BMP Credit Durations

Jeff Sweeney
Environmental Protection Agency
Chesapeake Bay Program Office
sweeney.jeff@epa.gov
410-533-6617

BMP Verification Ad-Hoc Action Team
August 7, 2020

- Revisit credit duration
  - What is the best available information to determine BMP credit duration?
  - What multiple lines of evidence can be used to update BMP-specific credit durations?
    - More up-to-date data
    - Best professional judgement for how best to use the evidence
    - Lessons learned during preceding years

BMP Credit Durations
History

- Credit durations were introduced with Phase 6 versions of models

- Previously, BMPs reported by jurisdictions remained in the model simulation for the duration of the model version or through several versions – going back to 1985 BMP reports

- There were many cases where cumulative implementation reached 100% of the relevant land area in a model segment or county
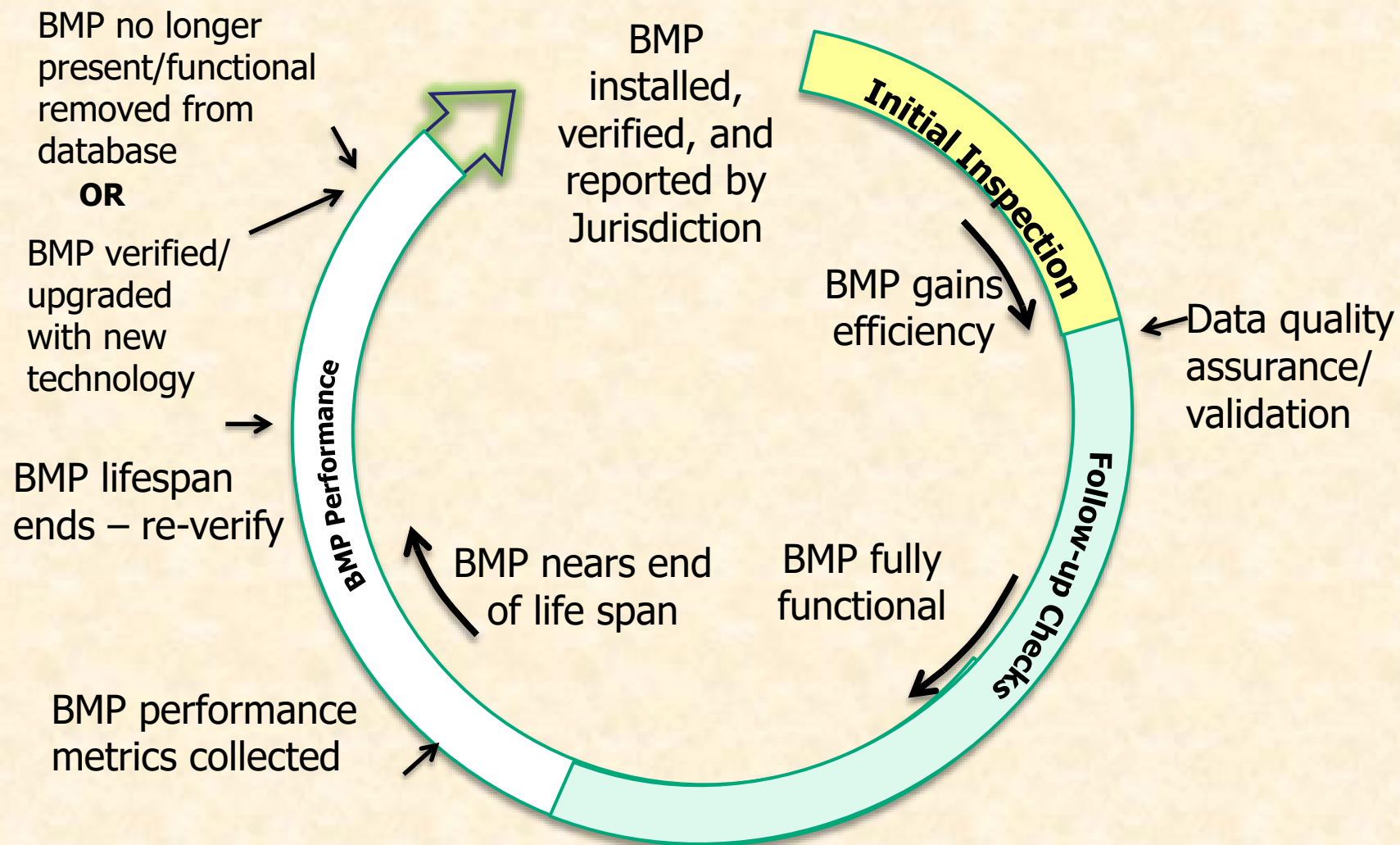
BMP Credit Durations
Credit Duration Versus Design Life

