p><u>Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and SDRWQCB; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and SDRWQCB; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See manual Section 1.4.2 for additional guidance.</u></p>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	(e)	<p>New development projects that support one or more of the following uses:</p> <p>(i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.</p> <p>(ii) Retail gasoline outlets. This category includes retail gasoline outlets that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic of 100 or more vehicles per day.</p>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	(f)	<p>New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction.</p> <p><i>Note: See manual Section 1.4.2 for additional guidance.</i></p>

Does the project meet the definition of one or more of the PDP categories (a) through (f) listed above?

No – the project is not a PDP (Standard Project).

Yes – the project is a PDP.

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is: _____ ft² (A)

The total proposed newly created or replaced impervious area is: _____ ft² (B)

Percent impervious surface created or replaced (A/B)*100: _____%

The percent impervious surface created or replaced is (select one based on the above calculation):

less than or equal to fifty percent (50%) – only new impervious areas are considered PDP

OR

greater than fifty percent (50%) – the entire project site is a PDP



Site Information Checklist For PDPs		Form I-3B (PDPs)
Project Summary Information		
Project Name		
Project Address		
Assessor's Parcel Number(s)		
Permit Application Number		
Project Watershed (Hydrologic Unit)	Select One: <input type="checkbox"/> Santa Margarita 902 <input type="checkbox"/> San Luis Rey 903 <input type="checkbox"/> Carlsbad 904	
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	_____ Acres (_____ Square Feet)	
Area to be disturbed by the project (Project Area)	_____ Acres (_____ Square Feet)	
Project Proposed Impervious Area (subset of Project Area)	_____ Acres (_____ Square Feet)	
Project Proposed Pervious Area (subset of Project Area)	_____ Acres (_____ Square Feet)	
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.		

Hydrologic Unit	Hydrologic Area	Hydrologic Sub-Area
Santa Margarita 902.00	<input type="checkbox"/> Ysidora 902.10	<input type="checkbox"/> Lower Ysidora 902.11
San Luis Rey 903.00	<input type="checkbox"/> Lower San Luis 903.10	<input type="checkbox"/> Mission 903.11
		<input type="checkbox"/> Bonsall 903.12
Carlsbad 904.00	<input type="checkbox"/> Loma Alta 904.10	Not Applicable
	<input type="checkbox"/> Buena Vista Creek 904.20	<input type="checkbox"/> El Salto 904.21
		<input type="checkbox"/> Vista 904.22
	<input type="checkbox"/> Agua Hedionda 4.30	<input type="checkbox"/> Los Monos 904.31



Description of Existing Site Condition and Drainage Patterns

Current Status of the Site (select all that apply):

- Existing development
- Previously graded but not built out
- Agricultural or other non-impervious use
- Vacant, undeveloped/natural

Description / Additional Information:

Existing Land Cover Includes (select all that apply):

- Vegetative Cover
- Non-Vegetated Pervious Areas
- Impervious Areas

Description / Additional Information:

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

- NRCS Type A
- NRCS Type B
- NRCS Type C
- NRCS Type D

Approximate Depth to Groundwater:

- Groundwater Depth < 5 feet
- 5 feet < Groundwater Depth < 10 feet
- 10 feet < Groundwater Depth < 20 feet
- Groundwater Depth > 20 feet



Description of Existing Site Topography and Drainage [How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe]:



Description of Proposed Site Development and Drainage Patterns

Project Description / Proposed Land Use and/or Activities:

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

List/describe proposed pervious features of the project (e.g., landscape areas):

Does the project include grading and changes to site topography?

- Yes
- No

Description / Additional Information:

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

- Yes
- No

Description / Additional Information:



Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):

- Onsite storm drain inlets
- Interior floor drains and elevator shaft sump pumps
- Interior parking garages
- Need for future indoor & structural pest control
- Landscape/outdoor pesticide use
- Pools, spas, ponds, decorative fountains, and other water features
- Food service
- Refuse areas
- Industrial processes
- Outdoor storage of equipment or materials
- Vehicle and equipment cleaning
- Vehicle/equipment repair and maintenance
- Fuel dispensing areas
- Loading docks
- Fire sprinkler test water
- Miscellaneous drain or wash water
- Plazas, sidewalks, and parking lots



Identification of Receiving Water Pollutants of Concern

Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs



Identification of Project Site Pollutants*

***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**

Identify pollutants expected from the project site based on all proposed use(s) of the site (see manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Expected from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

Note: Indicator Bacteria shall be addressed as a Pollutant of Concern (POC) for projects located in the Lower San Luis Hydrologic Area and for projects that discharge to the Pacific Ocean Shoreline within the boundaries of the City of Oceanside.

