|  |
| --- |
| **CITY OF SOLANA BEACH** |
| **PRIORITY DEVELOPMENT PROJECT (PDP)**  **STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)**  **FOR**  **[INSERT PROJECT NAME]**  **[INSERT PERMIT APPLICATION NUMBERS]**  **[INSERT PROJECT ADDRESS]**  **[INSERT PROJECT CITY, STATE ZIP CODE]**  **ASSESSOR'S PARCEL NUMBER(S):**  **[INSERT APN(S)]** |
| **ENGINEER OF WORK:**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **[INSERT CIVIL ENGINEER'S NAME AND PE NUMBER HERE, PROVIDE WET SIGNATURE AND STAMP ABOVE LINE]** |

PREPARED FOR:

[INSERT APPLICANT NAME]

[INSERT ADDRESS]

[INSERT CITY, STATE ZIP CODE]

[INSERT TELEPHONE NUMBER]

PDP SWQMP PREPARED BY:

[INSERT COMPANY NAME]

[INSERT ADDRESS]

[INSERT CITY, STATE ZIP CODE]

[INSERT TELEPHONE NUMBER]

DATE OF SWQMP:

[INSERT MONTH, DAY, YEAR]

PLANS PREPARED BY:

[INSERT CIVIL ENGINEER OR ARCHITECT]

[INSERT ADDRESS]

[INSERT CITY, STATE ZIP CODE]

[INSERT TELEPHONE NUMBER]

**TABLE OF CONTENTS**

Acronym Sheet

PDP SWQMP Preparer's Certification Page

PDP SWQMP Project Owner's Certification Page

Submittal Record

Project Vicinity Map

FORM 1 Site Information Checklist for PDPs

FORM 2 Source Control BMP Checklist for All Development Projects

FORM 3 Site Design/LID BMP Checklist for All Development Projects

FORM 4 Summary of PDP Structural BMPs

FORM 5 Harvest and Use Feasibility Checklist

FORM 6 Factor of Safety and Design Infiltration Rate Worksheet

Attachment 1: Backup for PDP Pollutant Control BMPs

Attachment 1a: DMA Exhibit

Attachment 1b: Tabular Summary of DMAs and Design Capture Volume Calculations (Worksheet 1.b)

Attachment 1c: Harvest and Use Feasibility Screening (when applicable)

Attachment 1d: Categorization of Infiltration Feasibility Condition (when applicable)

Attachment 1e: Pollutant Control BMP Design Worksheets / Calculations

Attachment 2: Backup for PDP Hydromodification Control Measures

Attachment 2a: Hydromodification Management Exhibit

Attachment 2b: Management of Critical Coarse Sediment Yield Areas

Attachment 2c: Geomorphic Assessment of Receiving Channels

Attachment 2d: Flow Control Facility Design

Attachment 3: Structural BMP Maintenance Plan

Attachment 3a: B Structural BMP Maintenance Thresholds and Actions

Attachment 3b: Draft Maintenance Agreement (when applicable)

Attachment 4: Copy of Plan Sheets Showing Permanent Storm Water BMPs

**ACRONYMS**

APN Assessor's Parcel Number

BMP Best Management Practice

HMP Hydromodification Management Plan

HSG Hydrologic Soil Group

MS4 Municipal Separate Storm Sewer System

N/A Not Applicable

NRCS Natural Resources Conservation Service

PDP Priority Development Project

PE Professional Engineer

SC Source Control

SD Site Design

SDRWQCB San Diego Regional Water Quality Control Board

SIC Standard Industrial Classification

SWQMP Storm Water Quality Management Plan

**PDP SWQMP PREPARER'S CERTIFICATION PAGE**

**Project Name: [Insert Project Name]**

**Permit Application Number: [Insert Permit Application Number]**

**PREPARER'S CERTIFICATION**

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Solana Beach BMP Design Manual, which is a design manual for compliance with the City of Solana Beach and the MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

I have read and understand that the City Engineer 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 PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable 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 PDP SWQMP by the City Engineer 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.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Print Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Company

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date

Engineer's Seal:

**PDP SWQMP PROJECT OWNER'S CERTIFICATION PAGE**

**Project Name: [Insert Project Name]**

**Permit Application Number: [Insert Permit Application Number]**

**PROJECT OWNER'S CERTIFICATION**

This PDP SWQMP has been prepared for [INSERT PROJECT OWNER'S COMPANY NAME] by [INSERT SWQMP PREPARER'S COMPANY NAME]. The PDP SWQMP is intended to comply with the PDP requirements of the City of Solana Beach BMP Design Manual, which is a design manual for compliance with the City of Solana Beach and the MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan, including ensuring on-going operation and maintenance of structural BMPs. A signed copy of this document shall be available on the subject property into perpetuity.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Owner's Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Print Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Company

