

URBAN STORMWATER WORKGROUP

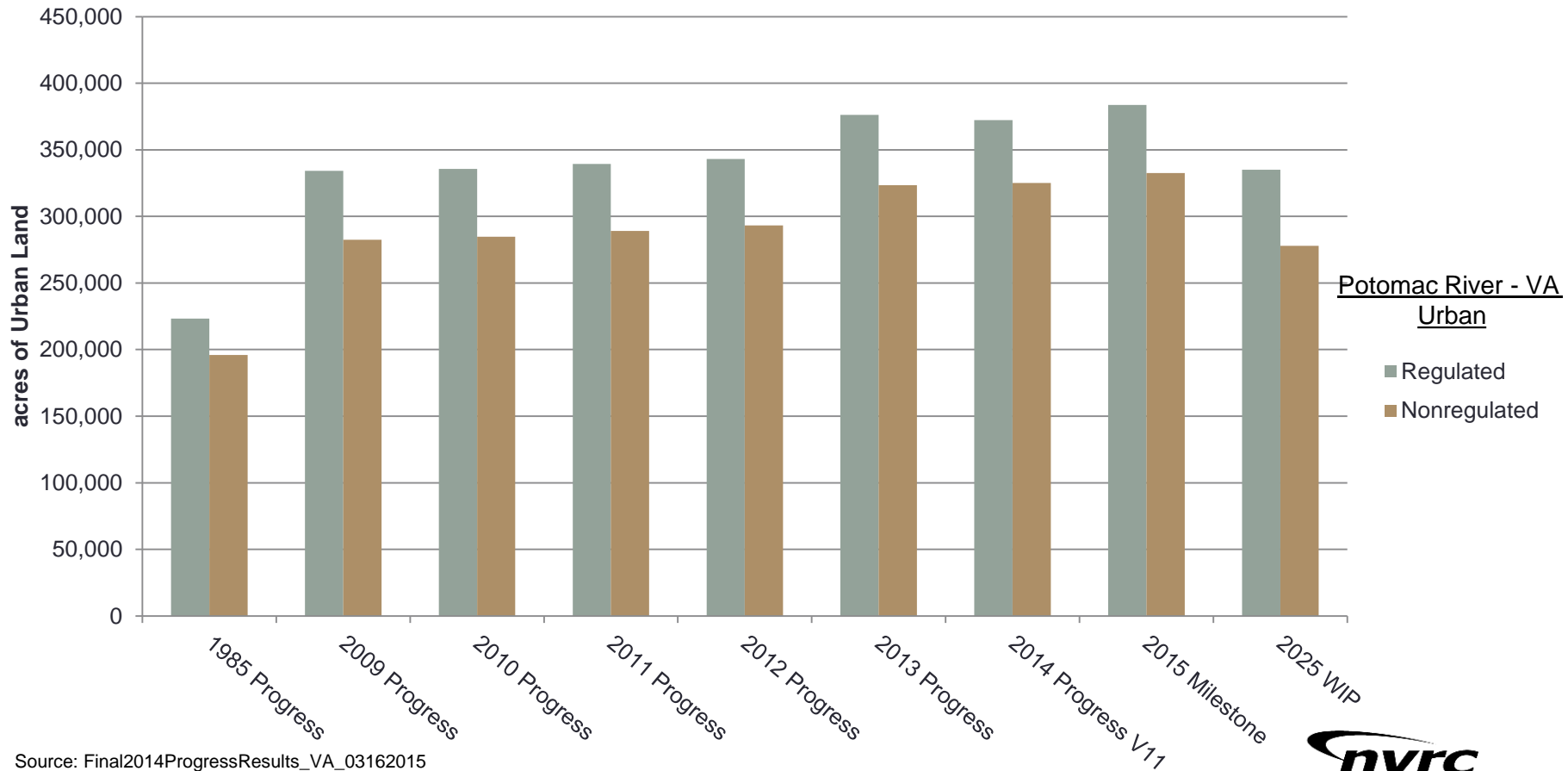
Potomac Watershed Roundtable

Hot Topics List

- 2014 Progress
- BMP Expert Panels
- Verification
- Phase 6 Land Use
- Phase 6 Model Development
- Mid Point Assessment



