Received 12/23/2025

Initial Storm Water Low Impact Development Submittal

For

8100 Valentine Avenue Development, Grupe Investment Company, Inc.

8100 Valentine Avenue
Sebastopol, California
APN 004-510-054

JN 25213
December 19, 2025

Prepared for:
Grupe Investment Company, Inc.
3255 West March Lane, Suite 400
Stockton, CA 95219
(209) 473 – 6010

Timothy L. Schram, RCE 67890
My license expires 6/30/2027

Prepared by:

adobe associates, inc.
civil engineering | land surveying | wastewater
1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com

Prepared By: KM
Checked By: ZR

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

Section 1: Applicant and Project Information and Determination Worksheet

Instructions: Fill in all the applicable information. Any drawings or calculations must be attached behind each section sheet, as indicated in this template.

Disclaimer: This document is intended to provide guidance in the submittal of a stormwater low-impact development plan (SW LID). All final submittals must conform to the requirements of the Low-Impact Development Technical Design Manual.

1.1 Project Information

Project Name: 8100 Valentine Avenue - Vesting Tentative Map
Site Address (Number/Street): 8100 Valentine Avenue
(City/State): Sebastopol, California
All APN(s): 004-510-054

1.2 Submittal Information

Initial SWLIDS (Pre-Entitlement Documents)
1st Submittal Date: December 12, 2025
Revision Submittal Dates: N/A

Date of Entitlement Acceptance: N/A

Final SWLIDS (Pre-Construction Documents)
1st Submittal Date: N/A
Revision Submittal Dates: N/A
Date Approved by Jurisdiction for Permit: N/A

Post-Construction (As-Built) Documentation
Submittal Date: N/A

1.3 Design Manual Used – Select ONE based on the year the project entitlement was approved.

___REVISED 2017 Storm Water Low Impact Development Technical Design Manual (1/6/2021-Present)
___ 2017 Storm Water Low Impact Development Technical Design Manual (5/3/2017 to 1/5/2021)
___ 2011 Stormwater Low Impact Development Technical Design Manual (7/1/2010 to 5/2/2017)
___ 2005 Standard Urban Storm Water Mitigation Plan (7/13/2005-6/30/2010)

1.4 Applicant Information

Name of Developer/Representative: Rob Toste
Business Name: Grupe Investment Company, Inc.
Phone: (209) 473 - 6010
Email: rtoste@grupe.com

Name of Design Professional: Timothy L. Schram
Business Name: Adobe Associates, Inc.
Phone: (707) 541 - 2300
Email: TSchram@adobeinc.com

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

Name of Landscape Professional: Sam Harned
Business Name: Sam Harned Lanscape Architect
Phone: (209) 380 - 7376
Email: sam@Harnedla.com

1.5 Permit Type(s) – Place a check mark and list relevant permit numbers next to all that apply.

Permit Type	X	Permit #
Building Permit		
Encroachment		
Hillside Development		
CIP		
Entitlement	**X**	N/A
Grading Permit		
Other		

If other, describe here:

1.6 Relevant Reports Prepared by Other Professionals – Select all that apply. If included, state report completion date and the name and email address of the other professional(s).

X Geotechnical Report December 5, 2025; Siegfrieg, (209) 943 - 2021
X Arborist Report December 4, 2025; John C. Meserve, jcmeserve53@gmail.com
___Wetland Delineation
___Groundwater Contamination Data
___Other: _____

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

EXHIBIT FOR SECTION 1:

COMPLETED DETERMINATION WORKSHEET

Final submittal must include a signature.

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

SECTION 2: DESIGN INFORMATION

2.1 Project size (square feet): 128,997 SF

2.2 Intended function of the project, post-development:

This project proposes a 20 lot subdivision intended for condominium purposes of 39 residential units. The site will include an AC Driveway, Parking spaces, concrete sidewalks, dog park, and associated Hardscaping and landscaping.

EXISTING CONDITIONS

2.3 Describe the existing site, including impervious areas:

The existing site includes a building, AC driveway, parking, and associated hardscaping and landscaping.

2.4 Known sensitive features present? (check all that apply)

a. ___Creeks
___Wetlands
__X__Trees
___Other _____
___None present

b. Describe plans for preservation, removal or alteration:

Site grading of this project has been designed in order to save as many existing protected trees as feasible.

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

2.5 Does this project trigger other restrictive factors?

___ 401 Water quality certification
___ 404 Dredged or filled materials discharging to Waters of the U.S.
___ California Construction General Permit
___ CALGreen
___ other_____
__X__ none present

Describe these factors and your plans to address them.

_____
_____
_____
_____
_____
_____

2.6 Existing Soil Conditions

a. Porosity value:_____ Source:_____
b. K-Value: 0.2 to 0.57 in/hr Source: USDA Web Soil Survey
c. NRCS soil group(s): C Source: USDA Web Soil Survey
   i. Does the project have NRCS type D soils?: ___Yes __X__No
   Note: If yes, the maximum ponding depth is 3.5 inches.
d. Describe site-specific soils if logged or lab-analyzed.

_____
_____
_____
_____

2.7 Groundwater

a. Average depth from existing ground surface to seasonal high groundwater (mean):
   More than 10'
b. Amount of separation (feet) from bottom of LID feature to seasonal high groundwater:
   3'
c. Are there known groundwater contaminants present? ___ Yes __X__ No
   i. **If yes, describe contaminant type(s) and plans for mitigation and/or removal. Attach additional pages, if needed.**

_____
_____
_____
_____

   ii. **If yes, provide the source of your information:**
   ___ Geotracker ___ Other (Name of Source):_____

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

PROPOSED POST-CONSTRUCTION CONDITIONS

2.8 Runoff Reduction Measures

a. Will runoff reduction measures be used (as represented in the LID Calculator)?

___ Yes ___**X**___ No

i. If yes, which options?

___ Interceptor Trees
___ Impervious Area Disconnect
___ Vegetated Buffer Strips
___ Permeable Pavers/Pavement
___ Disconnected Roof Drains
___ Other (describe):

_____
_____
_____

2.9 Description of Drainage Areas

a. Use the table to describe each area and the corresponding curve number. Provide justification of why it's appropriate for the project site.

Drainage Area Name	Cover Type	LID feature ID # that the area drains to	Curve Number	Explanation of Curve Number Selection
DA-1	Grass/impervious	RBIO-1	92	Impervious surfacing and landscape
DA-2	Grass/impervious	BIO-2	91	Impervious surfacing and landscape

2.10 Types of BMPs Proposed

a. Name and describe the BMP types AND how many of each:

Proposed BMPs for this site will be Priority 2 - Roadside bioretention and rain garden.

b. BMP priorities (select all that apply):

___ Priority 1 ___**X**___ Priority 2 ___ Priorities 3 through 6

c. If BMPs are Priorities 3, 4, 5, or 6, justify your reasoning here, including why Priority 1 or 2 BMPs are infeasible for this project. If treatment train is used, describe in 2.7-a. If not applicable, type "NA".

Note: If proposing Priority 3 through 6 BMPs, the Regional Water Board must approve the project before the project's jurisdictional agency issues permits.

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

2.11 Level of Treatment and Volume Capture

___ Treatment Only
___ Delta Volume & Treatment
_X_ 100% Volume Capture

2.12 Offset

Note: "Onsite offset" can only be used for volume capture upon jurisdiction approval. Onsite offset for treatment and trash control and all offsite offset can only be used upon approval by the project jurisdiction and the Regional Water Board.

a. Will on-site offset be used? ___ Yes _X_ No
   i. If yes:
      1. Explain why:

_____
_____
_____
_____

      2. Describe offset type(s) and location(s):

_____
_____
_____
_____

b. Is off-site offset proposed? ___ Yes _X_ No
   i. If yes:
      1. Explain why, and include your plans for seeking Regional Water Board approval.

_____
_____
_____
_____

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

2.13 Design Details ***(Complete this section with Final SWLIDS Submittal)*** Initial SWLIDS Phase: N/A

N/A a. Does the design include irrigation? ___ Yes ___ No

N/A b. Has the landscape architect been notified of the minimum requirements for plant coverage (50% surface area), use of the LID plant list (Appendix F of the Design Manual), irrigation, and erosion control?

___ Yes ___ No

i. If yes, where is the note with the minimum requirements included in the plans? (List plan set and page number.) _____

ii. If no, explain your plan for transmitting the minimum requirements to the landscape architect.

_____

_____

_____

N/A c. Will any features include high flow bypass? ___ Yes ___ No

i. If yes:

i. Which features?

_____

_____

ii. What is the planned minimum ponding depth from finished grade of landscaping to the inlet of the high flow bypass? (In inches. Finished grade includes any mulch/non-plant ground cover.) List all variations.

_____

_____

_____

_____

N/A d. Will this project include proprietary trash capture devices?

Note: "If the selected LID BMP does not adequately intercept trash as small as 100 microns by virtue of its design (such as bioretention with curb openings) then an additional treatment BMP, such as capture inserts, baskets, or separators, may need to be used." Pg 28-29, 2020 Storm Water Low Impact Development Technical Design Manual

___ Yes ___ No

i. If yes:

i. Where will each be installed? Be specific.

_____

_____

_____

ii. What type(s) of devices, (including model numbers), and how many of each?

_____

_____

_____

iii. Are the proposed devices on the approved list from the State of California? **(See CASQA)**

___ Yes ___ No

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

N/A e. Will mulch or another (non-plant) ground cover be used in the limits of the bioretention?

___ Yes ___ No

i. **Note: Bare soils shall be covered and stabilized until plants establish more than 50% surface area coverage. If mulch is used, composted arbor mulch (or comparable) is recommended. Synthetic mulch and non-arbor mulch are prohibited.** If yes:

1. How deep is the proposed mulch/ground cover layer?

_____

_____

2. What type of mulch/ground cover will be used?

_____

_____

ii. Does the design account for a minimum ponding depth of 3" to the overflow, including mulch or other ground cover? ___ Yes ___ No

N/A f. Energy Dissipation: How will surfaces around your curb inlets, drains, and pipe outfalls be protected from erosion?

___ Cobble ___ Concrete apron ___ Other (Describe methods and locations):

_____

_____

N/A g. Does the design include maintenance access to the LID features? ___ Yes ___ No

(Required. Must note locations on figures for SWLIDS and maintenance site plan and on construction drawings.)

i. Is specialized equipment needed for maintenance? ___ Yes ___ No

i. If yes, describe.