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date

**SUBMITTAL RECORD**

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the 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** | **Summary of Changes** |
| 1 |  | * Preliminary Design / Planning/ CEQA * Final Design | Initial Submittal |
| 2 |  | * Preliminary Design / Planning/ CEQA * Final Design |  |
| 3 |  | * Preliminary Design / Planning/ CEQA * Final Design |  |
| 4 |  | * Preliminary Design / Planning/ CEQA * Final Design |  |

**PROJECT VICINITY MAP**

**Project Name: [Insert Project Name]**

**Permit Application Number: [Insert Permit Application Number]**

[Insert Project Vicinity Map here]

|  |  |  |
| --- | --- | --- |
| 1. **Site Information Checklist**   **For PDPs** | | **Form 1 (PDPs)**  City of Solana Beach BMP Design Manual |
| **Project Summary Information:** | | |
| Project Name: |  | |
| Project Address: |  | |
| Assessor's Parcel Number(s) (APN(s)) |  | |
| Permit Application Number |  | |
| Project Hydrologic Unit | Select One:   * San Dieguito (HA Solana Beach, HSA Rancho Santa Fe) 905.11 * Carlsbad (HA Escondido Creek, HAS San Elijo) 904.61 | |
| Project Watershed  (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier) |  | |
| 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. | | |
| **Form 1** | | |
| **Description of Existing Site Condition** | | |
| Current Status of the Site (select all that apply):   * Existing development * Previously graded but not built out * Demolition completed without new construction * 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 (GW):   * GW Depth < 5 feet * 5 feet < GW Depth < 10 feet * 10 feet < GW Depth < 20 feet * GW Depth > 20 feet | | |
| **Form 1** | | |
| Existing Natural Hydrologic Features (select all that apply):   * Watercourses * Seeps * Springs * Wetlands * None   Description / Additional Information: | | |
| **Description of Existing Site Drainage Patterns** | | |
| 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) Is run-on conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;  (3)Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and  (4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.  Describe existing site drainage patterns: | | |

|  |
| --- |
| **Form 1** |
| **Description of Proposed Site Development** |
| 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): |
| **Form 1** |
| Does the project include grading and changes to site topography?   * Yes * No   Description / Additional Information: |

|  |
| --- |
| **Form 1** |
| **Description of Proposed Site Drainage Patterns** |
| Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?   * Yes * No   If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.  Describe proposed site drainage patterns:: |
| **Form 1** |
| Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):   * On-site 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   Description / Additional Information: |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Form 1** | | | | | |
| **Identification and Narrative of Receiving Water and Pollutants of Concern** | | | | | |
| Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge 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 and/or Highest Priority Pollutants from the WQIP for the impaired water bodies: | | | | | |
| **303(d) Impaired Water Body** | | **Pollutant(s)/Stressor(s)** | | **TMDLs / WQIP Highest Priority Pollutant** | |
|  | |  | |  | |
|  | |  | |  | |
|  | |  | |  | |
| **Identification of Project Site Pollutants\***  **\*Identification of project site pollutants is only required if flow-through 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 BMP Design Manual Appendix B.6): | | | | | |
| **Form 1** | | | | | |
| **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 |  | |  | |  |

|  |
| --- |
| **Form 1** |
| **Hydromodification Management Requirements** |
| Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)?   * Yes, hydromodification management flow control structural BMPs required. * No, the project will discharge runoff directly to existing underground storm drains discharging directly to an exempt receiving water such as the Pacific Ocean, and exempt river reach, or a tidally-influenced area. * 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 the Pacific Ocean, a tidally-influenced area, or an exempt river reach. * 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): |
| **Form 1** |
| **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 Appendix H of the BMP Design Manual been performed?   * H.6.1 Site-Specific Geomorphic Landscape Units (GLUs) Analysis * H.7 Downstream Systems Sensitivity to Coarse Sediment * H.7.3 Coarse Sediment Source Area Verification * 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 2.b of the SWQMP. * Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections H.2, H.3, and H.4 as applicable, and the areas are identified on the SWQMP Exhibit.   Discussion / Additional Information: |

|  |
| --- |
| **Form 1** |
| **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) |