Note: Nutrients shall be addressed as a Pollutant of Concern (POC) for projects located in the Loma Alta Hydrologic Area.



Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the manual)?

- Yes, hydromodification management flow control structural BMPs required.
- No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Critical Coarse Sediment Yield Areas*

***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

- Yes
- No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the manual been performed?

- 6.2.1 Verification of GLUs Onsite
- 6.2.2 Downstream Systems Sensitivity to Coarse Sediment
- 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
- No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

- No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.
- Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.
- Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:



Flow Control for Post-Project Runoff*

***This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

Has a geomorphic assessment been performed for the receiving channel(s)?

- No, the low flow threshold is 0.1Q2 (default low flow threshold)
- Yes, the result is the low flow threshold is 0.1Q2
- Yes, the result is the low flow threshold is 0.3Q2
- Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

Discussion / Additional Information: (optional)



Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.



Source Control BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-4
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Project Identification

Project Name
Permit Application Number

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Implemented?		
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SC-1 Prevention of Illicit Discharges into the MS4	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SC-1 not implemented:			

SC-2 Storm Drain Stenciling or Signage	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SC-2 not implemented:			

SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SC-3 not implemented:			



Source Control Requirement	Implemented?		
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SC-4 not implemented:			
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SC-5 not implemented:			



Form I-4 Page 3 of 3

SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)	Implemented?		
Onsite storm drain inlets	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Interior floor drains and elevator shaft sump pumps	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Interior parking garages	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Need for future indoor & structural pest control	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Landscape/outdoor pesticide use	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Pools, spas, ponds, decorative fountains, and other water features	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Food service	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Refuse area	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Industrial processes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Outdoor storage of equipment or materials	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Vehicle and equipment cleaning	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Vehicle/equipment repair and maintenance	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Fuel dispensing areas	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Loading docks	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Fire sprinkler test water	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Miscellaneous drain or wash water	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Plazas, sidewalks, and parking lots	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<p>Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.</p>			



Site Design BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-5
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Project Identification
Project Name
Permit Application Number

Site Design BMPs
<p>All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following.</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-2 not implemented:			
SD-3 Minimize Impervious Area	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-3 not implemented:			
SD-4 Minimize Soil Compaction	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-4 not implemented:			



Site Design Requirement	Applied?		
SD-5 Impervious Area Dispersion	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-5 not implemented:			
SD-6 Runoff Collection	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-8 not implemented:			



Summary of PDP Structural BMPs	Form I-6 (PDPs)
Project Identification	
Project Name	
Permit Application Number	
PDP Structural BMPs	
<p>All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).</p> <p>PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).</p> <p>Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).</p> <p>Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.</p>	
(Continue on page 2 as necessary.)	



(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)

(Continued from page 1)



Structural BMP Summary Information

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No.	
Construction Plan Sheet No.	
Type of structural BMP: <input type="checkbox"/> Retention by harvest and use (HU-1) <input type="checkbox"/> Retention by infiltration basin (INF-1) <input type="checkbox"/> Retention by bioretention (INF-2) <input type="checkbox"/> Retention by permeable pavement (INF-3) <input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1) <input type="checkbox"/> Biofiltration (BF-1) <input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) <input type="checkbox"/> Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) <input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) <input type="checkbox"/> Detention pond or vault for hydromodification management <input type="checkbox"/> Other (describe in discussion section below)	
Purpose: <input type="checkbox"/> Pollutant control only <input type="checkbox"/> Hydromodification control only <input type="checkbox"/> Combined pollutant control and hydromodification control <input type="checkbox"/> Pre-treatment/forebay for another structural BMP <input type="checkbox"/> Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the manual)	
Who will be the final owner of this BMP?	
Who will maintain this BMP into perpetuity?	
What is the funding mechanism for maintenance?	



Structural BMP Summary Information

(Copy this page as needed to provide information for each individual proposed structural BMP)

Discussion (as needed):

Empty space for discussion.





