Construction Best Management Practices Inspector's Guide

PROTECT OUR WATER

MĀLAMA I KA WAI

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION • STATE OF HAWAII •

State of Hawaii
Department of Transportation
Highways Division
March 2022

Disclaimer

The information presented in this Inspectors Guide is a quick reference booklet of the most commonly used Best Management Practices (BMPs) found on DOT-HWY projects and does not replace the latest "Construction Best Management Practices Field Manual." For the current verision of the Construction BMP Field Manual, go to https://stormwaterhawaii.com.

This booklet is prepared as a reference guideline, however, due to site-specific conditions, the selection of the BMPs must be used in conjunction with best professional judgment and sound engineering principles to assure proper function and performnace of the BMPs contained herein. The author does not guarantee the accuracy or completeness of this document and will not assume any liability or responsibility for the use of, or for any damages resulting from the use of any information contained herein. The detail and the wording inthis manual will not necessarily result in compliance with National Pollutant Discharge Elimination System (NPEDES) Permit requirements or state requirements specific to the user`s site. Application of any BMPs must comply with manufacturing specifications and any federal, state, and local requirements. In case of conflict between the condictions stated, the more stringent conditions shall apply.

Useful Phone Numbers

Sate of Hawaii Department of Health

Clean Water Branch.....808-586-4309
Hawaii State Hospital (CWB, non-business hours.....808-247-2191
Solid and Hazardous Waste Branch.....808-586-4226
Hazardous Evaluation and Emergency Response (HEER) Office...808-586-4249
DOH-HEER Office (non-business hours).....808-236-8200

State of Hawaii Agencies

State of Hawaii Department of Transportation.....808-587-2150
State of Hawaii Department of Labor & Industrial Relations,
Hawaii Occupational Safety and Health Administration.....808-586-9116
Hawaii National Guard.....808-733-4228

City and County of Honolulu

Honolulu Fire Department, Honolulu Police Department.....911
Grading, Grubbing, or Stockpiling Permits.....808-768-8217
Grading Plan Review/Approval Process.....808-768-8108
Effluent Discharge Permit -Construction Dewatering.....808-768-3242
Environmental Concern Line.....808-768-3300

Federal Agencies

National Resources Conservation Service, Pacific Islands Area 808-600-2911
U.S. Army Corps of Engineers, Regulatory Branch (permits).....808-835-4303
U.S. Coast Guard.....808-842-2970
U.S. Coast Guard, National Response Center.....800-424-8802
U.S. Environmental Protective Agency, Pacific Islands.....808-541-2710

Table of Contents

Site Management

- Material Storage and Handling
- Stockpile Management
- Concrete Wash and Waste Management
- Asphalt Cement Waste Management
- Solid Waste Management
- Hazardous Materials and Waste Management
- Spill Prevention and Control
- Staging Area

Erosion Control

- Slope Interceptor or Diversion Ditches/ Berms
- Geotextile and Mats
- Seeding and Planting

Sediment Control

- Storm Drain Inlet Protection
- Check Dams
- Compost Filter Berm/Sock
- Silt Fence or Filter Fabric Fence
- Stabilized Construction Entrance/Exit



Site Management

Site Management (SM) BMPs are preventative measures implemented during the planning and/or construction stage of the project, which control potential pollutants at their source through the use of good housekeeping practices.

Material Storage and Handling

Practices and procedures promote proper handling, storage, and use of construction materials in a manner that minimizes or eliminates storm water pollution, groundwater pollution, soil contamimination, and injury to workers or visitors.

What to Inspect

- ☐ Are storage areas clean, organized, and equipped with an adequate supply of cleanup materials?
  - Designate on-site material storage area.
- ☐ Are storage areas located away from concentrated flows and open waterbodies?
- ☐ Are secondary containment measures being used?
  - Secondary containment must be able to retain 100% of the volume of the largest container of 10% of the aggregate total of all containers being stored within secondaty containment, whichever is greater.
- ☐ Do containers have proper labeling?
  - Containers must be clearly labeled as to their contents (for products labeled in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
- ☐ Do containers show signs of corrosion and/or evidence of leaks?
- ☐ Are materials properly stored so not to come into contact with storm water?
  - Materials with potential to contaminate runoff must be stored off the ground and under cover.
- ☐ Are materials stored on any erosion or sediment control devices?

Material Storage and Handling



Hazardous materials not under cover and in secondary containment are a common occurrence if a material storage area is not designated on-site.



Materials with the potential to contaminate runoff must be stored under cover and in appropriate secondary containment.



While rebar is racked off the ground, it must also be covered with impermeable material to prevent it from contaminating storm water runoff.



Properly stored rebar is racked off the ground and covered with plastic.

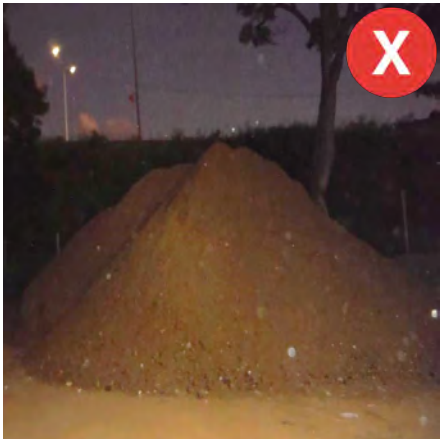
Stockpile Management

Stockpile protection measures reduce the potential for air and water pollution originating from stockpiles of construction materials and spoil piles. Stockpiled materials may include soil, Portland cement concrete (PCC), asphalt concrete (AC), cold mix asphalt, and aggregate. Spoil piles may include materials excavated from a trench, tunnel, shaft or other excavation activity.

