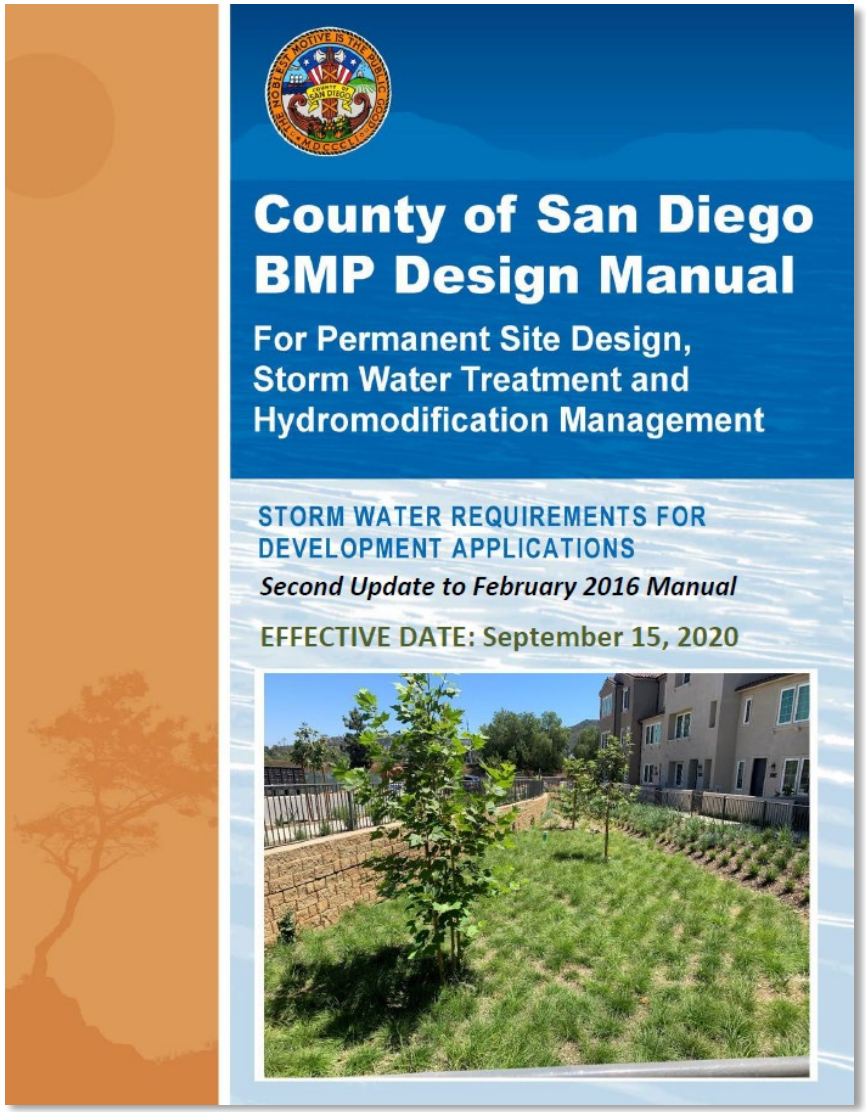
Significant Site Design BMP (SSD-BMP) Sizing Methods & Calculations

(NEW APPENDIX I)



Appendix I: Significant Site Design BMP (SSD-BMP) Sizing Methods and Calculations

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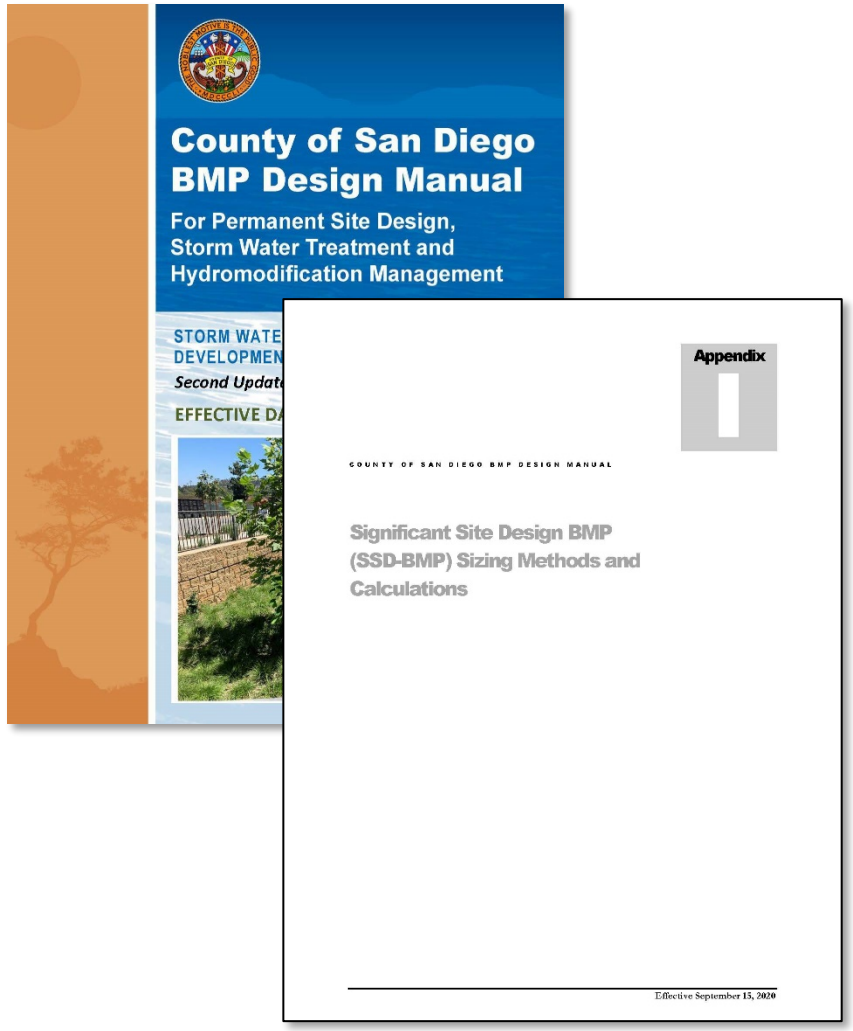


What is a Significant Site Design BMP (SSD-BMP)?

- Significant site design BMPs (SSD-BMPs) are site design BMPs that are sized and constructed to satisfy structural performance standards for a drainage management area (DMA).
- SSD-BMPs fully satisfy the design capture volume (DCV) requirement for pollutant control
- SSD-BMPs can also be designed to satisfy hydromodification control requirements
- SSD-BMPs include:
  - Tree Wells
  - Impervious Area Dispersion
  - Permeable Pavement (limited use for pollutant control only)

Site Design BMP Terms

Implementation Level	Sizing Requirements
Baseline BMP or Site Design BMP	• No minimum size • Apply where applicable and feasible • No credit to DCV or hydromodification control
Enhanced Site Design BMP	• Meet minimum sizing and design requirements • Reduce overall DCV
Significant Site Design BMP	• Meet greater sizing and design requirements • Fully satisfy DCV and hydromodification control

SSD-BMPs vs. Enhanced Site Design BMPs

BMP	*The BMP may be used as:*		
	Enhanced Site Design BMP to Reduce DCV Draining to a Downstream BMP	SSD-BMP to Fully Satisfy DCV	SSD-BMP to Fully Satisfy DCV and Hydromodification Management
Rain Barrel	✓		
Green Roof	✓		
Permeable Pavement	✓	✓ (as site design SD-D)	**X** (only as structural INF-3)
Impervious Area Dispersion	✓	✓	✓
Tree Wells	✓	✓	✓

SSD-BMP Development Timeline

2016 Manual

Site design BMPs can be used to reduce DCV.

Impervious area dispersion, permeable pavement, and tree wells can fully satisfy DCV.

No sizing criteria available for site design BMPs to satisfy hydromodification management.

2019 Manual

New criteria added for impervious area dispersion and tree wells to satisfy hydromodification management in addition to DCV.

“Enhanced site design BMP” and “significant site design BMP” (“SSD-BMP”) terms introduced.

