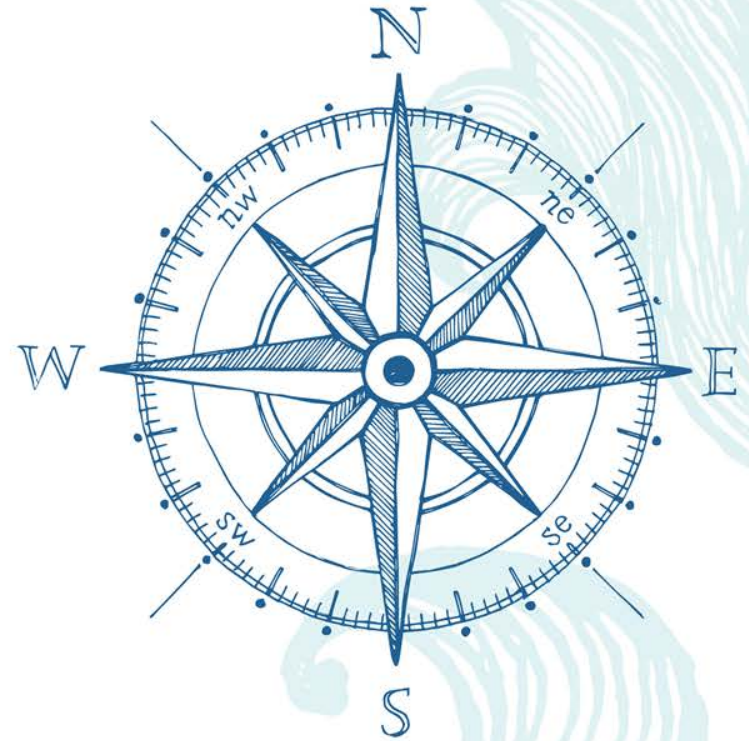
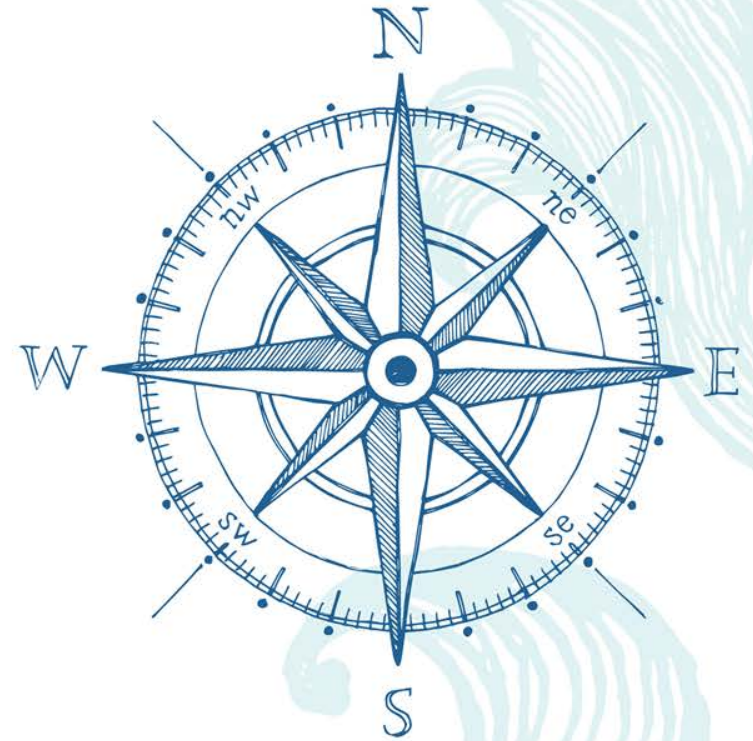


BUILDING COLLABORATIVE COMMUNITIES

NAVIGATING CHALLENGES, CHARTING INNOVATIONS





Stormwater and Water Quality in Planning, Design and Maintenance

Agenda

- Stormwater Pollution
- Construction vs. Post-Construction
- Overview of Permits
- Roles and Responsibilities
- Trash Amendment – Track 1 vs. Track 2



Objectives

- What is Stormwater Pollution?
- Construction vs. Post-Construction
- Construction General Permit Regulations ([2009-0009-DWQ](#))
- Municipal Separate Sewer System (MS4) Phase II permit ([2013-0001-DWQ](#))
- Roles and Responsibilities
- Trash Amendment – Track 1 vs. Track 2
- Prevent stormwater pollution and impacts to the watershed.



