



County of San Diego

Green Streets PDP Exempt Stormwater Quality Management Plan (SWQMP)

This form must accompany applications for Green Streets PDP-exempt projects such as a) development of new sidewalks, bike lanes, and/or trails, or b) improvements to existing roads, sidewalks, bike lanes, and/or trails as described in Section 1.4.3 of the County BMP Design Manual.

Project Identification	
<p><u>Project Information</u> <i>Project Name</i> <i>Project Street Address</i> <i>Project City, State, Zip</i> <i>Assessor's Parcel Number</i> <i>Project/Oracle Number</i></p>	<p>Cottonwood Sand Mining Project 3121 Willow Glen Road El Cajon, CA 92019 APNs: 506-021-1900, 506-020-5200, 518-012-1300, 518-012-1400, 518-030-0500, 518-030-0600, 518-030-0700, 518-030-0800, 518-030-1000, 518-030-1200, 518-030-1300, 518-030-1500, 518-030-2100, 518-030-2200, 519-010-1500, 519-010-1700, 519-010-2000, 519-010-2100, 519-010-3300, 519-010-3400, 519-010-3700, and 519-011-0300. PDS2018-MUP-18-023, PDS2018-RP-18-001, PDS2018-ER-18-19-007</p>
<p><u>Applicant Information</u> <i>Applicant Name</i> <i>Applicant Phone Number</i> <i>Applicant Email Address</i> <i>Company Name</i> <i>Company Address</i></p>	<p>Greg Brown (619) 441-1463 gbrown@nwinvestmentinc.com New West Development 565 N. Magnolia Avenue El Cajon, CA 92020</p>
<p><u>Engineer's Certification</u> <i>Engineer's Signature</i> <i>PE Number</i> <i>State of Licensure</i></p> <p><i>I hereby declare that I am the Engineer in Responsible Charge of design of stormwater BMPs for this project. (This item is only required at final submittal).</i></p>	<p>Will sign upon approval.</p> <p>Wayne W. Chang, PE 46548 (California), Exp. 6/30/2023</p>
<p><u>Preparation Date:</u></p>	<p>October 12, 2021</p>

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Project Description

Describe project intent, existing/proposed drainage patterns, net increase in impervious area, and green street performance strategies.

If the project consists entirely of “routine maintenance” activities as outlined in Table 1-2 of the County BMPDM (i.e. road resurfacing, utility trenching, etc), clearly state so and provide a thorough description of these activities. Routine maintenance projects are not required to complete the rest of this SWQMP form.

The project proposes to mine sand suitable for Portland cement concrete (PCC) use over an extended period within designated phases. Reclamation of the mined lands will follow as soon as mining operations are completed in a specific area. Reclamation procedures will be phased with mining operations and will be initiated immediately after the conclusion of resource extraction and backfilling to design elevations.

The maximum level of aggregate production is anticipated to be 570,000 tons per year. This level of production will be realized after 1 year of site development. Actual production levels and project life will depend on market demand but will not exceed the maximum permitted production level. The project is expected to continue for 12 years. This will include 10 years of extraction and reclamation of previous phases. Reclamation of previously disturbed areas is anticipated to begin in year 2. Vegetation monitoring will continue for 5 years after reclamation.

The County is requiring Willow Glen Drive improvements along the site east of Steele Canyon Road. Willow Glen Drive is classified as a 4 lane major road. The public road along the site contains 4 lanes west of Steele Canyon Road, but only 3 lanes east (two westbound and one eastbound). Proposed street widening will start approximately 1,300 feet east of Steele Canyon Road and involve widening the south side to add an eastbound lane for the site entrance. The widening will extend to the project’s outbound driveway and will transition back to the existing road east of the outbound driveway.

The County of San Diego has stated that the sand mining project will be subject to State requirements and the Industrial General Permit and as such should prepare an Industrial Storm Water Pollution Prevention Plan. This will address the sand mine itself.

In regards to the Willow Glen Drive frontage improvements as required by conditions of approval, those improvements are creating impervious roadway surfaces and as such they are subject to stormwater requirements as they are not listed on Table 1-2 of the *BMP Design Manual*.

Since the sand mine is not subject to the MS4 Permit, County staff indicated the frontage improvements qualify for a Green Streets Priority Development Project Exemption, as outlined in Section 1.4.3 of the *BMP Design Manual*. The County has a performance standard for projects that qualify for the Green Streets PDP Exemption, and it includes treating newly created impervious surfaces (Section K.2.1 of the *BMP Design Manual* outlines the performance standard). The Green Streets PDP Exemption pathway is being used for the proposed public improvements along Willow Glen Drive. This SWMQP addresses the Green Streets exemption.

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Best Management Practices	
Minimize Impervious Area <i>Project considered use of pervious pavements and constructs all impervious features to the minimum widths necessary.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Conserve Natural Areas <i>Project preserves soils, vegetation, waterbodies, existing trees, open space, drainage patterns, and drainage features to the maximum extent practicable.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Construction BMPs <i>Project implements all relevant construction BMPs as depicted in Attachment 1.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Storm Drain Stenciling <i>Project stencils all new storm drain inlets as depicted in Attachment 1.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Landscaping <i>Project uses only native and/or drought tolerant species in the landscape palette as depicted in Attachment 1.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Trash Storage <i>Project designs all trash storage areas to prevent wind and water-based dispersal of trash as depicted in Attachment 1.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Green Streets BMPs <i>Project implements Green Streets BMPs as depicted in Attachment 2.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Additional Information <i>Provide a brief explanation for all "No" answers above.</i>	N/A

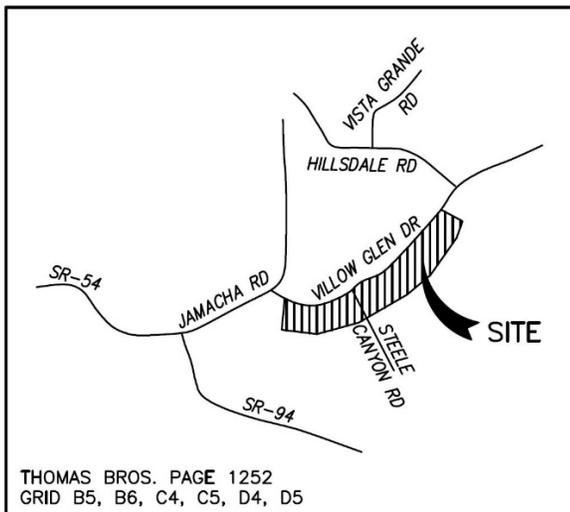
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Attachment 1: Relevant Supporting Information

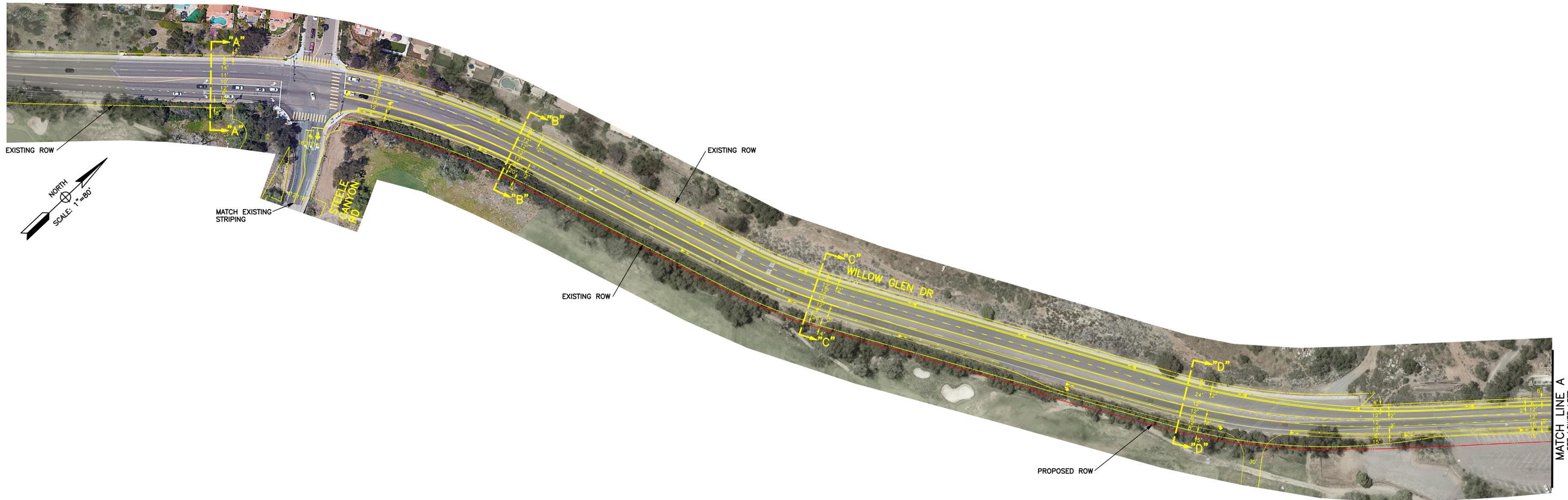
Include the following supporting information as needed:

- Vicinity maps
- Plans (i.e., grading plans, landscape plans, site plans, details, construction BMPs, permanent BMPs)
- Drainage studies
- Geotechnical studies
- Other

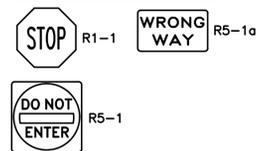
The attached conceptual Striping and Cross-section plan has been developed by Linscott, Law & Greenspan, Engineers and approved by the County of San Diego's Traffic Engineering Department. The plan proposes restriping of Willow Glen Drive along the project site east of Steele Canyon Road. A portion of the street will be widened as it approaches the proposed project entrance, where an additional eastbound lane be added along the south side of the street. The widening will provide a right turn lane to the proposed project entrance into the plant area. The widening will continue east along the proposed plant area (existing Cottonwood Golf Club parking lot) in order to provide continuation of the existing Willow Glen Road striped median. The widening will gradually taper back to the existing street east of the site exit. The taper will end near the east end of the existing parking lot. The Vicinity Map for the project is below. The only impervious area added by the Willow Glen Drive street improvement is associated with the widening. There will be a minor increase in storm runoff from the widening, which will flow into the site and then the Sweetwater River that flows within the site. There will be no off-site flow impacts associated with the runoff increase since the increase will be negligible compared to the Sweetwater River flow. A geotechnical report will be prepared for final engineering of the widening area, as needed.



