County of San Luis Obispo
Post-Construction Stormwater Guidebook

September 2024

COUNTY of SAN LUIS OBISPO

STORMWATER PROGRAM

LIST OF TABLES

List Of Figures

List of equations

APPENDICES

Guidebook Revisions and Amendments

Low Impact Development (LID) is an evolving and adaptive concept, and best practices and design guidance are subject to revision as technologies are developed and refined. Revisions and amendments to this guide will be evaluated on a biennial basis. Updates and revisions will be noted in Table 2, the Guidebook Revision and Amendment Log.

Table 1: Post-Construction Stormwater Guidebook revision and amendment log.

Date of Update	Section Updated	Page Updated	Update Summary Notes

Statement to Users

This guidebook is intended for use as a guidance document to support developing projects to comply with the Central Coast Post-Construction Requirements. The Central Coast Water Board does not approve or reject guidance documents and may differ in their interpretations of specific policy provisions.

ACRONYMS & ABBREVIATIONS

APN	Assessor's Parcel Number
ADU	Accessory Dwelling Unit
BMP	Best Management Practice
BSM	Biofiltration Soil Media
CCM Case	Condition Compliance Monitoring Permit Case
CCRs	Covenants, Conditions, and Restrictions
Central Coast Water Board	Central Coast Regional Water Quality Control Board
COA	Conditions of Approval
CSD	Community Services District
DMA	Drainage Management Area
EISA	Equivalent Impervious Surface Area
EPA	Environmental Protection Agency
HOA	Homeowner's Association
HSG	Hydrologic Soils Group
JADU	Junior Accessory Dwelling Unit
LID	Low Impact Development
MS4	Municipal Separate Storm Sewer System, as defined in the Clean Water Act
MS4 Area	Areas regulated by the MS4 Phase II Permit.
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service (US Department of Agriculture)
O&M	Operations and Maintenance
PCRs	Regional Post-Construction Requirements, current version adopted by the Central Coast Water Board in July 2013. Resolution No. R3-2013-0032.
PR	Performance Requirements, as detailed in the Regional Post-Construction Requirements.
SCM	Stormwater Control Measure
sf	Square feet
SFD	Single Family Dwelling
USA	Urban Sustainability Area
WMZ	Watershed Management Zone

DEFINITIONS

Term	***Definition***
Best Management Practice (BMP)	A program, technology, process, citing criteria, operational method, or engineered system which when implemented prevents, controls, removes, or reduces stormwater pollution. *Source: Sonoma County Stormwater LID Technical Design Manual, 2020*
Bioretention	A Stormwater Control Measure designed to retain stormwater runoff using vegetated depressions and soils engineered to collect, store, treat, and infiltrate runoff. Bioretention designs do not include underdrains. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Biotreatment or Biofiltration	A Stormwater Control Measure designed to detain stormwater runoff, filter stormwater through soil media and plant roots, and release the treated stormwater runoff to the storm drain system. Biotreatment systems include an underdrain. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Biofiltration Soil Media	Blended soil media intended to filter stormwater and support plant growth while minimizing the leaching of potential pollutants. Biofiltration Soil Media is also referred to as Engineered Soil Media and Bioretention Soil Media. *Source: County of San Diego County BMP Design Manual, 2020*
C-Factor	Representation of a surface's ability to produce runoff. Surfaces that produce higher quantities of runoff are represented by higher C-Factors (such as impervious surfaces.) *Source: Sonoma County Stormwater LID Technical Design Manual, 2020*
Conditions of Approval	Requirements a jurisdiction may adopt for a project in connection with a discretionary action (e.g., issuance of a use permit). COAs may include features to be incorporated into the final plans for the project and may also specify uses, activities, and operational measures that must be observed over the life of the project. *Source: County of San Diego County BMP Design Manual, 2020*
Detention	Temporarily holding or storing storm water runoff via a designed outlet (e.g., underdrain, orifice) to provide flow rate and duration control. *Source: County of San Diego County BMP Design Manual, 2020*
Direct Infiltration	Infiltration via methods or devices designed to bypass surface soils and transmit runoff directly to subsurface soils. Examples of direct infiltration include infiltration trenches, underground chambers, and dry wells. *Source: County of San Diego County BMP Design Manual, 2020. City of Gilroy, City of Morgan Hill, County of Santa Clara. Stormwater Management Guidance Manual for Low Impact Development & Post-Construction Requirements. June 2015.*
Hydraulic Residence Time	The length of time between inflow and outflow that runoff remains in a SCM. *Source: County of San Diego County BMP Design Manual, 2020*

Term	***Definition***
Impervious Surface	A hard, non-vegetated surface area that prevents or significantly limits the entry of water into the soil mantle, as would occur under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, oiled, or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether the thresholds for application of Performance Requirements are exceeded. However, for modeling purposes, open, uncovered facilities that retain/detain water (e.g., retention ponds, pools) shall be considered impervious surfaces. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Indirect Infiltration	Infiltration via facilities designed to hold runoff and allow it to percolate into surface soils. Runoff may reach groundwater indirectly or may be drained through subsurface pipes. Examples of indirect infiltration include bioretention, landscaped areas, and vegetated basins. *Source: County of San Diego County BMP Design Manual, 2020. City of Gilroy, City of Morgan Hill, County of Santa Clara. Stormwater Management Guidance Manual for Low Impact Development & Post-Construction Requirements. June 2015.*
Low Impact Development	A stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation, and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
New Development	Land disturbing activities that include the construction or installation of buildings, roads, driveways and other impervious surfaces. Development projects with preexisting impervious surfaces are not considered New Development. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Pervious Surface	A surface that allows varying amounts of stormwater to infiltrate into the ground. Examples include pasture, native vegetation areas, landscape areas, and permeable pavements designed to infiltrate. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Pretreatment	Removal of gross solids, including organic debris and coarse sediment, from runoff to minimize clogging and increase the effectiveness of SCMs. *Source: County of San Diego County BMP Design Manual, 2020*
Replaced Impervious Surface	The removal of existing impervious surfaces down to bare soil or base course, and replacement with new impervious surface. Replacement of impervious surfaces that are part of routine road maintenance activities are not considered replaced impervious surfaces. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*

Term	***Definition***
Repaired Impervious Surface	Surfaces that are repaired by practices that include overlay, slurry sealing, fog sealing, crack sealing, pothole and square cut patching, or re-surfacing with in-kind material without expanding the footprint of the impervious area. Repairs maintain the original line, grade, hydraulic capacity and overall footprint of the existing surface without disturbance of the base course. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Redevelopment	On a site that has already been developed, construction or installation of a building or other structure subject to the Permittee's planning and building authority including: 1) the creation or addition of impervious surfaces; 2) the expansion of a building footprint or addition or replacement of a structure; or 3) structural development including construction, installation, or expansion of a building or other structure. It does not include routine road maintenance, nor does it include emergency construction activities required to immediately protect public health and safety. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Self-Retaining Area	(also called "zero discharge" areas) Areas designed to retain some amount of rainfall (by ponding and infiltration and/or evapotranspiration) without producing stormwater runoff. Self-Retaining Areas may include graded depressions with landscaping or pervious pavement. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Self-Treating Area	A portion of a Regulated Project in which infiltration, evapotranspiration and other natural processes remove pollutants from stormwater. The self-treating areas may include conserved natural open areas and areas planted with native, drought-tolerant, or LID appropriate vegetation. The self-treating area only treats the rain falling on itself and does not receive stormwater runoff from other areas. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*
Structural Stormwater Control Measure (SCM)	A manufactured facility, structural mechanism, or landscape feature designed and constructed to mitigate the adverse impacts of stormwater runoff (e.g. canopy, basin). *Source: Sonoma County Stormwater LID Technical Design Manual, 2020*
Trash Amendment	An amendment to the State Water Resources Control Board's Water Quality Control Plan for Ocean Waters and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California that establishes a trash discharge prohibition and includes a strategy to provide "full capture" of trash from stormwater MS4 permits. *Source: Sonoma County Stormwater LID Technical Design Manual, 2020*
Watershed Management Zone	A categorization of the urbanized portions of MS4 Area based on common key watershed processes and receiving water type (creek, marine nearshore waters, lake, etc.). The Central Coast Region is categorized into 10 WMZs. *Source: Central Coast Resolution R3-2013-0032, Post-Construction Requirements*

CREDITS

This guidebook was prepared for the County of San Luis Obispo with the support of Wallace Group consultants. The County gratefully acknowledges the public agencies whose stormwater management and low impact development guidance documents provided valuable insight and information for this guidebook, including:

City of Gilroy, City of Morgan Hill, County of Santa Clara. 2015. "Stormwater Management Guidance Manual for Low Impact Development & Post-Construction Requirements."

City of Salinas. 2021. "Stormwater Development Standards for New and Redevelopment Projects."

City of San Diego, 2018. "The City of San Diego Storm Water Standards."

County of Sonoma. 2017. "Storm Water Low Impact Development Technical Design Manual, Revised December 2020."

County of Santa Barbara, Project Clean Water. 2017. "Stormwater Technical Guide for Low Impact Development, 2nd Edition."

County of Orange. 2017. "South Orange County Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans."

California Department of Transportation, Division of Environmental Analysis. 2012. Biofiltration Swale Design Guidance.

Contra Costa Clean Water Program, 2022. Stormwater C.3 Guidebook, 8th Edition.

County of San Diego. 2020. "County of San Diego BMP Design Manual." 2nd update to February 2016 Manual.

Santa Clara Valley Urban Pollution Prevention Program (SCVURPPP), 2016. Guidance for Implementing Stormwater Requirements for New Development and Redevelopment Projects (C.3 Stormwater Handbook)

Riverside County LID BMP Handbook, Riverside County Flood Control and Water Conservation District, 2011.

State of Washington, Department of Ecology. Emerging Stormwater Treatment Technologies (Technology Assessment Protocol- Ecology TAPE) Guidance Documents. 2018.

Central Coast Low Impact Development Initiative (LIDI), 2013. "Bioretention Engineering Standards: Details and Technical Specifications."

1. Introduction

San Luis Obispo County is located on the Central Coast of California and comprises nearly 1,300 square miles of area with over 100 miles of coastline. The Mediterranean climate and broad diversity of landscapes present unique challenges for construction projects and new development. Protecting the county's waterways and natural resources is fundamental to preserving the economic vitality and quality of life enjoyed by residents and visitors. Accordingly, incorporation of post-construction stormwater runoff standards to new and redevelopment projects is essential to protecting vital water resources as the county grows.

The California Regional Water Quality Control Board for the Central Coast Region (Central Coast Water Board) adopted the Post-Construction Stormwater Management Requirements (PCRs) for Development Projects in the Central Coast [Resolution R3-2013-0032] in July 2013. The County of San Luis Obispo (County) is responsible for applying the PCRs to development projects across many of the County's unincorporated census-designated places. New or redevelopment projects located within all areas covered by the California Phase II Municipal Separate Storm Sewer System NPDES permit (MS4 Area) are subject to the PCRs.

The PCRs are intended to protect surface waters, groundwater supplies, and the beneficial uses of the County's waterways, including creeks, lakes, rivers, and coastal waters. The PCRs are designed to preserve water quality such that beneficial uses including recreation, fish habitat, shellfish production, agricultural use, and domestic use can be maintained.

a. Background

Several versions of Low Impact Development (LID) policies and requirements have been instituted in the County over the previous two (2) decades, as depicted in Table 2: Summary of Post-Construction Stormwater Policies Applied in San Luis Obispo County. The current regional framework, adopted in 2013 and instituted in 2014, is more detailed and robust than previous policies.

Table 2: Summary of Post-Construction Stormwater Policies Applied in San Luis Obispo County.

Date	Requirements	Applicable Area
Before May 10, 2010	Limited PCR Requirements	
May 10, 2010 through March 3, 2011	MS4 Attachment 4 Post Construction Requirements	2003 MS4 Boundaries
March 3, 2011 through March 6, 2014	Interim Low Impact Development Guidelines	2003 MS4 Boundaries
July 1, 2013	California Construction General Permit for Stormwater Discharges, Section XIII. Post-Construction Standards	Statewide
March 6, 2014 - present	Central Coast Water Board Resolution R3-2013-0032 – Phase II Small MS4 Permit.	2013 MS4 Boundaries

The PCRs mandate the use of LID to minimize, retain, and treat post-construction stormwater runoff. In addition to LID design features, development projects may also require integration of structural stormwater control measures (SCMs) to provide water quality treatment, improve stormwater retention or manage peak flows, and achieve compliance with specific performance requirements. Beyond the design and construction phases of a project, the PCRs also mandate the establishment of an ongoing operations and maintenance framework for certain completed regulated projects.

Implementation and Regulatory Reporting

The Central Coast Water Board has delegated responsibility for applying the PCRs to the County through the County's Phase II Municipal Stormwater Permit. The County is responsible for ensuring that new and redevelopment projects comply with the PCRs and submits annual reports to the Central Coast Water Board summarizing compliance activities. Project documents for construction permits approved by the County are subject to audit by the Central Coast Water Board. The County is subject to State enforcement actions or penalties if compliance with applicable performance standards on approved projects is not clearly documented and achieved.

b. Purpose of This Guidebook

The purpose of this guidebook is to provide technical guidance and strategies for effectively complying with the PCRs in the County. The guide addresses stormwater management strategies for use in the planning, design, construction, and maintenance phases of a project and is intended to serve as a resource for developers, contractors, engineers, architects, and planners.

The information in this guidebook is intended to support compliance with the PCRs and does not supersede the PCRs or requirements adopted by other municipalities or regulatory agencies. Additional requirements imposed by Governing Agencies such as Cal Green, CEQA, 401/404 permitting, or flood control standards still apply as appropriate.

Since stormwater management considerations are highly site-specific, only broad considerations and guidance are provided in this guidebook. The appendices provide references to additional maps, resources, calculators, and checklists to support applicants.

What is Stormwater Low Impact Development (LID)?

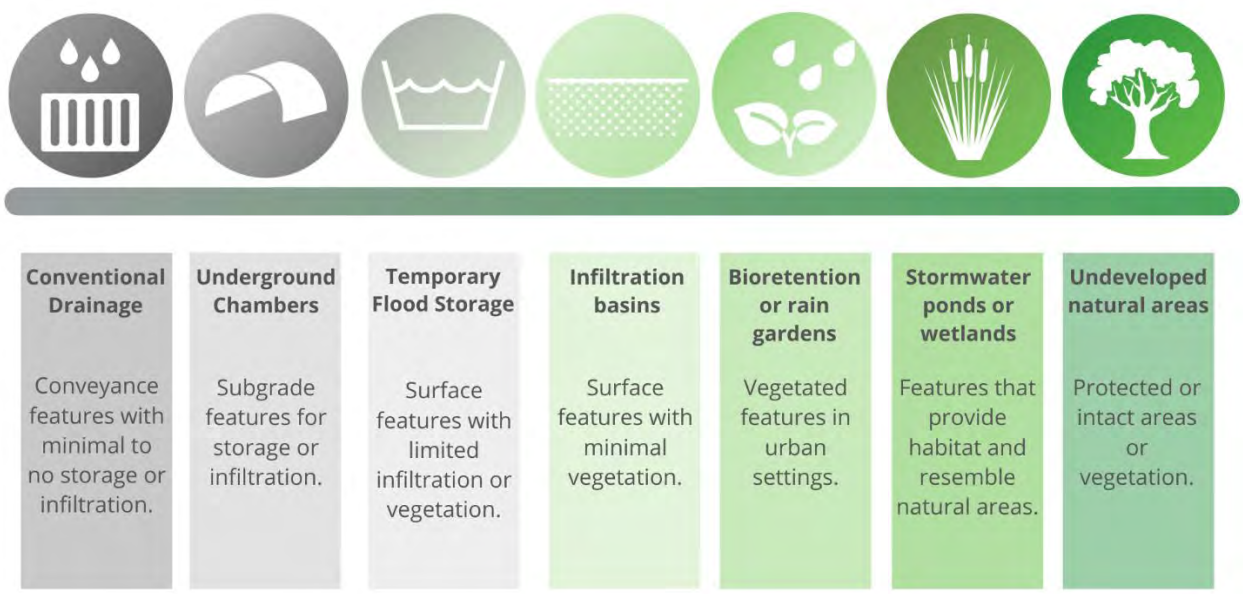
Undeveloped natural landscapes allow a significant proportion of rainfall to infiltrate into the soil, which is essential for all watershed functions and replenishing groundwater supplies. The development of natural landscape areas with impervious (nonporous) surfaces like roads, parking lots, and roofs dramatically diminishes the opportunity for landscapes to infiltrate rainwater and stormwater runoff and maintain natural watershed functions.

Low Impact Development (LID) aims to replicate the pre-development site hydrology and watershed processes through utilization of site design strategies and optimization of landscaped areas. When implemented effectively, LID design practices can provide

treatment and filtration of stormwater runoff and increase runoff infiltration onsite. Small-scale LID features are intended to be permanent site assets.

LID prioritizes incorporating 'green' infrastructure into new and redevelopment projects over more traditional types of 'gray' infrastructure. While gray infrastructure has historically collected and conveyed stormwater offsite as efficiently as practical, green infrastructure focuses on retaining and infiltrating stormwater onsite to replicate the site's pre-development hydrology. Figure 1: Comparison of green and gray stormwater management strategies demonstrates different stormwater management strategies and their relative ranking as green or gray infrastructure.

Figure 1: Comparison of green and gray stormwater management strategies



The PCRs prioritize the implementation of green stormwater management strategies over traditional gray strategies. The County is mandated by the Central Coast Water Board to limit the use of gray stormwater management strategies where green strategies are feasible and achievable.

How This Manual Relates to Other Requirements

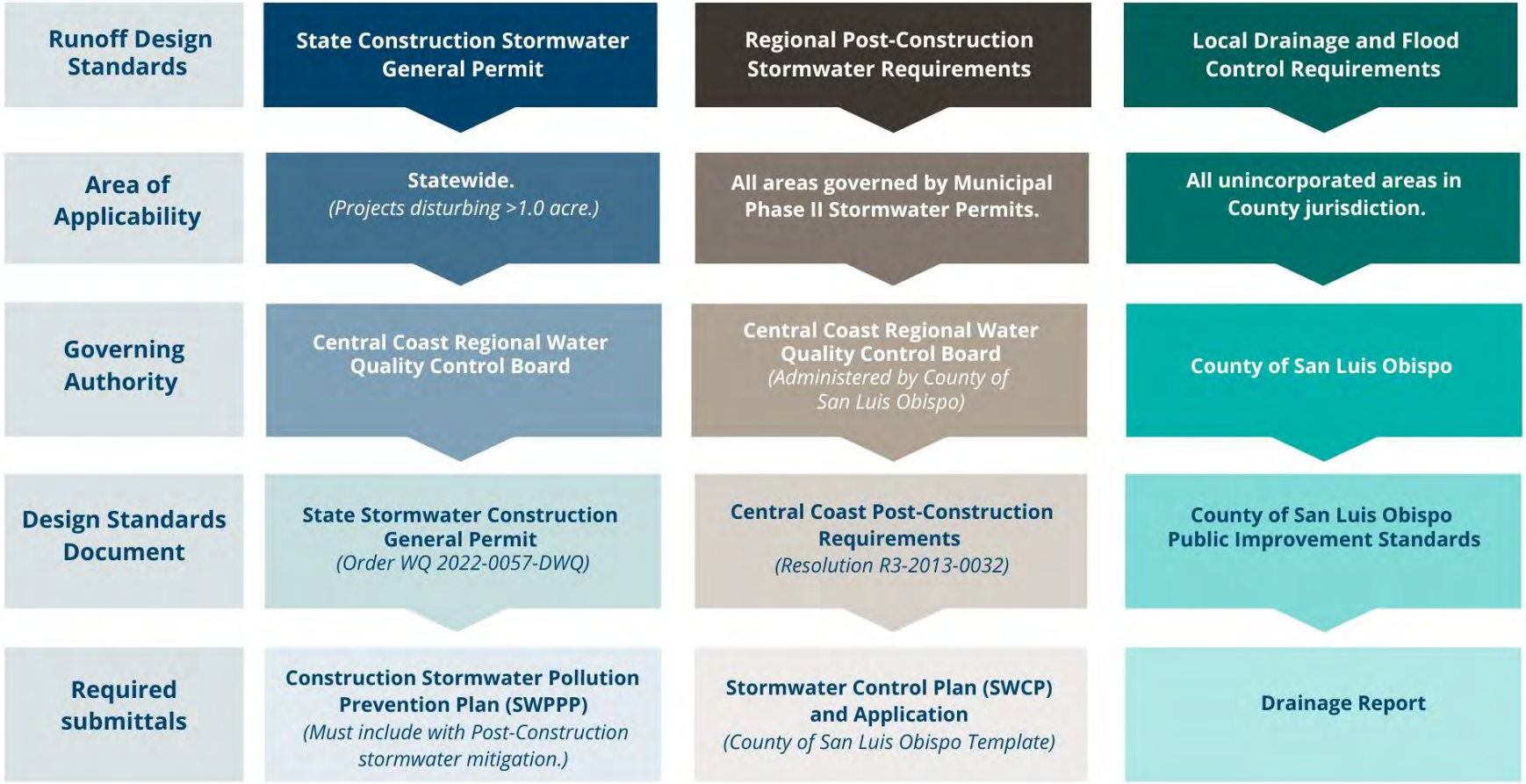
Several State and local policies dictate the volume of stormwater that must be treated and detained or retained onsite in San Luis Obispo County (i.e., PCRs, Flood Control Requirements, project conditions of approval). Depending on the requirements or policy, different stormwater management strategies and retention volume criteria may be required for the site design.

At the outset of the development project design process, the requirements of each policy indicated in Figure 2 should be carefully evaluated for their applicability to the proposed project. Multiple standards and submittals may be required based on project scope and location. A pre-application meeting conducted through the Department of Planning and

Building that includes other department stakeholders is strongly encouraged for large, phased, or multi-use projects that must comply with multiple standards.

This guidebook specifically addresses strategies to comply with the Regional Post-Construction Stormwater Requirements. Depending on site design and applicable requirements, compliance with the Regional Post-Construction Requirements may partially satisfy local drainage and flood control requirements and fully satisfy the post-construction standards of the State Construction Stormwater General Permit Order 2022-0057-DWQ, adopted September 8, 2022. However, in most cases, additional retention or detention will be required to satisfy local drainage and flood control requirements.

Figure 2: Policies dictating post-construction stormwater runoff control standards.



2. Project Triggers

The location and scope of a project will determine whether the PCRs must be applied to the project and which Performance Requirements (PR) must be met. Project specifications such as the amount of impervious area created/replaced, the total area of soil disturbance, and applicable Watershed Management Zone (WMZ) must be determined early in the planning stages to begin evaluation of PCR applicability.

a. Geographic Areas

The County of San Luis Obispo applies the PCRs to all areas covered by the County's Phase II Municipal Separate Storm Sewer Permit (MS4 Areas). This includes many of the County's unincorporated communities, census designated places (CDPs), and urban reserve areas located near the outskirts of incorporated cities. The precise boundaries of the County's MS4 Area are subject to change periodically due to annexations into the incorporated cities. Development projects located within any of the County's incorporated cities are also subject to the PCRs. Development review, permitting, and PCR compliance are administered by the cities, not the County, within incorporated city limits.

Additionally, certain requirements of the PCRs vary depending upon the WMZ a project is located in. The applicable WMZ should be determined early in the project planning stages. WMZ boundaries were determined by the Central Coast Water Board based on key watershed processes and receiving water types, and the County does not have authority to modify or approve exceptions to the designated WMZs.

The County's Department of Planning and Building hosts an online GIS web mapping application, which is the preferred method for determining if a project is in an MS4 Area and the applicable WMZ. Instructions for utilizing this tool are provided in Appendix A.

b. Previously Vested Projects

In rare circumstances, a project may have received approval and vesting prior to the effective date of the PCR policies outlined in Table 1. To qualify as a previously vested project, the project's vesting tentative subdivision map must have been deemed complete and received first discretionary approval of project design prior to March 6th, 2014. The approved designs must show drainage, flood control, and stormwater conveyance infrastructure that comply with the prior policies. Additionally, the project Conditions of Approval (via Notice of Final Action) must not indicate that compliance with LID or Post-Construction stormwater standards was required at the time of approval. A Notice of Final Action letter should reflect this project information. Copies of these documents must be provided as part of the construction permit application. A change to a previously approved and vested project may require additional Conditions of Approval and require compliance with the PCRs.

Projects that were vested prior to the effective date of the PCRs are not exempted from compliance with the State Construction Stormwater General Permit Order 2022-0057-DWQ, which also contains post-construction stormwater mitigation requirements. There are no

provisions in the State Construction Stormwater General Permit that offer a similar vesting exemption.

c. Project Triggers and Exemptions

The PCRs categorize construction activities and development projects in the MS4 Area as either "Unregulated" or "Regulated" based on specific project characteristics. Determining the project's regulatory status is a fundamental step of the construction permit application process. Additionally, there are several compliance strategies available to regulated projects that are unable to achieve full compliance with the PCRs.

Unregulated Projects

While the determination of PCR compliance is typically based on new construction project impervious area, a limited scope of projects are designated as 'unregulated' by the Central Coast Water Board. Applicants should closely review the unregulated project criteria in Table 3. Construction permit applications for unregulated projects are required to include the County's Post-Construction Stormwater Waiver Request Form and justification that ensures compliance with unregulated project conditions. This form documents project information and allows the County to verify and confirm that the project is unregulated per the PCRs.

Table 3: Unregulated project criteria.

Unregulated Project Criteria
Unregulated project criteria are established by Central Coast Regional Water Quality Control Board Resolution R3-2013-0032, Attachment 1.
Road and Parking Lot Maintenance 1) Road surface repair, including slurry sealing, fog sealing, and pothole and square cut patching 2) Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage 3) Shoulder grading 4) Cleaning, repairing, maintaining, reshaping, or re-grading drainage systems 5) Crack sealing 6) Resurfacing with in-kind material without expanding the road or parking lot 7) Practices to maintain original line and grade, hydraulic capacity, and overall footprint of the road or parking lot 8) Repair or reconstruction of the road because of slope failures, natural disasters, acts of God or other man-made disaster
Sidewalk and bicycle path lane projects, where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas
Trails and pathways, where no other impervious surfaces are replaced or created, and built to direct stormwater runoff to adjacent vegetated areas

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics
Curb and gutter improvement or replacement projects that are not part of any additional creation or replacement of impervious surface area (e.g., sidewalks, roadway)
Second-story additions that do not increase the building footprint
Raised (not built directly on the ground) decks, stairs, or walkways designed with spaces to allow for water drainage
Photovoltaic systems installed on/over existing roof or other impervious surfaces, and panels located over pervious surfaces with well-maintained grass or vegetated groundcover, or panel arrays with a buffer strip at the most down gradient row of panels
Temporary structures (in place for less than six (6) months)
Electrical and utility vaults, sewer and water lift stations, backflows, and other utility devices
Above-ground fuel storage tanks and fuel farms with spill containment system

It is important to note that a project can be waivable only if it consists of listed items. A development project may include a combination of several elements, both regulated and unregulated. If the scope of work includes more than the listed criteria of the waivable items indicated, then the project is not fully waivable and cannot be considered unregulated.

Accessory Dwelling Units and Accessory Structures

California government code requires that permit applications for an accessory dwelling unit (ADU) or junior accessory dwelling unit (JADU) shall be considered and approved ministerially without discretionary review or hearing. Construction of an ADU or JADU does not modify the zoning of the site to multi-family residential, and the stormwater and construction standards for multi-family residential construction do not apply. The County will apply the PCRs to projects constructing ADUs and JADUS as they are written for detached single-family homes.

Additionally, parcels zoned for single-family residential use are authorized to construct residential accessory structures (barns, sheds, detached garages, etc.) consistent with County land use and building codes. Construction of these structures is dependent upon single-family residential zoning, and the PCR triggers and requirements identified for single-family home projects will be applied.

Technical Infeasibility

The PCRs provide a mechanism for the County to approve claims of technical infeasibility for onsite compliance with select performance requirements. County approval of technical infeasibility does not waive the requirement for applicants to provide alternative or off-site compliance within the same watershed as the regulated project. Applicants will be required to meet all of the PCR criteria associated with technical infeasibility.

The County will require submittal of an opportunities and constraints map (per the PCRs) to demonstrate the criteria are met for a technical infeasibility finding. Additional detail about the criteria for technical infeasibility is provided in Chapter 4. Applicants are encouraged to thoroughly review the specific criteria associated with technical infeasibility determinations in Resolution R3-2013-00032.

Urban Sustainability Areas and Regional Watershed Plans

The PCRs afford limited alternative compliance options for projects located within approved Urban Sustainability Areas (USAs) or areas subject to Regional Watershed Plans. The County has not developed plans for USAs or regional watershed plans that would allow applicants to exercise these alternatives. Due to the vast, variable, and discontinuous coverage of the County's MS4 Permit Areas, the County does not plan to pursue a Regional Watershed Plan or USA designations for the purpose of facilitating alternative compliance with the PCRs.

d. Site Determination

In the context of PCR compliance, the "project site" includes all areas of development, including both onsite improvements and public improvements within the public right-of-way. Onsite improvements include all structural and nonstructural development planned within the boundaries of privately owned property. Public improvements associated with the project that may be constructed in the public right-of-way may include new roads, road widening, utility installation, or other improvements associated with the project. The development may require installation of structural SCMs on private property, in the public right-of-way, or on properties held in common ownership. Public improvements that are required as a condition of the project, but not contiguous to the rest of the project site, must demonstrate PCR compliance and may be considered a separate project.

e. Impervious Surfaces, Surface Types

Redevelopment and new construction projects typically incorporate several types of hardened surfaces. Such alteration of a landscape from natural to hardened inherently changes the ratio of stormwater that is either infiltrated or transformed into stormwater runoff from the ratio associated with predevelopment conditions. The magnitude of impacts associated with post-project stormwater runoff generally increases as the project's impervious surface area increases. This section further outlines types of surfaces and which surface modifications are regulated by the PCRs.

Impervious Surfaces, Calculations

Impervious surfaces include any hard, non-vegetated surface areas that prevent or significantly limit the entry of water into the soil mantle, as would have occurred under natural conditions prior to development. Common impervious surfaces include rooftops, walkways, patios, driveways, parking lots or storage areas, and concrete or asphalt paving.

Many projects require repair or replacement of existing impervious surfaces as a component of development. Generally, construction activities that affect impervious surfaces but do not involve removal and/or replacement of the base course or result in a change in grade are considered repairs. These repaired areas are not included in the regulated impervious

surface area calculations. Construction activity that removes an impervious surface and underlying base course (down to native soils) is considered impervious surface replacement and is regulated by the PCRs.

Precise calculation of new, replaced, repaired, and removed impervious surface areas is essential to determine which Performance Requirements are applicable to the project. New and replaced impervious surface areas are the most important factors in making this determination. To determine replaced impervious surface area, a drawing of the existing, pre-project impervious areas should be placed as an overlay on the proposed site plan.

The County considers the following surfaces impervious for the purpose of calculating surface areas that apply to the Performance Requirement thresholds:

- Roofs, concrete, asphalt, grouted pavers.
- Bricks or solid pavers.
- Grouted rock.
- Decomposed granite with binder.
- Dense-graded aggregate or dense-graded road base (e.g. Class II, red rock).

Figure 3 lists each impervious surface category pertinent to determining the applicable Performance Requirements. The total area of each of these surface modifications should be determined before beginning impervious area calculations. This information is required to complete permit applications, as detailed further in Chapter 3.

Figure 3: Impervious surface categories for determining project performance requirements.

Applicants should begin by calculating the Total New and Replaced Impervious Area. In new construction projects on vacant properties, there are typically no replaced impervious areas.

Equation 1: Total new and replaced impervious area.

In some limited cases, a reduction in total imperviousness from the pre-project to post-project site condition may reduce the net impervious area. The reduced impervious area credit is only applicable where there is a net pre-project to post-project reduction in impervious area.

Equation 2: Net impervious area.

Example project calculations are included in Figures 6 and 7 at the end of this chapter.

Engineered Pervious Surfaces

The inclusion of engineered pervious surfaces in new development plans is common throughout San Luis Obispo County. Examples of engineered pervious surfaces may include turf block, artificial turf, unit pavers with permeable joints, pervious asphalt, porous/pervious concrete, or open-graded gravel. Incorporation of engineered pervious and natural pervious surfaces into new and redevelopment projects can reduce the performance requirements applied to the project. Chapter 6 includes additional information on how to incorporate engineered pervious surfaces into project calculations.

f. Performance Requirements Summarized

The PCRs utilize a group of Performance Requirements for new and redevelopment projects that invoke stormwater management strategies that preserve key watershed processes. This section briefly summarizes each Performance Requirement and its related implementation requirements, including the types of projects subject to the Performance Requirements.

Figure 4 presents a flow chart for determining which Performance Requirements apply to regulated projects. The performance requirements and applicable regulated projects are also summarized in Table 4 and detailed more thoroughly in the following sections.

Figure 4: Applicable performance requirements determination chart.

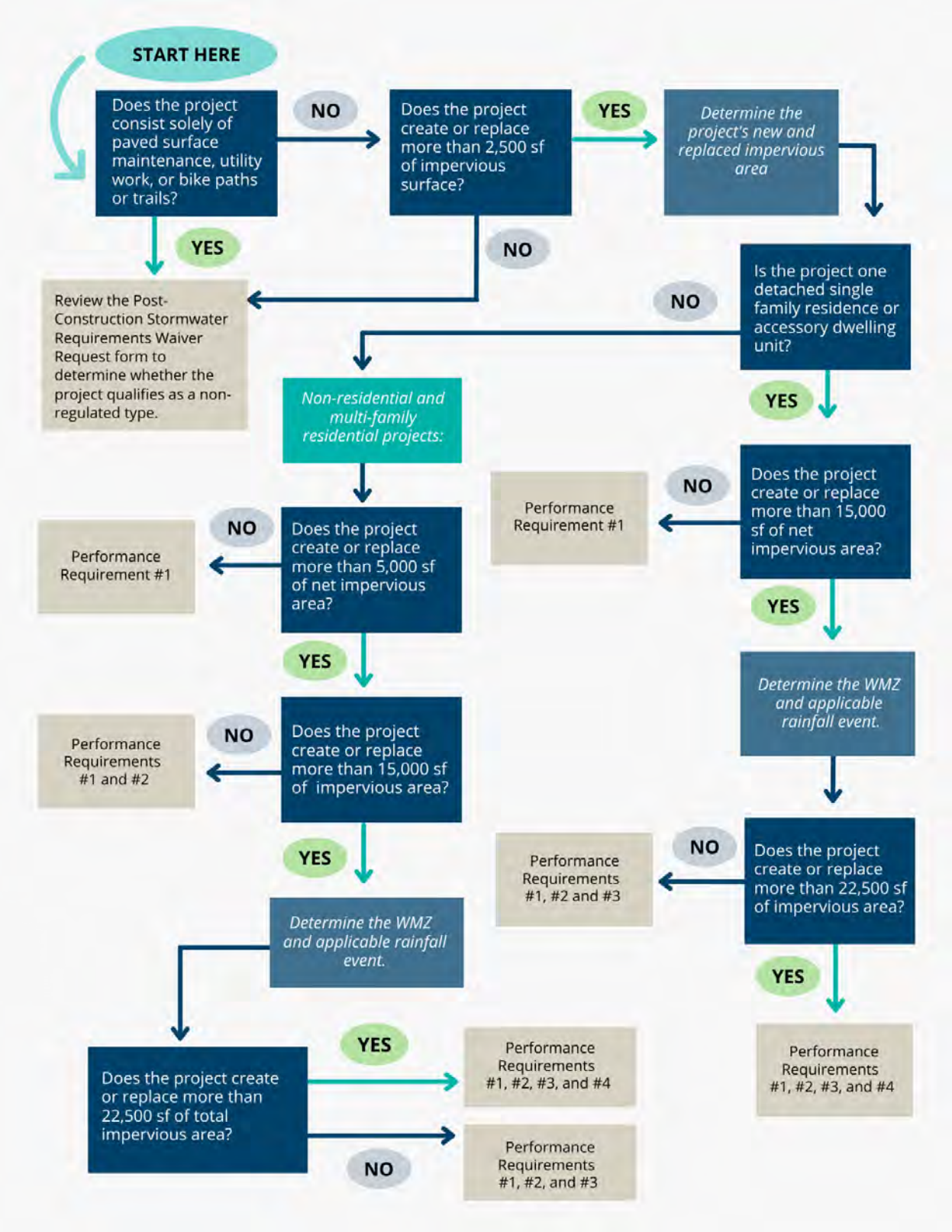


Table 4: Summary of post-construction performance requirements.

Central Coast Post-Construction Stormwater Performance Requirements	
Type of Project	Requirements
Tier 1: Projects, including one single-family home that is not part of a larger plan of development, that create or replace 2,500 sf or more of impervious surface.	**Implement Performance Requirement #1** **LID Measures:** Limit disturbance of natural drainage features. Limit clearing, grading, and soil compaction. Minimize impervious surfaces. Incorporate at least one (1) runoff reduction measure.
Tier 2: Projects, other than one single-family home that is not part of a larger plan of development, that create or replace 5,000 sf or more net impervious surface.*	**Performance Requirement 1, plus:** Treat runoff with an approved and appropriately sized LID treatment system prior to discharge on or from the site.
Tier 3 Projects, other than single-family homes, that create or replace 15,000 sf or more of impervious surface. Single-family homes that create or replace 15,000 sf or more net impervious surface.*	**Performance Requirements 1 & 2, plus**: Prevent offsite discharge from events up to the 95th percentile rainfall event using Stormwater Control Measures.
Tier 4 Projects that create or replace 22,500 sf of impervious surface.	**Performance Requirements 1, 2, & 3, plus:** Control peak flows to not exceed pre-project flows for the 2-year through 10-year events.
** Net impervious surface equals new plus replaced impervious area minus the total pre-project-to-post project reduction in impervious area (if any).*	

Performance Requirement #1 (PR#1): Site Design and Runoff Reduction

This requirement applies to projects that create and/or replace > 2,500 square feet of impervious surface and focuses on the LID design concept of mimicking predevelopment hydrology. Projects must incorporate site design and runoff reduction measures where feasible. Site design measures are the best opportunity to implement management strategies that maintain the soil and vegetation regime, which in turn, support other strategies for flow control and water quality treatment.

While detailed plans are not required for demonstrating compliance, applicants must indicate that the specific measures will be incorporated into the project site design where feasible. The location of site design elements that support PR#1 compliance should be clearly labeled on grading or utility plan sheets and detailed in the SWCP (for applicable projects). Some examples of PR#1 site design strategies are provided in Table 5.

Table 5: Examples of PR#1 site design strategies.

Strategy	Implementation
Limit disturbance of creeks and natural drainage features.	• Indicate on the plans where the project will avoid wetlands and waterways. This may include agency-mandated buffers or development setbacks. • Incorporate design elements that avoid routing runoff to direct waterway outfalls. Indicate that an alternative to direct outfall was selected. • Indicate where flatwork, abutments, or foundations are deliberately set back from creek banks or natural drainage features.
Minimize compaction of highly permeable soils.	• Indicate areas on the plans that will be protected from grading, clearing, and/or over excavation. This may include landscaped or unpaved areas.
Limit clearing and grading of native vegetation.	• Indicate on site plans where existing native trees will be protected in place. • Indicate any locations where existing native plants will be protected. This may include protection by mandatory setbacks (i.e. near sensitive features, sensitive plants, wetlands, or waterways.)
Minimize impervious surfaces and concentrate improvements on least-sensitive portions of the site.	• Identify locations that will not be developed due to sensitive resources or open space requirements. • Indicate where redevelopment will occur in the footprint of existing impervious surfaces.

Additionally, applicants must incorporate at least one (1) runoff reduction measure into the site design. Approved runoff reduction measures are summarized in Figure 5. The County's guidelines for the volume of runoff addressed by these runoff reduction measures are indicated in Table 6.

Figure 5: Runoff reduction measures, PR#1.

Table 6: Runoff reduction strategy volume guidelines.

Runoff Reduction Strategy	Guidelines for Runoff Volume
Direct roof runoff into cisterns or rain barrels for reuse.	Minimum 100-gallon volume for collection.
Direct roof runoff to vegetated areas away from foundations and footings.	Minimum 10% of roof area directed to vegetated areas.
Direct runoff from sidewalks, walkways and/or patios onto vegetated areas.	Minimum 10% of flatwork area drainage directed to vegetated areas.
Direct runoff from driveways and/or parking lots onto vegetated areas.	Minimum 10% of flatwork area drainage directed to vegetated areas.
Construct flatwork with engineered pervious/permeable surfaces.	Minimum 10% of flatwork area constructed with permeable surfaces.

Performance Requirement #2 (PR#2): Water Quality Treatment

The Water Quality Treatment Performance Requirement (PR#2) applies to projects that create and/or replace > 5,000 square feet of Net Impervious Area and to single-family residences that create and/or replace > 15,000 square feet of Net Impervious Area. A SWCP is required for all regulated projects subject to PR#2.

Regulated projects subject to PR#2 must treat a defined minimum volume or flow rate of runoff using onsite measures. This performance requirement addresses post-construction pollutant loading through treatment measures that emphasize LID (harvesting and re-use, infiltration, and evapotranspiration) and biofiltration over non-retention based or flow-based treatment approaches. Allowable onsite measures are listed in the order of preference (highest to lowest):

1. Low Impact Development
2. Biofiltration Treatment Systems
3. Non-Retention Based Treatment Systems

Biofiltration treatment is prioritized over non-retention based treatment systems due to the potential for the biofiltration system to provide infiltration/retention and more closely replicate watershed processes (evapotranspiration, chemical and biological transformations) than flow-through (non-retention) measures. Table 7 summarizes the water quality treatment design criteria associated with PR#2.

Table 7: PR#2 design criteria.

Water Quality Treatment Strategy	Design Criteria
LID Treatment System: Harvesting and use, at-grade infiltration, evapotranspiration, bioretention (without an underdrain).	Retain stormwater runoff from the 85th percentile 24-hour storm event. Runoff volume based on local rainfall data.
Biofiltration Treatment System: Bioretention features with a raised underdrain or similar facilities with an equivalent effectiveness to meet the specified design criteria.	Design rain event of 0.2 in/hr intensity ***or*** 2x 85th percentile hourly rainfall intensity. Additional design criteria: • Maximum surface loading rate 5 in/hr. • Surface reservoir depth of 6”-12”. • Minimum planting medium depth 24”. • Proper plant selection to sustain 50% vegetated cover/survivorship. • Subsurface gravel layer minimum depth 12”. • Underdrain placement at the top of the gravel layer. • No compaction of soils beneath the structure. • Liners only authorized for sidewalls where required.
Non-Retention Based Treatment Systems: Lined bioretention, flow-through planters, high-rate tree well filters or media filters.	Volumetric hydraulic design to 85th percentile 24-hour storm event. Flow hydraulic design basis of 0.2 in/hr intensity ***or*** 2x 85th percentile hourly rainfall intensity.

Performance Requirement #3 (PR#3): Runoff Retention

The Onsite Runoff Retention Performance Requirement (PR#3) applies to projects that create and/or replace > 15,000 square feet of impervious surface, and to single-family residences that create and/or replace > 15,000 square feet of Net Impervious Area. A SWCP is required for all regulated projects subject to PR#3.

Regulated projects subject to PR#3 must meet PR#1 and PR#2 requirements and additionally retain runoff from a designated design storm volume. The required retention volumes and method depend on the Watershed Management Zone (WMZ) in which the project is located, with some WMZs not requiring runoff retention. The PCRs Resolution R3-2013-0032 should be consulted to determine which runoff retention requirements apply in the project’s WMZ. A decentralized stormwater management approach is fundamental to demonstrating compliance with PR#3.

Regulated projects must demonstrate that the use of Site Design and Runoff Reduction measures have been maximized to the extent feasible and indicate which LID development standards are utilized to meet PR#3 requirements. The development standards include the following:

- Site Assessment Measures – identify opportunities and constraints to implement LID,
- Site Design Measures – optimize site design measures and strategies from PR#1 and augment with additional measures,
- Delineation of discrete Drainage Management Areas (DMAs), and
- Use of undisturbed natural landscaped areas as self-treating or self-retaining areas.

Resources for identifying and appropriately demonstrating site opportunities and constraints are provided in Appendix B. Once site design measures, self-treating areas, and self-retaining areas have been maximized to the extent feasible, structural Stormwater Control Measures (SCMs) may be incorporated to retain runoff.

SCMs can be sized using one of three methodologies:

1. Continuous simulation hydrologic modeling, calibrated to local conditions;
2. The simple method (single event-based); or
3. The routing method (single event-based).

The simple method sizes the structural SCM with a volume equal to the runoff volume produced by the design storm. The routing method uses iterative calculations routing the design storm hydrograph through the facility to account for infiltration that occurs simultaneously with inflow, resulting in a smaller facility. Sizing guidance for the simple method and the routing method are provided in Chapter 6.

Santa Barbara County developed a "Stormwater Control Measures Sizing Calculator" Excel Workbook that uses the routing method. The outputs from the calculator are authorized for Stormwater Control Plan submittals in San Luis Obispo County. Downloads and user instructions are available on the Santa Barbara County website. A hyperlink is included in Appendix A.

The PCRs include allowances for technical infeasibility adjustments and off-site mitigation for sites that are significantly constrained in their ability to comply with PR#3. Additional information is included in Chapter 4.

Performance Requirement #4 (PR#4): Peak Management

Regulated projects that create and/or replace >22,500 square feet of impervious surface (collectively over the entire project site) are subject to PR#4. Projects subject to PR#4 must also meet PR#1, PR#2 and PR#3 requirements. A SWCP is required for all regulated projects subject to PR#4.

Regulated projects subject to PR#4 must ensure that post-development peak flows discharged from the site do not exceed pre-project peak flows for the 2- through 10-year storm events. The pre-project condition refers to the runoff conditions that exist onsite immediately before the development project begins. A site hydrology report must effectively demonstrate that post-development stormwater peak flows from the site do not exceed pre-project peak flows. Additional discharge constraints may also apply to the project, such as those mandated by the San Luis Obispo County Public Improvement Standards.

Additional information on the required calculations and model outputs for submittal is provided in Chapter 6.

Performance Requirement #5 (PR#5) Special Circumstances

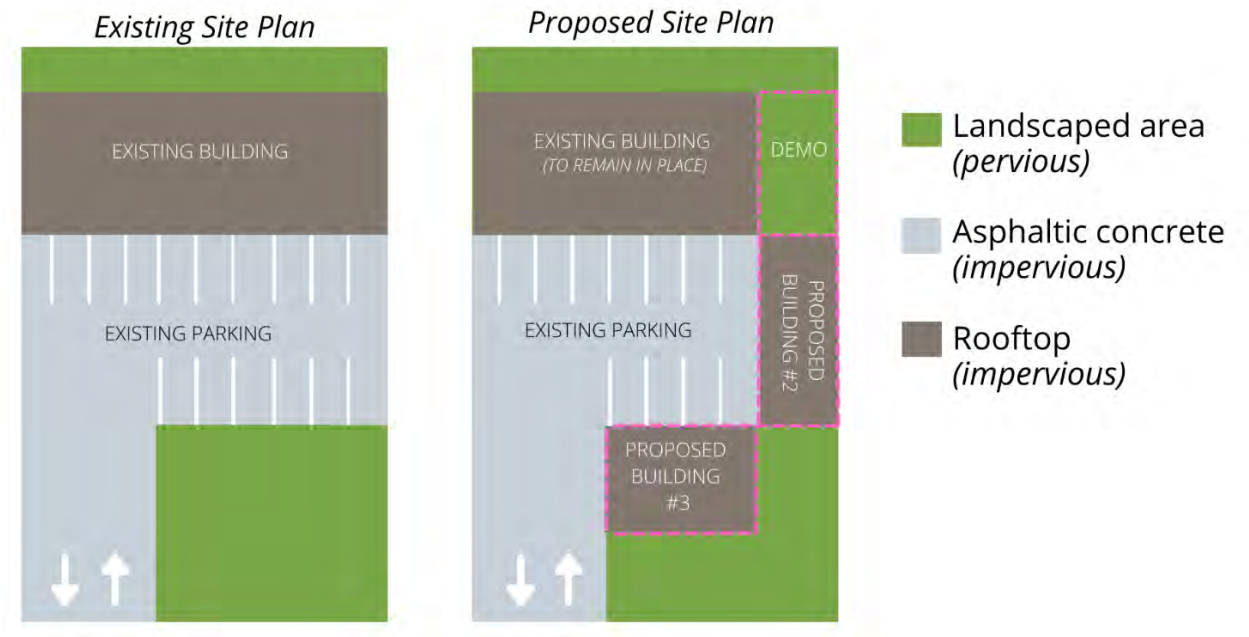
This Performance Requirement may modify the applicability of the PCRs for specific conditions, such as highly altered channels and intermediate flow control facilities. The County may consider and designate individual projects as subject to PR#5 based on site and receiving water conditions. The applicability of PR#5 is significantly limited in San Luis Obispo County due to the scarcity of highly altered channels and intermediate flow control facilities.

Applicants who believe that their project meets the criteria for PR#5 are strongly encouraged to thoroughly review the conditions of PR#5 and request a pre-application meeting with the County prior to initial plan submittal. Additional processing time and review fees may apply.

Example Project #1:

The following example demonstrates how to correctly determine Total New and Replaced and Net Impervious Area. Figure 6 demonstrates new, replaced, and removed impervious surface types, and how to properly calculate the net impervious area.

Figure 6: Example project #1, impervious area metrics.



Existing Site Plan	
Surface	**Area**
Existing Pervious *(landscaping)*	12,780 sf
Existing Impervious *(building, parking)*	30,780 sf

Proposed Site Plan	
Surface	**Area**
New Impervious *(landscaping to proposed building #3)*	3,340 sf
Removed Impervious *(building #1 to landscaping)*	2,360 sf
Replaced Impervious *(parking to proposed building#2)*	3,140 sf

Calculating New and Replaced Impervious Area:

New Impervious + Replaced Impervious = Total New and Replaced Impervious Area
3,340 sf + 3,140 sf = 6,480 sf

Impervious Area Credit (not applicable):

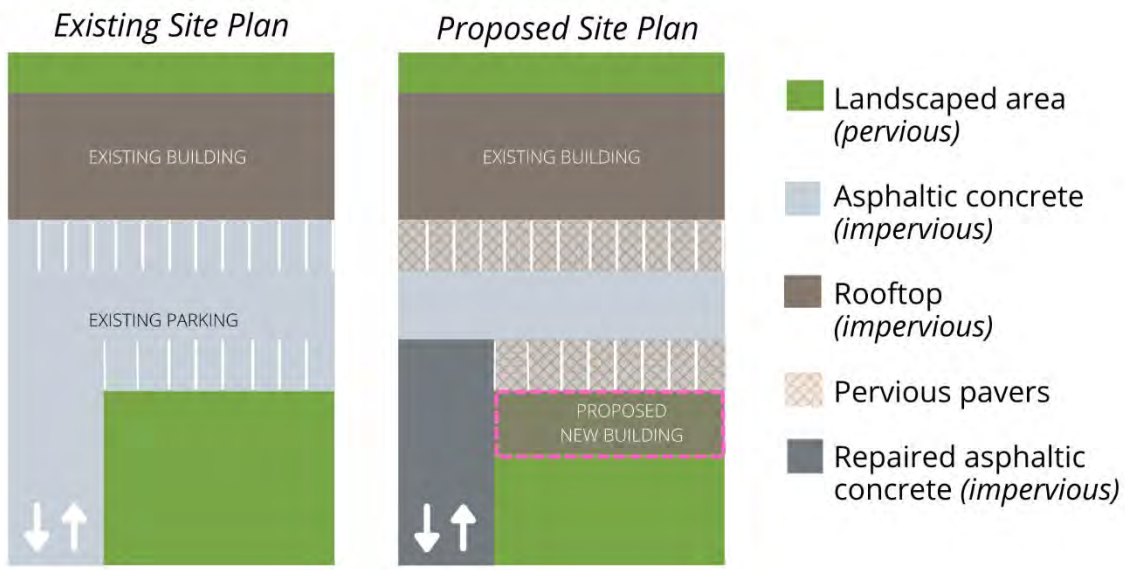
Pre-project net impervious: 30,780 sf
Post-project net impervious: 34,900 sf

The overall increase in site impervious area (+4,120 sf) does not allow credit for reduced impervious area. The new and replaced impervious area, as well as the net impervious area for determining PCR compliance is 6,480 sf. This project is subject to PR#1 and PR#2.