_____

_____

_____

2.14 Pollution Prevention Source Control

Which source control pollution prevention measures (that reduce pollutant loading in the LID features) will be included in the design and will be employed on site post-construction?

X Covered trash enclosures

(must note locations on figures for SWLIDS and maintenance site plan and on construction drawings)

___ Indoor or roof-covered operations

X Street sweeping

___ Litter collection and/or containment

___ Other (describe):

_____

_____

_____

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

SECTION 3: LID CALCULATOR SHEETS

3.1 Calculations: Use the Storm Water Calculator found at https://www.streetstocreeks.org/commercial/low-impact-dev/

_X_ Summary Sheet

_X_ Sizing calculations for each BMP (volume capture and/or treatment)

_X_ Supplemental calculations, as applicable, (ex: drawdown calculation for ponding depth over 3 inches and bioretention without perforated piping).

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

EXHIBIT FOR SECTION 3:

COMPLETED LID CALCULATOR SHEETS

Final submittal must include the summary sheet, final sizing calculations for each BMP, and final supplemental calculations, as applicable.

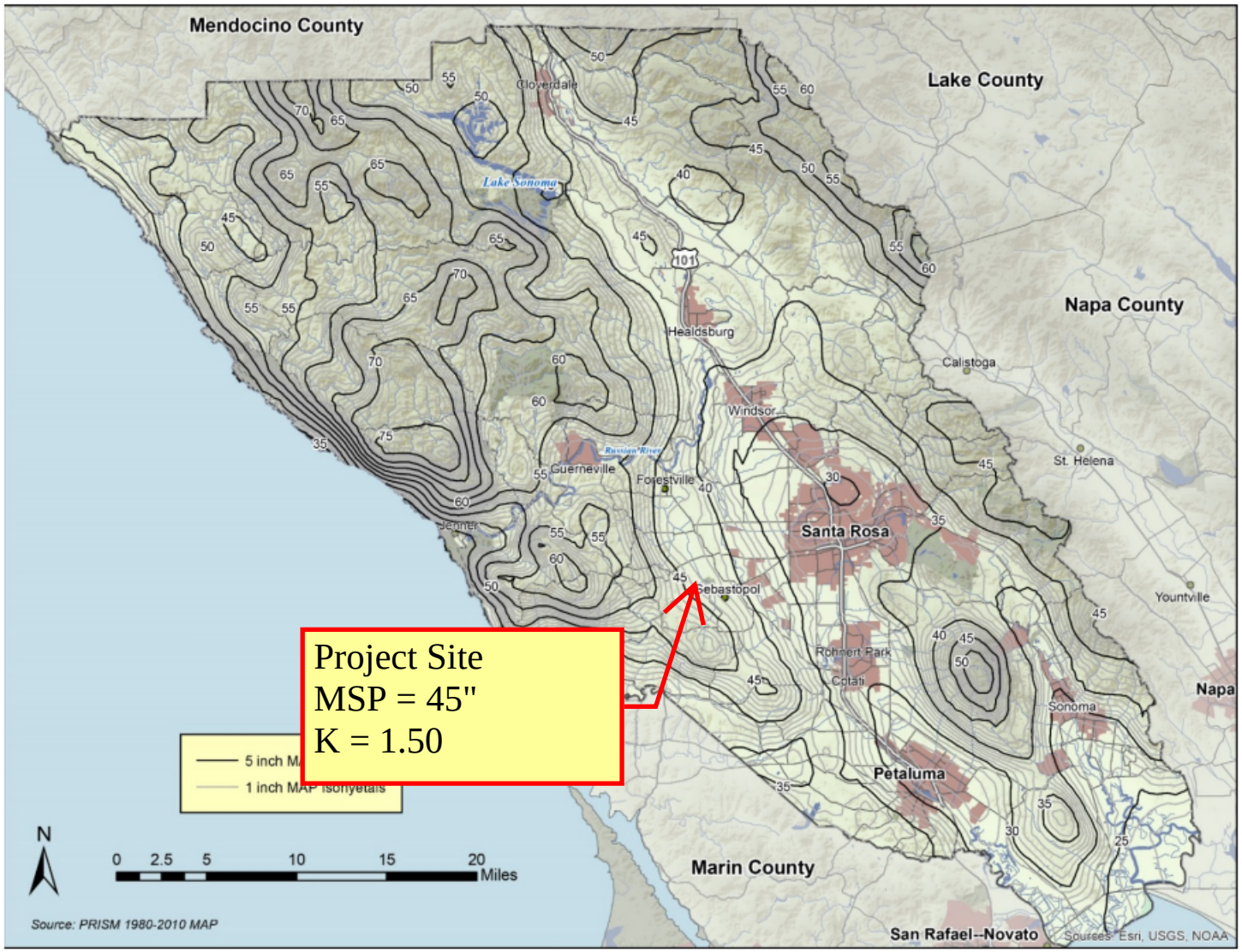


Figure D.2-1. Mean Annual Precipitation

City of Santa Rosa WATER

STORM WATER CALCULATOR

LID BMP Summary Page & Site Global Values

Project Information:

Project Name:	8100 Valentine Ave
Address/Location:	8100 Valentine Ave
Designer:	KM
Date:	12/10/2025

Site Information:

Mean Seasonal Precipitation (MSP) of Project Site:	45.00	(inches)
K=MSP/3(K=	1.50	
Impervious area - pre development:	88,427.0	ft^2
Impervious area - post development:	76,309.0	ft^2

Based upon the pre and post development impervious area, the post construction BMP requirement is:

100% Capture & Treatment

Summary of Saved BMP Results:

		Tributary Area		Requirements		BMP Design Results						
							Hydromodification Control		Flow Base Treatment		Delta Volume Capture	
	BMP ID:	Tributary Area (ft^2.)	Runoff Reduction Measures (Y/N)	Type of Requirement Met	Type of BMP Design	Percent Achieved	Required $V_{Hydromod}$ (ft^3)	Achieved (ft^3)	Required Q Treatment (cfs)	Achieved (ft^3)	Required Vdelta (ft^3)	Achieved (ft^3)
1	DA1	25,062	No	Hydromod Volume Capture	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	122.5	1672.1366	2048.0000				
2	DA2	108,256	No	Hydromod Volume Capture	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	111.9	5688.8530	6368.0001				
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

Weighted Runoff Curve Number

Project:	25213-8100 Valentine Ave	By:	K Murata	Date:	12/10/2025
Location:	DA1				

----- POST-Construction Condtitions -----

1. Runoff Curve Number

Soil Name and Hydrologic Group (Appendix A)	Cover Description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious ratio)	TR-55 CN* Tables 2-2(a-d)	TR-55 CN* Figure 2-3	TR-55 CN* Figure 2-4	Area Acres Miles^2 Percent	Product of CNxArea
Goldridge fine Sandy Loam, Hydrologic Soil Group C	Ex. Open Space (Fair)	79			0.19	15.01
Goldridge fine Sandy Loam, Hydrologic Soil Group C	Proposed Impervious (AC Driveway, Garage, Concrete)	98			0.39	38.22
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00

*Use only one CB source per line

Totals 0.58 53.23

CN (weighted) = Total Product / Total Area = 91.78 **Use CN** 92

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **8100 Valentine Ave**

BMP ID:	DA1
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	25,062.0 ft^2
Description/Notes:	

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = 1,672.14 ft^3

Post development hydrologic soil type within tributary area:	A: greater than 0.30 in/hr infiltration (transmission) rate
Post development ground cover description:	Brush: weed-grass mixture with brush major element - Poor (<50% ground cover)
CN_{POST} :	
User Composite post development CN:	92.0

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = 122.48 %

	BMP Volume Below Ground		Ponded Water Above Ground	
Porosity:	0.40			
Depth below perforated pipe if present:	4.00	ft		
Depth:			0.00	ft
Width:	0.00	ft	0.00	ft
Length:	0.00	ft	0.00	ft
Area:	1,280.00	ft^2	0.00	ft^2

Weighted Runoff Curve Number

Project:	25213-8100 Valentine Ave	By:	K Murata	Date:	12/10/2025
Location:	DA2				

----- POST-Construction Condtitions -----

1. Runoff Curve Number

Soil Name and Hydrologic Group (Appendix A)	Cover Description (cover type, treatment and hydrologic condition; percent impervious; unconnected/connected impervious ratio)	TR-55 CN* Tables 2-2(a-d)	TR-55 CN* Figure 2-3	TR-55 CN* Figure 2-4	Area Acres Miles^2 Percent	Product of CNxArea
Goldridge fine Sandy Loam, Hydrologic Soil Group C	Ex. Open Space (Fair)	79			1.13	89.27
Goldridge fine Sandy Loam, Hydrologic Soil Group C	Proposed Impervious (AC Driveway, Garage, Concrete)	98			1.36	133.28
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00

*Use only one CB source per line

Totals 2.49 222.55

CN (weighted) = Total Product / Total Area = 89.38 **Use CN** 89

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **8100 Valentine Ave**

BMP ID:	DA2
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	108,256.0 ft^2
Description/Notes:	BIO-1 INCLUDES DRAINAGE TRIBUTARY AREA (DA2 = 92,695 SF AND EX = 15,561 SF) IN TOTAL TRIBUTARY AREA.

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = 5,688.85 ft^3

Post development hydrologic soil type within tributary area:	A: greater than 0.30 in/hr infiltration (transmission) rate
Post development ground cover description:	Brush: weed-grass mixture with brush major element - Poor (<50% ground cover)
CN_{POST} :	
User Composite post development CN:	89.0

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = 111.94 %

	BMP Volume Below Ground		Ponded Water Above Ground	
Porosity:	0.40			
Depth below perforated pipe if present:	4.00	ft		
Depth:			0.00	ft
Width:	0.00	ft	0.00	ft
Length:	0.00	ft	0.00	ft
Area:	3,980.00	ft^2	0.00	ft^2

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

SECTION 4: SITE-SPECIFIC PLANS AND DETAIL EXHIBITS

GUIDE TO LID EXHIBITS **(Remove this page with submittal. Submit all exhibits behind the designated section sheets in this document.)**

4.1 The EXISTING CONDITION Exhibits - Include the following:

- Street names
- Property lines
- Existing storm drainage system
- Waterways
- Title block
- Scale
- North arrow
- Soil type of existing site
- Proposed Tributary Areas
- Existing elevations or contours
- Existing impervious areas, labeled and listed in square feet or acres
- Land cover types with associated C and/or CN values

4.2 The POST-CONSTRUCTION SWLIDS Exhibit - Include the following:

- All proposed LID features (with unique identifiers)
- All proposed interceptor trees and other runoff reduction measures used for credit in the LID calculations; include areas (sq ft)
- All proposed proprietary trash capture devices.
- Proposed maintenance access routes to all LID features and trash capture devices
- New or replaced impervious areas
- Street names
- Property lines
- Proposed storm drainage system, including all inlets
- Waterways
- Title block
- Scale
- North arrow
- Proposed tributary areas for all BMPs (including off-site drainage areas that affect on-site tributaries)
- C and/or CN value for each tributary area, (C only needed for treatment calculations for Delta volume capture)
- Interceptor trees used for runoff reduction credit (as applicable)
- Soil Type of existing site
- A table of all proposed BMPs with surface area, depth, and unique feature names that reflect feature types. This should be consistent with the table in section 4.4 of this document.