VICINITY MAP

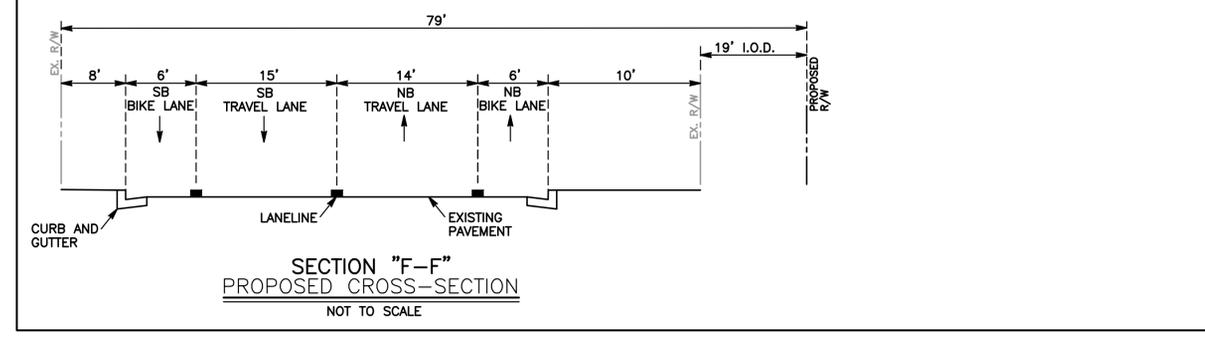
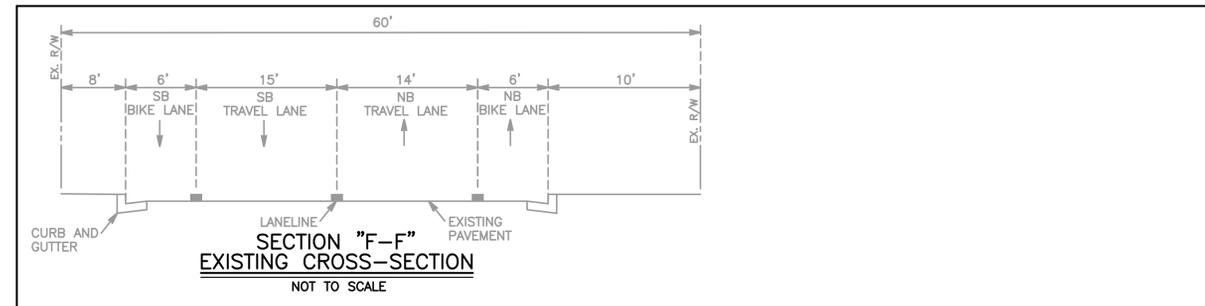
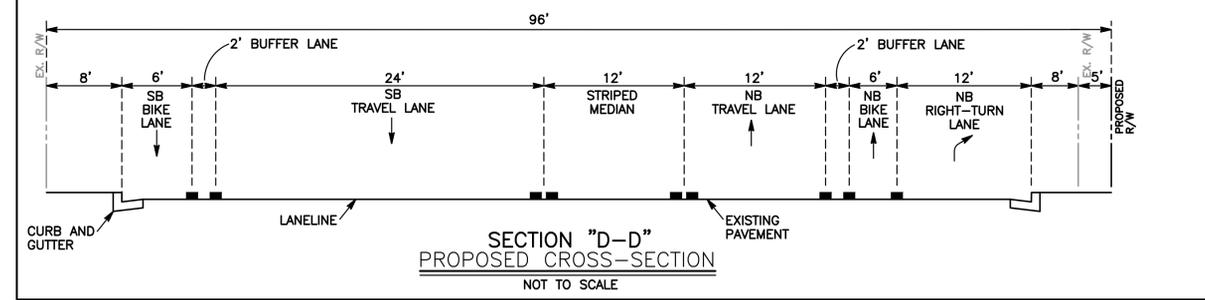
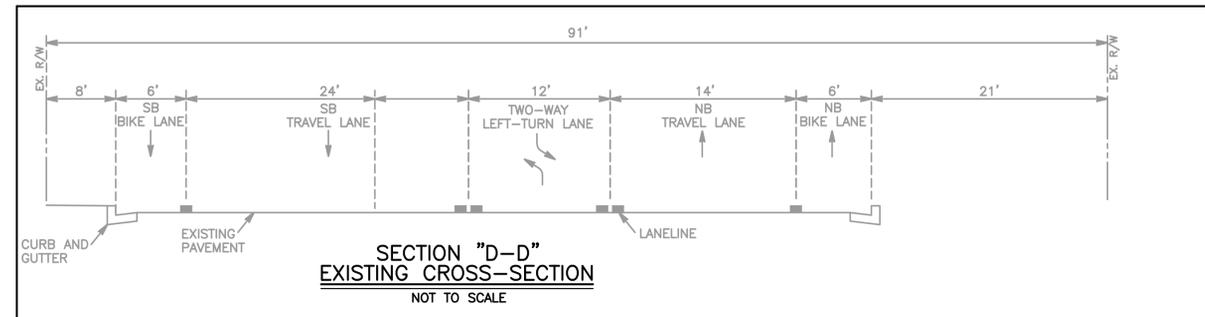
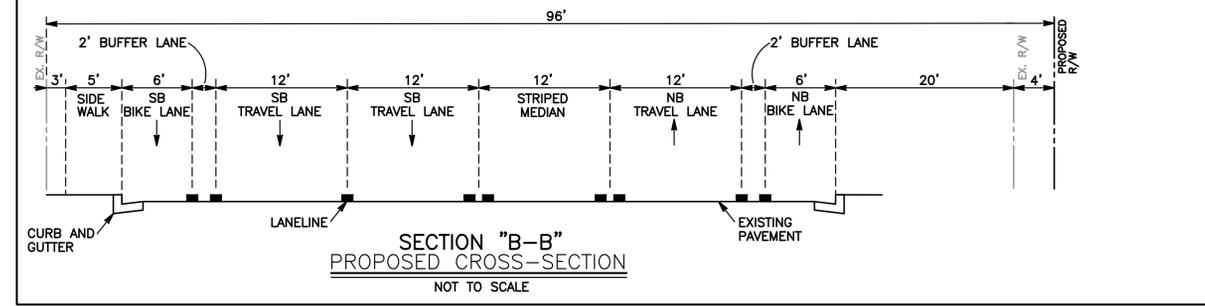
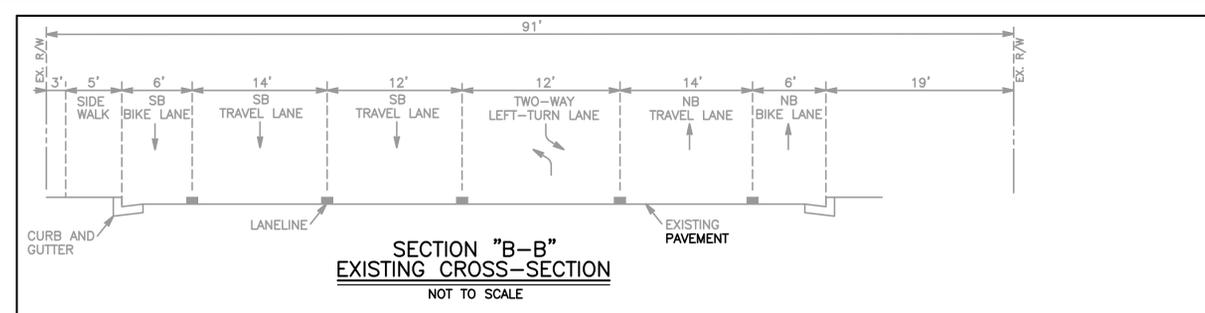
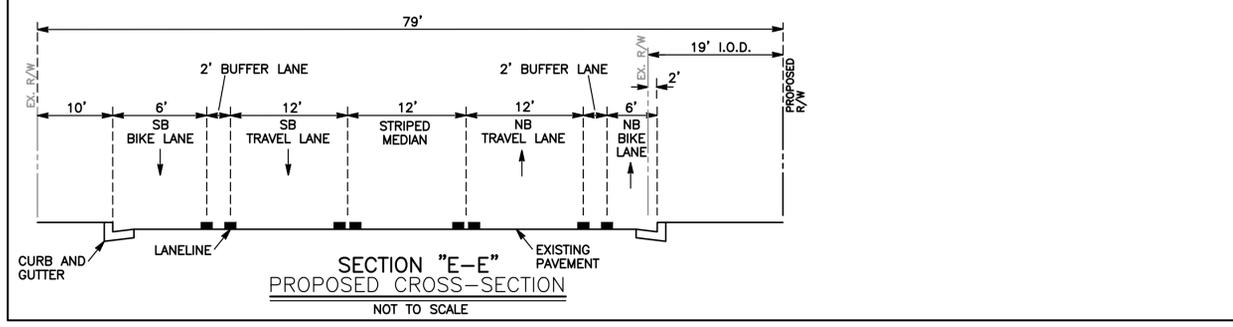
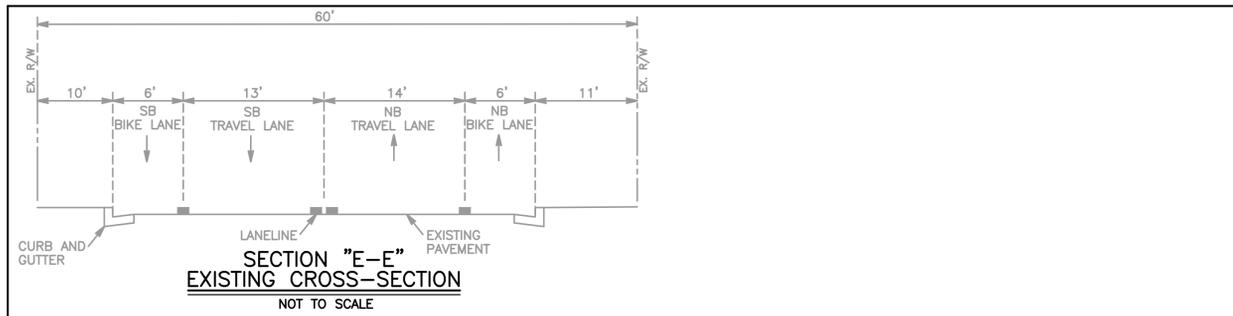
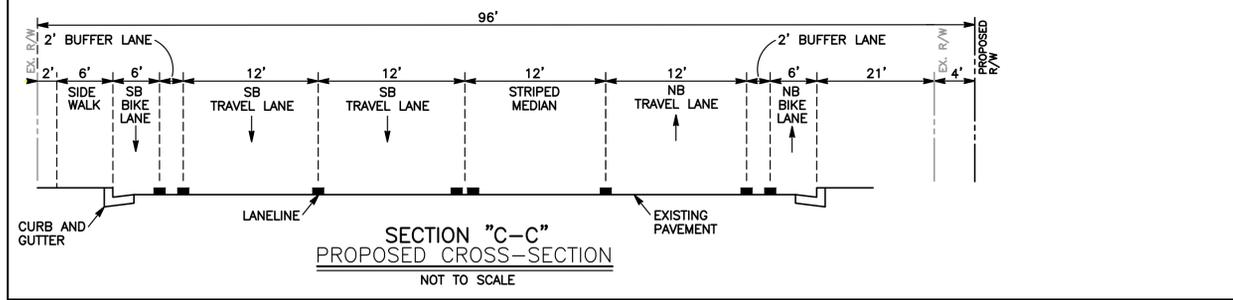
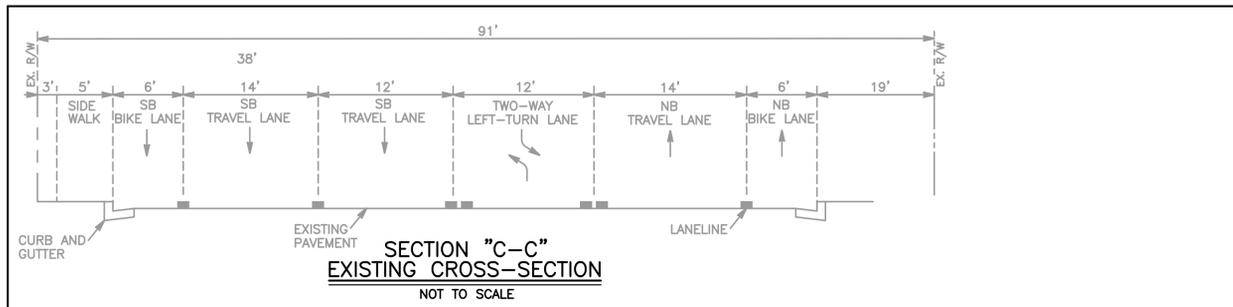
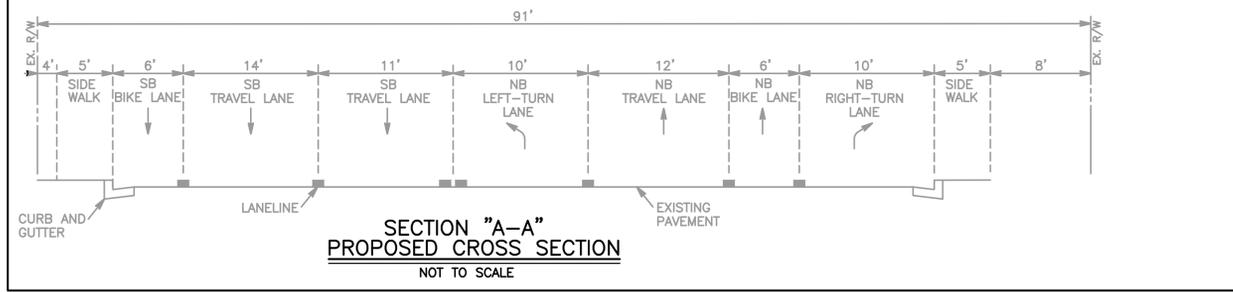
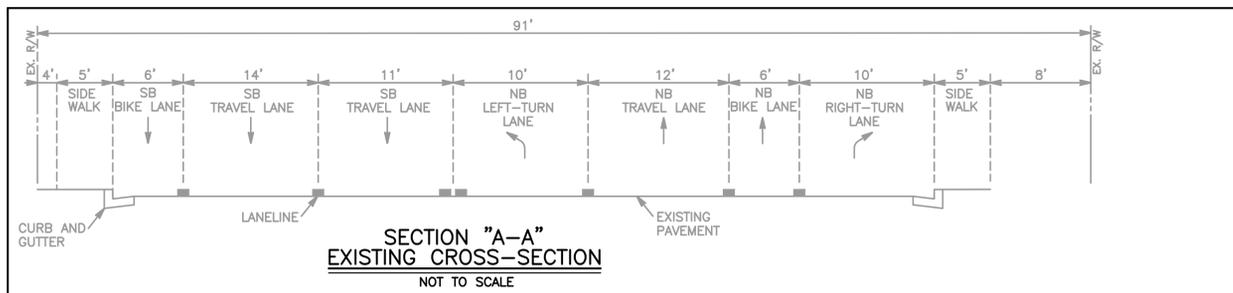