Example Project #2:

Figure 7 demonstrates impervious surface calculations and how the reduced impervious area credit is applied.

Figure 7: Example project #2, net impervious area reduction example.



Existing Site	
Surface	**Area**
Existing Pervious *(landscaping)*	12,780 sf
Existing Impervious *(building, parking)*	30,780 sf

Proposed Site	
Surface	**Area**
New Impervious *(landscaping to proposed building)*	3,830 sf
Removed Impervious *(paved parking to pervious pavers)*	7,430 sf
Replaced Impervious	0 sf
Repaired Impervious *(seal coating existing driveway)*	5,580 sf

Calculating New and Replaced Impervious Area:

New Impervious + Replaced Impervious = Total New and Replaced Impervious Area

3,830 sf + 0 sf = 3,830 sf

Impervious Area Credit:

Pre project impervious area: 30,780 sf

Post project impervious area: 27,180 sf

(Pre Project Impervious Area) – (Post Project Impervious Area) = Reduced Impervious Area Credit

(30,780 sf) – (27,180 sf) = 3,600 sf

The overall decrease in site impervious area (-3,600 sf) allows for credit for reduced impervious area.
(New + Replaced Impervious) – (Reduced Impervious Area Credit) = Net Impervious Area
(3,830 sf) – (3,600 sf) = 230 sf

The New and Replaced Impervious Area for determining PCR compliance is 3,830 sf. This project is subject to PR#1 due to the total new and replaced impervious surface exceeding 2,500sf. The Net Impervious Area for determining PR#2 compliance is 230 sf. The project is not subject to PR#2.

1

3. Submittal Process Overview

The County has integrated post-construction stormwater management into the development review process to comply with regional, state, and federal regulatory requirements. This chapter outlines the County's development review process and gives instructions for how to prepare permit applications for new development and redevelopment projects.

a. Timeline for Submittals and Required Documents

New and redevelopment projects may be required to submit Stormwater Control Plans (SWCP) and Stormwater Control Plan Applications (SWCP Apps) both prior to land use permit and/or tentative subdivision approval and again prior to issuance of construction permits. These documents convey critical project-specific information to the County, verify construction feasibility, and are to be certified by an appropriately licensed individual. SWCPs and SWCP Apps submitted during land use permit or tentative subdivision review and approval are considered preliminary documents to demonstrate PCR feasibility and site features and are referenced for verifying conformance during construction permitting. SWCPs and SWCP Apps submitted with construction permit applications are considered final documentation and should be fully detailed and complete.

Preliminary Stormwater Control Plans, Land Use, and/or Tentative Subdivision Approval

The purpose of preliminary SWCP Apps and SWCPs is to ensure that the proposed site design will be able to integrate necessary LID measures and structures to reduce post-construction stormwater impacts and meet all of the applicable requirements of the PCRs. At the land use permit and/or tentative subdivision approval stage, applicants must provide sufficiently detailed documents that demonstrate the project's ability to fully comply with the objectives in Figure 8. This includes delineation of DMAs for the entire project, estimated runoff volumes generated in each DMA, and estimated square footage, treatment volume, and retention volume addressed by each structural SCM.

Figure 8: Preliminary SWCP objectives.

For subdivisions, the County strongly encourages applicants to prepare preliminary SWCPs that address the 'full build-out' runoff volume resulting from all lots and all public improvements. SWCPs that address only the runoff volume associated with public improvements associated with a subdivision will necessitate that the County impose the full extent of the tract's PCR requirements on each parcel in the subdivision as they apply for individual construction permits. The preliminary SWCP should also indicate whether the project will enter into a new individual owner stormwater operations and maintenance agreement or incorporate operations and maintenance provisions into CC&Rs or an existing agreement.

County staff will review the preliminary SWCP and SWCP App and request additional information or clarification through an information hold if necessary. Applicants are encouraged to provide detailed calculations and specifications wherever possible in the preliminary SWCP. Project conditions of approval typically require submittal of a final SWCP and SWCP App at the time of application for construction permits and completion and execution of an operations and maintenance agreement for stormwater infrastructure.

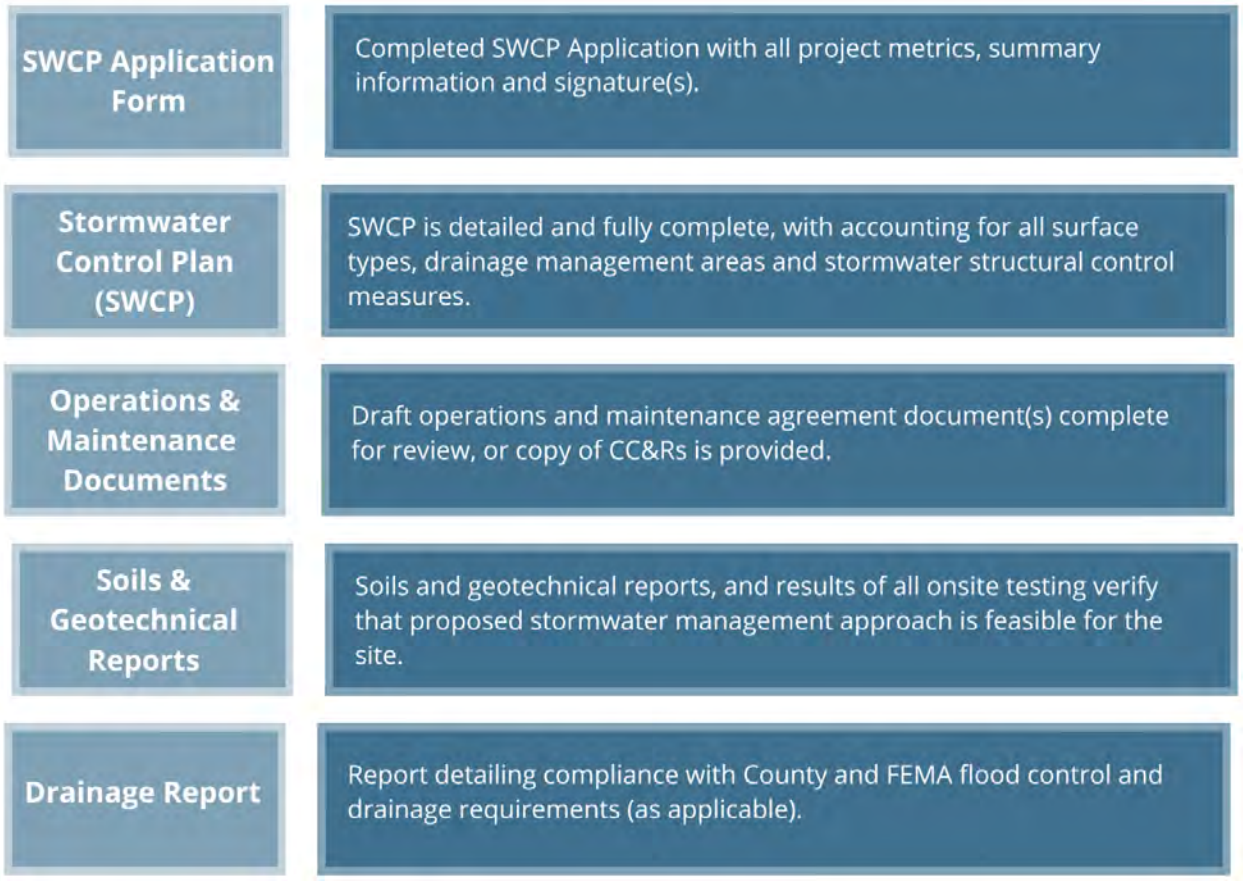
While the square footages, feature layouts, and surface types may fluctuate between the preliminary and final SWCP, the final SWCP should not deviate substantially from the preliminary SWCP unless significant site constraints are revealed by subsequent technical investigations. Detailed information about the contents of these submittals is provided in Chapter 7.

Final Stormwater Control Plans, Construction Permit Application

Final SWCPs and SWCP Apps are required submittals with applications for grading and construction permits. These documents are not considered conceptual and should only be submitted to the County as fully completed, stamped, reports and plans. Submittal of incomplete documents extends and delays the plan review process.

In addition to the site plans, SWCP, and SWCP App, applicants should submit a complete soils and geotechnical report, results of any infiltration and/or percolation testing performed at the site, and a separate site drainage report. Information in these reports is cross-checked by the County to ensure feasibility and compliance of the proposed design. Applicants should also submit a draft Operations & Maintenance Agreement (O&M Agreement). Detailed procedures for compiling a draft O&M Agreement for post-construction stormwater features is provided in Chapter 9. Applicants are encouraged to reference the list of required plans and documents in Figure 9 when preparing their submittals.

Figure 9: Required submittals with final stormwater control plans.



Project information included in the SWCP and SWCP App must be consistent with other application materials, including plans and reports. Detailed information about the requirements for these submittals is provided in Chapter 7.

Additional Construction Permit Submittal Requirements

Projects with an area of disturbance greater than 1.0 acre are also required to submit a construction Stormwater Pollution Prevention Plan (SWPPP). The SWPPP should note that the project is designed to comply with the PCRs. The final version of the SWPPP should include appendices or attachments that incorporate copies of the SWCP, SWCP App, and an unofficial copy of the O&M Agreement. Beginning in September 2023, documentation of post-construction stormwater management measures is required as part of the permit registration documents for the Construction General Permit. Inclusion of the final post-construction stormwater documents as appendices can expedite Central Coast Water Board review of the project's Notice of Termination (NOT).

4. Site Assessment

Effective stormwater management requires early and ongoing coordination among project owners, architects, landscape architects, geotechnical engineers, and civil engineers. Careful consideration of the initial site layout can significantly reduce the volume of stormwater that will need to be treated and infiltrated through structural stormwater control measures (SCMs). The site assessment phase occurs prior to developing the final project concept and site design and is intended to identify site-specific stormwater "opportunities" and "constraints" that can be utilized as a basis for designing a well-balanced project.

The site assessment process prioritizes two (2) important strategies:

- For new development projects, the goal is to "mimic the pre-development stormwater runoff characteristics of the undeveloped site" through early implementation of strategically placed low impact design features and structural Stormwater Control Measures (SCMs).
- For redevelopment projects, the goal is "to reduce and/or prevent further impacts to downstream and impaired waterways" through the implementation of strategically placed LID and structural SCMs.

a. Opportunities and Constraints Analysis

Early assessment allows the design team to identify and preserve areas of the project site that favor PCR compliance (opportunities) while prioritizing development to portions of the project site that do not (constraints). Minimizing disturbance and maximizing opportunities begins during the design phase by fitting the development into the terrain, as opposed to changing the terrain to fit the development.

Thoughtful site design can also reduce or eliminate the need for more expensive, complex stormwater treatment controls that are 'force-fit' into a project's site plan late in the design process. An abbreviated list of opportunities and constraints is provided in Table 8. A comprehensive opportunities and constraints checklist with additional guidance is included in Appendix B. The County will require submittal of a detailed Opportunities and Constraints analysis as part of the justification for installation of underground structural SCMs or a Technical Infeasibility finding.

Table 8: Opportunities and constraints summary table.

Opportunities and Constraints
The following site characteristics should be considered as part of the project opportunities and constraints analysis.
Existing Vegetation: • Existing high-quality vegetation and trees are identified. Site disturbance at these locations during construction can be prevented by protective fencing.
Survey and Site Topography: • Integrate existing drainage patterns into the site design where possible. Prioritize existing, natural low spots and sumps for infiltration and drainage features. Prioritize existing high spots for placement of structures or hardscapes, allowing runoff to naturally drain to low-lying areas for treatment.
Soil Analysis: • Prioritize LID and SCM placement where onsite soils have the highest potential for infiltration. Consider hardscape placement where soils discourage infiltration.
Geotechnical Analysis: • Utilize information from soil borings and any geotechnical analysis to determine locations that are most suitable for infiltration (based on subsurface materials encountered) and locations with erosion hazards and landslide hazards that should be avoided.
Setbacks: • Establish setbacks and buffer zones surrounding restricted and/or sensitive areas. Identify areas where SCMs cannot be constructed due to setback requirements. Examples include existing and proposed building foundations, municipal water wells, private water wells, septic systems, flood zones, easements, etc. *(See Table 15 for additional setback information.)* • Determine the groundwater table elevation (including seasonally high and historically high) based on available historical data to ensure appropriate setbacks can be maintained.
Hydrologic Features: • Identify onsite and offsite waterways and drainage infrastructure, including locations where stormwater run-on may impact the site.
Pollutants of Concern: • Identify areas where future or existing site operations could generate potential pollutants and locations where contaminated soil or historic pollution sources may be present.
Construction Footprint: • Identify locations where existing vegetation or highly permeable soils can be protected from construction activity such as stripping, over-excavation, compaction, or stockpiling during construction.

b. Soil Classification

Soil types are highly variable across San Luis Obispo County with a wide range of characteristics and infiltration capabilities. Applicants are encouraged to undertake site-specific soils investigations early in the planning and design process to confirm data and maps available from various public agencies. Site-specific soils and infiltration assessments provide key information on structural SCM siting and feasibility.

Hydrologic Soils Groups

Hydrologic soil groups at the project location must be identified by soil groups (A, B, C, or D) by a licensed Geotechnical Engineer, Geologist, or Civil Engineer. The hydrologic soil group can be identified based on site-specific soil evaluation or publicly available data. The hydrologic soil groups must be included in any SWCP.

The preliminary SWCP may solely rely on NRCS soils data if a site-specific soil evaluation has not been completed, except where underground infiltration features are proposed. A site-specific soil investigation report is required as supporting documentation for the final SWCP. The site-specific soil investigation should be utilized for design if the findings do not conform with the NRCS soils data.

Percolation Testing

The 'percolation rate' obtained from a percolation test is not equivalent to the 'infiltration rate' obtained from targeted infiltration testing methods such as single or double ring infiltrometer tests. While the percolation rate is related to the infiltration rate, percolation rates are greater than infiltration rates. Percolation testing measures both the downward progression and the lateral progression of water into the soil (i.e., the bottom surface area and the sidewalls), while an infiltration rate refers to the rate of water progressing downward into the soil (i.e., only the bottom surface).

The County generally does not consider raw percolation test results acceptable for sizing PR#3 or PR#4 SCMs, as the design is likely to assume infiltration rates unlikely to be achieved in situ over the extended post-construction period. Percolation rates can only be utilized in design if obtained via well-documented testing. The measured raw percolation rate must be converted to an acceptable estimate of the infiltration rate via the Porchet Method, with limited exceptions for specific SCM types. Additional information about calculating these conversions is detailed in Chapter 6.

Infiltration Rates and Soil Testing

Infiltration or percolation tests must be conducted in the field where underground infiltration SCMs are proposed to ensure that the measurements are representative of actual site conditions. Infiltration testing is recommended, but not required, for bioretention and surface infiltration SCMs. It is recommended that infiltration or percolation tests occur during the wet season to obtain more accurate results for design infiltration rates in potentially saturated soil conditions.

It is ultimately at the discretion of the project geotechnical professional to select and apply testing methods that are most suitable to address site-specific factors. There are inherent limits to which infiltration or percolation testing will reflect as-built and long-term project performance.

The degree of minimum required soil infiltration testing varies by the size of the project, the site's soil types and conditions, anticipated SCMs, and the phase of project development. Applicants proposing the use of underground infiltration must perform at least three (3) infiltration or percolation tests, with at least one (1) test within or immediately adjacent to the footprint of a proposed SCM to support the design infiltration rate.

All projects that include SCMs should anticipate performing soil borings to characterize site soils in accordance with County Codes. Soil borings are used to characterize site soils and support structural design.

If testing is not conducted during the planning phase (supporting the preliminary SWCP), testing will be required for the construction documents design phase (final SWCP), as outlined in Chapter 3.

The following scenarios may necessitate additional testing for the final SWCP to ensure design suitability:

- Non-uniform soils across the project site.
- Relocation of infiltration-based SCMs to locations where testing has not been conducted.
- Installation of SCMs at an elevation not previously characterized by soil borings or infiltration tests.
- Testing was not performed in locations where significant earthwork, fill import, or compaction could impact infiltration rates.
- Proposed use of underground/subsurface infiltration SCMs.

Design infiltration rates shall be established using methods that are appropriate for the proposed SCMs and should incorporate an appropriate factor of safety. Table 9 specifies soil testing criteria (in addition to site soil borings) and minimum factors of safety based upon the feature type proposed and soils testing performed.

Table 9: Infiltration testing methods and appropriate factors of safety for SCM design.

SCM Type	Test Method	Minimum Number of Tests	Minimum Factor of Safety
Bioretention	Percolation (converted via Porchet Method)	3 per site*	FS = 1
	Infiltration (Ring Infiltrometer)	3 per site*	
	Hydrologic Soil Group (HSG) (standardized rates)	None required.	
Surface Infiltration	Percolation (converted via Porchet Method)	3 per site*	FS = 2
	Infiltration (Ring Infiltrometer)	3 per site*	
	Hydrologic Soil Group (HSG) (standardized rates)	None required.	
Underground Infiltration *(infiltration trench, dry well, chamber infiltration system, etc.)*	Percolation (converted via Porchet Method, unless dry well)	3 per site*	FS = 3**
	Infiltration (Ring Infiltrometer)	3 per site*	
	Hydrologic Soil Group (HSG) (standardized rates)	HSG rates not allowed to be used in design of underground SCMs	

** Minimum one (1) within or adjacent to SCM footprint.*
*** Where surface biofiltration is provided directly upstream of an underground infiltration SCM, a minimum factor of safety of 2 is permissible.*

Additional guidelines for soil investigations and testing:

- Testing must be conducted or overseen by a qualified, licensed professional.
- Testing should be conducted in the footprint or immediately adjacent to the proposed infiltration SCMs.
- The elevation of tests should correspond to the elevation where infiltration will take place at the soil interface.
- Soil boring logs should extend at least 5-10 feet below the proposed bottom elevation of the planned SCM.

These guidelines may be reduced or increased at the discretion of the project professional and reviewing jurisdiction depending on the complexity and variability of the site.

Factors of Safety

The performance of infiltration SCMs is limited by the decline of infiltration rates over time, and applying an appropriate factor of safety to infiltration testing results is required.

Infiltration rates typically decline between maintenance cycles as the feature's surface becomes impaired with sediment in the infiltrative layer. The functional infiltration rate is often lower than the rate measured during design, necessitating that adequate conservatism is incorporated in the selection of design infiltration rates. Applicants should incorporate appropriate factors of safety specified in Table 9.

c. Depth to Groundwater

The depth to seasonal high groundwater level must be evaluated prior to siting and selection of SCMs. Seasonally high groundwater may significantly limit the use of surface or underground infiltration based SCMs. Additional information about setbacks is provided in Chapter 5.

d. Geotechnical Constraints

The potential effects of infiltrated stormwater on soil properties and slope stability should be evaluated for potential impacts, including but not limited to: slope seepage, landslide potential, and distance to load-bearing structures such as building foundations and retaining walls. These potential issues must be thoroughly reviewed by a licensed Geotechnical Engineer, Geologist, or Civil Engineer, with their recommendations incorporated into the site design.

While geotechnical reports are commonly utilized to determine appropriate methods for foundation design, retaining walls, and construction practices, they should also evaluate site suitability for different stormwater management strategies. Available geologic or geotechnical reports on local geology should identify relevant features such as depth to bedrock, rock type, lithology, faults, and confining soil types as applicable. These geologic investigations should also identify shallow water tables and groundwater that could be critical to the stormwater design strategy.

Infiltration of stormwater can exacerbate geotechnical issues under certain conditions unless appropriate precautions are taken. If infiltration SCMs are planned, the site's geotechnical investigation should evaluate the area of the proposed infiltration feature to identify geotechnical issues and geological hazards that may result from infiltration and identify potential mitigation measures.

Geotechnical recommendations for structural SCMs and infiltration features should evaluate and discuss the following factors:

- Presence of collapsible soil
- Proximity of stormwater infiltration features to foundations and footings
- Presence of expansive soil (shrink/swell potential)
- Slope setbacks and slope stability
- Liquefaction potential
- Groundwater mounding potential, as appropriate.

Designers must adhere to site-specific recommendations made by a licensed geotechnical engineer or civil engineer based on soil boring data, drainage patterns, and other pertinent site characteristics. Implementing the geotechnical engineer's recommendations is essential

to help prevent damage from increased subsurface water pressure to surrounding properties, public infrastructure, and slopes.

e. Hazardous Materials or Contamination

Sites located in areas with known groundwater pollution or soil contamination may need to avoid infiltration SCMs, as they could contribute to the movement or dispersion of contamination. The potential existence of soil and groundwater contamination should be evaluated early in the site assessment so that the infiltration and drainage design can be modified where necessary.

The California State Water Resources Control Board (SWRCB) maintains a database of registered contaminated sites through their Geotracker® Program; refer to Appendix A for the website link. Registered contaminated sites can be identified in the project vicinity when the site address is typed into the search bar.

The site design should also consider the use and handling of hazardous materials and potential pollutants at the site once operational. Ongoing activities at sites such as gas stations, auto service stations, and recycling centers can generate high pollutant loads. In these cases, pretreatment devices, such as oil and grease separators, may be necessary to remove site-specific pollutants before stormwater is directed to infiltration features. This "treatment train" approach ensures that SCMs continue to provide their intended benefits and function properly.

Site drainage patterns should avoid concentrating drainage near areas where hazardous materials will be stored or handled. Similarly, flows should be routed in a manner that avoids areas where potential pollutants would likely be used during operations. Infrastructure should be designed in a manner that segregates post-construction stormwater from exposure to areas where industrial activities will take place.

Additional site control standards can be found in County of San Luis Obispo Title 19, linked in Appendix A.

f. Natural Areas and Existing Vegetation

The initial site assessment should identify any sensitive or protected habitats or natural resources present on the site. Site designs that protect and avoid disturbing sensitive features such as creeks, heritage or protected trees, and wetlands should note this strategy as a means of complying with PR#1.

Avoiding disturbance of these types of sensitive features can also reduce the need to obtain additional agency permits.

Figure 10: Protection of sensitive biological resources can be integrated as compliance with PR#1.

g. Special Considerations

In extenuating circumstances, applicants may apply for a finding of technical infeasibility to comply with PR#3. A finding of technical infeasibility does not waive any portion of the compliance requirements for PR#1 or PR#2 at the site.

Technical Infeasibility- Alternative Compliance

The PCRs allow two (2) options for alternative compliance with PR#3 retention requirements: the 10% Equivalent Impervious Area Adjustment (10% EISA adjustment), and off-site compliance.

Both options require a demonstration that full on-site compliance is technically infeasible. A finding of Technical Infeasibility will not apply to PR#1 or PR#2 requirements, which must still be achieved on-site. To propose a finding of technical infeasibility, the SWCP must include a complete and thorough implementation of opportunities for implementing LID on-site. The SWCP must also include a detailed opportunities and constraints analysis and site map, as detailed in Appendix B.

The conditions which merit a finding of technical infeasibility are detailed in the PCRs and summarized in Table 10. Applicants must submit a site-specific hydrologic and/or drainage design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect, demonstrating that compliance with Performance Requirement #3 is technically infeasible.

Sites with one or more documented constraints listed in Table 10 may be approved by the County to utilize the 10% EISA adjustment or an offsite compliance location. It is strongly recommended that applicants contact County staff to discuss technical infeasibility prior to submitting permit application documents.

Table 10: Site conditions supporting a technical infeasibility finding.

Constraining Site Conditions
The following site characteristics contribute to technical infeasibility.
Depth to seasonal high groundwater limits infiltration and/or prevents construction of SCMs;
Sites where soil types significantly limit infiltration;
Sites where pollutant mobilization in the soil or groundwater is a documented concern;
Depth to an impervious layer such as bedrock limits infiltration;
Sites where pollutant mobilization in the soil or groundwater is a documented concern;
Space constraints (e.g., infill projects, some redevelopment projects, high-density development);
Geotechnical hazards;
Stormwater Control Measures could only be located within 100 feet of a groundwater well used for drinking water;
Incompatibility with surrounding drainage system (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning treatment or flow control facility).

10% Equivalent Impervious Surface Area Adjustment (EISA)

Full compliance with PR#3 criteria can be waived if stormwater control features occupy an area of the site equivalent to no less than 10% of the project's 'Equivalent Impervious Surface Area' or EISA.

To demonstrate compliance with the 10% EISA adjustment, applicants must clearly demonstrate the following data in the SWCP:

1. Divide the site into Drainage Management Areas (DMAs).
2. Tabulate the total fully impervious square footage in each DMA.
3. Tabulate the pervious square footage in each DMA.
4. Multiply the square footage of pervious surfaces in each DMA by the correction factors shown in Table 11.
5. Total the contributions of the pervious and semi-pervious surfaces in all DMAs. This is the EISA for the site.

To calculate the required SCM area for the 10% adjustment factor:

1. Calculate the square footage of bioretention or other retention-based SCM facilities required for the site using the simple method or calculator.
2. Divide the required SCM area by the EISA to determine the 10% adjustment area.

Table 11: Correction factors for calculating Equivalent Impervious Surface Area.

Pervious Surface	Correction Factor
Disturbed soils / managed turf **(dependent on original Hydrologic Soil Group)**	A: 0.15 B: 0.20 C: 0.22 D: 0.25
Pervious Concrete	0.60
Cobbles	0.60
Pervious Asphalt	0.55
Natural Stone (without grout)	0.25
Turf Block	0.15
Brick (without grout)	0.13
Unit Pavers on Sand	0.10
Crushed aggregate	0.10
Grass	0.10

Off-site Mitigation

Nearly all proposed development should be able to attain onsite compliance through the use of LID or the 10% EISA adjustment. Applicants seeking to construct offsite mitigation must submit a description of the project(s) that will provide off-site mitigation. The proposed off-site project(s) may be existing facilities and/or prospective project(s) that are as effective in maintaining watershed processes as implementation of the applicable Post-Construction Stormwater Requirements on-site. The description in the SWCP shall include:

1. The location of the proposed off-site project(s) must be within the same watershed as the Regulated Project. Alternative Compliance project sites located outside the watershed may be approved by the Central Coast Water Board Executive Officer.
2. A schedule for completion of offsite mitigation project(s), where the off-site mitigation project(s) has not been constructed.
3. A preliminary design for the off-site mitigation project.

The County will require applicants proposing Off-site Mitigation to construct the off-site project concurrent with the development project requiring PCR compliance. Permits for the triggering project will not be granted Final status until the off-site project is fully constructed.

On-site Offset

LID measures and SCMs must be sized to address all post-construction flows and/or volume they receive onsite. If this is not possible, applicants may propose oversizing another SCM on the project site within a different tributary area or DMA to offset the shortfall. This practice is referred to as an "on-site offset."

The feature identified for upsizing should receive runoff from a similar surface type or site use as the area that cannot be treated. Justification for the use of an on-site offset must be provided to the County, and approval is at the discretion of County staff. The County generally will not consider the use of an on-site offset for more than 10% of the total post-construction runoff volume.

The SWCP should include an explanation and figure demonstrating why the proposed design would not be able to accommodate all required flows and/or volume within each DMA. Most commonly, this would be due to the inability to physically route the water to the SCM location or significant space constraints due to setbacks. All reasonable means to address post-construction flows should be evaluated before requesting the use of an on-site offset.

h. Landscaping Requirements

Applicants should prioritize the use of County ordinance-required landscaping as an opportunity to incorporate LID into the site design. Landscaping features required for screening or shading can be utilized for collecting and retaining stormwater onsite.

Maximizing Landscape Use and Efficiency

The PCRs require prioritization of landscape-based LID features for all regulated projects, and utilizing required site landscaping can be highly advantageous in reducing the scale of structural control measures. Additionally, vegetation is an important element of LID stormwater features. Plants provide a physical structure that increases infiltration into the soil and promotes a soil community of microorganisms that remove pollutants. Maintaining healthy vegetation is key to the functional benefit of stormwater treatment features.

County codes (Title 22 and Title 23) encourage the planting of native species, trees, and drought-tolerant species. Generally, the County requires landscaping in the following site locations:

- Setbacks
- Parking areas
- Unused areas of a site
- Special-use sites

Landscape areas typically include a combination of plant types and natural decorative materials to achieve the intended or required purpose of the landscape (e.g., screening, etc.)

Irrigation Considerations

Consistent with the Model Water Efficient Landscaping Ordinance (MWELO) an irrigation plan consistent with County codes is required during the application process and is submitted as part of the landscape plan. Title 22 and Title 23 specify the requirements for irrigation methods, equipment, and scheduling.

During drought emergencies, vegetation installed as part of a SCM will be considered functional landscaping and waived from watering prohibitions associated with non-functional turf or landscaping. All functional vegetation installed as part of SCMs should be significantly mature at 24 months following planting to minimize the need for continued irrigation. Where available, the use of municipally provided Recycled Water for landscape irrigation (including vegetated SCM plant establishment) is authorized and encouraged.

Parking Lot Landscaping Requirements

County codes require that all parking lots of three (3) or more spaces contain sufficient trees so that within 10 years, 60% of the surface area of the lot is shaded. This requirement is in addition to any required perimeter landscaping required for screening.

Applicants are encouraged to utilize landscaped areas within parking lots as self-retaining areas or treatment SCMs to infiltrate stormwater generated by the adjacent impervious surfaces of the parking lot. Optimizing this method of indirect infiltration reduces the irrigation demand of the site and supports compliance with multiple performance requirements.

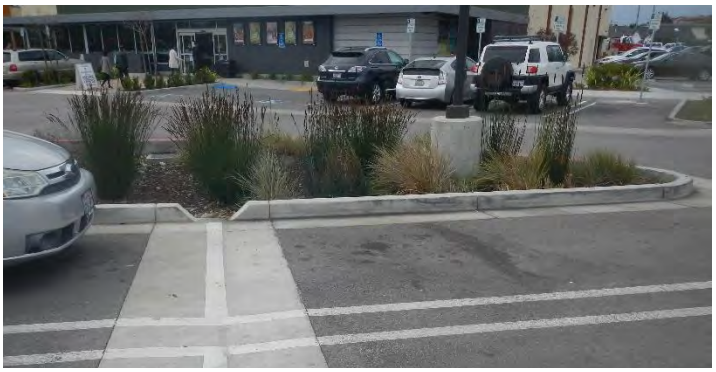


Figure 11: Recessed vegetated median with valley drain and curb cut to accept stormwater.

i. Utility Conflicts

Utility lines and connections are common and necessary components of infrastructure within the right-of-way and typically extend into private property. Designers should evaluate utility locations and determine where setbacks and sleeving requirements may impact opportunities for perimeter LID features or SCMs. In some scenarios, utility providers may authorize placement in LID features with the use of insulating wrap, impervious water stops, or utility trench dams.

Applicants should coordinate with local utility providers to determine setback or encasement requirements for existing or future utilities. Applicants should also consult with any applicable building or plumbing codes that may provide any minimum setback requirements between existing or future utilities and SCMs.

Figure 12: Utility infrastructure in a bioretention feature and obstructing a stormwater swale.

Placing above-grade utility infrastructure within LID features and SCMs should be avoided to prevent disruption of infiltration, flow routing, and maintenance access.

j. Site Definition and Run-On Control

Stormwater run-on is the drainage generated from upstream tributary areas (developed or undeveloped) that flows into the project site. County ordinance does not authorize modifying or significantly altering the path of existing drainage for the purpose of protecting new development. The historical drainage path is to be maintained exiting the site to avoid damaging downstream properties and/or facilities, and this will need to be accounted for in the planning and construction phases. Drainage entering the site needs to be carefully evaluated and incorporated into the project design. Structural SCMs must be adequately sized to accommodate the runoff that they receive, whether it be site-generated runoff or upstream run-on.

Redevelopment projects should carefully evaluate existing runoff and run-on conditions. Projects that expand the footprint of development on an existing site may be required to address and accommodate the runoff generated by existing site infrastructure if it cannot be isolated from the new development, which is also applicable to road widening improvements.

k. Minimizing the Size of SCMs

Runoff reduction measures can be integrated into the site design to reduce the amount of treatment and retention required. Design measures, such as directing roof downspouts to landscaping or routing parking lot drainage into landscaped areas, can dramatically reduce the amount of stormwater that needs to be managed by SCMs. These types of site design features meet all the criteria of LID; they are small-scale, vegetated, and infiltration-based.

Runoff reduction measures are generally not dependent on site constraints and should be considered for use with all projects. These measures also include rainwater harvesting, green roofs, buffer strips, and flow-through planters.

Figure 13 Downspout directed to site landscaping.

5. Structural Stormwater Control Measures

Once the site has been assessed and opportunities and constraints identified, designers can begin delineating drainage management areas (DMAs) and determining which structural SCMs may be appropriate for the site. The SCMs described in this chapter will contribute to managing and reducing stormwater runoff volume, rate, and/or pollutants from the site and should be used to augment LID measures to meet the performance requirements.

a. Drainage Management Area Delineation

Projects that meet the criteria for PR#2 or greater must delineate the site into Drainage Management Areas (DMAs) to document the decentralized stormwater management design approach. DMAs are portions of the developed project site that will drain to a common location. The entirety of the site must be tabulated into DMAs, with each DMA ideally containing only one type of surface (i.e. vegetation, impervious, or semi-pervious surface.) Each DMA must be clearly identified and labeled in an exhibit, with corresponding characteristics summarized in tabular format. DMAs should not overlap.

Types of DMAs

DMAs are typically delineated by grade breaks and surface cover types and drain to a common location of the site. There are four (4) accepted categories of DMAs:

- Self-retaining areas
- Areas draining to self-retaining areas
- Self-treating areas
- Areas draining to LID features or SCMs

Self-retaining areas provide passive stormwater treatment and retention and can be highly advantageous in meeting multiple performance requirements. Self-retaining areas include depressed vegetated areas with either landscaping or native vegetation or pervious pavements.

It is acceptable to direct runoff from another DMA with impervious cover to a self-retaining area. However, the maximum allowable ratio for this design strategy is 2-parts impervious area to 1-part pervious area. Runoff from the impervious area draining to the self-retaining area must be dispersed across the pervious self-retaining area. To utilize this strategy, the self-retaining area must be sized to hold a volume equal to both areas times a depth of 1 inch. This chapter includes additional guidance on run-on ratios for pervious pavements in section 5.i.

Self-treating areas are landscaped or undisturbed areas of the site that do not generate or receive stormwater runoff from other areas. Generally, self-treating areas are flat, depressed, or gently sloped, ensuring that stormwater will infiltrate into the soil. To qualify as a self-treating DMA, each of the following characteristics must be present:

- The area is vegetated with native and/or non-invasive drought-tolerant species that do not require permanent irrigation or regular application of fertilizers.
- If located in an area where soils have been disturbed, soils have been amended and aerated to promote infiltration characteristics equivalent to undisturbed native topsoil.

- Any incidental impervious areas are less than 5 percent of the self-treating area.
- The self-treating area is hydraulically separate from DMAs that contain permanent SCMs.

DMAs draining to constructed SCMs are typically characterized by a significant proportion of impervious surface. The impervious area within these DMAs is used to determine the necessary volume and footprint of the SCM. For each DMA draining to a SCM, determine the square footage, type of surface, and corresponding runoff factor. This information is used for sizing runoff retention and/or water quality treatment SCMs. Additional information on these calculations and resources to complete them are provided in Chapter 6. It is allowable for more than one (1) DMA to drain to an SCM. However, drainage from a single DMA should not be split among multiple SCMs.

DMA Sizing Guidelines

The objective of the decentralized approach of the PCRs is to manage the stormwater from each DMA with LID design features or an SCM. While a variety of factors will influence the size of each DMA, the guidelines in Table 12 should be incorporated into the delineation process.

Table 12: Drainage management area sizing guidelines.

Decentralized Drainage Management Area Guidelines
The following guidelines are recommended for ensuring an appropriately decentralized stormwater management approach.
Single-family Residential Project DMAs (*including parcels and access roads/driveways*): • Minimum of three (3) DMAs for sites less than one (1) acre in total area. • Each DMA less than five (5) acres in total area. • Each DMA less than one (1) acre total impervious area. • Each DMA less than ten (10) individual residential lots. • Each DMA should avoid comingling of runoff from multiple land uses where feasible. • DMAs with access roads should include ¼ mile or less of roadway. • DMAs should be no less than 250 square feet or 2% of the project site.
Commercial, Industrial, Multi-family residential projects *(including public improvements):* • DMAs should be land-use specific (i.e. parking, rooftop, access roads, equipment/processing areas.) • Each DMA less than three (3) acres total area. • Each DMA less than one (1) acre total impervious area. • DMAs should be no less than 250 square feet or 2% of the project site. • Each DMA should avoid comingling of runoff from multiple land uses where feasible.
Roadway projects (*public improvements only*): • DMA for local roadways ¼ mile or less. • DMA for collector roadways 1/8 mile or less • DMA for arterial roadways 1/8 mile or less.

Delineating DMAs Across Public and Private Property

Projects that include both public and private improvements may find it necessary to delineate DMAs that span both areas. For instance, a project may be required to construct curb, gutter, and sidewalk improvements within the public right-of-way, or existing roadway stormwater may flow onto the project site at the area of conform of the new frontage improvements and existing roadway. If the areas cannot be isolated with an asphalt berm or other method, then this would be a shared DMA between the roadway and the project site. Alternatively, distinct DMAs for public and private improvements may be delineated, with one DMA draining into another to reflect site drainage patterns.

The same would be true of a project located in a rural area not subject to curb, gutter, and sidewalk requirements.

b. Structural Control Measure Types

The County recognizes a defined suite of stormwater structural control measures that support compliance with the PCRs. These structural SCMS are categorized, defined, and named by common characteristics. The intent of categorizing specific types of SCMs is to promote consistent nomenclature across the County and project documentation.

Recognized SCM Types and Descriptions

The County recognizes and accepts only these standardized types of structural SCMs summarized and described in Table 13.

Table 13: Stormwater structural control measures.

SCM Type	Description	Key Characteristics	Applicable Performance Requirement(s)
Biofiltration/ Bioretention	Vegetated feature that filters stormwater through a specialized soil media and includes aggregate subsurface layer to enhance storage or infiltration. Biofiltration includes an underdrain for discharges where infiltration rates are poor. Allows for inundation of vegetated areas during storm runoff.	• At-grade, no slope. • Vegetated (50%+) • Indirect infiltration via aggregate subsurface layer and native soil bed.	PR1 PR2 PR3
Vegetated Swale	Vegetated feature with up to 4% slope that conveys stormwater and provides water quality filtration by vegetation. Design includes gently sloped flow paths and dense vegetation to promote stormwater surface filtration and velocity reduction by vegetation (settling).	• Vegetated to minimum 50% • Not designed for infiltration.	PR1 PR2

SCM Type	Description	Key Characteristics	Applicable Performance Requirement(s)
Vegetated Buffer Strip	Gently sloped vegetated feature adjacent to an impervious area that receives stormwater runoff flows as sheet flow. Provides water quality filtration by vegetation.	• Vegetated to minimum 70% • Retention volume credit may apply with PR3 design guidelines	PR1 PR2 PR3
Filtration Device	A flow-through structure or product designed to capture and retain sediment, leaf litter, trash, and coarse particles. Typically accepts runoff from a road or a single land-use paved area.	• Below grade. • Non-vegetated. • No infiltration or retention volume credit.	PR2
Infiltration Feature *(includes underground infiltration chambers, infiltration trenches, and dry wells)*	Structure designed to retain and infiltrate stormwater. Existing soils and grades may be modified to sustain maximum infiltration rates.	• At or below grade. • Non-vegetated. • Retention volume credit applies via direct infiltration.	PR3 PR4
Pervious Pavement	Durable materials that create a pervious surface that allows stormwater to infiltrate into the underlying soil. May include an underlying reservoir to increase retention capacity and infiltration rates. Constructed to minimize the volume of stormwater generated.	• At grade. • Non-vegetated. • Retention volume credit may apply if structural section includes retention capacity.	PR1 PR2 PR3
Infiltration (Retention) Basin	A feature designed to store and infiltrate significant volumes of stormwater into unsaturated zone. Infiltration rates may be augmented with a highly permeable substrate. Vegetation distribution is limited to grass or unvegetated. May be below the lowest outlet of a detention basin.	• At grade. • Minimally vegetated or non-vegetated. • Infiltration/ retention volume credit applies.	PR2 PR3 PR4
Detention Basin	A flow-through basin with discrete inlets and outlets to detain stormwater runoff for some minimum time to reduce peak flows. One or more outlets may exist at different elevations.	• At grade.	PR4

SCM Type	Description	Key Characteristics	Applicable Performance Requirement(s)
Media Filter	A proprietary subsurface flow-through structure that uses a membrane or media to actively filter stormwater pollutants. Pollutant load reductions achieved, but no stormwater volume reduction occurs.	• Primarily below grade. • Non-vegetated. • No infiltration/ retention volume credit.	PR2
Treatment Vault	A subsurface flow-through structure that physically separates sediment, trash, leaf litter, debris or other particulates by separation or settling. Pollutant load reductions achieved, but no stormwater volume reduction occurs.	• Below grade. • Non-vegetated. • No infiltration/ retention volume credit	PR2

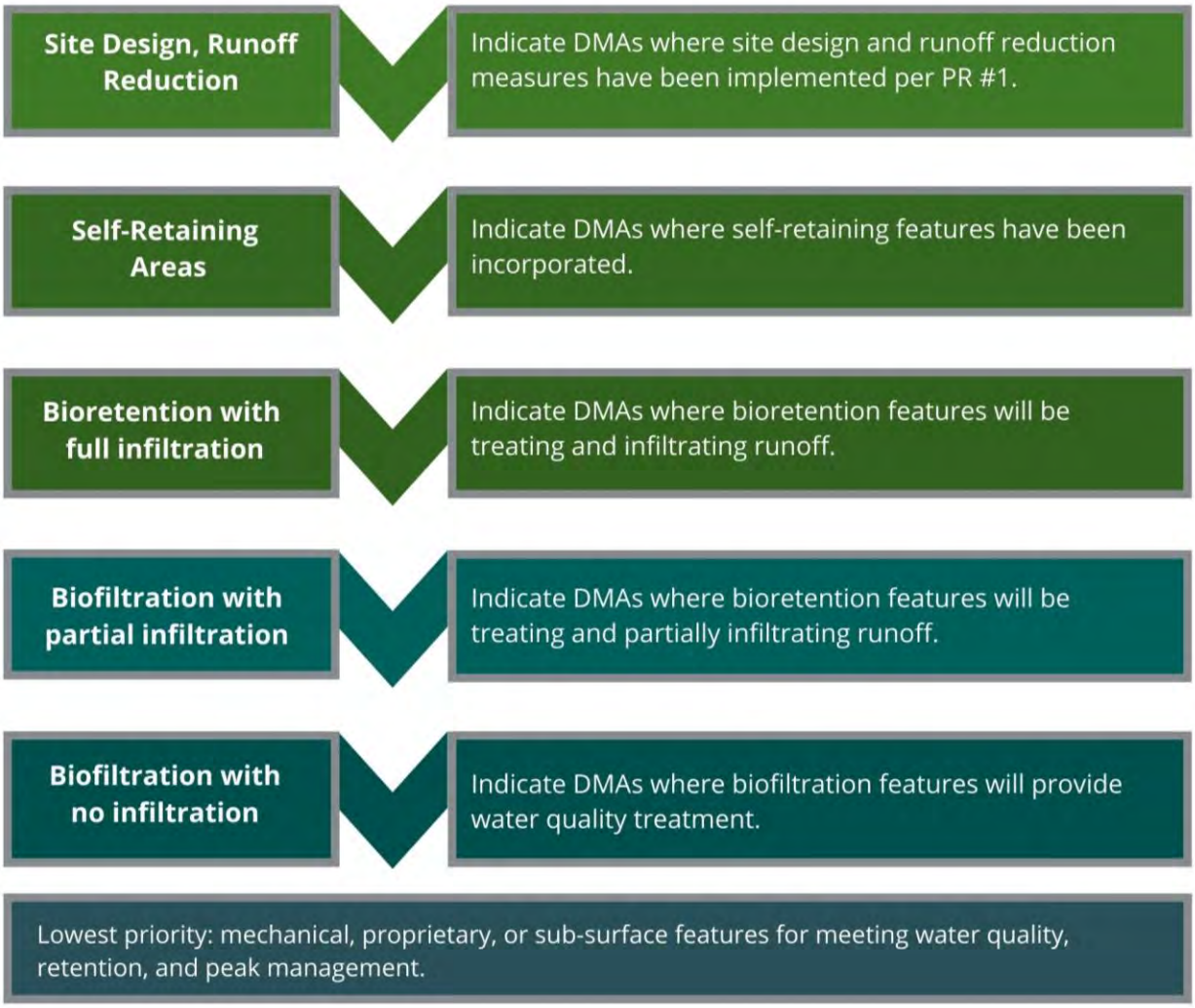
SCMs Types for Siting in the County Right-of-Way

A limited suite of the structural SCMs listed in Table 13 is approved for construction in the County's right-of-way. The County's Public Improvement Standards allow for the use of a roadside infiltrator design that can be installed beneath sidewalks. Additionally, biofiltration, bioretention, vegetated buffer strip, or vegetated swale SCMs may be placed in the shoulder along the roadway. In cases where right-of-way generated stormwater is routed to private onsite SCMs, additional types of SCMs are permitted. Runoff from private property development (onsite) may not be directed to any SCM in the public right-of-way.

c. Prioritization of Low Impact Development

Small-scale, landscaped-based LID infiltration features that treat stormwater as close to the source as possible are the highest priority for the site design. LID design features should be considered and incorporated for use with all projects. Identifying these features in both the SWCP and on project plans is critical for demonstrating compliance with PR#1. Engineered and proprietary structures such as underground infiltration chambers, hydrodynamic separators, and lined detention basins are not LID strategies. Compliance with the prioritization framework illustrated in Figure 14 must be documented in the SWCP and proposed design, especially where any mechanical, proprietary, or subsurface SCMs are proposed.

Figure 14: Low impact development prioritization framework.



Applicants must demonstrate that significant effort has been made to incorporate LID strategies into the design before proposing mechanical or subsurface features. Very few projects are constrained to the extent that they preclude the management of a majority of post-construction runoff via LID measures.

Underground infiltration chambers, hydrodynamic separators, vault systems, or treatment devices are not considered LID design elements and should be limited to the DMAs where all other LID design options are infeasible. If exceptional site constraints render management of post-construction runoff via LID measures infeasible, then designers should demonstrate that a minimum of 30% of the site's post-construction runoff volume has been managed through LID strategies or at-grade vegetated features before proposing compliance measures utilizing 'grey' or subsurface infrastructure.

Documenting Compliance with PR#1

All regulated projects must demonstrate compliance with PR#1. Compliance with PR#1 must be clearly documented in the SWCP App and/or SWCP, reference a specific plan sheet, and

detail in the construction plans that demonstrates the location of the strategy selected. PR#1 strategies benefit the overall project design by reducing the volume of runoff that must be treated, retained, and managed in accordance with PR#2, PR#3, and PR#4. Achieving compliance with the quantitative targets of PR#3 and PR#4 does not supersede the need to demonstrate that PR#1 has been met. However, PR#1 requirements could be met by directing runoff from an impervious DMA to a vegetated area or SCM designed to meet PR#2 and PR#3 requirements.

Self-treating Areas, Self-Retaining Areas

Self-treating and self-retaining areas are considered LID features, as they are typically vegetated and additionally reduce the overall imperviousness of the site. Incorporation of self-treating and self-retaining DMAs into the project design is an effective means of demonstrating compliance with PR#1. The locations and dimensions of self-treating and self-retaining areas should be clearly noted on plans and documented in the SWCP.

Rainwater Harvesting and Reuse Systems

Rainwater harvesting systems are designed to collect and store runoff for later use and are considered a LID practice. These systems store a specific volume of water and must be designed with a safe bypass or overflow route for rain events that exceed the design capacity. Collection systems or cisterns with a storage capacity of at least 100 gallons meet the requirements of PR#1.

Water quality treatment and water reuse limitations vary significantly based upon the surface from which the runoff is harvested. Per the California Building Code, runoff from above-grade surfaces (rooftops, shade structures) is classified as non-potable water and requires only modest screening and filtration for irrigation reuse. Runoff from at-grade surfaces and flatwork (driveways, walkways, parking areas, etc.) is classified as graywater, which requires significantly greater treatment and has more restricted reuse applications.

Applicants proposing capture and reuse systems are advised to closely review California Plumbing Code Chapters 15 and 16, which detail requirements for siting, water quality treatment, connections, inspection, and testing of these systems.

Consistent with the California Building Code, the County does not require separate permitting for rainwater harvesting systems collecting less than 360 gallons for outdoor irrigation reuse. Additionally, rainwater harvesting systems collecting up to 5,000 gallons may be constructed without individual permitting provided that tanks are constructed at grade, with no electrical connections, and meet a 2:1 height-to-width ratio.

Larger capacity harvesting systems, subsurface systems, systems that collect graywater (as defined by the California Plumbing Code), and systems proposed as the method of complying with PR#2 or above are subject to separate County permitting. Plans must indicate backflow prevention controls, a safe overland bypass/escape, and a detailed irrigation schedule that includes the site's irrigation demand and the maximum drawdown period for stored rainwater in all weather conditions.

Designers should reference the drawdown periods, credits, and sizing requirements in Table 14 when designing a rainwater harvesting system requiring County permitting. In all cases, a debris excluder and 100-micron filter are required on rainwater or greywater collection systems.

Table 14: Rainwater harvesting crediting and drawdown.

Planned Drawdown / Reuse Period	Sizing Requirements to Meet PCRs	Volume Credit Applied to County Flood Control Standards
Under 48 Hours (Less than 2 days)	Design storm. Meets PR#1, PR#2, PR#3.	100% stored volume.
Up to 72 hours (Up to 3 days)	Design storm x 1.2 *Meets PR#1, PR#2, PR#3.*	100% stored volume.
Up to 7 days	Design storm x 1.2 *Meets PR#1, PR#2, PR#3.*	100% stored volume.
Up to 14 days	Design storm x 1.2 *Meets PR#1, PR#2, PR#3.*	0% stored volume.
Greater than 14 days	Design storm x 1.2 *Meets PR#1, PR#2, PR#3.*	0% stored volume.
**The Design storm may be the 85th or 95th percentile 24-hour storm depth, depending upon the WMZ.*		

Permitted systems reusing stored water for irrigation in commercial or multi-family settings must also post permanent signage indicating that the source of irrigation water is un-treated rainwater. Single family residential systems are exempt from this signage requirement, unless utilizing spray irrigation in a publicly accessible area.

The project's operations and maintenance plan must include all required maintenance activities per the schedule in Chapter 16 of the California Plumbing Code, in addition to any site-specific maintenance or inspection activities.

d. Structural Stormwater Control Measure Selection

This section provides information for common SCMs including a description, advantages, limitations, key design features, and sizing design tips. Each DMA should be evaluated to determine the most appropriate SCM with careful consideration of information from the initial site assessment.

SCM Purpose: Flood Control Requirements and the PCRs

SCMs designed for compliance with the PCRs may not be suitable for addressing the retention or detention volume requirements set by the County's drainage and flood control standards. In some locations these flood control standards require retaining or detaining a significantly greater volume of stormwater.

Modifying bioretention or biofiltration SCMs to accommodate a deeper surface ponding area to increase basin volume can be detrimental to the functionality of these features.

While bioretention plantings are typically able to withstand 72 hours of inundation, repeated or prolonged inundation of a bioretention facility can damage plants and create vector control issues. The ponding depth for biofiltration and bioretention features should not exceed 12 inches.

If a site's SCMs do not contain adequate volumes to meet additional drainage or flood control standards, it is recommended that SCMs be designed with overflows and conveyance to additional downstream facilities. The downstream facilities (typically a basin) can be sized for the supplemental volume needed to achieve compliance with other standards. With this approach, decentralized, LID-compliant SCMs can be utilized to the maximum extent feasible while providing greater flexibility for the design engineer in managing volumes beyond the PCR requirements.

For example, consider a project that must meet PR#1-3 and County flood control requirements on a space-constrained site. The design engineer has identified that County flood control volumes for retention or detention will exceed the volumetric retention requirement of PR#3. Bioretention facilities with adequate surface area to meet flood control requirements as well as LID ponding depth, exceed available surface area. The design engineer opts not to pursue the extensive amount of subsurface exploration and excavation likely necessary to provide a subsurface retention facility that meets all standards for PR#3 and County flood control volumes. Instead, taking advantage of the reduced volumetric safety factors offered for bioretention facilities, the design engineer distributes a limited number of bioretention basins throughout the site to meet PR#2 and PR#3. These overflow to an onsite drain that outlets in a modest surface detention basin designed to County flood control standards (accounting for storage provided by the bioretention basins). This design concept is explicitly encouraged by the County.