What is Stormwater Pollution?

- Urban stormwater runoff is a source of sediment source to creeks and ocean pollution
- How can we view stormwater as a resource and also protect water quality of receiving water bodies?
- What are the consequences of not managing stormwater runoff?



Construction vs. Post-Construction



**2018 CSU FACILITIES
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Overview of MS4 Permit

- Components of the Phase II Small MS4 Permit:
 - Education and Outreach
 - Public Involvement and Participation
 - Illicit Discharge Detection and Elimination
 - Pollution Prevention/Good Housekeeping
 - **Construction Site Runoff Control**
 - **Post-Construction Storm Water Management Program**
 - Program Effectiveness Assessment and Improvement



Overview of Construction General Permit

- Projects > 1-acre of land disturbance or if project is part of a larger land disturbance project
- SWRCB Application and NOI
- Development of SWPPP
- Implementation and Monitoring of SWPPP
- Notice of Termination (NOT)



Roles and Responsibilities

- Responsible for ensuring that buildings and other campus amenities are designed and constructed in ways that minimize impacts on campus water quality.
- Directs the project development process to insure that projects are designed and developed in accordance with the Campus Master Plan.
- Maintains and updates the campus design and construction guidelines and works with other departments to ensure that 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.



Construction Site Runoff Control

- Responsible to ensure 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:
 - Notice of Intent (NOI) File the NOI with the SWRCB
 - 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 EH&S.



Construction Site Runoff Control (cont)

- Apply for the CGP via the Storm Water Multiple Application and Report Tracking System (SMARTS Database).
 - Stormwater Pollution Prevention Plan (SWPPP) 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 EH&S for review. EH&S will submit any comments back to the project manager. A final version of the SWPPP will be submitted to EH&S.
 - The contractor is responsible to install and maintain BMPs that effectively prevent stormwater pollution.



Construction Site Runoff Control (cont)

- Inspections and Monitoring per SWPPP requirements
 - The contractor is responsible for implementing the SWPPP requirements and thus is responsible for any inspections and monitoring. EH&S will provide quality assurance by conducting periodic inspections to confirm that the contractor is following the SWPPP and that the interests of the University as the property owner are being protected.



Post-Construction Program

- Post Construction Stormwater Management Requirements
- Example Projects
- Alternative Post-Construction
- Stormwater Management Program
- Roles and Responsibilities



Post-Construction Stormwater Management Requirements

- Applies to projects:
 - that create and/or replace **2,500 square feet or more of impervious surface.**