SIGNS THIS SHEET



GENERAL NOTE

THE PROJECT WILL CONSTRUCT AN INTERIM TRAIL ON THE SOUTH SIDE OF WILLOW GLEN DRIVE (EAST OF STEELE CANYON ROAD) ALONG THE PROJECT FRONTAGE UNTIL THE PROPOSED PROJECT TRAIL IS CONSTRUCTED AS SHOWN IN FIGURE 1-11: PROJECT TRAILS PLAN.



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Attachment 2: Green Streets BMP Information

Attachment 2A: Stormwater Pollutant Control Calculations

Include calculations showing that the Green Streets Performance Standard has been met. The performance standard can be found in Section K.2.1 of Appendix K of the County BMPDM. The County's Automated Pollutant Control Worksheet can be found on the Development Resources website:

www.sandiegocounty.gov/stormwater

The County of San Diego *BMP Design Manual* states that compliance with the Green Streets standards “may be demonstrated at the project-scale, meaning there is no obligation to treat runoff from each discrete segment of new impervious area.” In addition, for the required treatment volume a single runoff volume must be calculated associated with the net increase in impervious area. The runoff volumes associated with existing/replaced impervious areas should be excluded. Based on this criteria, a single required treatment volume was calculated for the new pavement area of 14,213 square feet. The calculation is given in Table K.2-1, which is attached, and is 530 cubic feet.

Storm runoff from the widening area will be directed along the southerly curb of Willow Glen Drive. A proposed spillway will be installed along the westerly end of the widening area to convey the runoff into tree wells just south of the street. The attached Worksheet B.1 indicates that two tree wells with a 25' mature tree canopy diameter can satisfy the required treatment volume.

K.2.1 Green Streets Performance Standard

This section builds on text from Section 1.4.3 providing more detailed guidance on compliance with the performance standard for Green Street PDP Exempt projects (herein referred to as Green Street projects).

Green Street projects must provide stormwater treatment for the volume of runoff associated with the project's net increase in impervious area. Compliance with this standard may be demonstrated at the project-scale, meaning there is no obligation to treat runoff from each discrete segment of new impervious area. Green Street projects are encouraged to achieve compliance through treatment of runoff from any combination of land uses including existing/proposed surfaces, onsite/offsite surfaces, pervious/impervious surfaces. As summarized below, Green Street compliance can be demonstrated through determination of the following 1) Required Treatment Volume, 2) Provided Treatment Volume, and 3) Comparison of Required and Provided Treatment.