City of Oceanside
 300 N Coast Highway
 Oceanside, CA 92054

**Permanent BMP
 Construction**
 Self Certification Form

February
 2016

Date Prepared: Click here to enter text.	Project No.: Click here to enter text.
Project Applicant: Click here to enter text.	Phone: Click here to enter text.
Project Address: Click here to enter text.	
Project Engineer: Click here to enter text.	Phone: Click here to enter text.

The purpose of this form is to verify that the site improvements for the project, identified above, have been constructed in conformance with the approved Storm Water Quality Management Plan (SWQMP) documents and drawings.

This form must be completed by the engineer and installing contractor and submitted prior to final inspection of the construction permit. Completion and submittal of this form is required for all new development and redevelopment projects in order to comply with the City's Storm Water ordinances and NDPEs Permit Order No. R9-2013-0001. Final inspection for occupancy and/or release of grading or public improvement bonds may be delayed if this form is not submitted and approved by the City of Oceanside.

ENGINEER'S CERTIFICATION:

As the professional in responsible charge for the design of the above project, I certify that I have inspected all constructed Low Impact Development (LID) site design, source control and treatment control BMP's required per the approved SWQMP and Construction Permit No. [Click here to enter text.](#); and that said BMP's have been constructed in compliance with the approved plans and all applicable specifications, permits, ordinances and Order No. R9-2013-0001 of the San Diego Regional Water Quality Control Board.

I understand that this BMP certification statement does not constitute an operation and maintenance verification.

Signature: _____



Date of Signature: _ [Click here to enter text.](#) _

Printed Name: _ [Click here to enter text.](#) _

Title: _ [Click here to enter text.](#) _

Phone No. _ [Click here to enter text.](#) _

Engineer's Stamp

CONTRACTOR'S CERTIFICATION:

As the professional in responsible charge for construction of the above project, I certify that all constructed Low Impact Development (LID) site design, source control and treatment control BMP's required per the approved SWQMP and Construction Permit No. [Click here to enter text.](#); have been constructed in compliance with the approved plans and all applicable specifications, permits, and ordinances.

I understand that this BMP certification statement does not constitute an operation and maintenance verification.

Signature: _____

Date of Signature: _ [Click here to enter text.](#) _

Printed Name: _ [Click here to enter text.](#) _

Title: _ [Click here to enter text.](#) _

Phone No. _ [Click here to enter text.](#) _



ATTACHMENT 1
BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.



Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist.	<input type="checkbox"/> Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	<input type="checkbox"/> Included on DMA Exhibit in Attachment 1a <input type="checkbox"/> Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Design Capture Volume Worksheet	<input type="checkbox"/> Included
Attachment 1d	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	<input type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use infiltration BMPs
Attachment 1e	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	<input type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use harvest and use BMPs
Attachment 1f	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines	<input type="checkbox"/> Included



Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- Underlying hydrologic soil group
- Approximate depth to groundwater
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- Critical coarse sediment yield areas to be protected
- Existing topography and impervious areas
- Existing and proposed site drainage network and connections to drainage offsite
- Proposed grading
- Proposed impervious features
- Proposed design features and surface treatments used to minimize imperviousness
- Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Form I-3B)
- Structural BMPs (identify location, type of BMP, and size/detail)



Placeholder – **DMA Exhibit**

Please provide the Exhibit in 24"x36" format with map pocket, wet stamp, and date.



Placeholder – **Tabular Summary of DMAs (if separate from DMA Exhibit)**

Leave placeholder intact if not applicable.

Not Applicable – Tabular Summary included on DMA Exhibit



Design Capture Volume		Worksheet B-2.1		
1	85 th percentile 24-hr storm depth from Figure B.1-1	d=		inches
2	Area tributary to BMP (s)	A=		acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=		unitless
4	Street trees volume reduction	TCV=		cubic-feet
5	Rain barrels volume reduction	RCV=		cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=		cubic-feet



Harvest and Use Feasibility Checklist

Form I-7

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?

- Toilet and urinal flushing
- Landscape irrigation
- Other: _____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

[Provide a summary of calculations here]

3. Calculate the DCV using worksheet B-2.1.

DCV = _____ (cubic feet)

3a. Is the 36 hour demand greater than or equal to the DCV?

- Yes / No \Rightarrow
 \Downarrow

3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?

- Yes / No \Rightarrow
 \Downarrow

3c. Is the 36 hour demand less than 0.25DCV?

