

MS4 Permit

Stormwater Management in New Development and Redevelopment

By Yolianne Maclay, PE

Stormwater Management in New Development and Redevelopment (Part 2.4.6)

- Permittees shall develop, implement and enforce a program, to the extent allowable under Commonwealth of Puerto Rico and local law, to control stormwater discharges from **new development and redeveloped** sites that discharge into the small MS4 that **disturb one acre or more**.
- The program requires to include projects of less than 1 acre if they are part of a larger or common development of one or more acres.



MS4 Permit Requirements

- **Ordinance or other regulatory mechanism** to address post-construction runoff.
- Owners or operators of new development and redeveloped sites **design, install, implement, and maintain** a combination of structural and non-structural BMPs appropriate for the community and to protect water quality.



Integrating Green
Infrastructure:
Infiltrate, evapotranspire and
harvest and use stormwater



Chicago City Hall

Permeable pavement and
bioretention in Albuquerque, NM
Photo courtesy of AridLID.org



Bioretention Cell in El Monte, CA
Photo Credit: Bill DePoto



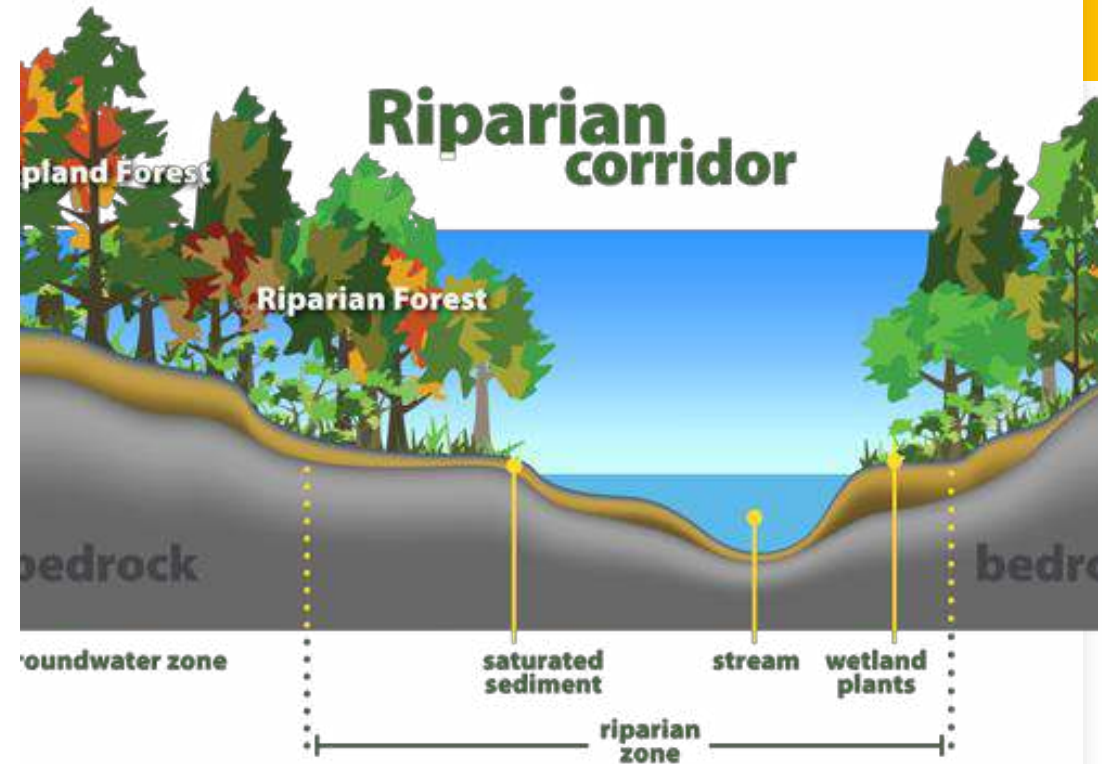
Structural
BMPs

Non-Structural BMPs

- **Planning Procedures.**
 - Local and comprehensive plans
 - Zoning ordinances
- **Site-Based BMPs.**
 - Buffer strip and riparian zone preservation
 - Minimization of disturbance and imperviousness
 - Maximization of open space

MS4 Permit Requirements

- The program shall include procedures to ensure that any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality.
- These procedures may include requirements to:
 - avoid disturbance of areas susceptible to erosion and sediment loss;
 - preserve areas in the municipality that provide important water quality benefits;
 - implement measures for flood control; and
 - protect the integrity of natural resources.



MS4 Permit Requirements

- Long-term operation and maintenance of structural stormwater control measures.
- Inspection Program



Guidance Documents

Green Infrastructure Modeling Toolkit

<https://www.epa.gov/water-research/green-infrastructure-modeling-toolkit>

Stormwater Discharges from Municipal Sources

<https://www.epa.gov/npdes/stormwater-discharges-municipal-sources>

National Menu of Best Management Practices (BMPs) for Stormwater

<https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#post>

Stormwater Discharges from Municipal Sources-Developing an MS4 Program

<https://www.epa.gov/npdes/stormwater-discharges-municipal-sources-developing-ms4-program#postconstruction>



Thank You!

Yolianne Maclay, P.E.
EPA
maclay.yolianne@epa.gov