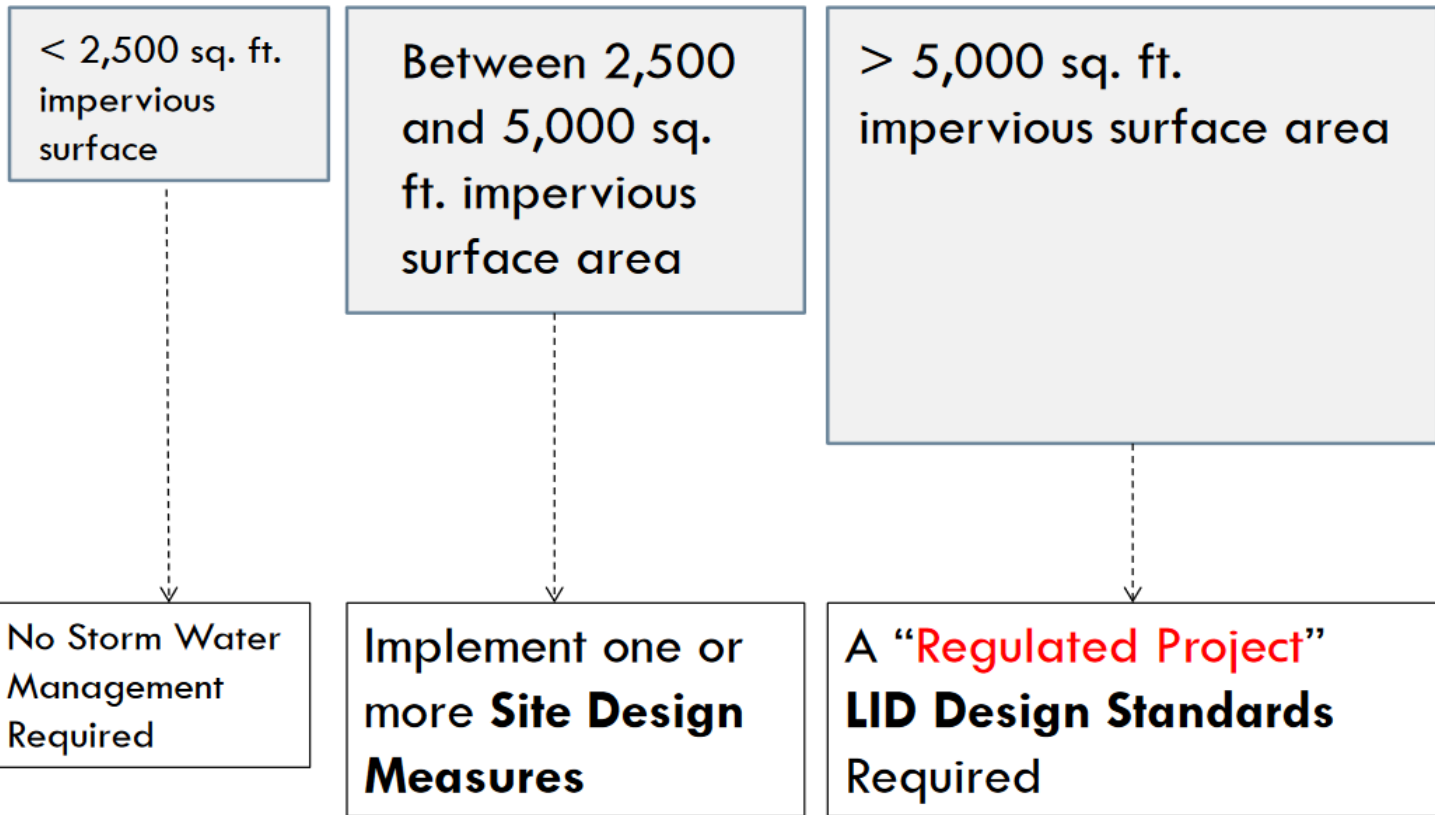


Post-Construction Stormwater Management Exemptions

- Interior remodels
- Routine maintenance or repair projects such as:
Maintenance, repair, and replacement work on existing underground utilities
- Building roof or exterior wall surface replacement
- Pavement or asphalt resurfacing within the existing footprint
- Sidewalk replacement within an existing footprint
- Routine replacement/repair of damaged pavement/asphalt

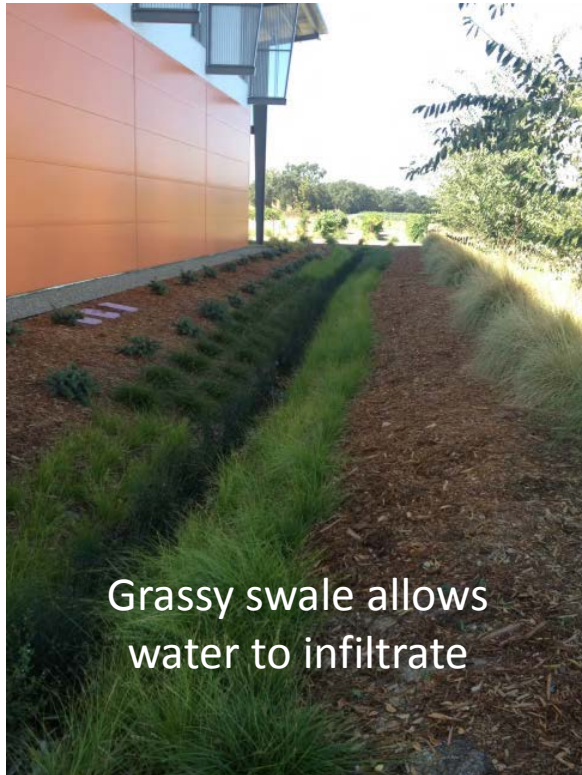


Project > 2500 ft²?