2020 Manual

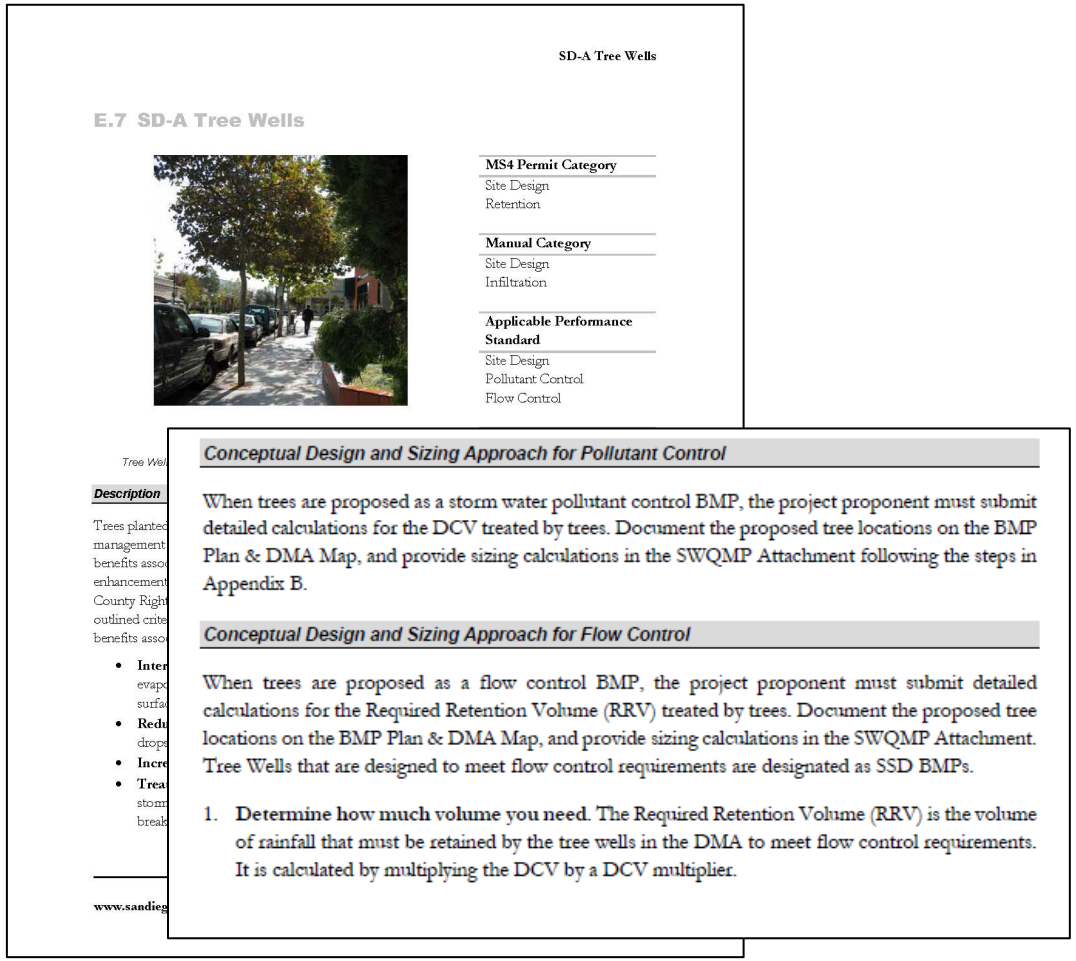
New step-by-step guidance added to facilitate design of impervious area dispersion and tree wells as SSD-BMPs.

New SSD-BMP spreadsheet tool provided.

SSD-BMP Design Guidance 2019 BMP Design Manual

Fact Sheets in Appendix E

- ***Tree Wells (SD-A)***


SD-A Tree Wells

E.7 SD-A Tree Wells

MS4 Permit Category
Site Design
Retention

Manual Category
Site Design
Infiltration

Applicable Performance Standard
Site Design
Pollutant Control
Flow Control

Description

Trees planted
management
benefits asso
enhancement
County Right
outlined crite
benefits asso

- **Inter**
  evapo
  surfa
- **Redu**
  drops
- **Incre**
- **Trea**
  storm
  break

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Conceptual Design and Sizing Approach for Pollutant Control

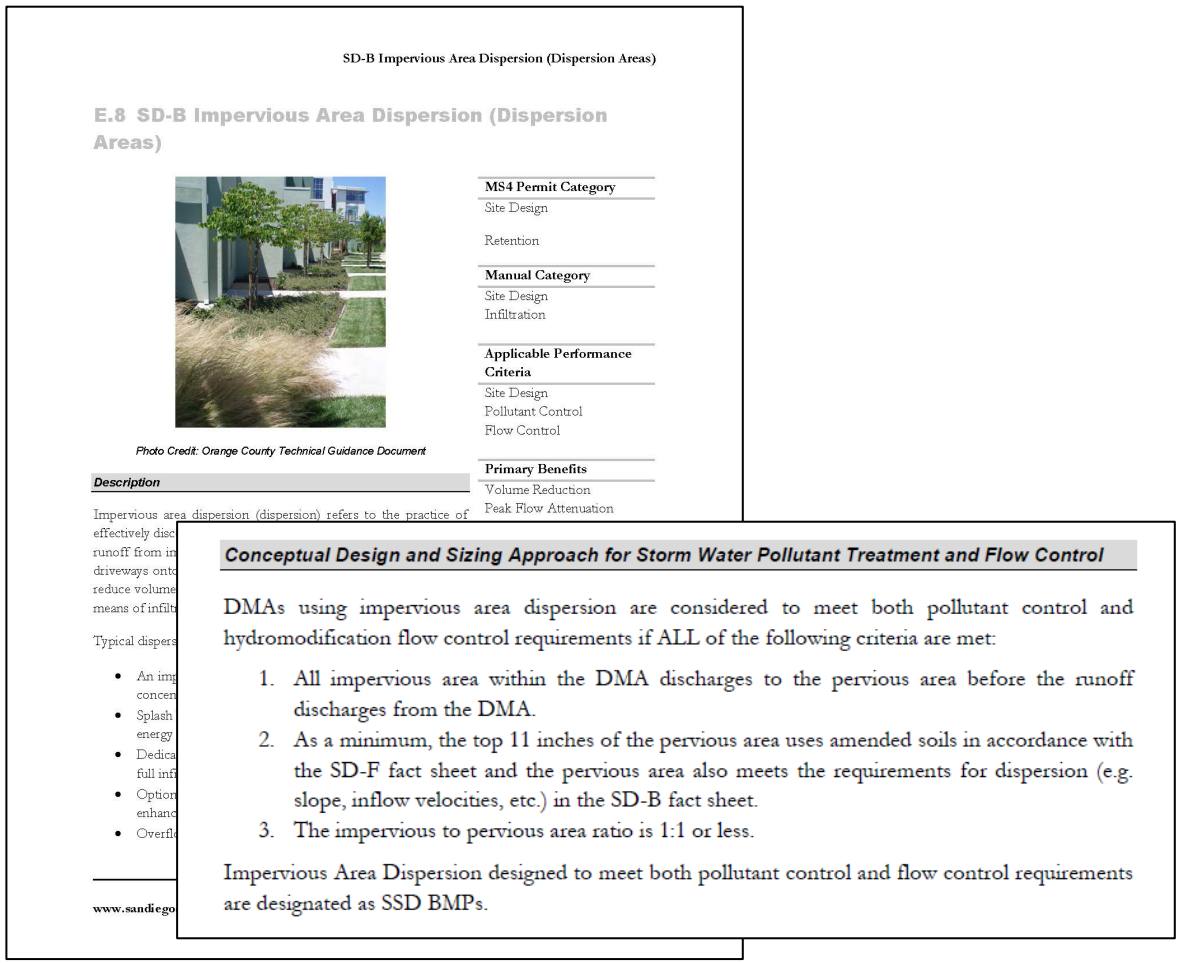
When trees are proposed as a storm water pollutant control BMP, the project proponent must submit detailed calculations for the DCV treated by trees. Document the proposed tree locations on the BMP Plan & DMA Map, and provide sizing calculations in the SWQMP Attachment following the steps in Appendix B.

Conceptual Design and Sizing Approach for Flow Control

When trees are proposed as a flow control BMP, the project proponent must submit detailed calculations for the Required Retention Volume (RRV) treated by trees. Document the proposed tree locations on the BMP Plan & DMA Map, and provide sizing calculations in the SWQMP Attachment. Tree Wells that are designed to meet flow control requirements are designated as SSD BMPs.

1. **Determine how much volume you need**. The Required Retention Volume (RRV) is the volume of rainfall that must be retained by the tree wells in the DMA to meet flow control requirements. It is calculated by multiplying the DCV by a DCV multiplier.

- ***Impervious Area Dispersion (SD-B)***


SD-B Impervious Area Dispersion (Dispersion Areas)

E.8 SD-B Impervious Area Dispersion (Dispersion Areas)

Photo Credit: Orange County Technical Guidance Document

MS4 Permit Category
Site Design
Retention

Manual Category
Site Design
Infiltration

Applicable Performance Criteria
Site Design
Pollutant Control
Flow Control

Primary Benefits
Volume Reduction
Peak Flow Attenuation

Description

Impervious area dispersion (dispersion) refers to the practice of
effectively disc
runoff from in
driveways onto
reduce volume
means of infilt

Typical dispers

- An imp
  concen
- Splash
  energy
- Dedica
  full infi
- Option
  enhanc
- Overflo

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Conceptual Design and Sizing Approach for Storm Water Pollutant Treatment and Flow Control

