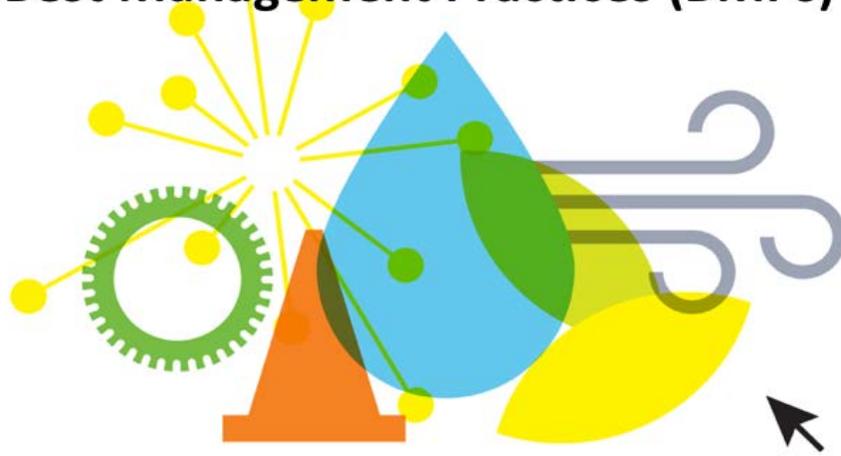


# Stormwater: Best Management Practices (BMPs)



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METRO ENVIRONMENTAL CONSTRUCTION  
AWARENESS (MECA) PROGRAM

Welcome to Metro's Environmental Construction Awareness Program module on Stormwater Best Management Practices.

While we work together, transforming Los Angeles into a more livable, sustainable city, we are just as careful about the process as we are about the outcome. We're asking you to think differently with us about how to build infrastructure so that the construction process protects the health of our waterways.

## What enters the catch basin...



eventually drains to the ocean



*Urban runoff discharge*



Water that reaches the ground is known as stormwater. Stormwater does not include contaminated groundwater from below the surface, process, or wastewater. These topics are covered in other MECA modules.

Stormwater can flow along uncovered surfaces, eventually entering catch basins that lead to storm drains. Storm drains are channels that run under our city, moving water away from our streets and to the ocean to minimize flooding.

It is our responsibility



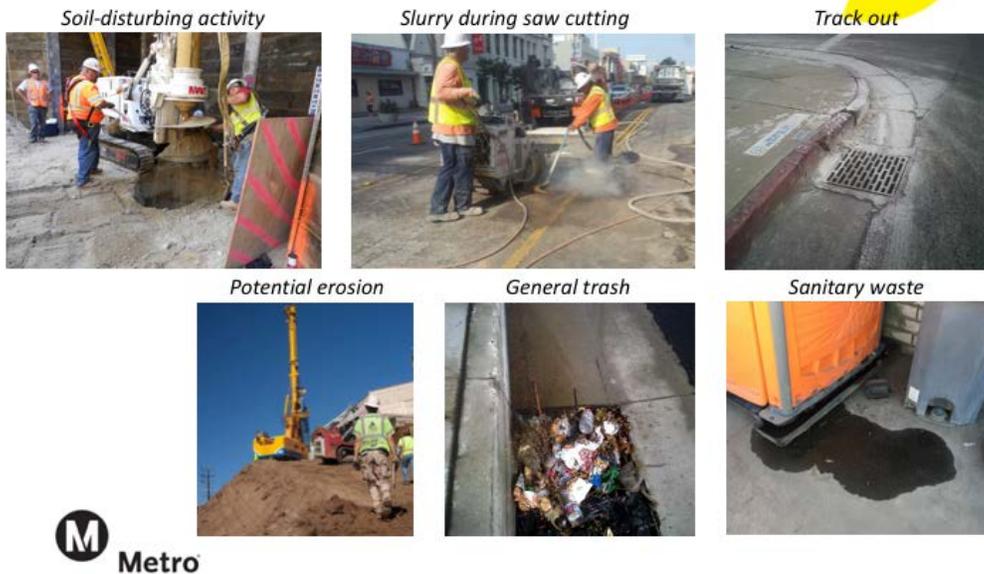
to keep stormwater  
free of pollutants



This water typically does not get treated or cleaned before it is released to the ocean. So, when water carrying pollutants joins streams and finally the ocean, each body of water can become polluted. Such pollution can cause damage to the environment, our atmosphere, and human health. As a result, stormwater discharges are regulated by the California Water Resources Control Board and Los Angeles Regional Water Board.