- Yes
 \Downarrow

Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.

Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.

Harvest and use is considered to be infeasible.

Is harvest and use feasible based on further evaluation?

- Yes, refer to Appendix E to select and size harvest and use BMPs.
- No, select alternate BMPs.



Categorization of Infiltration Feasibility Condition	Form I-8
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Part 1 - Full Infiltration Feasibility Screening Criteria
Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	<input type="checkbox"/>	<input type="checkbox"/>

Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

2	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	<input type="checkbox"/>	<input type="checkbox"/>
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Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.



Form I-8 Page 2 of 4

Criteria	Screening Question	Yes	No
3	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Provide basis:</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
4	<p>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Provide basis:</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
Part 1 Result *	<p>If all answers to rows 1 - 4 are “Yes” a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration</p> <p>If any answer from row 1-4 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design. Proceed to Part 2</p>	<p><input type="checkbox"/> Full Infiltration</p> <p><input type="checkbox"/> No</p>	

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings



Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	<input type="checkbox"/>	<input type="checkbox"/>

Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	<input type="checkbox"/>	<input type="checkbox"/>
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Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.



Form I-8 Page 4 of 4

Criteria	Screening Question	Yes	No
7	<p>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?</p> <p>The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Provide basis:</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
8	<p>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Provide basis:</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
Part 2 Result*	<p>If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.</p> <p>If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</p>		<p><input type="checkbox"/> Partial Infiltration</p> <p><input type="checkbox"/> No Infiltration</p>

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings



Infiltration BMP Sizing

There are two available sizing calculation methods for Infiltration BMPs

1. Simple Sizing Method
2. Percent Capture Method

Please choose one. Refer to Manual Section B.4 for guidance.

Simple Sizing Method for Infiltration BMPs		Worksheet B.4-1		
1	DCV (Worksheet B-2.1)	DCV=		cubic-feet
2	Estimated design infiltration rate (Worksheet D.5-1)	K_{design} =		in/hr
3	Available BMP surface area	A_{BMP} =		sq-ft
4	Average effective depth in the BMP footprint (DCV/A_{BMP})	D_{avg} =		feet
5	Drawdown time, T ($D_{avg} * 12 / K_{design}$)	T =		hours
6	Provide alternative calculation of drawdown time, if needed.			



Placeholder – **Percent Capture Method Calculations (Optional)**

Replace placeholder with calculations.

Remove placeholder if not applicable.



Factor of Safety and Design Infiltration Rate Worksheet		Worksheet D.5-1			
Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) $p = w \times v$
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater / impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms:					



Remove worksheet from SWQMP if not applicable.

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1 (Page 1 of 2)	
1	Remaining DCV after implementing retention BMPs		cubic-foot
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]		inches
5	Aggregate pore space	0.40	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]		inches
7	Assumed surface area of the biofiltration BMP		sq-ft
8	Media retained pore storage	0.1	in/in
9	Volume retained by BMP [(Line 4 + (Line 12 x Line 8))/12] x Line 7		cubic-foot
10	DCV that requires biofiltration [Line 1 – Line 9]		cubic-foot
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]		inches
12	Media Thickness [18 inches minimum], also add mulch layer thickness to this line for sizing calculations		inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area		inches
14	Media available pore space	0.2	in/in
15	Media filtration rate to be used for sizing (5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate)	5	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]		inches
19	Total Depth Treated [Line 17 + Line 18]		inches



Remove worksheet from SWQMP if not applicable.

Simple Sizing Method for Biofiltration BMPs (cont.)		Worksheet B.5-1 (Page 2 of 2)	
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]		cubic-foot
21	Required Footprint [Line 20/ Line 19] x 12		sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]		cubic-foot
23	Required Footprint [Line 22/ Line 18] x 12		sq-ft
Footprint of the BMP			
24	Area draining to the BMP		sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)		
26	BMP Footprint Sizing Factor (Default 0.03 or an alternative minimum footprint sizing factor from Worksheet B.5-2, Line 11)		unitless
27	Minimum BMP Footprint [Line 24 x Line 25 x Line 26]		sq-ft
28	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 27)		sq-ft
Check for Volume Reduction [Not applicable for No Infiltration Condition]			
29	Calculate the fraction of the DCV retained by the BMP [Line 9/ Line 1]		unitless
30	Minimum required fraction of DCV retained for partial infiltration condition	0.375	unitless
31	Is the retained DCV > 0.375? If the answer is no increase the footprint sizing factor in Line 26 until the answer is yes for this criterion.	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Note:

- Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until its equivalent to the required biofiltration footprint (either Line 21 or Line 23)
- The DCV fraction of 0.375 is based on a 40% average annual percent capture and a 36-hour drawdown time.
- The increase in footprint for volume reduction can be optimized using the approach presented in Appendix B.5.2. The optimized footprint cannot be smaller than the alternative minimum footprint sizing factor from Worksheet B.5-2.
- If the proposed biofiltration BMP footprint is smaller than the alternative minimum footprint sizing factor from Worksheet B.5-2, but satisfies Option 1 or Option 2 sizing, it is considered a compact biofiltration BMP and may be allowed at the discretion of the City Engineer, if it meets the requirements in Appendix F.



Remove worksheet from SWQMP if not applicable.

Alternative Minimum Footprint Sizing Factor		Worksheet B.5-2	
1	Area draining to the BMP		sq-ft
2	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)		
3	Load to Clog ¹ (See Table B.5-2 for guidance; L_c)	2.0	lb/sq-ft
4	Allowable Period to Accumulate Clogging Load (T_1)	10	years
Volume Weighted EMC Calculation			
Land Use	Fraction of Total DCV	TSS EMC (mg/L)	Product
Single Family Residential		123	
Commercial		128	
Industrial		125	
Education (Municipal)		132	
Transportation		78	
Multi-family Residential		40	
Roof Runoff		14	
Low Traffic Areas		50	
Open Space		216	
Other, specify:			
Other, specify:			
Other, specify:			
5	Volume Weighted EMC (sum of all products)		mg/L
BMP Parameters			
6	If pretreatment measures are included in the design, apply an adjustment of 25% ² [Line 5 x (1-0.25)]		mg/L
7	Average Annual Precipitation		inches
8	Calculate the Average Annual Runoff (Line 7 x 43,560/12) x Line 2		cu-ft/yr
9	Calculate the Average Annual TSS Load (Line 8 x 62.4 x Line 6)/10 ⁶		lb/yr
10	Calculate the BMP Footprint Needed (Line 9 x Line 4)/Line 3		sq-ft
11	Calculate the Alternative Minimum Footprint Sizing Factor [Line 10/ (Line 1 x Line 2)]		

¹ Load to clog value should be in the range of 2 – 5 lb/sq-ft per Pitt and Clark (2010). If selecting a value other than 2, a justification for the value selected is required. See guidance in Table B.5-2.

² A value of 25 percent is supported by Maniquiz-Redillas et al. (2014) study, which found a pretreatment sediment capture range of 15% - 35%. If using a value outside of this range, documentation of the selected value is required. A value of 50 percent can be claimed for a system with an active Washington State TAPE approval rating for “pre-treatment.”



Remove worksheet from SWQMP if not applicable.

Optimized Biofiltration BMP Footprint when Downstream of a Storage Unit		Worksheet B.5-3	
1	Area draining to the storage unit and biofiltration BMP		sq-ft
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)		
3	Effective impervious area draining to the storage unit and biofiltration BMP [Line 1 x Line 2]		sq-ft
4	Remaining DCV after implementing retention BMPs		cubic-feet
5	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible		ft/hr.
6	Media Thickness [1.5 feet minimum], also add mulch layer thickness to this line for sizing calculations		ft
7	Media filtration rate to be used for sizing (0.42 ft/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate)		ft/hr
8	Media retained pore storage	0.1	ft/ft
Storage Unit Requirement			
9	Drawdown time of the storage unit, minimum(from the elevation that bypasses the biofiltration BMP, overflow elevation)		hours
10	Storage required to achieve greater than 92 percent capture (see Table B.5-4)		fraction
11	Storage required in cubic feet (Line 4 x Line 10)		cubic-feet
12	Storage provided in the design, minimum(from the elevation that bypasses the biofiltration BMP, overflow elevation)		cubic-feet
13	Is Line 12 \geq Line 11. If no increase storage provided until this criteria is met	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Criteria 1: BMP Footprint Biofiltration Capacity			
14	Peak flow from the storage unit to the biofiltration BMP (using the elevation used to evaluate the percent capture)		cfs
15	Required biofiltration footprint [(3,600 x Line 14)/Line 7]		sq-ft
Criteria 2: Alternative Minimum Sizing Factor (Clogging)			
16	Alternative Minimum Footprint Sizing Factor [Line 11 of Worksheet B.5-2]		Fraction
17	Required biofiltration footprint [Line 3 x Line 16]		sq-ft
Criteria 3: Retention requirement [Not applicable for No Infiltration Condition]			
18	Conventional biofiltration footprint Line 28 of Worksheet B.5-1		sq-ft
19	Retention Losses from the conventional footprint (36 x Line 5 + Line 6 x Line 8) x Line 18		cubic-feet
20	Average discharge rate from the storage unit to the biofiltration BMP		cfs
21	Depth retained in the optimized biofiltration BMP {Line 6 x Line 8} + {(Line 4)/(2400 x Line 20)} x Line 5}		ft
22	Required optimized biofiltration footprint (Line 19/Line 21)		sq-ft
Optimized Biofiltration Footprint			
23	Optimized biofiltration footprint, maximum(Line 15, Line 17, Line 22)		sq-ft