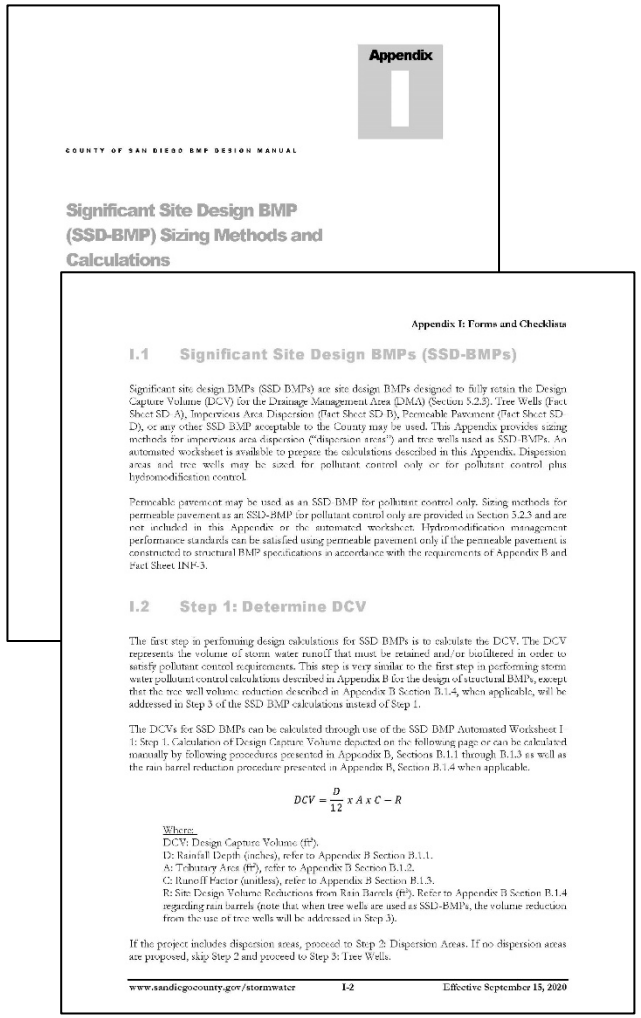
DMAs using impervious area dispersion are considered to meet both pollutant control and hydromodification flow control requirements if ALL of the following criteria are met:

1. All impervious area within the DMA discharges to the pervious area before the runoff discharges from the DMA.
2. As a minimum, the top 11 inches of the pervious area uses amended soils in accordance with the SD-F fact sheet and the pervious area also meets the requirements for dispersion (e.g. slope, inflow velocities, etc.) in the SD-B fact sheet.
3. The impervious to pervious area ratio is 1:1 or less.

Impervious Area Dispersion designed to meet both pollutant control and flow control requirements are designated as SSD BMPs.

SSD-BMP Design Guidance 2020 BMP Design Manual

Fact Sheets in Appendix E And New Appendix I and Spreadsheet Tool



Appendix

I

COUNTY OF SAN DIEGO BMP DESIGN MANUAL

Significant Site Design BMP (SSD-BMP) Sizing Methods and Calculations

Appendix I: Forms and Checklists

I.1 Significant Site Design BMPs (SSD-BMPs)

Significant site design BMPs (SSD BMPs) are site design BMPs designed to fully retain the Design Capture Volume (DCV) for the Drainage Management Area (DMA) (Section 5.2.3). Tree Wells (Fact Sheet SD-A), Impervious Area Dispersion (Fact Sheet SD-B), Permeable Pavement (Fact Sheet SD-D), or any other SSD BMP acceptable to the County may be used. This Appendix provides sizing methods for impervious area dispersion ("dispersion areas") and tree wells used as SSD BMPs. An automated worksheet is available to prepare the calculations described in this Appendix. Dispersion areas and tree wells may be sized for pollutant control only or for pollutant control plus hydromodification control.

Permeable pavement may be used as an SSD BMP for pollutant control only. Sizing methods for permeable pavement as an SSD-BMP for pollutant control only are provided in Section 5.2.3 and are not included in this Appendix or the automated worksheet. Hydromodification management performance standards can be satisfied using permeable pavement only if the permeable pavement is constructed to structural BMP specifications in accordance with the requirements of Appendix B and Fact Sheet INF-3.

I.2 Step 1: Determine DCV

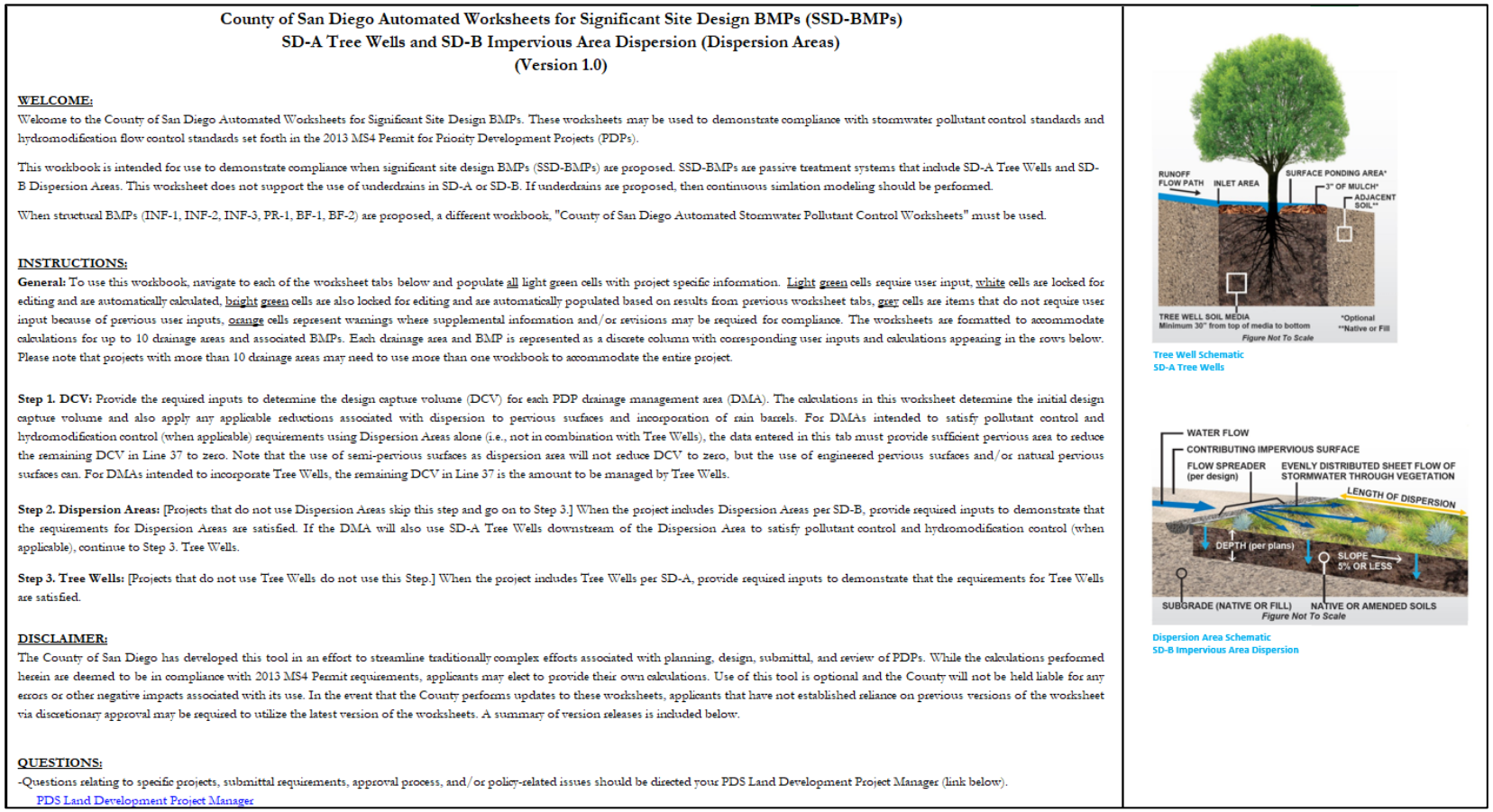
The first step in performing design calculations for SSD BMPs is to calculate the DCV. The DCV represents the volume of storm water runoff that must be retained and/or biofiltered in order to satisfy pollutant control requirements. This step is very similar to the first step in performing storm water pollutant control calculations described in Appendix B for the design of structural BMPs, except that the tree well volume reduction described in Appendix B Section B.1.4, when applicable, will be addressed in Step 3 of the SSD BMP calculations instead of Step 1.

The DCVs for SSD BMPs can be calculated through use of the SSD BMP Automated Worksheet I-1: Step 1. Calculation of Design Capture Volume depicted on the following page or can be calculated manually by following procedures presented in Appendix B, Sections B.1.1 through B.1.3 as well as the rain barrel reduction procedure presented in Appendix B, Section B.1.4 when applicable.

$$DCV = \frac{D}{12} \times A \times C - R$$

Where:
DCV: Design Capture Volume (ft³).
D: Rainfall Depth (inches), refer to Appendix B Section B.1.1.
A: Tributary Area (ft²), refer to Appendix B Section B.1.2.
C: Runoff Factor (unitless), refer to Appendix B Section B.1.3.
R: Site Design Volume Reductions from Rain Barrels (ft³). Refer to Appendix B Section B.1.4 regarding rain barrels (note that when tree wells are used as SSD-BMPs, the volume reduction from the use of tree wells will be addressed in Step 3).

If the project includes dispersion areas, proceed to Step 2: Dispersion Areas. If no dispersion areas are proposed, skip Step 2 and proceed to Step 3: Tree Wells.



County of San Diego Automated Worksheets for Significant Site Design BMPs (SSD-BMPs)
SD-A Tree Wells and SD-B Impervious Area Dispersion (Dispersion Areas)
(Version 1.0)

WELCOME:

Welcome to the County of San Diego Automated Worksheets for Significant Site Design BMPs. These worksheets may be used to demonstrate compliance with stormwater pollutant control standards and hydromodification flow control standards set forth in the 2013 MS4 Permit for Priority Development Projects (PDPs).