Setbacks

SCMs that utilize direct or indirect infiltration must be sited in a manner that minimizes impacts to existing and planned infrastructure. In some cases, existing infrastructure on neighboring properties may limit the siting of large SCMs. Thorough site assessment is necessary to ensure that the setbacks noted in Table 15 can be achieved. The setbacks suggested in Table 15 are suggested minimum values, and additional setbacks may be deemed necessary by the design and/or geotechnical engineer based upon site risk factors and geotechnical hazards.

Table 15: Minimum lateral setbacks for SCMs.

SCM Type	Setback	Minimum Distance
Infiltration feature, pervious pavement, infiltration basin. *(Including dry wells, underground infiltration chambers and roadside infiltrators.)*	Property line	10 feet
	Water well	100 feet
	Structural foundation (buildings or walls)	10 feet[(a)]
	Basements	100 feet upslope, 20 feet downslope
	Onsite wastewater treatment systems (leach fields)	150 feet
	Underground storage tanks	10 feet
	Road easements	10 feet from edge of easement width[(c)]
	Descending slopes or bluffs	100 feet[(a)]
	Reservoirs, ponds, lakes	100 feet
	Seasonally high groundwater[(b)]	10 feet (vertical separation)
	Streams, creeks, or springs	100 feet
Biofiltration, vegetated swale, vegetated buffer strip, bioretention.	Property line	5 feet
	Water well	100 feet
	Structural foundation	5 feet[(a)]
	Basements	100 feet upslope, 20 feet downslope[(a)]
	Onsite wastewater treatment systems (leach fields)	100 feet
	Underground storage tanks	10 feet
	Road easements	10 feet from edge of easement width[(c)]
	Descending slopes or bluffs (10% or steeper)	100 feet [(a)]
	Reservoirs, ponds, lakes	50 feet
	Seasonally high groundwater	5 feet (vertical separation)
	Streams, creeks, or springs	50 feet
(a) Setback may be modified with site-specific certification from geotechnical or structural engineer.		
(b) Seasonally high groundwater is the highest elevation of the water table during the wettest season of the year. The depth should be determined using available data, including soil borings and historical records.		
(c) Setback applies only to features managing runoff from private improvements.		

SCMs for Constrained Sites

A variety of site constraints may impact the overall drainage layout and design. It is important to note that even at sites that meet the criteria for technical infeasibility, a minimum of 10% of the EISA will need to be dedicated to stormwater treatment and retention. Strategies for achieving PCR compliance on constrained sites or demonstrating compliance with the 10% EISA criteria may include:

- Utilizing all areas of required landscaping as self-retaining DMAs.
- Incorporating pervious pavement systems for uncovered parking areas, driveways, or alleys.

- Installing rainwater harvesting systems for onsite irrigation reuse.
- Installing rooftop gardens or vertical gardens that serve as self-treating DMAs.

Sites that are constrained by geologic limitations or soil contamination should contact County staff early in the design process and consider securing an offsite location for alternative compliance. The criteria for demonstrating technical infeasibility are further detailed in Chapter 4.

e. Bioretention and Biofiltration

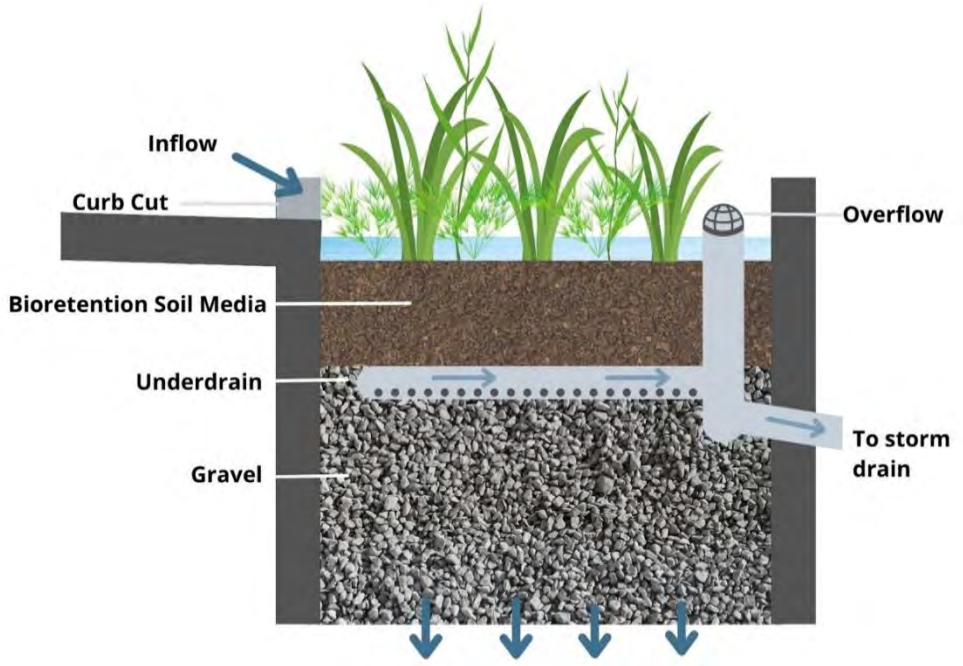
Vegetated bioretention and biofiltration features are the highest priority features for managing post-construction runoff. Bioretention and biofiltration treatment systems remove pollutants using natural systems utilizing enhanced soil media and vegetation and provide water quality benefits via several important mechanisms:

- Biologically active soil media provides media filtration.
- Vegetation provides filtration via straining, interception, settling of particles resulting from shallow flows.
- Sorption processes capture pollutants via absorption, ion exchange, surface complexation, etc.
- Soil microbes support biologically-mediated transformations.

Bioretention and biofiltration features can typically be fit into parking medians, perimeter screening landscape areas, and other landscaping features without significantly affecting the uses or layout of the site. Further, bioretention facilities contribute towards site landscaping requirements, attenuate peak flows, and effectively remove common pollutants of concern. Bioretention and biofiltration features may be of any shape but should incorporate the following characteristics as demonstrated by Figure 15:

- Surface reservoir equal to the biofiltration treatment system surface area times a depth of 6 inches.
- Specialized bioretention soil media depth of at least 24 inches.
- Subsurface drainage/storage (gravel) layer with an area equal to the biofiltration treatment system surface area and having a minimum depth of 12 inches.
- All layers constructed as flat, level surfaces with no longitudinal slope.
- No compaction of soils immediately beneath the biofiltration facility.
- Proper plant selection for both inundation zones that sustains 50% vegetated cover once established (typically within 12-24 months).
- Non-floatable wood mulch or pea gravel surface cover as appropriate.
- Stabilized inlets where concentrated inflows enter the feature.
- Overflow outlets or underdrains as necessary.
- No liners or other barriers interfering with infiltration, except for situations where lateral infiltration is not technically feasible.

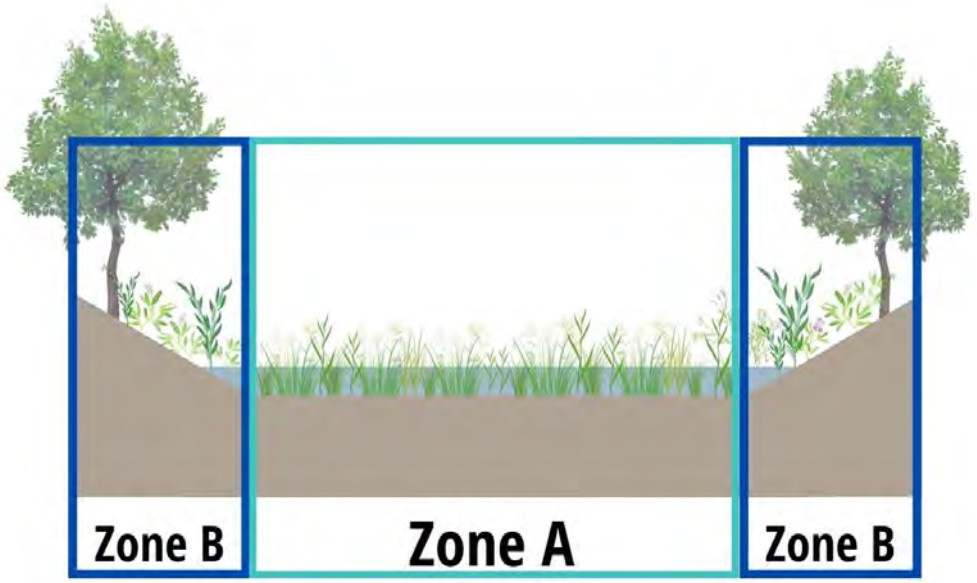
Figure 15: Bioretention/biofiltration feature common construction characteristics.



The planting media installed in biofiltration and bioretention features must be highly permeable (sustaining a minimum infiltration rate of 5 inches per hour) with a high concentration of organic matter to function effectively. This mixture is typically comprised of 60-70% sand and 30-40% compost. All planting media components should be free of stones, stumps, roots, or other detritus greater than ¾" in size. Once installed, the planting media should be covered with nonfloatable mulch, which will help suppress weeds and maintain infiltrative capacity. Aged mulch, also called compost mulch, has less tendency to float than bark mulch and should be prioritized where available.

There are two planting zones associated with bioretention and biofiltration features, based upon the potential frequency of inundation. The planting zones are indicated in Figure 16 and referenced in the plant palette recommendations in Appendix D. Plant species should be selected and planted based upon the planting zone. A minimum 50% vegetated plant cover of the bioretention or biofiltration feature should be achieved at plant maturity. Plant maturity is anticipated to occur between 12-24 months following planting. Applicants are encouraged to review the simplified plant palette recommendations in Appendix D of this guidebook.

Figure 16: Bioretention/Biofiltration planting zones.



Installation of structures into bioretention and biofiltration features that interfere with light penetration to LID vegetation, inhibit inspection and maintenance, or disturb subgrade aggregate material or bioretention soil are not permitted. This includes, but is not limited to: raised decks, docks, walkways, solar panels, monument signs, etc.

f. Vegetated Swales and Buffer Strips

Vegetated Swales

Vegetated swales differ from biofiltration and bioretention features in that they are used to convey flows down a gentle slope. Vegetated swales are intended to meet the requirements of PR#2 only.

Siting of vegetated swales must consider soil types, inflow volumes and the ability of the swale to support 50% cover of selected vegetation. Once graded, bottom soils in the swale should be de-compacted to a depth of twelve (12) inches and amended with four (4) inches of compost to support plant establishment and water quality treatment.

Check dams should be provided for slopes that exceed 2.5%. Check dams must be adequately embedded into side slopes and should be constructed of concrete, wood, metal, or sheet pile. Earthen and stone check dams are not recommended due to the risk of erosion. The area downslope of the check dam should be armored with gravel or cobble to minimize erosion. High flows should safely flow over the check dam without an increase in upstream flooding or damage to the check dam. Swales may also need to meet flood control requirements per the County's Public Improvement Standards. Equations for determining the required swale length and number of check dams are provided in Chapter 6.

The planting zones referenced in Figure 16 and the palettes provided in Appendix D may be applied to vegetated swales. Table 16 provides a summary of the County's vegetated swale design criteria.

Table 16: Vegetated swale design criteria.

Design Element	Minimum Value	Maximum Value
Bottom width	2 foot as trapezoid.	Up to 10 feet as trapezoid.
Side slopes	No minimum.	3:1
Longitudinal slope	0.25%	1% -2.5% [a]
Length of flow path	10 feet.	None.
Velocity	No minimum.	1.0 ft/sec for PR#2 flow
Vegetation coverage	50% cover	None.
Hydraulic Residence Time	5 minutes	None.
[a] Vegetated swales that incorporate check dams may utilize an average overall slope up to 4%. The bed slope between check dams must be 2.5% or less.		

Vegetated Buffer Strips

Vegetated buffer strips are designed to filter shallow sheet flow runoff and meet the requirements of PR#2 and, in some cases, PR#3. Vegetated buffer strips are most commonly used for treating stormwater runoff from adjacent impervious surfaces that drain by sheet flow, such as roadways, driveways, or parking lots.

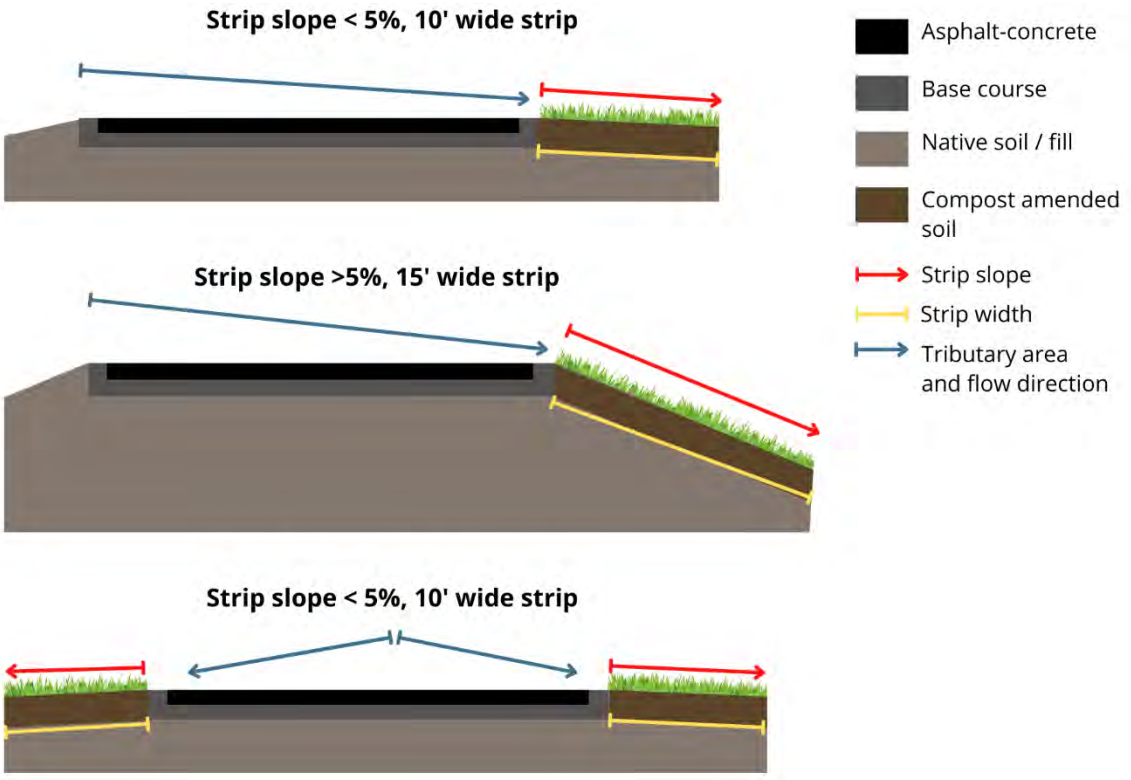
Siting of vegetated buffer strip must consider soil types, inflow volumes, and the ability of the strip to support selected vegetation, typically drought-tolerant native grasses. Once graded, surface soils in the strip should be de-compacted to a depth of twelve (12) inches and amended with four (4) inches of compost to support plant establishment and water quality treatment. Table 17 provides the County's vegetated buffer strip design criteria for meeting PR#2 requirements.

Table 17: Vegetated buffer strip design criteria for PR#2.

Design Element	Minimum Value	Maximum Value
Strip width	10 feet if sloped 5% or less. 15 feet if sloped exceeding 5%	None.
Strip slope	1%	40% (2.5 :1)
Tributary Length ***(length of contributing flow path)***	None.	100 feet
Vegetation coverage	70% cover	None.
Compost incorporation: apply four (4) inches of compost over strip area and incorporate to depth of twelve to sixteen (12-16) inches.		

Figure 17 demonstrates the minimum vegetated buffer strip widths based on strip slope. Note that the strip width is not determined by the slope of the tributary area, but by the slope of the strip itself.

Figure 17: Vegetated buffer strip design schematic.



Vegetated buffer strips may also be designed to provide infiltration to meet the requirements of PR#3. Table 18 provides the County's additional vegetated buffer strip design criteria for meeting PR#3 requirements.

Table 18: Vegetated buffer strip design criteria for PR#3.

Design Element	Minimum Value	Maximum Value
Strip width	10 feet if sloped 5% or less. 15 feet if sloped exceeding 5%	None.
Strip slope	1%	10%
Vegetation coverage	70% cover	None.

Additional PR#3 requirements for design rainfall 2" or less		
Soil Type	**Compost Depth / Incorporation Depth[a]**	**Maximum Tributary Area[b]**
HSG A or B	4" / 12"	2:1
HSG C or D	6" / 18"	1.5:1
Additional PR#3 requirements for design rainfall greater than 2"		
Soil Type	**Compost Depth / Incorporation Depth[a]**	**Maximum Tributary Area[b]**
HSG A or B	6" / 18"	2:1
HSG C or D	6" / 18"	1:1

a. Compost Incorporation: Apply specified depth of compost over strip area and incorporate to a depth equal to or greater than the incorporation depth shown.

b. Maximum Tributary Area is specified as tributary area: strip area.

g. Proprietary Units and Specialized Materials

A wide array of proprietary devices and materials are available for augmenting post-construction stormwater management. Proprietary devices are commercial products that typically provide stormwater treatment in space-limited applications, often using patented innovative technologies. Proprietary stormwater management devices include specialized biotreatment soil mixtures, hydrodynamic separation, catch basin insert technologies, or cartridge filters.

The County does not maintain a list of "approved" proprietary units or materials. Generally, any proprietary device or materials proposed for compliance with the PCRs must meet the following minimum standards:

1. Devices and materials must not adversely affect the level of flood protection provided by the drainage system.
2. Proprietary units must treat for the following pollutants of concern: sediment, petroleum hydrocarbons, nutrients, metals, and bacteria.
3. Proprietary units or materials may not contain antimicrobial products or coatings.
4. Devices must be vector-resistant, with a ponding duration of less than 72 hours after the end of a storm.

5. Devices may not adversely impact water quality by resuspending trash, sediments, or bacteria (through regrowth) or by leaching heavy metals or semi-volatile organic compounds during subsequent storms.
6. Subgrade equipment or devices with access shafts must:
    a. Meet or exceed American Public Works Association (APWA) standards;
    b. Be reasonably accessible by a qualified maintenance worker with appropriate provisions for confined space entry;
    c. Have ladder rungs and safety guard rails; and
    d. Can withstand lateral soil pressures.
7. Devices with plastic or fiberglass interior parts with the potential to break or shatter in the path of direct flow are not permitted.
8. Pipes, conduits, and vaults shall not be more than 20 feet below finished grade and must be continuously accessible by a vacuum truck hose for clean-out.
9. Must be designed with the ability to block off inflow and tail water backflow to isolate the device for safe maintenance and repair of the unit.

Performance shall be demonstrated with certification by an established stormwater technology assessment program. The dated approval letter and product specifications of all submitted materials, except for proprietary information, must be provided with the SWCP. The County reserves the right to disallow use of a proprietary device or material if the submitted information is incomplete or the system cannot reasonably demonstrate continuous, sufficient water quality treatment.

Filter Units

Filter unit SCMs filter stormwater and convey it either offsite or into an infiltration system. These SCMs do not meet the objectives of LID because they do not incorporate at-grade features that provide infiltration or evapotranspiration. Filter units may be part of a treatment train in sequence with other SCMs to meet multiple performance requirements. Filter units should only be used in cases where biofiltration or bioretention is severely constrained by site conditions. Examples of pertinent site constraints that would preclude infiltration include soil contamination, shallow groundwater, and slope instability.

Proprietary Device Sizing

Most proprietary devices and materials are designed as flow-based treatment structures and must be sized to capture and treat the water quality design flow rate if proposed as a stand-alone SCM. Proprietary biotreatment devices may include both volume-based and flow-based SCMs. Volume-based devices must be sized to capture and treat the water quality design volume if used as a stand-alone SCM.

h. Underground Infiltration Systems and Dry Wells

Dry wells and other subsurface stormwater infiltration practices that serve facilities other than single-family homes are considered Class V wells, subject to US Environmental Protection Agency (US EPA) regulations. Typically, Class V wells are shallow dry wells used to

distribute a variety of fluids directly below the ground surface. By definition, a well is "any bored, drilled, driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system" and an "injection well" is a "well" into which "fluids" are being injected (40 CFR §144.3). Subsurface fluid distribution or infiltration systems (i.e. Stormtech, Contech, Cultech) are included in the Class V Well designation. Class V wells may be authorized to operate if they are registered with the US EPA, and only inject uncontaminated stormwater.

Applicants that submit plans to the County that include underground infiltration systems or dry wells will be notified of the need to register systems with the US EPA prior to issuance of construction permits. All Class V wells in California must be registered with the US EPA's Region 9 Office. Registration of Class V Wells is completed by filling out an online form prior to commencement of use. See Appendix C for additional information.

Designers should demonstrate that a minimum of 30% of the site's post-construction runoff volume has been managed through at-grade LID strategies before proposing compliance measures utilizing 'grey' infrastructure such as underground infiltration chambers.

Soil Report Data

A soils report will be required to demonstrate soil infiltration rates in the location and at the elevation of the proposed underground infiltration system and the minimum distance to seasonally high groundwater. See Chapter 4 for additional information about required soil and infiltration testing and factors of safety.

Prior to plan approval the geotechnical engineer must provide a certification letter or report indicating that the site soils at the proposed location and elevation are suitable for an underground infiltration system. All minimum California Building Code Setbacks apply, in addition to any manufacturer-recommended setbacks.

Pretreatment Requirements

Per the County's Public Improvement Standards, underground infiltration system and dry well designs must incorporate a stormwater pretreatment device or feature to protect groundwater, remove solids, and ensure that particulate debris can be isolated from inflows. Pretreatment devices must be installed such that a 'treatment train' is created, and runoff passes through the treatment device prior to infiltration.

The County requires that pretreatment devices meet the following conditions:

1. Pretreatment or basic treatment proprietary devices certified by the Technology Assessment Protocol Ecology (TAPE) Program supported by the Washington State Department of Ecology. Devices certified in the Pretreatment or General Use Level Designation (GULD) for basic treatment or pretreatment technologies are acceptable. See the link referenced in Appendix A. Alternatively, applicants may provide results of field-scale testing indicating an equivalent level of performance.

2. The pretreatment requirements for PR#2 volume are met entirely upstream of the infiltration system through at-grade LID features such as bioretention or biofiltration features, and a settling vault or sump is installed at the infiltration system inlet.

Applicants may be required to provide additional studies to indicate that adequate pretreatment is achieved to protect groundwater quality. The County has no obligation to accept the use of any proposed proprietary SCM and will provide applicants a written explanation describing the rationale for any rejection of a proposed device.

Groundwater Separation

The minimum vertical groundwater separation for underground infiltration systems is 10 feet from the elevation of seasonally high groundwater. Guidance on determining the elevation of seasonally high groundwater is provided in Table 15.

Inspection Port Requirements

Underground infiltration systems must include appropriately sized inspection ports designed to the manufacturer's specifications. Systems with multiple rows of chambers must install an inspection port in every other row of chambers. Ports must be marked 'STORM' and remain unobstructed.

Class V Well Restrictions

San Luis Obispo County relies heavily on local groundwater supplies to meet municipal and agricultural water demand throughout the county. While Class V wells provide a mechanism to augment infiltration to groundwater tables, protection of water quality is a paramount concern.

Class V wells will not be authorized for construction on high-risk project sites where the site use presents an elevated risk of releasing contaminants (spills), or on properties susceptible to receiving contaminants from adjacent land uses. This includes, but is not limited to:

a. Vehicle repair facilities or fueling stations.
b. Facilities that store, transfer or generate hazardous materials.
c. Autopart recycling facilities.
d. Sites with a history of spills or illegal dumping.
e. Industrial facilities as defined by California's General Permit for Stormwater Discharges Associated with Industrial Activities (Order No. 2014-0057-DWQ).

The County reserves the right to reject site designs that include underground infiltration systems in the above-listed settings and others deemed high risk by the County's Environmental Health Department. Alternatively, the County may permit underground infiltration systems where robust pre-treatment and spill containment measures will be instituted or where there will be minimal exposure of industrial materials to stormwater.

i. Pervious Pavement Systems

Pervious pavement systems are constructed in a variety of formats including interlocking pavers, pervious asphalt or concrete, turf block systems, granular pavements, and geogrid systems. Pervious pavement systems are most efficient where native site soils are permeable but can be used on sites with clay soils if installed with a deep and well-drained base course. In most cases, pervious pavement systems are not recommended for installation on fill soils. Ideal conditions for most systems are flat areas with light traffic and low vehicle speeds.

To achieve compliance with PR#1, pervious pavement systems must comprise 10% or more of the total square footage of outdoor bike lanes, driveways, uncovered parking lots, sidewalks, walkways, or patios. Drainage directed to permeable pavement must be free of sediment or chemical pollutants. Runoff from vegetated or non-vegetated permeable areas is not recommended due to potential clogging of the pervious pavement.

To avoid potentially harmful seepage, pervious pavement systems should not be hydraulically connected to building foundations unless an impermeable liner is placed against the foundation. The recommended minimum setback from building foundations is 10 feet for systems without a liner.

Vehicle weight loading should be evaluated for the areas where pervious pavement systems are specified. Applicants should verify that pervious pavement systems are rated for HS-20 vehicle traffic for locations where waste-hauling trucks, freight delivery trucks, or emergency vehicles may regularly access the site.

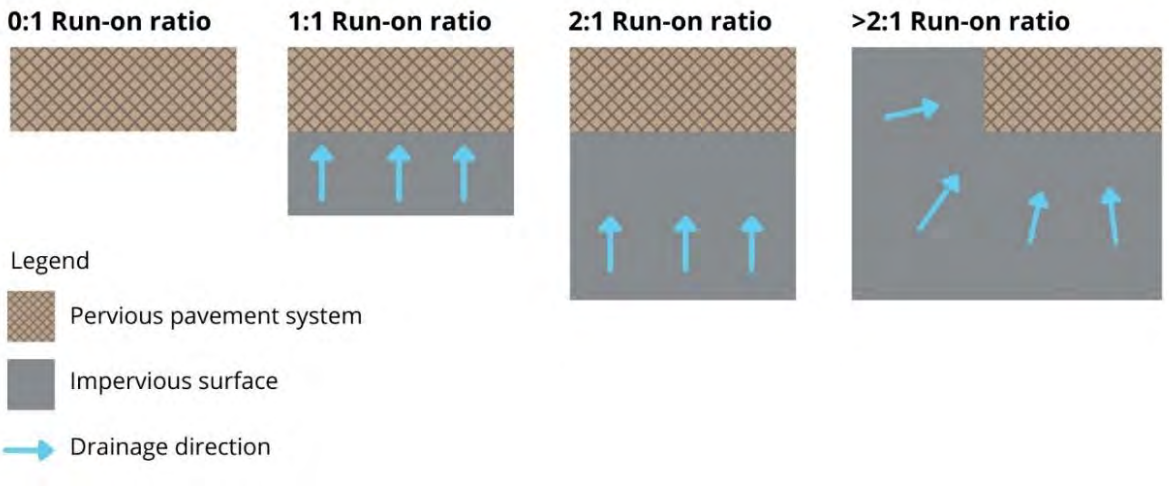
Run-on Ratios

Pervious pavement systems meet the requirements of PR#1 and may be used as self-retaining areas if designed appropriately. The specifications of the selected system will dictate the amount of run-on that can be infiltrated through the pervious pavement area. Any contributing drainage areas must be fully stabilized to prevent soil erosion and sedimentation of the pavement system. Different run-on ratios to pervious pavement systems are demonstrated in Figure 17.

Systems with a 0:1 or 1:1 run-on ratio are compliant with PR#1 and PR#2. Systems with a 2:1 run-on ratio are considered self-retaining areas and must adhere to the design requirements for self-retaining DMAs.

Designs that exceed the 2:1 run-on ratio must provide additional calculations and details indicating that the system can sufficiently manage the proposed run-on volume. Installations that exceed a 2:1 run-on ratio may not provide adequate water quality treatment to meet the requirements of PR#2. Additional water quality treatment may be necessary for systems exceeding the 2:1 run-on ratio that intend to satisfy PR#2 requirements.

Figure 18: Ratios of run-on drainage to pervious pavement systems.



Compliance with Americans with Disabilities Act (ADA) Regulations

Pervious pavement systems are not recommended in areas designated for ADA parking or an ADA path of travel. Many pervious paver systems require widened joints between pavers, and do not meet the criteria of a firm, stable, non-slip surface. Additionally, gaps in ground surfaces greater than ½ inch horizontally and ¼ inch vertically do not meet ADA criteria. Therefore, even if paver spacing is constructed within this threshold, spacing may vary over time if movement/settlement or damage occurs.

In parking areas where interlocking pervious paver systems will be installed, the County recommends transitioning to standard pavers, asphalt, or concrete in ADA parking stalls and the ADA path of travel, as demonstrated in Figure 19. Depending upon the type of system and the fillers installed, some systems may achieve ADA compliance.

Figure 19: Transition from pervious interlocking pavers to traditional pavers in ADA path of travel.

j. Sedimentation of Infiltration and Filtration Systems

Sediment deposition to infiltration and filtration SCMs poses a significant risk to sustained functionality. Sediment accumulation can reduce the permeability of infiltration surfaces and reduce the usable design life of SCMs. Designers should consider several site characteristics to optimize the functionality and usable life of infiltration and filtration features.

- **Identifying and Isolating High-Risk DMAs:** Drainage from steep, eroding, or sparsely vegetated areas can generate runoff with significant sediment loads.

Similarly, travel lanes or parking areas and areas with high-intensity industrial or commercial uses can generate runoff with significant concentrations of gross solids. Drainage from these areas should be isolated, diverted, and/or treated with due consideration of the potential particle loading.

- **Pretreatment:** A range of approaches can be used to remove sediment and particulates prior to flows reaching filtration and infiltration SCMs. The more commonly used approaches include settling chambers, grassy turf, and pretreatment devices.
- **Factor of Safety:** A factor of safety incorporates more resiliency into the system design and helps maintain the expected level of service as infiltration rates diminish. Utilizing a prudent factor of safety will support the long-term resiliency of the system under variable site conditions.

k. High Pollutant Risk Sites

Commercial and industrial facilities, including gas stations, manufacturing and production facilities, and automotive repair facilities, have greater potential to generate stormwater pollution. Pollutant source controls are an important element of site design for these facilities and should be outlined in the SWCP and O&M Plan.

Source Control Measures

Source control refers to any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices, or operational practices that prevent stormwater pollution by reducing the potential for contamination at the source of pollution. While some source control measures can be broadly applied to development, others are site and pollutant-specific. Source control measures should be documented in both the SWCP and operations and maintenance agreement.

There are three (3) primary types of source controls:

- **Structural source controls** are physical measures employed to prevent stormwater from contacting work and storage areas to prevent stormwater from picking up pollutants. Examples include berms, containment systems, and permanent shelters.
- **Operational source controls** are non-structural practices such as employee training, record keeping, good housekeeping, preventative maintenance, spill prevention, and cleanup.
- **Procedural source controls** include implementing process changes such as substituting a less hazardous material for a highly hazardous material in an industrial process.

The SWCP must identify potential pollutants that may be generated once the facility is operational and incorporate appropriate source control measures. Source control measures that are required by the project's conditions of approval or per State licensing requirements

should also be included. A checklist of potential Source Control BMPs is included in the SWCP Template.

Some facilities may also utilize pretreatment devices, such as oil grease separators or vegetated swales, to remove site-specific pollutants before stormwater reaches SCMs. This "treatment train" approach removes elevated pollutant loads and ensures that SCMs will continue to function effectively.

Industrial Stormwater Management

The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (Industrial General Permit) implements federally required stormwater regulations across California for stormwater associated with industrial activities. The Industrial General Permit regulates discharges associated with several federally defined categories of industrial activities (based on Standard Industrial Classification Code), many of which occur at privately operated facilities in San Luis Obispo County. Applicants should consider whether the developed site will be required to enroll in the Industrial General Permit and evaluate options to limit the exposure of industrial activities to stormwater and infiltrate or reuse stormwater onsite. Compliance with the PCRs does not supersede the requirement to enroll in, and comply with, the ongoing requirements of the Industrial General Permit.

6. Calculations

This chapter provides and describes commonly used and County accepted calculations for analyzing post-construction runoff volumes. These equations and calculations are tailored to support demonstrating compliance with the PCRs.

a. Tributary DMA Calculations and Tabulations

Several calculations are required for determining retention tributary areas, and the corresponding required retention volume. Each of these calculations should be clearly discernable in submitted SWCPs.

Retention Tributary Area

The first step in sizing structural SCMs is to determine the overall site Retention Tributary Area. This Retention Tributary area is the entire project area except for self-treating or self-retaining areas that will not produce runoff or create nuisance ponding. DMAs are smaller areas that cumulatively make up the Retention Tributary Area for the entire site. Table 12 provides guidelines for appropriately sizing DMAs.

Once DMAs are delineated and categorized, the retention tributary area can be calculated for each individual Drainage Management Area to facilitate the design of SCMs. Utilize Equation 3 to complete this calculation.

Equation 3: Retention tributary area.

The retention tributary area of a regulated project subject to PR#3 may be adjusted in scenarios with replaced impervious surfaces. Projects outside of approved Urban Sustainability Areas may multiply the amount of replaced impervious surface by 0.5 when calculating the Retention Tributary Area. Per Chapter 2, there are currently no USAs in the unincorporated County of San Luis Obispo. A calculation of retention tributary area is demonstrated in Table 18.

Table 18: Adjusted retention tributary area example.

Adjusted Retention Tributary Area Example	
Surfaces in DMA	**Area**
New Impervious Surface	8,000 sf
Replaced Impervious Surface	2,500 sf
Total DMA surface Area:	10,500 sf

Adjusted Retention Tributary Area:	(2,500 x 0.5) + 8,000 = 9,250sf

Runoff Retention Volume and Runoff Factors

Projects subject to PR#3 must determine the required runoff retention volume. This volume can be calculated using either flow-based or volume-based sizing requirements. Depending on the WMZ, projects will be required to retain runoff from either the 85th or 95th percentile rainfall event.

The runoff coefficient 'C' is calculated for each DMA using Equation 4.

Equation 4: Impervious ratio (i) to Runoff coefficient 'C' equation.

Where i = the fraction of the DMA that is impervious

Once the runoff coefficient C has been determined, the required retention volume can be calculated using Equation 5.

Equation 5: Retention volume calculation.

The required volume of each SCM can be determined using either the Simple Method or Routing Method.

b. Impervious and Pervious Surfaces

A variety of pervious surfaces are commonly specified for elements of new and redevelopment projects across the County. These surfaces can be beneficial in stormwater management but have limitations that require design consideration. Impervious surfaces have high runoff factors as nearly all rainfall is converted into runoff. Pervious surfaces have varying runoff factors as they can infiltrate a modest volume of stormwater before generating runoff.

Runoff Coefficient Calculation

Runoff factors (C) represent the ratio of stormwater runoff over rainfall that is anticipated for a particular surface type. Impervious surfaces are assigned high runoff factors (0.89) as nearly all rainfall is converted into stormwater runoff. Pervious and semi-pervious surfaces typically have lower runoff factors as a higher ratio of rainfall is retained in surface features.

Where possible, DMAs can be delineated by surface type. DMAs comprised of more than one surface type should calculate an area-weighted runoff factor per Equation 6, where C represents the runoff coefficient, and A represents the area of each surface.

Equation 6: Multi-surface runoff coefficient calculation.

$$C_{area\text{-}weighted} = \frac{\sum C_{surface\ 1} A_{surface\ 1} + C_{surface\ x} A_{surface\ x}}{\sum A_{all\ surfaces}}$$

Runoff Coefficient C Values

Table 19 provides approved Runoff Coefficient 'C' values for impervious and pervious surfaces commonly utilized in new and redevelopment projects.

Table 19: Approved C factors for constructed surface types.

	Surface Category	Surface Type	Post-Construction Runoff Coefficient (C)[a]
Impervious	Impervious Surfaces	Roofs, concrete, asphalt, grouted pavers.	0.89
		Bricks or solid pavers over sand base	0.89
		Grouted rock	0.89
		Decomposed granite with binder	0.89
		Dense-graded aggregate or dense-graded road base (e.g. Class II, red rock)	0.89
Pervious	Natural-Pervious	Compacted soil, HSG A or B	0.15
		Compacted soil, HSG C or D	0.30
		Decomposed granite without binder	0.30
		Landscape rock (e.g., cobbles, river rock, pea gravel, etc.)	0.10
	Engineered Pervious Surfaces (designed with sufficient depth to retain the design storm)	Permeable or porous pavers	0.00
		Pervious concrete or asphalt	0.00
		Engineered aggregate [b]	0.00
		Artificial turf over subgrade	Use "C" value for subgrade

Notes:

[a] Suggested C values only apply where surfaces are underlain by natural site soils with minimal compaction. Surface installations underlain by concrete or impermeable liners are considered impervious. Surface installations underlain by heavily compacted soils should use the C value for compacted soil.

[b] Open graded aggregate pathways, roadways, or parking areas (e.g. Class I and Class II permeable, No. 57 stone, etc.)

c. Infiltration and Percolation Rates

Design Infiltration Rates and Accepted Factors of Safety

For all SCMs except bioretention, a factor of safety must be applied to the infiltration rate to account for the risk of the facilities reduced infiltration rate over time. The resulting reduced rate is the design infiltration rate to be used in all calculations.

Design infiltration rates based on hydrologic soil groups can also be applied for bioretention and surface infiltration SCMs.

Table 20: Design infiltration rates based on Hydrologic Soil Groups.

Feature Type	Accepted HSG Rates	Factor of Safety
Bioretention	HSG A or B: 0.75 in/hour HSG C or D: 0.25 in/hour	1
Surface Infiltration	HSG A or B: 0.75 in/hour HSG C or D: 0.25 in/hour	2
Subsurface Infiltration	HSG Rates not accepted, infiltration testing required.	3

Percolation Rate Conversion

Although percolation rates and infiltration rates may be similar, they are not equivalent. As described in Chapter 4, the direct measurements yielded by percolation testing tend to overestimate the infiltration rate. A percolation rate may be converted to an acceptable estimate of the infiltration rate by applying a correction factor using the Porchet Method, Equation 7.

Equation 7: Porchet Method.

$$I_t = \frac{\Delta H(60r)}{\Delta t(r + 2Havg)}$$

Where

$\Delta H = H_O - H_f$

$H_o = D_T - D_o$; D_T (total depth of test hole); D_o (initial depth to water)

$H_f = D_T - D_f$; D_f (final depth to water)

r (test hole radius)

Δt (time interval)

$$H_{avg} = \frac{Ho + Hf}{2}$$

d. Structural SCM Sizing Calculations

A volumetric SCM must be designed such that a single 95th or 85th percentile 24-hour rainfall event will not overflow the SCM. Calculations for projects not subject to PR#4 may utilize either the simple method or the routing method. Projects subject to PR#4 must use the routing method to address flow rates.

Simple Method and Routing Method

The simple method is single event volume-based calculation and provides values using the retention volume equation for either the 85th or 95th percentile 24-hour rainfall depth. The simple method accounts for the total volume produced by the design storm.

Routing Method

The routing method is a flow-based calculation that accounts for infiltration that occurs simultaneously with inflow during a storm event and results in a smaller SCM footprint. To determine the runoff retention volume using the routing method, additional site characteristics will need to be inputted into a hydrologic modeling program. HydroCAD® is a commonly used program for calculating volumes via the routing method. Routing analyses must adhere to the criteria included in Table 21.

The SCM retention volume must be based on both the rate of flow from tributary areas into the SCM, and the rate of flow out of the SCM through infiltration into the underlying soil during the rain event. If the retention volume cannot fully infiltrate within 48-hours, a multiplier of 1.20 shall be applied to the SCM Capture Volume calculated through the routing method.

For modeling purposes, open, uncovered facilities that retain/detain stormwater with no infiltration (retention ponds, swimming pools, etc.) must be considered impervious surfaces.

Table 21: Routing method criteria.

Parameter	Criteria
Hydrograph Analysis Method	National Resources Conservation Service (NRCS) or Santa Barbara Urban Hydrograph (SBUH).
Pond Routing Method	Storage-indication, unless otherwise justified to be more correct based on site and storage conditions.
Infiltration Rate	Underlying soil saturated infiltration rate, as indicated by on-site testing. *(See requirements Chapter 4)*
Rainfall Distribution	National Resources Conservation Service Type 1* or based on local rainfall data.
Time of Concentration	Identified per County drainage and flood control standards.
Time Increment	0.10 hour, unless otherwise justified to be more correct based on rainfall distribution.
The National Resources Conservation Service developed standard 24-hour rainfall distributions for hydrograph analyses. These rainfall distributions were intended to represent intensities associated with shorter duration storms, ranging from durations of 30 minutes to 12 hours. The National Resources Conservation Service Type storm applies to the California West Coast, including the Central Coast Region. The Type rainfall distribution was derived using National Oceanic Atmospheric Administration Atlas 2 rainfall statistics for the 1-year through 100-year storm.	

The 4% Rule for Bioretention or Biofiltration Sizing

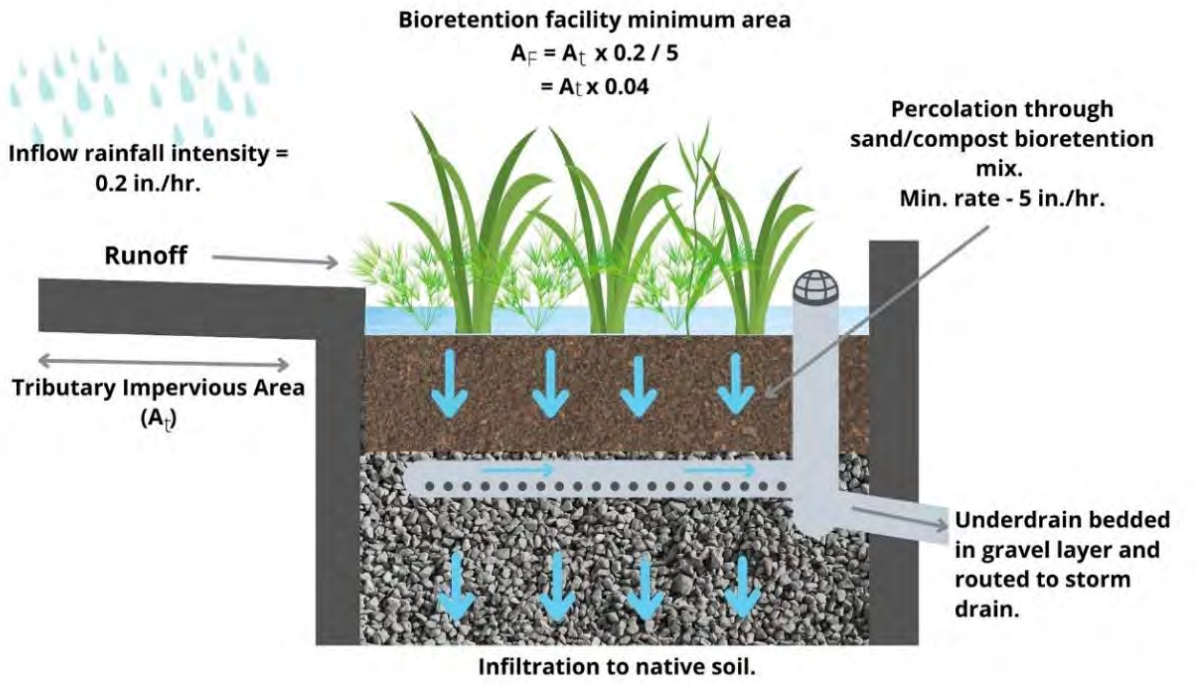
Bioretention and biofiltration facilities should generally be sized to provide a minimum surface area equal to 4% of the tributary impervious area. There is a simplified method specifically for sizing bioretention facilities meeting the design loading rate (infiltration rate) of 5 inches per hour to detain and treat runoff produced by a rainfall intensity of 0.2 inches per hour. If it is assumed that 100% of rainfall ends up as inflow to the bioretention facility, then the ratio of bioretention surface area to tributary impervious area (or sizing factor) needs to be 0.04 (0.2 in/hr ÷ 5 in/hr) or 4%. This simplified sizing method is demonstrated in Equation 8. This sizing method can be used to demonstrate compliance with PR#2. Additional volume-based calculations are required for PR #3. Designs that seek to decrease the minimum surface area below 4% will be required to provide media and materials specifications to the County for review and authorization.

Equation 8: Bioretention facility surface area calculation.

Tributary Impervious Area (sf) × **0.04 (sizing factor)** = **Bioretention Facility Surface Area (sf)**

Figure 20 graphically demonstrates the inputs associated with this simplified sizing method.

Figure 20: Simplified sizing method for bioretention facilities.



Vegetated Swale Length and Check-Dam Spacing Calculation

The hydraulic residence time in a vegetated swale must be five (5) minutes or longer to achieve adequate water quality treatment. The maximum velocity acceptable within a vegetated swale is 1.0 ft/sec to meet the criteria for PR#2 treatment flow. Installation of check dams may be necessary to reduce velocities and achieve the required residence time. Equations 9 and 10 should be utilized to calculate the swale length and number of check dams necessary to maintain design velocity.

Equation 9: Vegetated swale minimum length calculation.

$L = 300 (V_{wq})$

L= Minimum swale length (feet)

V_{wq} = Design flow velocity (ft/sec)

The 300 seconds multiplier determines the swale length necessary to achieve a hydraulic residence time of at least 5 minutes. Velocity should be calculated using the Manning's equation.

Equation 10: Vegetated swale check dam spacing calculation.

$$N = \frac{L_{swale} x\ (S - .02)}{H_{dam}}$$

$$L_{dam} = \frac{L_{swale}}{N}$$

Where:

N= number of check dams required
L_{swale} = total length of vegetated swale (feet)
S = longitudinal slope of vegetated swale (feet/foot)
H_{dam}= height of check dams (feet, use maximum height of 1.0)
L_{dam}= distance between check dams (feet)

This equation is simplified and can be adjusted to accommodate specific site conditions and swale configurations.

e. Santa Barbara Technical Guide Calculator Tool

The Central Coast Stormwater Control Measure Sizing Calculator, available on the Project Clean Water website, facilitates routing method calculations. The calculator MS Excel file should be submitted with your Stormwater Control Plan if utilizing this tool.

f. Credits for Redevelopment, PR#3

Credit for redevelopment can be achieved by evaluating the Retention Tributary Area and applying an adjustment factor, whereby the total amount of replaced impervious surface area can be multiplied by 0.5. See Table 18 for an example calculation. Evaluation of the redevelopment criteria is encouraged for all previously developed sites with existing impervious surfaces.

g. Underground Infiltration Systems and Dry Wells

Underground infiltration systems and dry wells may be used for either retention or detention of site stormwater runoff where their application is suitable for project conditions. Applicants should reference the criteria for siting underground infiltration system detailed in Chapter 5 and the requirements in Appendix C.

h. County Drainage and Flood Control Calculations

A project may be subject to additional County drainage and flood control requirements, such as those stipulated in Section 5 – Drainage & Flood Control of the County of San Luis Obispo Public Improvement Standards. A separate Drainage Report is required to address applicable flood control and/or drainage standards. The County generally recommends that the analytic methodology be consistent between the project SWCP and Drainage Report; however, specific requirements of the Public Improvement Standards may vary from those detailed here.

7. Required Post-Construction Stormwater Submittals

The County requires that all regulated projects submit a complete Stormwater Control Plan Application (SWCP App) and that projects meeting the criteria for PR#2 and above submit a full SWCP utilizing the County provided format. Projects that submit a Stormwater Waiver Request form do not need to submit a SWCP App or SWCP.

Depending on the scope and complexity of the project, the County may also request or require supporting documentation to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. Requirements for specific elements of the SWCP are further detailed in this chapter.

a. Stormwater Control Plan Application (SWCP App)

All regulated projects must complete a SWCP App as part of the construction permit application.

Small scale projects that only trigger compliance with PR#1 must complete the SWCP App but are not required to submit a full SWCP. The plan sheet and detail that demonstrate compliance with selected PR#1 measures must be listed in the SWCP App. The SWCP App provides a summary of key project details and information. Numeric values on the SWCP App are required to match those in the project plans and SWCP (when required).

b. Stormwater Control Plan, County Template

The SWCP shall be prepared by or under the direction of a qualified professional. The plans must be stamped, signed, and include a certifying statement indicating that all structural SCMs have been designed to meet the County's stormwater requirements and comply with the PCRs.

To decrease review time, the County of San Luis Obispo SWCP template should be used and followed. The County strongly discourages significant modification, recombination, or deletion of the provided tables in the template. The County may decline to initiate review of SWCPs submitted in formats from jurisdictions outside the Central Coast region. The SWCP template allows for inclusion of additional tables or information as attachments.

Documents that combine County-required drainage reports with the SWCP will not be accepted and will delay the start of project review.

Project Site Data

The SWCP template must be completed with all pertinent project site data. The fields included in the table are the minimum required information, and applicants may add additional details or narrative information as necessitated by the characteristics of the project.

Data provided in the SWCP must match information provided on plan sheets, supporting reports, and permit application materials. Inconsistencies in project data will require correction before permit review and approval can proceed.

Narrative Portion

The SWCP should be completed with narrative information about the project site and proposed development. In completing the project location and description section applicants should include information pertaining to:

- Project site location description;
- Vicinity map;
- Parcel boundary modifications (lot splits, lot line adjustments, tract or parcel maps);
- Existing and intended uses;
- County zoning;
- Setbacks and open space requirements;
- Project phasing (if applicable);
- Number of residential units or square footage of commercial space;
- Parking space requirements; and
- Neighborhood character, including neighboring developments.

This section of the SWCP should also include information about existing site features and conditions. This can include information about notable geographic, topographic and hydrologic features, existing vegetation, or land use. This narrative portion should highlight any of the notable opportunities or constraints associated with existing site features that affect the proposed project design. Applicants are encouraged to carefully review Chapter 4 for detailed information about completing an opportunities and constraints analysis ahead of finalizing the site layout.

Required Exhibits and Details

Several exhibits are required to complete a SWCP in addition to the tables and narrative portions of the SWCP template. Attachment 1 of the SWCP template requires attachment of the following exhibits for all projects requiring a SWCP:

- Pre-existing impervious area exhibit
- Post-project impervious area exhibit (with DMAs and SCMs)
- Net impervious area exhibit (only if applicable)

If a project is required to meet PR#4, the following additional exhibits must be provided:

- Pre-existing modeled conditions exhibit
- Post-project modeled conditions exhibit

These modeling exhibits must show all key information utilized in modeling the hydraulic performance of the SCM system (elevations, basin areas, etc.)

Required Project Plans

Structural SCMs should be clearly shown on project plans with identifying information as follows:

- Number/identification to match number/ID in the SWCP
- Manufacturer and model number
- Grading information (invert in/out, flow line, bottom of basin, top of basin, finish grade/surface, slopes, etc.)
- Inlet and outlet structure(s)
- Volume and/or surface area
- Detail(s)

The design engineer may consider formatting the project plan sheet such that the plan sheet may be used as an exhibit in the SWCP.

Calculations and Tables

The information tables must be filled out completely and not modified from the template unless otherwise approved by the County. Deviations from the calculation methods and formulas detailed in Chapter 6 are strongly discouraged.

Statement of Compliance

The PCRs require that the licensed professional preparing the SWCP include a statement of compliance that each applicable performance requirement has been met. The following statement is included in the template and must remain as part of the SWCP:

"The design of stormwater treatment and retention facilities and stormwater pollution control measures in this plan are in accordance with the Central Coast Region PCRs (Resolution R3-2013-0032) and consistent with the current edition of the County of San Luis Obispo Post-Construction Stormwater Guidebook."

Opportunities and Constraints Analysis Checklist

The PCRs require an Opportunities and Constraints analysis for projects that trigger PR#3 or PR#4. Additionally, the County requires the Opportunities and Constraints checklist and site map as submittals for projects claiming Technical Infeasibility. The County's opportunities and constraints checklist is included as Appendix B to this guidebook. The opportunities and constraints checklist and corresponding site map must be included as an attachment to the SWCP for regulated projects PR#3 and above.