What to Inspect

- ☐ Are stockpiles located away from concentrated flows, open waterbodies, and inlets?
- ☐ Does stockpiled material have fines and need to be covered?
- ☐ Are stockpiles completly covered?
  - Stockpiles must be covered with impermeable material (i.e., plastic).
- ☐ Are proper soil stabilization measures used to stabilize soil stockpiles?
  - Hydroseeding, hydromulching, and tackifiers can be used to stabilize soil stockpiles.
- ☐ Is perimeter control installed at the base of the stockpile?
- ☐ Are stockpiles of paving materials, waste asphalt, and/or cold patch stored on impermeable material?
  - Stockpiles of paving materials, waste asphalt, and cold patch cannot be stored directly on the ground or mixed with other stock/soil piles.
- ☐ Is there evidence of water or wind erosion?
- ☐ Is the stockpile taller than surrounding structures?

Stockpile Management



Active stockpiles need to have proper BMPs implemented at the end of every work day and before each anticipated rain event.



Stockpiles must be covered with plastic and surrounded with perimeter controls one to two feet away from its base.



Gaps in cover and perimeter control expose stockpiles to wind and water erosion.



A continuous cover and full perimeter control reduces the potential of wind and water pollution from stockpiles.

Concrete Wash and Waste Management

Practices and procedures to manage concrete/cementitious products, washout, and waste to prevent discharges to the ground, the drainage system or adjacent waterbodies.

What to Inspect

- ☐ Are concrete washouts located away from storm drain inlets, open drainage facilities, and waterbodies?
- ☐ Has the concrete washout been damaged?
- ☐ Is the impermeable liner of the concrete washout a continuous and seamless piece?
  - Disposal of concrete washout via percolation is prohibited.
- ☐ Is the concrete washout area exceeding 75% capacity limits or minimum freeboard of 4 inches?
- ☐ Are leaks obsereved from the designated concrete washout area?
  - Secondary containment placed under washouts will carry any leaks/spills.
- ☐ Is there evidence of concrete waste on the ground?
  - Waste concrete is not allowed to harden on the bare ground.
- ☐ Are contractors implementing proper concrete waste management measures?
- ☐ Is saw cut slurry being removed by vacuuming?
- ☐ Are inlet protection BMPs installed at adjacent strom drain inlets?

Concrete Wash and Waste Management



Waste concrete is not allowed to let harden on bare ground and must be removed when wet.



Clean up concrete waste before it hardens and sweep up debris when concrete work is completed for the day.



Measures must be taken to ensure that saw cut slurry is removed during concrete diamond grinding or saw cutting.



Vacuuming saw cut and boring slurry prevents the slurry from entering the storm drainage system and adjacent waterbodies.

Asphalt Cement Waste Management

Practices and procedures prevent asphalt cement millings and waste from discharging into the drainage system or adjacent waterbodies.

What to Inspect

- ☐ Is there evidence of asphalt waste on bare ground?
- ☐ Is the asphalt cement spoil pile properly stored on impermeable material and covered with plastic?
- ☐ Has perimeter control been installed at the base of the pile?
- ☐ Is milling debris cleaned up at the end of the day?
  - Loose debris must be swept or vacuumed by the end of the work day.
- ☐ Are inlets at risk of receiving pollutants protected?
- ☐ Are leaks observed from paving machinery and construction vehicles?
  - Keep an ample amount of spill cleanup materials on-site/readily available to handle any leaks or spills.
- ☐ Does paving equipment have drip protection?
  - Paving vehicles and equipment must be stored in an approved staging area and fully parked on a layer of geotextile filter fabric on top of plastic and surrounded with perimeter controls.

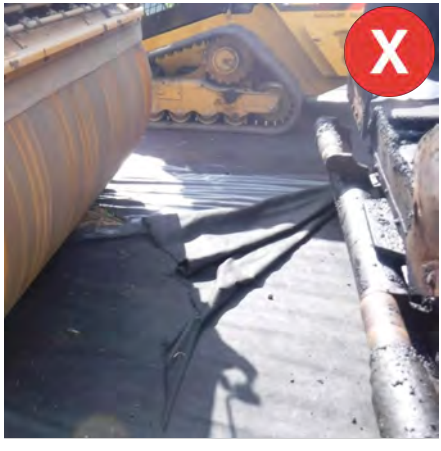
Asphalt Cement Waste Management



Waste asphalt/cold patch must be removed or stored properly by the end of the work day to prevent soil and storm water contamination.



Cold patch stockpiles must be stored on impermeable material in addition to being covered by plastic and surrounded with perimeter controls one to two feet away from its base.



Rips/tears in geotextile filter fabric and plastic leads to inadequate drip protection and must be replaced.



Storing paving equipment and vehicles on geotextile filter fabric with a layer of plastic underneath absorbs any potential spills/leaks.

Solid Waste Management

Practices and procedures to reduce the discharge of pollutants from construction and demolition (C&D) waste from entering the drainage system or adjacent waterbodies.

What to Inspect

- ☐ Are waste bins located away from drainage facilities, inlets, and open bodies of water?
- ☐ Is construction waste collected, removed, and disposed of at its authorized disposal site?
- ☐ Are waste containers properly covered?
  - Waste containers must be covered with impermeable material at the end of the work day and when not in use.
- ☐ Is the site neat and free of litter?
- ☐ Do waste containers exceed two-thirds capacity?
  - Waste and recyclable materials should be collected weekly or when containers are two-thirds full, whichever is sooner.
- ☐ Is there evidence of leaks or spills around waste containers?
  - Keep an ample amount of spill cleanup materials on-site/ readily available to handle any leaks or spills.
- ☐ Is waste being separated and placed in the appropriate bin?
- ☐ Is there evidence of illegal dumping on-site?
- ☐ Is trash removed regularly?

Solid Waste Management



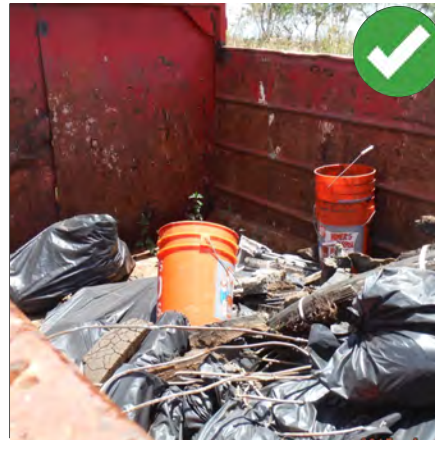
Uncovered waste containers are susceptible to loss of waste during windy conditions and precipitation which can lead to leaks from the container.



