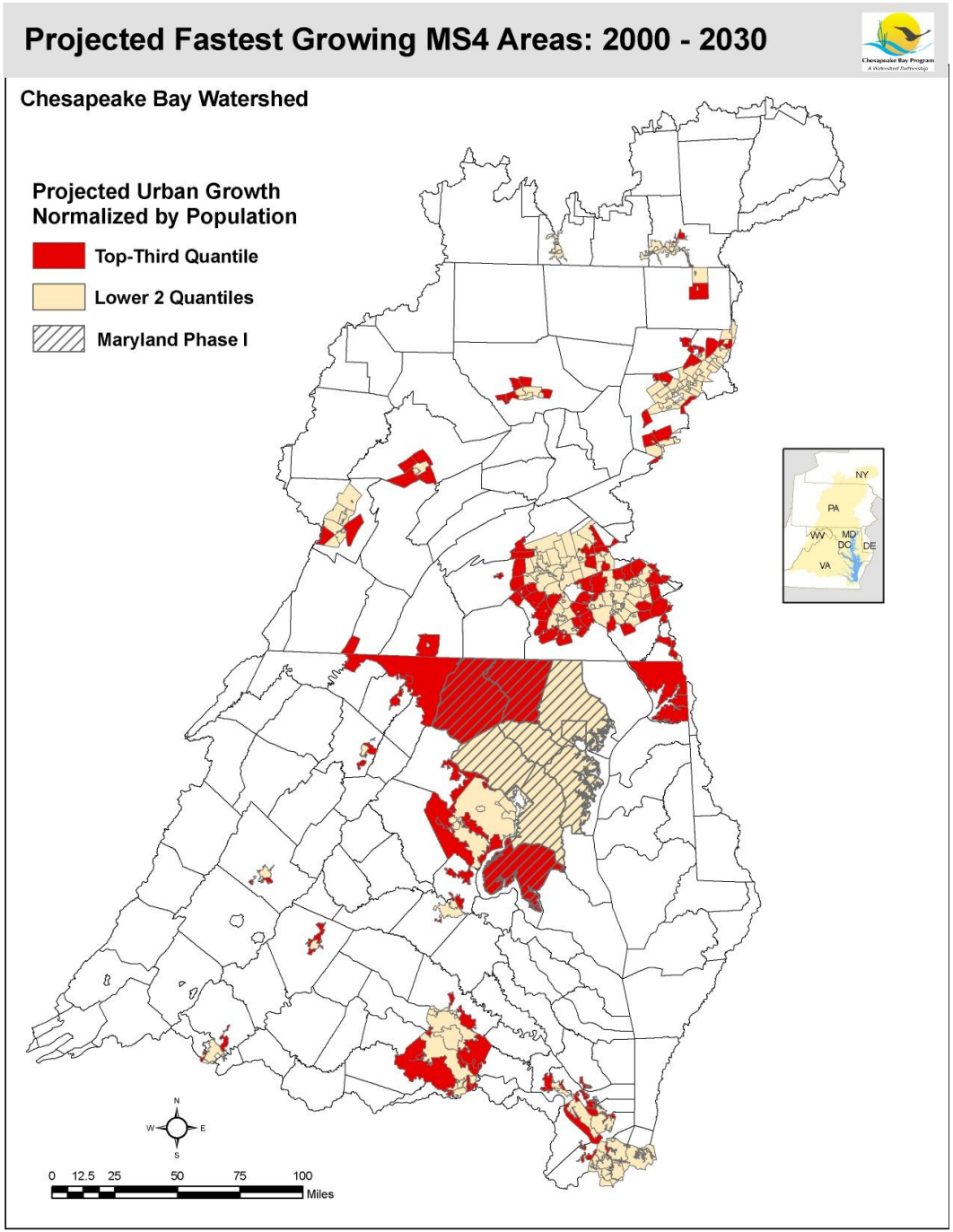
# Draft Principles and Protocols for Urban Stormwater BMP Verification

Normand Goulet
Urban Stormwater Workgroup
Northern Virginia Regional Commission

# FRAMEWORK

- NPDES MS4 Permit Core
- Regular Inspections and Maintenance
- Removal Rate Tied to Visual Inspections
- Process for BMP Downgrades
- Tracking and Reporting
- Recognition that proposed effort will not support Mid-Point Assessment




Stormwater Verification must operate in two worlds:

- Regulated Stormwater
- Unregulated Stormwater

Ability to Verify is Often Linked to Whether a community has a MS4 permit or not.