1) REQUIRED TREATMENT VOLUME

Project proponent must calculate a single water quality runoff volume associated with the net increase in impervious area across the entire project site. This calculation should exclude runoff volumes associated with existing/replaced impervious areas within the project footprint, as treatment is not mandated for these areas. Supporting exhibits delineating new impervious areas, existing/replaced impervious areas, and removed impervious areas must be provided as needed to support this determination.

2) PROVIDED TREATMENT VOLUME

Project proponent must calculate the total volume of stormwater runoff treated through site design elements and/or structural BMPs proposed by the project. Completion of this step requires consideration of all surfaces draining to proposed treatment elements (existing/proposed, onsite/offsite, pervious/impervious areas draining to BMPs).

Project proponent must provide treatment through use of “Conventional” treatment elements where feasible but may also be permitted to use “Alternative” treatment elements upon demonstration of infeasibility.

Conventional Treatment Elements: Elements that utilize conventional retention and/or biofiltration designs that are consistent with the County BMPDM¹⁰. Use of these elements may achieve Green Street compliance and are eligible to generate alternative compliance credits if implemented sufficiently. [*Examples: tree wells, dispersion areas, biofiltration basins (lined or unlined), bioretention basins, infiltration basins (vegetated or non-vegetated), pervious pavements without impermeable liners.*]

¹⁰ Minimum retention requirements waived for Green Streets.

Appendix K: Guidance on Green Infrastructure

Table K.2-1 : Green Street Performance Standard Calculations

Item	Value	Description
Required Treatment Volume	1 Land Use of Net Impervious Area	Transportation <i>Per project drawings.</i>
	2 Total Net Impervious Area ¹²	14,213 ft ² <i>Per project drawings.</i>
	3 85 th Percentile Rainfall Depth	0.497 in. <i>Determine per BMPDM Appendix B.1.</i>
	4 Runoff Coefficient	0.90 <i>Value of 0.90 applies to new impervious areas.</i>
	5 Required Treatment Volume	530 ft ³ <i>(Line 2 × Line 3 × Line 4) / 12</i>
Provided Treatment Volume	6 Land Use of Treated Area ¹³	Transportation <i>Per project drawings.</i>
	7 Land Use Factor ¹⁴	1.00 <i>Determine per Note 5 below.</i>
	8 Conventional Treatment Volume ¹⁵	580 ft ³ <i>Determine per Note 6 below.</i>
	9 Alternative Treatment Volume	0 <i>Determine per supplemental applicant calculations.</i>
	10 Final Treatment Volume	580 ft ³ <i>Line 7 × (Line 8 + Line 9)</i>
Result	11 Is Project Green Street Compliant?	Yes <i>Compliant if Line 10 ≥ Line 5. Otherwise, non-compliant.</i>
	12 Optional Credit	50 <i>(Line 7 × Line 8) – Line 5</i>

¹² The Net Increase in Impervious Area should **not** reflect any work occurring within existing impervious areas.

¹³ Classify drainage area into following land use types (may use more than one) agriculture, commercial, education, industrial, multi-family residential, orchard, rural residential, single family residential, transportation, open space.

¹⁴ If Land Uses from Lines 1 and 6 match, use a value of 1.0. Otherwise, refer to Regional Water Quality Equivalency Guidance for determination of appropriate Land Use Factor.

¹⁵ Conventional Treatment Volume may be determined by subtracting the project’s total “Deficit of Effectively Treated Stormwater” from the project’s total Design Capture Volume. These values can be found in Version 2.0 of the County of San Diego Automated Control Worksheet on Line 48 of the BMP Performance Tab and Line 26 of the DCV Tab respectively.

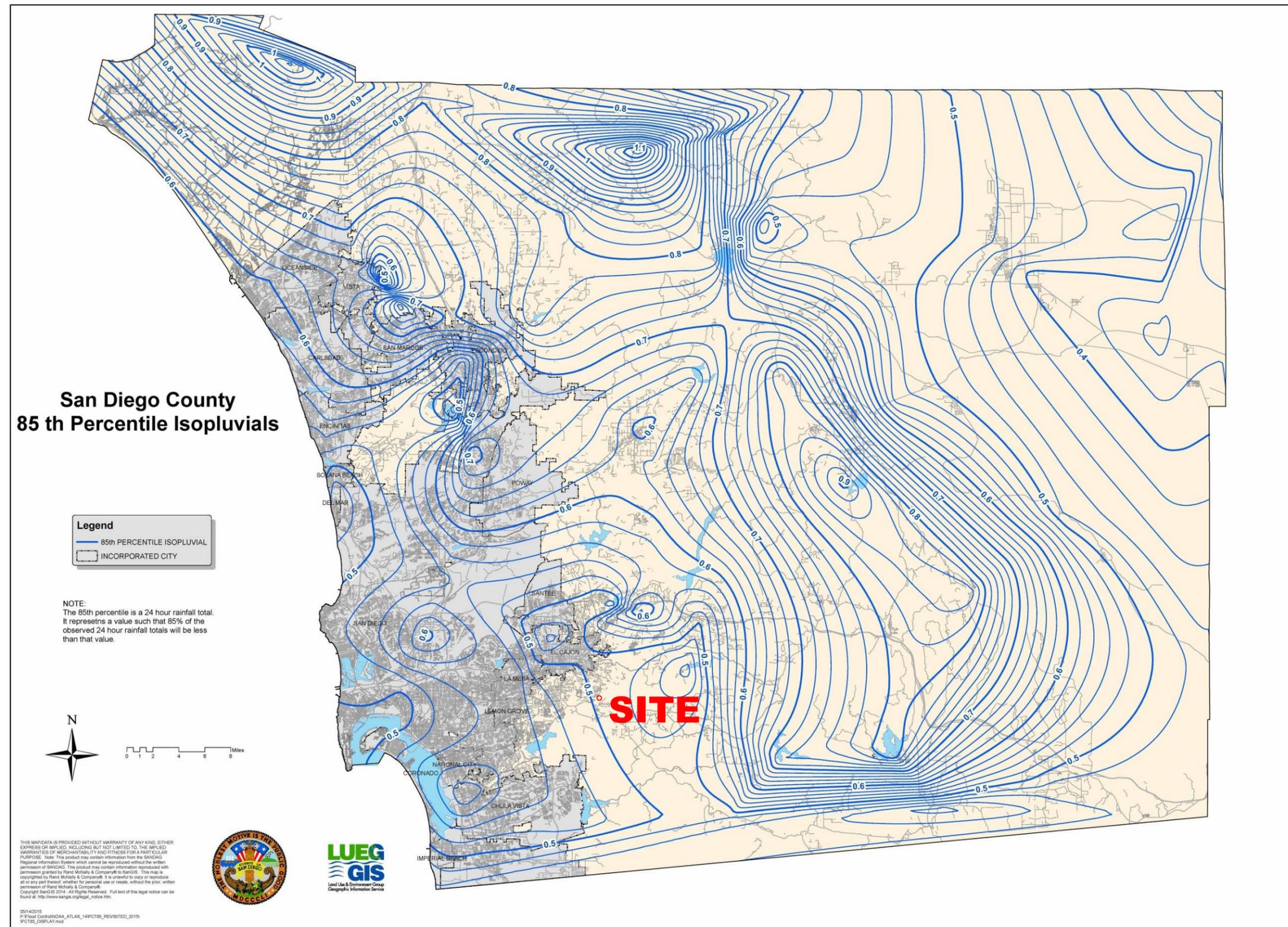


Figure B.1-1: 85th Percentile 24-hour Isopluvial Map

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	Tree Wells										unitless
	2	85th Percentile 24-hr Storm Depth	0.50										inches
	3	Impervious Surfaces <u>Not Directed to Dispersion Area</u> (C=0.90)	14,212										sq-ft
	4	Semi-Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.30)											sq-ft
	5	Engineered Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.10)											sq-ft
	6	Natural Type A Soil <u>Not Serving as Dispersion Area</u> (C=0.10)											sq-ft
	7	Natural Type B Soil <u>Not Serving as Dispersion Area</u> (C=0.14)											sq-ft
	8	Natural Type C Soil <u>Not Serving as Dispersion Area</u> (C=0.23)											sq-ft
	9	Natural Type D Soil <u>Not Serving as Dispersion Area</u> (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	Yes	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)											sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)											sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)											sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A	2										#
	19	Average Mature Tree Canopy Diameter	25										ft
	20	Number of Rain Barrels Proposed per SD-E	0										#
21	Average Rain Barrel Size	0										gal	
Initial Runoff Factor Calculation	22	Total Tributary Area	14,212	0	0	0	0	0	0	0	0	0	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	26	Initial Design Capture Volume	530	0	0	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	32	Design Capture Volume After Dispersion Techniques	530	0	0	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	580	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	36	Final Effective Tributary Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	580	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	0	0	0	0	0	0	0	0	0	0	cubic-feet

No Warning Messages

E.2 SD-A Tree Wells



Tree Wells (Source: County of San Diego LID Manual – EOA, Inc.)