Note: Biofiltration BMP smaller than the alternative minimum footprint sizing (Line 17) is considered compact biofiltration BMP and may be allowed at the discretion of the City Engineer if the BMP meets the requirements in Appendix F and Option 1 or Option 2 sizing in Worksheet B.5-1.



Alternative Compliance

Remove worksheet from SWQMP if not applicable.

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV		cubic-feet
2	DCV retained	DCV _{retained}		cubic-feet
3	DCV biofiltered	DCV _{biofiltered}		cubic-feet
4	DCV requiring flow-thru (Line 1 – Line 2 – 0.67*Line 3)	DCV _{flow-thru}		cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=		unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=		acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=		unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=		cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and flow based (e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed either by volume in Line 4 or flow rate in Line 9.
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.



ATTACHMENT 2
BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.



Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 2a	1. Hydromodification Management Exhibit (Required)	<input type="checkbox"/> Included See Hydromodification Management Exhibit Checklist.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	<input type="checkbox"/> Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination <input type="checkbox"/> 6.2.1 Verification of Geomorphic Landscape Units Onsite <input type="checkbox"/> 6.2.2 Downstream Systems Sensitivity to Coarse Sediment <input type="checkbox"/> 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	<input type="checkbox"/> Not performed <input type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design and Structural BMP Drawdown Calculations (Required) Overflow Design Summary for each structural BMP See Chapter 6 and Appendix G of the BMP Design Manual	<input type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	<input type="checkbox"/> Included <input type="checkbox"/> Not required because BMPs will drain in less than 96 hours



Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

- Underlying hydrologic soil group
- Approximate depth to groundwater
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- Critical coarse sediment yield areas to be protected
- Existing topography
- Existing and proposed site drainage network and connections to drainage offsite
- Proposed grading
- Proposed impervious features
- Proposed design features and surface treatments used to minimize imperviousness
- Point(s) of Compliance (POC) for Hydromodification Management
- Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
- Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)

Please provide the Exhibit in 24"x36" format with map pocket, wet date, and stamp.



Placeholder – **Hydromodification Management Exhibit**

Replace placeholder with required exhibit.



Placeholder – **WMAA Exhibit**

Replace placeholder with required exhibit.



Placeholder – **6.2.1 Verification of GLUs Onsite** (if applicable)

Replace placeholder with required calculations/documentation.

Leave placeholder intact if not applicable.

Not Applicable



Downstream Systems Sensitivity to Coarse Sediment		Form I-10	
When it has been determined that potential critical coarse sediment yield areas exist within the project site, the next step is to determine whether downstream systems would be sensitive to reduction of coarse sediment yield from the project site. Use this form to document the evaluation of downstream systems requirements for preservation of coarse sediment supply.			
Project Name:			
Project Tracking Number / Permit Application Number:			
1	Will the project discharge runoff to a hardened MS4 system (pipe or lined channel) or an un-lined channel?	Hardened MS4 system	Go to 2
		Un-lined channel	Go to 4
2	Will the hardened MS4 system convey sediment (e.g., a concrete-lined channel with steep slope and cleansing velocity) or sink sediment (e.g., flat slopes, constrictions, treatment BMPs, or ponds with restricted outlets within the system will trap sediment and not allow conveyance of coarse sediment from the project site to an un-lined system).	Convey	Go to 3
		Sink	Go to 7
3	What kind of receiving water will the hardened MS4 system convey the sediment to?	Un-lined channel	Go to 4
		Lake Reservoir Bay	Go to 7
		Lagoon Ocean	Go to 6
4	Is the un-lined channel impacted by deposition of sediment? This condition must be documented by the local agency.	Yes	Go to 7
		No	Go to 5