- Credit Duration – The length of time (in years) a CBP BMP is counted towards the TMDL (water quality) goals before it must be re-verified to ensure proper function and continuing model credit

- Lifespan, Design Life – The length of time (in years) that a BMP is expected to function as intended after initial implementation.

The BMP Lifecycle

BMP no longer present/functional removed from database
OR
BMP verified/ upgraded with new technology

BMP installed, verified, and reported by Jurisdiction

Initial Inspection

BMP gains efficiency

Data quality assurance/ validation

BMP Performance

BMP lifespan ends – re-verify

BMP nears end of life span

BMP fully functional

Follow-up Checks

BMP performance metrics collected

- As part of the development of the CBP BMP Verification Framework, workgroups were tasked with developing credit lives for BMPs in their sector (Appendix B, BMP Verification Guidance, Strengthening Verification of BMPs Implemented in the CB Watershed)

  - ○ Agriculture

  - ○ Forestry

  - ○ Urban Stormwater

  - ○ Wetlands

  - ○ Stream Restoration

Chesapeake Bay Program Partnership Commitment to Verification: October 2014

Strengthening Verification of Best Management Practices Implemented in the Chesapeake Bay Watershed: A Basin-wide Framework

https://www.chesapeakebay.net/what/programs/bmp_introduction_to_bmp_verification

BMP Credit Durations
Agriculture BMP Verification Guidance

- Agriculture Workgroup tasked an ad hoc team to assess credit durations
- Agricultural BMP credit durations are mostly from:
  1) BMP Expert Panels
  2) NRCS standards, practice lifespans (with considerations)
     - For example, NRCS (313) Waste Storage Facilities = 15 years
     - CBP BMP credit durations are not tied to NRCS and FSA contract periods which are the formal periods funding is provided to farmers to implement practices

BMP Credit Durations
Agriculture BMP Verification Guidance

- Example: Conservation Districts are responsible for the <u>annual</u> on-site status review of a CAFO's Nutrient Management Plan (NMP)

- A strong NMP verification program would have more than a checklist of yes or no options

- There needs to be a <u>frequent</u> qualitative review of compliance of each element of the NMP + enforcement of terms of the NPDES permit where relevant; verification that BMPs are being properly operated and maintained

