

Providing Adequate Energy Dissipation Improves Water Quality

Benefit 1.

Slows runoff velocity to reduce downstream erosion and scour potential.



Benefit 4.

Low maintenance requirements minimize additional costs.



Benefit 2.

Maintains runoff in a diffuse flow pattern, providing settling and sedimentation of pollutants.



Benefit 3.

Reduces runoff volume through evapotranspiration.

Compliance!

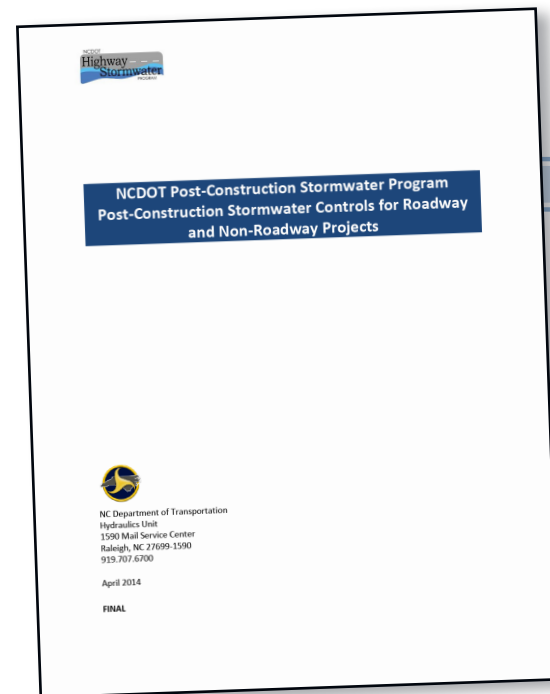
Stay compliant with the Department's National Pollutant Discharge Elimination System (NPDES) Permit. Follow the Post Construction Stormwater Program (PCSP).



For more information, please visit the HSP website:
<https://connect.ncdot.gov/resources/hydro/Pages/Highway-Stormwater-Program.aspx>

Flip
for more
information

Incorporating Minimum Measures to Reduce Runoff Volume and Improve Water Quality as Part of the Post-Construction Stormwater Program



Implement Minimum Measures to the maximum extent practicable (MEP) on all projects.

Minimum Measures – Planning Phase

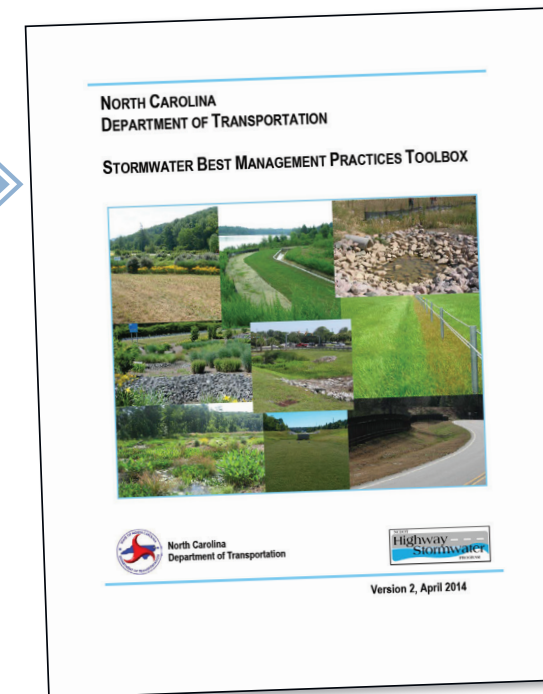
- Maximizing Shoulder Section
- Minimizing Roadway Side Slopes
- Assessing and Minimizing the Impacts of Stormwater Runoff to Environmentally Sensitive Areas
- Promoting Sensitive Crossing of Streams

When a project creates new built-upon area (BUA), the Post-Construction Stormwater Program (PCSP) applies!

- Once project is identified as creating new BUA, identify project type as **roadway** or **non-roadway**.
- Next, implement **planning** and **design minimum measures** based on project type.

Minimum Measures – Drainage Design Phase

- Providing Adequate Ground Cover
- Stabilizing Embankments and Drainage Ditches
- **Providing Adequate Energy Dissipation**
- Utilizing Natural Features and Drainage Pathways
- Maximizing Vegetative Conveyance
- Encouraging Diffuse Flow
- Minimizing Direct Discharge from Bridges



Implement Toolbox BMPs as directed.

- Determine whether **structural BMPs** are required for a project.
- Approved **structural BMPs** are provided in the NCDOT **Stormwater Best Management Practices Toolbox** ("BMP Toolbox").
- The BMP Toolbox presents guidance, criteria, and considerations for the design and application of structural BMPs.
- BMPs are to be implemented to the MEP.

Document your project with the Stormwater Management Plan (SMP)

- Preserves stormwater management decisions.
- Documents implementation of structural and non-structural BMPs to the MEP.

Minimum Measures have been utilized throughout the project corridor. To the maximum extent practicable, energy dissipators in the form of preformed scour holes and rock aprons have been implemented to slow runoff velocity, encourage diffuse flow, promote sedimentation, and reduce erosion and scour potential.