This workbook is intended for use to demonstrate compliance when significant site design BMPs (SSD-BMPs) are proposed. SSD-BMPs are passive treatment systems that include SD-A Tree Wells and SD-B Dispersion Areas. This worksheet does not support the use of underdrains in SD-A or SD-B. If underdrains are proposed, then continuous simlation modeling should be performed.

When structural BMPs (INF-1, INF-2, INF-3, PR-1, BF-1, BF-2) are proposed, a different workbook, "County of San Diego Automated Stormwater Pollutant Control Worksheets" must be used.

INSTRUCTIONS:

General: To use this workbook, navigate to each of the worksheet tabs below and populate all light green cells with project specific information. Light green cells require user input, white cells are locked for editing and are automatically calculated, bright green cells are also locked for editing and are automatically populated based on results from previous worksheet tabs, grey cells are items that do not require user input because of previous user inputs, orange cells represent warnings where supplemental information and/or revisions may be required for compliance. The worksheets are formatted to accommodate calculations for up to 10 drainage areas and associated BMPs. Each drainage area and BMP is represented as a discrete column with corresponding user inputs and calculations appearing in the rows below. Please note that projects with more than 10 drainage areas may need to use more than one workbook to accommodate the entire project.

Step 1. DCV: Provide the required inputs to determine the design capture volume (DCV) for each PDP drainage management area (DMA). The calculations in this worksheet determine the initial design capture volume and also apply any applicable reductions associated with dispersion to pervious surfaces and incorporation of rain barrels. For DMAs intended to satisfy pollutant control and hydromodification control (when applicable) requirements using Dispersion Areas alone (i.e., not in combination with Tree Wells), the data entered in this tab must provide sufficient pervious area to reduce the remaining DCV in Line 37 to zero. Note that the use of semi-pervious surfaces as dispersion area will not reduce DCV to zero, but the use of engineered pervious surfaces and/or natural pervious surfaces can. For DMAs intended to incorporate Tree Wells, the remaining DCV in Line 37 is the amount to be managed by Tree Wells.

Step 2. Dispersion Areas: [Projects that do not use Dispersion Areas skip this step and go on to Step 3.] When the project includes Dispersion Areas per SD-B, provide required inputs to demonstrate that the requirements for Dispersion Areas are satisfied. If the DMA will also use SD-A Tree Wells downstream of the Dispersion Area to satisfy pollutant control and hydromodification control (when applicable), continue to Step 3. Tree Wells.

Step 3. Tree Wells: [Projects that do not use Tree Wells do not use this Step.] When the project includes Tree Wells per SD-A, provide required inputs to demonstrate that the requirements for Tree Wells are satisfied.

DISCLAIMER:

The County of San Diego has developed this tool in an effort to streamline traditionally complex efforts associated with planning, design, submittal, and review of PDPs. While the calculations performed herein are deemed to be in compliance with 2013 MS4 Permit requirements, applicants may elect to provide their own calculations. Use of this tool is optional and the County will not be held liable for any errors or other negative impacts associated with its use. In the event that the County performs updates to these worksheets, applicants that have not established reliance on previous versions of the worksheet via discretionary approval may be required to utilize the latest version of the worksheets. A summary of version releases is included below.

QUESTIONS:

-Questions relating to specific projects, submittal requirements, approval process, and/or policy-related issues should be directed your PDS Land Development Project Manager (link below).

PDS Land Development Project Manager

Tree Well Schematic
SD-A Tree Wells

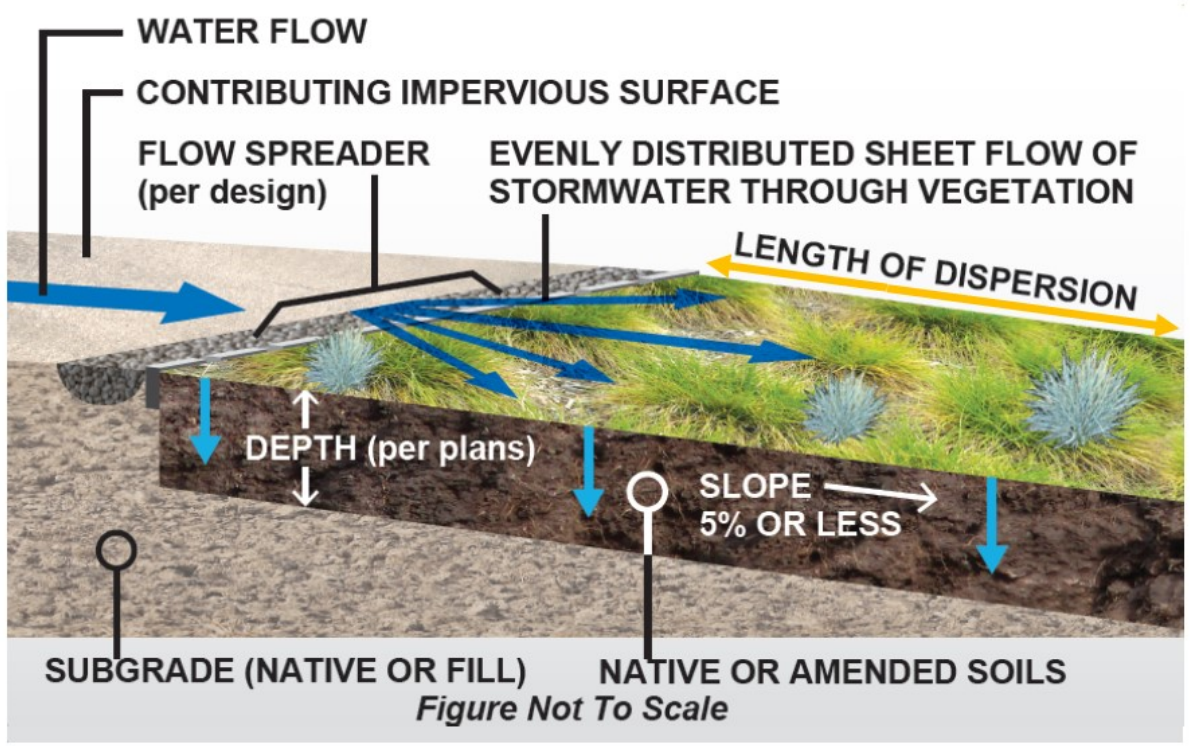
Dispersion Area Schematic
SD-B Impervious Area Dispersion

What is Impervious Area Dispersion?

- Impervious area dispersion refers to the practice of effectively disconnecting impervious areas from directly draining to the storm drain system by routing runoff from the impervious area onto an adjacent pervious dispersion area

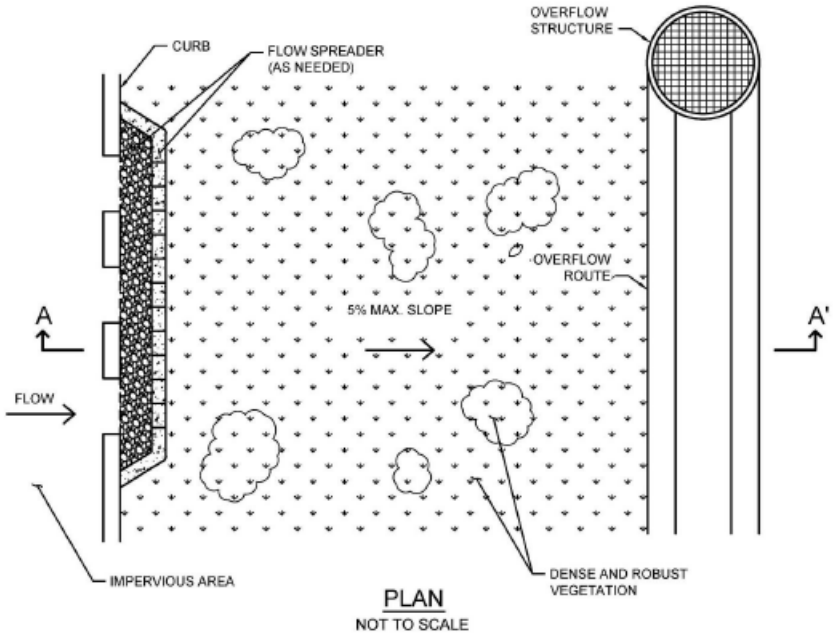
What is a Dispersion Area?