5	End – Preserve coarse sediment supply to protect un-lined channels from accelerated erosion due to reduction of coarse sediment yield from the project site unless further investigation determines the sediment is not critical to the receiving stream. Sediment that is critical to receiving streams is the sediment that is a significant source of bed material to the receiving stream (bed sediment supply) (see Section 6.2.3 and Appendix H.2 of the manual).
6	End – Provide management measures for preservation of coarse sediment supply (protect beach sand supply).
7	End – Downstream system does not warrant preservation of coarse sediment supply, no measures for protection of critical coarse sediment yield areas onsite are necessary. Use the space below to describe the basis for this finding for the project.



Placeholder – **6.2.3 Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite** (Optional)

Replace placeholder with required calculations/documentation.

Leave placeholder intact if not applicable.

Not Applicable



Placeholder – **6.3.4 Geomorphic Assessment of Receiving Channels** (Optional)

Replace placeholder with required calculations/documentation.

Leave placeholder intact if not applicable.

Not Applicable



Placeholder - **Flow Control Facility Design and Structural BMP Drawdown Calculations**

Replace placeholder with required calculations/documentation.

See Chapter 6 and Appendix G of the BMP Design Manual



Placeholder – **Vector Control Plan** (required when structural BMPs will drain in 96 hours)

Replace placeholder with required documentation.

Leave placeholder intact if not applicable.

Not Applicable



ATTACHMENT 3
STRUCTURAL BMP MAINTENANCE INFORMATION

This is the cover sheet for Attachment 3.



Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Thresholds and Actions (Required)	<input type="checkbox"/> Included See Structural BMP Maintenance Information Checklist.
Attachment 3b	Draft Maintenance Agreement (when applicable)	<input type="checkbox"/> Included <input type="checkbox"/> Not Applicable



Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Preliminary Design / Planning / CEQA level submittal:

- Attachment 3a must identify:
 - Typical maintenance indicators and actions for proposed structural BMP(s) based on Section 7.7 of the BMP Design Manual
- Attachment 3b is not required for preliminary design / planning / CEQA level submittal.

Final Design level submittal:

Attachment 3a must identify:

- Specific maintenance indicators and actions for proposed structural BMP(s). This shall be based on Section 7.7 of the BMP Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- How to access the structural BMP(s) to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For private entity operation and maintenance, Attachment 3b shall include a draft maintenance agreement in the local jurisdiction's standard format (PDP applicant to contact the City Engineer to obtain the current maintenance agreement forms).



Placeholder – **Structural BMP Maintenance Information**

Replace placeholder with required documentation.



ATTACHMENT 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.



Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
- The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- Details and specifications for construction of structural BMP(s)
- Signage indicating the location and boundary of structural BMP(s) as required by the City Engineer
- How to access the structural BMP(s) to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- All BMPs must be fully dimensioned on the plans
- When proprietary BMPs are used, site specific cross section with outflow, inflow and model number shall be provided. Broucher photocopies are not allowed.



Placeholder – **Stormwater BMP Plan Sheet(s)**

Replace placeholder with plan sheet(s).



ATTACHMENT 5
Drainage Report

This is the cover sheet for Attachment 5.



Placeholder – **Drainage Report**

Replace placeholder with drainage report.

Attach project's drainage report. Refer to Drainage Design Manual to determine the reporting requirements.



ATTACHMENT 6
Geotechnical and Groundwater Investigation Report

This is the cover sheet for Attachment 6.



Placeholder – **Geotechnical and Groundwater Investigation Report**

Replace placeholder with geotechnical and groundwater investigation report.

Attach project’s geotechnical and groundwater investigation report. Refer to Appendix C.4 to determine the reporting requirements.



ATTACHMENT 7
Storm Water Quality Assessment Form

This is the cover sheet for Attachment 7.



Placeholder – **Storm Water Quality Assessment Form**

Replace placeholder with a copy of the Storm Water Quality Assessment Form.



[Insert other supporting documentation here]