Structural Stormwater Control Measures (SCMs)

Structural SCMs must be clearly identified in SWCP text, calculations, figures, and summary tables. Identification includes:

- SCM number/identification
- SCM type
- Sizing calculations
    - Required and provided water quality flow rate or volume

c. Drainage Report or Drainage Analysis

A formal drainage report is required for projects required to meet flood control requirements, which is separate from the SWCP document. Calculations to meet PR#4 shall be contained within the SWCP to demonstrate the control of peak flows are not exceeding pre-project flows for the 2-year through 10-year storm events.

d. Operation and Maintenance Agreement

An Operation and Maintenance (O&M) Agreement is required for all projects that utilize SCMs to satisfy PR#2, PR#3, and/or PR#4. A maintenance program is essential to ensure that the stormwater facilities continue to function as designed to maintain water quality and prevent possible flooding and property damage.

A stormwater Condition Compliance Monitoring (CCM) case is the County's method of tracking long-term compliance with post-construction stormwater management requirements. CCM cases are assigned to projects triggering compliance with PR#2 and above and are used to verify that structural controls for managing stormwater runoff are maintained and operational. The Department of Planning and Building will create a CCM case permit and will provide applicants a permanent CCM permit number to reference on the O&M Agreement and permit documents.

A detailed description of the stormwater management system and the operation and maintenance requirements must be recorded with the County of San Luis Obispo Clerk-Recorder prior to final building permits. The recorded O&M Agreement binds current and future owners of the site to maintaining the stormwater drainage system to the design conditions in perpetuity.

The County of San Luis Obispo utilizes two types of Stormwater Operation and Maintenance Agreements for privately owned and operated Post-Construction Stormwater Management Systems. A summary of each type of Agreement and its typical application is further detailed in this section.

Operation and Maintenance Agreements for Privately Owned Development

Projects that construct SCMs on private property in a privately owned development typically execute single-owner operations and maintenance agreements. The Agreement is made between the County to the system owner and recorded with the County Clerk Recorder. An agreement consists of each of the forms and components listed in Table 22.

Table 22: Components of private operations and maintenance agreement.

Agreement Component	Description	Applicable Form or Template
Private Stormwater Agreement	Text that documents the purpose of the agreement, terms, and responsibilities of the County and owner.	County form SWP-3001
Owner Notarized Signature Sheet	Notarized signature page acknowledging agreement by the property owner.	County-provided form included in SWP-3001. This page may be substituted with notary-provided form as necessary.
County Notarized Signature Sheet	Notarized signature page acknowledging agreement by the County.	This form is provided and signed by County staff.
Legal Property Description	Full legal property description for all parcels affected by the Agreement.	Property descriptions may be retrieved from the Clerks' office and must be provided by applicants as **Exhibit A** of the Agreement.
Site Plan	Black and white site map indicating the location and assigned tracking number for each stormwater system component.	This exhibit must be provided by the applicant as **Exhibit B** of the Agreement.
SCM Descriptions	Detailed description for each element of the constructed system including location, size, capacity, etc.	County form SWP-1007, to be included as part of **Exhibit B.**
System Owner, Agent, Designer Information	Contact information for the original system owner, system designer and project agent (if applicable).	County form SWP-1003.
Stormwater System Plans and Manuals Sheets	Information about long-term operations and maintenance requirements and anticipated expenses. A separate form is required for each different feature type.	County form SWP-1008.

The text of the Private Stormwater Agreement requires owners to maintain the stormwater drainage system to the design conditions in perpetuity and formally ties the system to the physical property. Responsibility for operations and maintenance automatically transfers to future owners, heirs, or assigns. Following signature and notarization by both parties, the Agreement is recorded at the Clerk-Recorder's Office by County staff. Maintenance plans and manuals are retained by the County and attached to the tracking CCM case file.

Operation and Maintenance Agreements for Privately Owned Property Held in Common Ownership

Projects that construct SCMs on private property in a common owner development typically utilize Codes, Covenants and Restrictions (CC&Rs) for documenting long-term stormwater system operations and maintenance requirements. CC&Rs are typical of larger subdivisions, tracts, commercial developments, or multi-family residential developments that will have multiple owners and common or shared areas. Language and information are added to the CC&Rs to require operation, maintenance, and inspection of private stormwater systems. This documentation includes forms consistent with those required for an Agreement.

The CC&Rs language for stormwater systems is similar to language utilized for requiring maintenance and repair of private roads and drainage systems. The CC&Rs must expressly allow for access to private property where components of the system may be located (if not all held on public parcels.) Existing CC&Rs may be amended to include provisions for operation, maintenance, and inspection of stormwater systems.

CC&R language to address stormwater systems typically consists of the following:

Table 23: Components of CC&Rs for stormwater feature operation and maintenance.

Agreement Component	Description	Applicable Form or Template
CC&Rs Language	Information consistent with language and inclusions for the Private Stormwater Agreement.	Language and provisions for maintenance sourced from County form SWP-3001.
Site Plan	Black and white site map indicating the location and assigned tracking number for each stormwater system component.	This figure must be provided by the applicant as **an exhibit**.
SCM Descriptions	Detailed description for each element of the constructed system including location, size, capacity, etc.	County form SWP-1007, to be included as an Exhibit.
Stormwater System Plans and Manuals Sheets	Information about long-term operations and maintenance requirements and anticipated expenses. A separate form should be provided for each different feature type.	County form SWP-1008.

Planning and Building staff can review to verify completeness with respect to Stormwater Operation and Maintenance requirements; however, CC&Rs are not countersigned, notarized, or recorded by the County. The final recorded CC&R document number must be provided to Planning and Building for record-keeping purposes.

Agreements for SCMs in the Public Right-of-Way

Projects that construct SCMs on both public property and private property can utilize a modified Agreement format similar to that of Planning and Building for documenting O&M requirements. The Agreement should include all the components indicated in Table 22 plus an additional exhibit to incorporate a long-term encroachment permit. Long-term encroachment permits are issued by the Department of Public Works to allow maintenance of SCMs in the right-of-way. Similarly, the long-term encroachment permit may be referenced as an exhibit in CC&Rs.

8. SCM Construction and Inspection

Structural stormwater control measures (SCMs) may be constructed at variable phases of project development. While subsurface features may be installed early in the construction process, landscaped surface features may not be constructed until much later. It is critical that the construction team considers the unique attributes of each feature type and provide appropriate protection to ensure proper functioning at the completion of construction.

County-issued construction permits include several conditions requiring inspection at different phases of SCM construction. SCM construction checklists are provided in Appendix F. These checklists serve as a record of the site condition and materials used during construction and can be provided to County inspectors to verify compliance and conformity with approved plans.

a. Construction and Inspection Checklists

The checklists included in Appendix F may be referenced on the project plans to ensure proper construction practices are followed and necessary milestone inspections are completed for each type of SCM.

b. Inspection Process and Frequency

The project's construction permits will include specific conditions for inspection of drainage features and SCMs throughout the construction process. Site staff should maintain records of all delivered materials, photographic records of the installation process where subsurface features are installed, and records of third-party contractor or Engineer of Record inspections. These records should be provided to County as part of project closure.

Below are typical required inspection milestones for different types of SCMs. These inspection milestones may vary based on specific project details.

Subsurface Stormwater Feature (ex. Treatment Vault/Infiltration Chamber):

1. Excavation
2. Geotextile fabric installation
3. Gravel placement
4. Structure placement
5. Inlet, outlet, and pretreatment device
6. Backfilling
7. Final surface construction and connection

Biofiltration or Bioretention Stormwater Feature:

1. Excavation
2. Gravel placement
3. Bioretention soil media installation
4. Piping, underdrain structures
5. Vegetation plantings, mulch installation
6. Final restoration

Pervious Pavers (ex. Pervious or Permeable Pavers, Porous Concrete):

1. Excavation
2. Geotextile fabric placement
3. Gravel placement
4. Paver placement or porous concrete installation
5. Joint gravel or sand
6. Final

Detention Stormwater Feature (ex. Detention Basin):

1. Excavation
2. Inlet and outlet construction
3. Final (fully stabilized)

Developers are responsible for coordinating milestone inspections of all subsurface features and treatment measures prior to installing final cover.

c. Materials Specifications and Field Slips

It is the responsibility of the contractor and design engineer to ensure that construction materials conform to the approved design and details. Substitution of specified materials must be approved by the design engineer or architect. Materials field slips should be retained to confirm conformity with the approved plans and provided to the County for permanent records.

d. Documenting Field Changes

Due to the intensely site-specific nature of SCMs and precise sizing requirements, the County requires that any field changes that modify the dimensions or volume of any single SCM by more than 10% require updated permit submittals.

Documentation of after-issuance changes is critical to ensuring that the project will maintain compliance with the PCRs. Completion and filing of a Change Order to Issued Permit (Form BLD-1003) is required for all changes to the issued construction permit. Additional documentation may be necessary including as-built grading plans, utility plans, or an amended SWCP. Non-conformity with the job copy of issued permits can significantly delay the final closeout of construction permits.

Any changes to SCMs located within public right-of-way may also require revision of Public Improvement Plans and may require additional documentation for County Department of Public Works.

e. Engineer's Certification

Final Certification is required by the Engineer of Record or Work who designed the stormwater infrastructure. This includes approval that all construction materials installed conform with design specifications, the system was constructed in conformance of approved design, and that final inspection was completed and approved. This is required as part of final closure of the permit.

9. Overview of Operations and Maintenance Agreements

Lack of source control, site design, or SCM maintenance can be a cause of failure of SCMs due to significant impacts from delivery of runoff and pollutants. Stormwater SCMs are, by their nature, subject to deposition of solids such as sediment, trash, and vegetative debris. Some structural SCMs are also subject to growth of vegetation, either by design (e.g. bioretention) or incidentally. Maintenance to remove pollutants and manage vegetation must be done periodically for the life of the property to ensure the capacity of the SCMs to treat, infiltrate, and retain stormwater. Structural components of some SCMs are also at risk of clogging from collected debris and overgrowth of vegetation or invasive plants. Clogged SCMs can result in lengthened draw-down times and potentially result in flooding or prolonged standing water that creates mosquito breeding habitat. Proper operation and maintenance are critical to ensure the long-term functionality of LID features and SCMs across the project site.

This chapter provides an overview of the County's Operations& Maintenance agreements for ensuring long-term operation and maintenance of SCMs on private property and long-term encroachment permits for SCMs located in the County's right-of-way.

a. Roles and Responsibilities for Operations and Maintenance on Common Property

The maintenance, inspection, and repair of all SCMs on common land (those held by Homeowners Associations or HOAs) are the responsibility of the HOA. This responsibility runs with the land and must be legally recorded, executed, and transferred upon sale of the property.

The HOA is responsible for inspecting and/or ensuring the inspection by a qualified professional of all SCMs at least once a year and at the frequency specified in the maintenance and inspection section of the SWCP. The funding of all inspection, maintenance, repairs, and reporting of SCMs on common land is the sole responsibility of the HOA.

For projects with SCMs located within a common area or easement to be maintained by a HOA, language regarding the responsibility for inspection and maintenance must be included in the project's CC&Rs. In addition, the CC&Rs must include the location and brief description of all stormwater SCMs installed with the project, and any required maintenance. This language will be reviewed and approved by the Department of Planning and Building as part of the Final SWCP approval process.

Annually, the HOA (or a representative) must complete a self-inspection and certification of the Stormwater Management System verifying continued functionality. County staff will notify HOA representatives (via email or direct mailing) of the need to complete and submit inspection forms each year.

Completion of the annual inspection forms is tracked by the CCM Permit case number issued by the Department of Planning and Building. Self-inspection forms may be obtained from Planning and Building's website and must be completed and submitted by June 15th of each year.

The County does not require that property owners hire a certified professional to conduct the annual inspection. However, property owners and managers are authorized to hire a licensed or certified professional to conduct the inspection on their behalf. The funding of all inspection, maintenance, repair, or replacement of SCMs on private land is the sole responsibility of the property owner.

b. Roles and Responsibilities for Operations and Maintenance on Private Property

Maintenance and Inspection of all SCMs on private land are the responsibility of the property owner. Small stormwater systems owned and operated by a single owner are typically protected by an operations and maintenance Agreement recorded with the County Clerk-Recorder. The Agreement runs with the land and is transferred to successive owners, heirs, executors, administrators, assigns, and successors in interest. Additionally, a copy of this Agreement should be included in any sales and/or lease agreements.

Annually, the current property owner (or representative) must complete a self-inspection and certification of the Stormwater Management System verifying continued functionality. County staff will notify property owners or managers (via email or direct mailing) of the need to complete and submit inspection forms each year.

Completion of the annual inspection forms is tracked by the CCM Permit case number issued by the Planning and Building Department. Self-inspection forms may be obtained from Planning and Building's website and must be completed and submitted by June 15th of each year.

The County does not require that property owners hire a certified professional to conduct the self-inspection. However, property owners and managers are authorized to hire a licensed or certified professional to conduct the inspection on their behalf. The funding of all inspection, maintenance, repair, or replacement of SCMs on private land is the sole responsibility of the property owner.

c. Roles and Responsibilities for Operations and Maintenance on Public Property

Project developers and owners are encouraged to site SCMs within the limits of their private property on the project site. However, in cases where proposed SCMs are required to treat/mitigate stormwater runoff from public improvements, required as part of the project or existing public right-of-way that drains into the project area, SCMs may need to be located in the public right-of-way.

If SCMs are proposed in a public area the SCMs must meet narrower design guidelines than those specified in this Guidebook. Early consultation with County Public Works is strongly advised for determining specific regulations related to SCMs in the right-of-way. Inspection and maintenance will remain under the project or property owner's responsibility until the project conditions are met.

Once construction is complete, a long-term encroachment permit will be issued for SCMs located in the County's right-of-way to allow for private maintenance. This long-term encroachment permit allows a private entity to maintain SCMs located in the public right-of-way using a maintenance indemnification agreement. However, if any SCMs are formally transferred and accepted to public ownership, this long-term encroachment permit will be terminated. Once the SCMs are legally transferred and accepted, the maintenance, inspection, and replacement are the responsibility of the County.

d. Inspections and Maintenance Following Construction Completion

The plans and manuals included with the SWCP and Operation and Maintenance Agreement must specify the frequency of inspection and maintenance for each type of SCM installed at the project site. Site owners/operators are strongly encouraged to review the inspection and maintenance requirements of the proposed features with their design/engineering firm prior to authorization of construction.

The County recommends that any interim or periodic inspections specified by the O&M agreement be completed and documented, although only annual inspections must be reported to the County. Records regarding inspections and maintenance should be retained for at least five years and made available upon request to the County. These records may include copies of completed inspection reports and maintenance checklists to document any inspection and maintenance activities that were conducted over the preceding five years. Corrective actions, repairs, or replacements should also be documented and maintained with SCM inspection and maintenance records for a minimum of five years.

e. Common Maintenance Findings

SCMs require regular maintenance to function effectively during storm events. Common SCM maintenance activities include, but are not limited to:

- Clean pre-treatment devices and drain inlets (filters, screens, etc.) of soil, litter, and debris.
- Replace mulch, bioretention soil media, and surface cover material.
- Treat or replace dead or diseased vegetation.
- Remove sediment buildup in structures, basins, and underground chambers.
- Weeding, mowing, pruning, and replacing of vegetation.
- Clean out or replace rip-rap rock at outlet discharge locations.
- Remove any incidental litter or debris.

f. Mechanism to Assure Continued Operations

While many SCMs have minimal ongoing maintenance needs, the County is required to assure that all infrastructure required by the PCRs is continuously functional. Destruction of SCMs for a modified site use or significantly degraded functionality may prompt intervention by County enforcement staff.

Destruction or prolonged failure to maintain SCMs that results in compromised functionality would constitute a public nuisance, which may be abated under the Uniform Public Nuisance Abatement Procedure. This enforcement mechanism would allow the costs of maintenance to be billed to the owner, a lien placed on the property, and the tax collection process to be used.

For projects whose land use approval included ongoing conditions for post-construction stormwater management, project-specific conditions typically include a requirement for the owner of the land to maintain that facility in accordance with the requirements specified in the maintenance plan. Failure to perform maintenance may then be addressed as a violation of the land use permit under the ordinance governing that permit process.

g. Termination of Operations and Maintenance Agreements

There are limited cases where the County may terminate an operations and maintenance agreement with a property owner. The termination process is initiated by the Department of Planning and Building under merited circumstances such as annexation or property destruction.

Annexation into an Incorporated City

Properties that completed construction and enrolled in the County's operations and maintenance program while in County jurisdiction are terminated from the program upon annexation to an incorporated city. Once annexation is completed, property owners are relieved of completing annual inspections through the County's process and will be directed to enroll in the incorporated City's operations and maintenance program.

The County will notify annexed properties of the intent to terminate their operations and maintenance agreement and will file a Notice of Termination for the Agreement with the County Clerk-Recorder. Digital case records associated with the property including prior year's inspection forms, maps, and SWCP, will be provided to the annexing jurisdiction. No fees will be charged by the County for terminating agreements due to annexation.

Destruction by Catastrophic Event

The County may elect to terminate an operations and maintenance agreement following a natural disaster, declared emergency, or catastrophic event that requires subsequent demolition of the enrolled property.

County staff will evaluate the necessity of terminating operations and maintenance agreements on a case-by-case basis in these circumstances.

Removal of SCM and Restoration To Pre-Construction Conditions

The County may consider a request to terminate an operations and maintenance agreement if improvements associated with the project are removed and the site is restored to pre-construction conditions (native pervious materials). This will require submittal of a County of San Luis Obispo Grading Permit Application for approval for these demolition activities.

10. Bibliography and References

City of Gilroy, City of Morgan Hill, County of Santa Clara. 2015. "Stormwater Management Guidance Manual for Low Impact Development & Post-Construction Requirements." https://stgenpln.blob.core.windows.net/document/Stormwater_GuidanceManual_PostConstructionRequirements.pdf

City of Salinas. 2021. "Stormwater Development Standards for New and Redevelopment Projects." https://cityofsalinas.org/sites/default/files/departments_files/public_works_files/water_solid_waste_energy/swds/complete_swds_final_august_2021_md_rev.pdf

City of San Diego, 2018. "The City of San Diego Storm Water Standards." https://www.sandiego.gov/sites/default/files/storm_water_standards_manual_oct_2018.pdf

County of Sonoma. 2017. "Storm Water Low Impact Development Technical Design Manual, Revised December 2020." https://www.srcity.org/1255/Low-Impact-Development

County of Santa Barbara, Project Clean Water. 2017. "Stormwater Technical Guide for Low Impact Development, 2nd Edition." https://www.countyofsb.org/2324/New-Redevelopment

County of Orange. 2017. "South Orange County Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans." https://ocerws.ocpublicworks.com/service-areas/oc-environmental-resources/oc-watersheds/regional-stormwater-program/water-quality

California Department of Transportation, Division of Environmental Analysis. 2012. Biofiltration Swale Design Guidance. https://dot.ca.gov/-/media/dot-media/programs/design/documents/dg-biofiltration-swale-092712-a11y.pdf

California Department of Transportation, "Biofiltration Strip Design Guidance" https://dot.ca.gov/-/media/dot-media/programs/design/documents/1_dg-

biofiltration_strip_ada.pdf

Contra Costa Clean Water Program, 2022. Stormwater C.3 Guidebook, 8th Edition. https://www.cccleanwater.org/development-infrastructure/development/stormwater-c-3-guidebook

County of San Diego. 2020. "County of San Diego BMP Design Manual." 2nd update to February 2016 Manual. https://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP_Design_Manual.html

Santa Clara Valley Urban Pollution Prevention Program (SCVURPPP), 2016. Guidance for Implementing Stormwater Requirements for New Development and Redevelopment Projects (C.3 Stormwater Handbook) https://scvurppp.org/swrp/gsi/

Riverside County LID BMP Handbook, Riverside County Flood Control and Water Conservation District, 2011. https://rcwatershed.org/permittees/riverside-county-lid-bmp-handbook/#93-98-1-lid-bmp-design-handbook

State of Washington, Department of Ecology. Emerging Stormwater Treatment Technologies (Technology Assessment Protocol- Ecology TAPE) Guidance Documents. 2018. https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

Central Coast Low Impact Development Initiative (LIDI), 2013. "Bioretention Engineering Standards: Details and Technical Specifications." https://www.centralcoastlidi.org/projects.php

California Building Standard Commission (CBSC). 2022. "California Buildings Standards Code." http://www.bsc.ca.gov/Codes.aspx

California State Water Resources Control Board. 2022. “National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.” Order WQ 2022-0057-DWQ https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/docs/2022-0057-dwq-with-attachments/cgp2022_order.pdf

California State Water Resources Control Board. 2014. “National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Industrial Activities.” Order 2014-0057-DWQ. https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/industrial/2014indgenpermit/order.pdf

Central Coast Regional Water Quality Control Board. 2013. “Central Coast Post-Construction Stormwater Requirements.” Order No. R3-2013-0032. https://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/docs/lid/lid_hydromod_charette_index.html

California Department of Water Resources. “Model Water Efficient Landscape Ordinance.” https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance

San Luis Obispo County Municipal Code. 2022. Title 19.11, Buildings and Construction. https://library.municode.com/ca/san_luis_obispo_county/codes/county_code?nodeId=TIT19BUCO_CH19.11STMA

San Luis Obispo County Municipal Code. 2022. Title 8.68, Stormwater Pollution Prevention and Discharge Control. https://library.municode.com/ca/san_luis_obispo_county/codes/county_code?nodeId=TIT8HESA_CH8.68STPOPRDICO

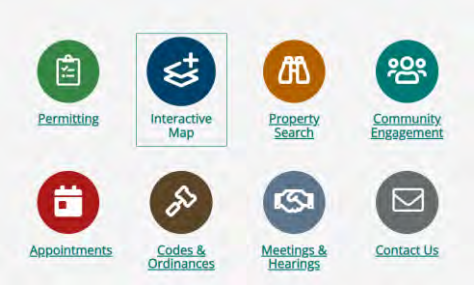
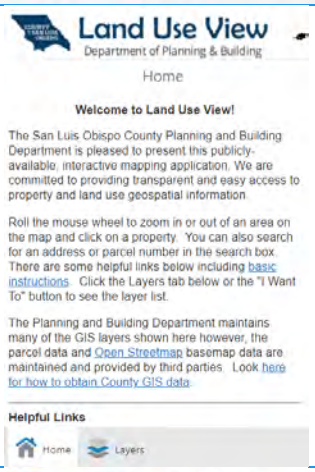
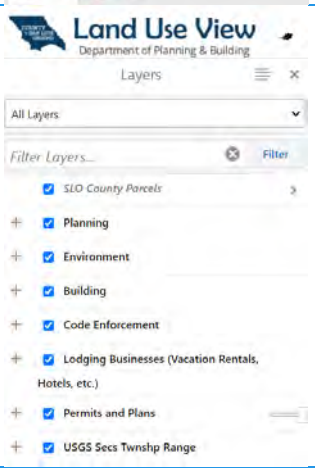
Appendix A: Hyperlinks and References

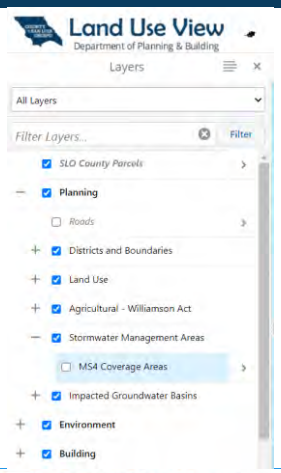
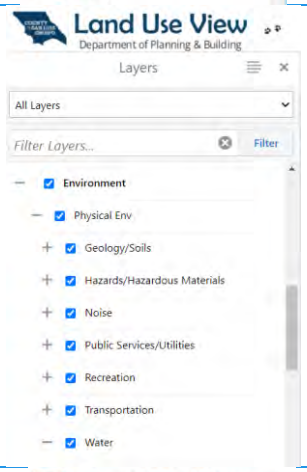
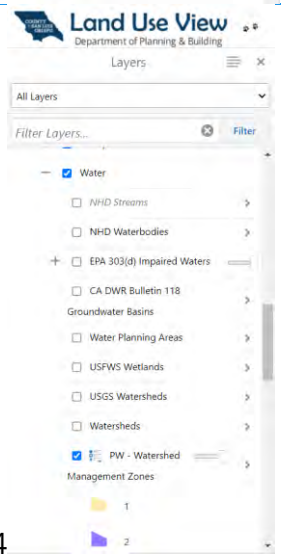
This Appendix contains instructions and hyperlinks to commonly used platforms and tools for developing a SWCP. The summary table below indicates the location of information in this appendix.

Table Number	Table Title	Notes
A-1	Identifying MS4 Area Boundaries and Watershed Management Zone	Step by step instructions for digital mapping tools to identify MS4 boundaries and WMZs in San Luis Obispo County.
A-2	Web resources and reference hyperlinks	Descriptions and hyperlinks to web resources commonly used in formulating Stormwater Control Plans.

Please email stormwater@co.slo.ca.us if any links are discovered to be non-functional. This resource was most recently updated in August 2024.

Table A-1: *Identifying MS4 Area Boundaries and Watershed Management Zones*

Instructions for utilizing Land Use View online mapping tools	
Step 1: Navigate to the County of San Luis Obispo Planning & Building Department web page. https://www.slocounty.ca.gov/Departments/Planning-Building.aspx	
Step 2: Select the icon for "Interactive Map" shown on the main page to load the Land Use View application.	
Step 3: Select 'Layers' in the lower left menu bar.	
Step 4: Expand the Layers group named "Planning"	

Instructions for utilizing Land Use View online mapping tools	
Step 5: Expand the Layer named "Stormwater Management Areas" Turn on the Layer named "MS4 Coverage Areas"	
Step 6: Expand the Layer named "Environment" and expand the group named "Water"	
Step 7: Turn on the Layer named "PW-Watershed Management Zones"	
Step 7: Use the map to navigate to your project location or enter the APN in the 'Search' box to determine whether it is in a MS4 Coverage Area and the applicable Watershed Management Zone.	

4

Table A-2: *Web resources and reference hyperlinks*

Page Hosting Agency	Site Title	Description	Link:
Central Coast Regional Water Quality Control Board.	Central Coast Region Post-Construction Stormwater Requirements	Resources and documents related to Resolution R3-2013-0032.	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater
County of San Luis Obispo, Public Works Department	Stormwater Requirements for New Construction	Resources page with instructions and forms for construction permit applications. Includes County PCR Waiver Request form, SWCP App, SWCP Template.	https://www.slocounty.ca.gov/Departments/Public-Works/Services/Programs-Outreach/Stormwater-Requirements-for-New-Construction.aspx
County of San Luis Obispo, Planning & Building Department	Post-Construction Stormwater Management	Resources page with forms and instructions for County long-term operations and maintenance agreements. Includes O&M Agreement forms and templates.	https://www.slocounty.ca.gov/Departments/Planning-Building/Department-Services/Agriculture,-Water,-and-Energy/Stormwater/Post-Construction-Stormwater-Management.aspx
County of Santa Barbara, Public Works Department	New and Redevelopment	Stormwater control plan manual and design resources. Includes Stormwater Control Measures Sizing Calculator and instructions.	https://www.countyofsb.org/2324/New-Redevelopment
Environmental Protection Agency, Southwest Region 9	Underground Injection Well Registration	Resources page with instructions and links for registering dry wells and underground stormwater chamber systems.	https://www.epa.gov/uic/forms/underground-injection-well-registration-epas-pacific-southwest-region-9

Page Hosting Agency	Site Title	Description	Link:
State of Washington, Department of Ecology	Emerging Stormwater Treatment Technologies (TAPE)	Stormwater treatment technologies reviewed and certified by the Washington state Technology Assessment Protocol – Ecology (the TAPE program).	https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies
Central Coast Low Impact Development Initiative (LIDI)	LID Design and Construction	Resources to guide LID design and construction for the central coast region.	https://www.centralcoastlidi.org/projects.php
State Water Resources Control Board	GeoTracker	Water Board's data management system for sites that impact or have the potential to impact ground water quality in California.	https://geotracker.waterboards.ca.gov/
County of San Luis Obispo, Planning & Building Department	Buildings and Construction Code, Title 19	Current County code Title 19 detailing requirements for buildings and construction. Chapter 19.11 details stormwater management requirements.	https://library.municode.com/ca/san_luis_obispo_county/codes/county_code?nodeId=TIT19BUCO
County of San Luis Obispo, Public Works Department	Public Improvement Standards	Current County Public Improvement Standards, most recent version adopted in 2022.	https://www.slocounty.ca.gov/Departments/Public-Works/Forms-Documents/Development-Services/Public-Improvements/Public-Improvement-Standards.aspx
County of San Luis Obispo, Public Works Department	Encroachment Permits	Resources, forms and documents for applying for a County of San Luis Obispo Encroachment Permit.	https://www.slocounty.ca.gov/Departments/Public-Works/Services/Applications,-Permits-Fees/Encroachment-Permits.aspx

Page Hosting Agency	Site Title	Description	Link:
Central Coast Regional Water Quality Control Board.	Central Coast Region Post-Construction Stormwater Requirements	Resources and documents related to Resolution R3-2013-0032.	https://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater
County of San Luis Obispo, Public Works Department	Stormwater Requirements for New Construction	Resources page with instructions and forms for construction permit applications. Includes County PCR Waiver Request, SWCP App, SWCP Template.	https://www.slocounty.ca.gov/Departments/Public-Works/Services/Programs-Outreach/Stormwater-Requirements-for-New-Construction.aspx

Appendix B: Opportunities and Constraints Analysis

Opportunities and Constraints Analysis

The suitability or infeasibility of a design strategy (or combination of design strategies) at a project site depends on the unique opportunities and constraints of the site. The objective of this assessment is to identify and preserve areas of the project site that favor PCR compliance (opportunities), while prioritizing development to those portions of the project site that do not (constraints). Ideally, the assessment of opportunities and constraints occurs prior to developing project concepts and site design, and identifies site-specific stormwater "opportunities" and "constraints" that can be utilized as a basis for creating a well-balanced project.

The County requires submittal of an opportunities and constraints checklist and demonstration map (per the PCRs) for projects that trigger PR#3 and above, and to demonstrate the criteria are met for a technical infeasibility finding. Applicants must complete the following pages and submit the analysis as an attachment to the SWCP if requesting a technical infeasibility finding. A separate opportunities and constraints site map reflecting the data in this appendix is also required.

Applicants are encouraged to thoroughly review the criteria associated with technical infeasibility in Resolution R3-2013-00032 when determining the applicability to their project.

1. Opportunities & Constraints Checklist

a. Existing Vegetation

Preserve or minimize disturbance to existing natural vegetated features. Designs that integrate natural features of the project site are better at mimicking pre-development runoff characteristics. Effective management of both existing and proposed site vegetation can reduce a development's impact on stormwater runoff quality and quantity.

☐ Yes ☐ No ☐ N/A	*Existing, high-quality vegetation has been identified and noted on the Opportunity and Constraints Map. Access to these areas will be restricted during construction.*
☐ Yes ☐ No ☐ N/A	*Existing trees have been identified and noted on the Opportunity and Constraints Map. The location of tree protection fencing is identified to restrict site disturbance and protect these locations during construction.*
☐ Yes ☐ No ☐ N/A	*Notes have been included on the corresponding site plans in areas where highly visible temporary fencing shall be placed around vegetation and tree areas that are to be preserved during construction.*

b. Survey and Site Topography

Identify opportunities and constraints within site topography and natural drainage patterns that can be incorporated into the design. Integrating existing drainage patterns into the site plan can maintain a site's predevelopment hydrologic function and will result in lower construction costs over sites that modify site topography and develop new drainage patterns.

☐ Yes ☐ No ☐ N/A	*The site has been surveyed and a topographic base file has been created to identify topography and natural drainage patterns.*
☐ Yes ☐ No ☐ N/A	*Existing low-spots and sumps within the topography have been identified on the Opportunity and Constraints Map. These areas will be preserved and utilized as BMP locations where technically feasible.*
☐ Yes ☐ No ☐ N/A	*Existing high-spots within the topography have been identified on the Opportunity and Constraints Map. These areas be preserved for placement of structures or hardscapes where feasible, allowing runoff to drain to low lying areas for treatment.*
☐ Yes ☐ No ☐ N/A	*Areas within 50 feet from the top of slopes that are greater than 20% and over 10 feet of vertical relief have been identified on the Opportunity and Constraints Map. Notes on the map indicate that SCMs are not authorized within these areas.*

c. Soil Analysis

Native undisturbed soils have a complex matrix created by the growth and decay of plant roots, earthworms, and insect activity. Topsoil stripping and stockpiling destroys soil structure and diminishes natural biological activity. Avoid and limit unnecessary site disturbances during construction. Plan LID and SCM placement where soils support infiltration (Soil Groups A and B). To the extent feasible, plan buildings and structures and hardscapes placement where soils discourage infiltration (Soil Group C and D).

☐ Yes ☐ No ☐ N/A	*Locations where soils encourage infiltration (Soil Group A and B) have been identified on the Opportunity and Constraints Map. Where feasible, these areas have been preserved or dedicated to SCM locations.*
☐ Yes ☐ No ☐ N/A	*Locations where soils discourage infiltration (Soil Group C and D) have been identified on the Opportunity and Constraints Map. Where feasible, these locations have been dedicated to the proposed project improvements such as structures and hardscapes, or contractor staging and equipment storage areas, etc.*
☐ Yes ☐ No ☐ N/A	*Locations where existing structures and hardscapes will be removed during construction (exposing highly compacted soils) have been identified on the Opportunity and Constraints Map. Placement of SCMs has been avoided in these areas.*

d. Geotechnical Analysis

Data from the preliminary geotechnical analysis or soil borings should be evaluated to support identification of opportunities and constraints. These areas should be specifically identified with limits noted on the Opportunities and Constraints Map.

☐ Yes ☐ No	*The site contains areas designated as an erosion hazard, or landslide hazard.*
☐ Yes ☐ No	*The site contains groundwater that drains into an erosion hazard, or landslide hazard area.*
☐ Yes ☐ No	*The geotechnical report identified contaminated soils:* ☐ *These soils will be removed during construction.* ☐ *These soils will remain in place during construction.*
☐ Yes ☐ No ☐ N/A	*The groundwater table elevation (including seasonally high and historically high) has been determined.*
☐ Yes ☐ No	*The seasonally high groundwater table elevation is at least 10-feet below the proposed invert elevations of the proposed SCMs.*
☐ Yes ☐ No ☐ N/A	*Fractured bedrock identified through geotechnical testing is at least 10-feet below the proposed invert elevations of the proposed SCMs.*
☐ Yes ☐ No	*Infiltration testing has been performed onsite at the proposed SCM locations and the geotechnical report has identified that the site is suitable for infiltration.*

e. Setbacks

Establish setbacks and buffer zones surrounding restricted and/or sensitive areas. Identify all areas where SCMs cannot be constructed due to setback requirements. Examples include existing and proposed building foundations, municipal water wells, private water wells, septic systems, easements, etc.

☐ Yes ☐ No ☐ N/A	*Private potable water wells in the vicinity have been identified (onsite and offsite) and a minimum offset radius has been established indicating where infiltration SCMs are not authorized.*
☐ Yes ☐ No ☐ N/A	*Municipal potable water wells in the vicinity have been identified (onsite and offsite) and a minimum offset radius has been established indicating where infiltration based SCMs are not authorized.*
☐ Yes ☐ No ☐ N/A	*Within the Coastal Zone, a setback of 100-feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.*
☐ Yes ☐ No ☐ N/A	*Within the Urban Reserve Lines, a setback of 50-feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.*
☐ Yes ☐ No ☐ N/A	*A setback of 10-ft has been established from all property lines to SCMs and the limits of these setbacks have been indicated on the Opportunity and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*A setback of 10-ft has been established from all existing and proposed building foundations with notes indicating infiltration SCMs are not authorized within these limits.*

f. Hydrology Features

Identify onsite and offsite downstream waterways, including creeks, wetlands, watercourse, seeps, riparian zones areas of 100-year flood inundation, potential stormwater run-on locations and depths to groundwater. All areas of hydrologic importance should be delineated at the earliest stage in the development planning process.

☐ Yes ☐ No ☐ N/A	*Hydrological features such as creeks, wetlands, riparian zones, etc. have been identified and incorporated into the Opportunity and Constraints Map.* ☐ *Notes have been added to the Opportunity and Constraint Map indicating that these areas will be protected by exclusionary fencing during construction to prevent resource damage.*
☐ Yes ☐ No ☐ N/A	*The pre-developed site drainage pathways have been identified and the limits of these features have been placed onto the Opportunities and Constraints Map.*

☐ Yes ☐ No ☐ N/A	*Existing storm drain infrastructure, including potential points of connection have been identified and placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*Stormwater run-on locations have been identified and placed onto the Opportunities and Constraints Map.*

g. Hazardous Areas & Pollutants of Concern (POCs)

Identify locations where existing or future pollutants may occur onsite and identify features that may prevent these pollutants from being exposed to stormwater runoff. Examples include chemical storage locations, fueling stations, and industrial operation areas.

☐ Yes ☐ No ☐ N/A	*Existing hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*Proposed hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.*

Appendix C: Class V Wells and Underground Infiltration Systems

Class V Well Requirements

Dry wells and other sub-surface stormwater infiltration practices or technologies serving uses other than single-family homes are considered Class V wells, subject to US Environmental Protection Agency (US EPA) regulations. Typically, Class V wells are shallow wells used to place a variety of fluids directly below the land surface. By definition, a well is "any bored, drilled, driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system" and an "injection well" is a "well" into which "fluids" are being injected (40 CFR §144.3). Stormwater dry wells and other sub-surface stormwater infiltration practices/technologies may be authorized to operate as long as they are registered with the US EPA, and only inject uncontaminated stormwater.

Applicants that submit drainage plans to the County for review will be notified of the need to register if the plans include a Class V system. The County requires Class V Well registration as part of permitting new development and will include a condition on the construction permit requiring registration. A condition for *'Public Works Inspection prior to Final'* will be added to the building permit with notes that the applicant must submit evidence to Public Works they have registered their Class V system with the US EPA's Region 9 Office. There is no fee associated with registration, and there are no ongoing reporting requirements. Applicants can satisfy the building permit condition by providing evidence of system registration to Public Works. A confirmation email and registration number from the US EPA are sufficient evidence of registration.

Local Requirements

There are no detailed State or Federal requirements for the design or approval of new Class V systems. However, the County is the local authority responsible for ensuring that new Class V wells do not endanger underground drinking water supplies. The County's requirements are intended to ensure that new systems meet the minimum requirements set forth by the US EPA to and protect underground water supplies. The County reserves the right to reject site designs that include underground infiltration systems in settings deemed high risk by the County's Environmental Health Department.

Per the County's Public Improvement Standards, underground infiltration system and dry well designs must incorporate a stormwater pretreatment device or features to protect groundwater, remove solids, and ensure that particulate debris can be isolated from inflows.

The County requires that pretreatment for Class V systems meet one of the following two criteria:

1. Pretreatment proprietary devices certified by the Technology Assessment Protocol Ecology (TAPE) Program supported by the Washington State Department of Ecology. Devices certified in the Pretreatment or General Use Level Designation (GULD) technologies are acceptable.

2. The pretreatment requirements for PR#2 are met entirely upstream of the infiltration system through at-grade LID features such as bioretention or biofiltration features, and a settling vault or sump is installed.

Underground infiltration systems do not meet the standards to qualify as Low Impact Development. Accordingly, Designers should demonstrate that a minimum of 30% of the site's post-construction runoff volume has been managed through at-grade LID strategies before proposing underground infiltration chambers or other Class V infrastructure.

Chapter 4 of the Post-Construction Stormwater Guidebook includes additional information about structural and groundwater setbacks for siting Class V infrastructure.

Soil Report Data

A soils report will be required to demonstrate soil infiltration rates in the location and elevation of the proposed underground infiltration system and the minimum distance to seasonally high groundwater. See Chapter 4 of the Post-Construction Guidebook for additional information about required soils and infiltration testing and applicable factors of safety.

The soils report must include a statement indicating that the site soils at the proposed system location and elevation are suitable for an underground infiltration system and will not present a hazard to the site, adjoining properties, or the public right-of-way.

Groundwater Setbacks

The minimum vertical groundwater setback for underground infiltration systems is 10 feet from the elevation of seasonally high groundwater. Soil types with high infiltration rates require additional setback distance to ensure adequate soil contact time in the vadose zone.

Table C-1:*Groundwater setbacks for underground infiltration systems, Class V systems*

Infiltration Rate	Minimum setback to seasonally high groundwater
<1 minute per inch	50 feet
1-4 minutes per inch	20 feet
>5 minutes per inch	10 feet

Construction Requirements

Underground infiltration infrastructure is typically installed very early in the construction process. Protecting drain inlets to underground infiltration systems is of paramount importance during site construction.

Protective measures should be well documented in the erosion and sediment control plan or in the site's Stormwater Pollution Prevention Plan. Protective BMPs and their required maintenance frequency should be noted on grading and drainage plans. Drain inlets should

remain offline until site surfaces have been stabilized with permanent stabilization measures.

Construction managers should call for all milestone inspections noted on their issued permit. County inspectors will observe and inspect the infrastructure at each milestone involved with installation of the underground system.

Inspection Ports

The County requires that an observation well or inspection port be installed in every other row of chambers where multiple rows are installed. Where practical, an additional observation well that extends into the foundation gravel bed should also be installed for each series of chambers. All inspection and maintenance access ports should also be labeled "STORM", accessible for inspection and maintenance at all times.

Table C-2: *Web resources and reference hyperlinks for underground infiltration systems and dry wells*

Page Hosting Agency	Site Title	Description	Link:
United States Environmental Protection Agency	Basic Information About Class V Injection Wells	Resources page with information about types, uses and requirements for Class V wells.	https://www.epa.gov/uic/basic-information-about-class-v-injection-wells
United States Environmental Protection Agency	Federal Requirements for Class V Wells	Resources page with information about submitting inventory information.	https://www.epa.gov/uic/federal-requirements-class-v-wells
Environmental Protection Agency, Southwest Region 9	Class V Underground Injection Well Registration	Resources page with instructions and links for registering dry wells and underground stormwater chamber systems.	https://www.epa.gov/uic/forms/underground-injection-well-registration-epas-pacific-southwest-region-9
State of Washington, Department of Ecology	Emerging Stormwater Treatment Technologies (TAPE)	Stormwater treatment technologies reviewed and certified by the Washington state Technology Assessment Protocol – Ecology (the TAPE program).	https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies
County of San Luis Obispo, Public Works Department	Public Improvement Standards	Current County Public Improvement Standards, most recent version adopted in 2022.	https://www.slocounty.ca.gov/Departments/Public-Works/Forms-Documents/Development-Services/Public-Improvements/Public-Improvement-Standards.aspx

Appendix D: Plant Palettes

Guide to Plant Palette Tables

The plant palettes provided in tables D-1 through D-10 of this appendix provide shortened lists of species known to be successful in vegetated stormwater features throughout San Luis Obispo County. The palettes include descriptions of species, recommended planting zones, and recommended planting sizes.

Table Number	Table Title	Notes
D-1	Roadside Plant Palette (without trees)	Palette suggested for roadside stormwater features. Designed to ensure low vegetation height, without long-term irrigation.
D-2	Approved Roadside Trees for Stormwater Features	Subset of the approved tree list included in County of San Luis Obispo 2022 Public Improvement Standards.
D-3	Basic Commercial Palette, Coastal	Palette suggested for coastal commercial developments where heavy foot and vehicle traffic may be present.
D-4	Basic Commercial Palette, Inland	Palette suggested for inland commercial developments where heavy foot and vehicle traffic may be present.
D-5	Flowering Commercial Palette, Coastal	Palette suggested for coastal commercial developments. Features species with more prominent flowers than the basic palette.
D-6	Flowering Commercial Palette, Inland	Palette suggested for inland commercial developments. Features species with more prominent flowers than the basic palette.
D-7	Basic Residential Palette, Coastal	Low maintenance palette of native species with modest color variation. Species adapted for success in cooler coastal climates.
D-8	Basic Residential Palette, Inland	Low maintenance palette of native species with modest color variation. Species adapted for success in warmer and dryer inland climates.
D-9	Flowering Residential Palette Coastal	Moderate maintenance palette of native species with showy seasonal flowers. Palette thrives with supplemental irrigation during dry months.
D-10	Flowering Residential Palette, Inland	Moderate maintenance palette of native species with showy seasonal flowers. Palette thrives with supplemental irrigation during dry months.

Table D-1: *Roadside Plant Palette (without trees)*

Common Name	Scientific Name	Native	Zone	Description	Type	Size
California Grey Rush	*Juncus patens*	Yes	A	Tolerates poor drainage, drought, shade, and resists deer.	Grass-like	1-gallon
Clustered field sedge	*Carex praegracilis*	Yes	A	Tolerates wide range of growing conditions, foot traffic.	Grass	Plugs
Deer Grass	*Muhlenbergia rigens*	Yes	A	Highly drought tolerant but can tolerate regular water. Large bunch grass.	Grass	1-gallon
Common yarrow	*Achillea millefolium*	Yes	A, B	Tolerates regular watering, occasional summer watering required inland. Can be mowed, handles foot traffic.	Perennial, Upright herb	1-gallon or Seed
Coffeeberry	*Rhamnus californica*	Yes	B	Deer resistant. Fire resistant when watered regularly.	Shrub	5-gallon
Toyon	*Heteromeles arbutifolia*	Yes	B	Tolerates sand, clay and serpentine soils, seasonal water with good drainage.	Shrub	5-gallon
Sky Lupine	*Lupinus nanus*	Yes	B	Annual spring wildflower which prefers lean soil and will self-sow.	Annual herb	Seed
California Poppy	*Eschscholzia californica*	Yes	B	Orange flowering perennial in spring-late spring, self-seeds, can tolerate periodic inundation.	Perennial	Seed

Table D-2: *Approved Roadside Trees for Stormwater Features*

This table includes *a subset of roadside trees a*pproved *in the County's 2022 Public Improvement Standards.*

Common Name	Scientific Name	Drought Tolerant	Native	Water Use	Region
California Bay Laurel	*Umbellularia californica*	Yes	Yes	Moderate	Coastal
Coast Live Oak	*Quercus agrifolia*	Yes	Yes	Very Low	Coastal & Inland
Cork Oak	*Quercus suber*	Yes	Yes	Low	Coastal
Goldenrain Tree	*Koelreuteria paniculata*	Yes	No	Moderate	Inland
Interior Live Oak	*Quercus wislizenii*	Yes	Yes	Very Low	Inland
London Plane Tree	*Platanus acerifolia*	No	No	Moderate	Coastal & Inland
Maidenhair Tree	*Gingko biloba 'Fairmont'*	No	No	Moderate	Coastal & Inland

Table D-3: *Basic Commercial Palette (Coastal)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Small Cape Rush	*Chondropetalum tectorum*	Full Sun-Part Sun	No	A, B	Tough, reed-like plant, tolerates boggy or clay soils. Evergreen. Drought tolerant once established.	Grass-like	1-gallon
California Field Sedge	*Carex praegracilis*	Sun or Shade	Yes	A	Tolerates wide range of growing conditions, foot traffic.	Grass	plugs
California Grey Rush	*Juncus patens*	Sun-Part Sun	Yes	A	Tolerates poor drainage, drought, shade. Forms clumps from short rhizomes.	Grass-like	1-gallon
California Sycamore	*Platanus racemosa*	Sun	Yes	B	Tolerates sand and clay soils, seasonal flooding, drought tolerant once established along coast. Likes sun and moderate water.	Tree	15-gallon
Coast Live Oak	*Quercus agrifolia*	Sun-Shade	Yes	B	Tolerates drought, coastal fog, and winter wet. Evergreen, produces significant leaf duff.	Tree	15-gallon

Table D-4: *Basic Commercial Palette (Inland)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Small Cape Rush	*Chondropetal -um tectorum*	Full Sun-Part Sun	No	A, B	Tough, reed-like plant tolerates boggy or clay soils. Evergreen. Drought tolerant once established.	Grass-like	1-gallon
Berkeley Sedge	*Carex divulsa*	Sun - Part Shade	Yes	A, B	Tolerates foot traffic. Best planted with regular to occasional irrigation. Fairly drought tolerant once established. Can be mowed to 4" for clean look.	Grass	plugs
California Grey Rush	*Juncus patens*	Sun-Part Sun	Yes	A	Tolerates poor drainage, drought, shade.	Grass-like	1-gallon
California Sycamore	*Platanus racemosa*	Sun	Yes	B	Tolerates sand and clay soils, seasonal flooding, drought tolerant once established along coast.	Tree	15-gallon
Coast Live Oak	*Quercus agrifolia*	Sun-Shade	Yes	B	Tolerates drought, coastal fog, and winter wet. Evergreen, produces significant leaf duff.	Tree	15-gallon

Table D-5: *Flowering Commercial Palette (Coastal)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Douglas Iris	*Iris douglasiana*	Sun-Full Shade	Yes	B	Fast growing. Full sun near coast, afternoon shade inland. Prefers richer soils. Tolerates sand, clay and serpentine soils and seasonal wet. Needs summer water.	Perennial	1-gallon
Yarrow	*Achillea millefolium*	Sun-Part Shade	Yes	A, B	Tolerates regular watering, occasional summer watering required inland. Can be mowed, handles foot traffic.	Perennial, Upright herb	1-gallon or Seed
California Goldenrod	*Solidago californica*	Sun-Part Shade	Yes	A, B	Late summer/fall yellow flowering perennial. Spreads by underground runners. Winter dormant.	Perennial	1-gallon
Western Redbud	*Cercis occidentalis*	Sun	Yes	B	Small tree or large shrub. Tolerates clay, winter wet, drought. Pink/red blooms in spring prior to leaf bud out.	Tree	15-gallon

Table D-6: *Flowering Commercial Palette (Inland)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Sky Lupine	*Lupinus nanus*	Full Sun	Yes	B	Small purple flowers. Annual spring wildflower which prefers lean soil and will self-sow.	Annual herb	Seed
Yarrow	*Achillea millefolium*	Sun-Part Shade	Yes	A, B	Tolerates regular watering, occasional summer watering required inland. Can be mowed, handles foot traffic.	Perennial, Upright herb	1-gallon or Seed
California Wild Rose	*Rosa californica*	Part Shade	Yes	A, B	Small pink flowers. Tolerates wide variety of soils, seasonal flooding, some drought but likes some moisture.	Shrub	5-gallon
Western Redbud	*Cercis occidentalis*	Sun	Yes	B	Pink/red blooms in spring prior to leaf bud out. Small tree or large shrub. Tolerates clay, winter wet, drought.	Tree	15-gallon

Table D-7: *Basic Residential Palette (Coastal)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
California Gray Rush	*Juncus patens*	Sun, shade	Yes	A	Tolerates poor drainage, drought, shade. Forms clumps from short rhizomes.	Grass-like	1-gallon
Elk Blue California Grey Rush	*Juncus patens 'Elk Blue'*	Sun, shade	Yes	A	Tolerates poor drainage, drought, shade, and resists deer. Forms clumps from short rhizomes.	Grass-like	1-gallon
San Diego Sedge	*Carex spissa*	Full Sun-Part Shade	Yes	A, B	Large clumping grass, tolerates alkaline, clay, serpentine soils, in or out of water, drought (once established) and resists deer.	Grass	1-gallon
Toyon	*Heteromeles arbutifolia*	Sun-Part Sun	Yes	B	Tolerates sand, clay and serpentine soils, seasonal water with good drainage. No summer water after first year.	Shrub	5-gallon
Pacific Wax Myrtle	*Myrica californica*	Sun-Part Sun	Yes	B	Large shrub/small tree. Tolerates seaside conditions, sand, clay & seasonal inundation.	Shrub	5-gallon
Western Redbud	*Cercis occidentalis*	Sun	Yes	B	Small tree or large shrub. Tolerates clay, winter wet, drought. Pink/red blooms in spring prior to leaf bud out.	Tree	15-gallon

Table D-8: *Basic Residential Palette (Inland)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Deer Grass	*Muhlenbergia rigens*	Sun or Shade	Yes	B	Tolerates poor drainage, drought, shade. Forms clumps from short rhizomes.	Grass	1-gallon
Small Cape Rush	*Chondropetal-um tectorum*	Full Sun-Part Sun	No	A, B	Tough, reed-like plant tolerates boggy or clay soils. Evergreen. Drought tolerant once established.	Grass-like	1-gallon
San Diego Sedge	*Carex spissa*	Full Sun-Part Shade	Yes	A, B	Large clumping grass, tolerates alkaline, clay, serpentine soils, in or out of water. Drought tolerant (once established) and resists deer.	Grass	1-gallon
Toyon	*Heteromeles arbutifolia*	Sun-Part Sun	Yes	B	Tolerates sand, serpentine and clay soils, seasonal water with good drainage. No summer water after first year.	Shrub	5-gallon
California Goldenrod	*Solidago californica*	Sun-Part Shade	Yes	A, B	Late summer/fall yellow flowering perennial, spreads by underground runners. Winter dormant.	Shrub	1-gallon
Coast Live Oak	*Quercus agrifolia*	Sun, Shade	Yes	B	Tolerates drought, coastal fog, and winter wet. Evergreen, produce significant leaf duff.	Tree	15-gallon

Table D-9: *Flowering Residential Palette (Coastal)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Deer Grass	*Muhlenbergia rigens*	Sun or Shade	Yes	B	Tolerates poor drainage, drought, shade. Forms clumps from short rhizomes.	Grass	1-gallon
Small Cape Rush	*Chondropetal-um tectorum*	Full Sun-Part Sun	No	A, B	Tough, reed-like plant tolerates boggy or clay soils. Evergreen. Drought tolerant once established.	Grass-like	1-gallon
San Diego Sedge	*Carex spissa*	Full Sun-Part Shade	Yes	A, B	Large clumping grass, tolerates alkaline, clay, serpentine soils, in or out of water. Drought tolerant (once established) and resists deer.	Grass	1-gallon
Toyon	*Heteromeles arbutifolia*	Sun-Part Sun	Yes	B	Tolerates sand, serpentine and clay soils, seasonal water with good drainage. No summer water after first year.	Shrub	5-gallon
California Goldenrod	*Solidago californica*	Sun-Part Shade	Yes	A, B	Late summer/fall yellow flowering perennial, spreads by underground runners. Winter dormant.	Shrub	1-gallon
Coast Live Oak	*Quercus agrifolia*	Sun, Shade	Yes	B	Tolerates drought, coastal fog, and winter wet. Evergreen, produce significant leaf duff.	Tree	15-gallon

Table D-10: *Flowering Residential Palette (Inland)*

Common Name	Scientific Name	Exposure	Native	Zone	Description	Type	Size
Yarrow	*Achillea millefolium*	Sun-Part Shade	Yes	A, B	White or light pink flowers. Tolerates regular watering, occasional summer watering required inland. Can be mowed.	Perennial, Upright herb	1-gallon or seed
California Poppy	*Eschscholzia californica*	Full Sun	Yes	B	Orange flowering perennial in spring-late spring. Self-seeds, can tolerate periodic inundation.	Perennial	Seed
California Wild Rose	*Rosa californica*	Part Shade	Yes	A, B	Small pink flowers. Tolerates wide variety of soils, seasonal flooding, some drought.	Shrub	5-gallon
Coffeeberry	*Rhamnus californica (Frangula)*	Sun to Part Shade	Yes	B	Deer resistant. Fire resistant when watered regularly.	Shrub	5-gallon
Elk Blue California Grey Rush	*Juncus patens 'Elk Blue'*	Sun, shade	Yes	A	Tolerates poor drainage, drought, shade, and resists deer.	Grass-like	1-gallon
Western Redbud	*Cercis occidentalis*	Sun	Yes	B	Pink/red blooms in spring prior to leaf bud out. Small tree or large shrub. Tolerates clay, winter wet, drought.	Tree	15-gallon

Guide to Extended LID Plant Lists

The plant information provided in tables D-11 and D-12 of this appendix include a more extensive variety of species known to grow successfully in vegetated stormwater features throughout San Luis Obispo County. Species from these lists can be used to augment or modify any of the palettes suggested in tables D-1 through D-10.