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

GUIDE TO LID EXHIBITS (Continued) **(Remove this page with submittal.)**

4.3 BMP CONSTRUCTION DETAIL Exhibit—Include the following:

- **Detail for each type of BMP selected (Minimum size 8.5"x11")**
  - **Pre-entitlement:** If no significant changes are proposed, the Fact Sheets from the LID Design Manual can be used for the Pre-Entitlement SWLIDS.
  - **Pre-construction:** Project-specific details must be completed for the Pre-construction SWLIDS.
    - Must show ponding depths, thickness of all media types (mulch, groundcover, structural soil, etc.), and horizontal liner (as applicable)

4.4 On PLANS: (Designated Stormwater LID Design Sheet & Landscape Plan Sheet)

- Show all applicable elements of the selected BMPs on appropriate plan sheets, including but not limited to table of BMP sizing (length, width, depth), and BMPs color coded by design detail (i.e. bioretention, tree filter, etc).
- Material specifications.
- Make sure construction plans and the Post-Construction SWLIDS Exhibit match.
- Includes a table with design specifications as shown below

Feature ID #	Length (ft at longest)	Width (ft at widest)	Area (Sq Ft)	Feature Depth (ft) (to native soil)	Volume Capture Depth (ft)	Ponding Depth (in)	Priority Type (1-6)	Includes high-flow bypass? (Y/N)	Horizontal Liner? (Y/N)	Underdrain Location (High/ Middle/ Low/None)	Drainage Management (Tributary) Area (sq ft)
(Example) BR-1	50 ft	20 ft	1000	4 ft	4ft	6 in	1	No	No	None	2,020

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

Naming Convention for Exhibits

This is a regionwide naming convention for submittals in all co-permittee jurisdictions.

LID BMP ID	LID BMP Description
~~BR-#~~ BIO-1	Bioretention (Includes Rain Gardens and Vegetated Swales, but NOT roadside bioretention)
RBIO-1~~RB-#~~	Roadside Bioretention
CW-#	Constructed Wetland
IF-#	Infiltration Trench
FP-#	Flow-Through Planter
PROPRIETARY UNITS	
CS-#	Chambered Separator Unit
TD-#	Trash Device - Capture/Exclusion
FI-#	Filter Inserts (for inlets)
CF-#	Centrifugal Separator Unit
TF-#	Tree Filter Unit
US-#	Underground Storage Unit
PU-#	Other Proprietary Unit
RUNOFF REDUCTION MEASURES	
IT-#	Interceptor Trees
ID-#	Impervious Area Disconnect
VB-#	Vegetated Buffer Strips
PP-#	Porous Pavement/Pavers
DR-#	Disconnected Roof Drain

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

EXHIBIT FOR SECTION 4.1

EXISTING CONDITIONS

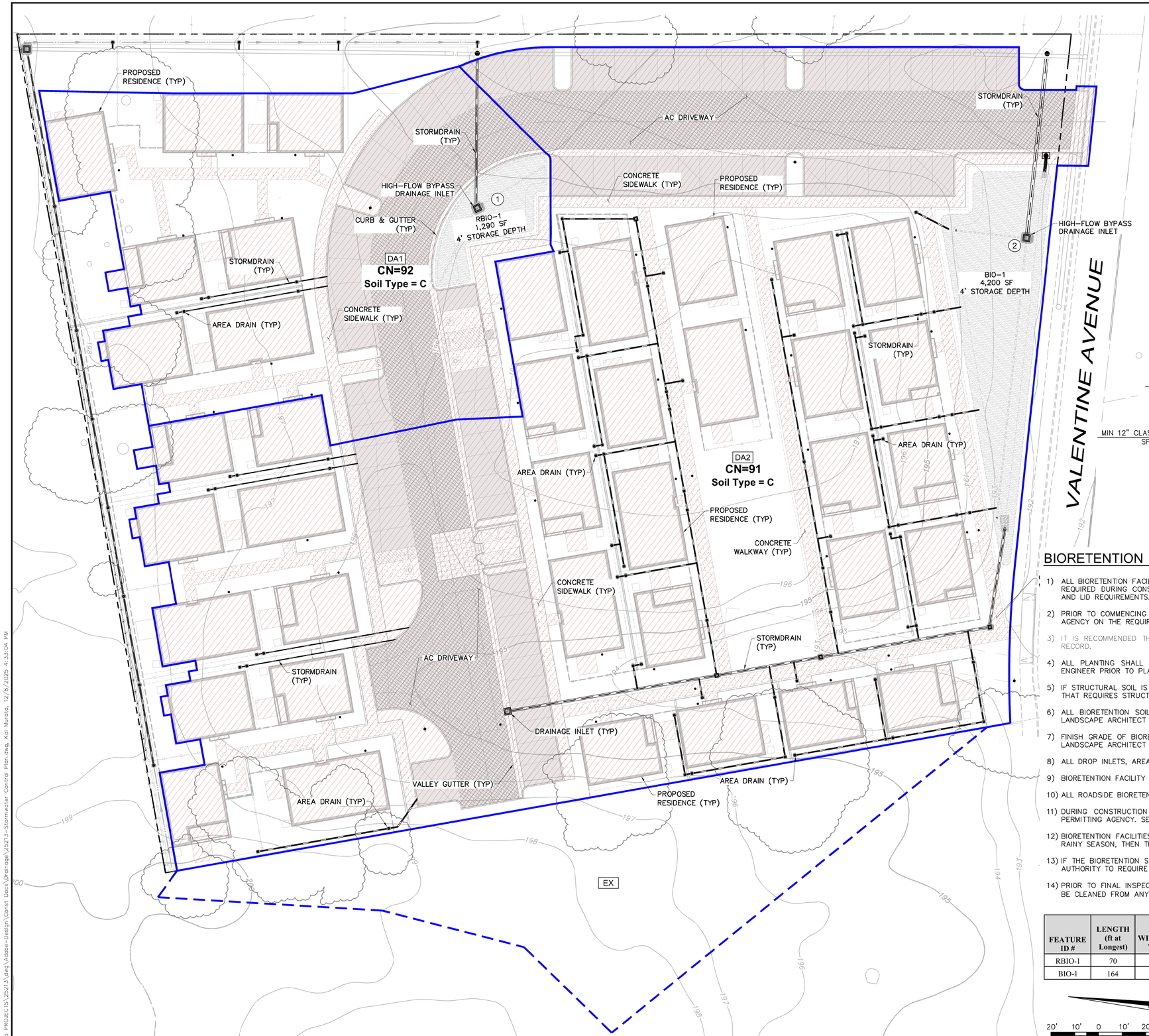
Not needed for 100% volume Capture Condition

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

EXHIBIT FOR SECTION 4.2

PROPOSED POST-CONSTRUCTION STORMWATER LID

Final submittal must include any changes made to project that differ from the exhibit in the Initial SWLIDS, as applicable.



DRAINAGE AREA LEGEND

- DA1 — DRAINAGE AREA
- 1 — POINT OF CONCENTRATION
- DRAINAGE AREA BOUNDARY
- PROPERTY LINE (℄)

DRAINAGE AREA TABLE

DA1 = 0.58 AC (25,062 SF)

DA2 = 2.13 AC (92,695 SF)

EX = 0.36 AC (15,561 SF)

HATCHING LEGEND

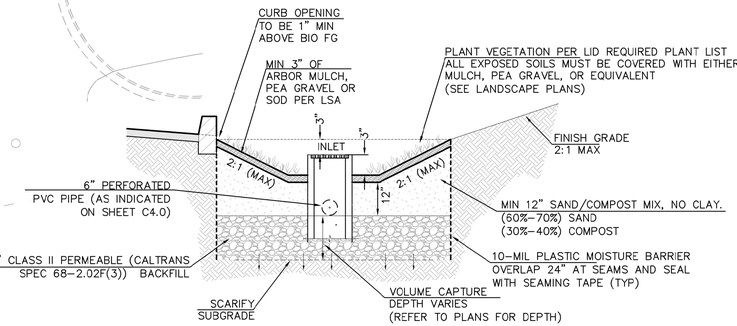
- IMPERVIOUS AREA
- BIORETENTION FACILITY