BMP Credit Durations
Agriculture BMP Verification Guidance

- In addition, the Agriculture group made credit-life recommendations for Resource Improvement (RI) practices
  - RI credit durations in the CBP model are shorter than NRCS practice lifespans
  - Typically 3-5 years
  - Same amount of credit as NRCS Practices, but less time between verification, e.g. RI-1 Dry Waste Storage Structure = 5 years
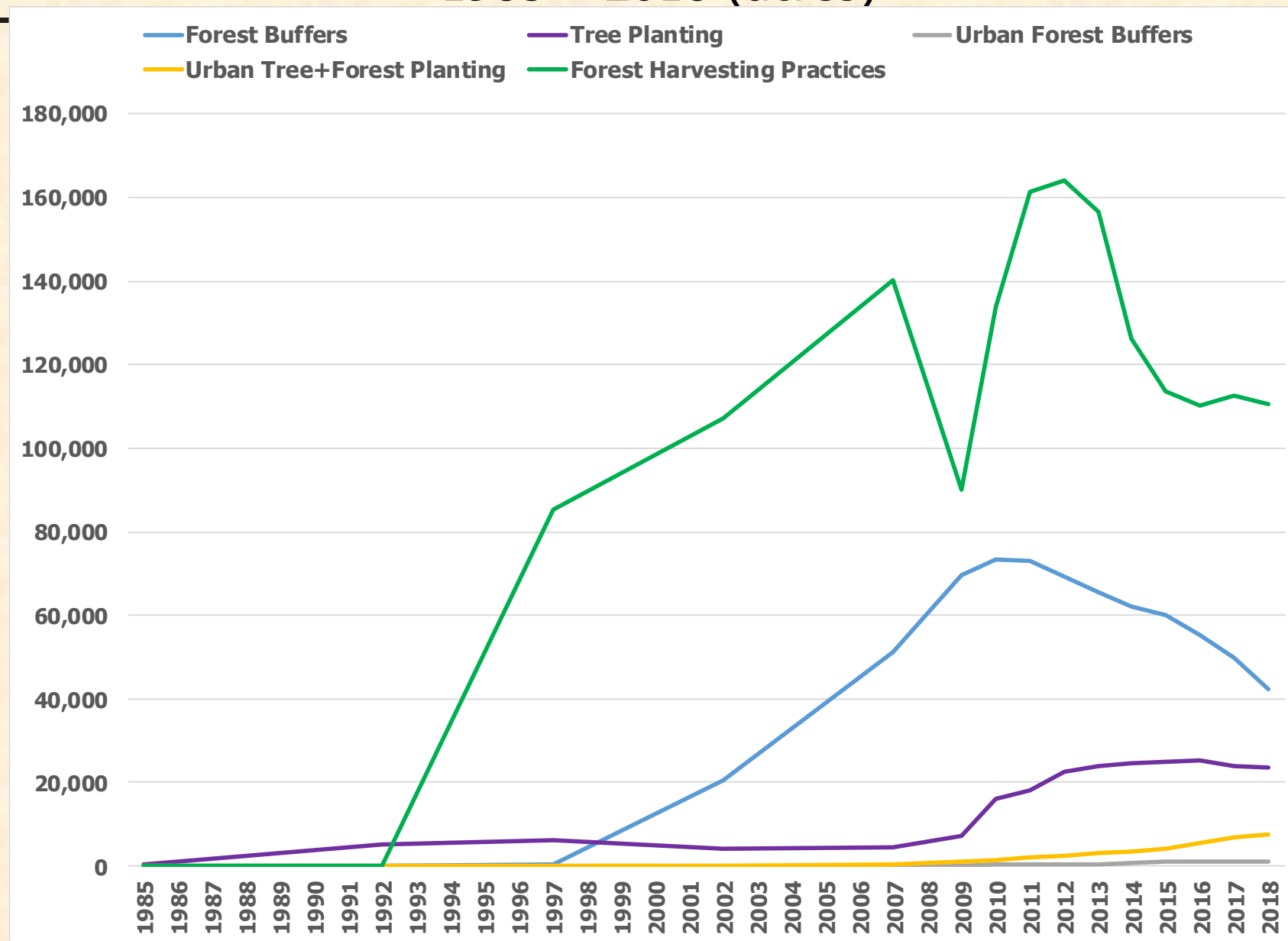
Forestry BMP Verification Guidance

- Examples: Some forest harvesting BMPs are designed to have a short life – only for the duration of the harvest operation (e.g., temporary stream crossings)

- Others are intended to last several years – re-inspection of a site 1-4 years post-planting to address maintenance needs until the forest grows back (e.g., erosion control plantings)

CB Watershed Reported Forestry BMPs
1985 – 2018 (acres)

BMP Credit Durations

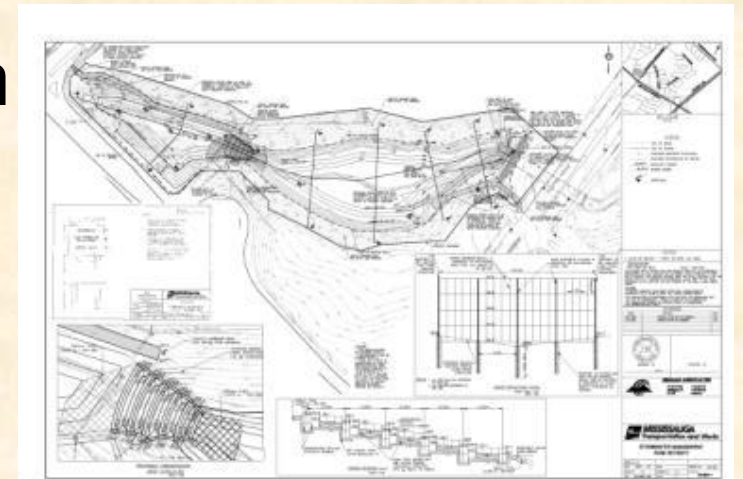## Urban Stormwater BMP Verification Guidance

