



MAA Guide for the Aggregate Industry in Michigan: Stormwater Management

This document is to be used as a general guide and it is not intended as a sole source for information, nor is it intended to provide legal advice. Users are encouraged to seek technical advice from qualified professionals familiar with the site and stormwater management requirements. MAA is not responsible for any acts or omissions taken by any party using this document for reference.

Stormwater management practices must be site-specific, and based on a variety of factors, including location, weather, physical characteristics, nature of operations, existing regulatory status and available resources. Consequently, not all methods or techniques may be appropriate depending on such factors.

Stormwater BMPs are any temporary or permanent measures used to treat, prevent or reduce soil erosion and water pollution. These BMPs can either be non-structural or structural in nature.

Non-Structural BMPs:

Non-Structural BMPs include items associated with institutional, educational, or pollution protection practices designed to limit the amount of soil erosion and surface water pollution. These practices are best utilized when instituted at your mine. Some examples of non-structural BMPs include:

- Employee Training
- Obtaining and Maintaining Appropriate Permits
- Proper Record Keeping
- Project Phasing
- Minimize Impervious Areas
- Preventative Maintenance
- Good Housekeeping
- Site Inspections
- BMP Inspection and Maintenance Plans

Structural BMPs:

Structural BMPs can range from natural systems (drainage, vegetative, etc.) to brick and mortar techniques. Structural BMPs are designed to attenuate and in some cases, infiltrate, runoff volume allowing some pollutants to settle out in the process. Some examples of structural BMPs include:

- Aggregate Cover
- Check Dam
- Cofferdam
- Constructed Filter (rip rap)
- Construction Dam
- Dewatering by Filter Bag/Sediment Basin
- Diversion Dike
- Diversionary Ditch
- Drop Inlet Sediment Trap
- Dust Control
- Energy Dissipaters
- Gravel Access Approach
- Gravel Filter Berm
- Infiltration Berm
- Infiltration or Sedimentation Basin
- Infiltration Trench



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- Inlet Protection Fabric Drop
- Inlet Protection
- Intercepting Ditch
- Mulch Blankets
- Mulching and Mulch Anchoring
- Outlet Protection
- Permanent/Temporary Seeding
- Pervious Pavement with Infiltration Bed
- Pipe Drop
- Plastic Sheets or Geotextile Cover
- Pond (Basin)
- Rain garden
- Riprap
- Sand and Stone Bags
- Sand Fence and Dune Stabilization
- Silt Fence
- Vegetation Planting/Sod Cover
- Stream Relocation
- Street Sweeping (Maintenance)
- Temporary Bypass Channel
- Trees, Shrubs, Vines and Ground Cover
- Turbidity Curtain
- Vegetated Strip or Swale
- Vegetative Buffer Strips

The non-structural and structural BMPs shared above are only an example of the various BMPs that can be utilized to reduce soil erosion and surface water pollution. A simple internet search for stormwater BMPs can provide more examples or expound upon the ones listed above. Two good sources for various BMPs that may be applicable to your site can be found in:

- MDEQ Nonpoint Source BMP Manual at http://www.michigan.gov/deq/0,4561,7-135-3313_71618_3682_3714-118554--,00.html
- Southeast Michigan Council of Governments (SEMCOG) Low Impacts Development Manual for Michigan at <https://semcog.org/Reports/LID/index.html>

The site should be inspected on a regular basis by qualified/trained personnel. Use photographs in addition to hand written notes to document any unusual observations and share with the work group. Remember to follow all safety regulations at site.

For further information on SWPPP requirements go to the MDEQ Industrial Stormwater Program webpage at http://www.michigan.gov/deq/0,4561,7-135-3313_71618_3682_3716-24018--,00.html

For further information on Soil Erosion and Sedimentation Control Program (SESC) requirements, go to Michigan Department of Environmental Quality (MDEQ) webpage at http://www.michigan.gov/deq/0,4561,7-135-3311_4113-8844--,00.html