Waste containers must be covered with an impermeable material at the end of the work day and when not in use.



Waste containers must not be filled once they reach two-thirds capacity to prevent overloading.



Keep track of how full waste container are and schedule solid waste collection regularly to ensure containers are not overfilled.

Hazardous Materials and Waste Management

Practices and procedures to prevent hazardous material and waste from discharging into the storm drain system or adjacent waterbodies.

What to Inspect

- ☐ Are hazardous materials stored away from concentrated runoff, waterbodies, and inlets?
- ☐ Is hazardous material in secondary containment and covered with an impermeable material?
  - Secondary containment must be able to retain 100% of the volume of the largest container or 10% of the aggregate total volume of all the containers being stored within the secondary containment, whichever is greater.
- ☐ Are containers completely empty before being thrown into the waste bin?
- ☐ Is plastic cover ripped or torn?
- ☐ Are metal containers containing hazardous material rusting or leaking?
  - Metal containers must be covered with an impermeable material.
- ☐ Are original labels on all containers containing hazardous material?
- ☐ Is hazardous material in its original container?
- ☐ Are containers completely sealed?
- ☐ Is there evidence of leaks or spills on the ground?
  - Keep an ample amount of cleanup materials on-site/readily available to handle any leaks or spills.
- ☐ Is hazardous waste being stored properly and regularly disposed of by a licensed tranporter?

Hazardous Materials and Waste Management



Hazardous materials not under cover and in secondary containment have the potential to discharge into the storm drainage system or adjacent waterbodies.



Secondary containment must be able to retain 100% of the largest container or 10% of the aggregate total of containers being stored, whichever is greater.



Unlabeled hazardous waste containers can pose a potential threat to personnel on-site.



If possible, keep original product label on the hazardous material container. Labels must be cleared and easily identifiable.

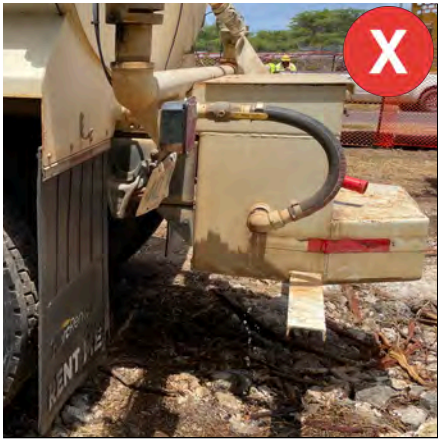
Spill Prevention and Control

Proper spill prevention practices and procedures aid in preventing spills and leaks from discharging into the storm drain system or adjacent waterbodies.

What to Inspect

- ☐ Are storage areas located away from drainage facilities, inlets, and open waterbodies?
- ☐ Do facilities have sufficient spill containment areas?
- ☐ Are hazardous and chemical materials/waste stored in secondary containment and covered?
- ☐ Are drip pans and/or absorbent material placed uner construction vehicles and equipment?
  - Drain/drip pans must be adequately sized.
  - Vehicles and equipment stored on a layer of geotextile filter fabric on top of impermeable material must be surrounded with perimeter controls.
- ☐ Are spills/leaks evident around construction vehicles, equipment, stored materials, drain inlets or open waterbodies?
- ☐ Are there tears/rips in plastic sheeting or geotextile filter fabric?
- ☐ Is there an ample amount of spill cleanup material on-site and readily accessible?
- ☐ Are proper spill cleanup requirements and procedures being followed when a spill occurs in-site?
- ☐ Is the Resident/Construction Engineer being notified of spills?
- ☐ Are significant spills being reported to the proper agencies?

Spill Prevention and Control



Leaks from vehicles and equipment must be fixed immediately and cleanup procedures must be followed to prevent discharges.



Drip pans/geotextile filter fabric on top of plastic that is placed under idle vehicles and equipment will catch any potential leaks.



If ample cleanup materials are not readily accessible, spills may come into contact with storm water or discharge into strom drainage systems.



Spill kits or cleanup materials must be located on-site or be readily accessible in case of any potential spills.

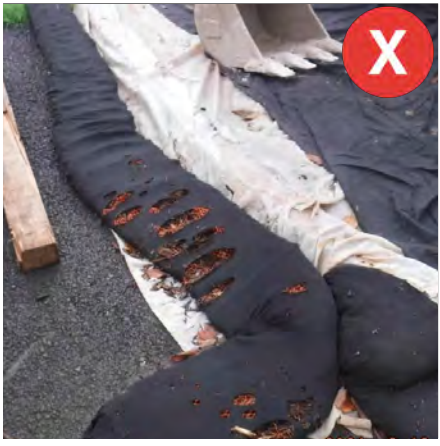
Staging Area

An approved location, designated in the SWPPP/SSBMP Plan, where construction equipment, vehicles, materials, and other construction-related materials are stored. Staging areas can be a significant source for pollution, so BMPs are necessary to ensure no contaminated storm water exits the site.

What to Inspect

- ☐ Are staging areas defined in the project`s plans and approved prior to use?
- ☐ Is the correct size aggregate being used for construction roads and entrances?
- ☐ Are vehicles tracking sediment onto public roads?
- ☐ Are perimeter controls placed fully around the perimeter of the staging area?
- ☐ Are drip pans and/or absorbent material placed under construction vehicles, equipment or materials?
- ☐ Are any construction equipment, materials, vehicles, or stockpiles stored on a tree root system?
  - Construction equipment, materials, vehicles, and stockpiles must not be stored under a tree`s drip line or on top of tree roots.
- ☐ Are waste bins covered when not in use?
- ☐ Are portable toilets secured from tipping/knocking over?
- ☐ Is rebar and galvanized steel racked off of the ground and covered with plastic?
- ☐ Are hazardous materials stored in secondary containment and covered?