MS4 Permit Category

Site Design
Retention

Manual Category

Site Design
Infiltration

Applicable Performance Standard

Site Design
Pollutant Control
Flow Control

Primary Benefits

Volume Reduction

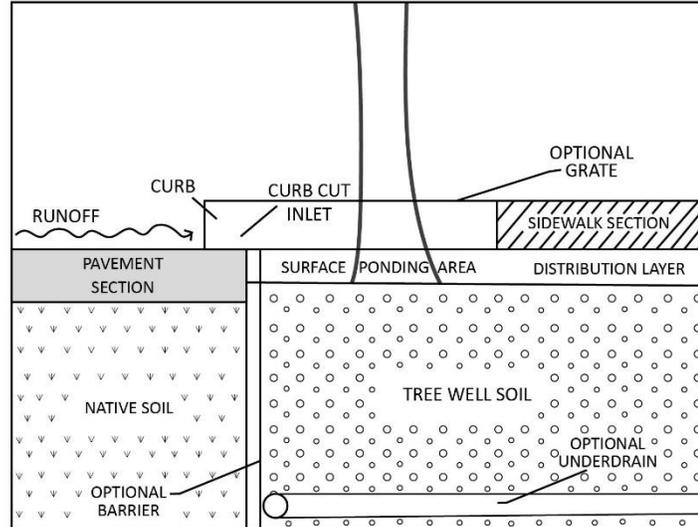
Description

Trees planted to intercept rainfall and runoff as described in this fact sheet may be used as storm water management measures to provide runoff reduction of the DCV per Appendix B.1.4. Additional benefits associated with tree wells, include energy conservation, air quality improvement, and aesthetic enhancement. In addition to the requirements provided in this fact sheet, tree wells located in the County Right-of-Way shall follow requirements in Appendix K of this manual. Deviations from the outlined criteria may be approved at the discretion of County staff. Typical storm water management benefits associated with trees include:

- **Interception of rainfall** – tree surfaces (roots, foliage, bark, and branches) intercept, evaporate, store, or convey precipitation to the soil before it reaches surrounding impervious surfaces
- **Reduced erosion** – trees protect denuded area by intercepting or reducing the velocity of rain drops as they fall through the tree canopy
- **Increased infiltration** – soil conditions created by roots and fallen leaves promote infiltration
- **Treatment of storm water** – trees provide treatment through uptake of nutrients and other storm water pollutants (phytoremediation) and support of other biological processes that break down pollutants

Typical tree well system components include:

- Trees of the appropriate species for site conditions and constraints. Refer to the Plant List in this fact sheet.
- Available soil media reservoir volume based on mature tree size, soil type, water availability, surrounding land uses, and project goals
- Optional suspended pavement design to provide structural support for adjacent pavement without requiring compaction of underlying layers
- Optional root barrier devices as needed; a root barrier is a device installed in the ground, between a tree and the sidewalk, intended to guide roots down and away from the sidewalk in order to prevent sidewalk lifting from tree roots.
- Optional tree grates; to be considered to maximize available space for pedestrian circulation and to protect tree roots from compaction related to pedestrian circulation; tree grates are typically made up of porous material that will allow the runoff to soak through.
- Optional shallow surface depression for ponding of excess runoff
- Optional planter box drain



Schematic of Tree Well

Design Adaptations for Project Goals

Site design BMP to provide incidental treatment. Tree wells primarily function as site design BMPs for incidental treatment.

Pollutant Control BMP to provide treatment. Project proponents are allowed to design trees to reduce the volume of stormwater runoff that requires treatment, (the Design Capture Volume [DCV]), or completely fulfill the pollutant control BMP requirements by retaining the entire DCV. Benefits from tree wells are accounted for by using the volume reduction values in Table B.1-3 presented in Appendix B. This credit can apply to other trees that are used for landscaping purposes that meet the same criteria. Project proponents are required to provide calculations supporting the amount of credit claimed from implementing trees within the project footprint.

Flow Control BMP to meet hydromodification requirements. Project proponents are also allowed to design tree wells as a flow control BMP. Benefits from tree wells are accounted for by using the DCV multipliers listed below. Project proponents are required to provide calculations showing that the entire DCV including the DCV multiplier is retained.

Design Criteria and Considerations

Tree Wells, whether designed as Site Design BMPs, as Stormwater Pollutant Control BMP, or as a Flow Control BMP must meet the following design criteria and considerations, and if placed in the right-of-way must be consistent with the County of San Diego Green Streets Design Criteria and Green Streets Standard Drawings in Appendix K. Deviations from the below criteria may be approved at the discretion of the County staff if it is determined to be appropriate:

<i>Siting and Design</i>	<i>Intent/Rationale</i>														
<input type="checkbox"/> Tree species is appropriately chosen for the development (private or public). For public rights-of-ways, local planning guidelines and zoning provisions for the permissible species and placement of trees are consulted. A list of trees appropriate for site design that can be used by all county municipalities are provided in this fact sheet.	Proper tree placement and species selection minimizes problems such as pavement damage by surface roots and poor growth.														
<input type="checkbox"/> Tree well placement: ensure area is graded; and the well is located so that full amount of DCV reduction drains to the well.	Minimizes short-circuiting of run off and assures DCV reductions are retained onsite.														
<p>Location of trees planted along public streets follows guidance on green infrastructure (Appendix K). Vehicle and pedestrian line of sight and clear recovery zones are considered in tree selection and placement.</p> <p>Unless exemption is granted by County staff the following minimum tree separation distance is followed</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Improvement</th> <th style="width: 50%;">Minimum distance to tree well</th> </tr> </thead> <tbody> <tr> <td>Traffic Signal, Stop sign</td> <td>20 feet</td> </tr> <tr> <td>Underground Utility lines (except sewer)</td> <td>5 feet</td> </tr> <tr> <td>Sewer Lines</td> <td>10 feet</td> </tr> <tr> <td>Above ground utility structures (Transformers, Hydrants, Utility poles, etc.)</td> <td>10 feet</td> </tr> <tr> <td>Driveways</td> <td>10 feet</td> </tr> <tr> <td>Intersections (intersecting curb lines of two streets)</td> <td>25 feet</td> </tr> </tbody> </table>	Improvement	Minimum distance to tree well	Traffic Signal, Stop sign	20 feet	Underground Utility lines (except sewer)	5 feet	Sewer Lines	10 feet	Above ground utility structures (Transformers, Hydrants, Utility poles, etc.)	10 feet	Driveways	10 feet	Intersections (intersecting curb lines of two streets)	25 feet	Roadway safety for both vehicular and pedestrian traffic is a key consideration for placement along public streets.
Improvement	Minimum distance to tree well														
Traffic Signal, Stop sign	20 feet														
Underground Utility lines (except sewer)	5 feet														
Sewer Lines	10 feet														
Above ground utility structures (Transformers, Hydrants, Utility poles, etc.)	10 feet														
Driveways	10 feet														
Intersections (intersecting curb lines of two streets)	25 feet														

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<p><input type="checkbox"/> Underground utilities and overhead wires are considered in the design and avoided or circumvented. Underground utilities are routed around or through the planter in suspended pavement applications. All underground utilities are protected from water and root penetration.</p>	<p>Tree growth can damage utilities and overhead wires resulting in service interruptions. Protecting utilities routed through the planter prevents damage and service interruptions. Refer to Section 6.6 of the Green Streets Design Criteria in Appendix K for guidelines regarding utility placement and potential conflict with BMP facilities.</p>
<p><input type="checkbox"/> Suspended pavement was used for confined Tree Well soil volume. Suspended pavement design was developed where appropriate to minimize soil compaction and improve infiltration and filtration capabilities.</p> <p>Suspended pavement was constructed with an approved structural cell.</p>	<p>Suspended pavement designs as shown in Page 7 of the Green Streets Guidelines in Appendix K provide structural support without compaction of the underlying layers, thereby promoting tree growth.</p> <p>Recommended structural cells include poured in place concrete columns, Silva Cells manufactured by Deeproot Green Infrastructures and Stratacell and Stratavault systems manufactured by Citygreen Systems.</p>
<p><input type="checkbox"/> 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.</p>	<p>The minimum soil volume ensures that there is adequate storage volume to allow for unrestricted evapotranspiration and infiltration.</p>

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<p>To claim credit for existing trees, the root structure of existing tree shall be protected and additional soil volumes provided to meet the above requirements.</p> <p><input type="checkbox"/> A berm or well must be constructed around the perimeter of the soil volume to be credited and an inlet structure must be of the appropriate size to allow runoff to enter the well.</p> <p>Considerations should be made to prevent root and water intrusion damage to surrounding infrastructure.</p>	<p>The minimum soil volume ensures that there is adequate storage volume to allow for unrestricted storage, evapotranspiration, and infiltration.</p>
<p><input type="checkbox"/> DCV from the tributary area draining to the tree is equal to or greater than the tree credit volume</p>	<p>The minimum tributary area ensures that the tree receives enough runoff to fully utilize the infiltration and evapotranspiration potential provided. In cases where the minimum tributary area is not provided, the tree credit volume must be reduced proportionately to the actual tributary area.</p>
<p><input type="checkbox"/> Inlet opening to the tree that is at least 18 inches wide.</p> <p>A minimum 2 inch drop in grade from the inlet to the finish grade of the tree.</p> <p>Grated inlets are allowed for pedestrian circulation. Grates need to be ADA compliant and have sufficient slip resistance.</p>	<p>Design requirement to ensure that the runoff from the tributary area does not bypass the BMP.</p> <p>Different inlet openings and drops in grade may be allowed at the discretion of County staff if calculations are shown that the diversion flow rate (Appendix B.) from the tributary area can be conveyed to the tree. In cases where the inlet capacity is limiting the amount of runoff draining to the tree, the tree credit volume must be reduced proportionately.</p>

Conceptual Design and Sizing Approach for Site Design

Determine the areas where tree wells can be used in the site design to achieve incidental treatment. Tree wells reduce runoff volumes from the site. Refer to Appendix B.2. Document the proposed tree locations in the SWQMP.