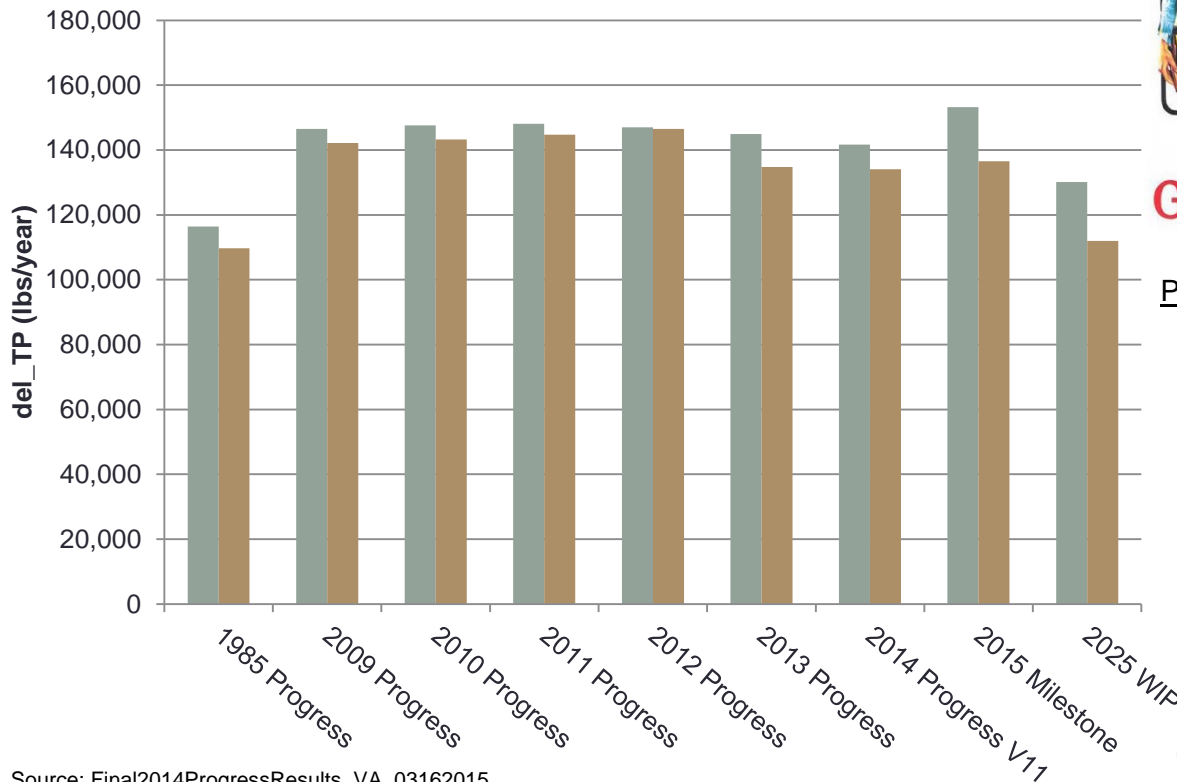
2014 Virginia Progress Reporting



Source: Final2014ProgressResults_VA_03162015

2014 Virginia Progress Reporting

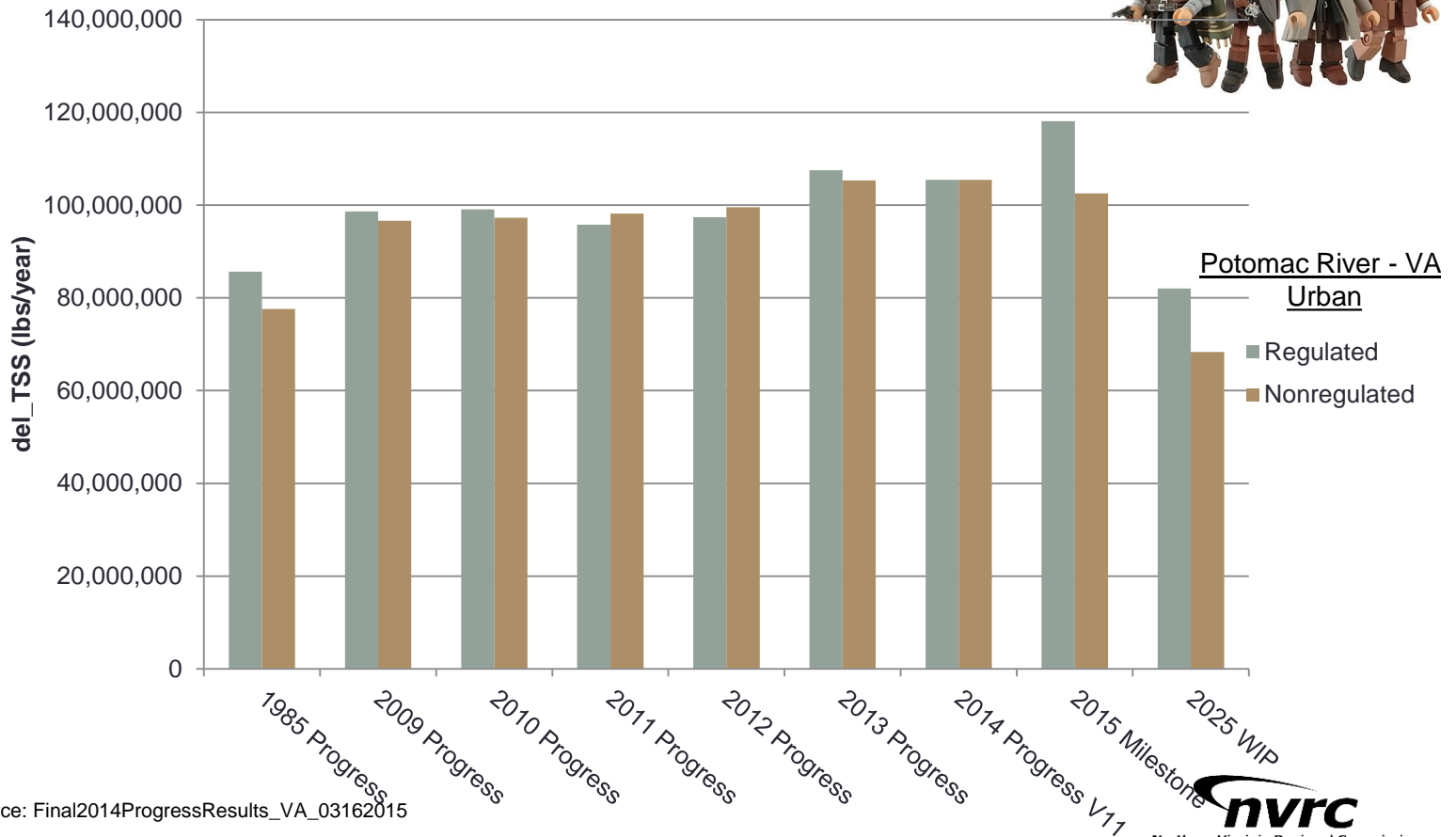
- The GOOD



Source: Final2014ProgressResults_VA_03162015

2014 Virginia Progress Reporting

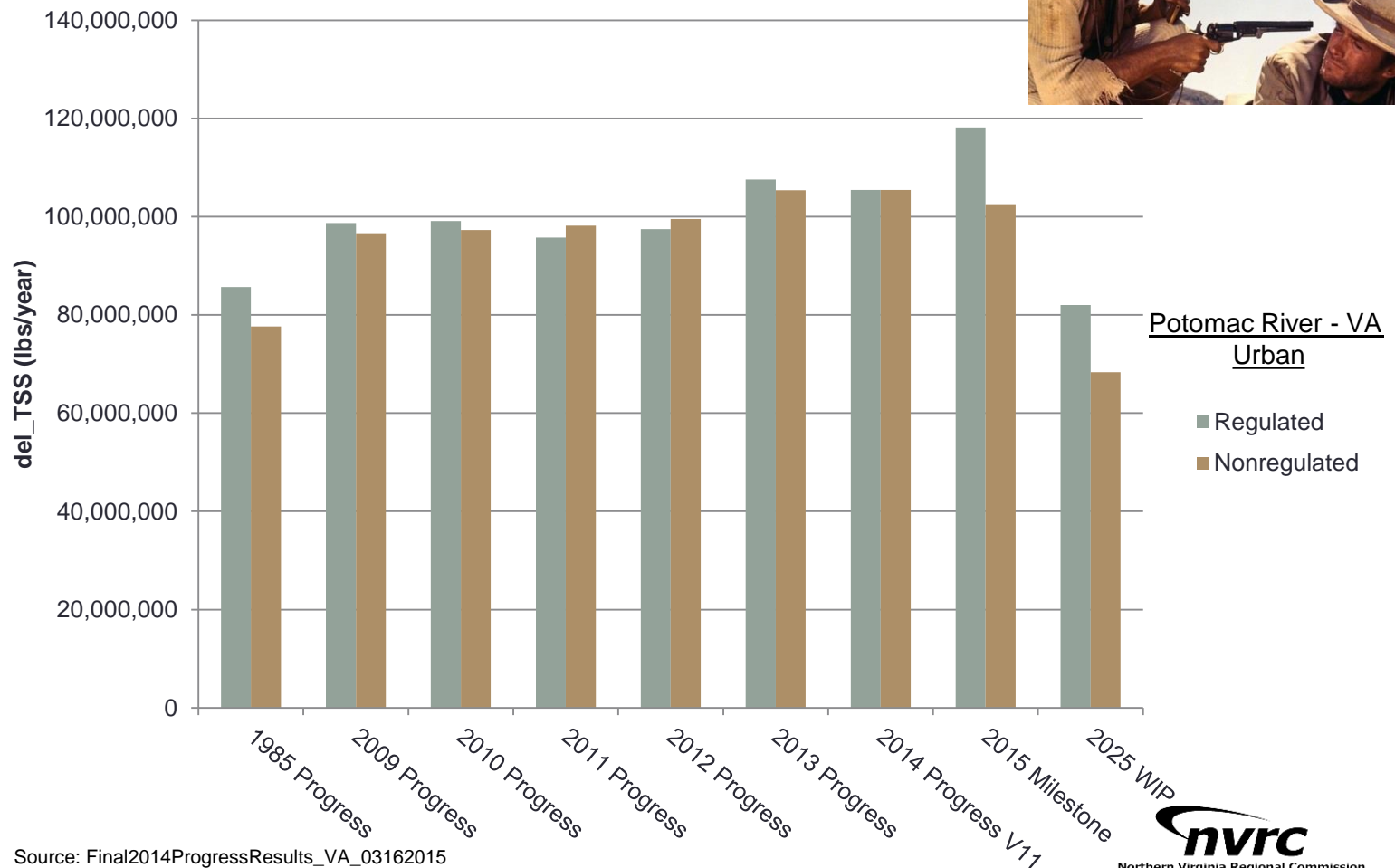
- The BAD



Source: Final2014ProgressResults_VA_03162015

2014 Virginia Progress Reporting

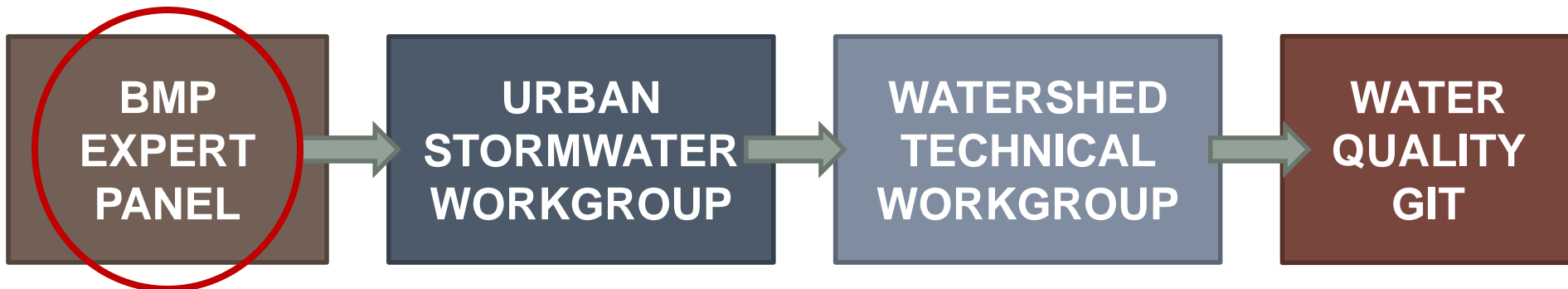
- The UGLY



Recent Expert Panels