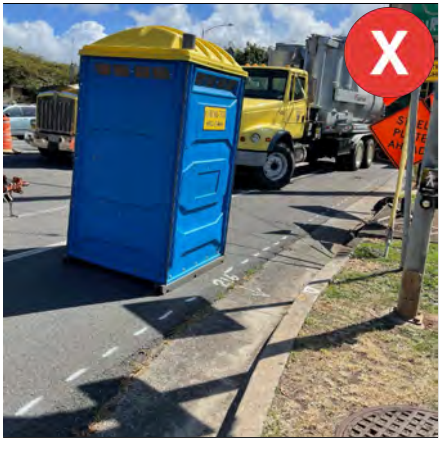
Staging Area



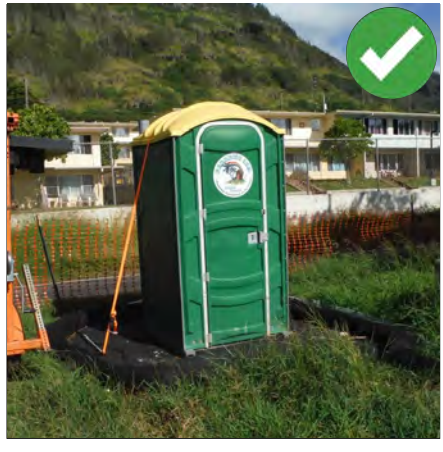
Damaged perimeter controls around staging areas must be fixed or replaced once identified.



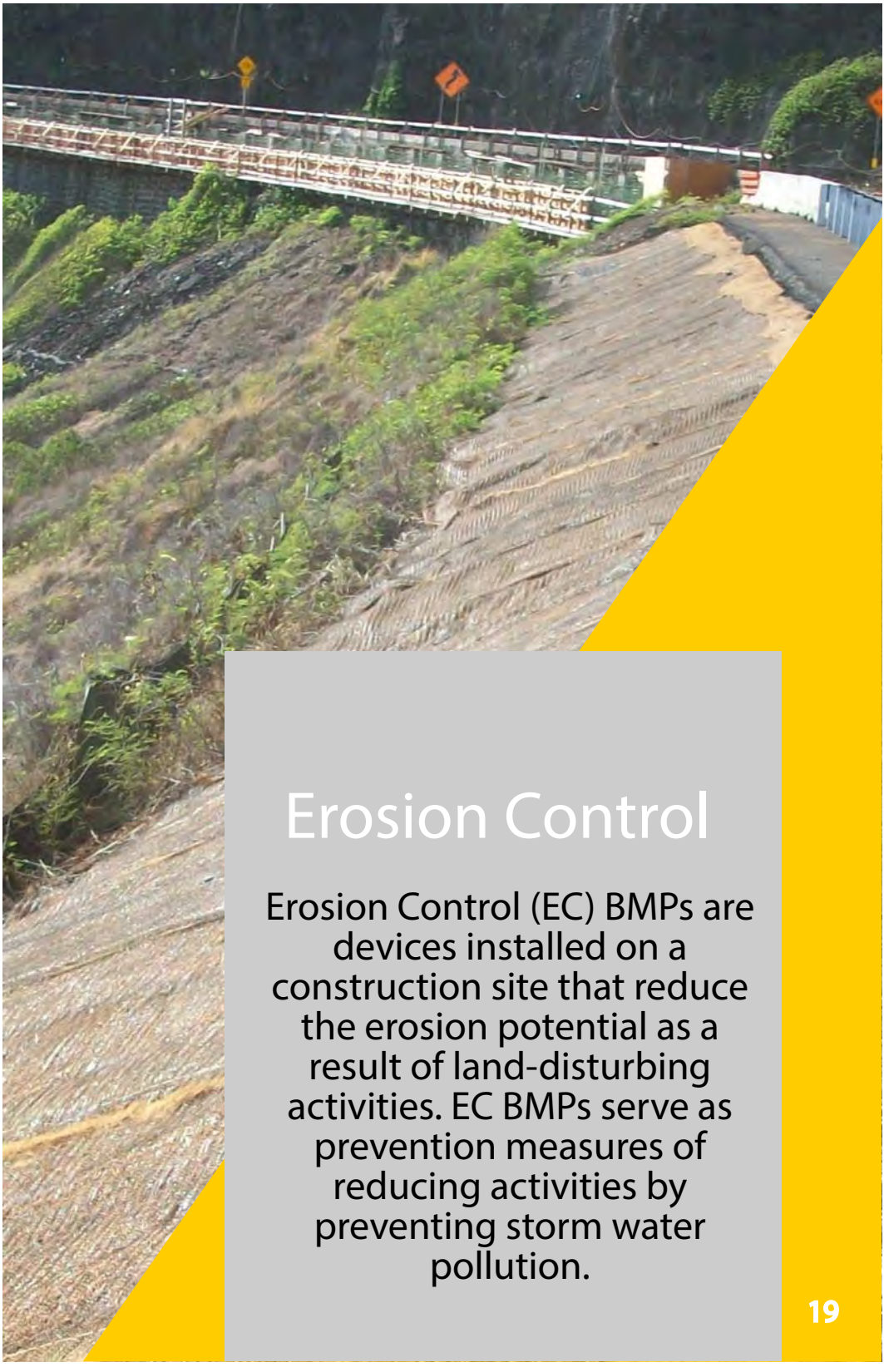
Perimeter controls must be placed along the perimeter of the staging area to divert storm water run-on and filter storm water runoff.



Unsecured sanitary facilities have the potential to leak/tip over and discharge sanitary waste into the storm drainage system.



Sanitary facilities must be secured and located away from concentrated runoff, drainage systems, and open waterbodies.



Erosion Control

Erosion Control (EC) BMPs are devices installed on a construction site that reduce the erosion potential as a result of land-disturbing activities. EC BMPs serve as prevention measures of reducing activities by preventing storm water pollution.