- Dispersion areas are dedicated pervious areas, typically vegetated, with in-situ soil infiltration capacity for partial or full infiltration

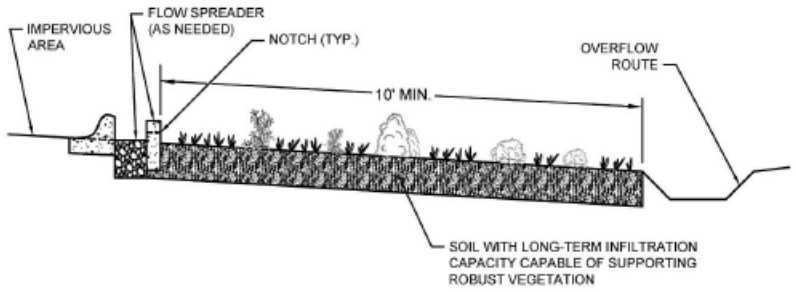


Dispersion Area Design Elements

- Ratio of impervious area to pervious area
- Dispersion area surface
- Sheet flow travel length across dispersion area
- Slope



PLAN
NOT TO SCALE



SECTION A-A'
NOT TO SCALE

Criteria for Dispersion Areas as SSD-BMPs

SSD-BMP	Criteria for Pollutant Control Only	Criteria for Pollutant Control Plus Hydromodification Control
Dispersion Area (SD-B)	• Ratio of impervious area to engineered pervious surface and/or natural hydrologic soil group A soil area is 2:1 or less; OR ratio of impervious area to natural hydrologic soil group B soil area is 1:1 or less • Sheet flow travel length across dispersion area is 10 feet or more* • Slope is less than 5%	• Ratio of impervious area to engineered pervious surface area is 1:1 or less • The top 11 inches of soil is amended in accordance with Fact Sheet SD-F • Sheet flow travel length across dispersion area is 10 feet or more* • Slope is less than 5%
*Exemption to this minimum travel length criterion may be allowed when the contributing flow path length of the impervious area /pervious area travel length ≤ 2		

Notes About Dispersion Area Surfaces

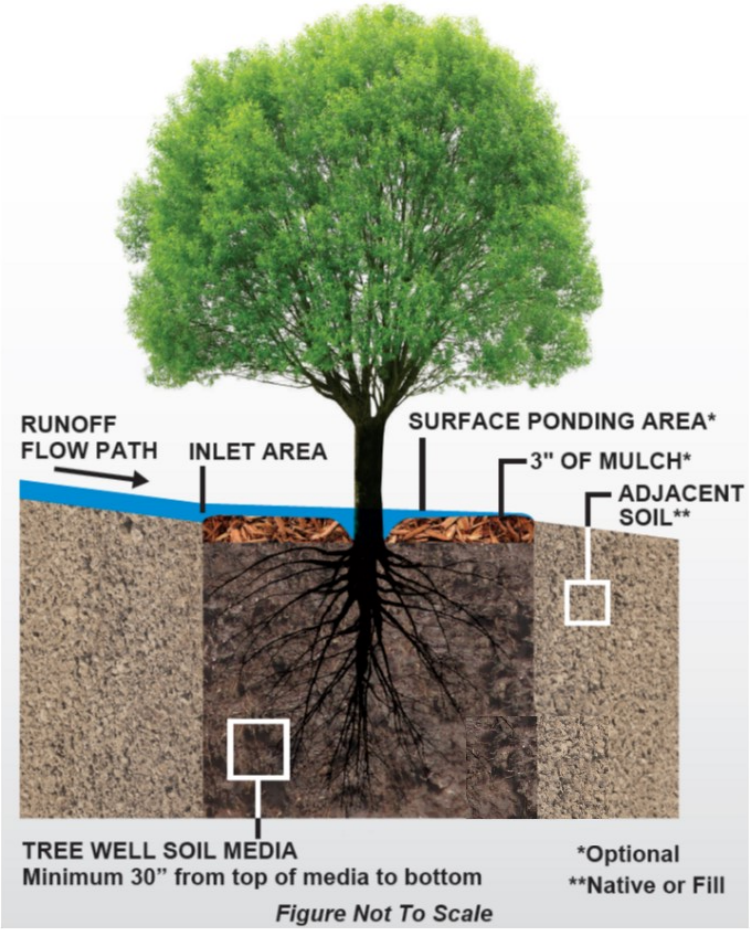
- Natural (Non-Amended) Soil
  - Hydrologic soil group A or B soils can serve as an SSD-BMP for pollutant control only
  - Hydrologic soil group C or D soils cannot serve as an SSD-BMP but can reduce DCV draining to a downstream BMP
- Engineered Pervious Surface
  - Soils that have been amended and mulched in accordance with Fact Sheet SD-F can serve as SSD-BMP for pollutant control
  - Soils with minimum 11-inch thickness amended and mulched in accordance with Fact Sheet SD-F can serve as SSD-BMP for pollutant control and hydromodification control
- Semi-Pervious Surface (e.g., cobbles, crushed aggregate)
  - Cannot serve as an SSD-BMP but can reduce DCV draining to a downstream BMP

Dispersion Areas Additional Notes

- Dispersion areas meeting the SSD-BMP criteria do not need an additional downstream BMP
- Dispersion areas not meeting the SSD-BMP criteria can be used as regular site design BMPs to reduce DCV draining to a downstream SSD-BMP or S-BMP
- Dispersion areas not meeting criteria to reduce DCV can still be included as baseline BMPs

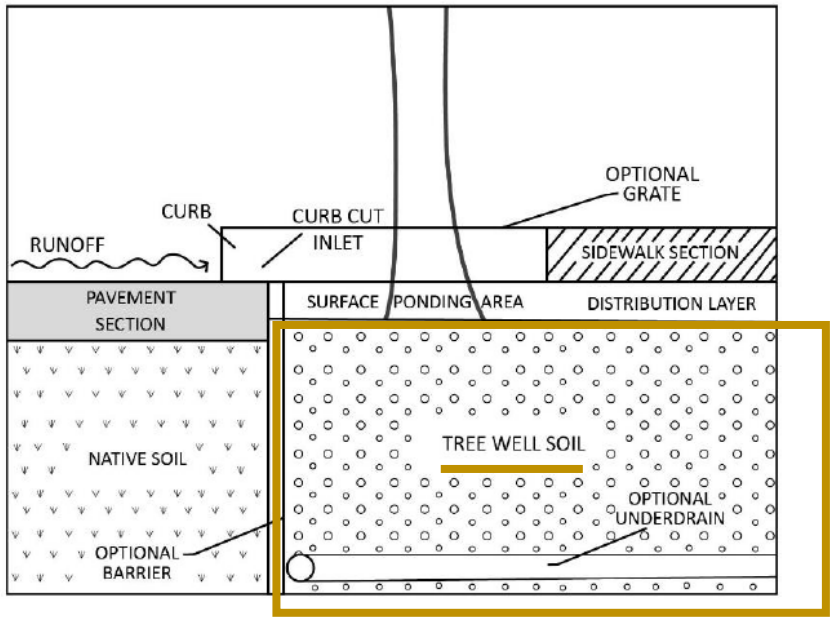
What is a Tree Well?

- A tree well as a storm water management feature consists of a tree planted in an excavated area with a minimum designed volume of soil media to allow for storage, infiltration, and evapotranspiration of runoff



Tree Well Design Elements

- Tree type and size
- Volume of tree well soil



Schematic of Tree Well

	Botanical Name	Common Name	Mature Height (ft)	Mature Canopy Diameter (ft)	Credit Volume per Tree (ft3)
1	*Ceanothus 'Ray Hartman"*	California Mountain Lillac	30	10	40
2	*Pittosporum Phillyraeoides*	Willow Pittosporum	25	15	100
3	*Salix Lasiolepsis*	Arroyo Willow	25		
4	*Arbutus Unedo*	Strawberry Tree	30		
5	*Prunus Ilicifolia*	Hollyleaf Cherry	30	20	180
6	*Prunus Lynoii*	Catalina Cherry	40		
7	*Cercis Occidentalis*	Western Redbud	25	25	290
8	*Heteromeles Arbutifolia*	Toyon, Christmas Berry	25		
9	*Alnus Rhombifolia*	White Elder	75		
10	*Arbutus 'Marina'*	Hybrid Strawberry Tree	35		
11	*Chilopsis Linearis*	Desert Willow	30		
12	*Lyonothamnus Floribundus*	Catalina Ironwood	50		
13	*Magnolia Grandiflora*	Southern Magnolia	40		
14	*Pinus Torreyana*	Torrey Pines	80	30	420
15	*Platanus Racemosa*	California sycamore	60		
16	*Quercus Agrifolia*	Coast Live Oak	70		
17	*Quercus Engelmannii*	Engelmann Oak	50		
18	*Quercus Suber*	Cork Oak	40		
19	*Sambucus Mexicana*	Blue Elderberry	30		

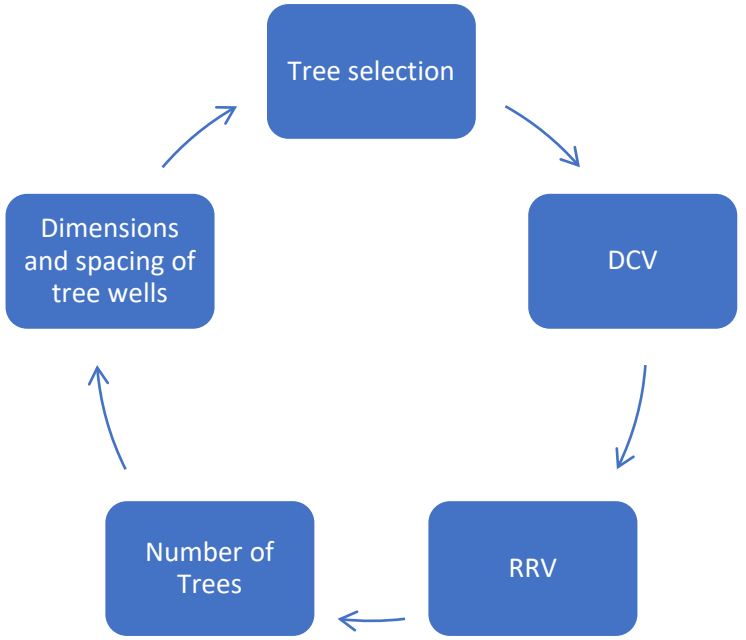
Tree Palette Table

Criteria for Tree Wells as SSD-BMPs

SSD-BMP	Criteria for Pollutant Control Only	Criteria for Pollutant Control Plus Hydromodification Control
Tree Well (SD-A)	• The total tree credit volume is greater than DCV • Provide tree well soil based on the mature tree canopy diameter in accordance with Fact Sheet SD-A	• The total tree credit volume is greater than RRV, where RRV accounts for a multiplier applied to the DCV value • Provide tree well soil based on the mature tree canopy diameter in accordance with Fact Sheet SD-A

Tree Wells Design Process

- Coordinate with the project landscape architect to select a tree type and tree well depth
- Determine DCV
- If hydromodification control applies, determine DCV multiplier and calculate required retention volume (RRV)
- Determine number of trees required to satisfy DCV or RRV as applicable
- Determine the minimum soil volume required, area of each tree well, and spacing of trees



Tree Wells Design Process

- Select a tree species
- Tree palette table provided in Fact Sheet SD-A provides credit volume per tree
- Other tree species may be approved at the discretion of the County Landscape Architect.