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.
 - a. Determine the DCV. See Appendix B.
 - b. Determine the DCV Multiplier. The DCV Multiplier is based on two factors: (1) The tree well soil depth and, (2) The Hydrologic Soil Group. Once you know both values, determine the DCV Multiplier using this table:
 - c. Calculate the Required Retention Volume (DCV x DCV Multiplier). Calculate the RRV by multiplying the DCV by the DCV Multiplier. This is the volume of runoff that must be offset by the Tree Well Credit Volume. Repeat this process for each DMA.

Minimum Tree Well Soil Depth (inches)	Hydrologic Soil Group				DCV Multiplier
	A	B	C	D (Default)	
30"	1.60	2.20	2.50	2.90	
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	

DCV Multiplier Table

Tree Well Soil Depth is the vertical distance from the top to the bottom of the soil layer in the tree well. **Hydrologic Soil Group** describes the native soil surrounding the tree well. Soil type affects how well water can infiltrate into the area surrounding the tree well. Group A soils provide the most infiltration and Group D the least. If your soil type is unknown, you can assume Group D. But this will result in larger DCV Multipliers, and in turn increase the size or number of tree wells needed.

Alternative Proposals: You can also propose RRV values or use methods and assumptions different than those described here. Proposals must be based on SWMM modeling or other methods acceptable to the County.

2. **Determine how much volume you have.** The Tree Well Credit Volume is the volume of runoff retention in cubic feet per tree (ft³/tree) to be provided by each tree well (or group) in the DMA. Together retain a volume that is equal to or greater than the RRV for the DMA.

The volume credited for each tree well is based on the mature canopy diameter of the tree species selected. Any species listed below can be used in a tree well so long as it meets all other applicable restrictions and requirements for the project area. Native and drought tolerant species are required where feasible.

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

Tree Palette Table

Below are sources for Tree Palette Mature Height and Mature Canopy Diameter:

- Water Efficient Landscape Design Manual, County of San Diego, 2016
- Sustainable Landscapes Guidelines, San Diego County Water Authority, 2015
- Low Impact Development Handbook, County of San Diego, 2014
- Low Impact Development Design Manual, City of San Diego, 2011
- Street Tree Selection Guide, City of San Diego, 2013
- Environmentally Friendly Garden Plant List, City of San Diego, 2004
- BMP Design Manual, County of San Diego, 2016
- California Native Plant Society. 2017

Alternative Species. Tree species other than those listed are allowable, but must be approved by the County. If you know the mature canopy diameter of the species you want to propose, use the values in the table to determine its credit volume. Note that even if you select a species with a canopy diameter greater than **30 feet**, the maximum credit any tree can generate is **420 ft³**.

3. **Determine if you have enough volume.** Compare your total Tree Well Credit Volume from Step 2 to the RRV you calculated in Step 1. Once your Credit Volume is equal to or greater than

your RRV, this requirement is satisfied. If your Credit Volume is initially too low, adjust your design either to (1) increase it with more or bigger trees, or (2) decrease the RRV through DCV reductions.

Tree wells will normally be placed at the **discharge point** of the DMA, either individually or in groups. If some of them will retain runoff from different areas in the DMA, RRV and DCV calculations must be specific to each subarea.

If an **underdrain** is proposed for the Tree Well, the sizing factors shown in the DCV Multiplier Table cannot be used, and instead continuous simulation modeling should be performed. This would allow to obtain credit for soil volume underneath the underdrain.

Tree Planting Design in New or Reconstructed Streetscapes

1. Maximized open soil area for tree planting is the most cost effective method of achieving the required soil volume.
2. Tree wells within sidewalks shall have a minimum open area of four feet wide by six feet long. Larger areas may be required to accommodate large root balls.
3. Tree well soil characteristics shall meet the requirements of SD-F Amended Soil.

Structural Requirements for Confined Tree Well Soil Volume

In order to provide adequate soil volume for tree wells, soils may be placed confined beneath adjacent paved surfaces. Acceptable soil systems capable of carrying D-50 loading include structural soils, structural slabs, and structural cells:

1. Structural soil systems include CU-StructuralSoil™, Stalite Structural Soil, or equivalent.
2. Suspended pavements that allow uncompacted growing soil beneath the sidewalk include; structural slabs that span between structural supports, structural cells, and other commercially available structural systems. See Page 7 of the Green Streets Guidelines in Appendix K for illustrations. Manufacturer details and certification must be provided for commercial systems. Structural calculations and details must be provided for structural slab installations. Structural cells are commercially-available structural systems placed subsurface that support the sidewalk and are filled with amended soil (SD-F). Manufacturer details and certification must be provided for commercial systems.

Stormwater Retention and Treatment Volume

Tree wells with expanded soil volume will serve as a method of capturing and retaining the required volume of stormwater in accordance with County requirements in Appendix B of this manual. These facilities can be designed to meet the County requirements when surface ponding volume is provided, whether designed as an enclosed plant bed with covered soil volume, or a continuous open area (either mulched or with turf) with soil volume under the adjacent sidewalk.

Maintenance Overview

Normal Expected Maintenance. Tree health shall be maintained as part of normal landscape maintenance. Additionally, ensure that storm water runoff can be conveyed into the tree well as

designed. That is, the opening that allows storm water runoff to flow into the tree well (e.g., a curb opening, tree grate, or surface depression) shall not be blocked, filled, re-graded, or otherwise changed in a manner that prevents storm water from draining into the tree well. A summary table of standard inspection and maintenance indicators is provided within this Fact Sheet.

Non-Standard Maintenance or BMP Failure. Trees wells are site design BMPs that normally do not require maintenance actions beyond routine landscape maintenance. The normal expected maintenance described above ensures the BMP functionality. If changes have been made to the tree well entrance / opening such that runoff is prevented from draining into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well, or a surface depression has been filled so runoff flows away from the tree well), the BMP is not performing as intended to protect downstream waterways from pollution and/or erosion. Corrective maintenance will be required to restore drainage into the tree well as designed.

Surface ponding of runoff directed into tree wells is expected to infiltrate/evapotranspire within 24-96 hours following a storm event. Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health, and surface ponding longer than approximately 96 hours following a storm event poses a risk of vector (mosquito) breeding. Poor drainage can result from clogging or compaction of the soils surrounding the tree. Loosen or replace the soils to restore drainage.

Other Special Considerations. Site design BMPs, such as tree wells, installed within a new development or redevelopment project are components of an overall storm water management strategy for the project. The presence of site design BMPs within a project is usually a factor in the determination of the amount of runoff to be managed with structural BMPs (i.e., the amount of runoff expected to reach downstream retention or biofiltration basins that process storm water runoff from the project as a whole). When site design BMPs are not maintained or are removed, this can lead to clogging or failure of downstream structural BMPs due to greater delivery of runoff and pollutants than intended for the structural BMP. Therefore, the County Engineer may require confirmation of maintenance of site design BMPs as part of their structural BMP maintenance documentation requirements. Site design BMPs that have been installed as part of the project should not be removed, nor should they be bypassed by re-routing roof drains or re-grading surfaces within the project. If changes are necessary, consult the County Engineer to determine requirements.

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Tree health	Routine actions as necessary to maintain tree health.	<ul style="list-style-type: none"> • Inspect monthly. • Maintain when needed.
Dead or diseased tree	Remove dead or diseased tree. Replace per original plans.	<ul style="list-style-type: none"> • Inspect monthly. • Maintain when needed.
Standing water in tree well for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to tree health	Loosen or replace soils surrounding the tree to restore drainage.	<ul style="list-style-type: none"> • Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	Disperse any standing water from the tree well to nearby landscaping. Loosen or replace soils surrounding the tree to restore drainage (and prevent standing water).	<ul style="list-style-type: none"> • Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
<p>Entrance / opening to the tree well is blocked such that storm water will not drain into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well; or a surface depression is filled such that runoff drains away from the tree well)</p>	<p>Make repairs as appropriate to restore drainage into the tree well.</p>	<ul style="list-style-type: none"> • Inspect monthly. • Maintain when needed.

County of San Diego Green Streets PDP Exempt SWQMP

Attachment 2B: Stormwater Pollutant Control DMA Exhibits

The attached exhibits must identify:

- Underlying hydrologic soil group
- Approximate depth to groundwater if less than 10 ft
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- 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 Step 3.5)
- Green Streets BMPs (identify location, BMP ID #, type of BMP, and size/detail)
- Relevant plans: site, grading, improvement, profile, detail, construction BMP

A DMA Exhibit covering the Willow Glen Drive widening and tree wells is attached.