Slope Interceptor or Diversion Ditches/Berms

Methods to minimize sheet flow over slopes and reduce erosion by intercepting and conveying runoff to sediment removing structures or a protected drainage system.

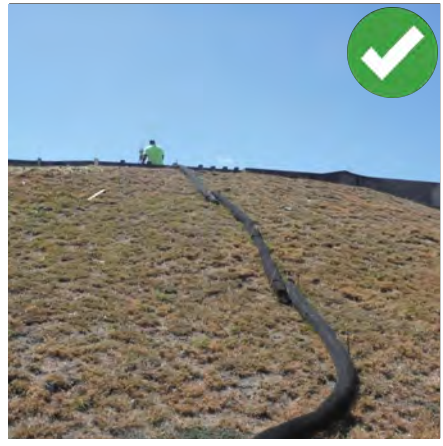
What to Inspect

- ☐ Are washouts evident in ditches or berms?
- ☐ Are structures accumulating sediment and/or debris?
- ☐ Is there evidence of rill or gully erosion?
- ☐ Is sediment discharging into outlets?
- ☐ Are berms properly spaced on slope?
  - Slope inclination of 4:1 (H:V) or flatter: Compost filter berms/socks should be placed at a maximum interval of 20 feet.
  - Slope inclination of 4:1 and 2:1 (H:V): Compost filter berms/socks should be placed a maximum interval of 15 feet.
  - Slope inclination 2:1 (H:V) or greater: compost filter berms/socks should be placed at a maximum interval of 10 feet, a closer spacing is more effective.
- ☐ Is a BMP device installed at the top of the disturbed slope?
  - Install a BMP device (i.e. dike, berm) at the top of disturbed slopes until the slope is revegetated or temporary erosion controls are installed on the face of the slope.
- ☐ Are velocity dissipation devices installed on slopes over 15 feet in height?
  - Velocity dissipation measures must be installed when exposing erodible surfaces are greater than 15 feet in height.

Slope Interceptor or Diversion Ditches/Berms



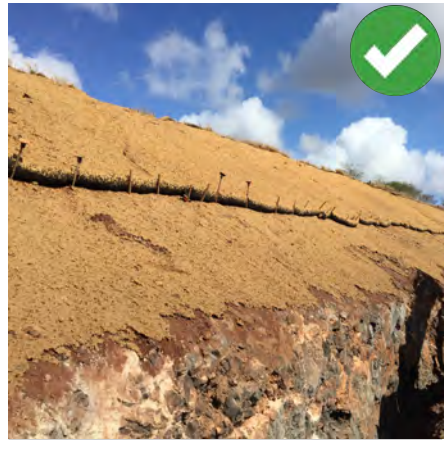
Gaps in slope interceptors allow runoff to flow through, creating erosion on the slope.



Compost filter socks must be overlapped a minimum of 6 inches when more than one compost filter sock is placed in a row.



Distrubed slopes require the use of slope interceptors as velocity dissipation devices to protect against erosion.



Compost filter socks used as slope interceptors must be staked into a 2- to 4-inch trench to secure them into place.

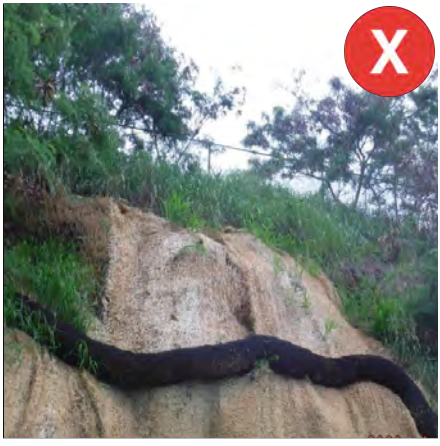
Geotextiles and Mats

Natural or synthetic mats are roll-type materials used for temporary or permanent soil stabilization and protection from rain/wind erosion.

What to Inspect

- ☐ Is ther evidence of undercutting at the top of the slope?
- ☐ Is the slope eroding benearth the blanket?
  - Matting must maintain direct contact with soil to prevent rills, gullies, and undermining.
- ☐ Are blankets firmly anchored and trenched in at the top and bottom of the slope?
  - Entrench or anchor material at the top and bottom of the slope in a 6-inch x 6-inch trench or per manufacturer`s specifications, whichever is more stringent.
- ☐ Are blanket segments properly overlapped?
- ☐ Are stakes properly spaced and driven into the soil to prevent the blanket from lifting away from soil?
  - Manufacturer`s specifications must be followed for overlapping and stake spacing requirements.
- ☐ Is matting free from any defects or tears?
- ☐ Are there areas that are not adequately growing vegetation?
  - Areas not adequately growing vegetation must be reseeded and fertilized.

Geotextiles and Mats



Installing erosion control mats without grading the slope will cause tenting and hinder contact with soil.



Matting must maintain direct contact with soil to prevent rills, gullies, and undermining.



Incorrectly installed matting at the top and toe of the slope can lead to water sliding underneath the matting and create undermining.



Matting must be entrenched or anchored at the top and toe of the slope in a 6-inch x 6-inch trench or per manufacturer`s specifications.

Seeding and Planting

Practices and procedures to provide ground cover for temporary or permanent stabilization of soil.

What to Inspect

- ☐ Has the contractor initiated vegetative stabilization within the required timeframe?
- ☐ Is vegetation growing?
- ☐ Is there evidence of erosion?
- ☐ Are fertilizers being properly stored and handled?
- ☐ Has soil been conditioned?
- ☐ Are native plants being used?
- ☐ Is there 70% vegetative coverage?
  - Vegetative cover must be uniform (evenly distributed without large bare areas), non-invasive, and perennial, which provides 70% or more of the coverage that was provided by vegetation prior to commencing earth-distrubing activities.
- ☐ Are temporary non-vegetative stabilization devices installed?
- ☐ Are perimeter controls installed around exposed areas where vegetation is becoming established?
- ☐ Is vegetation getting adequate watering?
  - Temporary irrigation may be required for initial establishment of vegetation and sustained growth.
  - If a water source is not readily available, water may need to be brought in to water the area.
- ☐ Are there areas that are not adequately growing vegetation?
  - Areas not adequately growing vegetation must be reseeded and fertilized.