Table Number	Table Title	Notes
D-11	Extended Coastal Low Impact Development Plant List	Comprehensive table of ground cover, shrubs, and tree species adapted to succeed in coastal vegetated stormwater features.
D-12	Extended Inland Low Impact Development Plant list	Comprehensive table of ground cover, shrubs, and tree species adapted to succeed in warmer inland climates.

Table D-11: *Extended Coastal Low Impact Development Plant List*

Common Name	Scientific Name	Height	Spread	Exposure	Type	Planting Zone	Tolerates Periodic Inundation	Erosion Control	Native	Notes
Yarrow	*Achillea millefolium*	1'-3'	2'	Sun-Part Shade	Perennial	A, B	X	X	X	Tolerates regular watering to no watering, occasional summer watering helps keep plants attractive. Can be mowed, handles foot traffic.
Yerba Mansa	*Anemopsis californica*	1'	2'	Part Sun-Shade	Perennial	A, B			X	Prefers moist soil, does best in damp areas. Goes dormant from late summer to early winter.
Berkeley Sedge	*Carex divulsa*	1'	Spreading	Sun - Part Shade	Grass	A, B	X			Good lawn substitute, can be planted in light shade. Tolerates foot traffic, dry to moist conditions. Blue-grey leaves. Can be mowed to 4" for clean look.
California Meadow Sedge	*Carex pansa*	6"-8"	Spreading	Sun - Part Shade	Grass	A, B	X		X	Good lawn substitute. Tolerates wide range of growing conditions, foot traffic. Drought tolerant once established. Can be mowed occasionally (2-3 times per year) to 4" for clean look.
California Field Sedge	*Carex praegracilis*	<1'	Spreading	Sun or Shade	Grass	A, B	X	X	X	Good lawn substitute. Tolerates wide range of growing conditions, foot traffic. Bank stabilizer.
San Diego Sedge	*Carex spissa*	3'-4'	2'-3'	Full Sun-Part Shade	Grass	A, B	X	X	X	Large clumping grass, tolerates alkaline, clay, serpentine soils, in or out of water, drought (once established) and resists deer.
Small Cape Rush	*Chondropetalum tectorum*	2'-3'	3'-4'	Full Sun-Part Sun	Grass-like	A, B	X			Tough, reed-like plant, tolerates boggy or clay soils. Evergreen. Drought tolerant once established.
California Fuchsia	*Epilobium canum*	1'-3'	1'-3'	Full Sun	Perennial	B		X	X	No supplemental water after established. Hot dry areas require periodic summer water. Orange/red flowers, fire resistant.
California Poppy	*Eschscholzia californica*	1'-3'	1'-3'	Full Sun	Perennial	B	X		X	Orange flowering perennial in spring-late spring, self-seeds, can tolerate periodic inundation.
Douglas Iris	*Iris douglasiana*	6" - 2'-6"	2'-4'	Sun - Full Shade	Perennial	B	X	X	X	Fast growing. Full sun near coast, afternoon shade inland. Prefers richer soils. Tolerates sand, clay and serpentine soils and seasonal wet. Needs summer water.
Soft Rush	*Juncus effusus*	1'-2'	1'-2'	Full Sun-Part Shade	Grass-like	A,B	X	X	X	Tolerates heavy soils, poor drainage, seasonal flooding. Needs more supplemental water than *Juncus patens.*
California Grey Rush	*Juncus patens*	1'-2'	1'-2'	Sun-Shade	Grass-like	A,B	X	X	X	Tolerates poor drainage, drought, shade. Forms clumps from short rhizomes.
Elk Blue California Grey Rush	*Juncus patens 'Elk Blue'*	1'-2'	1'-2'	Sun-Shade	Grass-like	A,B	X	X	X	Tolerates poor drainage, drought, shade, and resists deer. Forms clumps from short rhizomes.

Table D-11 (continued): *Extended Coastal Low Impact Development Plant List*

Common Name	Scientific Name	Height	Spread	Exposure	Type	Planting Zone	Tolerates Periodic Inundation	Erosion Control	Native	Notes
Giant Wild Rye	*Leymus condensatus*	4-6'	3'	Full Sun	Grass	B	X	X	X	Evergreen bunching grass, highly drought tolerant. Tolerates sand, clay, serpentine soil. Does not like to be over watered.
Canyon Prince Wild Rye	*Leymus condensatus 'Canyon Prince'*	3'	Running	Full Sun	Grass	B	X	X	X	Tolerates wet, not soggy soils. Drought resistant but looks better with occasional supplemental irrigation. Can grow 5' tall with regular watering. Spreads by rhizomes.
Sky Lupine	*Lupinus nanus*	4"-18"	1'	Full Sun		B			X	Annual spring wildflower which prefers lean soil and will self-sow.
Deer Grass	*Muhlenbergia rigens*	4'-5'	4'-6'	Sun or Shade	Grass	B	X	X	X	Highly drought tolerant but can tolerate regular water. Large warm season bunch grass. Best cut back in late winter/early spring.
Blue Eyed Grass	*Sisyrinchium bellum*	1'-2'	6"	Full Sun	Perennial	B	X		X	Small purple/blue flowers in early/late spring. Summer dormant and drought tolerant, requires occasional summer water in hot dry areas. Tolerates seaside conditions, clay, sand, and resists deer. Fire resistant.
Coyote Brush	*Baccharis pilularis*	3'-6'	5'	Sun	Evergreen	B	X	X	X	Adaptable, provides quick cover and bank stabilization, tolerant of coastal conditions, alkaline soil, sand, clay and seasonal wet. Deer resistant.
Toyon	*Heteromeles arbutifolia*	8'-12'	8'-15'	Sun-Part Sun	Evergreen	B	X	X	X	Tolerates sand, clay and serpentine soils, seasonal water with good drainage. Should not receive summer water after first year. Some fire resistance. Good food source for birds.
Pacific Wax Myrtle	*Myrica californica*	15'	15'	Sun-Part Sun	Evergreen	B	X		X	Large shrub/small tree. Tolerates seaside conditions, sand, clay and seasonal inundation. Can be used as a formal hedge. Drought tolerant in coastal plantings.
Coffeeberry	*Rhamnus californica (Frangula)*	6'-10'	6'-10'	Sun to Part Shade	Evergreen	B			X	Deer resistant. Fire resistant when watered regularly. Good as a hedge, screen, and wildland interface.
Pacific Blackberry	*Rubrus ursinus*	3'	20'	Sun to Shade	Semi -deciduous	B		X	X	Prickly branches, edible fruit. Vigorous spreader. Needs cool temperatures and moisture to set large fruit.
Western Elderberry	*Sambucus mexicana*	10-20'	8'-20'	Sun-Part Shade	Deciduous	A,B	X		X	Large shrub/small tree. Tolerates clay, seasonal flooding, and extreme drought once established.
California Goldenrod	*Solidago californica*	1-3'	1-3'	Sun-Part Shade	Perennial	A,B	X	X	X	Late summer/fall yellow flowering perennial. Spreads by underground runners. Winter dormant.

Table D-11 (continued): *Extended Coastal Low Impact Development Plant List*

Common Name	Scientific Name	Height	Spread	Exposure	Type	Planting Zone	Tolerates Periodic Inundation	Erosion Control	Native	Notes
California Sycamore	*Platanus racemosa*	40'-80'	40'-70'	Sun	Deciduous	B			X	Fast growing tree found along creeks. Tolerates sand and clay soils, seasonal flooding, drought tolerant once established along coast. Likes sun and moderate water.
Coast Live Oak	*Quercus agrifolia*	25'-60'	40'-70'	Sun-Shade	Evergreen	B			X	Tolerates drought, coastal fog, and winter wet. Mature trees produce significant leaf duff.

Table D-12: *Extended Inland Low Impact Development Plant List*

Common Name	Scientific Name	Height	Spread	Exposure	Type	Planting Zone	Tolerates Periodic Inundation	Erosion Control	Native	Notes
Yarrow	*Achillea millefolium*	1'-3'	2'	Sun-Part Shade	Perennial	A,B	X	X	X	Tolerates regular watering, occasional summer watering required inland. Can be mowed, handles foot traffic.
Yerba Mansa	*Anemopsis californica*	1'	2'	Part Sun-Shade	Perennial	A			X	Prefers moist soil and damp areas. Goes dormant from late summer to early winter.
Berkeley Sedge	*Carex divulsa*	1'	Spreading	Sun - Part Shade	Grass	A,B	X			Tolerates foot traffic. Best planted in light shade with regular to occasional irrigation. Fairly drought tolerant once established. Blue-grey leaves. Can be mowed to 4" for clean look.
California Meadow Sedge	*Carex pansa*	6"-8"	Spreading	Sun - Part Shade	Grass	A,B	X		X	Lawn substitute, edge of meadows. Moderate water requirements. Tolerates wide range of growing conditions, some foot traffic. Has period of summer dormancy in warm, dry weather. Can be mowed to 4" for clean look.
California Field Sedge	*Carex praegracilis*	<1'	Spreading	Sun or Shade	Grass	A	X	X	X	Tolerates wide range of growing conditions, foot traffic. Has period of summer dormancy in warm, dry weather.
San Diego Sedge	*Carex spissa*	3'-4'	2'-3'	Full Sun-Part Shade	Grass	A,B	X	X	X	Large clumping grass, tolerates alkaline, clay, serpentine soils, in or out of water, drought (once established) and resists deer. Best in wet native garden.
Small Cape Rush	*Chondropetalum tectorum*	2'-3'	3'-4'	Full Sun-Part Sun	Grass-like	A,B	X			Tough, reed-like plant, tolerates boggy or clay soils. Evergreen. Drought tolerant once established.
California Fuchsia	*Epilobium canum*	1'-3'	1'-3'	Full Sun	Perennial	B		X	X	Requires periodic summer water. Orange/red flowers, fire resistant.
California Poppy	*Eschscholzia californica*	1'-3'	1'-3'	Full Sun	Perennial	B	X		X	Orange flowering perennial in spring-late spring, self seeds.
Soft Rush	*Juncus effusus*	1'-2'	1'-2'	Full Sun-Part Shade	Grass-like	A	X	X	X	Tolerates heavy soils, poor drainage, seasonal flooding. Needs more supplemental water than Juncus patens.

Table D-12 (continued): *Extended Inland Low Impact Development Plant List*

Common Name	Scientific Name	Height	Spread	Exposure	Type	Planting Zone	Tolerates Periodic Inundation	Erosion Control	Native	Notes
California Grey Rush	*Juncus patens*	1'-2'	1'-2'	Sun-Shade	Grass-like	A	X	X	X	Tolerates poor drainage, drought, shade. Forms clumps from short rhizomes.
Elk Blue California Grey Rush	*Juncus patens 'Elk Blue'*	1'-2'	1'-2'	Sun-Shade	Grass-like	A	X	X	X	Excellent in bioretention areas. Tolerates poor drainage, drought, shade, and resists deer. Forms clumps from short rhizomes. Occasional summer irrigation in full sun.
Giant Wild Rye	*Leymus condensatus*	4-6'	3'	Full Sun	Grass	B	X	X	X	Evergreen bunching grass, highly drought tolerant. Tolerates sand, clay, serpentine soil. Does not like to be over watered.
Canyon Prince Wild Rye	*Leymus condensatus 'Canyon Prince'*	2'-3'	Running	Full Sun	Grass	B	X	X	X	Very hardy evergreen grass. Tolerates wet, not soggy soils. Drought resistant but requires supplemental irrigation in summer. Grows 2-3' tall in drier locations. Spreads by rhizomes.
Sky Lupine	*Lupinus nanus*	4"-18"	1'	Full Sun		B			X	Annual spring wildflower which prefers lean soil and will self-sow.
Deer Grass	*Muhlenbergia rigens*	4'-5'	4'-6'	Sun or Shade	Grass	B	X	X	X	Highly drought tolerant but can tolerate regular water. Large warm season bunch grass. Best cut back in early spring.
Blue Eyed Grass	*Sisyrinchium bellum*	1'-2'	6"	Full Sun	Perennial	B	X	X	X	Small purple/blue flowers in early/late spring. Summer dormant and drought tolerant with occasional summer water. Tolerates clay, sand, and resists deer. Fire resistant.
Coyote Brush	*Baccharis pilularis*	3'-6'	5'	Sun	Evergreen	B	X	X	X	Adaptable, provides quick cover and stabilization, tolerant of alkaline soil, sand, clay and seasonal wet. Deer resistant.
Toyon	*Heteromeles arbutifolia*	8'-12'	8'-15'	Sun-Part Sun-Shade	Evergreen	B	X	X	X	Tolerates sand, clay and serpentine soils, regular & seasonal water with good drainage. Prefers part sun and supplemental summer water inland. Some fire resistant.

Table D-12 (continued): *Extended Inland Low Impact Development Plant List*

Common Name	Scientific Name	Height	Spread	Exposure	Type	Planting Zone	Tolerates Periodic Inundation	Erosion Control	Native	Notes
Pacific Wax Myrtle	*Myrica californica*	15'	15'	Part Sun	Evergreen	B	X		X	Large shrub/small tree. Does best in afternoon shade with summer watering. Tolerates sand, clay and seasonal inundation. Cold tolerant to 20 degrees.
Coffeeberry	*Rhamnus californica (Frangula)*	6'-10'	6'-10'	Sun to Part Shade	Evergreen	B			X	Deer resistant. Fire resistant when watered regularly. Good as a hedge, screen, and wildland interface.
California Wild Rose	*Rosa californica*	3'-6'	3'-6'	Part Shade	Deciduous	A, B	X		X	Tolerates wide variety of soils, seasonal flooding, likes some moisture.
Pacific Blackberry	*Rubrus ursinus*	3'	20'	Part Sun to Shade	Semi - deciduous	B		X	X	Prickly branches, edible fruit. Vigorous spreader. Needs cool temperatures and moisture to set large fruit.
California Goldenrod	*Solidago californica*	1-3'	1-3'	Sun-Part Shade	Perennial	A, B	X	X	X	Late summer/fall yellow flowering perennial. Spreads by underground runners. Likes non-reflective sun to part shade. Winter dormant.
Western Redbud	*Cercis occidentalis*	20'	15-20'	Sun	Deciduous	B	X	X	X	Small tree or large shrub. Tolerates clay, winter wet, drought. Pink/red blooms in spring prior to leaf bud out. Needs winter chill for flowers to set properly. Hardy to 10 degrees, protect young plants below 20 degrees. Some summer water for faster growth.
Desert Willow	*Chilopsis linearis*	25'	20-25'	Sun	Deciduous	B	X		X	Fragrant pink flowers in spring/summer. Tolerates alkaline, sand, clay soils, seasonal flooding, and drought.
California Sycamore	*Platanus racemosa*	40'-80'	40'-70'	Sun	Deciduous	B			X	Fast growing tree , tolerates sand and clay soils, and seasonal flooding. Drought tolerant once established where there is a high water table. Likes sun and moderate water.
Coast Live Oak	*Quercus agrifolia*	25'-60'	40'-70'	Sun-Shade	Evergreen	B			X	Tolerates drought, winter wet. Mature trees produce significant leaf duff.

Appendix E: Example Projects

APPENDIX-E
EXAMPLE PROJECT: Main Street Park and Ride Lot, Anytown

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS

STORMWATER CONTROL PLAN APPLICATION

Departmental Use Only

Do Not Mark

Applicant and Designer Information

Applicant Name:	Jane Doe	Daytime Phone:	555-123-4567
Mailing Address:	111 Main Street	Zip Code:	55555
Email Address:	jane@email.com		

Designer Name:	John Doe	Daytime Phone:	555-123-4567
Mailing Address:	222 Main Street	Zip Code:	55555
Email Address:	john@email.com		

Project Information

☐ Preliminary entitlements- Subdivision or Land Use Permit approval	■ Final- Building and/or Grading Permit for construction
Land Use Permit Number(s):	Building Permit Number(s): CBLD2023-12345
Project Address: 123 Main St. Anytown, CA	Assessor's Parcel Number (APN): 123-45-678
Brief narrative description of project: Construct new parking lot with 116 vehicle spaces for County Transit Park-and-Ride program on southern portion of currently undeveloped lot. Remainder of lot to remain undisturbed.	

Impervious Surface Areas

Calculate and identify all items listed in the table below.

Total Existing Impervious Area (square feet): Existing buildings, pavement, etc. within project area	5,000
New Impervious Area (square feet): Example: New buildings, new pavement, etc.	22,500
Replaced Impervious Area (square feet): Example: Buildings demolished to build a new parking lot or vice versa	4,000
Reduced Impervious Area (square feet): Example: Pavement/buildings demolished with area scarified, re-vegetated, replaced with pervious pavers, etc.	0
Credit for Reduced Impervious Area (square feet): If [**New** + **Replaced**) > **Total Existing**, use **Credit = 0** If (**New** + **Replaced**) < **Total Existing**, use **Credit = Reduced**	0
Net Impervious Area (square feet) = (**New** + **Replaced**) - **Credit**	26,500

STORMWATER CONTROL PLAN APPLICATION

Stormwater Performance Requirements

The following table summarizes the mandatory Performance Requirements based on the amount of impervious surface area that is created or replaced. Please review this table to determine which requirements apply to the project.

Net Impervious Surface square feet	**Performance Requirements**			
	Performance Requirement #1	Performance Requirement #2	Performance Requirement #3	Performance Requirement #4
0 - 2,499	*Complete Stormwater PCR Waiver Request Form*			
2,500 - 4,999	✔			
5,000 - 14,999	✔	✔ *		
15,000 – 22,499	✔	✔	✔	
≥ 22,500	✔	✔	✔	✔

** Not applicable for a single-family residence*

Check the applicable performance requirements and indicate whether the project meets the requirement:

Performance Requirement #1- Site Design	Requirement met? ■ Yes ☐ No
(Projects that meet Performance Requirement 1 only, complete this SWCP application and attach any applicable exhibits)	
Performance Requirement #2- Water Quality Treatment	Requirement met? ■ Yes ☐ No
Performance Requirement #3- Runoff Retention	Requirement met? ■ Yes ☐ No
Performance Requirement #4- Peak Management	Requirement met? ■ Yes ☐ No

- **Projects that create or replace less than 2,500 square feet of impervious surface area must complete and submit the Stormwater PCR Waiver Request Form.**
- **Projects required to meet Performance Requirement 1 only, must complete this SWCP application and attach any applicable exhibits.**
- **Projects required to meet Performance Requirement 2, 3, or 4, must submit this SWCP application in addition to a complete Stormwater Control Plan using the County provided template.**

STORMWATER CONTROL PLAN APPLICATION

Performance Requirement #1: Site Design Measures Applicants Can Incorporate to Reduce Stormwater Impacts

Applicants are encouraged to reduce stormwater impacts associated with development and redevelopment.

Performance Requirement 1: Site Design and Runoff Reduction Summary

Minimize stormwater runoff by implementing <u>one or more</u> of the following Site Design Measures.
Selected Design Measures must be clearly referenced on the project plans.

Site Design Measures	Implemented?	If Yes, provide Plan Sheet / Detail location	If No, provide an explanation below
Roof runoff directed into cisterns or rain barrels for reuse?	☐ Yes ■ No		No roof runoff generated by project.
Roof runoff directed into vegetated areas (safely away from building foundations and footings)?	☐ Yes ■ No		No roof runoff generated by project.
Runoff from sidewalks, walkaways, and/or patios directed onto vegetated areas (safely away from the building foundations and footings)?	☐ Yes ■ No		No applicable flatwork proposed.
Runoff from driveways and/or uncovered parking lots onto vegetated areas (safely away from the building foundations and footings)?	■ Yes ☐ No	Sheet C.3 (grading)	
Are bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios constructed with permeable surfaces?	■ Yes ☐ No	Sheet C.3 (grading)	

Performance Requirement #1: Stormwater Site Design & Runoff Reduction Summary

For each of the following, please describe how this project has complied to the maximum extent practicable with the following site design and runoff reduction:

1. Limit disturbance of creeks and natural drainage features.
The majority of the parcel is reserved to the wetland and the required wetland offset. The project is configured to work efficiently within the remaining space and preserve a buffer around the wetland.

STORMWATER CONTROL PLAN APPLICATION

2. Minimize compaction of highly permeable soils.
Infiltration SCMs sited to take advantage of permable soils.

3. Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection.
The site design leaves vegetated margins on all sides of the property which are conserved to the extent feasible. The majority of the site, including the north wetland will be left undisturbed.

4. Minimize impervious surfaces by concentrating improvements on the least-sensitive portions of the site, while leaving the remaining land in a natural, undisturbed state.
The entire area of disturbance and impervious surfaces being constructed are set back 50' minimum from the wetland boundary established by the project biological report.

Certification*

I hereby certify that this project is designed to achieve full compliance with each of the applicable Central Coast Post-Construction Requirements.

Preparer Name: John Doe	
Preparer Signature: John Doe	Date: 01/01/2024
Was this application completed by a registered professional? ■ Yes ☐ No	
License Number: 12345	License Type: Professional Engineer
Stamp: 	

*Certification is required for projects subject to Performance Requirements 2, 3, or 4 and may be provided by a registered professional engineer, geologist, architect, and/or landscape architect.

Post-Construction Stormwater Control Plan for:
Main Street Park and Ride Lot, Anytown

Date:	January 1, 2024
Name of owner:	General Land Development Company, LLC.
Owner's representative and contact information:	Jane Doe (555)123-4567 Jane@email.com
Plan prepared by:	General Civil Engineering Consultants, Inc.
Preparer's name and contact information:	John Doe (555)123-4567 John@email.com
Submitted to:	County of San Luis Obispo

Preparer's signed stamp:

APPENDIX-E
EXAMPLE PROJECT: Main Street Park and Ride Lot, Anytown

Stormwater Control Plan Submittal Completion Checklist

Exhibits:

Element	Included?	Notes
Exhibit depicting SCMs, Drainage Management Areas (DMAs).	Yes	Attachment 1
Exhibit depicting pre and post project pervious and impervious areas.	Yes	Attachment 1
Opportunities and constraints map.	Yes	Attachment 4

Required Submittals for PR#2

Element	Included?	Notes
Source control checklist.	Yes	Section 4
Plan sheet detail indicating location of PR#1 implementation.	Yes	Section 3.b Sheet C3.0 (grading) Sheet C4.0 (details)
Draft long-term operations and maintenance plan.	Yes	Attachment 5

Required Submittals for PR#3

Element	Included?	Notes
LID opportunities and constraints analysis with map.	Yes	Attachment 4
Underground infiltration system pretreatment device certification.	N/A	Pretreatment provided by bioretention and biofiltration features
Soils testing report and design infiltration rate supporting documentation.	Yes	Grading permit package

Requirements for PR#4

Element	Included?	Notes
Calculations for peak management.	Yes	Attachment 2

APPENDIX-E
EXAMPLE PROJECT: Main Street Park and Ride Lot, Anytown

Table of Contents

List of Tables

List of Figures

List of Attachments

APPENDIX E
EXAMPLE PROJECT Main Street Park and Ride Lot, Anytown

1. Summary Project Data

Table 1 provides a summary of project data related to demonstrating compliance with the Post-Construction Stormwater Management Requirements (the PCRs) for Development Projects in the Central Coast [Resolution R3-2013-0032]. The proposed project is designed to comply with applicable requirements outlined in the PCRs.

Table 1: Summary Project Data

Project name:	Main Street Park-and-Ride Lot			
Project or permit number:	Building Permit CBLD2023-12345			
Preliminary or Final SWCP:	☐ Preliminary entitlements Subdivision or Land Use Permit approval.	☒ Final Building and/or Grading Permit for construction.		
Project location:	Northwest corner of Main Street and Broadway 123 Main St. Anytown, CA APN: 123-45-678			
Project Description:	Construct new parking lot with 116 vehicle spaces for County Transit Park-and-Ride program on southern portion of currently undeveloped lot. Remainder of lot to remain undisturbed.			
Total project site area:	0.72 acres = 31,500 SF			
Total Existing Impervious Area:	5,000 SF			
New Impervious Area:	22,500 SF			
Replaced impervious Area:	4,000 SF (existing asphalt driveway)			
Reduced Impervious Area:	0 SF Credit = 0 Unless (Pre-Project Impervious – Post-Project Impervious) > 0			
Credit for Reduced Impervious Area: *If post-project > pre-project, Credit = 0* *If post-project < pre-project, Credit = Reduced*	[22,500 +4,000] = 26,500 Total existing: 5,000 Credit = 0			
Net impervious area:	(New + Replaced) – Credit = (22,500 + 4,000) – (0) = 26,500 SF			
Watershed management zone:	WMZ 1			
Design storm frequency and depth:	☒ 85th percentile	☒ 95th percentile	85th i = 1.1” 95th i = 1.9”	
Applicable performance requirements:	☒ PR #1	☒ PR #2	☒ PR #3	☒ PR #4

Table 2 summarizes the predominant soil characteristics of the development site and data generated from web generated soils reports and site soils explorations and testing.

Table 2: Site Soils summary data

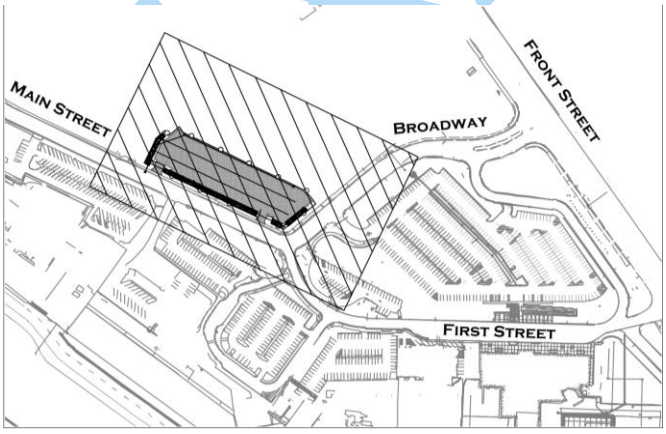
Predominant soil type(s) of site:	Silty well-graded sand.			
Predominant hydrologic soils group classification of site:	☒ Group A	☐ Group B	☐ Group C	☐ Group D
Soils testing conducted at site:	☒ Borings		☐ Percolation testing	
	☒ Infiltration testing		☐ Other	
Brief summary of soil testing conducted:	Three (3) soil borings were performed to collect soil samples and establish the soil profile and water table depth. Two (2) percolation tests were performed, and the percolation data was converted using the Porchet method to establish design infiltration rates for the underground infiltration chambers. The soils report for the project site was included with the building permit application.			
Design soil infiltration rate:	1.0 inches/hour			
Factor of Safety applied:	FS=2			

2. Project setting

a. Project Location and Description

This project site is located at the northwest corner of the intersection of Main Street and Broadway in Anytown, California. The site is currently zoned for Public Facilities and is undeveloped except for an existing storage shed and driveway. The proposed project will construct a new parking lot containing 116 parking stalls to be used by transit passengers from the adjacent communities in conjunction with the County Transit Park-and Ride program.

Figure 1:Project Vicinity Map



b. Existing Site Features and Conditions

The property is a 2.52 acre irregularly shaped parcel. Apart from the existing driveway and storage shed, the parcel is undeveloped and evenly covered with grasses and sage brush. The property can be roughly separated into two distinct flat areas to the north and south separated by a 15-foot sloped decline toward the middle.

The north portion of the property is a large triangular low-lying area containing a sensitive wetland. This area is mostly flat with gentle slopes to an internal naturally occurring sump area. The south portion of the property is a roughly 30,000 SF rectangular area bounded on the south and east by existing curb, gutter, and sidewalk improvements along Main Street and Broadway. This area is flat and roughly level with the adjacent streets but is bounded on the north by a sloped decline descending roughly 15 feet to the wetland below.

The proposed project will be constructed in the southern portion of the parcel leaving the wetland undisturbed and maintaining a 50' minimum offset from the wetland boundary as established by the project biological report. In the current condition, the project area is gently sloped to sheet flow toward the northern wetland and does not receive any significant run-on from the adjacent streets or properties. The proposed design will divert runoff from new impervious areas away from the northern wetland to new stormwater features on site for treatment and retention with attenuated overflows to the existing storm drain in Main Street.

The design was evaluated in coordination with the project biologist for the possibility of detrimental impact to the wetland caused by a net reduction of historical runoff received by the wetland. It was determined that the soil and vegetation immediately around the project area provide for quick infiltration and surface retention of runoff. As a result, historical runoff received by the wetland from the project area is negligible. Rather, the project biology report indicated that the wetland is primarily fed by surface flows descending from the larger, steeper areas to the north and west, and the report recommended that diverting new flows away from the wetland is the preferred strategy to avoid potential pollutant load on the wetland.

c. Opportunities and Constraints for Stormwater Control

Projects triggering PR#3 and above are required to submit a LID opportunities and constraints analysis.

This project is PR#3 or above:	☒ Yes	☐ No	
The LID opportunities and constraints checklist is included as an Attachment to this SWCP.	☒ Yes	☐ No	☐ Not Applicable
The LID opportunities and constraints site map is included as an Attachment to this SWCP.	☒ Yes	☐ No	☐ Not Applicable
The LID Opportunities and Constraints checklist and site map are included in Attachment 4.			

3. Low Impact Development Design Strategies

a. Site Design Strategies

Performance Requirement #1 is applicable to all regulated projects that create and/or replace ≥2,500 sf of impervious surface area. This project has incorporated Low Impact Development site design strategies as detailed below.

Limit disturbance to creeks and natural drainage features

The project will maintain a minimum 50' offset from the wetland on the north side of the property and keep this area undisturbed. Runoff from the project will be directed away from the wetland since the site will be graded to collect runoff into the on-site SCMs which will overflow to the public storm drains in the street. As discussed above, this strategy will protect the wetland from potential pollution.

Minimize compaction of highly permeable soils

The proposed project will occur on the south, rectangular portion of the site which was graded and flattened by previous owners and well compacted by vehicle parking. Therefore, the project will not increase compaction of soils beyond the historically well compacted areas.

Limit clearing and grading of native vegetation to minimum area necessary

The project will maintain a minimum 50' offset from the wetland on the north side of the property and keep this area undisturbed. The project area is clear of vegetation except for some grasses, so disturbance to vegetation will be minimal if any.

Minimize impervious surfaces and concentrate improvements on the least-sensitive portions of the site.

The available project area is restricted to the south area of the parcel by the wetland on the north and the required 50' setback. The project area was already graded by previous owners and somewhat well compacted by vehicles parking.

b. Runoff Reduction Strategies

Performance Requirement #1 mandates that one or more runoff reduction measures be integrated into the site design. Table 3 indicates where runoff reduction measures have been incorporated into the proposed project.

Table 3: Performance Requirement #1 Runoff Reduction Strategies

Runoff Reduction Strategy	Guidelines	Location implemented	Plan sheet and detail
Direct roof runoff into cisterns or rain barrels for reuse.	Minimum 100-gallon volume for collection.	N/A No roof area proposed	N/A No roof area proposed
Direct roof runoff to vegetated areas away from foundations and footings.	Minimum 10% of roof area directed to vegetated areas.	N/A No roof area proposed	N/A No roof area proposed
Direct runoff from sidewalks, walkways and/or patios onto vegetated areas.	Minimum 10% of flatwork* area drainage directed to vegetated areas.	N/A No applicable flatwork proposed.	N/A No applicable flatwork proposed.

Direct runoff from driveways and/or parking lots onto vegetated areas.	Minimum 10% of flatwork area drainage directed to vegetated areas.	25,000 SF impervious to vegetated SCMs / 26,500 total impervious area = 94% > 10% OK	Sheet C3.0 (grading) Sheet C4.0 (details)
Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces.	Minimum 10% of flatwork area constructed with permeable surfaces.	1,080 SF permeable pavers / 26,500 SF pavement = 4% < 10% Does not meet PR1 minimum	Sheet C3.0 (grading) Sheet C4.0 (details)

**Flatwork refers to smooth paved surfaces such as sidewalks, driveways, pathways, or parking lots.*

Additional site design and runoff reduction strategies are required for projects that must comply with Performance Requirement #3. Table 4 indicates the design strategies that were incorporated into the project design to optimize the use of LID.

Table 4: Performance Requirement #3 Additional LID Design Strategies

Augmented PR#3 LID Design Strategies	**Implemented?**	**Explanation**
Define the development envelope and protected areas. Identify areas suitable for development and areas to remain undisturbed.	☒ Yes ☐ No	The majority of the parcel is reserved to the wetland and the required wetland offset. The project is configured to work efficiently within the remaining space.
Conserve natural areas, including existing trees, vegetation, and soils.	☒ Yes ☐ No	The site design leaves vegetated margins on all sides of the property which are conserved to the extent feasible. The majority of the site, including the north wetland will be left undisturbed.
Limit the overall impervious footprint of the project.	☒ Yes ☐ No	The project footprint has been reduced to the extent feasible. The anticipated parking demands were reviewed with County Transit to limit unnecessary redundancy.
Construct streets, sidewalks, parking lot aisles to minimum widths required.	☒ Yes ☐ No	The parking stalls and drive aisles were designed to the minimum dimensions allowed by County Land Use Ordinance and CalFire.
Set back development from creeks, wetlands, and riparian habitats.	☒ Yes ☐ No	The entire area of disturbance is set back 50’ minimum from the wetland boundary established by the project biological report.
Conform the site layout along natural landforms.	☒ Yes ☐ No	The project was designed to fit within an existing flat, graded area bounded in the north by an existing grade break to the rest of the site. This will minimize grading and take advantage of the existing terrain.
Avoid excessive grading and disturbance of vegetation and soils.	☒ Yes ☐ No	The project was designed to fit within an existing flat, graded area bounded in the north by an existing grade break to the rest of the site. This will minimize grading and take advantage of the existing terrain.
Table 4 is not applicable to this project.	☐ The requirements of this table are not applicable to the project. This project is not required to comply with Performance Requirement #3.	

c. Self-treating and self-retaining areas

This project reduces the amount of runoff for which Stormwater Structural Control Measures (SCMs are required by utilizing self-treating and self-retaining areas.

This project reduces the amount of runoff for which Stormwater Structural Control Measures (SCMs) are required by utilizing self-treating and self-retaining areas. The rear corners of the project area furthest from the street were reserved as self-treating or self-retaining areas.

The NW corner of the site slopes back toward the property edge and the wetland in the current condition. To avoid re-grading this corner, it will be graded to match the current terrain and isolate runoff from six parking stalls and a portion of the drive aisle. These six stalls will be built with pervious pavers to self-retain 1,420 SF of asphalt pavement.

The NE edge requires minor grading to confirm to existing grade, but it will be vegetated and reserved as a self-treating area (DMA 6).

4. Documentation of Drainage Design

a. Drainage Management Areas Summary

The project site has been delineated into distinct Drainage Management Areas (DMAs), sized per the guidelines in the County of San Luis Obispo Post-Construction Stormwater Guidebook. Descriptions of each DMA are included in Table 5.

Table 5: Drainage Management Areas and Characteristics

DMA Number/ID	Surface Type & description	Area (sf)	Drains to:		
DMA 1	HMA Pavement	2,500	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 2	HMA Pavement	10,000	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 3	HMA Pavement	5,000	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 4	HMA Pavement	5,000	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 5	HMA Pavement	2,500	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 6	Landscaping	500	☒ Self-treating	☐ Self-retaining	☐ SCM
DMA 7	HMA Pavement Draining to Pavers	1,500	☐ Self-treating	☒ Self-retaining	☐ SCM

b. Stormwater Structural Control Measures

Structural Control Measures for PR#2 Treatment

This project requires construction of Stormwater Structural Control Measures (SCMs) to treat runoff in compliance with Performance Requirement #2, Water Quality Treatment. Treatment for each DMA is provided by one of the following types of features:

(1) Bioretention Basins
Required SCM Capacity = Volume (CF) of 85th percentile storm runoff from DMAs flowing to SCM
Provided SCM Capacity = Design volume (CF) of bioretention basin

(2) Biofiltration Features (i.e., bioretention w/ underdrain)

Required SCM Capacity = Area (SF) of DMAs flowing to SCM x 0.04
Provided SCM Capacity = Surface area of SCM

(3) Vegetated Flow-Based Treatment (i.e. vegetated swales, vegetated buffer strips)
Required SCM Capacity = Minimum swale length (FT) or minimum strip width (FT)
Provided SCM Capacity = Actual swale length (FT) or strip width (FT)

(4) Mechanical Flow-Based Treatment Devices (i.e., filters, mechanical separators)
Required SCM Capacity = Peak flow rate (CFS) to SCM
Provided SCM Capacity = Maximum recommended flow rate (CFS) to the SCM for effective treatment per manufacturer's specifications or design

No treatment is to be provided by direct infiltration facilities. All direct infiltration facilities must receive flows treated by flow-based treatment devices or by above-ground biofiltration or bioretention facilities. Direct infiltration should be reserved for retention and peak management.

Key attributes of these SCMs for Water Quality Treatment are summarized in Table 6.

Table 6: Structural Control Measure Summary Table (PR2 – Treatment Only)

SCM Number/ID	DMA Number/ID	SCM Type	Required SCM Capacity (CFS, SF, FT, CF)	Provided SCM Capacity (CFS, SF, FT, CF)
SCM 1	DMA 1	Vegetated Swale	22 FT	54 FT
SCM 2	DMA 2	Bioretention	953 CF	1650 CF
SCM 3	DMA 3	Bioretention	500 CF	900 CF
SCM 4	DMA 4	Bioretention	500 CF	900 CF
SCM 5	DMA 5	Vegetated Swale	22 FT	72 FT

Additionally, the vegetated swales have been designed for hydraulic capacity per the County Public Improvement Standards. This is documented within the project's Drainage Report.

Structural Control Measures for PR#3 Retention
This project requires construction of Stormwater Structural Control Measures to achieve compliance with Performance Requirement #3, Retention. Key attributes of the SCMs are summarized in Table 7.

Table 7: Structural Control Measure Summary Table (PR3 – Runoff Retention)

SCM Number/ID	DMA Number/ID	SCM Type	Required SCM volume (CF) (Area x runoff coefficient x 85th percentile rainfall depth)	Provided SCM volume (CF)
SCM 2	DMA 2	Bioretention Basin	1,647 CF	1650 CF
SCM 3	DMA 3	Bioretention Basin	863 CF	900 CF
SCM 4	DMA 4	Bioretention Basin	863 CF	900 CF
SCM 6	DMAs 1,5,6	Underground infiltration chambers	714 CF	14,000 CF
Table 7 is not applicable to this project.			☐ The requirements of this table are not applicable to the project. This project is not required to comply with Performance Requirement #3.	

Summary of Structural Control Measures (PR4 – Peak Management)

This project requires construction of Stormwater Structural Control Measures to achieve compliance with Performance Requirement #4, Peak Management. Key attributes of the SCMs are summarized in Table 8.

Table 8: Structural Control Measure Summary Table (PR4 – Peak Management)

SCM Number/ID	DMA Number/ID	SCM Type	2-Year Storm Runoff (CFS)		5-Year Storm Runoff (CFS)		10-Year Storm Runoff (CFS)	
			Pre	Post	Pre	Post	Pre	Post
6	1,2,3,4,5,6	Underground chambers	1.37	0	1.83	0	2.35	0
Table 8 is not applicable to this project.			☐ The requirements of this table are not applicable to the project. This project is not required to comply with Performance Requirement #4.					

Underground Structural Control Measures

Projects that intend to utilize underground stormwater structural control measures for retention, infiltration, or peak management must complete Table 9.

Table 9: Subgrade Stormwater Structural Control Measures

This project includes subgrade SCMs: (i.e. dry wells, chambers, vaults.)	☒ Yes	☐ No

The project design distributes at least 30% of the post-construction runoff volume to at-grade SCMs or LID features.	☒ Yes	☐ No *(If no, provide explanation below)*
Explanation (as needed): *Per Table 7 above, PR3 requires 4,087CF of total runoff retention. Surface bioretention basins (SCMs 2,3,4) provide 3,450 CF or 84% of the required volume.*		
The project design includes a TAPE certified* pre-treatment device upstream of subgrade features. *(Include documentation in Attachment)*	☐ Yes	☒ No
The project design achieves PR#2 water quality treatment using at-grade features upstream of subgrade features.	☒ Yes	☐ No
Table 9 is not applicable to this project.	☐ The project does not include underground structural control measures.	

**Information about TAPE certified pre-treatment devices is included in the San Luis Obispo County Post-Construction Stormwater Guidebook.*

c. Areas Draining to Self-retaining Areas

A portion of the project has been designed to drain to self-retaining areas (SRAs), summarized in Table 5. The pervious self-retaining areas included in Table 10 account for only the functional bottom width of the SRA in the receiving self-retaining DMA area column. Perimeter areas are not included when calculating the impervious to pervious ratio.

A portion of the project has been designed to drain to self-retaining areas (SRAs), summarized in Table 5. The pervious self-retaining areas included in Table 6 account for only the functional bottom width of the SRA in the receiving self-retaining DMA area column. Perimeter areas are not included when calculating the impervious to pervious ratio.

The design will incorporate permeable pavers so DMA 7 will function as an SRA. DMA 7 contains six parking stalls and a portion of parking drive aisle for a total of 2,500 SF of area. All six stalls will be constructed with pavers.

Table 10: Self-retaining area summary

SRA Number/ID	Description	[A] SRA Area (SF)	DMAs Draining to SRA Number/ID	[B] Total Areas Draining to SRA (SF)	Ratio [B]/[A]
DMA 7	Pervious pavers w/ gravel storage below	1,080	DMA 7	1,420	1.3 : 1
Table 10 is not applicable to this project.		☐ The project does not include any self-retaining areas.			

Minimum Stall Size = 10’ x 18’ = 180 SF

APPENDIX E
EXAMPLE PROJECT Main Street Park and Ride Lot, Anytown

Paver Area for Six Parking Stalls = (6)*(180 SF) = 1,080 SF
Tributary Area to Pavers = 2,500 SF – 1,080 SF = 1,420 SF

Check:
(1,420 SF) / (1,080 SF) = 1.3
1.3:1 (< 2:1 ok)

The proposed design meets the criteria for the use of self-retaining areas as written in the County of San Luis Obispo Post-Construction Stormwater Guidebook:

Self-retaining area sizing: ☒ 2:1 Sizing Ratio (acceptable) ☐ >2:1 Sizing Ratio (un-acceptable)

d. SCM Construction Checklist

Construction details are provided for each SCM planned for the site. These details include specifications for materials, elevations, plants, and protection of features during construction Table 11 indicates where SCM construction details can be reviewed.

Table 11: SCM Construction Details Summary Table

DMA Name/ID	SCM ID and Type	Plan Sheet No.	Plan set	SCM Detail No.
DMA 1	SCM 1 (Vegetated Swale)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #1
DMA 2	SCM 2 (Bioretention)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #2
DMA 3	SCM 3 (Bioretention)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #2
DMA 4	SCM 4 (Bioretention)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #2
DMA 5	SCM 5 (Vegetated Swale)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #1
DMA 1-7	SCM 6 (Chambers)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #3
DMA 7	SRA (Pavers)	C2.0	☒ Grading Permit ☐ Structure Permit	C3.0, Detail #4

Vegetated SCMs such as bioswales and bioretention require plantings to achieve optimal pollutant load reduction. Project plans must include a detail indicating the plant palette selected for vegetated SCMs. The source of the selected planting palette is summarized in Table 12.

Table 12: Plant Palette Selected for Vegetated SCMs

Name of Plant Palette	Source	Plan Sheet & Detail
Basic Commercial, Inland	☒ SLO County Post-Construction Guidebook Appendix D ☐ Central Coast LIDI: Plant Palette Guidebook, or Bioretention Plant Guide ☐ Other [describe]	Sheet L.1, Detail 5

5. Pollutant Source Control Measures

The project design includes pollutant source control measures to limit the exposure of potential pollutants once construction is complete. Source controls may be operational, structural or procedural. Permanent source control measures that are applicable to the project site and that will be implemented are indicated in Table 13.

Table 13: Permanent Pollutant Source Control Measures

Pollutant Generating Activities and Sources	Source Control BMP	Method selected
Vehicle or equipment cleaning. Un-authorized non-stormwater discharges.	Educational stormwater signage. *(Operational.)*	☒'No Dumping' storm drain inlet markers. ☐'Rainwater only' storm drain inlet markers. ☐ Educational or informational stormwater signage for LID features.
Fuel dispensing areas. Chemical or material storage areas. Refuse areas.	Secondary containment devices. *(Structural)*	☐ Raised permanent containment around liquid storage tanks. ☐ Rolling berm containment around liquid handling or loading areas.
Loading docks. Parking/storage areas.	Permanent protective shelters/covers. *(Structural.)* Waste collection and disposal equipment. *(Operational.)*	☐ Permanent storage sheds/canopies to shield equipment or materials. ☐ Canopy downspouts routed away from shelters covering equipment and materials. ☒ Trash and recycling receptacles provided in parking and storage areas.
Refuse/ trash disposal areas. Building and grounds maintenance.	Permanent protective shelters/covers. *(Structural)* Informational signage. *(Operational)* Periodic inspection. *(Operational.)*	☐ Drainage from adjoining areas diverted away from trash storage area. ☐ Trash storage area walled and covered. ☒ Storm drains located away from trash storage areas. ☐ Trash storage area paved to mitigate spills. ☒ Informational signage posted. ☒ Scheduled periodic inspection of waste receptacles.

Pollutant Generating Activities and Sources	**Source Control BMP**	**Method selected**
Loading & unloading areas.	Permanent protective shelters. *(Structural.)* Drainage routing or containment. *(Structural.)* Spill cleanup and control materials. *(Operational)*	☐ Permanent overhead canopy covering loading docks. ☐ Below-grade loading docks drain to water quality pre-treatment device. ☐ Trash receptacles provided near loading docks. ☐ Spill cleanup kit provided near loading docks. ☐ Loading docks located away from storm drain inlets.
Restaurants, grocery stores, and other food service operations.	Equipment cleaning and maintenance procedures. *(Operational)* Drains clearly marked and verified. *(Operational)*	☐ Indoor sinks and cleaning facilities sized for largest possible items for cleaning. ☐ Sinks and cleaning areas connected to grease interceptors. ☐ Indoor floor drains connected to sanitary sewer. ☐ Outdoor floor drains connected to sanitary sewer in permanently covered areas. ☐ Cleaning and degreasing agents used on site are low-hazard or biodegradable.
High traffic pedestrian areas. Pet-friendly areas.	Waste collection and disposal equipment. *(Operational)* Educational signage. *(Operational)*	☐ Permanent pet waste bag dispenser stations provided. ☒ Trash and recycling receptacles provided in areas of heavy pedestrian traffic. ☐ Informational pet waste signage installed.
Outdoor Pools, Spas, Fountains	Drainage design to manage overflows, backwashing, and maintenance. *(Structural)* Technician training and disposal plans. *(Operational)*	☐ Design prevents overflow discharge to streets, storm drains or creeks/waterways. ☐ Design incorporates filter backwash treatment plan. ☐ Service technicians trained in appropriate chemical application and disposal. ☐ Disposal plan for periodic water feature draining/refilling is established.
Landscaping maintenance. Landscaping irrigation systems.	Storage areas for landscaping chemicals. *(Structural.)* Water efficient irrigation system. *(Operational.)* Training for maintenance staff and chemical applicators. *(Operational.)*	☐ Covered and contained storage area provided for all pesticide, herbicides, and landscaping chemicals. ☐ Temporary landscape material stockpiling area provided away from water courses and drain inlets. ☒ Water efficient irrigation systems installed. ☒ Scheduled semi-annual irrigation maintenance and system verification. ☒ Employees and maintenance contractors appropriately licensed and trained. ☒ Chemical use (fertilizers, herbicides, pesticides) is minimized. ☒ Chemical applicators licensed or trained in proper application and disposal requirements.

Pollutant Generating Activities and Sources	**Source Control BMP**	**Method selected**
	Less hazardous chemicals selected for maintenance. *(Procedural.)*	☒ Less toxic chemicals substituted for hazardous toxic chemicals.
Fire Sprinkler Test Water	Fire system flushing water disposal plan. *(Operational.)*	☐ Fire system flushing area sited near landscaping for test water infiltration. ☐ Fire sprinkler line flush testing area designed for flow direction to sanitary sewer.
Vehicle or Equipment Parking areas.	Parking area regular maintenance. *(Operational.)* Vehicle and equipment regular maintenance. *(Operational.)*	☒ Trash receptacles provided in areas of heavy pedestrian traffic. ☒ Sweeping and litter removal scheduled as part of ongoing maintenance. ☐ Vehicles and equipment regularly serviced at off-site location. ☐ Vehicles and equipment fueled in designated location with spill control kits.
Un-authorized non-stormwater discharges	Employee/contractor training. *(Operational.)*	☐ Mobile cleaning vendors appropriately trained, capable of collecting and removing wash waters for offsite disposal. ☐ Service contractors equipped with appropriate washout and containment supplies.