1. Urban Stream Restoration
2. Homeowner BMPs
3. Enhanced Erosion and Sediment Control Practices
4. Shoreline Management and urban Filter Strips
5. Nutrient Discharges from Grey Infrastructure
6. Street and Storm Drain Cleaning



Current and Future Urban BMP Expert Panels



- Floating Treatment Wetlands
- Impervious Cover Disconnection
- MS4 Education and Outreach Efforts*
- Outfall Stabilization Practices*
- Performance Enhancements to Existing LID Practices

* Threshold Review

Typical Timeframe for the Expert Panel Process



- Secure consensus among the experts (anywhere from 12 to 24 months)
- Get through the rest of CBP approval process (averages 6 months to a year)
- So, plan on at least 2 to years to get them done
- No guarantees. Some panels may never cross the threshold for scientific literature or be unable to reach consensus

Panel Recommendations Need to Be Integrated into the Bay Watershed Model

- Scale Issues: Delivery Ratios from the Site to the Chesapeake Bay
- Existing vs. new practice...does it violate the calibration ?
- Double counting issues (has another upstream BMP already removed it?)
- Over-counting issues (Dealing w/ stormwater but neglecting groundwater)

CBP BMP Panels Go Well Beyond Defining Percent Removal

- A Single Percent Removal Rate Does Not Apply to Most BMPs
- More Complex Protocols Are Used to Define Rates based on Site and BMP Characteristics
- Such Complexity Can Be Hard to Wire Into Bay Modeling Tools (especially Scenario Builder)