The best way to avoid the impacts of stormwater pollution is to implement best management practices to keep stormwater clean.

# Stormwater impacts



If not careful, some construction activities can contribute to stormwater pollution.

Soil-disturbing activities such as clearing, grubbing and earthwork can produce sediment that if not contained, can mix with stormwater.

In addition, erosion from staging of contaminated soils, leaked slurries from sawing and grinding operations, wastewater and waste from concrete washout operations are likely pollutants.

Leaks or accidental spills from use and storage of hazardous materials such as vehicle fluids, batteries, concrete materials, curing compounds, joint seal materials, paints, solvents, thinners, and other chemicals can seep into stormwater.

Other unintended sources of pollution include: wastewater from vehicle cleaning operations, green waste from vegetation removal, non-storm water from dewatering operations, trash from packaging or food debris, or sanitary waste.

## Solving large-scale challenges



Wetting haul paths for dust suppression creates mud on truck wheels

- > Wheel wash keeps sediment on site
- > Street sweeping of roads catches any remaining residue



One of the best ways to avoid stormwater pollution is to control materials so they don't leave the work site. Yet, sometimes a variety of innovative solutions are needed to solve large-scale challenges.

At the La Brea South Yard, as part of the Purple Line Extension - Section 1, a tire wash was installed to keep sediment from tracking out. Sediment wetted for dust suppression stuck to truck wheels in the yard. The wheel wash contained the sediment, keeping it off the city streets and out of stormdrains.

Working in conjunction with frequent street sweeping, the project has been successful in minimizing stormwater pollution.

## Metro's commitment



- > Mitigation Monitoring and Reporting Plan
- > Metro Rail Design Criteria (MRDC)
- > General Requirements (GRs)
- > Water Pollution Control Specifications



*Water control near  
La Cienega along  
the Expo Line*



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Construction companies working for Metro must comply with applicable state and regional permits related to stormwater. These permits are updated occasionally, so contractors are encouraged to check for the latest version.

Metro has numerous specifications and plans in place to ensure stormwater pollution is adequately controlled, not only to meet compliance obligations with laws and ordinances, but to meet and exceed Metro's commitment to the community to be a good neighbor and leader in environmental practices.

The Environmental Impact Report or Environmental Impact Study that guides the project includes a Mitigation Monitoring and Reporting Plan with specific goals and strategies to minimize stormwater pollution. Metro's MRDC and GRs provide additional guidance. The Water Pollution Control Spec outlines the contractor's responsibility for permits, plans, and submittals, many of which are introduced in this module with samples provided for download.

As a partner in construction projects, Metro takes an active role in ensuring that contractors have sound plans for stormwater protection.

## Innovating through design



*Metro Division 20 Building 64 – Rendering of Maintenance Facility*



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At Metro, we are building infrastructure to last well into the future. These projects have the potential not only to keep stormwater clean during construction, but, if planned for, to maintain or even improve the quality of stormwater when buildings and infrastructure are in operation. These considerations need to happen from the beginning of the project and we invite you to innovate along with us.

### **Source:**

Rendering for the future LEED Silver certified – Division 20, Building 64 – Maintenance Facility

Gruen Associates, Architects

## Contractor's role



- > Stormwater Pollution Prevention Plan (SWPPP)
- > Water Pollution Control Program (WPCP)
- > Spill Prevention Control and Response Plan



*Plans define  
who to call when  
something happens*



Your project might be governed by a Stormwater Pollution Prevention Plan, often called a SWPPP (*LDM: this is pronounced 'swip'*) or Water Pollution Control Program, depending on how much soil disturbance is expected. This documentation is your commitment to using the best management practices available to control stormwater pollution and should align with Metro's larger permits. Your plan includes specific strategies selected, their locations, timeframe for implementation, and schedules for inspection and maintenance based on resources such as those found in the California Stormwater Quality Association handbooks and documentation.

Either program must be developed and overseen by a qualified member of your environmental team. These documents must be submitted and approved by necessary regulatory bodies and Metro before site activity can begin.

If plans are not in place and approved, and if stormwater pollution is not properly controlled, construction projects can be shut down or receive notices of violation and fines.

## Submittals



- > Pre-construction surveys
- > Weekly stormwater inspection reports
- > Quarterly non-stormwater inspection reports
- > Annual report summarizing corrective actions
- > Rain Event Action Plan (REAP)
- > Sampling with lab reports and analysis
- > Staffing updates



Metro expects that inspections, tests, reports, and submittals as outlined in plans and permits are submitted on time and complete to minimize work delays and fines. These submittals are the contractor's evidence of plan implementation.