6. Stormwater Infrastructure Maintenance

a. Operations and Maintenance Agreements

The Regional Transit Authority will be responsible for operations and maintenance of the stormwater system in perpetuity. These responsibilities are transferred to future owners upon completion of sale of the project site or portion thereof. This project intends to delegate responsibility for long-term operations and maintenance as follows:

Recorded maintenance agreement type:	☒ Agreement	☐ Codes, Covenants & Restrictions language.
The party responsible for operations and maintenance of the system will be:	☒ Single owner	☐ Multiple owners
	☐ Owner's association	☐ Corporation
The party responsible for operations and maintenance of the system:	☒ Is located locally in San Luis Obispo County.	☐ Has a designated local representative in San Luis Obispo County.
	☐ Is located outside the County, within California.	☐ Is located outside California.
The party responsible for operations and Maintenance intends to complete annual inspections and maintenance by the following methods:	☒ Self-inspect and maintain. Contract out for additional maintenance support as necessary.	☐ Contract out all system inspection and maintenance services.

b. Summary of Maintenance Requirements for each Structural Control Measure

The maintenance requirements and anticipated annual costs for maintaining each SCM associated with the project are documented in County form SWP-1008. Copies of these forms are included as Attachment 5. An operations and maintenance agreement will be recorded with the County Clerk Recorder prior to final of project construction.

7. Conclusions and Certification of Compliance

This project meets each of the applicable Performance Requirements stipulated by the PCRs.

Performance Requirement #1	Compliance achieved onsite? ☒ Yes ☐ No	Measure(s) implemented: Runoff from hardscape is directed to vegetated areas. Design incorporates permeable pavers.	
Performance Requirement #2	Volume of treatment required for project: DMA 2,3,4 1,953 CF required (bioretention) DMA 1,5 22 FT required each (vegetated swale) DMA 7 None (self-retained)	Volume of treatment provided by project: DMA 2,3,4 3,450 CF provided (bioretention) DMA 1,5 54 FT and 72 FT DMA 7 None (self-retained)	Compliance achieved: ☒ Onsite ☐ Offsite
Performance Requirement #3	Volume of retention required for total project: 4,087 CF	Volume of retention provided by total project: 17,450 CF	Compliance achieved: ☒ Onsite ☐ Offsite
Performance Requirement #4	Peak management required: 6,578 CF (2-year volume) 9,867 CF (5-year volume) 11,276 CF (10-year volume)	Peak management achieved: 17,450 CF provided. Peak flow reduced to 0 CFS for 2,5,10-year	

The registered professional engineer, geologist, architect or landscape architect authoring this report certifies that all applicable post-construction stormwater performance requirements have been applied to this project and that this plan conforms to the requirements of the Central Coast Post-Construction Stormwater Management Resolution R3-2013-0032 and the current edition of the County's Post-Construction Stormwater Guidebook.

Preparer Name: John Doe	
Date: 01/01/2024	
License Number: 12345	License Type: Civil Engineer

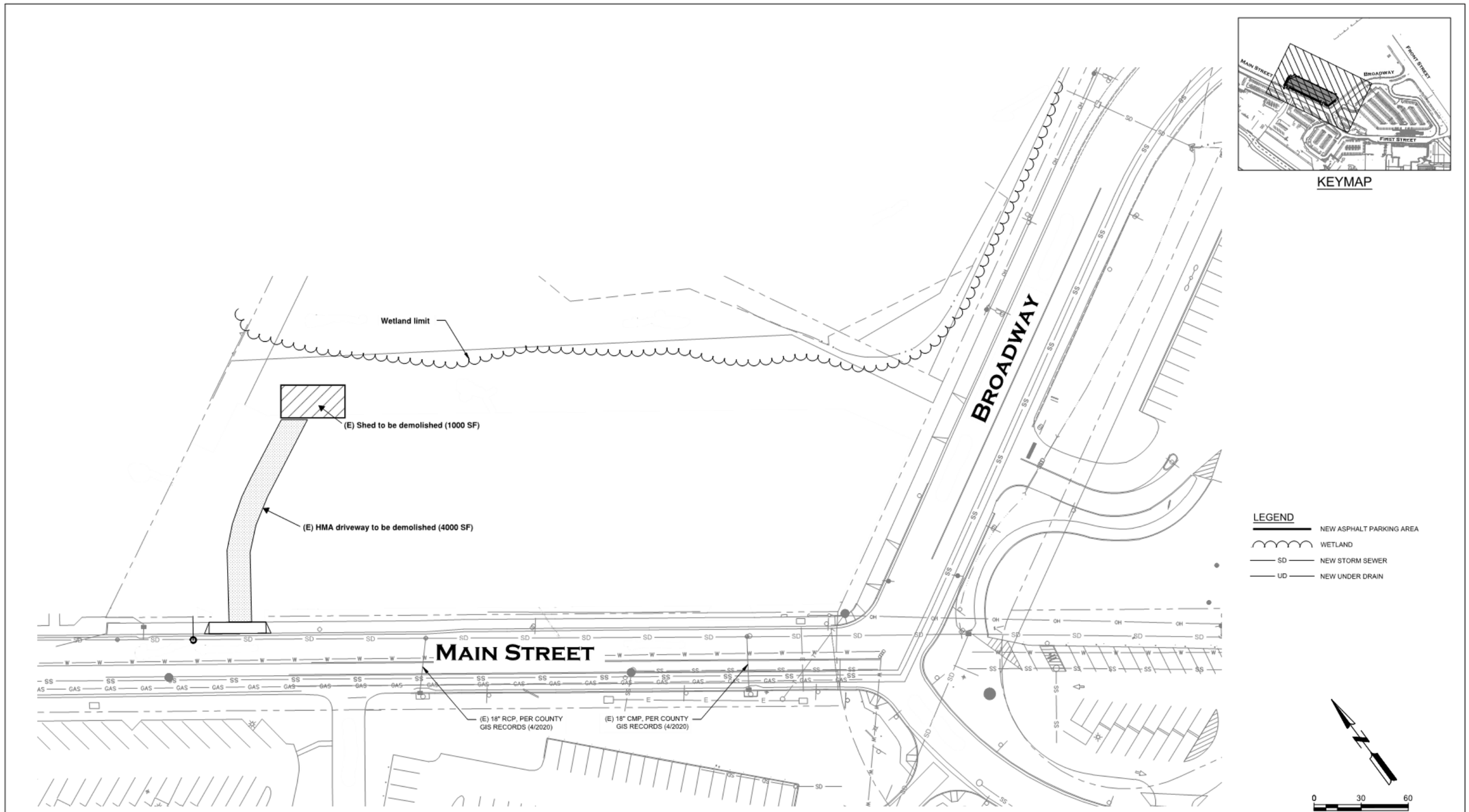
APPENDIX E
EXAMPLE PROJECT Main Street Park and Ride Lot, Anytown

Attachment 1: Site Maps and Exhibits

Pre-Project Impervious Area Exhibit

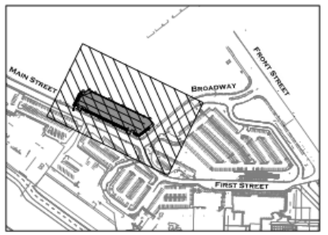
Post-Project Impervious Area Exhibit

Drainage Management Areas (DMAs) & Structural Control Measures (SCMs) Exhibit

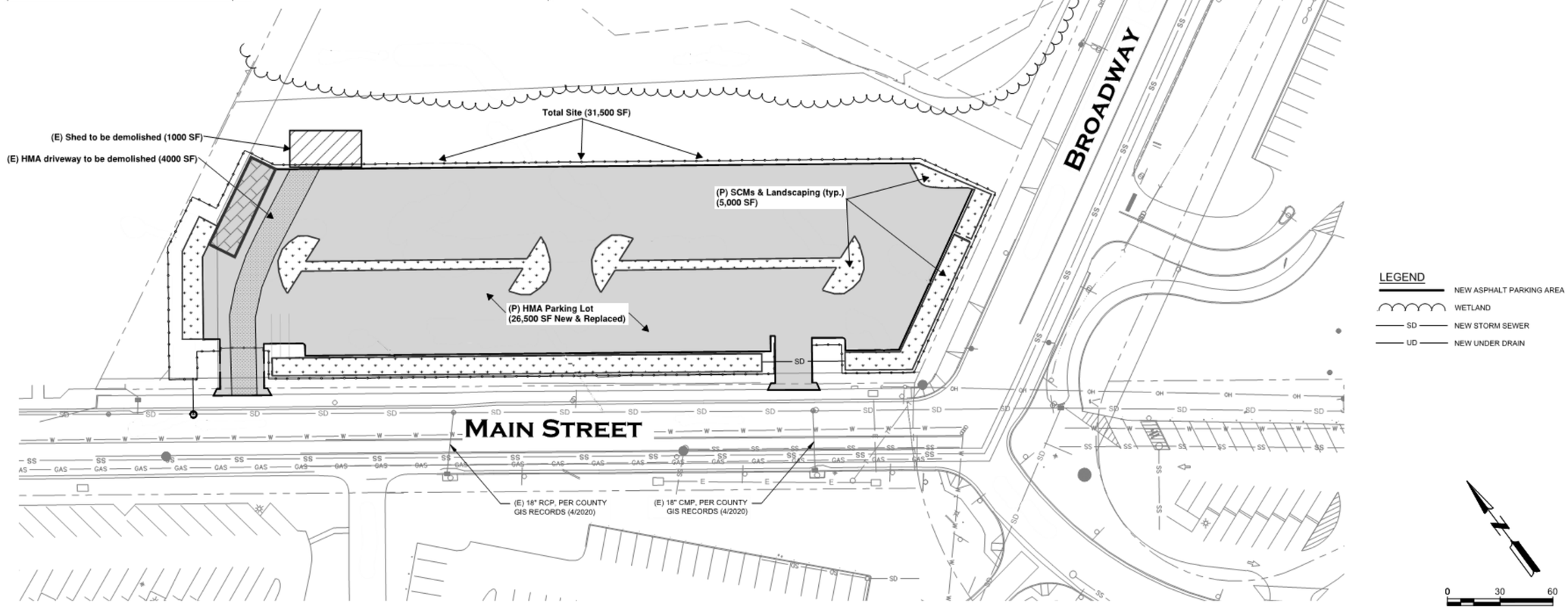


Pre-Project Impervious Areas Exhibit

Total project site area:	0.72 acres = 31,500 SF
Total Existing Impervious Area:	5,000 SF
New Impervious Area:	22,500 SF
Replaced impervious Area:	4,000 SF (existing asphalt driveway)
Reduced Impervious Area:	0 SF Credit = 0 Unless (Pre-Project Impervious – Post-Project Impervious) > 0
Credit for Reduced Impervious Area: *If [New + Replaced) > Total Existing, Credit = 0* *If (New + Replaced) < Total Existing, Credit = Reduced*	[22,500 +4,000] = 26,500 Total existing: 5,000 Credit = 0
Net impervious area: *(Exhibit required)*	(New + Replaced) – Credit = (22,500 + 4,000) – (0) = 26,500 SF



KEYMAP



Post-Project Impervious Areas Exhibit

Table 5: Drainage Management Areas and Characteristics

DMA Number/ID	Surface Type & description	Area (sf)	Drains to:		
DMA 1	HMA Pavement	2,500	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 2	HMA Pavement	10,000	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 3	HMA Pavement	5,000	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 4	HMA Pavement	5,000	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 5	HMA Pavement	2,500	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 6	Landscaping	500	☒ Self-treating	☐ Self-retaining	☐ SCM
DMA 7	HMA Pavement Draining to Pavers	1,500	☐ Self-treating	☒ Self-retaining	☐ SCM

Table 6: Structural Control Measure Summary Table (PR2 – Treatment Only)

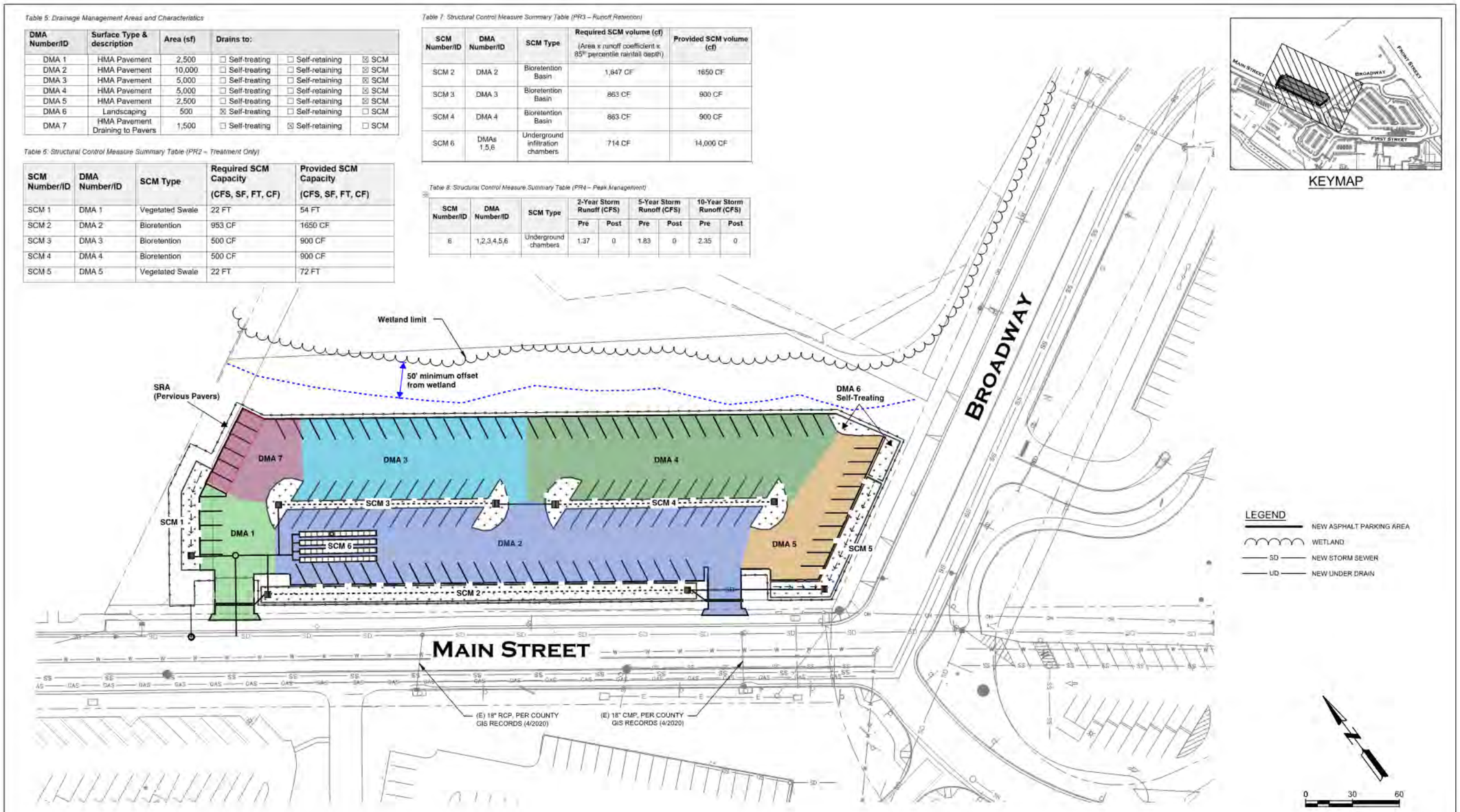
SCM Number/ID	DMA Number/ID	SCM Type	Required SCM Capacity (CFS, SF, FT, CF)	Provided SCM Capacity (CFS, SF, FT, CF)
SCM 1	DMA 1	Vegetated Swale	22 FT	54 FT
SCM 2	DMA 2	Bioretention	953 CF	1650 CF
SCM 3	DMA 3	Bioretention	500 CF	900 CF
SCM 4	DMA 4	Bioretention	500 CF	900 CF
SCM 5	DMA 5	Vegetated Swale	22 FT	72 FT

Table 7: Structural Control Measure Summary Table (PR3 – Runoff Retention)

SCM Number/ID	DMA Number/ID	SCM Type	Required SCM volume (cf) (Area x runoff coefficient x 85th percentile rainfall depth)	Provided SCM volume (cf)
SCM 2	DMA 2	Bioretention Basin	1,847 CF	1650 CF
SCM 3	DMA 3	Bioretention Basin	863 CF	900 CF
SCM 4	DMA 4	Bioretention Basin	863 CF	900 CF
SCM 6	DMAs 1,5,6	Underground infiltration chambers	714 CF	14,000 CF

Table 8: Structural Control Measure Summary Table (PR4 – Peak Management)

SCM Number/ID	DMA Number/ID	SCM Type	2-Year Storm Runoff (CFS)		5-Year Storm Runoff (CFS)		10-Year Storm Runoff (CFS)	
			Pre	Post	Pre	Post	Pre	Post
6	1,2,3,4,5,6	Underground chambers	1.37	0	1.83	0	2.35	0



Drainage Management Areas (DMAs) and Structural Control Measures (SCMs) Exhibit

Attachment 2: SCM Sizing Calculator Outputs

Supporting Calculations for Structural Control Measures (PR2 – Treatment)

SCM 1, 5 – Vegetated Swale

Size for water quality treatment – Minimum flow capacity is equal to water quality peak runoff. Minimum flow length to provide minimum 5-minute hydraulic residence time.

Water Quality Peak Flow: Rational Method, Q = CiA

- Q = Water Quality Peak flow (cfs)
- C = PCRs Runoff Coefficient
    - $C = 0.858i^3 – 0.78i^2 + 0.744i + 0.04 = 0.862$
        - i = Percent impervious
- i = WQF Rainfall Intensity (0.2 in/hr)
- A = Tributary Area (acres)

Swale Sizing: Manning's Equation, $Q = (1.49/n) * A * R^{2/3} * S^{1/2}$

- Q = Flow (cfs)
- n = Manning's coefficient
- A = Cross-sectional area of the flow in the channel (ft^2)
- R = Hydraulic Radius, A/P (ft)
    - P = Wetted perimeter of flow area (ft)
- S = Channel longitudinal slope (ft/ft)

Used Manning's equation to iteratively solve channel design variables.

See attached spreadsheet printout for vegetated swale calculations and sizing. The site grading directs runoff from each DMA to the upstream end of the swale. The swales were also sized for hydraulic capacity per the County Public Improvement Standards, this is documented within the project's drainage report.

APPENDIX E
EXAMPLE PROJECT Main Street Park and Ride Lot, Anytown

SCM 2, 3, 4

Size for treatment by retention of 85th percentile storm volume (simple method)
Min Req'd Retention Volume = C x Rainfall Depth x A,

- C = PCRs Runoff Coefficient (unitless)
  - $C = 0.858i^3 - 0.78i^2 + 0.744i + 0.04 = 0.862$
    i = Percent impervious
  - C = 0.89 for 100% impervious surface
- 85th percentile rainfall depth = 1.1 inches for this location
- A = retention tributary surface area (SF)

SCMs must also have sufficient volume to capture the rain that falls directly on them (C = 1.0)

SCM	Tributary DMA	Surface Type	C	A (SF)	Required Volume (CF)
SCM 2	DMA 2	HMA	0.89	10,000	816
	SCM 2	Bioretention	1.00	1,500	138
				SCM 2 Total	**953**
SCM 3	DMA 3	HMA	0.89	5,000	408
	SCM 3	Bioretention	1.00	1,000	92
				SCM 3 Total	**500**
SCM 4	DMA 4	HMA	0.89	5,000	408
	SCM 4	Bioretention	1.00	1,000	92
				SCM 4 Total	**500**

APPENDIX E
EXAMPLE PROJECT Main Street Park and Ride Lot, Anytown

Supporting Calculations for Structural Control Measures (PR3 – Retention)

Size for retention of 95th percentile storm volume (simple method)
Min Req'd Volume = C x Rainfall Depth x A,

- C = PCRs Runoff Coefficient (unitless)
  - o C = $0.858i^3 - 0.78i^2 + 0.744i + 0.04 = 0.862$
    i = Percent impervious
  - o C = 0.89 for 100% impervious surface
  - o C = 0.04 for 0% impervious
- 95th percentile rainfall depth = 1.9 inches for this location
- A = retention tributary surface area (SF)

SCM	Tributary DMA	Surface Type	C	A (SF)	Required Volume (CF)
SCM 2	DMA 2	HMA	0.89	10,000	1,409
	SCM 2	Bioretention	1.00	1,500	238
				SCM 2 Total	**1,647**
SCM 3	DMA 3	HMA	0.89	5,000	705
	SCM 3	Bioretention	1.00	1,000	158
				SCM 3 Total	**863**
SCM 4	DMA 4	HMA	0.89	5,000	705
	SCM 4	Bioretention	1.00	1,000	158
				SCM 4 Total	**863**
SCM 6	DMA 1	HMA	0.89	2500	352
	DMA 5	HMA	0.89	2500	352
	DMA 6	Landscape	0.04	500	3
	SCM 1	Landscape (swale)	0.04	500	3
	SCM 5	Landscape (swale)	0.04	500	3
				SCM 6 Total	**714**

APPENDIX E
EXAMPLE PROJECT Main Street Park and Ride Lot, Anytown

Check PR3 Drawdown Requirements

Site infiltration rate = 1.0 inches/hour = 0.0833 ft/hour

SCM	95th Percentile Runoff Volume (CF)	SCM Floor Area (SF)	95th Percentile Storm Depth (FT) (Volume / Area)	SCM Type	Safety Factor	Drawdown Time (HOURS) (Depth / Infiltration Rate x Safety Factor)
2	1,647	1,500	1.10	Bioretention	1	13.2
3	863	1,000	0.86	Bioretention	1	10.4
4	863	1,000	0.86	Bioretention	1	10.4
6	714	800	0.89	Underground Chambers	2	21.4

All SCMs fully infiltrate in less than 48 hours per Central Coast Water Board requirements.

Supporting Calculations for Structural Control Measures (PR4 – Peak Management)

Look-up Inputs from County Standard H-4 (PIS) and calculate required retention volume using County modified rational method. For County retention standard, use storm duration t = 10 hours = 36,000 seconds. For peak flow calculations, assign minimum Tc of 10 minutes to all DMAs.

- Peak Runoff, Q = CiA (CFS)
  - C = Rational method runoff coefficient
  - i = storm intensity (inches/hour)
  - A = tributary area (acres)
- Volume = V = Q x t (CF)
  - t = storm duration (seconds)

Annual Rainfall at Project Site = 25 inches

Storm Recurrence (years)	Storm Intensity "i" (in/hr)	
	10 min (Q)	10 hour (V)
2	2.1	0.28
5	2.8	0.42
10	3.6	0.48

Area ID	Surface Type	Area (SF)	Area (ACRES)	Runoff Coefficient, C	Peak Runoff, Q (CFS)		
					2-year	5-year	10-year
DMA 1	HMA Pavement	2,500	0.06	0.95	0.11	0.15	0.20
DMA 2	HMA Pavement	10,000	0.23	0.95	0.46	0.61	0.79
DMA 3	HMA Pavement	5,000	0.11	0.95	0.23	0.31	0.39
DMA 4	HMA Pavement	5,000	0.11	0.95	0.23	0.31	0.39
DMA 5	HMA Pavement	2,500	0.06	0.95	0.11	0.15	0.20
DMA 6	Landscaping	500	0.01	0.65	0.02	0.02	0.03
DMA 7	HMA Pavement	1,500	0.03	0.95	0.07	0.09	0.12
SCM 1	Vegetated Swale	500	0.01	0.65	0.02	0.02	0.03
SCM 2	Bioretention Basin	1,500	0.03	0.65	0.05	0.06	0.08
SCM 3	Bioretention Basin	1,000	0.02	0.65	0.03	0.04	0.05
SCM 4	Bioretention Basin	1,000	0.02	0.65	0.03	0.04	0.05
SCM 5	Vegetated Swale	500	0.01	0.65	0.02	0.02	0.03
				Site Total	**1.37**	**1.83**	**2.35**
				DMA/SCM 2 Sub-Total	0.50	0.67	0.87
				DMA/SCM 3 Sub-Total	0.26	0.35	0.45
				DMA/SCM 4 Sub-Total	0.26	0.35	0.45

Area ID	Surface Type	Area (SF)	Area (ACRES)	Runoff Coefficient, C	Runoff Volume, V (CF)		
					2-year	5-year	10-year
DMA 1	HMA Pavement	2,500	0.06	0.95	550	824	942
DMA 2	HMA Pavement	10,000	0.23	0.95	2,198	3,298	3,769
DMA 3	HMA Pavement	5,000	0.11	0.95	1,099	1,649	1,884
DMA 4	HMA Pavement	5,000	0.11	0.95	1,099	1,649	1,884
DMA 5	HMA Pavement	2,500	0.06	0.95	550	824	942
DMA 6	Landscaping	500	0.01	0.65	75	113	129
DMA 7	HMA Pavement	1,500	0.03	0.95	330	495	565
SCM 1	Vegetated Swale	500	0.01	0.65	75	113	129
SCM 2	Bioretention Basin	1,500	0.03	0.65	226	338	387
SCM 3	Bioretention Basin	1,000	0.02	0.65	150	226	258
SCM 4	Bioretention Basin	1,000	0.02	0.65	150	226	258
SCM 5	Vegetated Swale	500	0.01	0.65	75	113	129
				Site Total	**6,578**	**9,867**	**11,276**
				DMA/SCM 2 Sub-Total	2,424	3,636	4,155
				DMA/SCM 3 Sub-Total	1,250	1,874	2,142
				DMA/SCM 4 Sub-Total	1,250	1,874	2,142

10-year Volume Retained by Bioretention SCMs
= 1,650 CF (SCM 2) + 900 CF (SCM 3) + 900 CF (SCM 4)
= **3,450 CF**

Confirm Bioretention SCM storage will be fully utilized, e.g. 10-year Runoff Volume is >= Volume Retained

SCM 2: 4,155 > 1,650 CF
SCM 3: 2,142 > 900 CF
SCM 4: 2,142 > 900 CF

Retain remainder runoff volume in SCM 6, Underground Chambers

Minimum Required 10-year Volume for Underground Chambers
= Total Site Runoff Volume– Volume Retained by Bioretention SCMs
= 11,276 CF – 3,450 CF
= **7,826 CF**

Capacity Provided by Proposed Underground Chambers
= **14,000 CF** (> 8,026 CF, ok)

Total Capacity Provided by all SCMs
= 14,000 CF + 3,450 CF
= **17,450 CF**

Bioswale Water Quality Flow Calculations

Bioswale Flow (Water Quality Treatment)

SCM ID	Tributary DMA	Runoff Coefficient, C	Rainfall Intensity, i (in/hr)[1]	Tributary Area, A (ac)	Flow (cfs)
SCM 1	DMA 1	0.89	0.2	0.057	0.010
SCM 5	DMA 5	0.89	0.2	0.057	0.010

[1] Table 7, County of San Luis Obispo Post-Construction Stormwater Guidebook

Runoff Coefficient, C

DMA	Impervious Ratio	Runoff Coefficient, C[1]
DMA 1	1	0.89
DMA 5	1	0.89

[1] Equation 4, County of San Luis Obispo Post-Construction Stormwater Guidebook

Tributary Area, A

DMA	Tributary Area (sf)	sf per ac	Tributary Area (ac)
DMA 1	2,500	43,560	0.057
DMA 5	2,500	43,560	0.057

Equations Used

$WQF = C \times i \times A$

where

WQF = runoff rate generated by the 85th percentile 24-hour storm event (cfs)

C = runoff coefficient – from PPDG Section 5.3

i = WQF rainfall intensity (in/hr) – from PPDG Section 5.3

A = portion of the CDA to the Biofiltration Swale not infiltrated (acres)

From Section 3.1.2, Caltrans Stormwater Quality Handbooks: Biofiltration Swale Design Guidance

The runoff coefficient 'C' is calculated for each DMA using Equation 4.

Equation 4: Impervious ratio (i) to Runoff coefficient 'C' equation.

$$0.858i^3 - 0.78i^2 + 0.774i + 0.04 = \text{Runoff Coefficient C}$$

Where i = the fraction of the DMA that is impervious

Equation 4, County of San Luis Obispo Post-Construction Stormwater Guidebook

Bioswale Hydraulic Calculations

Bioswale Parameters (Trapezoid)

SCM ID	Base Width b (ft)[1]	Side Slope z[1]	Manning's n[2]	Slope S (%)[1]	Length L (ft)	Water Quality Flow Q (cfs)
SCM 1	3	4	0.24	1.00%	54	0.010
SCM 5	3	4	0.24	1.00%	72	0.010

[1] Table 16, County of San Luis Obispo Post-Construction Stormwater Guidebook

[2] Table 2-1, Caltrans Stormwater Quality Handbooks: Biofiltration Swale Design Guidance

Depth and Velocity (Trapezoid)

SCM ID	Depth y (in)[1]	Depth y (ft)	Area A (sqft)	Perimeter P (ft)	Hy Radius R (ft)	Calculated Flow Q (cfs)[1]	Velocity V (fps)[2]	Hyd. Residence Time HRT (min)[3]	Minimum Length L_{min} (ft)[4]
SCM 1	0.52	0.043	0.14	3.36	0.041	0.010	0.07	12.2	22
SCM 5	0.52	0.043	0.14	3.36	0.041	0.010	0.07	16.3	22

[1] Solve for depth to set Calculated Flow equal to Water Quality Flow, Max of 6 in: Table 2-1 Caltrans Stormwater Quality Handbooks: Biofiltration Swale Design Guidance

[2] Max of 1 fps: Table 16, County of San Luis Obispo Post-Construction Stormwater Guidebook

[3] Min of 5 min: Table 16, County of San Luis Obispo Post-Construction Stormwater Guidebook

[4] Equation 9, County of San Luis Obispo Post-Construction Stormwater Guidebook

Equations Used

$Q = (1.49/n) \times A \times R^{2/3} \times S^{1/2}$

where

Q = flow at defined event, Q_{WQF} or Q_{25}, (cfs)

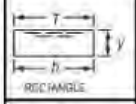
n = Manning's coefficient: recommend using "n" = 0.24 for Q_{WQF} and 0.05 for Q_{25}

A = Cross-sectional area of the flow in the channel

R = Hydraulic Radius = "A" / Wetted Perimeter ("P")[2]

S = longitudinal slope (ft/ft)

From Section 3.2.1, Caltrans Stormwater Quality Handbooks: Biofiltration Swale Design Guidance

Section	Area A	Wetted Perimeter P	Hydraulic Radius R
	by	$b+2y$	$\frac{by}{b+2y}$
	$(b+zy)y$	$b+2y\sqrt{1+z^2}$	$\frac{(b+zy)y}{b+2y\sqrt{1+z^2}}$
	zy^2	$2y\sqrt{1+z^2}$	$\frac{zy}{2\sqrt{1+z^2}}$

From Table 2-1 Open-Channel Hydraulics, Ven Te Chow

Equation 9: Vegetated swale minimum length calculation

$L = 300 (V_{wq})$

L= Minimum swale length (feet)

V_{wq} = Design flow velocity (ft/sec)

The 300 seconds multiplier determines the swale length necessary to achieve a hydraulic residence time of at least 5 minutes. Velocity should be calculated using the Manning's equation.

From Equation 9, County of San Luis Obispo Post-Construction Stormwater Guidebook

Attachment 3: Non-retention Based Treatment System Documentation

Not Applicable.

Attachment 4: LID Opportunities and Constraints Checklist

Existing Vegetation

Preserve or minimize disturbance to existing natural vegetated features. Designs that integrate natural features of the project site are better at mimicking pre-development runoff characteristics. Effective management of both existing and proposed site vegetation can reduce a development's impact on stormwater runoff quality and quantity.

☐ Yes ☐ No ☒ N/A	*Existing, high-quality vegetation has been identified and noted on the Opportunity and Constraints Map. Access to these areas will be restricted during construction.*
☐ Yes ☐ No ☒ N/A	*Existing trees have been identified and noted on the Opportunity and Constraints Map. The location of tree protection fencing is identified to restrict site disturbance and protect these locations during construction.*
☐ Yes ☐ No ☒ N/A	*Notes have been included on the corresponding site plans in areas where highly visible temporary fencing shall be placed around vegetation and tree areas that are to be preserved during construction.*

Survey and Site Topography

Identify opportunities and constraints within site topography and natural drainage patterns that can be incorporated into the design. Integrating existing drainage patterns into the site plan can maintain a site's predevelopment hydrologic function and will result in lower construction costs over sites that modify site topography and develop new drainage patterns.

☒ Yes ☐ No ☐ N/A	*The site has been surveyed and a topographic base file has been created to identify topography and natural drainage patterns.*
☒ Yes ☐ No ☐ N/A	*Existing low-spots and sumps within the topography have been identified on the Opportunity and Constraints Map. These areas will be preserved and utilized as BMP locations where technically feasible.*
☒ Yes ☐ No ☐ N/A	*Existing high-spots within the topography have been identified on the Opportunity and Constraints Map. These areas be preserved for placement of structures or hardscapes where feasible, allowing runoff to drain to low lying areas for treatment.*
☐ Yes ☐ No ☒ N/A	*Areas within 50 feet from the top of slopes that are greater than 20% and over 10 feet of vertical relief have been identified on the Opportunity and Constraints Map. Notes on the map indicate that SCMs are not authorized within these areas.*

Soil Analysis

Native undisturbed soils have a complex matrix created by the growth and decay of plant roots, earthworms, and insect activity. Topsoil stripping and stockpiling destroys soil structure and diminishes natural biological activity. Avoid and limit unnecessary site disturbances during construction. Plan LID and SCM placement where soils support infiltration (Soil Groups A and B). To the extent feasible, plan buildings and structures and hardscapes placement where soils discourage infiltration (Soil Group C and D).

☒ Yes ☐ No ☐ N/A	*Locations where soils encourage infiltration (Soil Group A and B) have been identified on the Opportunity and Constraints Map. Where feasible, these areas have been preserved or dedicated to SCM locations.*
☒ Yes ☐ No ☐ N/A	*Locations where soils discourage infiltration (Soil Group C and D) have been identified on the Opportunity and Constraints Map. Where feasible, these locations have been dedicated to the proposed project improvements such as structures and hardscapes, or contractor staging and equipment storage areas, etc.*
☒ Yes ☐ No ☐ N/A	*Locations where existing structures and hardscapes will be removed during construction (exposing highly compacted soils) have been identified on the Opportunity and Constraints Map. Placement of SCMs has been avoided in these areas.*

Geotechnical Analysis

Data from the preliminary geotechnical analysis or soil borings should be evaluated to support identification of opportunities and constraints. These areas should be specifically identified with limits noted on the Opportunities and Constraints Map.

☐ Yes ☒ No	*The site contains areas designated as an erosion hazard, or landslide hazard.*
☐ Yes ☒ No	*The site contains groundwater that drains into an erosion hazard, or landslide hazard area.*
☐ Yes ☒ No	*The geotechnical report identified contaminated soils:* ☐ *These soils will be removed during construction.* ☐ *These soils will remain in place during construction.*
☒ Yes ☐ No ☐ N/A	*The groundwater table elevation (including seasonally high and historically high) has been determined.*
☒ Yes ☐ No	*The seasonally high groundwater table elevation is at least 10-feet below the proposed invert elevations of the proposed SCMs.*
☐ Yes ☐ No ☒ N/A	*Fractured bedrock identified through geotechnical testing is below the proposed invert elevations of the proposed SCMs.*
☒ Yes ☐ No	*Infiltration testing has been performed onsite at the proposed SCM locations and the geotechnical report has identified that the site is suitable for infiltration.*

Setbacks

Establish setbacks and buffer zones surrounding restricted and/or sensitive areas. Identify all areas where SCMs cannot be constructed due to setback requirements. Examples include existing and proposed building foundations, municipal water wells, private water wells, septic systems, easements, etc.

☐ Yes ☐ No ☒ N/A	*Private potable water wells in the vicinity have been identified (onsite and offsite) and a minimum offset radius has been established indicating where infiltration SCMs are not authorized.*

☐ Yes ☐ No ☒ N/A	*Municipal potable water wells in the vicinity have been identified (onsite and offsite) and a minimum 100 foot offset radius has been established indicating where infiltration based SCMs are not authorized.*
☐ Yes ☐ No ☒ N/A	*Within the Coastal Zone, a setback of 100 feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.*
☒ Yes ☐ No ☐ N/A	*Within the Urban Reserve Lines, a setback of 50 feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.*
☒ Yes ☐ No ☐ N/A	*A setback of either 5 or10 feet has been established from all property lines to SCMs and the limits of these setbacks have been indicated on the Opportunity and Constraints Map.*
☐ Yes ☐ No ☒ N/A	*A setback of either 5 or 10 feet has been established from all existing and proposed building foundations with notes indicating infiltration SCMs are not authorized within these limits.*

Hydrology Features

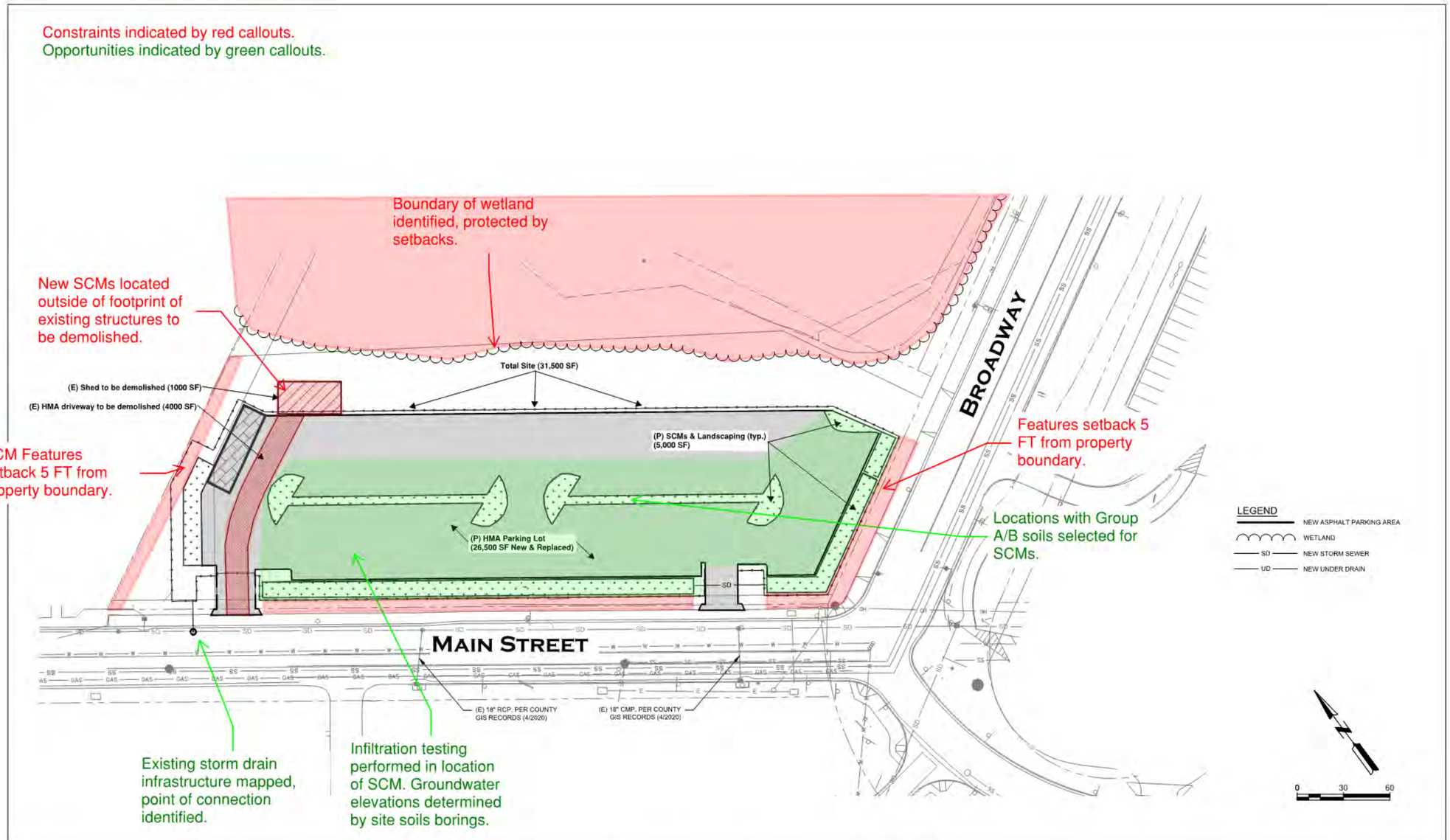
Identify onsite and offsite downstream waterways, including creeks, wetlands, watercourse, seeps, riparian zones areas of 100-year flood inundation, potential stormwater run-on locations and depths to groundwater. All areas of hydrologic importance should be delineated at the earliest stage in the development planning process.

☒ Yes ☐ No ☐ N/A	*Hydrological features such as creeks, wetlands, riparian zones, etc. have been identified and incorporated into the Opportunity and Constraints Map.* ✓ *Notes have been added to the Opportunity and Constraint Map indicating that these areas will be protected by exclusionary fencing during construction to prevent resource damage.*
☒ Yes ☐ No ☐ N/A	*The pre-developed site drainage pathways have been identified and the limits of these features have been placed onto the Opportunities and Constraints Map.*
☒ Yes ☐ No ☐ N/A	*Existing storm drain infrastructure, including potential points of connection have been identified and placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☒ N/A	*Stormwater run-on locations have been identified and placed onto the Opportunities and Constraints Map.*

Hazardous Areas & Pollutants of Concern (POCs)

Identify locations where existing or future pollutants may occur onsite and identify features that may prevent these pollutants from being exposed to stormwater runoff. Examples include chemical storage locations, fueling stations, and industrial operation areas.

☐ Yes ☐ No ☒ N/A	*Existing hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☒ N/A	*Proposed hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.*



Opportunities and Constraints Map

Attachment 5: Draft SCM Operations & Maintenance Forms

RECORDING REQUESTED BY:

County of San Luis Obispo
Planning and Building Department

WHEN RECORDED, PLEASE RETURN TO
(SYSTEM OWNER ADDRESS)

General Land Development Company
1234 Washing Street
Anytown, CA 55555

AGREEMENT
County of San Luis Obispo
Private Stormwater Management System
Operation and Maintenance

Condition Compliance Monitoring Permit #: CCM2023-00024

Property Address: 123 Main Street, Anytown, CA
(Street No. & Street Name, City)

Property APN #: 123-45-789 **Building Permit #:** CBLD2023-12345

Project Description *(hereinafter referred to as "PROJECT")*:
Construct new parking lot on undeveloped parcel.

Legal Description: Refer to Exhibit A, attached hereto
System Description: Refer to Exhibit B, attached hereto

This Agreement is made and entered into in San Luis Obispo, California, this 1 day of June, 2024, by and between General Land Development Company (hereinafter referred to as "OWNER") and the County of San Luis Obispo, located in the State of California, (hereinafter referred to as "County"). This Agreement is made in accordance with existing codes and regulations and in accordance with the approved PROJECT Stormwater Control Plan and specifications on file at the County (hereinafter collectively referred to as "PLANS") with respect to the following recitals:

RECITALS:

The undersigned OWNER of the real property referenced above, hereby covenants with County to utilize on-site stormwater management systems (i.e. structural and/or non-structural) to minimize runoff and pollutants in stormwater runoff and to provide permanent storm drainage maintenance to control, manage, retain, treat, infiltrate and dispose of (1) on-site storm drainage for the PROJECT and (2) ancillary street and site drainage from the adjoining street and sites, as stipulated in the PLANS and in the Stormwater Control Plan on file at the County (hereinafter referred to as "Stormwater Control Plan"). The storm drainage improvements shown and described in Exhibit B are hereinafter referred to as the "SYSTEM".

OWNER is solely responsible for adhering to the requirements set forth in the Stormwater Control Plan and agrees to the following conditions in compliance with all local, state, federal laws and regulations and according to the PLANS and Stormwater Control Plan:

1. **MAINTENANCE:** OWNER shall **maintain** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

2. **MONITORING:** OWNER shall **monitor** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

3. **INSPECTIONS:** OWNER shall **routinely inspect** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

4. **CLEANINGS:** OWNER shall **routinely clean** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

5. **REPAIRS:** OWNER shall repair the **SYSTEM** as required in the Stormwater Control Plan.

6. **DOCUMENT, REPORT, AND FEES:** OWNER shall document all maintenance, monitoring, inspections, cleanings, and repairs made to the SYSTEM in the annual report submitted to County by June 15th of each year in a format approved by County. System Owners will be subject to a Stormwater Annual Inspection and Reporting fee (SWI) based on current County of San Luis Obispo Planning and Building Fee Schedule. Payment of Fee due by June 15th of each year.

7. **COUNTY'S RIGHTS & AUTHORITY: Pursuant to San Luis Obispo County Code Title 22.10.155,** County has the right and authority to inspect the SYSTEM to determine compliance with this agreement (i.e. maintenance, monitoring, inspections, cleanings, repairs, documentation and reporting) which may result in enforcement activities and/or abatement if necessary pursuant to applicable laws and regulations. OWNER hereby consents to County conducting said inspections between the hours of 8:00 a.m. through 5:00 p.m., Mondays through Fridays. This Agreement shall not be construed as precluding County from conducting inspections, which may be necessary due to an emergency.

8. **FAILURE TO MAINTAIN, CLEAN AND/OR REPAIR SYSTEM:** Failure to maintain, monitor, inspect, clean, repair, or document and report as required herein shall constitute a public nuisance. The County may remedy such public nuisance through any of the applicable procedures as set forth in the County of San Luis Obispo Code, and/or may pursue any other

legal or equitable remedies to abate such public nuisance.

9. **INDEMNIFICATION:** Owner further agrees to defend, indemnify, protect and hold the County and its agents, officers and employees harmless from and against any and all claims asserted or liability established for damages or injuries to any person or property, including to Owner's tenants, guests, invitees, agents or employees, which arise from or are connected with or caused or claimed by the acts or omissions of Owner, and its agents, employees or contractors, in performing the obligations specified herein, and all expenses of investigating and defending against same; provided, however, that Owner's duty to indemnify and hold harmless all not include any claims or liability arising from the established sole negligence or willful misconduct of the County, its agents, officers or employees.

10. **BINDING ON FUTURE OWNERS:** This covenant shall run with the land and shall be binding upon the undersigned owners, their heirs, executors, administrators, assigns and successors in interest.

11. **RECORDING OF AGREEMENT:** This Agreement shall be recorded in the office of the San Luis Obispo County Recorder, and such recordation shall serve as notice of the restrictions and obligations contained herein to be performed and observed by Owner and the successors in interest to all or any portion of Owner's Property.

12. **NOTICES:** Any notice, demand, request, consent, approval or communication to OWNER under this Agreement (hereinafter collectively referred to as "Notices") shall be in writing and either served personally or sent by prepaid, first-class mail to the person and address set forth below. Alternately, OWNER may elect to have Notices sent by e-mail if indicated below and an e-mail address is provided. OWNER shall notify County of any change in address, e-mail, or transfer of ownership. Any notice shall be deemed to be effective five calendar days after the date mailed or, if applicable, on the same date the notice was e-mailed.

Jane Doe	1234 Washington Street
System Owner *(Printed Name)*	**Owner's Street Address**
President	Anytown, CA 55555
Business Affiliation and Title *(if applicable)*	**Owner's City/State, Zip Code**
6/1/2024	Jane@email.com
Date	**Owner's Email Address:**

I agree to receive Notices by e-mail: (●) Yes ( ) No

COUNTY OF SAN LUIS OBISPO:

Cheryl Journey
Cheryl Journey *(Signature)*

County of San Luis Obispo

6/1/2024
Date

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN LUIS OBISPO)

On June 1, 2024, before me, Notary Name, a Notary Public, in and for the State of California, personally appeared Cheryl Journey, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[SEAL]

Signature *Notary Name*
Signature of Notary Public

OWNER:

Jane Doe	6/1/2024
System Owner *(Signature)*	**Date**
Jane Doe	
System Owner *(Printed Name)*	
President	
Business Affiliation and Title *(if applicable)*	

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN LUIS OBISPO)

On June 1, 2024, before me, Notary Name, a Notary Public, in and for the State of California, personally appeared Jane Doe, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[SEAL]

Signature *Notary Name*
Signature of Notary Public

Exhibit A
Property Legal Description in Full

LEGAL DESCRIPTION

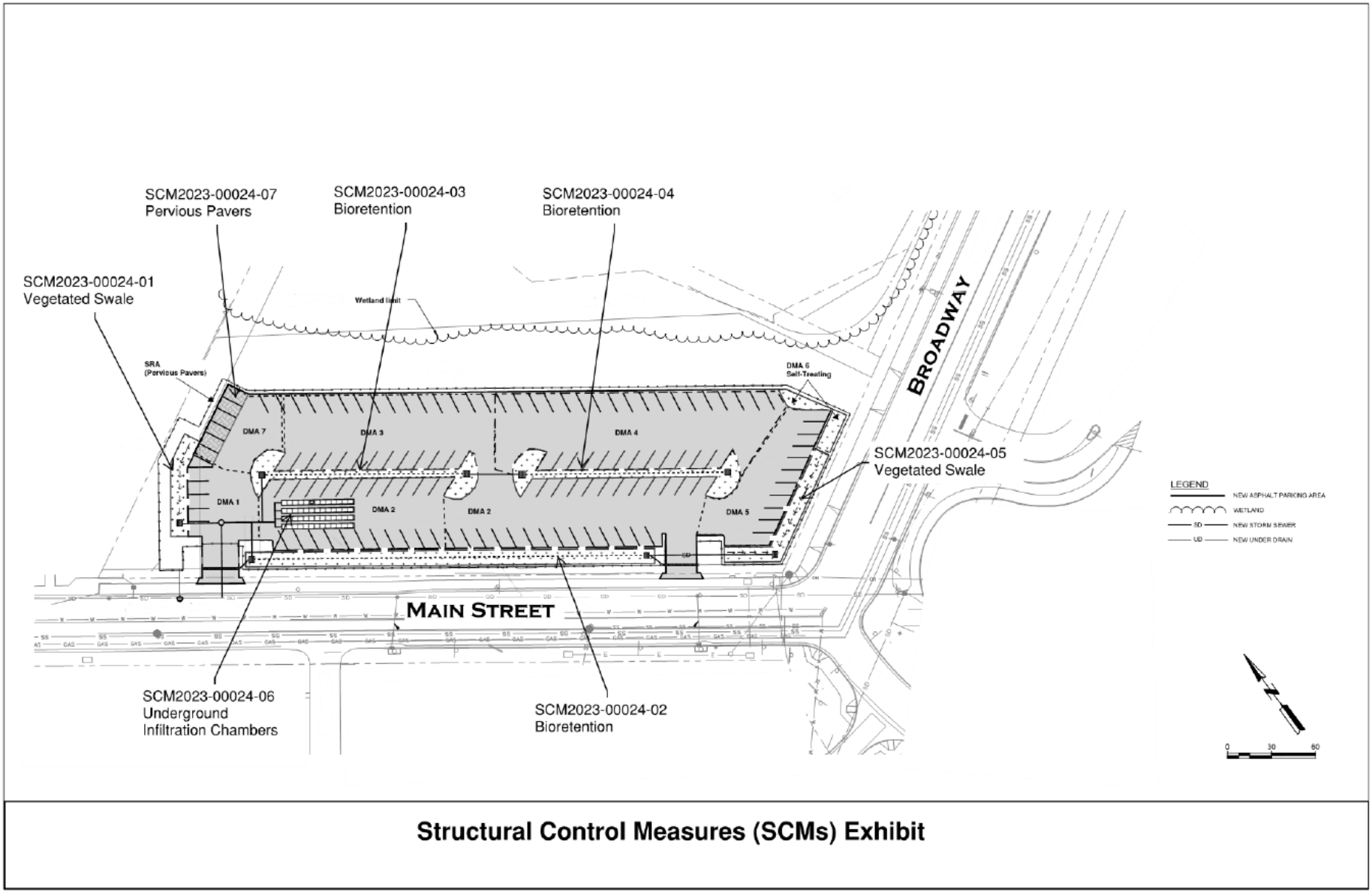
Real property in the unincorporated area of the County of San Luis Obispo, State of California, described as follows:

PARCEL A:

A PORTION OF PARCEL MAP CO-78-215 SITUATED IN THE COUNTY OF SAN LUIS OBISPO, STATE OF CALIFORNIA, AS SHOWN ON A MAP RECORDED IN BOOK 28 OF PARCEL MAPS PAGE 84 IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY AND BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT BEING THE MOST NORTH WESTERLY CORNER OF PARCEL 2 ACCORDING TO SAID PARCEL MAP; THENCE NORTH 89° 57' 27" EAST 1272.35 FEET TO A POINT BEING THE MOST NORTH EASTERLY CORNER OF SAID PARCEL 2 OF SAID PARCEL MAP; THENCE SOUTH 00° 42' 10" WEST 209.17 FEET ALONG THE EASTERLY LINE OF SAID PARCEL TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00° 42' 10" WEST 475.60 FEET TO A POINT;
THENCE NORTH 89° 57' 27" EAST 1176.38 FEET TO A POINT TO EAST BOUNDARY;
THENCE NORTH 29° 15' 25" EAST ALONG THE EAST BOUNDARY 109.55 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF BUCKLEY ROAD AS SHOWN ON A MAP FILED WITH THE COUNTY RECORDER'S OFFICE OF SAID COUNTY IN BOOK 80 AT PAGE 2 OF LICENSED SURVEYS; SAID POINT BEING ON A CURVE TO THE RIGHT, CONCAVE TO THE NORTH, HAVING A RADIUS OF 805.00 FEET AND A RADIAL OF NORTH 25° 46' 21" EAST; THENCE NORTHWESTERLY ALONG SAID CURVE 130.26 FEET TO A POINT ON SAID RIGHT-OF- WAY;
THENCE CONTINUING ALONG SAID RIGHT-OF-WAY NORTH 55° 00' 12" WEST 457.45 FEET;
THENCE NORTH 59° 24' 08" WEST 65.19 FEET TO A POINT ON SAID RIGHT-OF-WAY;
THENCE NORTH 82° 51' 18" WEST 99.34 FEET TO A POINT ON SAID RIGHT-OF-WAY;
THENCE LEAVING SAID RIGHT-OF-WAY NORTH 89° 28' 18" WEST 582.49 FEET TO THE TRUE POINT OF BEGINNING.