	Botanical Name	Common Name	Mature Height (ft)	Mature Canopy Diameter (ft)	Credit Volume per Tree (ft3)
1	*Ceanothus 'Ray Hartman"*	California Mountain Lillac	30	10	40
2	*Pittosporum Phillyraeoides*	Willow Pittosporum	25	15	100
3	*Salix Lasiolepsis*	Arroyo Willow	25		
4	*Arbutus Unedo*	Strawberry Tree	30	20	180
5	*Prunus Ilicifolia*	Hollyleaf Cherry	30		
6	*Prunus Lynoii*	Catalina Cherry	40		
7	*Cercis Occidentalis*	Western Redbud	25	25	290
8	*Heteromeles Arbutifolia*	Toyon, Christmas Berry	25		
9	*Alnus Rhombifolia*	White Elder	75	30	420
10	*Arbutus 'Marina'*	Hybrid Strawberry Tree	35		
11	*Chilopsis Linearis*	Desert Willow	30		
12	*Lyonothamnus Floribundus*	Catalina Ironwood	50		
13	*Magnolia Grandiflora*	Southern Magnolia	40		
14	*Pinus Torreyana*	Torrey Pines	80		
15	*Platanus Racemosa*	California sycamore	60		
16	*Quercus Agrifolia*	Coast Live Oak	70		
17	*Quercus Engelmannii*	Engelmann Oak	50		
18	*Quercus Suber*	Cork Oak	40		
19	*Sambucus Mexicana*	Blue Elderberry	30		

Tree Palette Table

Tree Wells Design Process

- Determine DCV

$$DCV = \frac{D}{12} \; x \; A \; x \; C \; - R$$

Where:

- DCV: Design Capture Volume
- D: Rainfall Depth (inches)
- A: Tributary Area (feet^2)
- C: Runoff Factor (unitless)
- R: Site Design Volume Reductions from Rain Barrels

Tree Wells Design Process

- If hydromodification management applies, determine RRV
  - $RRV = DCV \; x \; DCV \; Multiplier$
  - DCV Multiplier Table provided in Fact Sheet SD-A and in Appendix I

Minimum Tree Well Soil Depth (inches)	Hydrologic Soil Group				
	A	B	C	D (Default)	
30”	1.60	2.20	2.50	2.90	DCV Multiplier
36”	1.80	2.47	2.83	3.17	
42”	2.00	2.73	3.17	3.43	
48”	2.20	3.00	3.50	3.70	

Tree Wells – Using the DCV Multiplier Table

Minimum Tree Well Soil Depth (inches)	Hydrologic Soil Group				
	A	B	C	D (Default)	
30”	1.60	2.20	2.50	2.90	DCV Multiplier
36”	1.80	2.47	2.83	3.17	
42”	2.00	2.73	3.17	3.43	
48”	2.20	3.00	3.50	3.70	

- Select from the standard tree well depths 30, 36, 42, or 48 inches
- Tree well soil depth shall be a minimum of 30 inches (Fact Sheet SD-A)
- If the actual depth of your tree well is not shown, select the next lower depth for the purpose of determining the DCV multiplier

Tree Wells Design Process

- Determine the number of trees required
- DCV or RRV divided by tree credit volume
- Tree credit volume provided in Tree Palette Table

	Botanical Name	Common Name	Mature Height (ft)	Mature Canopy Diameter (ft)	Credit Volume per Tree (ft3)
1	*Ceanothus 'Ray Hartman"*	California Mountain Lillac	30	10	40
2	*Pittosporum Phillyraeoides*	Willow Pittosporum	25	15	100
3	*Salix Lasiolepsis*	Arroyo Willow	25		
4	*Arbutus Unedo*	Strawberry Tree	30	20	180
5	*Prunus Ilicifolia*	Hollyleaf Cherry	30		
6	*Prunus Lynoii*	Catalina Cherry	40		
7	*Cercis Occidentalis*	Western Redbud	25	25	290
8	*Heteromeles Arbutifolia*	Toyon, Christmas Berry	25		
9	*Alnus Rhombifolia*	White Elder	75	30	420
10	*Arbutus 'Marina'*	Hybrid Strawberry Tree	35		
11	*Chilopsis Linearis*	Desert Willow	30		
12	*Lyonothamnus Floribundus*	Catalina Ironwood	50		
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14	*Pinus Torreyana*	Torrey Pines	80		
15	*Platanus Racemosa*	California sycamore	60		
16	*Quercus Agrifolia*	Coast Live Oak	70		
17	*Quercus Engelmannii*	Engelmann Oak	50		
18	*Quercus Suber*	Cork Oak	40		
19	*Sambucus Mexicana*	Blue Elderberry	30		

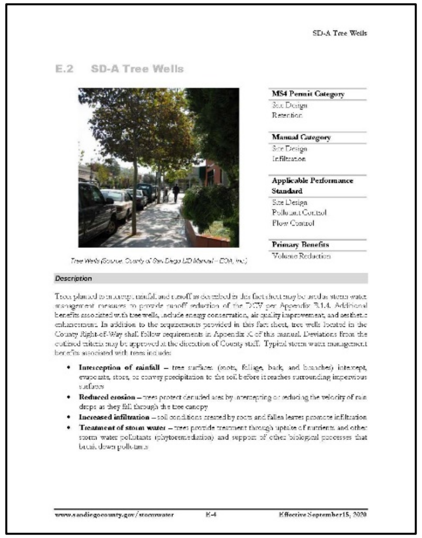
Tree Palette Table

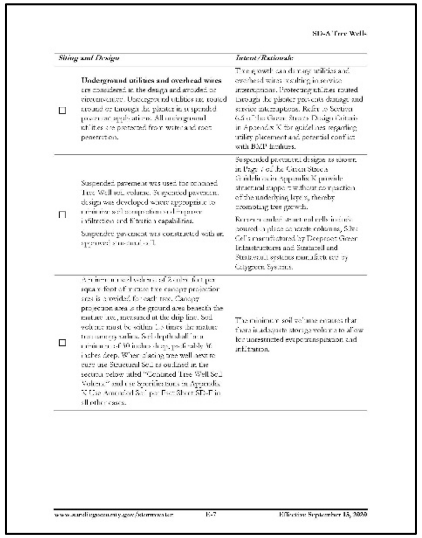
Tree Wells Design Process

- Determine the minimum soil volume per tree well
- Fact Sheet SD-A: Minimum of 2 *cubic feet of soil per square foot of mature tree canopy projection area*
  - $Minimum\ Tree\ Well\ Soil\ Volume\ (ft^3) = 2\ x\ \pi\ x\ \left(\frac{D}{2}\right)^2$

Where:

  - D = Mature canopy diameter (feet)





☐	A minimum soil volume of 2 cubic feet per square foot of mature tree canopy projection area is provided for each tree. Canopy projection area is the ground area beneath the mature tree, measured at the drip line. Soil volume must be within 1.5 times the mature tree canopy radius. Soil depth shall be a minimum of 30 inches deep, preferably 36 inches deep. When placing tree well next to curb use Structural Soil as outlined in the section below titled "Confined Tree Well Soil Volume" and use Specifications in Appendix K Use Amended Soil per Fact Sheet SD-F in all other cases.	The minimum soil volume ensures that there is adequate storage volume to allow for unrestricted evapotranspiration and infiltration.