Site Design Measures and Low Impact Development (LID)

Site Design Measures



Grassy swale allows water to infiltrate

Low Impact Development (LID)



Disconnect downspouts



Project between 2,500 ft² and 5,000 ft²?

- Projects that create and/or replace between 2,500 and 5,000 sq. ft. of impervious surface must implement one or more of the following:
 - Stream Setbacks and Buffers
 - Soil Quality Improvement and Maintenance
 - Tree Planting and Preservation
 - Rooftop and Impervious Area Disconnections
 - Porous Pavement
 - Green Roofs
 - Vegetated Swales
 - Rain Barrels and Cisterns



Site Design Measures

OPTION 1
On project site

OPTION 2
Off project site but
within campus and in
same watershed

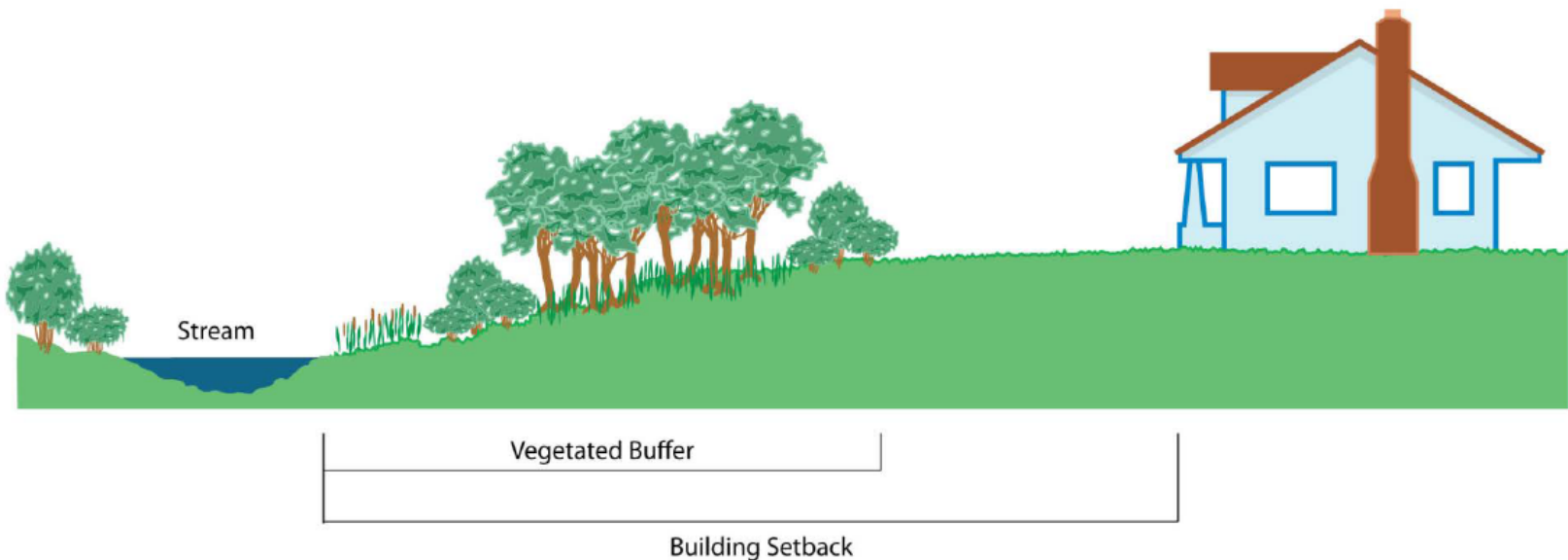
OPTION 3
Combination of on-site
and off-site

Options for implementing site design measures on project site or at another location on campus within the same watershed varies from campus to campus. Please work with EH&S for implementation and reporting.