- Credit durations were generally aligned with the frequency of inspection programs, understanding differences between the MS4 communities and unregulated developed areas

- The credit duration for homeowner BMPs was reduced to 5 years as compared to the 10 years afforded to larger retrofits

  o The credit can be renewed based on verification that the practices still exist and are working

Urban Stormwater BMP Verification Guidance

- Initial Certification and Local Record Keeping

  o Need to do an initial post-construction certification that it was installed properly and meets its BMP design criteria

  o The installing agency should maintain a project file (i.e., construction drawings, as-builts, inspection records, etc) over the lifetime which the credit is claimed
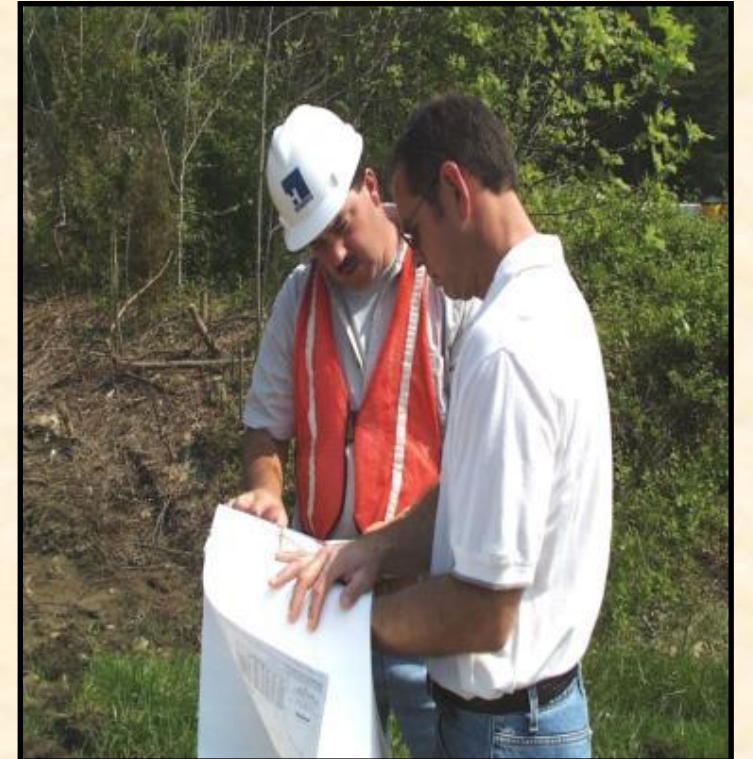
- Renewal of Credit Based on Field Inspection

  - 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 local MS4 permits

- Process for BMP Downgrades
  - If 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 by then, the locality would report zero pollutant reduction for the BMP to the state in its annual MS4 report.

BMP Credit Durations

- Most wetland projects are designed to minimize long-term maintenance and, therefore, theoretically could remain effective indefinitely

- Wetland restoration practices implemented under CRP/CREP have a 15-year contract; however, in most cases, the wetland continues to exist and function beyond the contract period.

- Wetland projects enrolled in WRE must be maintained for the duration of the easement, either 30 years or in perpetuity

BMP Credit Durations

- Post construction monitoring is typically required to satisfy permits
- Credit duration can vary depending on the complexity of the project and is often between 3 to 5 years
- However, stream restoration projects are subject to catastrophic damage from extreme flood events

BMP Credit Durations

- To ensure projects still exist and are operating as designed, monitoring is needed on an indefinite basis
- Stream Restoration Expert Panel recommended the maximum credit duration for pollutant removal rates to apply is 5 years
- Can be renewed based on a field performance inspection that verifies the project still exists + O&M

Variable BMP Credit
Management Board – Water Qualtiy GIT Charge

- Explore alternatives to BMP re-verification
  - What is the potential for partial credit, or variable credit through time?
  - An important component of this exploration should include a primer on the purpose of the watershed model.