Seeding and Planting



Initiation of stabilization must occur whenever earth-disturbing activities have temporarily or permanently ceased.



Reseed areas where stabilization is not occuring and/or any areas affected by erosion so that uniform vegetation is established within the required timeframe.



Areas where stabilization has been initiated without temporary perimeter controls are prone to erosion and sediment leaving the project area.



Temporary perimeter controls must be installed around exposed ares while stabilization is occuring.



Sediment Control

Sediment Control (SC) BMPs are controls implemented for a construction site that limit the amount of sediment from being transported and deposited offsite. SC BMPs serve as treatment measures by providing a second line of defense. SC BMPs are used to detain sediment-laden storm water runoff and promote infiltration and/or sedimentation.

Storm Drain Inlet Protection

Devices installed at storm drain inlets detain large objects and sediment-laden runoff prior to entering the storm drain system. These devices are often the last treatment measure, so a layered BMP approach is crucial to mitigating sediment runoff entering the Municipal Separate Storm Sewer System (MS4).

What to Inspect

- ☐ Is proper contact made against curb and gutter to prevent water from undercutting or bypassing inlet protection?
- ☐ Can sediment enter the catch basin from the top or backside of the structure?
- ☐ Is sediment accumulated in front or inside of the inlet protection?
- ☐ Is inlet protection falling into the grated drop inlet (GDI) or curb inlet/catch basin?
  - Inlet protection must be pulled out and repositioned if falling into the inlet.
  - Geotextile filter fabric placed under a GDI must extend 6 inches past the grate on all sides to prevent the fabric from falling into the inlet.
- ☐ Are curb inlet/catch basin inlet protection devices extended at least 1 foot past the inlet on both sides?
- ☐ Are non-destructive supporting brackets used to properly anchor inlet protection and prevent it from falling into the curb inlet/catch basin?
- ☐ Does sediment need to be removed?
  - Sediment must be removed from the BMP once it reaches one-half of the filter height.
- ☐ Are there rip/tears in the inlet protection?

Storm Drain Inlet Protection



Curb inlet protection that does not extend past the inlet allows unfiltered storm water to get into the drainage system.



Curb inlet protection must extend at least 1 foot past the inlet insert on both sides, unless manufacturing specifications differs.



Excessive sediment buildup will clog inlet protection and will cause ponding that could create a traffic or pedestrian hazard.



Sediment must be removed from inlet protection once it reaches one-half the height of the filter height or one-half the sediment trap depth.

Check Dams

Temporary devices placed across channels, ditches or swales reduce scour and erosion by reducing flow velocity and promoting sedimentation.

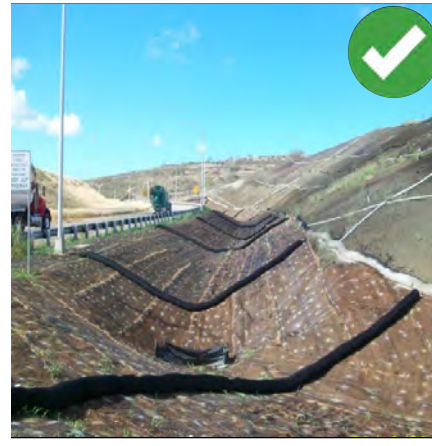
What to Inspect

- ☐ Is height of check dam effective?
  - The center of the check dam must be lower than the ends to prevent water from running around the ends and causing additional erosion.
- ☐ Are check dams adequately spaced to slow the velocity of flow?
  - The bottom of the upstream check dam should be at the same elevation as the top of the downstream check dam.
- ☐ Is there evidence of sediment bypassing the check dam?
- ☐ Are there traces of undercutting?
- ☐ Does the rock check dam have dislodged stones?
  - Repair/replace check dams that get pushed out of position by a heavy flow.
- ☐ Is geotextile filter fabric installed under rock check dams?
- ☐ Has accumulated sediment reached one-half the height of the check dam?

Check Dams



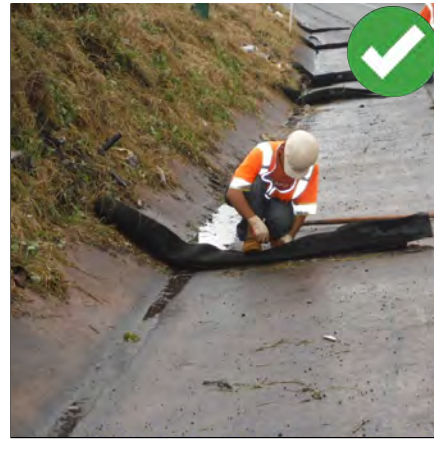
If ends of the check dam are lower than the center, storm water can flow around the ends, causing additional erosion and limits the effectiveness of the BMP.



The center of check dams must be lower than the ends to prevent water from flowing around the ends.



Check dams must be repaired/ reanchored when they are damaged or undermined.



Frequent maintenance should be done to ensure check dams are functioning properly.

Compost Filter Berm/Sock

Dikes consisting of compost material placed perpendicular to runoff reduce flow velocity and retain sediment and other pollutants. A fiber roll may consist of straw, flax, mulch, or other similar materials bound into a tight tubular roll.

What to Inspect

- ☐ Are compost filter socks properly installed according to manufacturer`s specifications?
  - Compost filter socks must be 8 inches in diamter, minimum.
  - Some types of compost filter socks require staking.
- ☐ Are the compost filter socks positioned in the correct orientation to effectively manage storm water?
  - Turn ends of compost filter sock up slope to prevent flow around ends.
  - Compost filter socks must be overlapped, not abutted to prevent gaps.
- ☐ Does the filter sock have rips of tears exposing the filter media?
  - Repairs to damaged compost filter socks must preserve filtration capabilities. Do not use duct tape, glue, or any material that will diminish filtration effectiveness.
- ☐ Does the compost filter sock need to be trenched and staked?
  - Refer to manufacturer`s specifications for trenching/staking requirements on slopes.
- ☐ Has sediment accumulated to one-half the height of the compost filter berm/sock?
- ☐ Is there evidence of rills or gullies forming under the compost filter berm/sock?
  - Compost filter socks must be in continuous contact with ground.

