CAL POLY Facilities Management & Development
Environmental Health & Safety

STORMWATER MANAGEMENT

I. PURPOSE:

The Stormwater Management Program is intended to improve the water quality of surface waters by reducing the quantity of pollutants that stormwater picks up and carries into the storm drain systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, pet waste, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles.

When discharged into streams and rivers, these pollutants can impair the waterways, discouraging recreational use, contaminating drinking water supplies, and interfering with the habitat of fish, other aquatic organisms, and wildlife.

Click here to watch a video about stormwater pollution prevention.

II. SCOPE and APPLICATION

Areas or operations include Construction Activities and Facility Operations

III. ROLES and RESPONSIBLITIES

A. Environmental Health and Safety

- Develop, communicate and implement written programs and procedures that comply with applicable stormwater regulations
- Coordinate assessments and reporting for illicit discharge detection and elimination
- Perform water quality sampling and analysis
- Implement education and outreach activities and events
- Carry out erosion and sedimentation inspections
- Oversee hazardous materials management
- Direct an emergency response team for hazardous material spill management
- Conduct annual compliance audits and report the results to department heads who are engaged in regulated discharge activities

B. Facility Operations

Facility Operations is responsible for maintaining the campus stormwater system infrastructure, which includes all structural best management practices (BMPs) and stormwater conveyances.

1. Landscape Services
   - Clean and maintain storm drain inlets.
   - Implement a landscape conversion program where areas of turf are converted to tree, shrub and perennial plantings that hold stormwater runoff and allow for improved infiltration.
   - Limit pesticide, herbicide and fertilizer application by prohibiting application within 5 feet of pavement, 25 feet of a storm drain inlet, or 50 feet of surface waters.
   - Provide street sweeping services in order to prevent automobile related pollution and parking lot trash from entering campus creeks.
2. Plumbing Shop
   - Maintain storm drain inlets, catch basins, pipes and structural BMPs.
   - Monitor the function of structural BMPs and coordinate maintenance.
   - Perform annual cleaning/pumping of storm drain inlets that have accumulated debris.

C. Facilities Planning and Capital Projects (FPCP)

- Ensure buildings and other campus amenities are designed and constructed in ways that minimize impacts on campus water quality.
- Direct the project development process to ensure that projects are designed and developed in accordance with the Campus Master Plan.
- Maintain and update the campus design and construction guidelines and work with other departments to ensure they reflect the requirements of this program.
- Project managers are responsible for ensuring that stormwater BMPs for projects are installed in accordance with their approved designs, and for ensuring that sedimentation and erosion control devices are installed correctly and maintained for the life of the project.

D. Campus Community (Colleges, Departments, Auxiliaries)

The entire campus community is responsible for ensuring the campus is being maintained to prevent and report illicit discharges.

IV. REQUIREMENTS:

The Campus Stormwater Program has six elements for implementation:

A. Education and Outreach
B. Public Involvement and Participation
C. Illicit Discharge Detection and Elimination
D. Construction Site Runoff Control
E. Pollution Prevention/Good Housekeeping for Permittee Operations
F. Post Construction Stormwater Management

These requirements include three fundamental principles:

1. Effectively prohibit non-stormwater discharges through the stormdrain system
2. Implement controls to reduce the discharge of pollutants to receiving waters
3. Follow provisions that the Regional Water Board has determined appropriate for the control of such pollutants.

A. Education and Outreach

Distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.

B. Public Involvement and Participation

Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel

C. Illicit Discharge Detection and Elimination

Stormwater that includes sanitary wastewater, sewage from septic tanks, improper oil disposal, garden hoses, dumping of holding tanks, or other matter are considered to have "illicit discharge." The campus storm drain system directs all runoff that enters the storm drain to Brizzolara Creek. The runoff is not treated so whatever enters the storm drain goes directly to surface waters and straight to Avila Beach.

Examples of an illicit discharge include:

- Sanitary wastewater.
- Effluent from septic tanks.
- Car wash waters.
- Improper oil disposal.
- Radiator flushing disposal.

- Dumping of Holding Tanks
- Improper disposal of auto and household toxics.
- Sediment and pollutants from construction sites.
- Hosing down roads and sidewalks.
- Everything except clean stormwater and authorized non-stormwater discharges.

D. Construction Site Runoff Control

Cal Poly is constantly improving and expanding the campus through new development and redevelopment. In order to protect surface water, it is important to prevent soil and construction wastes from leaving each construction site and entering the storm drain system.

The university is responsible for ensuring that construction activities that result in soil disturbances of at least one acre of total land area, or is part of a larger common plan of development, are permitted under the Construction General Permit (CGP).