DRAINAGE ROUTING

DA1 → 1 → RBIO-1

DA2 → 2 → BIO-2

EX



1 BIORETENTION DETAIL

NTS

BIORETENTION NOTES

1) ALL BIORETENTION FACILITIES SHALL BE CONSTRUCTED PER DETAILS AND APPROVED PLANS IN COORDINATION WITH THE ENGINEER. IF CHANGES ARE REQUIRED DURING CONSTRUCTION THE ENGINEER SHOULD BE NOTIFIED TO ENSURE THE CHANGES MEET THE AGENCY CONSTRUCTION STANDARDS AND LID REQUIREMENTS.
2) PRIOR TO COMMENCING CONSTRUCTION ON BIORETENTION FACILITIES IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE PERMITTING AGENCY ON THE REQUIRED BIORETENTION INSPECTIONS.
3) IT IS RECOMMENDED THAT THE CONTRACTOR SUBMIT MATERIALS USED IN THE BIORETENTION FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.
4) ALL PLANTING SHALL BE PER APPROVED BIORETENTION PLANTING LIST. CONTRACTOR TO COORDINATE WITH THE LANDSCAPE ARCHITECT OR ENGINEER PRIOR TO PLANTING
5) IF STRUCTURAL SOIL IS USED IN ANY BIORETENTION FOR THE PROJECT. IT SHALL BE PLACED PER MANUFACTURERS RECOMMENDATIONS. GENERALLY THAT REQUIRES STRUCTURAL SOIL TO BE PLACED WITHIN 24-HOURS OF DELIVERY.
6) ALL BIORETENTION SOIL SHALL BE COVERED IN MULCH, PEA GRAVEL, JUTE NETTING, OR EQUIVALENT. CONTRACTOR TO COORDINATE WITH THE LANDSCAPE ARCHITECT OR ENGINEER PRIOR TO 100% COMPLETION.
7) FINISH GRADE OF BIORETENTION SHALL ACCOUNT FOR ALL AMENDED SOIL, PLANTING, SOD, MULCH, ETC. CONTRACTOR TO COORDINATE WITH THE LANDSCAPE ARCHITECT OR ENGINEER
8) ALL DROP INLETS, AREA DRAINS, CATCH BASINS, ETC. WITHIN BIORETENTION FACILITIES SHALL HAVE TRASH CAPTURE INSERTS.
9) BIORETENTION FACILITY SIDE SLOPES SHALL NOT EXCEED 2:1 OR 50%.
10) ALL ROADSIDE BIORETENTION CURB OPENING FLOW LINES SHALL BE 1" ABOVE BIORETENTION FINISH GRADE.
11) DURING CONSTRUCTION CONTRACTOR SHALL SCHEDULE 25%, 50%, 75%, AND 100% INSPECTIONS WITH THE ENGINEER OF RECORD AND THE PERMITTING AGENCY. SEE BIORETENTION INSPECTION TABLE
12) BIORETENTION FACILITIES SHALL NOT BE USED DURING CONSTRUCTION. IF THE BIORETENTION FACILITIES ARE CONSTRUCTED PRIOR OR DURING THE RAINY SEASON, THEN THEY SHALL BE PROTECTED WITH NON WOVEN FILTER FABRIC. COORDINATE WITH ENGINEER.
13) IF THE BIORETENTION SOIL AND DRAIN ROCK ARE COMPROMISED WITH SEDIMENT AND DEBRIS DURING CONSTRUCTION THE PERMITTING AGENCY HAS AUTHORITY TO REQUIRE RECONSTRUCTION PRIOR TO FINAL APPROVAL AND OCCUPANCY.
14) PRIOR TO FINAL INSPECTION (100%) ALL PLANTING MUST BE COMPLETED, BIORETENTION SOILS MUST BE COVERED, ALL TRASH AND DEBRIS SHALL BE CLEANED FROM ANY CURB/GUTTER, INLET/OUTLET PIPE, DROP INLET, ETC.

FEATURE ID #	LENGTH (ft at Longest)	WIDTH (ft at Widest)	AREA (Sq. Feet)	FEATURE DEPTH (ft) (To Native Soil)	VOLUME CAPTURE DEPTH (ft)	PRIORITY TYPE (1-6)	INCLUDES HIGH-FLOW BYPASS? (Y/N)	VERTICAL LINER? (Y/N)	UNDERDRAIN LOCATION (High/Middle/Low/None)	DRAINAGE MANAGEMENT (Tributary) Area (sq ft)
RBIO-1	70	30	1290	5.5	4	2	YES	YES	YES	25,062
BIO-1	164	42	4200	5.5	4	2	YES	YES	YES	108,256

20' 10' 0 10' 20' 40' 60'

Graphic Scale: 1" = 20'

December 08, 2025

STORMWATER CONTROL PLAN

VALENTINE AVENUE
8100 Valentine Avenue, Sebastopol, CA
APN 004-510-054

adobe associates, inc.
civil engineering | land surveying | wastewater
1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com
"A Service You Can Count On!"

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

Initial SWLIDS Phase: N/A

EXHIBIT FOR SECTION 4.3

LID BMP CONSTRUCTION DETAILS

Final submittal must include 8.5”X11” detail for each type of BMP selected, including dimensions, site-specific soils and project-specific details.

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

SECTION 5: (FINAL) MAINTENANCE AGREEMENT

5.1 MAINTENANCE AGREEMENT (For LID features maintained by private parties. Consult the project jurisdiction for the required timing to sign and record.)

- Legal document provided by the project jurisdiction
- Site map (plat) with all BMPs labelled per the naming convention
    - Use requirements for Post Construction SWLIDS Exhibit and Construction Details Exhibit above.
    - Include a table as shown in Section 4.4
    - Must print to 8.5x11" (required by the Recorder's Office)
- LID BMP Construction Details
- Legal property description, if required by the jurisdiction
    - Include book and page numbers for reference
- Notarization (with post-construction version)

Notes:

Record a Maintenance Declaration or other legally binding mechanism to assign maintenance responsibility and the funding source before occupancy can be given.

The contractor or realtor must notify property owners of LID features constructed on their property and inform them of responsibilities regarding intent, maintenance/irrigation requirements, and alteration restrictions.

The contractor or realtor shall notify property owner(s) to protect back drains with sufficient BMPs to prevent potential discharges (i.e. sediment, pathogens, fertilizers) into the jurisdiction's storm drain system until the yard is appropriately landscaped and/or provide sufficient BMPs to protect inlet(s) upon sale or transfer.

IMPORTANT FOR PROJECT CLOSEOUT—If changes occurred during construction, the calculations and figures must be updated and re-submitted. See Section 8 for final instructions.

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

Initial SWLIDS Phase: N/A

EXHIBIT FOR SECTION 5

MAINTENANCE AGREEMENT

Initial SWLIDS Phase: N/A

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

SECTION 6: MAINTENANCE SPECIFICS

6.1 Describe any specific maintenance requirements for each proprietary BMP type (ex: checking sediment depth, frequency of filter change, filter make and model #), other than what is included in the standard maintenance plan (provided by your project's jurisdiction). If not applicable, state "NA".

_____

_____

_____

_____

_____

6.2 Maintenance Responsibility

a. Who will be legally responsible for maintenance? Select all that apply.

___ Property owner
___ Property owners' association (HOA)
___ Public jurisdiction
___ Other (Describe):

_____

_____

b. How will the legally responsible party be notified of the maintenance requirements?

_____

_____

c. How will the legally responsible party be informed of design specifications for proprietary features, (including LID and trash capture)?

_____

_____

6.3 Funding & Costs

a. How will the maintenance and replacement activities be funded, (including irrigation)? Select all that apply.

___ Property owner

___ Property owners' association (HOA)

___ Tax assessment district or similar (Describe):

_____

_____

___ Other (Describe):

_____

_____

_____

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

b. Estimated Cost Sheet

LID Feature Type	Number of Features	Total Sq Feet (if applicable)	Maintenance Cost per Visit (per unit or sq foot)	Annual Maint. Cost (Assume 12 visits per year)	Replacement Cost (per unit or sq foot)	Total Replacement Cost (all units or all sq feet)
(Example) Bioretention	3	800	$3.00/sq ft	$28,800.00 (800x3x12)	$5.00	$4000.00
(Example) Tree Filter	8	NA	$100.00/unit	$9,600.00 (8x100x12)	Tree only: $150.00 Entire unit: $2,000.00	Trees: $1,200.00 Entire Units: $16,000

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

EXHIBIT FOR SECTION 6

STANDARD OWNER'S MAINTENANCE PLAN

& MAINTENANCE SPECIFICS

Insert the standard maintenance plan, as provided by your jurisdiction.

Include any manufacturer spec sheets or maintenance guides, as applicable.

STORM DRAINS CONNECT
STREETS TO CREEKS
OURS TO PROTECT

RAIN RUNOFF TREATMENT • TRATAMIENTO DE LA ESCORRENTÍA DE LLUVIA
ROADSIDE BIORETENTION
STREETSTOCREEKS.ORG/LID
L.I.D.

L I D

LOW IMPACT DEVELOPMENT

OWNER'S MAINTENANCE GUIDE

ADDITIONAL RESOURCES

Request an informational site visit with your local agency.

For LID Feature Factsheets & the Approved Plant List:
www.streetstocreeks.org/lid-for-owners

E.P.A. General LID Information visit:
www.epa.gov/nps/urban-runoff-low-impact-development

Health & Safety Tip: If standing water is in your feature for longer than 72 hours, check out msmosquito.org for services.

LID is infrastructure that treats, stores and slows stormwater runoff before it enters local creeks and waterways.