PURSUANT TO LOT LINE ADJUSTMENT RECORDED MAY 16, 2007 AS DOCUMENT NO. 2007033357, SAN LUIS OBISPO COUNTY OFFICIAL RECORDS.



Structural Control Measures (SCMs) Exhibit

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-01

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☐ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☑ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft²): 2500	
	Narrative Location Description: Vegetated swale along northwest edge of property.			
	Drainage Management Area (DMA) Number: 1		Drainage Area Treated (acres): 0.06	
	Latitude: 35.240612		Longitude: -120.641442	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft³):			
5. Design Details *(As applicable):*	Width (ft²): 3		Slope (ft/ft): 0	
	Depth (ft): 1		SCM Capacity/Volume (ft³): 54	
	Length (ft): 54		Surface Area (ft²): 54	
	Is this SCM subsurface? ○ YES ◉ NO		SCM Vegetated? ◉ YES ○ NO	
	Design Vegetation Height (ft): 1		Does this SCM involve a manufactured product? ○ YES ◉ NO	
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:			
	Manufacturer/Model Number:			
	Total Number Installed Onsite:			
	Estimated Product Life:			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☐ Annually ☑ Biennially		

Page ☐ of ☐

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-02

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☑ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft^2): 10000	
	Narrative Location Description: Bioretention basin along south edge of property.			
	Drainage Management Area (DMA) Number:	1	Drainage Area Treated (acres):	0.23
	Latitude: 35.240337		Longitude: -120.641052	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft^3):		871 PR2, 1504 PR3	
5. Design Details *(As applicable):*	Width (ft^2):		Slope (ft/ft):	
	Depth (ft):		SCM Capacity/Volume (ft^3):	1650
	Length (ft):		Surface Area (ft^2):	1650
	Is this SCM subsurface?	○ YES ◉ NO	SCM Vegetated?	◉ YES ○ NO
	Design Vegetation Height (ft):	1	Does this SCM involve a manufactured product?	○ YES ◉ NO
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:			
	Manufacturer/Model Number:			
	Total Number Installed Onsite:			
	Estimated Product Life:			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially		

Page ☐ of ☐

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-03

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☑ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☐ Onsite ☐ Offsite		Contributing Impervious Area (ft²): 5000	
	Narrative Location Description: Bioretention basin parking island west side.			
	Drainage Management Area (DMA) Number: 3		Drainage Area Treated (acres): 0.11	
	Latitude: 35.240509		Longitude: -120.641186	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft³): 435 PR2, 752 PR3			
5. Design Details *(As applicable):*	Width (ft²):		Slope (ft/ft): 0	
	Depth (ft):		SCM Capacity/Volume (ft³): 900	
	Length (ft):		Surface Area (ft²): 900	
	Is this SCM subsurface? ○ YES ◉ NO		SCM Vegetated? ◉ YES ○ NO	
	Design Vegetation Height (ft): 1		Does this SCM involve a manufactured product? ○ YES ◉ NO	
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:			
	Manufacturer/Model Number:			
	Total Number Installed Onsite:			
	Estimated Product Life:			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially		

Page ☐ of ☐

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-04

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☑ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft^2):	
	Narrative Location Description: Bioretention basin parking island east side.			
	Drainage Management Area (DMA) Number:	4	Drainage Area Treated (acres):	
	Latitude: 35.240285		Longitude: -120.640567	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft^3):	871 PR2, 1504 PR3		
5. Design Details *(As applicable):*	Width (ft^2):		Slope (ft/ft):	0
	Depth (ft):		SCM Capacity/Volume (ft^3):	900
	Length (ft):		Surface Area (ft^2):	900
	Is this SCM subsurface?	○ YES ◉ NO	SCM Vegetated?	◉ YES ○ NO
	Design Vegetation Height (ft):	1	Does this SCM involve a manufactured product?	○ YES ◉ NO
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:			
	Manufacturer/Model Number:			
	Total Number Installed Onsite:			
	Estimated Product Life:			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially		

Page ☐ of ☐

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-05

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☐ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☑ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft²): 2500	
	Narrative Location Description: Biofiltration basin on east side of property.			
	Drainage Management Area (DMA) Number:	5	Drainage Area Treated (acres):	0.06
	Latitude: 35.240153		Longitude: -120.640332	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft³):	100 PR2		
5. Design Details *(As applicable):*	Width (ft²):	3	Slope (ft/ft):	
	Depth (ft):	1	SCM Capacity/Volume (ft³):	72
	Length (ft):	72	Surface Area (ft²):	72
	Is this SCM subsurface?	○ YES ◉ NO	SCM Vegetated?	◉ YES ○ NO
	Design Vegetation Height (ft):	1	Does this SCM involve a manufactured product?	○ YES ◉ NO
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:			
	Manufacturer/Model Number:			
	Total Number Installed Onsite:			
	Estimated Product Life:			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially		

Page ☐ of ☐

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-06

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☐ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☑ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft²): 25000	
	Narrative Location Description: Underground infiltration chambers in southwest corner of parking lot			
	Drainage Management Area (DMA) Number: 1-5		Drainage Area Treated (acres): 0.57	
	Latitude: 35.240493		Longitude: -120.641346	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft³):			
5. Design Details *(As applicable):*	Width (ft²): 40		Slope (ft/ft): 0	
	Depth (ft):		SCM Capacity/Volume (ft³): 14000	
	Length (ft): 55		Surface Area (ft²):	
	Is this SCM subsurface? ◉ YES ○ NO		SCM Vegetated? ○ YES ◉ NO	
	Design Vegetation Height (ft): 0		Does this SCM involve a manufactured product? ◉ YES ○ NO	
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name: ADS			
	Manufacturer/Model Number: Stormtech MC-3500			
	Total Number Installed Onsite: 4 x 55' long rows			
	Estimated Product Life: 20			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially		

Page ☐ of ☐

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2023-00024-07

1. Performance Requirement Addressed *(check all that apply):*	☐ Water Quality Treatment (Performance Requirement #2)	☐ Runoff Retention (Performance Requirement #3)	☐ Peak Management (Performance Requirement #4)
2. Type of SCM Installed:	☐ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☑ Pervious Pavement ☐ Media Filter ☐ Treatment Vault

3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft²): 0	
	Narrative Location Description: Pervious pavers located in northwest corner of parking lot.			
	Drainage Management Area (DMA) Number:		Drainage Area Treated (acres):	
	Latitude: 35.240663		Longitude: -120.641383	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft³):			
5. Design Details *(As applicable):*	Width (ft²):		Slope (ft/ft):	
	Depth (ft):		SCM Capacity/Volume (ft³):	
	Length (ft):		Surface Area (ft²):	1500
	Is this SCM subsurface?	○ YES ◉ NO	SCM Vegetated?	○ YES ◉ NO
	Design Vegetation Height (ft):	0	Does this SCM involve a manufactured product?	◉ YES ○ NO
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:		Air Vol Block	
	Manufacturer/Model Number:		Permeable Roman Pavers	
	Total Number Installed Onsite:		1500 SF	
	Estimated Product Life:		50 years	
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially		

Page ☐ of ☐

SWP-1008
06/01/2024

Private Stormwater System Plans and Manuals

Vegetated Stormwater Control Measures Maintenance Information

Structural Control Measure (SCM) Maintenance Details	Assigned SCM#: 2023-00024-01, 2023-00024-05
	SCM Feature Type: ☐ Biofiltration Feature ☐ Bioretention Feature ☑ Vegetated Swale ☐ Vegetated Buffer Strip

Does the feature utilize vegetation or specialized soil media? ☑ YES ☐ NO	Contact for vendor who can provide replacement plants or soil media: Landscape Vendor

Estimated annual cost for maintenance:
$750

List vegetation species and soil media type originally installed:
Biofiltration Soil Media (BSM) consisting of 60-70% sand and 30-40% compost.
For planting schedule and species see Civil or Landscape Plans.
Basin vegetation include the following: Iris Douglasiana, Juncus Patens, and Carex Passa.

Describe short-term maintenance requirements (irrigation schedule, weed control, vegetation height, etc.):
Trash removal, weed control, and removal of debris.

Describe long-term maintenance requirements (litter removal, inlet/outlet maintenance, etc.):
Trash removal, BSM replacement, plant replacement, energy dissipater rock replacement, and outlet structure cleaning.

Contact information for local professional qualified to maintain or repair this SCM:
Landscape Vendor

Additional notes:

SWP-1008
06/01/2024

Private Stormwater System Plans and Manuals

Vegetated Stormwater Control Measures Maintenance Information

Structural Control Measure (SCM) Maintenance Details	Assigned SCM#: 2023-00024-02, 2023-00024-03, 2023-00024-04
	SCM Feature Type: ☐ Biofiltration Feature ☑ Bioretention Feature ☐ Vegetated Swale ☐ Vegetated Buffer Strip

Does the feature utilize vegetation or specialized soil media? ☑ YES ☐ NO	Contact for vendor who can provide replacement plants or soil media: Landscape Vendor

Estimated annual cost for maintenance:
$750

List vegetation species and soil media type originally installed:
Biofiltration Soil Media (BSM) consisting of 60-70% sand and 30-40% compost.
For planting schedule and species see Civil or Landscape Plans.
Basin vegetation include the following: Iris Douglasiana, Juncus Patens, and Carex Passa.

Describe short-term maintenance requirements (irrigation schedule, weed control, vegetation height, etc.):
Trash removal, weed control, and removal of debris.

Describe long-term maintenance requirements (litter removal, inlet/outlet maintenance, etc.):
Trash removal, BSM replacement, plant replacement, energy dissipater rock replacement, and outlet structure cleaning.

Contact information for local professional qualified to maintain or repair this SCM:
Landscape Vendor

Additional notes:

SWP-1008
06/01/2024

Private Stormwater System Plans and Manuals

Subsurface Stormwater Control Measure Maintenance Information

Structural Control Measure (SCM) Maintenance Details	Assigned SCM#: 2023-00024-06
	SCM Feature Type: ☐ Media Filter ☐ Treatment Vault ☐ Detention Basin ☑ Infiltration Feature/Basin/Chamber
Does the SCM include a proprietary device/structure? ☑ YES ☐ NO	Contact for vendor who can provide replacement parts or maintenance instructions: ADS 1-800-821-6710
Describe short-term maintenance requirements (frequency of replacement or inspection): Removal of trash, sediment, and other debris.	
Estimated annual cost for maintenance: $1000	
Describe long-term maintenance requirements: Removal of trash, sediment, and other debris. Video inspection and vacuum sediments out of chambers.	
Contact information for local professional qualified to maintain or repair this SCM: Local Vacuum/pump company.	
Additional notes:	

SWP-1008
06/01/2024

Private Stormwater System Plans and Manuals

Porous Pavement and Catch Basin Insert Maintenance Information

Structural Control Measure (SCM) Maintenance Details	Assigned SCM#: 2023-00024-07 **SCM Feature Type:** ☐ Porous Concrete ☑ Pervious Pavers
Does the SCM include a proprietary device/structure? ☑ YES ☐ NO	Contact for vendor who can provide replacement parts or maintenance instructions: Air Vol Block Inc
Describe short-term maintenance requirements (frequency of filter replacement or inspection): Remove trash and other debris that impedes stormwater infiltration. Replace media between pavers as needed.	
Estimated annual cost for maintenance: $200	
Describe long-term maintenance requirements: Removal of trash, sediment, and other debris. Sweep and vacuum sediments.	
Contact information for local professional qualified to maintain or repair this SCM: Local Sweep/Vacuum company.	
Additional notes:	

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PLANNING & BUILDING

SWP-1003
06/08/2017

Private Stormwater System Owner, Agent, & Designer Information

2023-00024	*CBLD2023-12345*
Condition Compliance Monitoring (CCM) Case Number (CCM20##-#####)	Building Permit Number (PMT20##-#####)
123 Main Street, Anytown, CA	
Project Address	

SYSTEM OWNER:

General Land Development Company, Jane Doe	
Current Property Owner *(Include name of primary contact)*	
1234 Washington Street	
Street Address	
Anytown	CA
City	**State**
55555	(555) 123-4567
Zip Code	**Phone Number**
Jane@email.com	
Owner Email:	

SYSTEM DESIGNER:

General Civil Engineering Consultants, Inc., John Doe	
Designer Name and Affiliation	
PE 12345	
Designer License Number and Type	
1234 Washington Street	
Street Address	
Anytown	CA
City	**State**
55555	555-123-4567
Zip Code	**Phone Number**
John@emal.com	
Designer Email:	

SWP-1003
06/08/2017

Private Stormwater System Owner, Agent, & Designer Information

2023-00024	*CBLD2023-12345*
Condition Compliance Monitoring (CCM) Case Number (CCM20##-#####)	Building Permit Number (PMT20##-#####)

123 Main Street, Anytown, CA
Project Address

PROJECT AGENT (if applicable):

Cool Consultng, Joe Cool
Agent Name and Affiliation
(Include name of primary contact)

990 Palm Street
Street Address

San Luis Obispo	CA
City	**State**
93401	(555) 555-5555
Zip Code	**Phone Number**

JC@cool.com
Agent Email:

COORDINATING COUNTY REPRESENTATIVE:

Stormwater Program Manger
County Representative *(Printed Name)*

Stormwater Program Manager, Department of Planning and Building
County Representative Title

stormwater.scm@co.slo.ca.us	(805) 781-5602
Email	**Phone**

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS

STORMWATER CONTROL PLAN APPLICATION

Departmental Use Only

Do Not Mark

Applicant and Designer Information

Applicant Name:	John Doe	Daytime Phone:	555-123-4567
Mailing Address:	123 Any Street, Anytown	Zip Code:	00000
Email Address:	john@email.com		

Designer Name:	Jane Doe	Daytime Phone:	555-123-4567
Mailing Address:	456 Any Street, Anytown	Zip Code:	00000
Email Address:	jane@gmail.com		

Project Information

☐ Preliminary entitlements- Subdivision or Land Use Permit approval	■ Final- Building and/or Grading Permit for construction
Land Use Permit Number(s):	Building Permit Number(s): CBLD2024-1234
Project Address: 1234 San Luis Bay Drive, Avila Beach	Assessor's Parcel Number (APN): 123-45-678
Brief narrative description of project: Hotel expansion adding 12 rooms in a new building, parking lot and accessibility improvements.	

Impervious Surface Areas

Calculate and identify all items listed in the table below.

Total Existing Impervious Area (square feet): Existing buildings, pavement, etc. within project area	2700
New Impervious Area (square feet): Example: New buildings, new pavement, etc.	5200
Replaced Impervious Area (square feet): Example: Buildings demolished to build a new parking lot or vice versa	1300
Reduced Impervious Area (square feet): Example: Pavement/buildings demolished with area scarified, re-vegetated, replaced with pervious pavers, etc.	0
Credit for Reduced Impervious Area (square feet): If [**New** + **Replaced**) > **Total Existing**, use **Credit = 0** If (**New** + **Replaced**) < **Total Existing**, use **Credit = Reduced**	0
Net Impervious Area (square feet) = (**New** + **Replaced**) - **Credit**	6500

STORMWATER CONTROL PLAN APPLICATION

Stormwater Performance Requirements

The following table summarizes the mandatory Performance Requirements based on the amount of impervious surface area that is created or replaced. Please review this table to determine which requirements apply to the project.

Net Impervious Surface square feet	**Performance Requirements**			
	Performance Requirement #1	Performance Requirement #2	Performance Requirement #3	Performance Requirement #4
0 - 2,499	*Complete Stormwater PCR Waiver Request Form*			
2,500 - 4,999	✔			
5,000 - 14,999	✔	✔ *		
15,000 – 22,499	✔	✔	✔	
≥ 22,500	✔	✔	✔	✔

** Not applicable for a single-family residence*

Check the applicable performance requirements and indicate whether the project meets the requirement:

Performance Requirement #1- Site Design	Requirement met? ■ Yes ☐ No
(Projects that meet Performance Requirement 1 only, complete this SWCP application and attach any applicable exhibits)	
Performance Requirement #2- Water Quality Treatment	Requirement met? ■ Yes ☐ No
Performance Requirement #3- Runoff Retention	Requirement met? ☐ Yes ■ No
Performance Requirement #4- Peak Management	Requirement met? ☐ Yes ■ No

- **Projects that create or replace less than 2,500 square feet of impervious surface area must complete and submit the Stormwater PCR Waiver Request Form.**
- **Projects required to meet Performance Requirement 1 only, must complete this SWCP application and attach any applicable exhibits.**
- **Projects required to meet Performance Requirement 2, 3, or 4, must submit this SWCP application in addition to a complete Stormwater Control Plan using the County provided template.**

STORMWATER CONTROL PLAN APPLICATION

Performance Requirement #1: Site Design Measures Applicants Can Incorporate to Reduce Stormwater Impacts

Applicants are encouraged to reduce stormwater impacts associated with development and redevelopment.

Performance Requirement 1: Site Design and Runoff Reduction Summary

Minimize stormwater runoff by implementing <u>one or more</u> of the following Site Design Measures.
Selected Design Measures must be clearly referenced on the project plans.

Site Design Measures	Implemented?	If Yes, provide Plan Sheet / Detail location	If No, provide an explanation below
Roof runoff directed into cisterns or rain barrels for reuse?	☐ Yes ■ No		Limited space to implement an onsite reuse system.
Roof runoff directed into vegetated areas (safely away from building foundations and footings)?	■ Yes ☐ No	EX-1, Detail 2	
Runoff from sidewalks, walkaways, and/or patios directed onto vegetated areas (safely away from the building foundations and footings)?	■ Yes ☐ No	EX-2, Detail 2	
Runoff from driveways and/or uncovered parking lots onto vegetated areas (safely away from the building foundations and footings)?	☐ Yes ■ No		Not feasible due to existing curb grades.
Are bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios constructed with permeable surfaces?	■ Yes ☐ No	EX-1, Detail 4	

Performance Requirement #1: Stormwater Site Design & Runoff Reduction Summary

For each of the following, please describe how this project has complied to the maximum extent practicable with the following site design and runoff reduction:

1. Limit disturbance of creeks and natural drainage features.
Construction is within established setbacks from creek bank. No construction work will occur within the setback.

STORMWATER CONTROL PLAN APPLICATION

2. Minimize compaction of highly permeable soils.
Onsite soils are not highly permeable having been graded and compacted in original tract development. Project is an infill development on imported fill soils.

3. Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection.
Development envelope is in an existing cleared and utilized space. Riparian vegetation near the creek will not be disturbed or impacted by the project.

4. Minimize impervious surfaces by concentrating improvements on the least-sensitive portions of the site, while leaving the remaining land in a natural, undisturbed state.
Sensitive riparian habitat adjacent to the project will be undisturbed and protected from construction activity.

Certification*

I hereby certify that this project is designed to achieve full compliance with each of the applicable Central Coast Post-Construction Requirements.

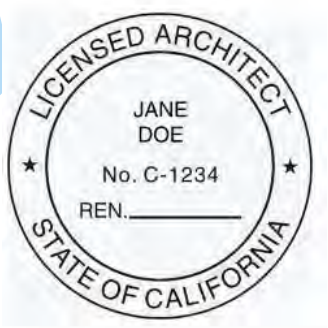
Preparer Name: Jane Doe	
Preparer Signature: *Jane Doe*	Date: 03/01/2024
Was this application completed by a registered professional? ■ Yes ☐ No	
License Number: C-1234	License Type: Architect
Stamp: 	

*Certification is required for projects subject to Performance Requirements 2, 3, or 4 and may be provided by a registered professional engineer, geologist, architect, and/or landscape architect.

Post-Construction Stormwater Control Plan for:
San Luis Bay Hotel Expansion Project, Avila Beach

Date:	03/01/2024
Name of owner:	John Doe
Owner's representative and contact information:	General Land Development Company (555) 123-4567
Plan prepared by:	General Civil Engineering & Architecture Consultants Inc.
Preparer's name and contact information:	Jane Doe (555)123-4567 jane@email.com
Submitted to:	County of San Luis Obispo

Preparer's signed stamp:



APPENDIX E
EXAMPLE PROJECT: San Luis Bay Hotel Expansion Project, Avila Beach

Stormwater Control Plan Submittal Completion Checklist

Exhibits:

Element	Included?	Notes
Exhibit depicting SCMs, Drainage Management Areas (DMAs).	Yes	Attachment 1
Exhibit depicting pre and post project pervious and impervious areas.	Yes	Attachment 1
Opportunities and constraints map.	N/A	N/A

Required Submittals for PR#2

Element	Included?	Notes
Source control checklist.	Yes	
Plan sheet detail indicating location of PR#1 implementation.	Yes	
Draft long-term operations and maintenance plan.	Yes	

Required Submittals for PR#3

Element	Included?	Notes
LID opportunities and constraints analysis with map.	N/A	Project does not meet threshold for PR#3.
Underground infiltration system pretreatment device certification.	N/A	
Soils testing report and design infiltration rate supporting documentation.	N/A	

Requirements for PR#4

Element	Included?	Notes
Calculations for peak management.	N/A	Project does not meet threshold for PR#4.

APPENDIX E
EXAMPLE PROJECT: San Luis Bay Hotel Expansion Project, Avila Beach

Table of Contents

List of Tables

List of Figures

List of Attachments

APPENDIX E
EXAMPLE PROJECT: San Luis Bay Hotel Expansion Project, Avila Beach

1. Summary Project Data

Table 1 provides a summary of project data related to demonstrating compliance with the Post-Construction Stormwater Management Requirements (the PCRs) for Development Projects in the Central Coast [Resolution R3-2013-0032]. The proposed project is designed to comply with applicable requirements outlined in the PCRs.

Table 1: Summary Project Data

Project name:	San Luis Bay Hotel Expansion			
Project or permit number:	CBLD2024-1234			
Preliminary or Final SWCP:	☐ Preliminary entitlements Subdivision or Land Use Permit approval.	☒ Final Building and/or Grading Permit for construction.		
Project location:	1234 San Luis Bay Drive, Avila Beach APN 123-45-6789			
Project Description:	New building for hotel expansion, parking lot and accessibility improvements.			
Total project site area:	0.29 acres 12,680 SF			
Total Existing Impervious Area:	2,700 SF			
New Impervious Area:	5,200 SF			
Replaced impervious Area:	1,300 SF			
Reduced Impervious Area:	N/A			
Credit for Reduced Impervious Area: *If [New + Replaced) > Total Existing, Credit = 0* *If (New + Replaced) < Total Existing, Credit = Reduced*	0 SF			
Net impervious area:	6,500 SF			
Watershed management zone:	WMZ 1			
Design storm frequency and depth:	☒ 85th percentile	☐ 95th percentile	1.1”	
Applicable performance requirements:	☒ PR #1	☒ PR #2	☐ PR #3	☐ PR #4

Table 2 summarizes the predominant soil characteristics of the development site and data generated from web generated soils reports and site soils explorations and testing.

Table 2: Site Soils summary data

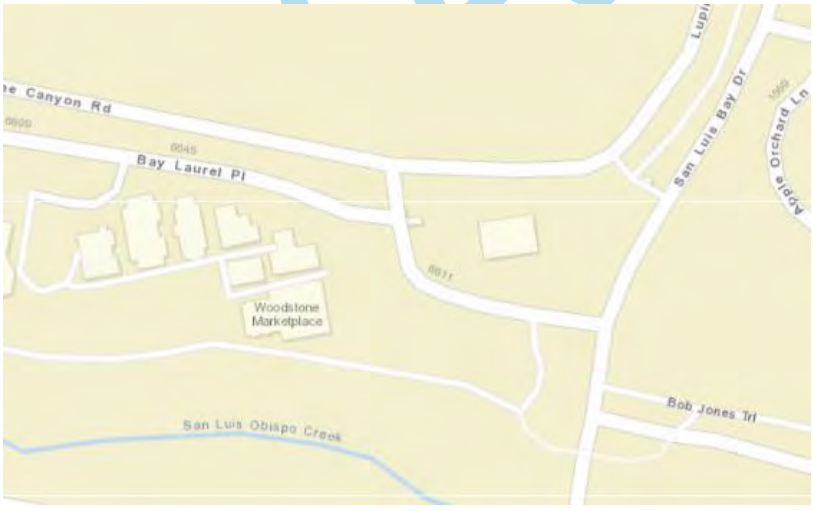
Predominant soil type(s) of site:	Alluvial soft clays and sands.			
Predominant hydrologic soils group classification of site:	☐ Group A	☐ Group B	☒ Group C	☐ Group D
Soils testing conducted at site:	☐ Borings		☐ Percolation testing	
	☐ Infiltration testing		☒ Other	
Brief summary of soil testing conducted:	Cone penetration test (descriptive only – no percolation/infiltration tests)			
Design soil infiltration rate:	0.25 in/hr			
Factor of Safety applied:	N/A			

2. Project setting

a. Project Location and Description

The project consists of construction of a standalone expansion to an existing hotel. Maintaining the existing commercial zoning, the project proposes a 3-story hotel with 12 rooms. The building will contain approximately 10,150 square feet of usable area within a 4,210 square foot impervious footprint. Beyond the structure, the project will reconfigure sidewalk and four existing parking spots to meet current accessibility requirements.

Figure 1:Project Vicinity Map



b. Existing Site Features and Conditions

The project site is a 0.23-acre lot that was previously graded with fill during construction of Tract 1234 in the 1990s. The lot has been used as amenity open space since construction of the tract in the early 2000s.

The current site condition is landscaping (primarily turf) over fill soils. The existing limited impervious areas consist of access flatwork, a concrete picnic area, and a decorative accessory structure. Runoff is generally directed to an existing storm drain system constructed with the Tract. The Bob Jones Trail is located beyond the southern site boundary and San Luis Obispo Creek. The site is in the San Luis Obispo Creek floodplain but only vulnerable to inundation in extreme flood events.

The site soils as mapped by NRCS are shown below. The underlying site soils are defined by the NRCS as HSG C. During soils testing, groundwater was noted approximately 20 feet below ground.

Figure 2: Project Site Soils Map (optional)

c. Opportunities and Constraints for Stormwater Control

Projects triggering PR#3 and above are required to submit a LID opportunities and constraints analysis.

This project is PR#3 or above:	☐ Yes	☒ No	
The LID opportunities and constraints checklist is included as an Attachment to this SWCP.	☐ Yes	☐ No	☒ Not Applicable
The LID opportunities and constraints site map is included as an Attachment to this SWCP.	☐ Yes	☐ No	☒ Not Applicable

3. Low Impact Development Design Strategies

a. Site Design Strategies

Performance Requirement #1 is applicable to all regulated projects that create and/or replace ≥2,500 sf of impervious surface area. This project has incorporated Low Impact Development site design strategies as detailed below.

Limit disturbance to creeks and natural drainage features
Construction is sited beyond creek banks and natural drainage features.

Minimize compaction of highly permeable soils
Onsite soil is not highly permeable having been graded and compacted in original Tract development.

Limit clearing and grading of native vegetation to minimum area necessary
Development envelope is preexisting cleared and utilized space. Creekside vegetation will not be disturbed for the project.

Minimize impervious surfaces and concentrate improvements on the least-sensitive portions of the site.
The most sensitive areas near the creek will be left undisturbed.

b. Runoff Reduction Strategies

Performance Requirement #1 mandates that one or more runoff reduction measures be integrated into the site design. Table 3 indicates where runoff reduction measures have been incorporated into the proposed project.

Table 3: Performance Requirement #1 Runoff Reduction Strategies

Runoff Reduction Strategy	Guidelines	Location implemented	Plan sheet and detail
Direct roof runoff into cisterns or rain barrels for reuse.	Minimum 100-gallon volume for collection.	N/A	N/A
Direct roof runoff to vegetated areas away from foundations and footings.	Minimum 10% of roof area directed to vegetated areas.	100% of 4,210 SF roof to biofiltration basin, OK	C-1.1, C1.2

Direct runoff from sidewalks, walkways and/or patios onto vegetated areas.	Minimum 10% of flatwork* area drainage directed to vegetated areas.	1,330 SF flatwork to vegetated areas / 2,770 SF total flatwork area 48% > 10% OK	C-1.1
Direct runoff from driveways and/or parking lots onto vegetated areas.	Minimum 10% of flatwork area drainage directed to vegetated areas.	N/A	N/A
Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces.	Minimum 10% of flatwork area constructed with permeable surfaces.	480 SF Pervious Pavers / 2,770 SF total flatwork area 17% > 10% OK	C-1.1 Detail C-4.1

**Flatwork refers to smooth paved surfaces such as sidewalks, driveways, pathways, or parking lots.*

Additional site design and runoff reduction strategies are required for projects that must comply with Performance Requirement #3. Table 4 indicates the design strategies that were incorporated into the project design to optimize the use of LID.

Table 4: Performance Requirement #3 Additional LID Design Strategies

Augmented PR#3 LID Design Strategies	**Implemented?**	**Explanation**
Define the development envelope and protected areas. Identify areas suitable for development and areas to remain undisturbed.	☐ Yes ☐ No	
Conserve natural areas, including existing trees, vegetation, and soils.	☐ Yes ☐ No	
Limit the overall impervious footprint of the project.	☐ Yes ☐ No	
Construct streets, sidewalks, parking lot aisles to minimum widths required.	☐ Yes ☐ No	
Set back development from creeks, wetlands, and riparian habitats.	☐ Yes ☐ No	
Conform the site layout along natural landforms.	☐ Yes ☐ No	
Avoid excessive grading and disturbance of vegetation and soils.	☐ Yes ☐ No	
Table 4 is not applicable to this project.	☒ The requirements of this table are not applicable to the project. This project is not required to comply with Performance Requirement #3.	

c. Self-treating and self-retaining areas

This project reduces the amount of runoff for which Stormwater Structural Control Measures (SCM) are required by utilizing self-treating and self-retaining areas.

The parking lot improvements include conversion of some stalls to permeable pavers. The pavers have been designed with adequate gravel storage to treat runoff from the tributary impervious area. However the total tributary area to the pavers including adjacent pervious areas exceed the maximum 2:1 run on ratio. Therefore the pavers are considered an SCM rather than a Self Retaining Area (SRA).

4. Documentation of Drainage Design

a. Drainage Management Areas Summary

The project site has been delineated into distinct Drainage Management Areas (DMAs), sized per the guidelines in the County of San Luis Obispo Post-Construction Stormwater Guidebook. Descriptions of each DMA are included in Table 5.

Table 5: Drainage Management Areas and Characteristics

DMA Number/ID	Surface Type & description	Area (sf)	Drains to:		
DMA 1	Parking lot improvements, access flatwork, and landscape	4,240	☐ Self-treating	☐ Self-retaining	☒ SCM
DMA 2	Hotel structure, flatwork, and landscape	8,430	☐ Self-treating	☐ Self-retaining	☒ SCM

b. Stormwater Structural Control Measures

Structural Control Measures for PR#2 Treatment

This project requires construction of Stormwater Structural Control Measures (SCMs) to treat runoff in compliance with Performance Requirement #2, Water Quality Treatment. Treatment for each DMA is provided by one of the following types of features:

(1) Bioretention Basins
Required SCM Capacity = Volume (CF) of 85th percentile storm runoff from DMAs flowing to SCM
Provided SCM Capacity = Design volume (CF) of bioretention basin

(2) Biofiltration Features (i.e., bioretention w/ underdrain)
Required SCM Capacity = Impervious area (SF) of DMA(s) flowing to SCM x 0.04
Provided SCM Capacity = Surface area of SCM

(3) Vegetated Flow-Based Treatment (i.e. vegetated swales, vegetated buffer strips)
Required SCM Capacity = Minimum swale length (ft) or minimum strip width (ft)
Provided SCM Capacity = Actual swale length (ft) or strip width (ft)

(4) Mechanical Flow-Based Treatment Devices (i.e., filters, mechanical separators)
Required SCM Capacity = Peak flow rate (CFS) to SCM

Provided SCM Capacity = Maximum recommended flow rate (CFS) to the SCM for effective treatment per manufacturer's specifications or design

No treatment is to be provided by direct infiltration facilities. All direct infiltration facilities must receive flows treated by flow-based treatment devices or by above-ground biofiltration or bioretention facilities. Direct infiltration should be reserved for retention and peak management.

Key attributes of these SCMs for Water Quality Treatment are summarized in Table 6. Calculations are included in Attachment 2.

Table 6: Structural Control Measure Summary Table (PR2 – Treatment Only)

SCM Number/ID	**DMA Number/ID**	**SCM Type**	**Required SCM Capacity (CFS, SF, FT, CF)**	**Provided SCM Capacity (CFS, SF, FT, CF)**
SCM 1	DMA 1	Pervious Pavers	133 CF	240 CF
SCM 2	DMA 2	Biofiltration	95 SF	320 SF

Structural Control Measures for PR#3 Retention

This project requires construction of Stormwater Structural Control Measures to achieve compliance with Performance Requirement #3, Retention. Key attributes of the SCMs are summarized in Table 7.

Table 7: Structural Control Measure Summary Table (PR3 – Runoff Retention)

SCM Number/ID	**DMA Number/ID**	**SCM Type**	**Required SCM volume (CF)** (Area x runoff coefficient x 85th percentile rainfall depth)	**Provided SCM volume (CF)**
Table 7 is not applicable to this project.			☒ The requirements of this table are not applicable to the project. This project is not required to comply with Performance Requirement #3.	

Summary of Structural Control Measures (PR4 – Peak Management)

This project requires construction of Stormwater Structural Control Measures to achieve compliance with Performance Requirement #4, Peak Management. Key attributes of the SCMs are summarized in Table 8.

Table 8: Structural Control Measure Summary Table (PR4 – Peak Management)

SCM Number/ID	**DMA Number/ID**	**SCM Type**	**2-Year Storm Runoff (CFS)**		**5-Year Storm Runoff (CFS)**		**10-Year Storm Runoff (CFS)**	
			Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**

Table 8 is not applicable to this project.	☒ The requirements of this table are not applicable to the project. This project is not required to comply with Performance Requirement #4.

Underground Structural Control Measures

Projects that intend to utilize underground stormwater structural control measures for retention, infiltration, or peak management must complete Table 9.

Table 9: Subgrade Stormwater Structural Control Measures

This project includes subgrade SCMs: (i.e. dry wells, chambers, vaults.)	☐ Yes	☐ No
The project design distributes at least 30% of the post-construction runoff volume to at-grade SCMs or LID features.	☐ Yes	☐ No *(If no, provide explanation below)*
Explanation (as needed):		
The project design includes a TAPE certified* pre-treatment device upstream of subgrade features. *(Include documentation in Attachment)*	☐ Yes	☐ No
The project design achieves PR#2 water quality treatment using at-grade features upstream of subgrade features.	☐ Yes	☐ No
Table 9 is not applicable to this project.	☒ The project does not include underground structural control measures.	

**Information about TAPE certified pre-treatment devices is included in the San Luis Obispo County Post-Construction Stormwater Guidebook.*

c. Areas Draining to Self-retaining Areas

DMA 1, which includes impervious flatwork to access the new construction, will drain to the pervious pavers to be installed in a portion of the existing parking lot. These pavers will serve as an SCM, not an SRA. Only considering the impervious area tributary to the SRA meets the default 2:1 run-on ratio. However, considering the landscaped areas in DMA 1 causes the SRA ratio to exceed the default 2:1 ratio, so the paver's underlying gravel section has been sized as an SCM, as shown in Table 6.

Table 10: Self-retaining area summary

SRA Number/ID	Description	[A] SRA Area (SF)	DMAs Draining to SRA Number/ID	[B] Total Areas Draining to SRA (SF)	Ratio [B]/[A]
Table 10 is not applicable to this project.		☒ The project does not include any self-retaining areas.			

The proposed design meets the criteria for the use of self-retaining areas as written in the County of San Luis Obispo Post-Construction Stormwater Guidebook:

Self-retaining area sizing: ☐ 2:1 Sizing Ratio (acceptable) ☒ >2:1 Sizing Ratio (un-acceptable)

d. SCM Construction Checklist

Construction details are provided for each SCM planned for the site. These details include specifications for materials, elevations, plants, and protection of features during construction. Table 11 indicates where SCM construction details can be reviewed.

Table 11: SCM Construction Details Summary Table

DMA Name/ID	SCM ID and Type	Plan Sheet No.	Plan set	SCM Detail No.
DMA 1	SCM 1 Pervious Pavers	Sheet C-4.1	☒ Grading Permit ☒ Structure Permit	PERVIOUS PAVERS SECTION
DMA 2	SCM 2 Biofiltration	Sheet C-4.1	☒ Grading Permit ☐ Structure Permit	BIO-TREATMENT BASIN DETAIL

Vegetated SCMs such as bioswales and bioretention require plantings to achieve optimal pollutant load reduction. Project plans must include a detail indicating the plant palette selected for vegetated SCMs. The source of the selected planting palette is summarized in Table 12.

Table 12: Plant Palette Selected for Vegetated SCMs

Name of Plant Palette	Source	Plan Sheet & Detail
Flowering Commercial Palette- Coastal	☒ SLO County Post-Construction Guidebook Appendix D ☐ Central Coast LIDI: Plant Palette Guidebook, or Bioretention Plant Guide ☐ Other [describe]	Sheet L.1, Detail 5

5. Pollutant Source Control Measures

The project design includes pollutant source control measures to limit the exposure of potential pollutants once construction is complete. Source controls may be operational, structural or procedural. Permanent source control measures that are applicable to the project site and that will be implemented are indicated in Table 13.

Table 13: Permanent Pollutant Source Control Measures

Pollutant Generating Activities and Sources	**Source Control BMP**	**Method selected**
Vehicle or equipment cleaning. Un-authorized non-stormwater discharges.	Educational stormwater signage. *(Operational.)*	☒'No Dumping' storm drain inlet markers. ☐'Rainwater only' storm drain inlet markers. ☐ Educational or informational stormwater signage for LID features.
Fuel dispensing areas. Chemical or material storage areas. Refuse areas.	Secondary containment devices. *(Structural)*	☐ Raised permanent containment around liquid storage tanks. ☐ Rolling berm containment around liquid handling or loading areas.
Loading docks. Parking/storage areas.	Permanent protective shelters/covers. *(Structural.)* Waste collection and disposal equipment. *(Operational.)*	☐ Permanent storage sheds/canopies to shield equipment or materials. ☐ Canopy downspouts routed away from shelters covering equipment and materials. ☒ Trash and recycling receptacles provided in parking and storage areas.
Refuse/ trash disposal areas. Building and grounds maintenance.	Permanent protective shelters/covers. *(Structural)* Informational signage. *(Operational)* Periodic inspection. *(Operational.)*	☒ Drainage from adjoining areas diverted away from trash storage area. ☒ Trash storage area walled and covered. ☒ Storm drains located away from trash storage areas. ☐ Trash storage area paved to mitigate spills. ☐ Informational signage posted. ☐ Scheduled periodic inspection of waste receptacles.
Loading & unloading areas.	Permanent protective shelters. *(Structural.)* Drainage routing or containment. *(Structural.)* Spill cleanup and control materials. *(Operational)*	☐ Permanent overhead canopy covering loading docks. ☐ Below-grade loading docks drain to water quality pre-treatment device. ☐ Trash receptacles provided near loading docks. ☐ Spill cleanup kit provided near loading docks. ☐ Loading docks located away from storm drain inlets.
Restaurants, grocery stores, and other food service operations.	Equipment cleaning and maintenance procedures. *(Operational)* Drains clearly marked and verified. *(Operational)*	☐ Indoor sinks and cleaning facilities sized for largest possible items for cleaning. ☐ Sinks and cleaning areas connected to grease interceptors. ☐ Indoor floor drains connected to sanitary sewer. ☐ Outdoor floor drains connected to sanitary sewer in permanently covered areas. ☐ Cleaning and degreasing agents used on site are low-hazard or biodegradable.

Pollutant Generating Activities and Sources	**Source Control BMP**	**Method selected**
High traffic pedestrian areas. Pet-friendly areas.	Waste collection and disposal equipment. *(Operational)* Educational signage. *(Operational)*	☒ Permanent pet waste bag dispenser stations provided. ☒ Trash and recycling receptacles provided in areas of heavy pedestrian traffic. ☒ Informational pet waste signage installed.
Outdoor Pools, Spas, Fountains	Drainage design to manage overflows, backwashing, and maintenance. *(Structural)* Technician training and disposal plans. *(Operational)*	☐ Design prevents overflow discharge to streets, storm drains or creeks/waterways. ☐ Design incorporates filter backwash treatment plan. ☐ Service technicians trained in appropriate chemical application and disposal. ☐ Disposal plan for periodic water feature draining/refilling is established.
Landscaping maintenance. Landscaping irrigation systems.	Storage areas for landscaping chemicals. *(Structural.)* Water efficient irrigation system. *(Operational.)* Training for maintenance staff and chemical applicators. *(Operational.)* Less hazardous chemicals selected for maintenance. *(Procedural.)*	☐ Covered and contained storage area provided for all pesticide, herbicides, and landscaping chemicals. ☐ Temporary landscape material stockpiling area provided away from water courses and drain inlets. ☒ Water efficient irrigation systems installed. ☒ Scheduled semi-annual irrigation maintenance and system verification. ☐ Employees and maintenance contractors appropriately licensed and trained. ☒ Chemical use (fertilizers, herbicides, pesticides) is minimized. ☐ Chemical applicators licensed or trained in proper application and disposal requirements. ☐ Less toxic chemicals substituted for hazardous toxic chemicals.
Fire Sprinkler Test Water	Fire system flushing water disposal plan. *(Operational.)*	☒ Fire system flushing area sited near landscaping for test water infiltration. ☐ Fire sprinkler line flush testing area designed for flow direction to sanitary sewer.
Vehicle or Equipment Parking areas.	Parking area regular maintenance. *(Operational.)* Vehicle and equipment regular maintenance. *(Operational.)*	☒ Trash receptacles provided in areas of heavy pedestrian traffic. ☒ Sweeping and litter removal scheduled as part of ongoing maintenance. ☐ Vehicles and equipment regularly serviced at off-site location. ☐ Vehicles and equipment fueled in designated location with spill control kits.
Un-authorized non-stormwater discharges	Employee/contractor training. *(Operational.)*	☐ Mobile cleaning vendors appropriately trained, capable of collecting and removing wash waters for offsite disposal. ☐ Service contractors equipped with appropriate washout and containment supplies.

6. Stormwater Infrastructure Maintenance

a. Operations and Maintenance Agreements

The project owner, John Doe, will be responsible for operations and maintenance of the stormwater system in perpetuity. These responsibilities are transferred to future owners upon completion of sale of the project site or portion thereof. This project intends to delegate responsibility for long-term operations and maintenance as follows:

Recorded maintenance agreement type:	☒ Agreement	☐ Codes, Covenants & Restrictions language.
The party responsible for operations and maintenance of the system will be:	☒ Single owner	☐ Multiple owners
	☐ Owner's association	☐ Corporation
The party responsible for operations and maintenance of the system:	☒ Is located locally in San Luis Obispo County.	☐ Has a designated local representative in San Luis Obispo County.
	☐ Is located outside the County, within California.	☐ Is located outside California.
The party responsible for operations and Maintenance intends to complete annual inspections and maintenance by the following methods:	☐ Self-inspect and maintain. Contract out for additional maintenance support as necessary.	☒ Contract out all system inspection and maintenance services.

b. Summary of Maintenance Requirements for each Structural Control Measure

The maintenance requirements and anticipated annual costs for maintaining each SCM associated with the project are documented in County form SWP-1008. Copies of these forms are included as Attachment 5. An operations and maintenance agreement will be recorded with the County Clerk Recorder prior to final of project construction.

7. Conclusions and Certification of Compliance

This project meets each of the applicable Performance Requirements stipulated by the PCRs.

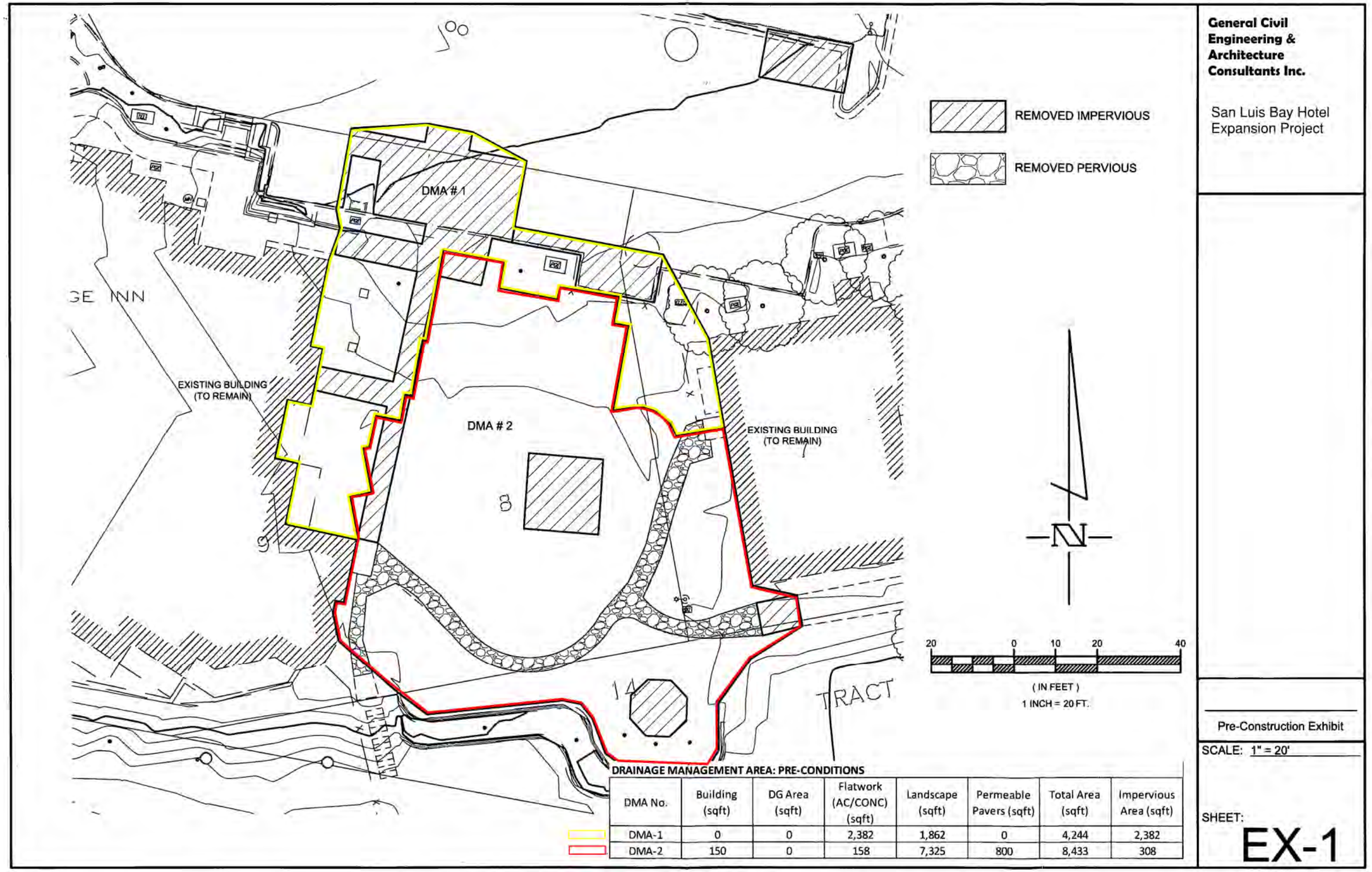
Performance Requirement #1	Compliance achieved onsite? ☒ Yes ☐ No	Measure(s) implemented: Direct roof runoff to vegetated areas away from foundations and footings. Direct runoff from sidewalks, walkways and/or patios onto vegetated areas. Construct flatwork with permeable surfaces.	
Performance Requirement #2	Volume of treatment required for project:	Volume of treatment provided by project:	Compliance achieved: ☒ Onsite ☐ Offsite

	713 SF	800 SF	
Performance Requirement #3	Volume of retention required for total project: N/A	Volume of retention provided by total project: N/A	Compliance achieved: ☒ Onsite ☐ Offsite
Performance Requirement #4	Peak management reduction required: N/A	Peak management reduction achieved: N/A	

The registered professional engineer, geologist, architect or landscape architect authoring this report certifies that all applicable post-construction stormwater performance requirements have been applied to this project and that this plan conforms to the requirements of the Central Coast Post-Construction Stormwater Management Resolution R3-2013-0032 and the current edition of the County's Post-Construction Stormwater Guidebook.

Preparer Name: Jane Doe	
Date: 03/01/2024	
License Number: C-1234	License Type: Architect

Attachment 1: Site Maps and Exhibits



General Civil Engineering & Architecture Consultants Inc.

San Luis Bay Hotel Expansion Project

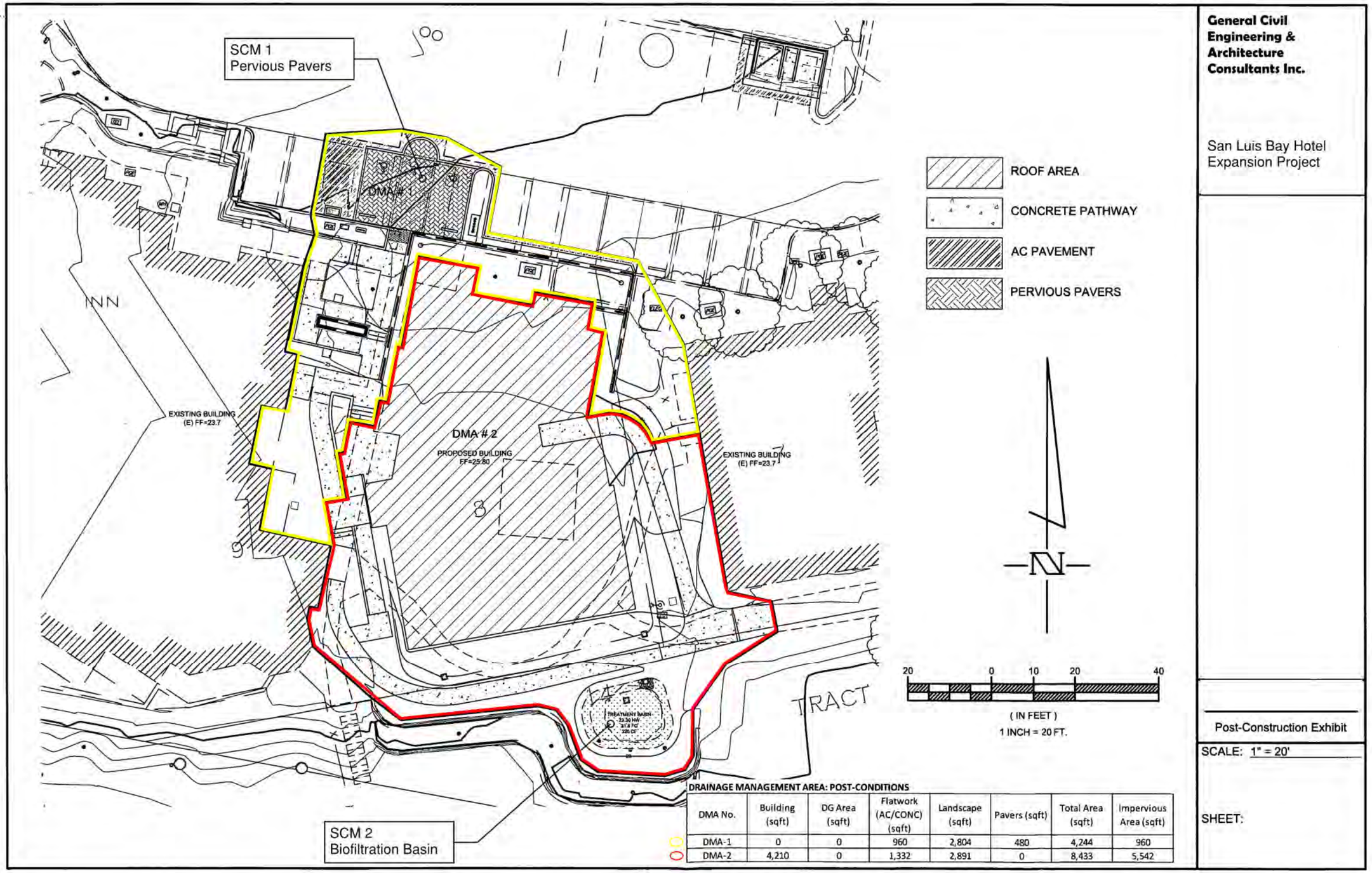
Pre-Construction Exhibit

SCALE: 1" = 20'

SHEET: EX-1

DRAINAGE MANAGEMENT AREA: PRE-CONDITIONS

DMA No.	Building (sqft)	DG Area (sqft)	Flatwork (AC/CONC) (sqft)	Landscape (sqft)	Permeable Pavers (sqft)	Total Area (sqft)	Impervious Area (sqft)
DMA-1	0	0	2,382	1,862	0	4,244	2,382
DMA-2	150	0	158	7,325	800	8,433	308



DRAINAGE MANAGEMENT AREA: POST-CONDITIONS

DMA No.	Building (sqft)	DG Area (sqft)	Flatwork (AC/CONC) (sqft)	Landscape (sqft)	Pavers (sqft)	Total Area (sqft)	Impervious Area (sqft)
DMA-1	0	0	960	2,804	480	4,244	960
DMA-2	4,210	0	1,332	2,891	0	8,433	5,542

General Civil Engineering & Architecture Consultants Inc.