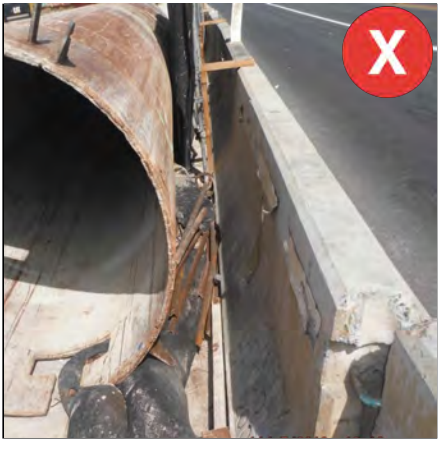
Compost Filter Berm/Sock



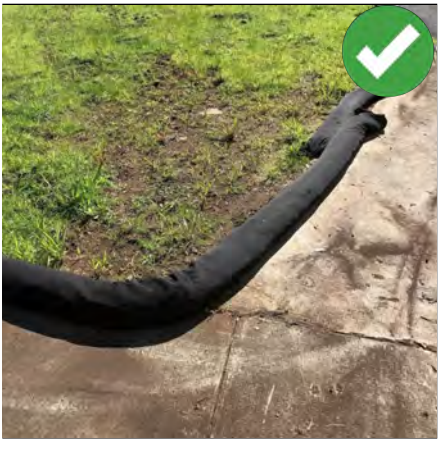
Compost filter socks that are overlapped incorrectly allow water to flow down slope through gaps in overlaps.



The end of the upslope compost filter sock must be overlapped on the inward side of the top of the down slope compost filter sock.



Materials and equipment must not be stored on top of compost filter socks while in place.



Make personnel aware of compost filter sock locationos so no materials/ equipment is stored on top of them and no vehicles drive over them.

Silt Fence or Filter Fabric Fence

Temporary linear sediment barrier composed of permeable fabric designed to intercept and slow sediment-laden storm water.

What to Inspect

- ☐ Is there sediment accumulating behind the silt fence?
  - Sediment must be removed once it has reached one-third the barrier height.
- ☐ Is the silt fence properly installed?
  - Silt fences must be entrenched in a 6-inch x 6-inch trench and be backfilled and compacted.
  - Silt fence must overlapped 6 inches between adjoining segments or overlapped, wrapped, and rolled.
- ☐ Is there evidence of undermining or undercutting?
  - Silt fences must be replaced/reinstalled if undermining or undercutting occurs.
- ☐ Are adjoining segments seamless?
- ☐ Does silt fence have rips, tears, or degradation of fabric?
- ☐ Are stakes on downgreadient side?
- ☐ Is fabric securely attached to the stakes?
- ☐ Is silt fence installed on steep slope?
- ☐ Are the ends of the silt fence turned uphill?

Silt Fence or Filter Fabric Fence



Flattened and damaged silt fences do not have the capability to pool storm water runoff, causing sediment-laden storm water to leave the site.



Routine maintenance is needed to ensure the silte fence is effective in allowing storm water to pool and sedimentation to occur.



Failure to properly trench in the silt fence will cause undercutting and allow unfiltered storm water to leave the project area.



Properly installed silt fences are trenched in a 6-inch deep by 6-inch wide trench, backfilled, and compacted.

Stabilized Construction Entrance/Exit

Designated areas for entry and/or exit from a construction site to reduce the amount of sediment tracked offsite by construction vehicles.

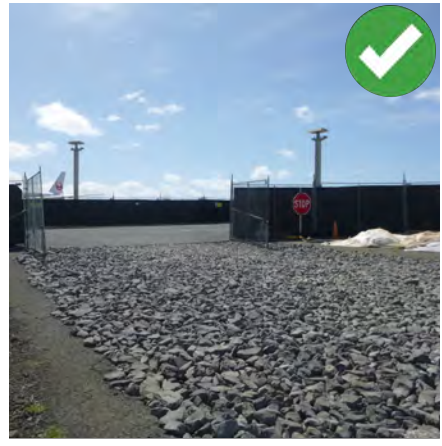
What to Inspect

- ☐ Is the construction entrance/exit the correct dimentsions?
  - Dimensions must be a minimum of 50 feet in length and 30 feet in width, unless specified differently in plans.
- ☐ Does stabilized construction entrance fully connect to the roadway?
- ☐ Are commercial products being maintained to maximize effectiveness?
- ☐ Is there evidence of tracking onto paved roads?
  - Clean dirt, mud, or other material tracked onto the road, sidewalk, or other paved area as soon as possible, but no later than by the end of the same day in which track-out occurs.
- ☐ Is proper siz and type of aggregate used?
  - Aggregate must be three to six inches in diameter.
  - Crushed concrete and asphalt millings are not allowed.
- ☐ Is there geotextile installed beneath the aggregate?
- ☐ Is sediment buildup evident within aggregate?
- ☐ Is runoff leaving site?
- ☐ Is water being used to wash track-out?
  - Sediment track-out must be removed using dry cleaning using dry methods only (i.e. brooms, shovels, vacuums, etc.).
- ☐ Is clean water being used for tire washing?

Stabilized Construction Entrance/Exit



Replenish aggregate and consider additional BMPs if sediment is consistently tracking out of the project site.



Stabilized construction entrances must consist primarily of 3- to 6-inch aggregate to keep sediment from tracking out of the project site.



Aggregate installed directly onto soil will shift and move when driven on, causing rutting.



Place geotextile fabric beneath the aggregate to separate the aggregate from the soil and keep the aggregate in place.