|  |
| --- |
| **Form 1** |
| **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. |
|  |
| **Form 1** |
| **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. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **Source Control BMP Checklist**   **for All Development Projects** | | **Form 2 (PDPs)**  City of Solana Beach BMP Design Manual | | |
| **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 BMP Design 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 City of Solana Beach BMP Design 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** | **Applied?** | | | |
| **4.2.1** Prevention of Illicit Discharges into the MS4 | * Yes | | * No | * N/A |
| Discussion / justification if SC-1 not implemented: | | | | |
| **4.2.2** Storm Drain Stenciling or Signage | * Yes | | * No | * N/A |
| Discussion / justification if SC-2 not implemented: | | | | |
| **Form 2** | | | | |
| **Source Control Requirement** | **Applied?** | | | |
| **4.2.3** Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal | * Yes | | * No | * N/A |
| Discussion / justification if SC-3 not implemented: | | | | |
| **4.2.4** Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal | * Yes | | * No | * N/A |
| Discussion / justification if SC-4 not implemented: | | | | |
| **4.2.5** Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal | * Yes | | * No | * N/A |
| Discussion / justification if SC-5 not implemented: | | | | |
| **Form 2** | | | | |
| **Source Control Requirement** | **Applied?** | | | |
| **4.2.6** Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)   * On-site 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 | * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes * Yes | | * No * No * No * No * No * No * No * No * No * No * No * No * No * No * No * No * No | * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A * N/A |
| Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above. | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **Site Design/LID BMP Checklist**   **for All Development Projects** | | **Form 3 (PDPs)**  City of Solana Beach BMP Design Manual | | |
| **Project Identification** | | | | |
| Project Name: | | | | |
| Permit Application Number: | | | | |
| **Site Design/LID BMPs** | | | | |
| All development projects must implement site design/LID BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the BMP Design Manual for information to implement site design BMPs shown in this checklist.  Answer each category below pursuant to the following.   * "Yes" means the project will implement the site design/LID BMP as described in Chapter 4 and/or Appendix E of the City of Solana Beach BMP Design 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?** | | | |
| **4.3.1** Maintain Natural Drainage Pathways and Hydrologic Features | * Yes | | * No | * N/A |
| Discussion / justification if SD-1 not implemented: | | | | |
| **4.3.2** Conserve Natural Areas, Soils, and Vegetation | * Yes | | * No | * N/A |
| Discussion / justification if SD-2 not implemented: | | | | |
| **Form 3** | | | | |
| **Source Control Requirement** | **Applied?** | | | |
| **4.3.3** Minimize Impervious Area | * Yes | | * No | * N/A |
| Discussion / justification if SD-3 not implemented: | | | | |
| **4.3.4** Minimize Soil Compaction | * Yes | | * No | * N/A |
| Discussion / justification if SD-4 not implemented: | | | | |
| **4.3.5** Impervious Area Dispersion | * Yes | | * No | * N/A |
| Discussion / justification if SD-5 not implemented: | | | | |
| **4.3.6** Runoff Collection | * Yes | | * No | * N/A |
| Discussion / justification if SD-6 not implemented: | | | | |
| **4.3.7** Landscaping with Native or Drought Tolerant Species | * Yes | | * No | * N/A |
| Discussion / justification if SD-7 not implemented: | | | | |
| **4.3.8** Harvesting and Using Precipitation | * Yes | | * No | * N/A |
| Discussion / justification if SD-8 not implemented: | | | | |

|  |  |
| --- | --- |
| 1. **Summary of PDP Structural BMPs** | **Form 4 (PDPs)**  City of Solana Beach BMP Design Manual |
| **Project Identification** | |
| Project Name: | |
| Permit Application Number: | |
| **PDP Structural BMPs** | |
| All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design 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 BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).  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 and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the BMP Design Manual).  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). | |
| **Form 4** | |
| 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 BMP Design 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.  (Continue on next page as necessary.) | |

|  |
| --- |
| **Form 4** |
| **(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)** |
| Continued from page 1) |

|  |  |
| --- | --- |
| **Form 4 (Copy as many as needed)** | |
| **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:   * Retention by harvest and use (HU-1) * Retention by infiltration basin (INF-1) * Retention by bioretention (INF-2) * Retention by permeable pavement (INF-3) * Retention by dry well (INF-4) * Partial retention by biofiltration with partial retention (PR-1) * Biofiltration (BF-1, BF-2, BF-3) * Biofiltration with Nutrient Sensitive Media Design (BF-2) * Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F * Flow-through treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) * Flow-through 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) * Detention pond or vault for hydromodification management * Other (describe in discussion section below) | |
| Purpose:   * Pollutant control only * Hydromodification control only * Combined pollutant control and hydromodification control * Pre-treatment/forebay for another structural BMP * Other (describe in discussion section below) | |
| **Form 4 (Copy as many as needed)** | |
| 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 BMP Design Manual). |  |
| Who will be the final owner of this BMP? |  |
| Who will maintain this BMP into perpetuity? |  |
| What is the funding mechanism for maintenance? |  |

|  |
| --- |
| **Form 4 (Copy as many as needed)** |
| Structural BMP ID No. |
| Construction Plan Sheet No. |
| Discussion (as needed): |

