

# 5: Best Management Practices



# INTRODUCTION

- Look at each highway construction project with fresh eyes. Each project has unique conditions that may require BMPs not used on previous projects.
- New or custom BMPs may be needed to meet water quality goals.
- Use Chapter 5 of the Manual as a BMP Toolbox.
- Erosion and pollution control BMPs evolve rapidly – make sure to check for updates regularly.

**Sediment Control**
**Sediment Trap**
**SC-3**

**DEFINITION**  
A small impoundment formed by excavation and/or constructing an embankment so that sediment-laden runoff is temporarily detained.

**PURPOSE**

- Allow sediment to settle out of construction runoff before the water is discharged.
- Simplify stormwater management on a construction site by trapping small amounts of sediment at multiple spots.

**AT A GLANCE**

GENERAL INFORMATION	RATINGS	H	M	L																																				
<p><b>Key Design Considerations</b></p> <ul style="list-style-type: none"> <li>Soils need to be appropriate for infiltration</li> <li>Locate to minimize potential for groundwater contamination</li> <li>Use for drainage areas of 5 acres or less</li> </ul> <p><b>Alternate BMPs to consider:</b></p> <ul style="list-style-type: none"> <li>SC-1 Sediment Control Berm</li> </ul> <p><b>Use in combination with:</b></p> <ul style="list-style-type: none"> <li>RC-1 Earth Dikes/Drainage Swales and Lined Ditches</li> <li>RC-4 Rock Outlet Protection/Velocity Dissipation Devices</li> <li>RC-5 Slope Drain</li> <li>SC-5 Sediment Wattle</li> <li>SC-7 Gravel Bag Protection</li> </ul> <p><b>Maintenance Needs:</b></p> <ul style="list-style-type: none"> <li>Inspect after storm events to ensure functionality</li> <li>Repair eroded areas or re-evaluate placement if erosion occurs frequently or install additional BMPs.</li> <li>Remove accumulated sediment when 50% capacity is reached</li> </ul>	<p><b>Associated Costs</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Design</td><td></td><td>X</td><td></td></tr> <tr><td>Construction</td><td></td><td></td><td>X</td></tr> <tr><td>Maintenance</td><td>X</td><td></td><td></td></tr> </table> <p><b>BMP Objectives</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Erosion Control</td><td></td><td>X</td><td></td></tr> <tr><td>Runoff Control</td><td>X</td><td></td><td></td></tr> <tr><td>Sediment Control</td><td>X</td><td></td><td></td></tr> <tr><td>Good Housekeeping</td><td></td><td></td><td></td></tr> <tr><td>Non-Stormwater</td><td></td><td></td><td></td></tr> <tr><td>Waste Management</td><td></td><td></td><td></td></tr> </table>	Design		X		Construction			X	Maintenance	X			Erosion Control		X		Runoff Control	X			Sediment Control	X			Good Housekeeping				Non-Stormwater				Waste Management						
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*Small sediment trap*



*Sediment trap with rock protection*

ADOT Erosion and Pollution Control Manual

# IMPLEMENTING CONSTRUCTION SITE BMPS

Successful implementation of BMPs depends on:

- Thorough project site assessment.
- Comprehensive review of plans, details, and specifications.
- Identification of strategies to limit extent of disturbance.
- Properly sized BMPs.
- Combining BMPs to maximize erosion and pollution control.
- Inspection, maintenance and repair or replacement of BMPs.
- Proper employee training.
- Diligent documentation of inspections, performance and maintenance.



**NOTE:** Construction sites that disturb less than one acre are exempt from permit coverage, however, **operators are required to apply stormwater quality and erosion/sediment control BMPs** as part of ADOT's compliance practices and pollution prevention measures.

# CONSTRUCTION BMPS

**BMP Categories and BMPs included in the Manual.**

<b>CP</b>	<b>Construction Site Planning and Management</b>
CP-1	Construction Sequencing
CP-2	BMP Inspection and Maintenance
<b>EC</b>	<b>Erosion Control</b>
EC-1	Preserve Existing Vegetation
EC-2	Minibenches/Slope Roughening
EC-3	Mulch Cover
EC-4	Seeding
EC-5	Geotextiles/Erosion Control Blankets
EC-6	Soil Binders
EC-7	Crown Ditch
<b>RC</b>	<b>Runoff Control</b>
RC-1	Earth Dikes/Drainage Swales and Lined Ditches
RC-2	Cut to Fill Slope Transitions
RC-3	Erosion Protection at Structures
RC-4	Rock Outlet Protection/ Velocity Dissipation Devices
RC-5	Slope Drains
RC-6	Check Dam
<b>SC</b>	<b>Sediment Control</b>
SC-1	Sediment Control Berm
SC-2	Silt Fence
SC-3	Sediment Trap
SC-4	Sediment Basin
SC-5	Sediment Wattle
SC-6	Sediment Log
SC-7	Gravel Bag Protection
SC-8	Storm Drain Inlet Protection
SC-9	Curb Inlet Protection
SC-10	Stabilized Construction Entrance/Exit
SC-11	Stabilized Construction Roadway