Stream Setbacks and Buffers

A vegetated area that exists or is established to protect a natural water system



Soil Quality Improvement and Maintenance

Improvement and maintenance of soil through soil amendments and creation of microbial communities



Tree Planting and Preservation

- Planting and preservation of healthy, established trees (deciduous and evergreen)



Rooftop and Impervious Area Disconnections



Porous Pavement

Pavement that allows runoff to pass through it, thereby reducing runoff and filtering pollutants, and slowing storm water flow



State Water Board Trash Amendments

Adopted in April 2015 by the State Water Resources Control Board

Impacted Entities:

- Phase I and II Municipal Stormwater—Except Bay Area and LA Phase I MS4s. (In a TMDL watershed? Seek clarification!)
- California Department of Transportation (Caltrans)
- Permitted Industrial Facilities

Trash Reduction Requirement

- Install/Maintain **Full Capture Systems (or Equivalent Actions)** in all Priority Land Use (PLUs)(or Equivalent Land Areas) within 10 years from the effective date of the implementing permit.



Compliance Approaches – *Track 1 vs. Track 2*

- **Track 1** – Install, operate, and maintain **full capture systems** for all storm drains that capture runoff from all priority land uses (or equivalent)
- **Track 2** – Install, operate, and maintain **any combination** of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls
 - Achievement of **full capture system equivalency**



Track 1: Trash Full Capture Systems

- **MUST BE CERTIFIED BY STATE WATER BOARD STAFF**

https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html

Proprietary Devices

- **Catch Basin Inserts**
 - 24 Types/Models (13 vendors)
- **Large/High Flow Capacity**
 - 16 Types/Models (8 vendors)

Multi-benefit Treatment Systems

- **Bioretention**
- **Capture and Use**
- **Detention Basin**
- **Infiltration Trench or Basin**
- **Media Filter**



Multi-benefit Treatment Systems

- Prohibits the discharge of particles 5 mm or greater to surface waters offsite
- Sizing: **in flux—see website for updates**
- Requires design plans stamped by a registered California licensed professional civil engineer



Fact Sheets @: https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/trash_implementation/fcs_list_of_mbts_04aug17.pdf



Track 2 – Full Capture Equivalency

(from State Board Staff Report)

The trash load that would be reduced if full capture systems were installed, operated, and maintained for all storm drains that capture runoff from the relevant areas of land (e.g., Priority Land Uses)



Full Capture Equivalency (FCE) Approach

via On-land Visual Trash Assessments (OVTA)

- Walking/driving survey of trash levels on areas draining to MS4s
- Qualitative Assessment
 - Training needed
 - Quality Assurance/Control
- Used to establish:
 - Baseline – Observed levels of trash on-land during baseline time period (e.g., 2018)
 - Progress – Changes in levels of trash on-land over time
- Equivalence = achieving lowest assessment level of on-land trash in priority land use (PLU) areas



OVRTA Assessment Levels

Trash Level	General Description	Definition
A	Not Littered	<ul style="list-style-type: none"> Effectively no trash is observed Any trash is not obvious at first glance Cleanup is a one-person job walking at a normal pace No additional measures are needed
B	Slightly Littered	<ul style="list-style-type: none"> A few littered areas Trash noticeable at first glance Cleanup is a one or two-person job walking at a slow pace Additional measures are needed
C	Littered	<ul style="list-style-type: none"> A few clean areas Trash widely distributed Cleanup is a multi-person job requiring frequent stops Roughly 4 times the trash as B level
D	Very Littered	<ul style="list-style-type: none"> Continuous trash Piles Cleanup requires a large, organized effort Roughly 3 times the trash as C level



OVRTA Protocols

Protocol	Protocol Name	When to Use
A	Street and Sidewalk Survey	<ul style="list-style-type: none"> • Streets with sidewalks are the primary areas draining to storm drain inlets • Safe to walk the assessment site
B	Driving Survey	<ul style="list-style-type: none"> • Streets with sidewalks are the primary areas draining to storm drain inlets • No sidewalks exist or it's unsafe to walk the assessment site
C	Area-based Survey	<ul style="list-style-type: none"> • Areas not directly associated with inlets on streets (e.g., parking lots)



WHERE ARE CONTROLS REQUIRED?

PRIORITY LAND USE (PLU) AREAS – Non-Traditional MS4s

- Permittee defined
- Areas generating “substantial amounts of trash”
 - Moderate (B), high (C) or very high (D) OVTA scores
- **Minimums from the Traditional MS4 Program**
 - **Student Housing**
 - **Commercial** – sale/transfer of goods/services
 - **Public Transportation Stations** – facilities/sites where public transit agencies’ vehicles load/unload passengers or goods



OVTA Resources

- http://eoainc.com/ovta_fc/
- https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html