# Verification for Urban BMPs

The need for verification differs among each type of BMP, but they can be generally classified into four broad categories:

- Traditional engineered stormwater BMPs that were historically installed through a local stormwater plan review process.
- New runoff reduction BMPs that will be implemented to meet new state stormwater performance standards in the future and also go thru the local stormwater review process.
- Stormwater retrofits and restoration practices designed and installed by localities to treat existing impervious cover.
- Non-structural or operational BMPs that are typically applied by a municipal agency or a homeowner.

# Role of Maintenance in BMP Performance

Regular inspections and maintenance of BMPs are critical to ensure their pollutant removal performance is maintained and extended over time.

Therefore, the core verification principle is to ensure that BMPs are installed and maintained properly over their design life to qualify for their pollutant removal rates.

# Utilize Existing MS4 Framework

The existing MS4 inspection and maintenance framework for hundreds of communities in the Bay watershed should be the foundation of any BMP reporting and verification system for the Bay TMDL.

Ongoing BMP reporting and maintenance inspections requirements in MS4 permits may need to be adjusted slightly to verify BMP performance, but the modifications should be limited to reduce the administrative burden for local and state agencies.

# Removal Rate Tied to Visual Inspections

The basic concept is that urban BMPs will have a defined time-frame in which the pollutant removal rate applies.

Credit can be renewed or extended based on a visual inspection that confirms that the BMP still exists, is adequately maintained and is operating as designed.

It is recommended that these rapid investigations be piggy-backed as part of routine stormwater BMP inspections required under their MS4 NPDES permits.

# Recommended Cycle for Field Verification of Urban BMPs

Local inspectors should perform field verification at least once every other inspection cycle mandated under their MS4 permit.

The typical inspection cycle in MS4 permits ranges from 3 to 5 years.

Recommended that localities should complete Legacy BMP inventory verification within Two Permit Cycles.

## Suggested Process for BMP Downgrades

If the field inspection indicates that a BMP is not performing to its original design, the locality would have up to one year to take corrective maintenance or rehabilitation actions to bring it back into compliance.

If the facility is not fixed within a pre-defined time frame, the pollutant reduction rate for the BMP would be eliminated, and the locality would report this to the state in its annual MS4 report.

If corrective maintenance actions were verified for the BMP at a later date, the locality could take credit for it then.

# Non MS4 localities

- Option 1: Follow the verification inspection process outlined for MS4 community and gets the same credit.
- Option 2: Locality sub-samples a representative fraction of **their** local BMPs and applying the results to their entire population of BMPs that are credited in the CBWM.
- Option 3: State or Third Party conducts a sub-sample of BMP verification in a representative non-MS4 community, and applies the results to other comparable non-Ms4s.
- Option 4: Locality does not perform verification inspections and accepts gradual downgrades in BMP performance. Full performance credit is given for the first five years, and then is downgraded by 20% each year over the next five years, such that all BMP credits expire in ten years.

# Locality reporting systems

- Localities to verify that BMP:
  - Installed properly
  - Meets/exceeds design standards
  - Functions hydrologically as designed
- Initial verification should be provided by the designer or local inspector as condition of project completion.
- Localities provide BMP review and inspection results in annual MS4 Reports.

# State Reporting Systems

- States report BMP data using CBP-approved rates/methods, reporting units, geographic location.
- Periodically field verify BMPs as part of delegated NPDES Authority

# Impediments

- Urban BMPs are installed in non-regulated areas in the watershed. Many of these localities may not have all of the legally required BMP inspection and maintenance provisions found in MS4 localities. As a consequence, BMP reporting and verification may be challenging in non-MS4 communities, particularly in smaller localities with limited staff resources.
- Most localities do not currently report on voluntary BMPs that are installed by homeowners or watershed groups.
- Some resistance to Urban Verification Principles due to concerns about EPA enforcement actions as a result of inaccurate or incomplete tracking, reporting or inspections.

# Impediments

- Some urban BMPs are implemented outside the local development review process, and therefore may not be properly counted or reported.
- Most Bay states are just now developing tracking systems to aggregate the BMPs reported by individual localities, and several have not been able to keep up with BMP information submitted by 70 to 400 MS4s in their jurisdiction.
- Up to now, few states have allocated sufficient staff resources to fully enforce existing MS4 permit maintenance conditions or to verify that local BMP information is accurate.