Definitions

Best Management Practice (BMP) - Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plan site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Construction Activity - Any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in a land disturbance. Construction does not include emergnecy construction activities required to immediately protect public health and safety or routine maintenance to maintaine original line and grade, hydraulic capacity, or original purpose of the facility.

Critical Deficiencies - Those deficiencies that pose an immediate threat for the discharge of pollutants to the stotm drain system, surface water, or state waters. Critical deficiencies include, but are not limited to, the following examples:

1. Any observed discharge, or evidence of discharge, of untreated storm water or non-storm water from the drainage area(s).
2. Absence of linear barriers and/or perimeter controls required by the BMP Plan.
3. There are identified storm drain inlets, surface waters, or state waters within or adjacent to the project site in close proximity to disturbed soil areas without control measures in place pose an immediate threat of untreated storm water discharges.
4. Work in an active stream channel or other surface water body without proper implementation of required BMPs.
5. Presence of any spilled oil or hazardous materials near to unprotected storm drain inlet, surface waters, or state waters.

Discharge of a Pollutant - Any addition of any pollutant or combination of pollutants to state waters from any point source.

Disturbance of Land - The penetration, turning, or moving of soil or resurfacing of pavement with exposure of the base course or the exposure of bare soil or ground surface; including the land surface exposed by construction roads, baseyards, staging areas, demolition, headquarters, and parking areas.

Definitions

Erosion Control - Stabilizing a disturbed or exposed surface area to prevent soil particles from being detached and causing sediment accumulation in nearby surface waters.

Major Deficiencies - Those deficiencies that are significant problems which could result in the discharge of pollutants to the storm drain system, surface waters, or state waters. Major deficiencies include, but are not limited to, the following examples:

1. No BMP Plan or NPDES permit (if required).
2. Linear barriers and/or perimeter controls in areas tributary to a water body or drain inlet are installed as required by the BMP Plan, but are not functional.
3. Hazardous materials or waste is stored within the project without containment or implementation of BMPs.
4. Oil, fuel, or brake or transmission fluid spills covering more than one square yard and/or adjacent to protected storm drain inlets, surface waters, or state waters.
5. Any discharge of sediment or other deleterious material resulting from dewatering operations conducted without implementation of requried BMPs for dewatering.
6. Sediment tracking more than 50 feet from project ingress/ egress location(s).
7. Expansion of the active distrubed soil area limit without approval.
8. Soil stabilization and sediment controls are not installed in accordance with applicable construction site BMP Plans.
9. Sediment controls are installed in accordance with the BMP Plan, but there is a large unstabilized distrubed soil area with insufficient controls down gradient to prevent the discharge of untreated storm water to the storm drain system, surface waters, or state waters if a rain event generates runoff.
10. Dust from project site visibly blowing off the site and into strom drain conveyances or adjacent surface water bodies.

Definitions

Maximum Extent Practicable (MEP) - The minimum required performance standard for implementation of minicipal storm water management programs to reduce pollutants in storm water. Maximum Extent Practicable is the cumulative effect of implementing, evaluating, and making corresponding changes to a variety of technically appropriate and economically feasible best management practices, ensuring that the most appropriate controls are implemented in the most effective manner.

Minor Deficiencies - Those deficiencies that do not pose a threat for discharge of untreated storm water or pollutants to the storm drain system, surface waters, or state waters, but are not in strict conformance with the SWPPP or BMP Plan. Minor deficiencies include, but are not limited to, the following examples:

1. BMP Plan does not reflect current operations and an amendment is recommended.
2. BMPs are not deficient, but are not consistent with the BMP Plan.
3. Linear barriers and/or perimeter controls are installed as required by the BMP Plan but require minor maintenance.
4. Soil stabilization or sediment controls are installed as required by the BMP Plan, but not properly maintained.
5. Site inspections by project staff are not being conducted at the required frequency.
6. Non-storm water or waste management BMPs improperly maintained.
7. Oil, fuel, or brake or transmission fluid spills covering less than one square yard and not adjacent to storm drain inlets, surface waters, or state waters.
8. Evidence of active winderosion on unstabilized slopes/stock piles.
9. Minor tracking less than 50 feet from project ingress/egress locations.
10. Major deficiencies which are corrected prior to the inspector leaving the site.

Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a state, city, town, or other public body, that is designed or used for collecting or conveying storm water, this is not a combined sewer, and that is not part of a publicly owned treatment works.

Notice of Intent (NOI) - Form completed and signed by a construction site operator or an industrial facility operator notifying the DOH that the operator intends to be authorized to discharge pollutants to state waters under an applicable NPDES general permit.

Definitions

Erosion Control - Stabilizing a disturbed or exposed surface area to prevent soil particles from being detached and causing sediment accumulation in nearby surface waters.

Pollutants - Refer to the waste material that contaminates air, soil, or water. In the context of storm water quality, pollutants often refer to the followg:

- Nutrients - phosphorous and nitrogen;
- Suspended solids - sediment suspended in the water;
- Organic carbon and hydrocarbons;
- Bacteria;
- Trace metals;
- Pesticides; and
- Trash and debris.

Post-Construction BMP - A specific practice indtended to reduce storm water volume and/or the pollutino typically associated with storm water runoff. Sush practices may include LID design features, source control methods, or manufactured devices designed to capture pollutants and is synonymous with the terms Permanent BMP and Permanent Post-construction BMP.

Private Construction Projects - Construction activity not under the authority (funding) of or administered by DOT-HWYS that is located within or adjacent to DOT-HWYS ROW and drains to the DOT-HWYS MS4. Private construction projects are required to obtain a Permit to Perform Work Upon State Highways prior to commencing construction activities.

Public Construction Projects - A construction activity, which is funded by DOT-HWYS, designed either by personnel of DOT-HWYS or engineering consultant firms, and constructed by DOT-HWYS or a private contractor. Includes contract construction projects and maintenance construction projects.

Sediment - Organic or inorganic material that is carried by or is suspended in water and that settles out to form deposits in the storm drain system or receiving waters.

Storm Water Runoff - The portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels, or pipes.