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **Harvest and Use Feasibility Checklist** | | **Form 5 (PDPs)**  City of Solana Beach BMP Design Manual | |
| 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 | 3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?  Yes / No | | 3c. Is the 36 hour demand less than 0.25DCV?  Yes |
| 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. | | | |

Note: 36-hour demand calculations are for feasibility analysis only. Once feasibility analysis is complete the applicant may be allowed to use a different drawdown time provided they meet the 80% annual capture standard (refer to B.4.2) and 96-hour vector control drawdown requirement.

| 1. Factor of Safety and Design Infiltration Rate Worksheet | | | | | Form 6 (PDPs)  City of Solana Beach BMP Design Manual | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Factor Category | | Factor Description | Assigned Weight (w) | Factor Value (v) | | | Product (p)  p = w x 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, SA = Σp | | | | |  |
| B | Design | Level of pretreatment/ expected sediment loads | 0.5 |  | | |  |
| Redundancy/resiliency | 0.25 |  | | |  |
| Compaction during construction | 0.25 |  | | |  |
| Design Safety Factor, SB = Σp | | | | |  |
| Combined Safety Factor, Stotal= SA x SB | | | | | |  | |
| Observed Infiltration Rate, inch/hr, Kobserved  (corrected for test-specific bias) | | | | | |  | |
| Design Infiltration Rate, in/hr, Kdesign = Kobserved / Stotal | | | | | |  | |
| **Supporting Data** | | | | | | | |
| Briefly describe infiltration test and provide reference to test forms: | | | | | | | |

**ATTACHMENT 1**

**BACKUP FOR PDP POLLUTANT CONTROL BMPS**

This is the cover sheet for Attachment 1.

**Indicate which Items are Included behind this cover sheet:**

|  |  |  |
| --- | --- | --- |
| **Attachment Sequence** | **Contents** | **Checklist** |
| Attachment 1a | DMA Exhibit (Required)  See DMA Exhibit Checklist on the back of this Attachment cover sheet. | * 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 1.a | * Included on DMA Exhibit in Attachment 1.a * Included as Attachment 1.b, separate from DMA Exhibit |
| Attachment 1c | Form 5, 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 5. | * Included * Not included because the entire project will use infiltration BMPs |
| Attachment 1d | Infiltration Feasibility Information.  Contents of Attachment 1d depend on the infiltration condition:   * No Infiltration Condition:   + Infiltration Feasibility Condition Letter (Note: must be stamped and signed by licensed geotechnical engineer)   + Form I-8A of the BMP Design Manual (optional)   + Form I-8B (optional) * Partial Infiltration Condition:   + Infiltration Feasibility Condition Letter (Note: must be stamped and signed by licensed geotechnical engineer)   + Form I-8A   + Form I-8B * Full Infiltration Condition:   + Form I-8A   + Form I-8B   + Worksheet C.4-3   + Form I-9   Refer to Appendices C and D of the  BMP Design Manual for guidance. | * Included * Not included because the entire project will use harvest and use BMPs |
| Attachment 1e | 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 | * 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 demolition
* 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 1)
* Structural BMPs (identify location, type of BMP, and size/detail)

**Place Holder for DMA Exhibit**

**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 behind this cover sheet:**

|  |  |  |
| --- | --- | --- |
| **Attachment Sequence** | **Contents** | **Checklist** |
| Attachment 2a | Hydromodification Management Exhibit (Required) | * Included   See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet. |
| 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. | * Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required)   Optional analyses for Critical Coarse Sediment Yield Area Determination   * 6.2.1 Verification of Geomorphic Landscape Units Onsite * 6.2.2 Downstream Systems Sensitivity to Coarse Sediment * 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. | * Not performed * Included * Submitted as separate stand-alone document |
| Attachment 2d | Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required)  See Chapter 6 and Appendix G of the BMP Design Manual | * Included * Submitted as separate stand-alone document |
| Attachment 2e | Vector Control Plan (Required when structural BMPs will not drain in 96 hours) | * Included * 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)

**ATTACHMENT 3**

**Structural BMP Maintenance Information**

This is the cover sheet for Attachment 3.

**Indicate which Items are Included behind this cover sheet:**

|  |  |  |
| --- | --- | --- |
| **Attachment Sequence** | **Contents** | **Checklist** |
| Attachment 3a | Structural BMP Maintenance Thresholds and Actions (Required) | * Included   See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet. |
| Attachment 3b | Draft Maintenance Agreement (when applicable) | * Included * 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).

**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 4 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. Photocopies of general brochures are not acceptable.
* A single plan BMP sheet for each construction drawing highlighting only those BMPs included in the referenced construction drawing. (See Section 5.5.2 of the City’s JRMP for further detail.)