Tree Wells Design Process

- Determine the minimum tree well soil area
  - $$Minimum\ Tree\ Well\ Soil\ Area\ (ft^2) = \frac{Minimum\ Tree\ Well\ Soil\ Volume\ (ft^3)}{Tree\ Well\ Soil\ Depth\ (ft)}$$

- Spacing considerations
  - Tree well soil must be within 1.5 times the mature tree canopy radius
  - When multiple trees are used, the trees must be spaced so that the minimum tree well soil volume for each tree does not overlap
  - There may be other factors not related to storm water management that influence the spacing of trees – coordinate with the project landscape architect

Tree Wells Additional Notes

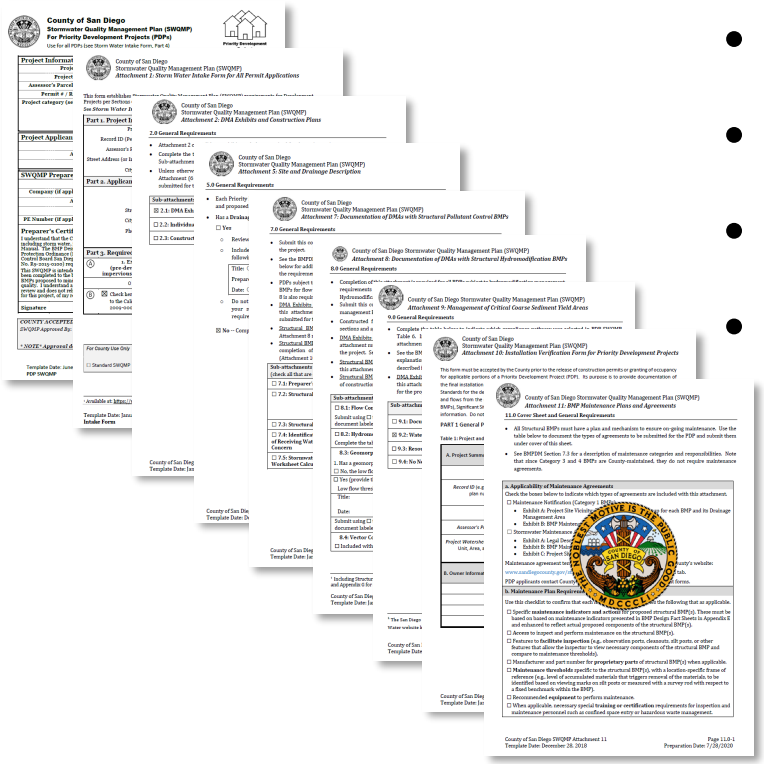
- Tree wells meeting the SSD-BMP criteria do not need an additional downstream BMP
- Tree wells not meeting the SSD-BMP criteria can be used as regular site design BMPs to reduce DCV draining to a downstream structural BMP
- Additional benefits associated with tree wells include habitat, energy conservation, air quality improvement, and aesthetic enhancement

PDP SWQMPs and Signatures

Engineer's Signature Required

Using Structural BMPs

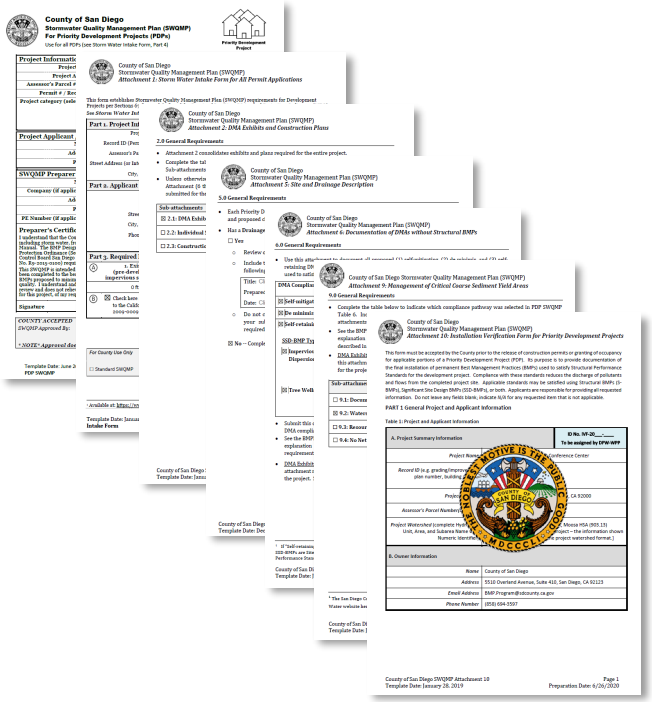
- PDP SWQMP (14 pages)
- Attachment 1
- Attachment 2
- Attachment 4 (if needed)
- Attachment 5
- Attachment 7
- Attachment 8
- Attachment 9
- Attachment 10
- Attachment 11



No Engineer's Signature Required

Using SSD-BMPs

- PDP SWQMP (14 pages)
- Attachment 1
- Attachment 2
- Attachment 4 (if needed)
- Attachment 5
- Attachment 6
- Attachment 9
- Attachment 10



Forms to Fill Out for a PDP SWQMP

Using SSD-BMPs

- PDP SWQMP (14 pages)
- Attachment 1
- Attachment 2
- Attachment 4 (if needed)
- Attachment 5
- Attachment 6
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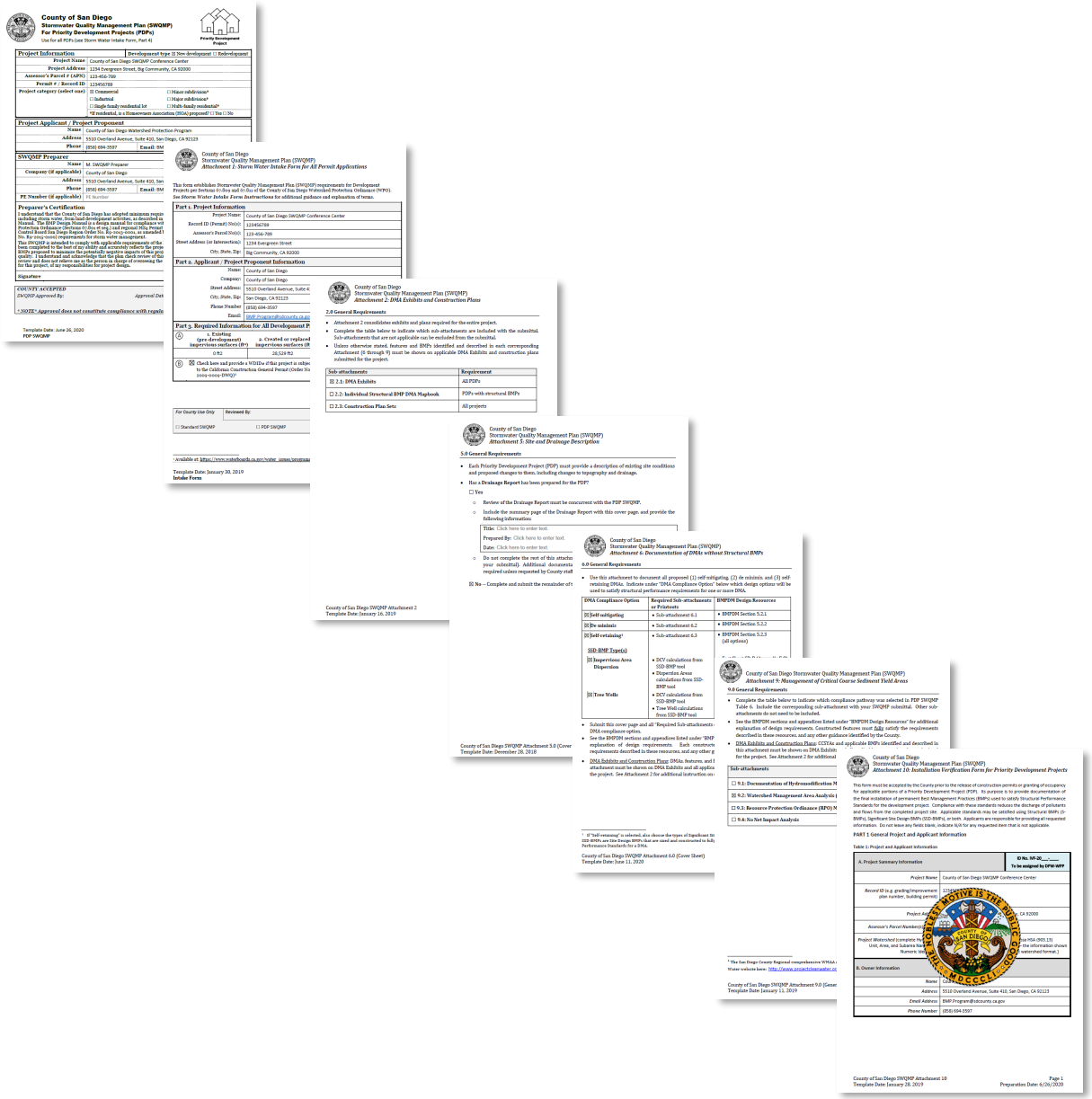
- Attachment 10