San Luis Bay Hotel Expansion Project

Post-Construction Exhibit

SCALE: 1" = 20'

SHEET:

Attachment 2: SCM Sizing Calculator Outputs

Pervious Pavers SCM Capacity Calculations

Runoff Coefficient, C

DMA	Surface Type	Surface Area (sf)	Impervious Ratio	Runoff Coefficient, C[1]
DMA 1	Concrete/Asphalt	960	1	0.89
DMA 1	Landscaping	2,804	0	0.04

[1] Equation 4 County of San Luis Obispo Post-Construction Stormwater Guidebook

Required Pervious Paver Capacity

SCM ID	Tributary DMA	Runoff Coefficient, C[1]	Rainfall Depth, i (in)[2]	Tributary Area, A (ac)	Volume (cf)[3]
SCM 1	DMA 1	0.26	1.1	3,764	**89**
	SCM 1	1.00	1.1	480	**44**
				SCM 1 Total	**133**

[1] Equation 6, County of San Luis Obispo Post-Construction Stormwater Guidebook

[2] Table 7, 85th Percentile Storm, County of San Luis Obispo Post-Construction Stormwater Guidebook

[3] Equation 5, County of San Luis Obispo Post-Construction Stormwater Guidebook

Provided Pervious Paver Capacity

SCM ID	Surface Area (sf)	Gravel Depth (in)[1,2]	Gravel Void Coefficient[2]	Volume (cf)
SCM 1	480	15	0.4	**240**

[1] Table 7, County of San Luis Obispo Post-Construction Stormwater Guidebook

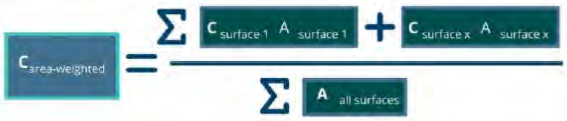
[2] From Design

Equations Used

Equation 5: Retention volume calculation.

Equation 5, County of San Luis Obispo Post-Construction Stormwater Guidebook

Equation 6: Multi-surface runoff coefficient calculation



Equation 6, County of San Luis Obispo Post-Construction Stormwater Guidebook

Equation 4: Impervious ratio (i) to Runoff coefficient 'C' equation.

Where i = the fraction of the DMA that is impervious

Equation 4, County of San Luis Obispo Post-Construction Stormwater Guidebook

Biofiltration Basin SCM Capacity Calculations

Required Biofiltration Basin Capacity

SCM ID	Tributary DMA	Tributary Impervious Area (sf)	Sizing Factor	Required Surface Area (sf)[1]
SCM 2	DMA 2	2,382	0.04	**95**

[1] Equation 8, County of San Luis Obispo Post-Construction Stormwater Guidebook

Provided Biofiltration Basin Capacity

SCM ID	Surface Area (sf)[1]
SCM 1	**320**

[1] From Design

Equations Used

Equation 8: Bioretention facility surface area calculation.

Tributary Impervious Area (sf) × 0.04 (sizing factor) = Bioretention Facility Surface Area (sf)

Equation 8, County of San Luis Obispo Post-Construction Stormwater Guidebook

Attachment 3: Non-retention Based Treatment System Documentation

Not Applicable

Attachment 4: LID Opportunities and Constraints Checklist

Not Applicable. Project is not subject to PR#3.

Existing Vegetation

Preserve or minimize disturbance to existing natural vegetated features. Designs that integrate natural features of the project site are better at mimicking pre-development runoff characteristics. Effective management of both existing and proposed site vegetation can reduce a development's impact on stormwater runoff quality and quantity.

☐ Yes ☐ No ☐ N/A	*Existing, high-quality vegetation has been identified and noted on the Opportunity and Constraints Map. Access to these areas will be restricted during construction.*
☒ Yes ☐ No ☐ N/A	*Existing trees have been identified and noted on the Opportunity and Constraints Map. The location of tree protection fencing is identified to restrict site disturbance and protect these locations during construction.*
☐ Yes ☐ No ☐ N/A	*Notes have been included on the corresponding site plans in areas where highly visible temporary fencing shall be placed around vegetation and tree areas that are to be preserved during construction.*

Survey and Site Topography

Identify opportunities and constraints within site topography and natural drainage patterns that can be incorporated into the design. Integrating existing drainage patterns into the site plan can maintain a site's predevelopment hydrologic function and will result in lower construction costs over sites that modify site topography and develop new drainage patterns.

☐ Yes ☐ No ☐ N/A	*The site has been surveyed and a topographic base file has been created to identify topography and natural drainage patterns.*
☐ Yes ☐ No ☐ N/A	*Existing low-spots and sumps within the topography have been identified on the Opportunity and Constraints Map. These areas will be preserved and utilized as BMP locations where technically feasible.*
☐ Yes ☐ No ☐ N/A	*Existing high-spots within the topography have been identified on the Opportunity and Constraints Map. These areas be preserved for placement of structures or hardscapes where feasible, allowing runoff to drain to low lying areas for treatment.*
☐ Yes ☐ No ☐ N/A	*Areas within 50 feet from the top of slopes that are greater than 20% and over 10 feet of vertical relief have been identified on the Opportunity and Constraints Map. Notes on the map indicate that SCMs are not authorized within these areas.*

Soil Analysis

Native undisturbed soils have a complex matrix created by the growth and decay of plant roots, earthworms, and insect activity. Topsoil stripping and stockpiling destroys soil structure and diminishes natural biological activity. Avoid and limit unnecessary site disturbances during construction. Plan LID and SCM placement where soils support infiltration (Soil Groups A and B). To

the extent feasible, plan buildings and structures and hardscapes placement where soils discourage infiltration (Soil Group C and D).

☐ Yes ☐ No ☐ N/A	*Locations where soils encourage infiltration (Soil Group A and B) have been identified on the Opportunity and Constraints Map. Where feasible, these areas have been preserved or dedicated to SCM locations.*
☐ Yes ☐ No ☐ N/A	*Locations where soils discourage infiltration (Soil Group C and D) have been identified on the Opportunity and Constraints Map. Where feasible, these locations have been dedicated to the proposed project improvements such as structures and hardscapes, or contractor staging and equipment storage areas, etc.*
☐ Yes ☐ No ☐ N/A	*Locations where existing structures and hardscapes will be removed during construction (exposing highly compacted soils) have been identified on the Opportunity and Constraints Map. Placement of SCMs has been avoided in these areas.*

Geotechnical Analysis

Data from the preliminary geotechnical analysis or soil borings should be evaluated to support identification of opportunities and constraints. These areas should be specifically identified with limits noted on the Opportunities and Constraints Map.

☐ Yes ☐ No	*The site contains areas designated as an erosion hazard, or landslide hazard.*
☐ Yes ☐ No	*The site contains groundwater that drains into an erosion hazard, or landslide hazard area.*
☐ Yes ☐ No	*The geotechnical report identified contaminated soils:* ☐ *These soils will be removed during construction.* ☐ *These soils will remain in place during construction.*
☐ Yes ☐ No ☐ N/A	*The groundwater table elevation (including seasonally high and historically high) has been determined.*
☐ Yes ☐ No	*The seasonally high groundwater table elevation is at least 10-feet below the proposed invert elevations of the proposed SCMs.*
☐ Yes ☐ No ☐ N/A	*Fractured bedrock identified through geotechnical testing is below the proposed invert elevations of the proposed SCMs.*
☐ Yes ☐ No	*Infiltration testing has been performed onsite at the proposed SCM locations and the geotechnical report has identified that the site is suitable for infiltration.*

Setbacks

Establish setbacks and buffer zones surrounding restricted and/or sensitive areas. Identify all areas where SCMs cannot be constructed due to setback requirements. Examples include existing and proposed building foundations, municipal water wells, private water wells, septic systems, easements, etc.

☐ Yes ☐ No ☐ N/A	*Private potable water wells in the vicinity have been identified (onsite and offsite) and a minimum offset radius has been established indicating where infiltration SCMs are not authorized.*

☐ Yes ☐ No ☐ N/A	*Municipal potable water wells in the vicinity have been identified (onsite and offsite) and a minimum 100 foot offset radius has been established indicating where infiltration based SCMs are not authorized.*
☐ Yes ☐ No ☐ N/A	*Within the Coastal Zone, a setback of 100 feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.*
☐ Yes ☐ No ☐ N/A	*Within the Urban Reserve Lines, a setback of 50 feet has been established from the upland extent of riparian vegetation. The limits of these setbacks are indicated on the Opportunity and Constraints map.*
☐ Yes ☐ No ☐ N/A	*A setback of either 5 or10 feet has been established from all property lines to SCMs and the limits of these setbacks have been indicated on the Opportunity and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*A setback of either 5 or 10 feet has been established from all existing and proposed building foundations with notes indicating infiltration SCMs are not authorized within these limits.*

Hydrology Features

Identify onsite and offsite downstream waterways, including creeks, wetlands, watercourse, seeps, riparian zones areas of 100-year flood inundation, potential stormwater run-on locations and depths to groundwater. All areas of hydrologic importance should be delineated at the earliest stage in the development planning process.

☐ Yes ☐ No ☐ N/A	*Hydrological features such as creeks, wetlands, riparian zones, etc. have been identified and incorporated into the Opportunity and Constraints Map.* ☐ *Notes have been added to the Opportunity and Constraint Map indicating that these areas will be protected by exclusionary fencing during construction to prevent resource damage.*
☐ Yes ☐ No ☐ N/A	*The pre-developed site drainage pathways have been identified and the limits of these features have been placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*Existing storm drain infrastructure, including potential points of connection have been identified and placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*Stormwater run-on locations have been identified and placed onto the Opportunities and Constraints Map.*

Hazardous Areas & Pollutants of Concern (POCs)

Identify locations where existing or future pollutants may occur onsite and identify features that may prevent these pollutants from being exposed to stormwater runoff. Examples include chemical storage locations, fueling stations, and industrial operation areas.

☐ Yes ☐ No ☐ N/A	*Existing hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.*
☐ Yes ☐ No ☐ N/A	*Proposed hazardous storage areas and POC sources have been identified and placed onto the Opportunities and Constraints Map.*

Attachment 5: Draft SCM Operations and Maintenance Information

RECORDING REQUESTED BY:

County of San Luis Obispo
Planning and Building Department

WHEN RECORDED, PLEASE RETURN TO
(SYSTEM OWNER ADDRESS)

General Land Development Company
1234 Washing Street
Anytown, CA 55555

AGREEMENT
County of San Luis Obispo
Private Stormwater Management System
Operation and Maintenance

Condition Compliance Monitoring Permit #: CCM2024-00003

Property Address: 123 Main Street, Anytown, CA
(Street No. & Street Name, City)

Property APN #: 123-45-789 **Building Permit #:** CBLD2023-12345

Project Description *(hereinafter referred to as "PROJECT")*:
Hotel expansion to include one new building, upgrades to flatwork.

Legal Description: Refer to Exhibit A, attached hereto
System Description: Refer to Exhibit B, attached hereto

This Agreement is made and entered into in San Luis Obispo, California, this 1 day of June, 2024, by and between General Land Development Company (hereinafter referred to as "OWNER") and the County of San Luis Obispo, located in the State of California, (hereinafter referred to as "County"). This Agreement is made in accordance with existing codes and regulations and in accordance with the approved PROJECT Stormwater Control Plan and specifications on file at the County (hereinafter collectively referred to as "PLANS") with respect to the following recitals:

RECITALS:

The undersigned OWNER of the real property referenced above, hereby covenants with County to utilize on-site stormwater management systems (i.e. structural and/or non-structural) to minimize runoff and pollutants in stormwater runoff and to provide permanent storm drainage maintenance to control, manage, retain, treat, infiltrate and dispose of (1) on-site storm drainage for the PROJECT and (2) ancillary street and site drainage from the adjoining street and sites, as stipulated in the PLANS and in the Stormwater Control Plan on file at the County (hereinafter referred to as "Stormwater Control Plan"). The storm drainage improvements shown and described in Exhibit B are hereinafter referred to as the "SYSTEM".

OWNER is solely responsible for adhering to the requirements set forth in the Stormwater Control Plan and agrees to the following conditions in compliance with all local, state, federal laws and regulations and according to the PLANS and Stormwater Control Plan:

1. **MAINTENANCE**: OWNER shall **maintain** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

2. **MONITORING**: OWNER shall **monitor** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

3. **INSPECTIONS**: OWNER shall **routinely inspect** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

4. **CLEANINGS**: OWNER shall **routinely clean** the SYSTEM as required in the Stormwater Control Plan and any specifications included in Exhibit B.

5. **REPAIRS**: OWNER shall repair the **SYSTEM** as required in the Stormwater Control Plan.

6. **DOCUMENT, REPORT, AND FEES**: OWNER shall document all maintenance, monitoring, inspections, cleanings, and repairs made to the SYSTEM in the annual report submitted to County by June 15th of each year in a format approved by County. System Owners will be subject to a Stormwater Annual Inspection and Reporting fee (SWI) based on current County of San Luis Obispo Planning and Building Fee Schedule. Payment of Fee due by June 15th of each year.

7. **COUNTY'S RIGHTS & AUTHORITY: Pursuant to San Luis Obispo County Code Title 22.10.155,** County has the right and authority to inspect the SYSTEM to determine compliance with this agreement (i.e. maintenance, monitoring, inspections, cleanings, repairs, documentation and reporting) which may result in enforcement activities and/or abatement if necessary pursuant to applicable laws and regulations. OWNER hereby consents to County conducting said inspections between the hours of 8:00 a.m. through 5:00 p.m., Mondays through Fridays. This Agreement shall not be construed as precluding County from conducting inspections, which may be necessary due to an emergency.

8. **FAILURE TO MAINTAIN, CLEAN AND/OR REPAIR SYSTEM**: Failure to maintain, monitor, inspect, clean, repair, or document and report as required herein shall constitute a public nuisance. The County may remedy such public nuisance through any of the applicable procedures as set forth in the County of San Luis Obispo Code, and/or may pursue any other

legal or equitable remedies to abate such public nuisance.

9. **INDEMNIFICATION:** Owner further agrees to defend, indemnify, protect and hold the County and its agents, officers and employees harmless from and against any and all claims asserted or liability established for damages or injuries to any person or property, including to Owner's tenants, guests, invitees, agents or employees, which arise from or are connected with or caused or claimed by the acts or omissions of Owner, and its agents, employees or contractors, in performing the obligations specified herein, and all expenses of investigating and defending against same; provided, however, that Owner's duty to indemnify and hold harmless all not include any claims or liability arising from the established sole negligence or willful misconduct of the County, its agents, officers or employees.

10. **BINDING ON FUTURE OWNERS:** This covenant shall run with the land and shall be binding upon the undersigned owners, their heirs, executors, administrators, assigns and successors in interest.

11. **RECORDING OF AGREEMENT:** This Agreement shall be recorded in the office of the San Luis Obispo County Recorder, and such recordation shall serve as notice of the restrictions and obligations contained herein to be performed and observed by Owner and the successors in interest to all or any portion of Owner's Property.

12. **NOTICES:** Any notice, demand, request, consent, approval or communication to OWNER under this Agreement (hereinafter collectively referred to as "Notices") shall be in writing and either served personally or sent by prepaid, first-class mail to the person and address set forth below. Alternately, OWNER may elect to have Notices sent by e-mail if indicated below and an e-mail address is provided. OWNER shall notify County of any change in address, e-mail, or transfer of ownership. Any notice shall be deemed to be effective five calendar days after the date mailed or, if applicable, on the same date the notice was e-mailed.

Jane Doe	1234 Washington Street
System Owner *(Printed Name)*	**Owner's Street Address**
President	Anytown, CA 55555
Business Affiliation and Title *(if applicable)*	**Owner's City/State, Zip Code**
6/1/2024	Jane@email.com
Date	**Owner's Email Address:**

I agree to receive Notices by e-mail: (•) Yes ( ) No

COUNTY OF SAN LUIS OBISPO:

Cheryl Journey
Cheryl Journey *(Signature)*

County of San Luis Obispo

6/1/2024
Date

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN LUIS OBISPO)

On June 1, 2024, before me, Notary Name, a Notary Public, in and for the State of California, personally appeared Cheryl Journey, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[SEAL]

Signature *Notary Name*
Signature of Notary Public

OWNER:

Jane Doe	6/1/2024
System Owner *(Signature)*	**Date**
Jane Doe	
System Owner *(Printed Name)*	
President	
Business Affiliation and Title *(if applicable)*	

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN LUIS OBISPO)

On June 1, 2024, before me, Notary Name, a Notary Public, in and for the State of California, personally appeared Jane Doe, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[SEAL] NOTARY PUBLIC

Signature *Notary Name*
Signature of Notary Public

County of San Luis Obispo
Form # SWP-3001

Page of
Updated: 5/18/2024

Exhibit A
Property Legal Description in Full

LEGAL DESCRIPTION

Real property in the unincorporated area of the County of San Luis Obispo, State of California, described as follows:

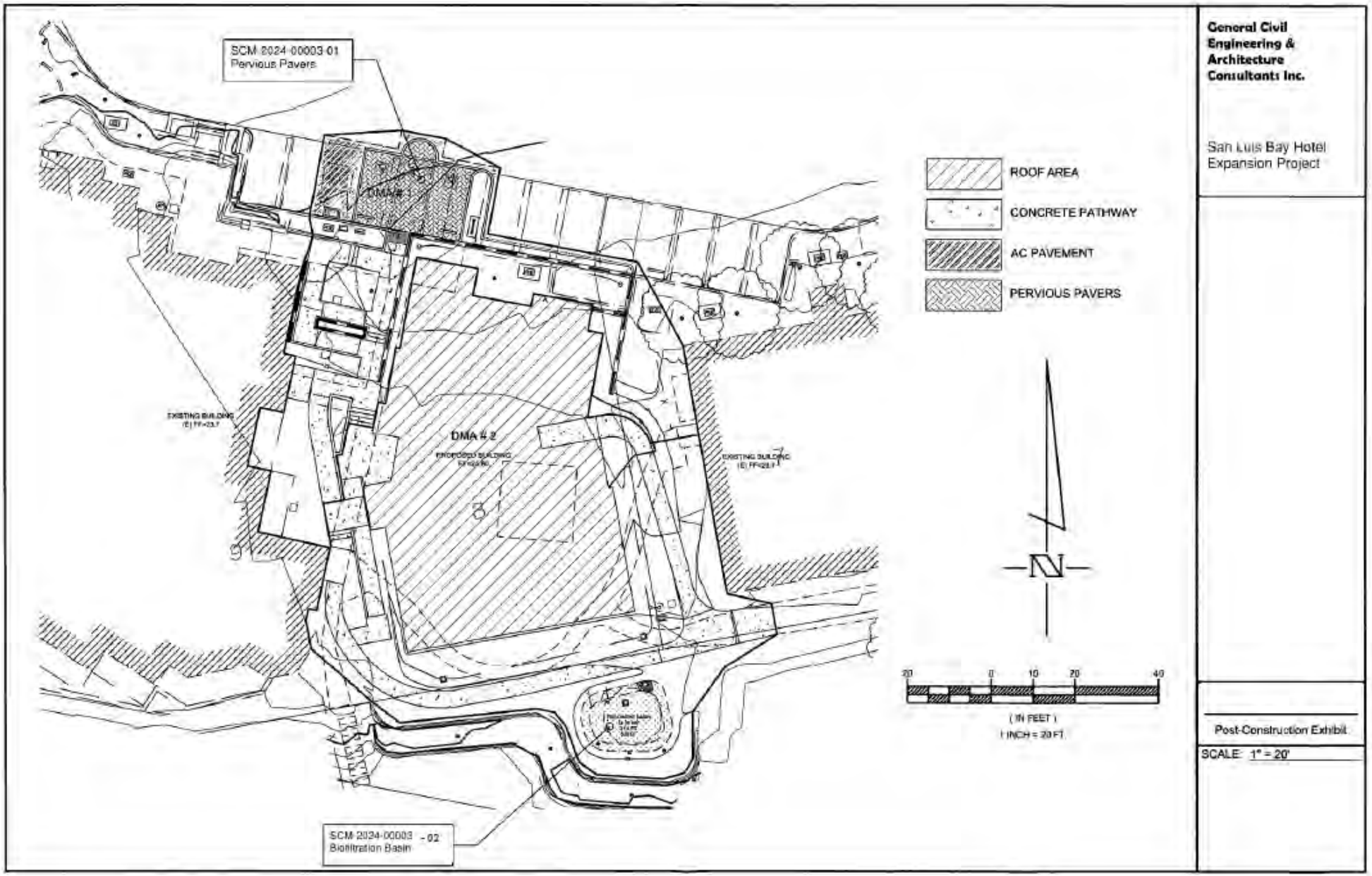
PARCEL A:

A PORTION OF PARCEL MAP CO-78-215 SITUATED IN THE COUNTY OF SAN LUIS OBISPO, STATE OF CALIFORNIA, AS SHOWN ON A MAP RECORDED IN BOOK 28 OF PARCEL MAPS PAGE 84 IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY AND BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT BEING THE MOST NORTH WESTERLY CORNER OF PARCEL 2 ACCORDING TO SAID PARCEL MAP; THENCE NORTH 89° 57' 27" EAST 1272.35 FEET TO A POINT BEING THE MOST NORTH EASTERLY CORNER OF SAID PARCEL 2 OF SAID PARCEL MAP; THENCE SOUTH 00° 42' 10" WEST 209.17 FEET ALONG THE EASTERLY LINE OF SAID PARCEL TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 00° 42' 10" WEST 475.60 FEET TO A POINT;
THENCE NORTH 89° 57' 27" EAST 1176.38 FEET TO A POINT TO EAST BOUNDARY;
THENCE NORTH 29° 15' 25" EAST ALONG THE EAST BOUNDARY 109.55 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF BUCKLEY ROAD AS SHOWN ON A MAP FILED WITH THE COUNTY RECORDER'S OFFICE OF SAID COUNTY IN BOOK 80 AT PAGE 2 OF LICENSED SURVEYS; SAID POINT BEING ON A CURVE TO THE RIGHT, CONCAVE TO THE NORTH, HAVING A RADIUS OF 805.00 FEET AND A RADIAL OF NORTH 25° 46' 21" EAST; THENCE NORTHWESTERLY ALONG SAID CURVE 130.26 FEET TO A POINT ON SAID RIGHT-OF- WAY;
THENCE CONTINUING ALONG SAID RIGHT-OF-WAY NORTH 55° 00' 12" WEST 457.45 FEET;
THENCE NORTH 59° 24' 08" WEST 65.19 FEET TO A POINT ON SAID RIGHT-OF-WAY;
THENCE NORTH 82° 51' 18" WEST 99.34 FEET TO A POINT ON SAID RIGHT-OF-WAY;
THENCE LEAVING SAID RIGHT-OF-WAY NORTH 89° 28' 18" WEST 582.49 FEET TO THE TRUE POINT OF BEGINNING.

PURSUANT TO LOT LINE ADJUSTMENT RECORDED MAY 16, 2007 AS DOCUMENT NO. 2007033357, SAN LUIS OBISPO COUNTY OFFICIAL RECORDS.

Exhibit B
Stormwater Management System


SCM 2024-00003-01
Pervious Pavers
DMA # 1
DMA # 2
EXISTING BUILDING
(E) FF=23.7
EXISTING BUILDING
(E) FF=23.7
SCM 2024-00003 - 02
Biofiltration Basin
ROOF AREA
CONCRETE PATHWAY
AC PAVEMENT
PERVIOUS PAVERS
N
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT
General Civil Engineering & Architecture Consultants Inc.
San Luis Bay Hotel Expansion Project
Post-Construction Exhibit
SCALE: 1" = 20'

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2024-00003-01

1. Performance Requirement Addressed *(check all that apply):*	☐ Water Quality Treatment (Performance Requirement #2)	☐ Runoff Retention (Performance Requirement #3)	☐ Peak Management (Performance Requirement #4)	
2. Type of SCM Installed:	☐ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☑ Pervious Pavement ☐ Media Filter ☐ Treatment Vault	
3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft²): 4240	
	Narrative Location Description: Pervious pavers located in parking lot.			
	Drainage Management Area (DMA) Number: 1		Drainage Area Treated (acres): 0.1	
	Latitude: 35.240663		Longitude: -120.641383	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft³):			
5. Design Details *(As applicable):*	Width (ft²):		Slope (ft/ft):	
	Depth (ft):		SCM Capacity/Volume (ft³): 240	
	Length (ft):		Surface Area (ft²):	
	Is this SCM subsurface? ○ YES ◉ NO		SCM Vegetated? ○ YES ◉ NO	
	Design Vegetation Height (ft): 0		Does this SCM involve a manufactured product? ◉ YES ○ NO	
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name: Air Vol Block			
	Manufacturer/Model Number: Permeable Roman Pavers			
	Total Number Installed Onsite: 1500 SF			
	Estimated Product Life: 50 years			
7. Maintenance and Inspection Frequency:	Inspection Frequency: ☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually			
	Maintenance Frequency: ☐ Monthly ☐ Semi-Annually ☑ Annually ☑ Biennially			

Page ☐ of ☐

Stormwater System Operations and Maintenance Plan Exhibit B
Form #SWP-1007

Revised 06/01/2024

Form SWP-1007

Exhibit B: Stormwater Control Measure (SCM) Description

SCM#: 2024-00003-02

1. Performance Requirement Addressed *(check all that apply):*	☑ Water Quality Treatment (Performance Requirement #2)	☑ Runoff Retention (Performance Requirement #3)	☑ Peak Management (Performance Requirement #4)
2. Type of SCM Installed:	☑ Biofiltration/Bioretention ☐ Filtration Device ☐ Infiltration Basin	☐ Vegetated Swale ☐ Infiltration Feature ☐ Detention Basin	☐ Vegetated Buffer Strip ☐ Pervious Pavement ☐ Media Filter ☐ Treatment Vault

3. Location of SCM *(Complete ALL fields)*	Location: ☑ Onsite ☐ Offsite		Contributing Impervious Area (ft^2): 8440	
	Narrative Location Description: Bioretention basin on south edge of property.			
	Drainage Management Area (DMA) Number:	2	Drainage Area Treated (acres):	0.19
	Latitude: 35.240612		Longitude: -120.641442	
4. Drainage Design Criteria: *(As applicable):*	Design Storm Flow (cfs):			
	Design Storm Capacity (ft^3):			
5. Design Details *(As applicable):*	Width (ft^2):		Slope (ft/ft):	0
	Depth (ft):		SCM Capacity/Volume (ft^3):	320
	Length (ft):		Surface Area (ft^2):	
	Is this SCM subsurface?	○ YES ◉ NO	SCM Vegetated?	◉ YES ○ NO
	Design Vegetation Height (ft):	1	Does this SCM involve a manufactured product?	○ YES ◉ NO
6. Manufactured Product Specifications: *(Include manuals and specifications)*	Product Name:			
	Manufacturer/Model Number:			
	Total Number Installed Onsite:			
	Estimated Product Life:			
7. Maintenance and Inspection Frequency:	Inspection Frequency:	☐ Pre-Rain ☑ Monthly ☑ Semi-Annually ☑ Annually		
	Maintenance Frequency:	☐ Monthly ☐ Semi-Annually ☐ Annually ☑ Biennially		

Page ☐ of ☐

SWP-1008
06/01/2024

Private Stormwater System Plans and Manuals

Porous Pavement and Catch Basin Insert Maintenance Information

Structural Control Measure (SCM) Maintenance Details	Assigned SCM#: 2024-00003-01
	SCM Feature Type: ☐ Porous Concrete ☑ Pervious Pavers
Does the SCM include a proprietary device/structure? ☑ YES ☐ NO	Contact for vendor who can provide replacement parts or maintenance instructions: Air Vol Block Inc

Describe short-term maintenance requirements (frequency of filter replacement or inspection):
Remove trash and other debris that impedes stormwater infiltration. Replace media between pavers as needed.

Estimated annual cost for maintenance:
$200

Describe long-term maintenance requirements:
Removal of trash, sediment, and other debris. Sweep and vacuum sediments.

Contact information for local professional qualified to maintain or repair this SCM:
Local Sweep/Vacuum company.

Additional notes:

SWP-1008
06/01/2024

Private Stormwater System Plans and Manuals

Vegetated Stormwater Control Measures Maintenance Information

Structural Control Measure (SCM) Maintenance Details	Assigned SCM#: 2024-00004-02
	SCM Feature Type: ☑ Biofiltration Feature ☐ Bioretention Feature ☐ Vegetated Swale ☐ Vegetated Buffer Strip

Does the feature utilize vegetation or specialized soil media? ☑ YES ☐ NO	Contact for vendor who can provide replacement plants or soil media: Landscape Vendor

Estimated annual cost for maintenance:
$750

List vegetation species and soil media type originally installed:
Biofiltration Soil Media (BSM) consisting of 60-70% sand and 30-40% compost.
For planting schedule and species see Civil or Landscape Plans.
Basin vegetation include the following: Iris Douglasiana, Juncus Patens, and Carex Passa.

Describe short-term maintenance requirements (irrigation schedule, weed control, vegetation height, etc.):
Trash removal, weed control, and removal of debris.

Describe long-term maintenance requirements (litter removal, inlet/outlet maintenance, etc.):
Trash removal, BSM replacement, plant replacement, energy dissipater rock replacement, and outlet structure cleaning.

Contact information for local professional qualified to maintain or repair this SCM:
Landscape Vendor

Additional notes:

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PLANNING & BUILDING

SWP-1003
06/08/2017

Private Stormwater System Owner, Agent, & Designer Information

2023-00024	*CBLD2023-12345*
Condition Compliance Monitoring (CCM) Case Number (CCM20##-#####)	Building Permit Number (PMT20##-#####)
123 Main Street, Anytown, CA	
Project Address	

SYSTEM OWNER:

General Land Development Company, Jane Doe	
Current Property Owner *(Include name of primary contact)*	
1234 Washington Street	
Street Address	
Anytown	CA
City	**State**
55555	(555) 123-4567
Zip Code	**Phone Number**
Jane@email.com	
Owner Email:	

SYSTEM DESIGNER:

General Civil Engineering Consultants, Inc., John Doe	
Designer Name and Affiliation	
PE 12345	
Designer License Number and Type	
1234 Washington Street	
Street Address	
Anytown	CA
City	**State**
55555	555-123-4567
Zip Code	**Phone Number**
John@emal.com	
Designer Email:	

SWP-1003
06/08/2017

Private Stormwater System Owner, Agent, & Designer Information

2023-00024	*CBLD2023-12345*
Condition Compliance Monitoring (CCM) Case Number (CCM20##-#####)	Building Permit Number (PMT20##-#####)
123 Main Street, Anytown, CA	
Project Address	

PROJECT AGENT (if applicable):

Cool Consultng, Joe Cool	
Agent Name and Affiliation *(Include name of primary contact)*	
990 Palm Street	
Street Address	
San Luis Obispo	CA
City	**State**
93401	(555) 555-5555
Zip Code	**Phone Number**
JC@cool.com	
Agent Email:	

COORDINATING COUNTY REPRESENTATIVE:

Stormwater Program Manger	
County Representative *(Printed Name)*	
Stormwater Program Manager, Department of Planning and Building	
County Representative Title	
stormwater.scm@co.slo.ca.us	(805) 781-5602
Email	**Phone**

Appendix F: Structural Control Measure Inspection Checklists

DEPARTMENT OF PLANNING & BUILDING
DEPARTMENT OF PUBLIC WORKS

Field Verification of Post-Construction Stormwater Control Measures Final Inspection Form

Inspection Details	Inspection Date:	Inspector Name:
	☐ PW Permit ☐ P&B Permit	Permit Number:
	CCM Case #:	SCM #s:
	Inspection Type: ☐ Pre-Final Inspection ☐ Construction Complete (Final) ☐ Re-Inspection	
Document Checklist for Final Inspection	☐ Stormwater Control Plan (stamped, final version) ☐ Engineer SCM Certification form ☐ Bioretention soil media field slips ☐ Plant/landscaping field slips .	☐ Owner's Operations and Maintenance Agreement (signed, notarized) ☐ Grading and Drainage plans (stamped final version) ☐ Construction Stormwater Pollution Prevention Plan (SWPPP) ☐ Other
Post Construction Requirements	☐ PR #1 ☐ PR #2 ☐ PR#3 ☐ PR#4	☐ Technical infeasibility or offsite compliance ☐ Phased development
Structural Control Measure Details	Total number of at-grade SCMS:	Total number of below grade (subsurface) SCMs:
Site Conditions	Temporary BMPs removed? ☐ Yes ☐ No Is there exposed sediment erosion risk? ☐ Yes ☐ No	All vegetated features landscaped? ☐ Yes ☐ No Are there visible impacts to SCMs from construction process or materials? ☐ Yes ☐ No
Documentation	Photographs taken? ☐ Yes ☐ No	File storage/documentation location:
Final approval of SCMs granted? ☐ ***Yes*** ☐ ***No*** ☐ ***Corrections Required***		
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***		
Re-inspection to be conducted by: ☐ ***Planning & Building*** ☐ ***Public Works***		

COUNTY OF SAN LUIS OBISPO
STORMWATER PROGRAM

Biofiltration or Bioretention Feature Inspection Form

Inspection Details	Inspection Date:	Inspector Name:	
	☐ PW Permit ☐ P&B Permit	Permit Number:	
	CCM Case #:	SCM #s:	
	SCM Type: ☐ Biofiltration Feature ☐ Bioretention Feature		
	Inspection Type: ☐ Construction Active (Interim) ☐ Construction Complete (Final) ☐ Post Construction – Annual Inspection		
Excavation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Soil subgrade visible:	☐ Depth to top of soil:	☐ Subgrade soils uncompacted:
Geotextile Fabric ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Types used: _____ ☐ Field Material slips verified:_____	☐ Depth to fabric: _____ _____	☐ Placement locations: ☐ Bottom_____ ☐ Sidewall_____
Gravel Bed ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Gravel Type: _____ ☐ Field Material slips verified:_____	☐ Gravel Thickness: _____	☐ Depth to top of gravel: _____ ☐ Underdrain: _____
Bioretention Soil Media ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Typical Mixture – 70% sand/30% compost	☐ Thickness: _____ ☐ Field Material slips verified:_____	☐ Soil media contaminated or impacted. Erosion or spilled material evident in SCM. Repair required.
Structures ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Inlet Structure:	☐ Overflow Structure:	☐ Underdrain: ☐ Pipe Size_____ ☐ Elevation_____ ☐ Cleanout_____
Vegetation Cover ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Plant palette types:	☐ Zone A Noted: _____ ☐ Surface Bark/Mulch: _____	☐ Zone B Noted: _____

Bioretention or Biofiltratoin Stormwater Feature Inspection Form

Protection from construction Impacts: ☐ ***Yes*** ☐ ***No***	Comments:		☐ Fencing/flagging ☐ Covered ☐ Other: _____ ☐ None
Drainage performance:	☐ No standing water present 24-hours following 0.50" storm event.	☐ No standing water present 72 hours following 0.50" storm event.	☐ Standing water present longer than 72 hours following 0.50" storm event.
Sediment/particle accumulation:	☐ Sediment accumulation less than 1.0" throughout feature	☐ Sediment accumulation 1.0-2.0" throughout feature. Functionality is not impaired.	☐ Sediment covers vegetation greater than 2.0" in any location. Maintenance required.
Evidence of erosion:	☐ No visible loss of soil media or mulch. No rill erosion or scour observed.	☐ Soil media or mulch requires infill/repair. Minor erosion visible.	☐ Soil media significantly impacted. Rill erosion evident in SCM. Maintenance required.
Deficient Items & Proposed Resolution:			
Additional Notes:			
Photographs taken? ☐ ***Yes*** ☐ ***No***		***Photo File storage:*** ☐ ***Energov*** ☐ ***PermitTrax*** ☐ ***Server***	
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***			

Form updated: Aug-24

COUNTY OF SAN LUIS OBISPO
STORMWATER PROGRAM

Detention Stormwater Feature Inspection Form

Inspection Details	Inspection Date:		Inspector Name:
	☐ PW Permit ☐ P&B Permit		Permit Number:
	CCM Case #:		SCM #s:
	SCM Type: ☐ Detention Basin		
	Inspection Type: ☐ Construction Active (Interim) ☐ Construction Complete (Final) ☐ Post Construction – Annual Inspection		
Excavation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Soil subgrade visible:	☐ Depth to top of soil:	☐ Subgrade soils uncompacted:
Geotextile Fabric ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Types used: ☐ Field Material slips verified:	☐ Depth to fabric:	☐ Placement locations: ☐ Bottom_____ ☐ Sidewall_____
Structures ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Inlet Structure:	☐ Outlet Structure:	☐ Overflow Structure:
Vegetation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Plant palette types:	☐ Bioretention Soil Media:	Percent of vegetation cover/establishment:
Protection from construction impacts ☐ ***Yes*** ☐ ***No***	Comments:		☐ Fencing ☐ Cover: ☐ Other: ☐ None:
Vegetation Cover Condition:	☐ Vegetation healthy (if present). No potential flood or fire hazards from dead vegetation, noxious weeds or overgrowth.	☐ Moderate overgrowth or vegetation death. Mowing, trimming, or removal necessary to maintain capacity and flow paths.	☐ Vegetation overgrowth presents hazards to inflows, outflows, and retention. Maintenance required immediately.

Detention Stormwater Feature Inspection Form

Visual assessment of inlets and outlets:	☐ Inlets and outlets fully stabilized, no signs of surface erosion or scour. No repair necessary.	☐ Inlets/outlets require minor repair or retrofit to control surface erosion or scour.	☐ Inlets/outlets show signs of erosion or scour more than 2". Repairs required immediately.
Sediment or particle accumulation:	☐ No evidence of particle accumulation at base, inlets, or outlets. No impacts to outflow.	☐ Sediment/particulate accumulation less than 15% of basin depth or partially obstructing inlets/outlets. No significant impacts to outflow.	☐ Sediment/particulate accumulation greater than 25% of basin depth. Basin requires maintenance to remove accumulated sediment.
Sidewalls condition:	☐ No evidence of erosion, rodent holes or compromise.	☐ Minor damage due to erosion or rodent holes. Sidewalls require repair or soil stabilization.	☐ Evidence of piping through sidewalls due to rodent holes or erosion damage. Immediate repair required.
Presence of debris or illicit activity:	☐ No debris, litter, or evidence of illicit dumping. Perimeter fence or control is secure (if present).	☐ Small amount of debris, litter. Perimeter fence or control is secure (if present). Debris and litter removed at time of inspection.	☐ Debris and litter present in significant quantities. Evidence of illicit dumping. Perimeter fence or control needed or requires repair.
Deficient Items & Proposed Resolution:			
Additional Notes:			
Photographs taken? ☐ ***Yes*** ☐ ***No***		***Photo File storage:*** ☐ ***Energov*** ☐ ***PermitTrax*** ☐ ***Server***	
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***			

Form updated: Aug-24

COUNTY OF SAN LUIS OBISPO
STORMWATER PROGRAM

Infiltration Stormwater Feature Inspection Form

Inspection Details	Inspection Date:	Inspector Name:	
	☐ PW Permit ☐ P&B Permit	Permit Number:	
	CCM Case #:	SCM #s:	
	SCM Type: ☐ Infiltration Feature/ Retention Basin		
	Inspection Type: ☐ Construction Active (Interim) ☐ Construction Complete (Final) ☐ Post Construction – Annual Inspection		
Excavation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Soil subgrade visible:	☐ Depth to top of soil:	☐ Subgrade soils compacted:
Geotextile Fabric ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Types used: ☐ Field Material slips verified:	☐ Depth to fabric:	☐ Placement locations: ☐ Bottom_____ ☐ Sidewall_____
Gravel Bed ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Gravel Type: _____ ☐ Bedding Thickness: _____	☐ Cover Thickness: _____ ☐ Sidewall Width: _____	☐ Soil or fill to subgrade: _____ ☐ Fill Thickness: _____
Structure/Chamber/ Vault/Pipe ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Structure Material: _____ ☐ Structure Brand/Model: _____	☐ Structure Dimensions: _____ ☐ Structure Numbers: _____	☐ Outflow Pipe: _____ ☐ Inspection Port(s): _____
Inlet/Pre-Treatment Structure ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Structure Type:	☐ Inlet Structure:	☐ Treatment Type:
Outlet Structure ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Structure Type:	☐ Inlet Structure:	☐ Treatment Type:

Infiltration Feature Inspection Form

Protection from construction impacts ☐ ***Yes*** ☐ ***No***	Comments:		☐ Fencing ☐ Cover: ☐ Other: _____ ☐ None:
Sediment/particle accumulation	☐ Sediment accumulation less than 0.25" throughout feature	☐ Sediment accumulation 0.25-1.0" throughout feature. Functionality is not impaired.	☐ Sediment covers vegetation greater than 1.0" in any location. Maintenance required.
Baffles/Filters (If applicable) ☐ ***Unknown, not observed.***	☐ Baffles or filters in good condition with >50% capacity remaining. No signs of warping, corrosion, or failure.	☐ Baffles or filters showing accumulation, warping or damage. Maintenance should be scheduled.	☐ Baffles or filters are clogged, warped, corroded, or failing. Immediate maintenance required.
Drain Inlets and Outlets: ***(if applicable)***	☐ Drain inlets and outlets are clear of debris. Filters are intact (if applicable). No ponding observed.	☐ Drain inlets and outlets partially blocked/impaired by sediment, vegetation, or debris. Some ponding observed.	☐ Drain inlets and outlets require maintenance. Debris and sediment must be removed for proper function.
Deficient Items:			
Additional Notes:			
Photographs taken? ☐ ***Yes*** ☐ ***No***		***Photo file storage:*** ☐ ***Energov*** ☐ ***PermitTrax*** ☐ ***Server***	
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***			

Form updated: Aug-24

COUNTY OF SAN LUIS OBISPO
STORMWATER PROGRAM

Pervious Pavement Inspection Form

Inspection Details	Inspection Date:	Inspector Name:	
	☐ PW Permit ☐ P&B Permit	Permit Number:	
	CCM Case #:	SCM #s:	
	SCM Type: ☐ Porous Concrete/Asphalt ☐ Permeable Pavers ☐ Grid Type		
	Inspection Type: ☐ Construction Active (Interim) ☐ Construction Complete (Final) ☐ Post Construction – Annual Inspection		
Excavation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Soil subgrade visible: _____	☐ Depth to top of soil: _____	☐ Subgrade soils compacted: _____
Geotextile Fabric ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Types used: _____ ☐ Field Material slips verified:_____	☐ Depth to fabric: _____ _____	☐ Placement locations: ☐ Bottom_____ ☐ Sidewall_____
Gravel Bed ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Gravel Layer 1: _____ ☐ Gravel Thickness: _____	☐ Gravel Layer 2: _____ ☐ Gravel Thickness: _____	☐ Gravel Layer 3: _____ ☐ Gravel Thickness: _____
Pavers ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Types used: _____ _____	☐ Bedding Material: _____ _____	☐ Joint Sand: _____ _____
Structures ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Inlet Structure: _____ _____	☐ Overflow Structure: _____ _____	☐ Underdrain: ☐ Pipe Size_____ ☐ Elevation_____
Protection from construction impacts ☐ ***Yes*** ☐ ***No***	Comments:		☐ Fencing ☐ Cover ☐ Other ☐ None

Pervious Pavement Feature Inspection Form

Overall feature condition	☐ Surface is intact. No cracks/damage visible, no ponding during rain events.	☐ Surface has a minor gaps, cracks, or depressions. Small amount of ponding during rain events.	☐ Cracks and gaps evident across 25% of surface. Ponding in depressions occurs during rain events.
Litter and Sediment Deposition	☐ No litter visible on site. No sediment observable on pavement.	☐ Some accumulation of sediment and debris, minor maintenance needed.	☐ Significantly blockage with sediment and debris. Maintenance required.
Surface Condition	☐ No evidence of spilled or leaked fluids (oils, etc.)	☐ Minor staining from drips and leaks. Spills/stains not likely to impair permeability of pavement.	☐ Significant staining from leaks and spills (greater than 10 sq. ft.).
Subsurface Drain Condition: ☐ ***Not applicable.***	☐ Subsurface drain outlet is clear of debris. No ponding observed at outlet or on pavement during rain events.	☐ Subsurface drain partially blocked by sediment, vegetation, or debris. Some ponding at outlet or on pavement surface.	☐ Subsurface drain outlet requires maintenance. Outlet is blocked, ponding observed on pavement.
Maintenance Records:	Has surface sweeping or vacuuming been conducted? ☐ Yes ☐ No	Have broken pavers or surface cracks been repaired? ☐ Yes ☐ No	Have maintenance needs identified by this inspection been scheduled for repair? ☐ Yes ☐ No
Deficient Items & Proposed Resolution:			
Additional Notes:			
Photographs taken? ☐ Yes ☐ No	***Photo File storage:*** ☐ ***Energov*** ☐ ***PermitTrax*** ☐ ***Server***		
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***			

Form updated: Aug-24

COUNTY OF SAN LUIS OBISPO
STORMWATER PROGRAM

Subsurface Stormwater Feature Inspection Form

Inspection Details	Inspection Date:	Inspector Name:	
	☐ PW Permit ☐ P&B Permit	Permit Number:	
	CCM Case #:	SCM #s:	
	SCM Type: ☐ Filtration Device ☐ Treatment Vault ☐ Media Filter ☐ Underground Infiltration Feature		
	Inspection Type: ☐ Construction Active (Interim) ☐ Construction Complete (Final) ☐ Post Construction – Annual Inspection		
Excavation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Soil subgrade visible	☐ Depth to top of soil:	☐ Subgrade soils compacted:
Geotextile Fabric ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Types used: _____ ☐ Field Material slips verified:_____	☐ Depth to fabric:	☐ Placement locations: ☐ Bottom_____ ☐ Sidewall_____
Gravel Bed ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Gravel Type: _____ ☐ Bedding Thickness: _____ ☐ Field Material slips verified:_____	☐ Cover Thickness: _____ ☐ Sidewall Width: _____	☐ Soil or fill to subgrade: _____ ☐ Fill Thickness: _____
Structure/Chamber/ Vault ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Structure Material: _____ ☐ Structure Brand/Model: _____	☐ Structure Dimensions: _____ ☐ Structure Numbers: _____	☐ Outflow Pipe: _____ ☐ Inspection Port(s): _____
Treatment Structure ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Structure Type:	☐ Inlet Structure:	☐ Inlet Treatment Type:

Subsurface Stormwater Feature Inspection Form

Inlet/Outlet Structure ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Structure Type:	☐ Inlet Structure:	☐ Outlet Structure:
Protection from construction impacts ☐ ***Yes*** ☐ ***No***	Comments:		☐ Fencing/flagging ☐ Cover ☐ Other ☐ None
Access cover or inspection port:	☐ Covers can be opened and closed as designed. No corrosion, deformation, or cracking.	☐ Cover requires additional equipment for operation. Minor corrosion, deformation or cracking evident.	☐ Cover cannot be located or opened for inspection. Corrosion or deformation prevents proper operation.
Sediment/particle accumulation	☐ Sediment accumulation less than 0.25" throughout feature	☐ Sediment accumulation greater than 0.25" in feature.	☐ Sediment accumulation 0.50" or more. Maintenance required.
Baffles/Filters (If applicable) ☐ ***Unknown, not observed.***	☐ Baffles or filters in good condition with >50% capacity remaining. No signs of warping, corrosion, or failure.	☐ Baffles or filters showing accumulation, warping or damage. Maintenance should be scheduled.	☐ Baffles or filters are clogged, warped, corroded, or failing. Immediate maintenance required.
Drain Inlets and Outlets: ***(if applicable)***	☐ Drain inlets and outlets are clear of debris. Filters are intact (if applicable). No ponding observed.	☐ Drain inlets and outlets partially blocked/impaired by sediment, vegetation, or debris. Some ponding observed.	☐ Drain inlets and outlets require maintenance. Debris and sediment must be removed for proper function.
Deficient Items:			
Additional Notes:			
Photographs taken? ☐ ***Yes*** ☐ ***No***		***Photo File storage:*** ☐ ***Energov*** ☐ ***PermitTrax*** ☐ ***Server***	
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***			

Form updated: Aug-24

COUNTY OF SAN LUIS OBISPO
STORMWATER PROGRAM

Vegetated Swale or Buffer Strip Inspection Form

Inspection Details	Inspection Date:	Inspector Name:	
	☐ PW Permit ☐ P&B Permit	Permit Number:	
	CCM Case #:	SCM #s:	
	SCM Type: ☐ Vegetated Swale ☐ Vegetated Buffer Strip		
	Inspection Type: ☐ Construction Active (Interim) ☐ Construction Complete (Final) ☐ Post Construction – Annual Inspection		
Excavation ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	☐ Soil excavation depth:	☐ Depth of scarification:	☐ Subgrade soils uncompacted:
Vegetated Swale Characteristics: ☐ ***N/A***	☐ Bottom width matches plans: Width:	☐ Side slopes match plans: slopes:	☐ Sheet flow to swale ☐ Concentrated flow at inlets.
Vegetated Swale check dams: ☐ ***N/A***	Check dams installed at correct intervals per plan? ☐ Yes ☐ No	Check dams embedded to side slopes? ☐ Yes ☐ No	Rock armor on downstream side of check dams? ☐ Yes ☐ No
Vegetation Cover ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	Plant palette types:	☐ Plants fully installed. ☐ Plants partially installed ☐ Irrigation installed.	Established vegetated cover: ☐ 0-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%
Vegetated Buffer Strip: ☐ ***N/A***	Buffer strip width:	Buffer strip slope:	Established vegetated cover: ☐ 0-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%
Compost Incorporation: ☐ ***In progress*** ☐ ***Complete*** ☐ ***N/A***	Compost Incorporation depth: ☐ 4”compost / 12” soil ☐ 6” compost / 18” soil	☐ Field Material slips verified:	☐ Compost visibly contaminated or impacted.

Vegetated Swale or Buffer Strip Inspection Form

Protection from construction Impacts: ☐ ***Yes*** ☐ ***No***	Comments:		☐ Fencing/flagging ☐ Covered ☐ Other: _____ ☐ None
Evidence of erosion:	☐ No visible loss of soil media or erosion. No rill erosion or scour observed.	☐ Structure requires infill/repair. Minor erosion visible.	☐ Structure significantly impacted. Rill erosion evident in SCM. Maintenance required.
Deficient Items & Proposed Resolution:			
Additional Notes:			
Photographs taken? ☐ ***Yes*** ☐ ***No***		***Photo File storage:*** ☐ ***Energov*** ☐ ***PermitTrax*** ☐ ***Server***	
Follow up inspection necessary based on findings? ☐ ***Yes*** ☐ ***No***			

Form updated: Aug-24