LEGEND:

 PROPOSED STREET WIDENING (14,213 SF)

 DMA 1 BOUNDARY – SWALES WILL DIRECT HALF OF 14,213 SF (7,107 SF) TO EACH TREE WELL.

 BMP 1 AND BMP 2 – PROPOSED TREE WELLS (25' MINIMUM MATURE CANOPY DIAMETER TREE IN EACH) PER DETAIL.

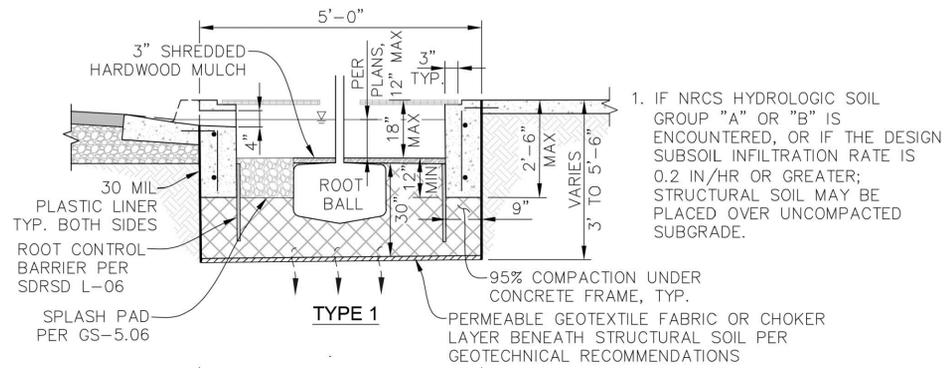
NOTES:

THE UNDERLYING HYDROLOGIC SOIL GROUP IS PRIMARILY A WITH A MINOR AMOUNT OF B.

THE APPROXIMATE DEPTH TO GROUNDWATER IS OVER 20 FEET.

THE WIDENING IS ALONG THE SOUTH EDGE OF WILLOW GLEN DRIVE AND WILL BE CONSTRUCTED WITH IMPERVIOUS AC PAVEMENT. THERE ARE NO NATURAL HYDROLOGIC FEATURES WITHIN THE WIDENING FOOTPRINT. THE EXISTING STREET IS AC PAVEMENT AND IMPERVIOUS.

STORM RUNOFF WILL FLOW ALONG THE SOUTHERLY EDGE OF THE WIDENING AREA AND BE DIRECTED ALONG THE CURB. THE RUNOFF WILL BE CONVEYED BY A ROADSIDE SPILLWAY TO TWO TREE WELLS.



TREE WELL DETAIL

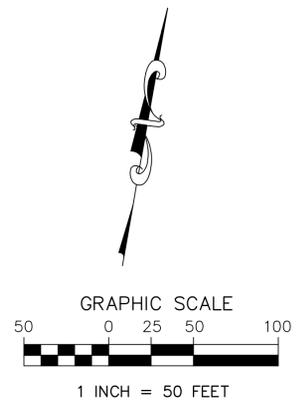
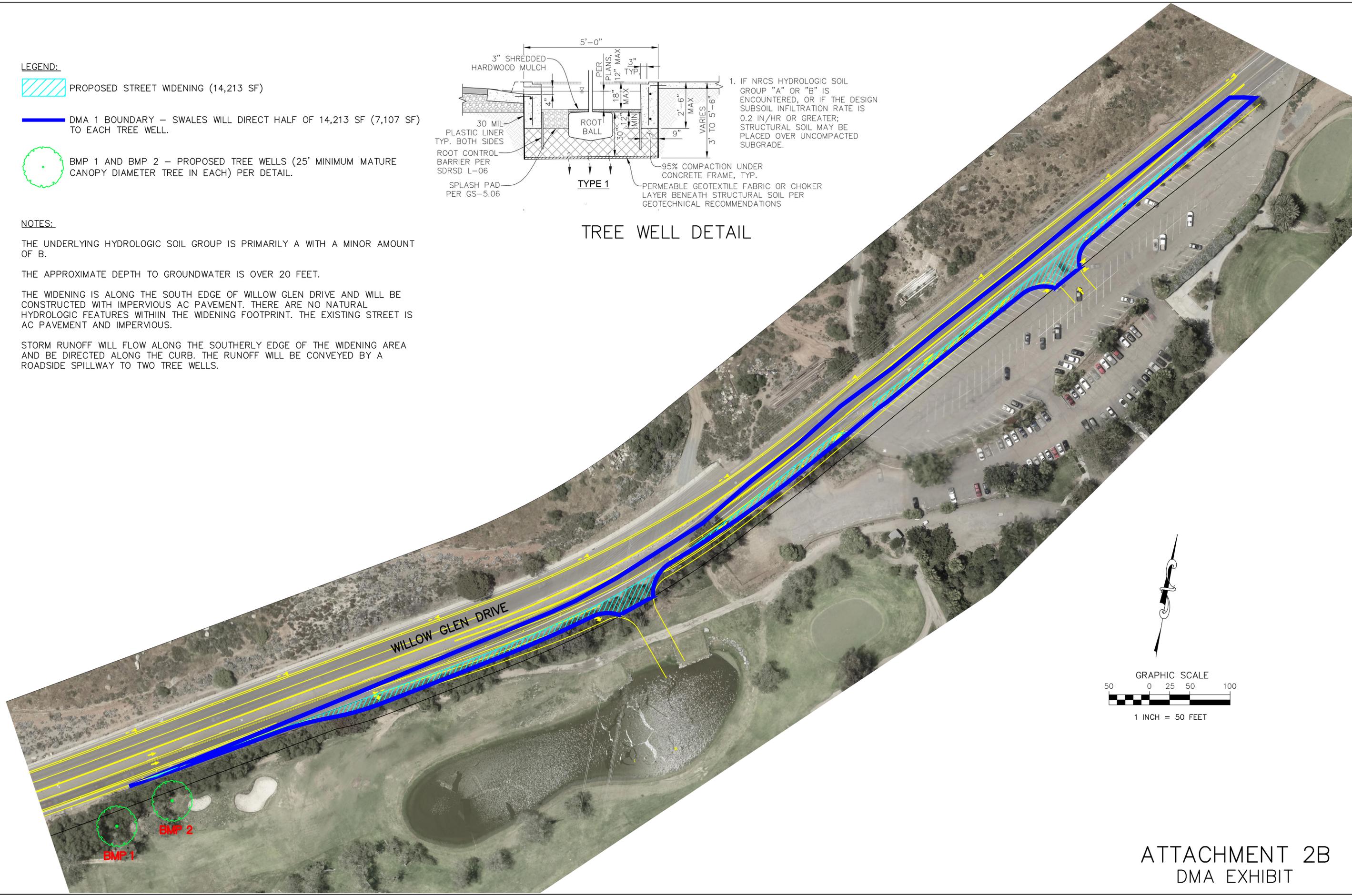


TABLE 7-2. Determination of Appropriate Maintenance Mechanism(s)

Increased risk, complexity, cost or other maintenance factors				
(Private Responsibility)			(Public Responsibility)	
	Category One	Category Two	Category Three	Category Four
Summary	Privately owned, privately maintained. Simple maintenance. See Section 7.3.1	Privately owned, privately maintained. More complex ownership & maintenance. See Section 7.3.2	Privately owned, publicly maintained. See Section 7.3.3	Publicly owned and usually publicly maintained. See Section 7.3.4
Importance of Maintenance	Minimal maintenance; inherent in BMP or property stewardship. Annual verification of maintenance will be required minimally.	More significant maintenance than first category. Need to make sure private owners maintain. County ability to step in & perform maintenance	Warrants County to assume responsibility, with funding related to project	County responsibility for maintenance
Typical BMPs	Easily maintained, such as usual landscaping on single lot.	May be larger drainage area or more complex maintenance than first category		Any County owned and maintained structural BMP.
Mechanisms	<ol style="list-style-type: none"> 1. Watershed Protection Ordinance¹⁰ requirement [section 67.812(a)&(b)], with code enforcement 2. Nuisance abatement with costs charged back to property owner 3. Condition in ongoing permit such as a Major Use Permit (if project has MUP) 4. Notice to new purchasers [67.812(e)] 5. Subdivision public report “white papers” to include notice of maintenance responsibility 		<ol style="list-style-type: none"> 1. Easement dedication to County 2. Inclusion into a watershed specific Community Facility District (CFD) or individual formation of benefit area/CFD or assessment district 3. County maintenance documentation 	<ol style="list-style-type: none"> 1. Land owned or dedicated to County 2. County maintenance documentation
	6. Recorded Maintenance Notification	6. Recorded Maintenance Agreement with covenant binding on successors		
Funding Source(s)	None necessary	None necessary	<p>Start-up interim: Developer fee covering 24 months of costs</p> <p>Permanent: FCD Tax Assessment per FCD Act Sec 105-17.5 or District Assessment or Other</p>	Varies: gas tax for BMP in road ROW, Transnet for CIP projects, Special funding (such as, inclusion into a watershed specific Community Facility District (CFD) or individual formation of benefit area/CFD or assessment district) or General funding for others.