PDP SWQMPs and Signatures

Using SSD-BMPs

- **PDP SWQMP (14 pages)**
- Attachment 1
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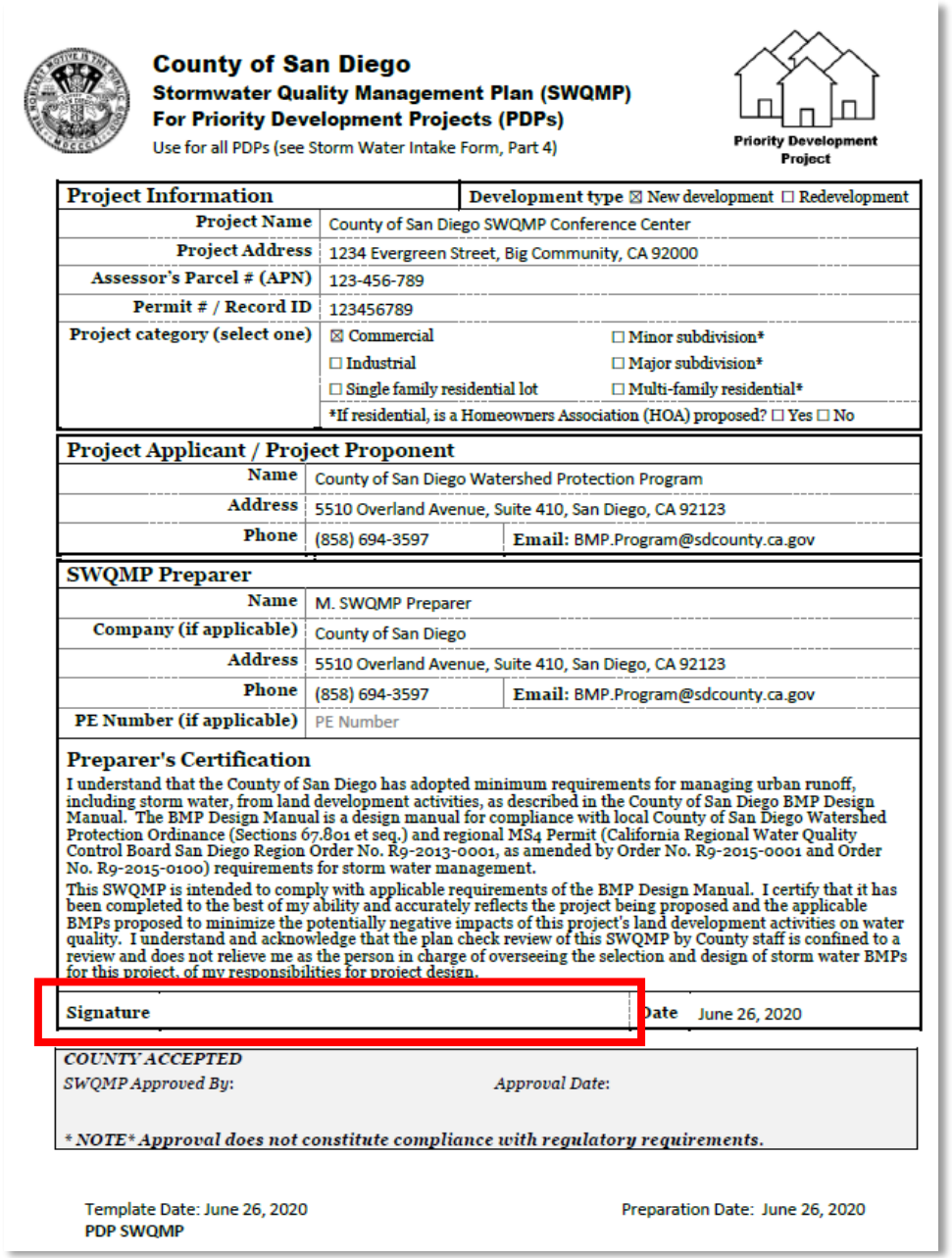
- Attachment 10



County of San Diego
Stormwater Quality Management Plan (SWQMP)
For Priority Development Projects (PDPs)
Use for all PDPs (see Storm Water Intake Form, Part 4)

Priority Development Project

Project Information	Development type ☒ New development ☐ Redevelopment	
Project Name	County of San Diego SWQMP Conference Center	
Project Address	1234 Evergreen Street, Big Community, CA 92000	
Assessor's Parcel # (APN)	123-456-789	
Permit # / Record ID	123456789	
Project category (select one)	☒ Commercial	☐ Minor subdivision*
	☐ Industrial	☐ Major subdivision*
	☐ Single family residential lot	☐ Multi-family residential*
	*If residential, is a Homeowners Association (HOA) proposed? ☐ Yes ☐ No	

Project Applicant / Project Proponent		
Name	County of San Diego Watershed Protection Program	
Address	5510 Overland Avenue, Suite 410, San Diego, CA 92123	
Phone	(858) 694-3597	**Email:** BMP.Program@sdcounty.ca.gov

SWQMP Preparer		
Name	M. SWQMP Preparer	
Company (if applicable)	County of San Diego	
Address	5510 Overland Avenue, Suite 410, San Diego, CA 92123	
Phone	(858) 694-3597	**Email:** BMP.Program@sdcounty.ca.gov
PE Number (if applicable)	PE Number	

Preparer's Certification

I understand that the County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the County of San Diego BMP Design Manual. The BMP Design Manual is a design manual for compliance with local County of San Diego Watershed Protection Ordinance (Sections 67.801 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001, as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100) requirements for storm water management.

This SWQMP is intended to comply with applicable requirements of the BMP Design Manual. I certify that it 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 SWQMP by County staff is confined to a review and does not relieve me as the person in charge of overseeing the selection and design of storm water BMPs for this project, of my responsibilities for project design.

Signature	Date June 26, 2020

COUNTY ACCEPTED
SWQMP Approved By: *Approval Date:*

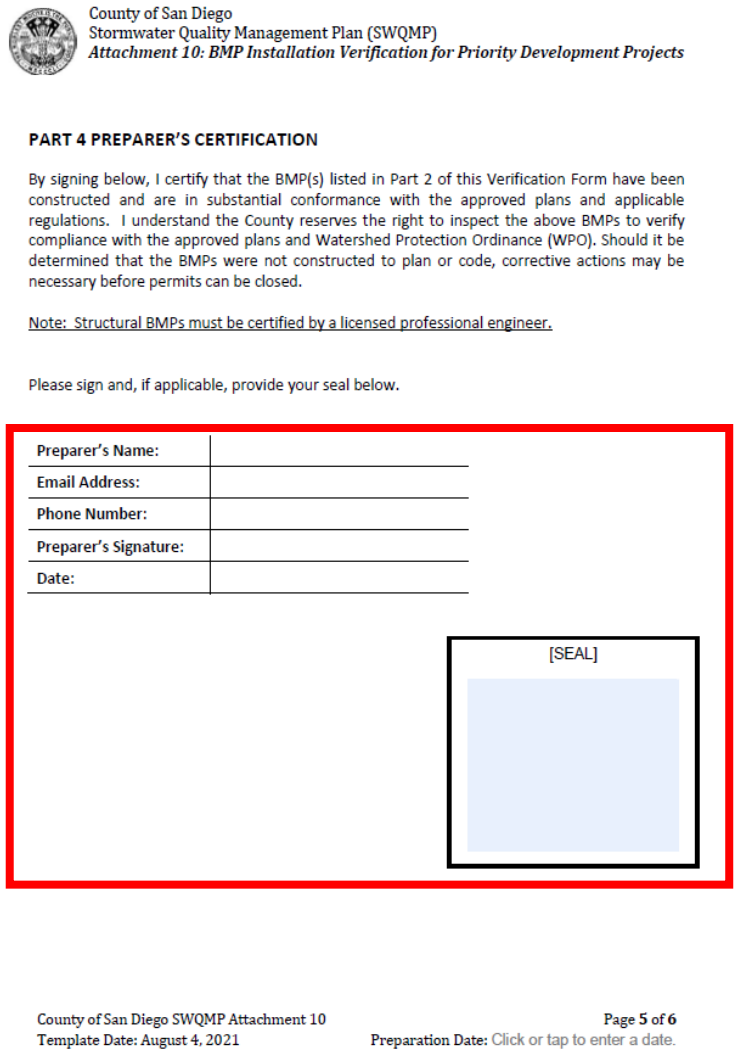
**NOTE* Approval does not constitute compliance with regulatory requirements.*

Template Date: June 26, 2020 Preparation Date: June 26, 2020
PDP SWQMP

PDP SWQMPs and Signatures

Using SSD-BMPs

- PDP SWQMP (14 pages)
- Attachment 1
- Attachment 2
- Attachment 4 (if needed)
- Attachment 5
- Attachment 6
- Attachment 9
- **Attachment 10**



County of San Diego
Stormwater Quality Management Plan (SWQMP)
Attachment 10: BMP Installation Verification for Priority Development Projects

PART 4 PREPARER'S CERTIFICATION

By signing below, I certify that the BMP(s) listed in Part 2 of this Verification Form have been constructed and are in substantial conformance with the approved plans and applicable regulations. I understand the County reserves the right to inspect the above BMPs to verify compliance with the approved plans and Watershed Protection Ordinance (WPO). Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Note: Structural BMPs must be certified by a licensed professional engineer.

Please sign and, if applicable, provide your seal below.

Preparer's Name:	
Email Address:	
Phone Number:	
Preparer's Signature:	
Date:	

[SEAL]

County of San Diego SWQMP Attachment 10
Template Date: August 4, 2021

Page 5 of 6
Preparation Date: Click or tap to enter a date.

Note: SSD-BMPs are not required to be certified by a licensed professional engineer

Forms to Fill Out for a PDP SWQMP

Using SSD-BMPs

- PDP SWQMP (14 pages)
- Attachment 1 – Intake Form
- Attachment 2 – Construction Plan Sheets
- Attachment 4 (if needed) – Prev. SWQMPs
- Attachment 5 – Ex. Site and Drainage
- Attachment 6 – DMAs without S-BMPs
- Attachment 9 – Critical Coarse Sediment
- Attachment 10 – Installation Verification