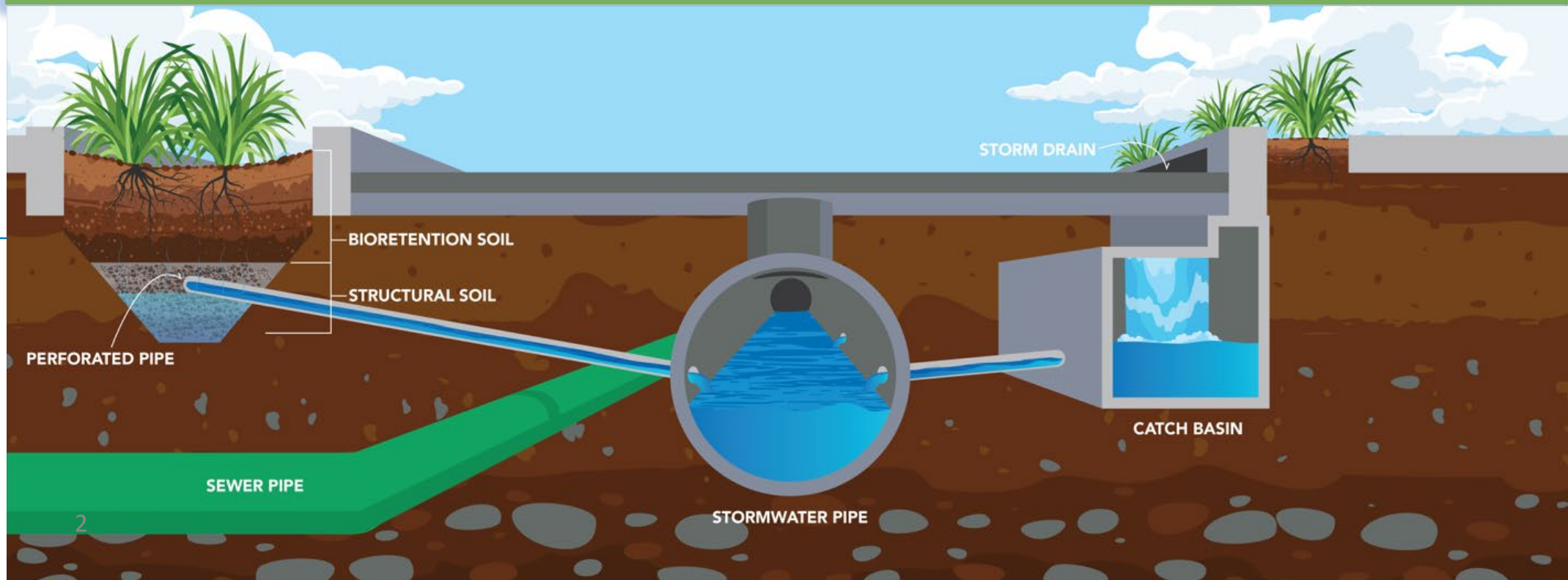


Table of Contents

Additional Resources.....2

What are Low Impact Development Features?.....4

Owner Responsibilities & Facts for Vegetated Features.....6

Maintenance Examples, Vegetated Features.....8

Do's & Don'ts of Vegetated Features.....10

Seasonal Maintenance, Vegetated LID.....11

Common Approved Plants.....12

Soil, Mulch, Rock & Unapproved Alterations.....14

Permeable Hardscaping Facts.....16

Maintenance Examples, Permeable Hardscaping.....17

Do's & Don'ts of Permeable Hardscaping.....18

Seasonal Maintenance, Permeable Hardscaping.....19

WHAT ARE LID FEATURES & WHY DO WE NEED THEM?

In healthy natural areas, soil and vegetation act like a sponge, absorbing rainwater and slowly releasing it into creeks, aquifers, and the atmosphere. When natural areas are developed, the land's ability to absorb and store rainwater is greatly reduced. Rain falling on impervious surfaces such as roofs, roads, parking lots, and driveways runs off faster and in greater amounts than it would under natural conditions. Large quantities of fast-flowing stormwater pick up pollutants such as motor oil, heavy metals, dust, feces, fertilizers, and microplastics, and carry them through the storm drain system directly to local creeks and the Russian River without treatment. These pollutants and the large quantity of runoff cause major issues for our creeks, wildlife and public health.

Luckily, there are solutions that allow for necessary development without causing stormwater issues. **Low-Impact Development (LID) features are engineered landscape areas designed to capture and treat stormwater runoff.** They allow stormwater to slow down, spread out, and soak into the ground while filtering out pollutants. LID features are a requirement of any new development that creates or replaces more than 10,000 square feet of impervious surfaces. Aside from their hydrological benefits, LID features help decrease erosion of creek banks and can be beautiful landscape additions that provide valuable wildlife habitat.

Common examples of LID features include roadside bioretention planters, rain gardens, vegetated swales, and permeable pavement. Let's look at the two most common types: vegetated features and permeable hardscaping. Additional resources and factsheets can be found at https://www.streetstocreeks.org/lid.

Routine maintenance of LID features protects local water quality, groundwater supplies, public health, infrastructure, and wildlife.

LID PREVENTS COSTLY PROBLEMS

Roofs, parking lots, streets, and other impervious surfaces alter natural hydrology, increasing the volume and velocity of stormwater runoff. This creates many costly impacts including flooding, potholes, damage to structures, streambank erosion, turbid water and habitat degradation. Well-maintained LID features help prevent these issues and provide other benefits as well.

Did you know that this:

Can contribute to this:

Graphic courtesy of Slow it. Spread it. Sink it. Store it! Second Edition June 2015. Sonoma Resource Conservation District and the Resource Conservation District of Santa Cruz County.

BENEFITS of LID

- ✓ Filters out pollutants
- ✓ Reduces flooding
- ✓ Prevents streambank erosion
- ✓ Replenishes groundwater supply
- ✓ Creates pollinator & bird habitat
- ✓ Beautifies urban areas

OWNER'S RESPONSIBILITY

It is the property owner's responsibility to maintain LID features, so they function as originally designed. LID features are a condition of approval for qualifying development. Maintenance is required for the life of the development by the local California Regional Water Quality Control Board and the Environmental Protection Agency (EPA) under the Clean Water Act.

Maintenance responsibility is attached to the property and transfers with changes in ownership. **This guide will help you stay in compliance.**

INSPECTIONS & REPORTING

Typically, inspections are performed annually by agency staff. If corrective actions are needed, the property owner will be contacted.
Corrective actions must be completed within the timeline specified by the agency or prior to the first rain of the wet season, whichever is sooner.

In some cases, depending on the type, age, and location of the feature, **you may be asked to complete a "self-inspection" or have your feature serviced** by a certified third-party contractor.

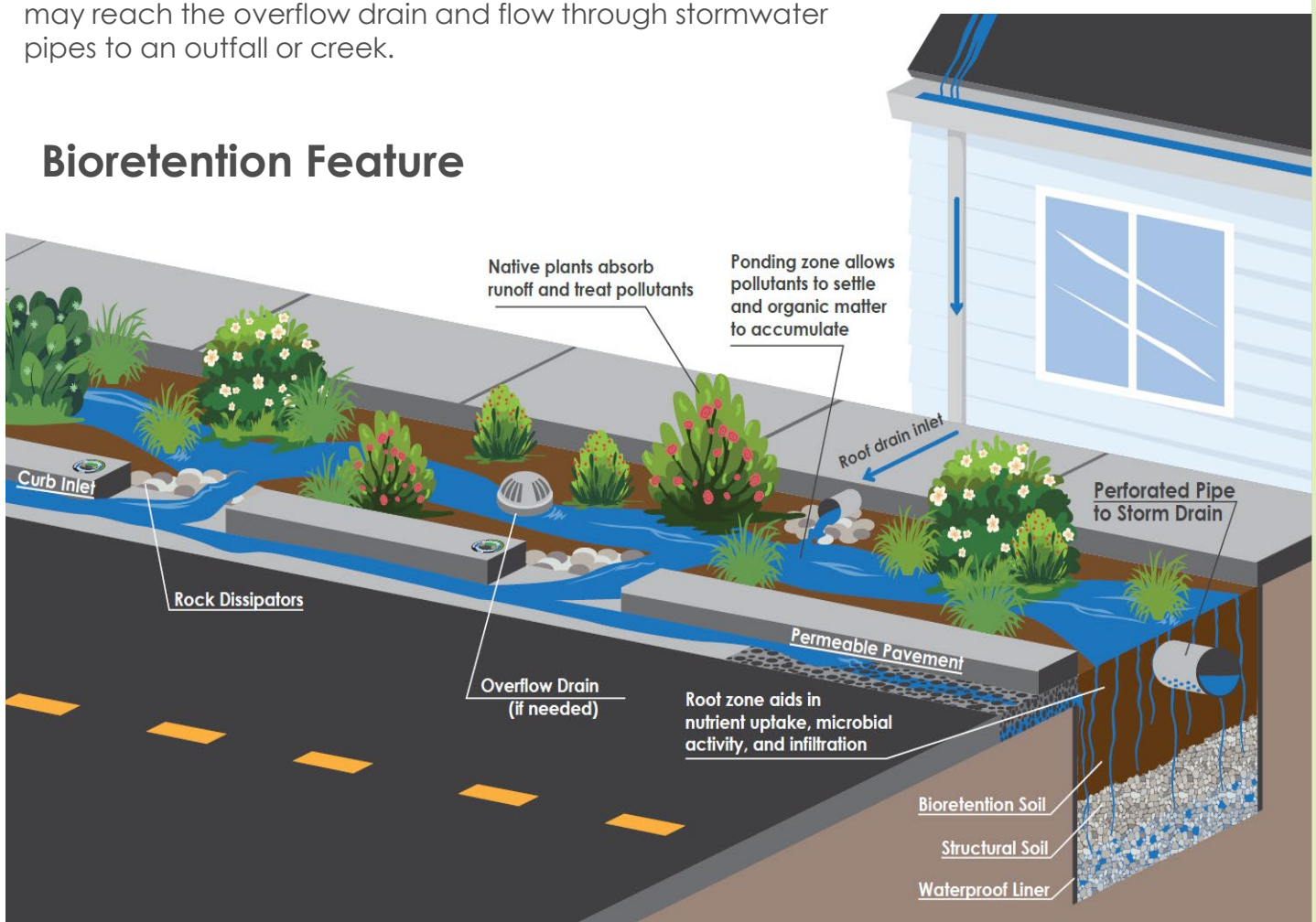
If needed, agency staff will initiate and approve self-inspections. Self-inspections are a simple process to complete and take a few minutes per feature. agency staff will send maps, a short inspection checklist, and instructions. Most homeowners can easily complete inspections themselves and submit results back to the agency inspector within an hour.

AN EXAMPLE OF GOOD MAINTENANCE....

FACTSHEET: VEGETATED LID FEATURES

Vegetated LID features use **plants and special engineered soil** to absorb and filter stormwater. Roadside bioretention basins, rain gardens and vegetated swales are common examples of vegetated LID features. They may be contained within a concrete barrier or a simple depression graded into the surrounding landscape. Vegetated features will have an inlet such as a curb or roof drain inlet, or permeable pavement that allows stormwater to flow into the feature. Plant roots and engineered soil do the filtering. It is desirable for water to pond in the features for a short time, but it should drain within 72 hours to prevent mosquito breeding. During large rain events, stormwater may reach the overflow drain and flow through stormwater pipes to an outfall or creek.

Bioretention Feature



THE RIGHT PLANTS ARE ESSENTIAL

The name says it all…**vegetation is key to the proper function of vegetated LID features!** The LID Technical Design Manual contains a list of approved plants, chosen specifically for their ability to filter out common pollutants and withstand flooding and drought. Most are native plants, and many offer additional habitat benefits too.