A number of submittals may be required for a Metro project, such as: pre-construction documents including all necessary hydraulic and hydrologic studies and runoff drainage calculations, weekly stormwater and non-stormwater inspection reports, quarterly and annual reports, lab reports based on sampling events, and Rain Event Action Plans, known as "REAPs" that reflect stormwater pollution risk levels before, during, and post-storm events.

Should your Qualified SWPPP Developer or Practitioner change, Metro should be notified immediately in order to file its required notifications to the State.

## Practices



Check BMPs daily



Be observant



Plan ahead



Prevention is pivotal to project success. Monitor discharge points before work begins to ensure no issues exist. Consider the work for the day and what areas may need additional protection. Be sure that spill kits and other equipment are available in good working order should they be needed.

As we often hear from the field, it's the little things that get a project sited. Therefore, daily maintenance of best management practices, BMPs, is critical to a successful project. Check for proper storage of rusty or greasy parts, use of containment and secondary containment, condition of fiber rolls used to protect inlets, effectiveness of track out prevention measures, etc.

If something is no longer working effectively, replace it immediately.

If you see trash, even if it is blown onto the site, collect and dispose of it properly so it doesn't become a problem for our project.

## Plan appropriately



- > Understand project specifications and requirements
- > Provide for essential personnel
- > Know BMPs appropriate to each stage of the project
- > Provide training to employees and subcontractors
- > Allocate resources to fully implement activities
- > Proactively update SWPPP when needed



Metro continuously updates its specifications and requirements. When planning a new project, be sure to review all materials carefully and be sure to understand components that are the contractor's responsibility, as these are project-specific.

Contractors should plan for sufficient personnel with any required certifications, materials and adequate equipment to perform and maintain water pollution control maintenance work through the end of the project. This includes training employees and subcontractors on when and how to use BMPs.

If conditions change on the construction site that impact water pollution controls, or if the measures being used are found to be inadequate to the need, Metro expects the contractor to be proactive, submitting an updated SWPPP to address the new situation.

## Summary



- > Stormwater pollution control strategies are a priority
- > Engage actively in the process
- > Submit deliverables on time



*Sweep up loose dirt to keep the right-of-way clean*



Keeping stormwater clean is a priority during Metro projects, from inception through construction and operations. This commitment shows in the comprehensive stormwater protection program required on our projects.

We invite you to work with us to bring state-of-the-art, innovative, water pollution control strategies to our projects.

In order to keep projects moving on schedule and on budget, we expect contractors to attend meetings for planning and coordination and to complete all plans, monitoring, inspections, notifications, and reports required during and following construction.

Timely submittal of deliverables, with sufficient time for review and approval by Metro, combined with clear communication throughout the project, are essential to minimize delays in construction and avoidance of fines or other penalties.

Thank you



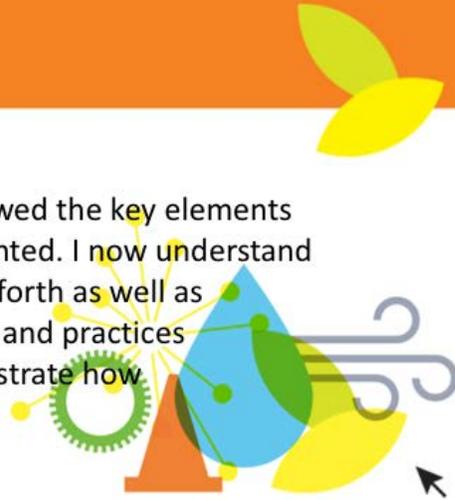
Send your thoughts to:  
[sustainability@metro.net](mailto:sustainability@metro.net)

Thank you for watching this MECA module. Resources mentioned in this module are available for download from this site.

We also encourage you to share your feedback using the form on this site or send your thoughts to [sustainability@metro.net](mailto:sustainability@metro.net).

## Certification

This certifies that I have reviewed the key elements of Stormwater BMPs as presented. I now understand the commitments Metro sets forth as well as the requirements, submittals, and practices contractors will use to demonstrate how stormwater will be protected.



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Your Name, Title

Company

Date



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Let us know that you watched and learned from this module. You might want to take a screen shot of this certification and include it in materials you share with Metro.