Projects that meet this requirement must:

1. File a Notice of Intent (NOI) with the State Water Resources Control Board

   The FPCP project manager or designee will prepare and submit the NOI to the SWRCB along with applicable fee. A copy of the NOI will be submitted to EHS.

2. Apply for the CGP via the Storm Water Multiple Application and Report Tracking System (SMARTS Database).

3. Develop and implement a site-specific Stormwater Pollution Prevention Plan (SWPPP).

   The contractor will write the plan. Contractors are encouraged to utilize the BMPs outlined in the CASQA Construction BMP On-line Handbook. A copy will be submitted to EHS for review. EHS will submit any comments back to the project manager. A final version of the SWPPP will be submitted to EHS.

4. The contractor is responsible to install and maintain BMPs that effectively prevent stormwater pollution.

5. Inspections and Monitoring per SWPPP requirements

   The contractor is responsible for implementing the SWPPP requirements and thus is responsible for any inspections and monitoring. EHS will provide quality assurance by conducting periodic inspections to confirm that the contractor is

following the SWPPP and that the interests of Cal Poly as the property owner are being protected.

Click here for an introduction video to the Construction General Permit

The CGP will provide information about inspections.

Inspection requirements are conducted before, during and after a significant rain event (0.5 inches). Construction Site Inspection Form may be used for the inspection.

Sampling requirements will be different depending on the risk level for the project.

All inspections and sampling records are forwarded to the project manager.

I. Pollution Prevention/Good Housekeeping for Permittee Operations

The campus is required to examine and subsequently alter actions to help ensure a reduction in the amount and type of pollution that: collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and results from activities such as development, flood management and maintenance of campus infrastructure.

These are the minimum BMPs for Pollution Prevention/Good Housekeeping:

- Do not discharge anything into a storm drain, including clean tap water. Only rain is permitted in a storm drain.
- Keep outdoor work and storage areas clean and orderly.
- Cover or protect storm drain inlets from outdoor work activities as needed.
- Maintain spill control and cleanup materials and clean up outdoor spills immediately.
- Do not store machinery, equipment, or vehicles over storm drains.
- Keep outdoor trash cans and bins closed.
- If water is used to clean, do not allow wash water to get into a storm drain.
- Fueling activities must be overseen by the equipment operator at all times.
- Use drip pans under leaking equipment.

II. Post Construction Stormwater Management

Construction projects that will create and/or replace 2,500 square feet or more of impervious surface may be required to incorporate post-construction stormwater management controls in the project design.

Post-construction stormwater management controls include permanent structural (e.g., rooftop runoff infiltration galleries) and non-structural Best Management Practices (e.g., conservation of natural and permeable areas) that remain in place after the project is completed and prevent pollution from the new or re-developed site over time.

Determining if stormwater management control is required

Use the appropriate checklist form (based on square feet of impervious surface) and the Post-Construction Runoff Calculator to calculate the pre and post-project stormwater runoff volumes.

Complete the forms during the planning stages of the project to ensure all required BMPs are implemented in accordance with Cal Poly's Phase II Small MS4 General Permit 2013-0001-DWQ.

2,500 SF – 5,000 SF of impervious surface

If your project will create and/or replace between 2,500 square feet to 5,000 square feet of impervious surface, use these forms:

Post-Construction Stormwater Management Checklist (2,500-5,000 ft^2)
Post-Construction Runoff Calculator

5,000 SF or greater of impervious surface

If your project will create and/or replace 5,000 square feet or more of impervious surface, use these forms:

Post-Construction Stormwater Management Checklist (5,000 ft^2 or greater)
Post-Construction Runoff Calculator

In addition to the six elements and three principles above, the program also requires the development of a Program Effectiveness Assessment and Improvement Plan (PEAIP), and compliance with Total Maximum Daily Loads (TMDL).

Program Effectiveness Assessment and Improvement Plan

The PEAIP requires each of the elements outlined in the stormwater permit.

The PEAIP must include the strategy that the Permittee will use to track the short and long-term effectiveness of the stormwater program as well as:

- The specific measures that will be used to assess the effectiveness of the prioritized best management practices (BMPs), groups of BMPs, and/or the stormwater program as a whole.
- A description of how the campus will use the information obtained through the PEAIP to improve the stormwater program.

Total Maximum Daily Loads Compliance

A Total Maximum Daily Load (**TMDL**) is a regulatory requirement that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards.

Cal Poly shall comply with all applicable TMDLs approved pursuant to 40 Code of Federal Regulations § 130.7 that assigns a Waste Load Allocation to the Permittee and that have been identified in Attachment G of the MS4 Permit.