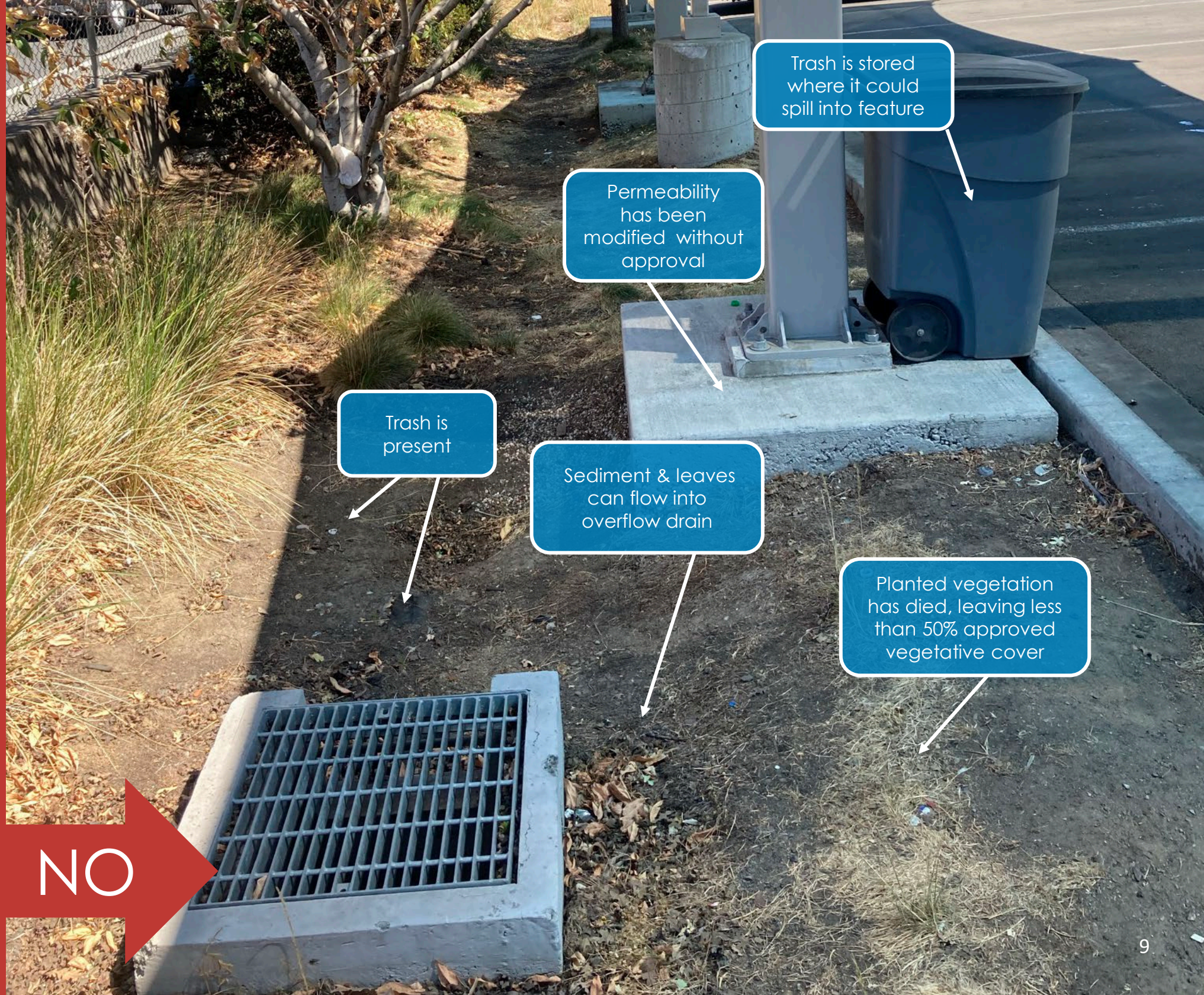
Only plants from the Approved Plant List are allowed, unless you get specific approval for alternative plants from your local stormwater authority & the Regional Water Quality Control Board.

It's a common misconception that LID plants don't need irrigation. Most need regular water during the first few summers, and once mature, may still need weekly to monthly dry-season irrigation. For recommendations on how much to water your plants, visit: www.srcity.org/3446/Watering-Recommendations.

AN OUNCE OF PREVENTION

Regular maintenance of your LID feature will save money and time and will prevent the need to restore or replace the feature later. The maintenance recommendations in this guide will help you keep your LID feature in compliance & thriving.


YES
Vegetative cover is greater than 50%
Overflow Drain is unobstructed
Approved plants are diverse & healthy, providing habitat & filtration
Weeds have been hand pulled & no weed liner is present
Interlocking Arbor Mulch prevents erosion
No sediment buildup, leaves or trash present
GOOD MAINTENANCE



NON-COMPLIANT FEATURE

NO

VEGETATED LID FEATURES

DO…

- ✓ **Choose approved plants** from the Approved Plant List, found at: streetstocreeks.org/lid-for-owners.
- ✓ **Maintain at least 50% vegetative cover** (weeds & trees don't count!).
- ✓ **Irrigate** plants, as needed in the dry season, & during root establishment.
- ✓ **Hand-pull weeds.**
- ✓ **Use arbor or vineyard mulch** that interlocks, is rough-cut & less likely to float.
- ✓ **Clear inlets** of sediment, trash, & leaf debris before the wet season to allow water to flow in.
- ✓ **Clean out overflow drain** so it flows freely.

DON'T…

- ✗ Modify or alter the LID without approval from your local agency.
- ✗ Install plants not on the Approved Plant List.
- ✗ Cut desired vegetation too short or too often.
- ✗ Let vegetation die off or fall below 50% coverage.
- ✗ Use herbicides.
- ✗ Add weed cloth or large quantities of rock.
- ✗ Use evenly cut wood chips which float & clog drains.
- ✗ Allow sediment to build up.
- ✗ Alter grade or remove cobble at curb inlets.
- ✗ Allow regular foot traffic that may compress engineered soils.

STORM DRAINS CONNECT STREETS TO CREEKS OURS TO PROTECT

VEGETATED LID FEATURES

GENERAL MAINTENANCE GUIDANCE

Follow these general maintenance guidelines for vegetated Low Impact Development (LID) features on your property.

ACTIVITY	NOTES	HOW OFTEN?	IDEAL SEASON(S) SPRING	SUMMER	FALL	WINTER
Remove **trash** and debris	Clean out any trash that may have accumulated. Put trash in garbage and any leaves or dead plant material into the compost.	Monthly and after every major storm	●	●	●	●
Remove accumulated **sediment**	Use a shovel or wet/dry vac to remove accumulated sediment at the inlets or bottom of feature. If sedimentation is severe, coordinate with City/County to help identify potential sources. If clogged with sediment, top layer of engineered soil may need to be replaced to maintain drainage.	When sediment reaches 2" in depth, or once a year		●	●	
Water plants	Ensure irrigation timer is working and properly programmed for weather conditions. Run system to check for leaks or breaks and repair. Hand water regularly if there is no irrigation system. Visit srcity.org/WateringRecommendations, or other local water agency, for watering details.	Dry season, and especially when plants are young	●	●	●	
Remove **weeds**	Hand pull weeds, making sure to remove the root. It is easiest to pull weeds while young. Use of herbicides is strictly prohibited.	Monthly in growing season, ideally before weeds make seeds	●	●		
Replace **plants** that have not done well	Replace plants that have died with plants from the original approved planting plan or equivalents from the Regional LID Manual Approved Plant List. Feature requires a minimum of 50% vegetation.	Replace as needed, inspect 1x/year	●		●	
Inspect and maintain **structures** such as inlets and overflow drain	Clear any plants that have grown over the inlets or drain. Remove any leaves, sediment, mulch, or other debris that may be clogging inlets/drains/splash pads. Make sure drainage grates are in place and in good repair.	As needed, inspect 1x/year			●	
Check plastic **liner** (if applicable)	If there is a plastic liner, check that it is still attached to the sidewalls of the planters. If it is not attached, it will need repair because water can flow underneath the liner and cause problems.	As needed, inspect 1x/year			●	
Clean up **grasses** and grass-like plants	Rake out dead material from grasses/sedges/rushes, and if needed, trim to appropriate length. To maintain long term health do not cut too short or too often.	As needed, inspect 1x/year	●			
Prune trees and shrubs	Prune up lower branches of trees to maintain sidewalk clearance. Deadhead or lightly trim shrubs, thinning if needed to maintain sunlight to understory plants.	As needed, inspect 1x/year				●
Add non-floatable **mulch**	If soil looks bare, add 2-3" of non-floatable mulch such as arbor mulch. Avoid evenly cut wood chip mulch, which floats & can cause clogging. Make sure mulch is pulled away from plant stems.	As needed, inspect 1x/year	●	●		

THE RIGHT PLANTS IN THE RIGHT PLACES

Here are commonly used species from the Approved Plant List. Increase curb appeal in your LID feature by using a variety of species including flowering plants. Plants in the low zone do most of the filtering, so you'll want to make sure plantings are densest there. Find the Approved Plant List at https://www.streetstocreeks.org/lid-for-owners.