<b>SC</b>	<b>Sediment Control, continued</b>
SC-12	Compost Sock
SC-13	Rock Berm
<b>GH</b>	<b>Good Housekeeping</b>
GH-1	Vehicle and Equipment Cleaning
GH-2	Vehicle and Equipment Fueling
GH-3	Vehicle and Equipment Maintenance
GH-4	Street Sweeping and Vacuuming
GH-5	Material Delivery and Storage
GH-6	Material Use
GH-7	Stockpile Management
GH-8	Spill Prevention and Control
GH-9	Portable Toilet
<b>NS</b>	<b>Non-Stormwater</b>
NS-1	Water Conservation Practices
NS-2	Dewatering Operations
NS-3	Paving and Milling Operations
NS-4	Temporary Watercourse Crossing
NS-5	Water Diversion
NS-6	Structure Demolition/Removal Over or Adjacent to Water
NS-7	Material and Equipment Use In/Over Watercourses
<b>WM</b>	<b>Waste Management</b>
WM-1	Solid Waste Management
WM-2	Hazardous Waste Management
WM-3	Contaminated Soil Management
WM-4	Concrete Waste Management
WM-5	Liquid Waste Management

# CONSTRUCTION BMPS

## CP: CONSTRUCTION SITE PLANNING AND MANAGEMENT

Construction site planning and management can reduce erosion and sediment loss by:

- Limiting the amount of disturbed area on the site at any one time.
- Proper implementation, inspection and maintenance of BMPs.
- Achievement of final stabilization of disturbed areas as the project progresses.

- CP-1: Construction Sequencing
- CP-2: BMP Inspection and Maintenance



# CONSTRUCTION BMPs

## EC: EROSION CONTROL

Erosion control (soil stabilization) consists of preparing the soil surface and applying BMPs or combinations thereof to disturbed soil areas.

Temporary soil stabilization shall be applied to disturbed soil areas of construction projects per plans, details, specifications, and applicable Construction General and/or ADOT permits.

First line of defense - rely on these BMPs to retain soil and sediment in place.

- EC-1: Preserve Existing Vegetation
- EC-2: Minibenches/Slope Roughening
- EC-3: Mulch Cover
- EC-4: Seeding
- EC-5: Geotextiles/Erosion Control Blankets
- EC-6: Soil Binders
- EC-7: Crown Ditch

# CONSTRUCTION BMPS

## RC: RUNOFF CONTROL

Runoff controls (also called temporary concentrated flow conveyance controls) consist of BMPs used alone or in combination to intercept, direct, divert, convey, and discharge concentrated flows with a minimum of soil erosion, both on-site and offsite.

Runoff controls may be required to direct run-on around or through the project in a non-erosive fashion.

- RC-1: Earth Dikes/Drainage Swales and Lined Ditches
- RC-2: Cut to Fill Slope Transitions
- RC-3: Erosion Protection at Structures
- RC-4: Rock Outlet Protection/Velocity Dissipation Devices
- RC-5: Slope Drains
- RC-6: Check Dam

# CONSTRUCTION BMPS

## SC: SEDIMENT CONTROL

Sediment control BMPs are back-up control measures to erosion control BMPs to keep sediment from leaving the construction site.

Construction (temporary) sediment control practices include those measures that intercept and slow or detain the flow of stormwater to allow sediment to be trapped and settle.

- SC-1: Sediment Control Berm
- SC-2: Silt Fence
- SC-3: Sediment Trap
- SC-4: Sediment Basin
- SC-5: Sediment Wattle
- SC-6: Sediment Log
- SC-7: Gravel Bag Protection
- SC-8: Storm Drain Inlet Protection
- SC-9: Curb Inlet Protection
- SC-10: Stabilized Construction Entrance/Exit
- SC-11: Stabilized Construction Roadway
- SC-12: Compost Sock
- SC-13: Rock Berm

# CONSTRUCTION BMPS

## GH: GOOD HOUSEKEEPING

Good Housekeeping and Material Management BMPs are procedural and structural pollution prevention measures designed to prevent contamination of stormwater from a broad range of materials.

Proper handling, storage and use of materials will ensure that construction site operations do not contribute to the degradation of stormwater runoff through added jobsite-related pollutants.

Implement for all applicable activities, material usage and site conditions.

- GH-1: Vehicle and Equipment Cleaning
- GH-2: Vehicle and Equipment Fueling
- GH-3: Vehicle and Equipment Maintenance
- GH-4: Street Sweeping and Vacuuming
- GH-5: Material Delivery and Storage
- GH-6: Material Use
- GH-7: Stockpile Management
- GH-8: Spill Prevention and Control
- GH-9: Portable Toilet

# CONSTRUCTION BMPS

## NS: NON-STORMWATER

Non-stormwater management BMPs are source control measures intended to prevent pollution by limiting or reducing potential pollutants at the source before they come in contact with stormwater.

These practices involve day-to-day operations of the construction site and are usually under the control of the contractor.

- NS-1: Water Conservation Practices
- NS-2: Dewatering Operations
- NS-3: Paving and Milling Operations
- NS-4: Temporary Watercourse Crossing
- NS-5: Water Diversion
- NS-6: Structure Demolition/Removal Over or Adjacent to Water
- NS-7: Material and Equipment Use In/Over Watercourses

# CONSTRUCTION BMPS

## WM: WASTE MANAGEMENT

Waste management BMPs are also source control measures to prevent pollution by limiting or reducing potential pollutants at the source before they come in contact with stormwater.

These BMPs involve day-to-day operations of the construction site, are under the control of the contractor, and are additional “good housekeeping practices” that involve keeping a clean, orderly construction site.

- WM-1: Solid Waste Management
- WM-2: Hazardous Waste Management
- WM-3: Contaminated Soil Management
- WM-4: Concrete Waste Management
- WM-5: Liquid Waste Management