San Luis Obispo Creek is listed on the 303(d) list for impaired waterbodies for pathogens and nitrates. Cal Poly is located within the SLO Creek watershed. Brizzolara and Stenner creeks flow through the campus and are tributaries to SLO Creek.

V. Training

Annual stormwater training is required for all staff who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection to the storm drain system.

Training is provided annually to staff in Facilities Management and Development and Housing custodians.

Periodically, EH&S may perform a site inspection to ensure that the site is meeting the requirements of the SWPPP.

VI. FORMS/CHECKLISTS

Post-Construction Stormwater Management Checklist (2,500-5,000 ft^2)

Post-Construction Stormwater Management Checklist (5,000 ft^2 or greater)

Post-Construction Runoff Calculator

Construction Site Inspection Form

VII. APPENDIX A: DEFINITIONS

Best management practices: BMPs are scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Catch basins: A catch basin (a.k.a., storm drain inlet) is an inlet to the storm drain system that typically includes a grate or curb inlet where storm water enters the catch basin and a sump to capture sediment, debris and associated pollutants. Catch basins act as pretreatment for other treatment practices by capturing large sediments. The performance of catch basins at removing sediment and other pollutants depends on the design of the catch basin (e.g., the size of the sump), and routine maintenance to retain the storage available in the sump to capture sediment

Erosion: The physical detachment of soil due to wind or water. Often the detached fine soil fraction becomes a pollutant transported stormwater runoff. Erosion occurs naturally but can be accelerated by land disturbance and grading activities such as farming, development, road building and timber harvesting.

Illicit discharges: Any discharge into a storm drain system that is not composed entirely of stormwater. This means that anything other than simply the water that falls from the sky is an illicit discharge.

Impaired waterbody: A waterbody (i.e., stream reaches, lakes, waterbody segments) with chronic or recurring monitored violations of the applicable numeric and/or narrative water quality criteria. Impaired water is water that has been listed on the California 303(d) list or has not yet been listed but otherwise meets the criteria for listing. A water is a portion of a surface water of the state, including ocean, estuary, lake, river, creek, or wetland. The water currently may not be meeting state water quality standards or may be determined to be threatened and have the potential to not meet standards in the future. The State of California's 303(d) list can be found at http://www.swrcb.ca.gov/quality.html.

Impervious surfaces: Surfaces that water cannot infiltrate or soak into (i.e., asphalt roads, concrete areas, buildings, sidewalks, etc.).

MS4: The regulatory definition of an MS4 (40 CFR 122.26(b)(8)) is "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States.

(ii) (ii) Designed or used for collecting or conveying storm water;

(iii) (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

In practical terms, operators of MS4s can include municipalities and local sewer districts, state and federal departments of transportation, public universities, public hospitals, military bases, and correctional facilities. The Stormwater Phase II Rule added federal systems, such as military bases and correctional facilities by including them in the definition of small MS4s.

Non-structural BMPs: Non-Structural BMPs include the development and implementation of policies and procedures that serve to reduce the impacts of stormwater runoff. This can include public education and outreach programs designed to teach citizens the importance of keeping household chemicals, solvents, paint, etc., under cover and away from stormwater.

Notice of Intent (NOI): The application form by which dischargers seek coverage under General Permits unless the General Permit requires otherwise.

Receiving waters: Surface water that receives regulated and unregulated discharges from activities on land.

Stormwater Pollution Prevention Plan (SWPPP): - The Construction General Permit requires the development of SWPPP by a certified Qualified SWPPP Developer (QSD). Many California Board of Professional Engineers, Land Surveyors and Geologists (CBPELSG) have self-certified.

Structural BMPs: Structural BMPs are built into the landscape to manage the runoff from urban areas. Common stormwater BMPs include dry detention ponds (these are normally dry and fill up with runoff during rain events and then are dry again), wet ponds (these are normally wet and the water level rises during rain events and then goes back down to the normal pond depth), bioswales and rain gardens.

Total Maximum Daily Load: The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain water quality standards. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet water quality standards even after application of technology-based controls, more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.

Waste Load Allocation: The portion of a receiving water's total maximum daily load that is allocated to one of its existing or future point sources of pollution. Waste load allocations constitute a type of water quality-based effluent limitation.

Watershed: An area of land that drains water, sediment and dissolved materials to a common receiving body or outlet. The term is not restricted to surface water runoff and includes interactions with subsurface water. Watersheds vary from the largest river basins to just acres or less in size.

VIII. APPENDIX B: REFERENCES

CASQA BMP Handbooks

Phase II Small MS4 Permit

40 Code of Federal Regulations § 130.7

Construction General Permit (CGP)