BMP Panels Need to Define Reporting Tracking and Verification

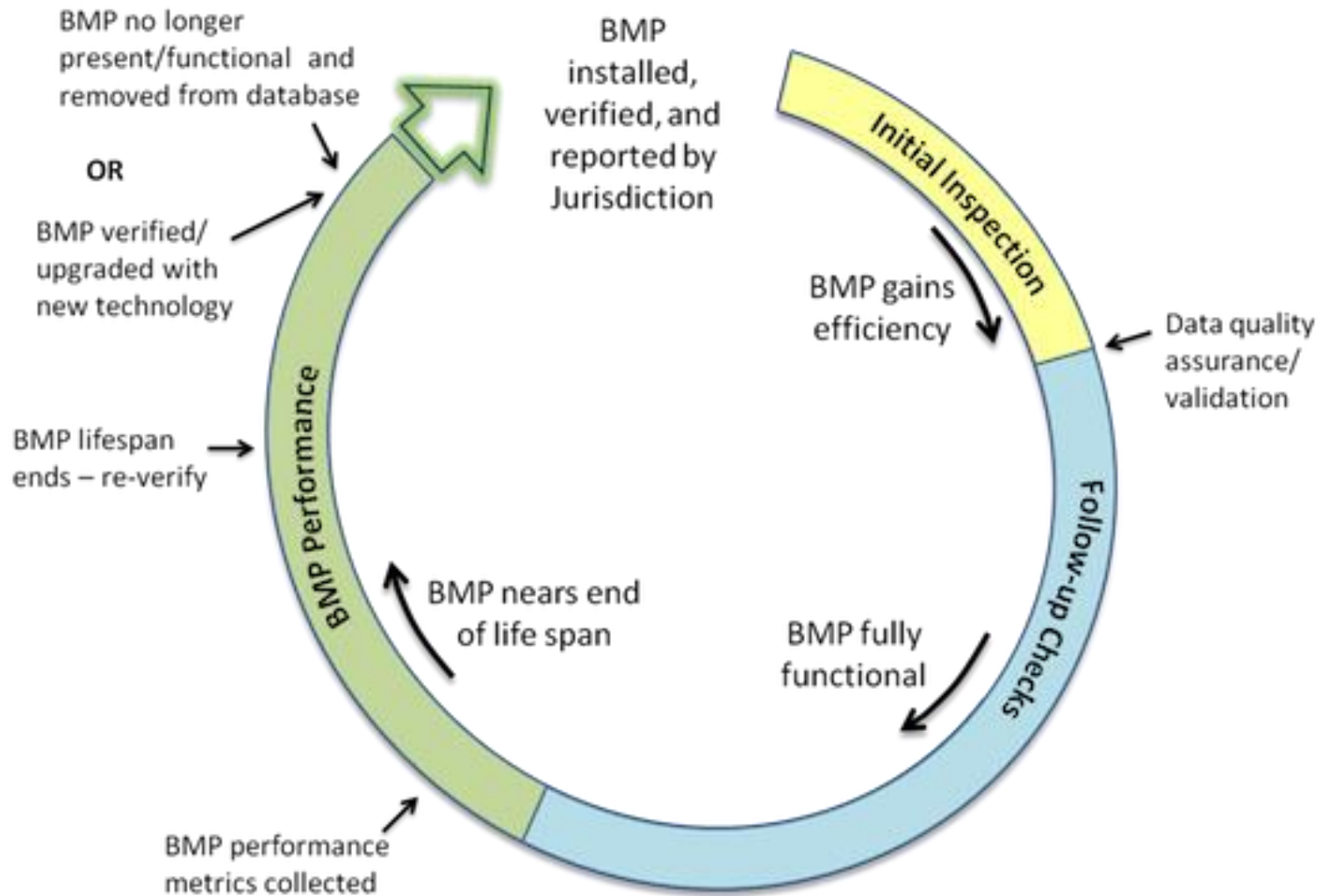
- Need to define a fixed credit duration for each BMP and a defined process for verifying it in the field
- Contention over these issues has led to about 75% of the objections to panel reports, and delays most of them by six months or more
- A lot of state-specific issues to align among seven states