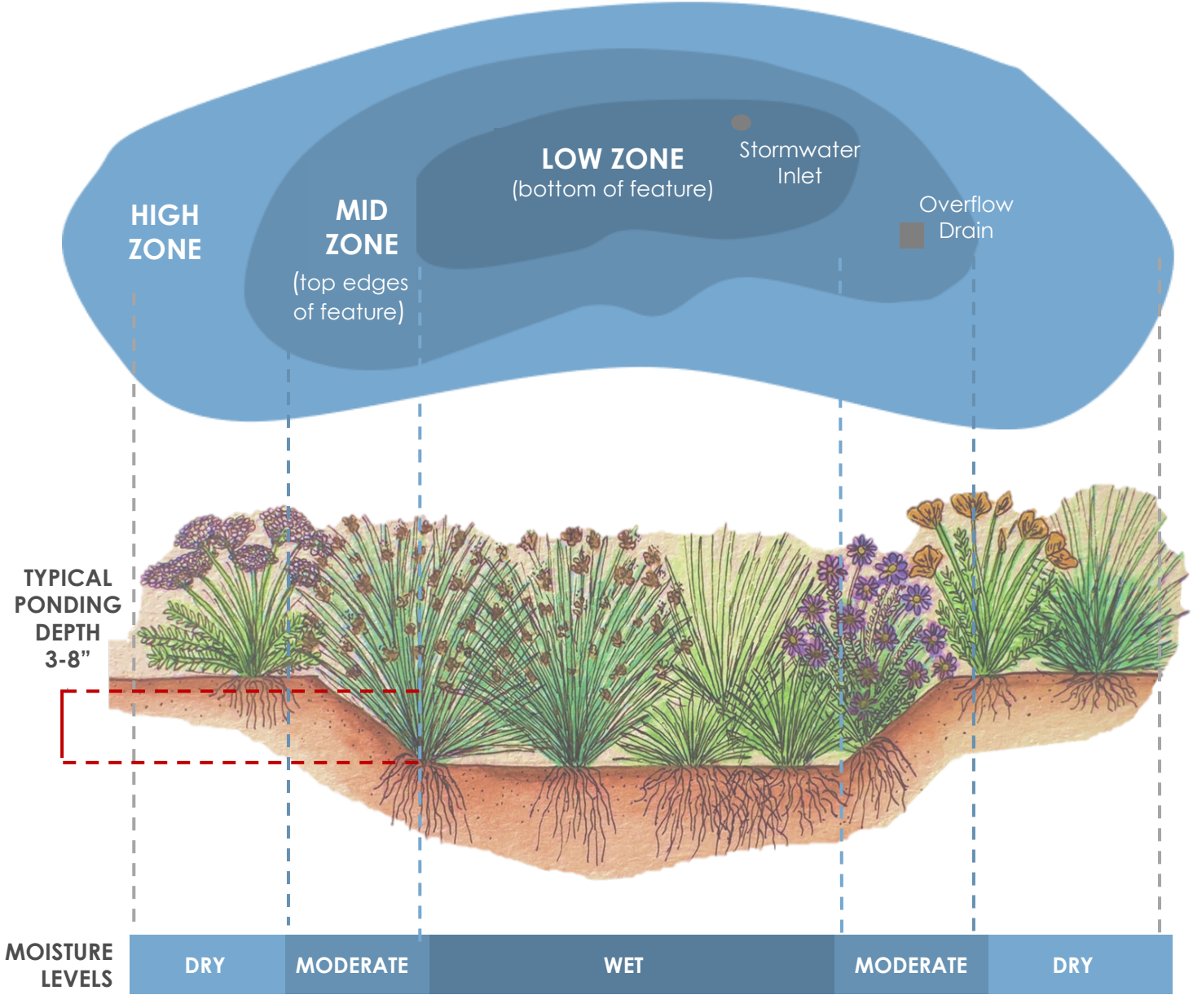


Illustration by Ashley Sporleder

LOW ZONE

Santa Barbara Sedge
Carex Barbarae

California Meadow Sedge
Carex Pansa

Grey Rush
Juncus Patens

MID ZONE

Douglas Iris
Iris Douglasiana

Sticky Monkey Flower
Mimulus Qurantiacus

Native Aster Species
Aster Spp.

HIGH ZONE

Cleveland Sage
Salvia Clevelandii

Manzanita
Arctostaphylos Spp.

Deer Grass
Muhlenbergia Rigens

Camas Lily
Camassia Leichtilinii

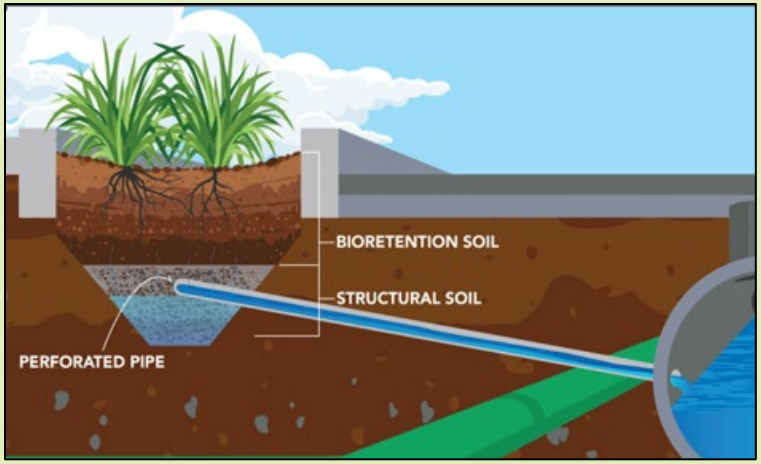
Yarrow Cultivars
Achillea Millefolium

California Fescue
Festuca Californica

California Lilac
Ceanothus Spp.

California Fuchsia
Epilobium Canum

Blue Bunchgrass
Festuca Idahoensis



Bioretention soil is designed to filter stormwater coming off roadways & impermeable surfaces.

This LID feature under construction shows structural components that are not visible once it is completed.

SOIL, MULCH & ROCK

Bioretention Soil

Soil within an LID feature is engineered to absorb and filter storm water. If bioretention soil is altered, the property owner will be required to replace the feature, at their expense, to the original design plan.

Interlocking Mulch

Mulch used to replenish groundcover must be interlocking, and rough cut. **Arbor or Vineyard** mulches are recommended and reduce the likelihood of it being transported to the storm drain.

Cobble and Rock

Cobble placed around inlets are energy dissipators. They slow the force of water flowing into the LID feature thereby reducing erosion within the feature. Cobble captures sediment and trash from road surfaces. It is important that this cobble remains in place.

Cobble and/or rock may be used in lieu of mulch. If used, it is imperative that the slope of the feature is maintained, the rocks do not inhibit the flow of stormwater into the feature, restrict designed infiltration rate or block the overflow drain.

Cobble placed at curb inlets reduce erosion within an LID feature.

PLANT CARE & ALTERATIONS

Plant Care

All plants need air, sunlight, water and nutrients to survive, but not every plant needs the *same* care. Although it is easier to over prune plants to reduce the frequency of care, it can lead to premature die off. To prevent having to revegetate an LID feature, please follow specific plant care recommendations for the plants living in your LID feature.

Herbicides

Herbicides **shall not be used** in an LID feature. LID features are designed to remove pollutants before stormwater enters the storm drain system. If added, herbicides create the potential for harmful chemicals to enter the storm drain system and inevitably the creeks.

Alterations

Any modification of LID **requires prior approval** from both your agency and the local Regional Water Quality Control Board. Walkways, paving stones, or structures that inhibit the infiltration of stormwater are **not allowed** otherwise. Contact your local agency to submit a project specific request to deviate from a constructed LID design before altering or deviating from the original design of the LID feature. Modifications without prior approval will be subject to corrective actions to return the LID feature back to the original design at the owner's expense.

Weed Liner

Weed liner is **not allowed** in LID features. Although it reduces unwanted vegetation, it will clog, reducing the function of LID features. If weed liner is used, you will be required to remove it.

The Common Rushes in this Bioretention feature have been pruned appropriately.

Weed liner is not allowed in LID.

Modifications **require prior approval** and are subject to corrective actions to replace the LID back to the original design.

LID features are designed to remove pollutants before stormwater enters the storm drain system. They are an extension of the storm drain.

Only rain down the storm drain!

FACTSHEET: PERMEABLE HARDSCAPING

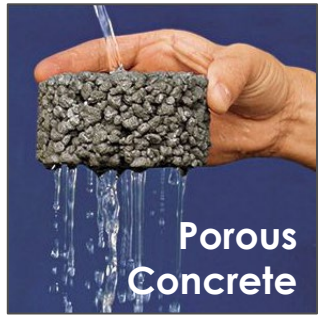
Permeable hardscaping contains **pores or separation joints** that allow water to flow through an **infiltration bed of gravel or drain rock**. Types of permeable pavement include porous asphalt and concrete, open joint or interlocking pavers, and plastic or concrete grid systems with gravel-filled or plant-filled voids. Permeable hardscaping can be found in parking lots, driveways, sidewalks, patios, or sometimes in street gutters as part of a vegetated roadside bioretention basin.

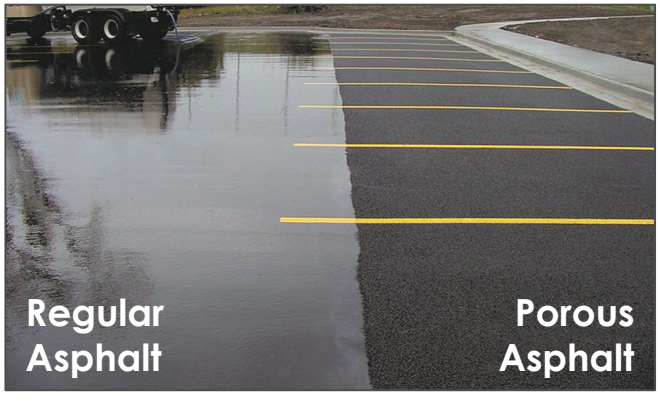
PREVENT CLOGGING

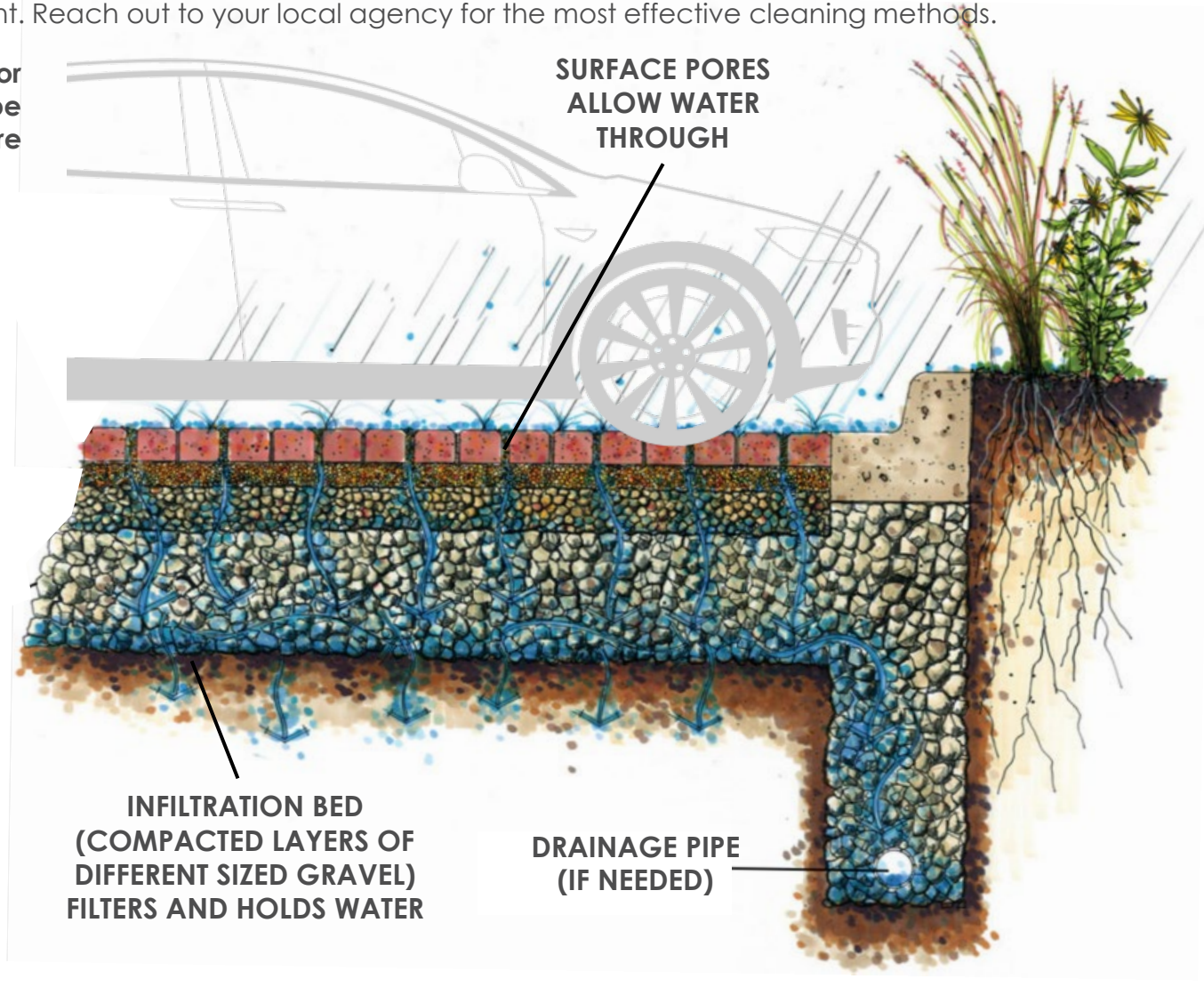
The most important maintenance for permeable hardscaping is keeping excess sediment out of the pore spaces. Keeping sediment from washing onto permeable hardscaping is the easiest form of preventative maintenance. Use a high-powered wet vacuum 1-2 times per year to remove sediment. Reach out to your local agency for the most effective cleaning methods.