County of San Diego Green Streets PDP Exempt SWQMP

Attachment 3: Private Project Documentation

Attachment 3A: Installation Verification Form

County of San Diego PDP Structural BMP Verification for Permitted Land Development Projects should be prepared by the project proponent and submitted to the County upon completion of BMP construction. The Installation Verification Form can be found on the Development Resources website under “Submittal Templates”:

www.sandiegocounty.gov/stormwater

Attachment 3B: Maintenance Agreements

For Green Street BMPs within the public right-of-way, a consultation with DPW Transportation Division may be required to determine whether the County will take over maintenance after construction. If an Encroachment Maintenance and Removal Agreement (EMRA) is agreed upon, it must be prepared and recorded at the County of San Diego Recorder’s office. Attach a draft version of that agreement here.

For Green Street BMPs outside the public right-of-way and on private property, a Category 1 or 2 Maintenance Agreement must be prepared and recorded at the County of San Diego Recorder’s office. Attach draft versions of those agreements here.

Templates for the agreements can be found on the Development Resources website under “Submittal Templates”:

www.sandiegocounty.gov/stormwater



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

This form must be accepted by the County prior to the release of construction permits or granting of occupancy for applicable portions of a Priority Development Project (PDP). Its purpose is to provide documentation of the final installation of permanent Best Management Practices (BMPs) used to satisfy Structural Performance Standards for the development project. Compliance with these standards reduces the discharge of pollutants and flows from the completed project site. Applicable standards may be satisfied using Structural BMPs (S-BMPs), Significant Site Design BMPs (SSD-BMPs), or both. Applicants are responsible for providing all requested information.

PART 1 PROJECT INFORMATION

A. Project Summary Information	
Project Name	Cottonwood Sand Mining Project
Record ID (e.g. grading/improvement plan number, building permit)	PDS2018-MUP-18-023
Project Address	3121 Willow Glen Road, El Cajon, CA 92019
Assessor's Parcel Number(s) APN(s)	506-021-1900, 506-020-5200, 518-012-1300, 518-012-1400, 518-030-0500, 518-030-0600, 518-030-0700, 518-030-0800, 518-030-1000, 518-030-1200, 518-030-1300, 518-030-1500, 518-030-2100, 518-030-2200, 519-010-1500, 519-010-1700, 519-010-2000, 519-010-2100, 519-010-3300, 519-010-3400, 519-010-3700, and 519-011-0300
Project Watershed (Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Sweetwater Hydrologic Unit (909.00), Middle Sweetwater Hydrologic Area (909.20), Hillsdale Hydrologic Subarea (909.22)
B. Owner Information	
Name	Cottonwood Cajon ES LLC
Address	9255 Doheny Road, #602, West Hollywood, CA 90069
Email Address	michael@cambrare.com
Phone Number	(310) 275-4425

COUNTY – OFFICIAL USE ONLY



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



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

PART 2 BMP INVENTORY INFORMATION

Use this table to document Structural BMPs (S-BMPs) and Significant Site Design BMPs (SSD-BMPs) for the PDP. All DMAs that are not self-mitigating or de minimis must have at least one Structural BMP or Significant Site Design BMP.

- In **Part A** list all Structural BMPs (including both Pollutant Control and/or Hydromodification as applicable) by DMA.
- Complete **Part B** for all DMAs that contain only Significant Site Design BMPs. SSD-BMPs are Site Design BMPs (SD-BMPs) that are sized and constructed to satisfy Structural Performance Standards for a DMA.
- The information provided for each BMP in the table must match that provided in the Stormwater Quality Management Plan (SWQMP), construction plans, maintenance agreements, and other relevant project documentation.

DMA #	BMP Information			Maintenance Category	Maintenance Agreement Recorded Doc #	Construction Plan Sheet #	Landscape Plan Sheet #	FOR DPW-WPP USE ONLY
	Quantity	Description/Type of Structural BMP	BMP ID #					
A. Structural BMPs (S-BMPs)								
A	2	Tree Wells	1 & 2	1	TBD	TBD	TBD	
Add rows as needed. Click into the last column in the row below this, then press TAB to add a new row.								
B. Significant Site Design BMPs (SSD-BMPs)								
		Choose an item.		---	---			
		Choose an item.		---	---			
		Choose an item.		---	---			
		Choose an item.		---	---			
		Choose an item.		---	---			
		Choose an item.		---	---			
Add rows as needed. Click into the last column in the row below this, then press TAB to add a new row.								
				---	---			



PART 3 REQUIRED ATTACHMENTS

For the permanent BMPs listed in Part 2, submit the following to the County inspector along with this Verification form as a package (check all that are attached):

- PHOTOGRAPHS:** Final construction photos of every permanent BMP listed in Part 2 are required. Final photos must be recent and be labeled with the date and a BMP Identifier. Additional photographs illustrating proper construction of the BMPs are recommended to be included and may be requested by WPP prior to acceptance of this Verification (e.g. excavation depths, liners, hydromodification orifices, Biofiltration Soil Media (BSM), vegetation, mulch).

- MAINTENANCE AGREEMENTS:** Copies of approved and recorded Storm Water Maintenance Agreements (SWMA), Category 1 Maintenance Notification Agreements (MN), or Encroachment Maintenance and Removal Agreements (EMRA) for all S-BMPs.
Note: Significant Site Design (SSD) BMPs and most Category 4 BMPs do not require recorded maintenance agreements.

- CONSTRUCTION PLANS:** Submit electronic and/or 11" X 17" hard copies of the current approved Construction Plan sheets for the Record ID(s) listed on Page 1:
 - Grading Plans
 - Improvement Plans
 - Precise Grading Plan
 - Building Plan (Applicable BMP Sheets only)
 - Other (Please specify) _____

For each Construction Plan, the sheets submitted must incorporate all of the following:

- A BMP Table on Sheet 1, AND
 - A plan detail cross-section of each verified as-built BMP, AND
 - The location of each verified as-built BMP
-
- LANDSCAPE PLANS:** If the PDP includes vegetated BMPs and has a Landscape Plan, submit the following:
 - Final Landscape Plans
 - Water Use Authorization from PDS Landscape Architect

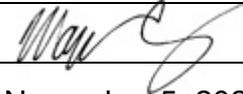


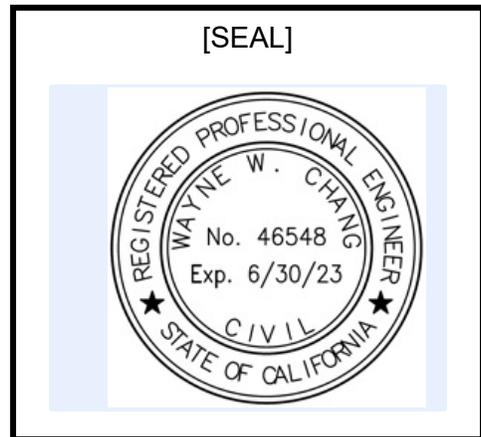
PART 4 PREPARER’S CERTIFICATION

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:	Wayne W. Chang
Email Address:	wayne@changconsultants.com
Phone Number:	(858) 692-0760
Preparer’s Signature:	
Date:	November 5, 2021





COUNTY - OFFICIAL USE ONLY

County Inspector Approval:

***NOTE: The County approved SWQMP document and any Addendums or Revisions must be included with this BMP Installation Verification submittal package.**

- DPW Private Development Construction Inspection (PDCI)
- PDS Building (Inspector Supervisor signature required)
- DGS
- DPR

By signing below, the County Inspector concurs that every BMP listed in Part 2 of this BMP Installation Verification form has been installed per plan.

Inspector Name: _____

Inspector's Signature: _____ Date: _____

DPW Watershed Protection Program (WPP) Acceptance:

Date Received: _____

WPP Reviewer: _____

WPP Reviewer concurs that the BMPs accepted in **Part 2** above may be entered into County inventory.

WPP Reviewer's Signature: _____ Date: _____

Enter Acceptance ID# on page 1.

NOTES:



11.0 Cover Sheet and General Requirements **To be provided following County review.**

- All Structural BMPs must have a plan and mechanism to ensure on-going maintenance. Use the table below to document the types of agreements to be submitted for the PDP and submit them under cover of this sheet.
- See BMPDM Section 7.3 for a description of maintenance categories and responsibilities. Note that since Category 3 and 4 BMPs are County-maintained, they do not require maintenance agreements.

a. Applicability of Maintenance Agreements

Check the boxes below to indicate which types of agreements are included with this attachment.

- Maintenance Notification (Category 1 BMPs)
 - Exhibit A: Project Site Vicinity; Project Site Map; and a map for each BMP and its Drainage Management Area
 - Exhibit B: BMP Maintenance Plan (see below)
- Stormwater Maintenance Agreement (Category 2 BMPs)
 - Exhibit A: Legal Description of Property
 - Exhibit B: BMP Maintenance Plan (see below)
 - Exhibit C: Project Site Vicinity Map

Maintenance agreement templates and instructions are provided on the County’s website:

www.sandiegocounty.gov/stormwater under the Development Resources tab.

PDP applicants contact County staff to ensure they have the most current forms.

b. Maintenance Plan Requirements

Use this checklist to confirm that each maintenance plan includes the following that as applicable.

- Specific **maintenance indicators and actions** for proposed structural BMP(s). These must be based on based on maintenance indicators presented in BMP Design Fact Sheets in Appendix E and enhanced to reflect actual proposed components of the structural BMP(s).
- Access** to inspect and perform maintenance on the structural BMP(s).
- Features 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.