If sediment builds up in the surface pores or below in the gravel bed and cannot be cleaned out, the feature may require replacement.

EXAMPLES







PERMEABLE HARDSCAPING MAINTENANCE

Permeable Pavement allows stormwater to flow into Roadside Bioretention features.

YES

Pore spaces are free of sediment. Pavement has no runoff during low-intensity storms.

NO

Sediment is clogging pore spaces, Reducing the flow of water into the feature.

DO…

- ✓ **Prevent** oil & automotive fluid drips; **clean up** spills immediately.
- ✓ **Prevent soil washout onto the pavement** by maintaining adjacent landscaped areas.
- ✓ **Clean up small amounts of sediment & leaves ASAP** using a wet/dry vacuum.
- ✓ **Hand pull weeds** & remove sediment to inhibit weed growth.
- ✓ **Use a tarp** under any landscaping materials that must be stored on permeable hardscaping, or store materials elsewhere.
- ✓ **Remove deeper sediment** at least semi-annually.
- ✓ **Clean drop inlets** twice per year (if present).

DON'T…

- ✗ Allow leaking vehicles to remain unprotected on permeable pavement.
- ✗ Power wash to clean permeable pavement. This cleaning method forces dirt & debris deeper into void spaces.
- ✗ Allow soil/mulch storage or construction staging on unprotected permeable hardscaping.
- ✗ Allow sediment to build up.
- ✗ Use herbicides to remove weeds.
- ✗ Wash mud from your vehicle, tools, or other surfaces onto permeable hardscaping.
- ✗ Repair vehicles on top of permeable hardscaping.

STORM DRAINS CONNECT STREETS TO CREEKS OURS TO PROTECT

BIORETENTION PLANTER FEATURE

GENERAL MAINTENANCE GUIDANCE

Follow these general maintenance guidelines for vegetated Low Impact Development (LID) features on your property.

ACTIVITY	NOTES	HOW OFTEN?	IDEAL SEASON(S)			
			SPRING	SUMMER	FALL	WINTER
Remove **trash** and debris	Clean out any trash that may have accumulated. Put trash in garbage and any leaves or dead plant material into the compost.	Monthly and after every major storm	✓	✓	✓	✓
Remove accumulated **sediment**	Use a shovel or wet/dry vac to remove accumulated sediment at the inlets or bottom of feature. If sedimentation is severe, coordinate with City/County to help identify potential sources. If clogged with sediment, top layer of engineered soil may need to be replaced to maintain drainage.	When sediment reaches 2" in depth, or once a year		✓	✓	
Water plants	Ensure irrigation timer is working and properly programmed for weather conditions. Run system to check for leaks or breaks and repair. Hand water regularly if there is no irrigation system. Visit srcity.org/WateringRecommendations, or other local water agency, for watering details.	Dry season, and especially when plants are young	✓	✓	✓	
Remove **weeds**	Hand pull weeds, making sure to remove the root. It is easiest to pull weeds while young. Use of herbicides is strictly prohibited.	Monthly in growing season, ideally before weeds make seeds	✓	✓		
Replace **plants** that have not done well	Replace plants that have died with plants from the original approved planting plan or equivalents from the Regional LID Manual Approved Plant List. Feature requires a minimum of 50% vegetation.	Replace as needed, inspect 1x/year	✓		✓	
Inspect and maintain **structures** such as inlets and overflow drain	Clear any plants that have grown over the inlets or drain. Remove any leaves, sediment, mulch, or other debris that may be clogging inlets/drains/splash pads. Make sure drainage grates are in place and in good repair.	As needed, inspect 1x/year			✓	
Check plastic **liner** (if applicable)	If there is a plastic liner, check that it is still attached to the sidewalls of the planters. If it is not attached, it will need repair because water can flow underneath the liner and cause problems.	As needed, inspect 1x/year			✓	
Clean up **grasses** and grass-like plants	Rake out dead material from grasses/sedges/rushes, and if needed, trim to appropriate length. To maintain long term health do not cut too short or too often.	As needed, inspect 1x/year	✓			
Prune trees and shrubs	Prune up lower branches of trees to maintain sidewalk clearance. Deadhead or lightly trim shrubs, thinning if needed to maintain sunlight to understory plants.	As needed, inspect 1x/year				✓
Add non-floatable **mulch**	If soil looks bare, add 2-3" of non-floatable mulch such as arbor mulch. Avoid evenly cut wood chip mulch, which floats & can cause clogging. Make sure mulch is pulled away from plant stems.	As needed, inspect 1x/year	✓	✓		

STORM DRAINS CONNECT STREETS TO CREEKS OURS TO PROTECT

RAIN GARDEN FEATURES

Follow these general maintenance guidelines for vegetated Low Impact Development (LID) features on your property.

GENERAL MAINTENANCE GUIDANCE

ACTIVITY	NOTES	HOW OFTEN?	IDEAL SEASON(S)			
			SPRING	SUMMER	FALL	WINTER
Remove **trash** and debris	Clean out any trash that may have accumulated. Put trash in garbage and any leaves or dead plant material into the compost.	Monthly and after every major storm	✓	✓	✓	✓
Remove accumulated **sediment**	Use a shovel or wet/dry vac to remove accumulated sediment at the inlets or bottom of feature. If sedimentation is severe, coordinate with City/County to help identify potential sources. If clogged with sediment, top layer of engineered soil may need to be replaced to maintain drainage.	When sediment reaches 2" in depth, or once a year		✓	✓	
Water plants	Ensure irrigation timer is working and properly programmed for weather conditions. Run system to check for leaks or breaks and repair. Hand water regularly if there is no irrigation system. Visit srcity.org/WateringRecommendations, or other local water agency, for watering details.	Dry season, and especially when plants are young	✓	✓	✓	
Remove **weeds**	Hand pull weeds, making sure to remove the root. It is easiest to pull weeds while young. Use of herbicides is strictly prohibited.	Monthly in growing season, ideally before weeds make seeds	✓	✓		
Replace **plants** that have not done well	Replace plants that have died with plants from the original approved planting plan or equivalents from the Regional LID Manual Approved Plant List. Feature requires a minimum of 50% vegetation.	Replace as needed, inspect 1x/year	✓		✓	
Inspect and maintain **structures** such as inlets and overflow drain	Clear any plants that have grown over the inlets or drain. Remove any leaves, sediment, mulch, or other debris that may be clogging inlets/drains/splash pads. Make sure drainage grates are in place and in good repair.	As needed, inspect 1x/year			✓	
Check plastic **liner** (if applicable)	If there is a plastic liner, check that it is still attached to the sidewalls of the planters. If it is not attached, it will need repair because water can flow underneath the liner and cause problems.	As needed, inspect 1x/year			✓	
Clean up **grasses** and grass-like plants	Rake out dead material from grasses/sedges/rushes, and if needed, trim to appropriate length. To maintain long term health do not cut too short or too often.	As needed, inspect 1x/year	✓			
Prune trees and shrubs	Prune up lower branches of trees to maintain sidewalk clearance. Deadhead or lightly trim shrubs, thinning if needed to maintain sunlight to understory plants.	As needed, inspect 1x/year				✓
Add non-floatable **mulch**	If soil looks bare, add 2-3" of non-floatable mulch such as arbor mulch. Avoid evenly cut wood chip mulch, which floats & can cause clogging. Make sure mulch is pulled away from plant stems.	As needed, inspect 1x/year	✓	✓		

STORM DRAINS CONNECT STREETS TO CREEKS OURS TO PROTECT

LID

Decals that identify LID features may be available in your jurisdiction.

For more information and resources visit:
streetstocreeks.org/lid

STORM WATER LOW IMPACT DEVELOPMENT SUBMITTAL (SWLIDS)

EXHIBIT FOR SECTION 7

POST-CONSTRUCTION DOCUMENTATION

Insert a post construction letter with the Engineer of Record's signature and stamp certifying that the LID features were built with significant conformance to design.

If changes occurred to the design, you must include updated calculations and new figures that reflect the changes.

NOTE: The project's jurisdiction requires the Engineer of Record (EOR) to provide certification, and supporting documentation, that the LID features have been designed in accordance to and are constructed/functioning per the current LID Manual and approved Final LID specifications. The Engineer shall complete a final inspection and certify that all BMPs will function per the intent of the approved design. Certification shall be provided to the governing agency prior to the issuance of final acceptance.