Verification Framework

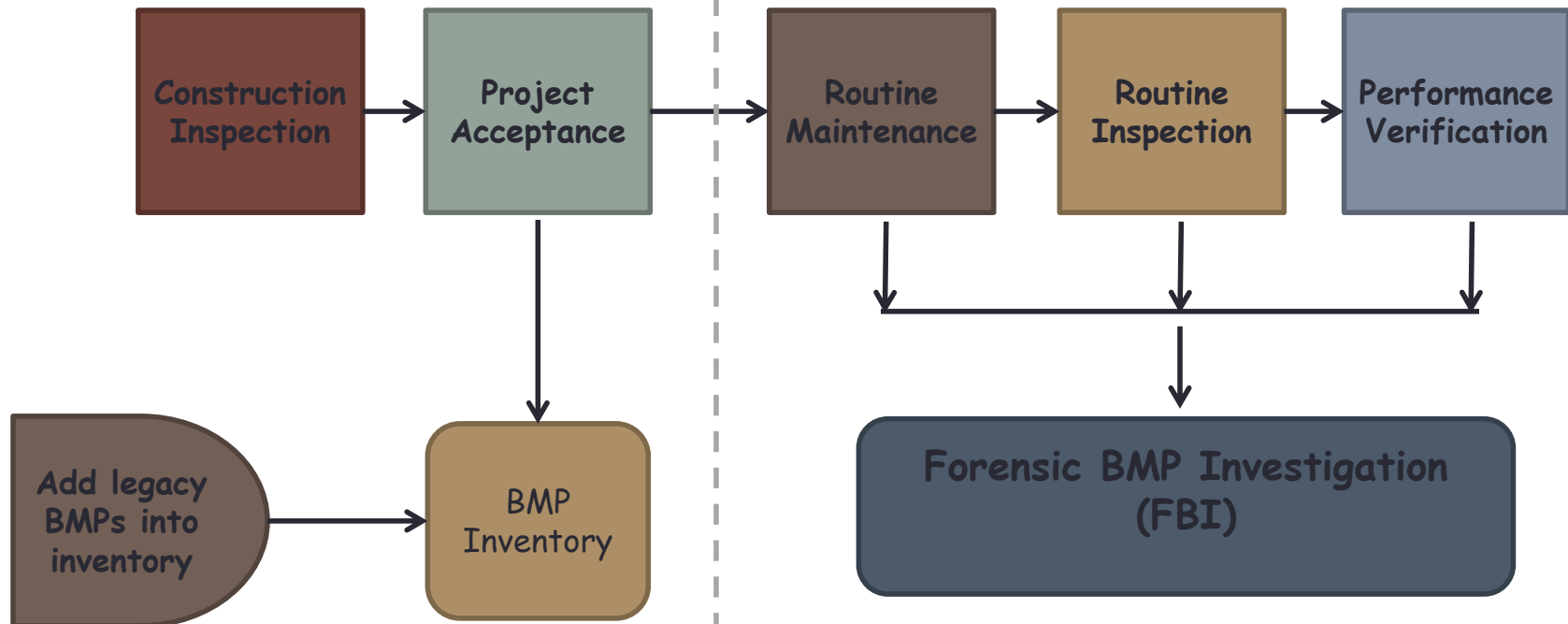
- NPDES MS4 Permit Core
- Regular Inspections and Maintenance
- Removal Rate Tied to Visual Inspections
- Process for BMP Downgrades
- Tracking and Reporting



BMP Verification



Seemed like a simple concept at the time But gets very complex at local level



Credit Duration Depends on BMP Type

- Stream Restoration 5 yrs
- Stormwater Retrofits 10 yrs
- New LID Practices 10 yrs
- Old Stormwater Practices 10 yrs
- Individual Nutrient Discharges 10 yrs
- Homeowner BMPs 5 yrs
- Advanced Nutrient Programs 5 yrs
- UNM Plans 3 yrs
- Erosion and Sediment Control 1 yr*
- Street Cleaning 1 yr

Verification Framework

- NPDES MS4 Permit Core
- Regular Inspections and Maintenance
- Removal Rate Tied to Visual Inspections
- **Process for BMP Downgrades**
- **Schedule**



Schedule

- **June:** States submit their draft BMP verification programs quality assurance plans to Chesapeake Bay Program Office.
- **July:** Panel members review the States' verification program documentation and rate them using a evaluation form.
- **August:** Each State receives the Panel's evaluations and recommendations on additional work needed and additional documentation requested.
- **September:** Continued collaboration between jurisdictions and Panel members to work through the Panel's comments and recommendations.
- **October:** Final draft set of State specific Panel recommendations distributed to Panel members for final review.
- **November:** The States are given the opportunity to provide EPA with their responses to the Panel's findings and recommendations on their proposed verification program.
- **December:** EPA reviews/approves each State's verification program or requests specific enhancements to address the Panel's recommendations prior to EPA approval.

Phase 6 Model Development

Watershed Model

- Revise Watershed Model system structure
 - HSPF PQUAL Simulation Concept
 - Updated Precipitation Input Dataset
 - Updated Hydrology
 - Updated Sediment Simulations
 - New Watershed Land Use/ Land Cover mapping products
- Revisit Watershed Model calibration methods
 - Extension of Simulation Period to *2013*
 - Regional Factors
 - Improve Lag Times

Phase 6 Model Development

Water Quality and Sediment Transport Model

- Refine and update the Water Quality and Sediment Transport Model (WQSTM)
- Refinement of shallow water simulation

Airshed Model

- Update Airshed Model to new CMAQ Bidirectional Ammonia Model

TMDL Charges

- Effects of Conowingo infill on Chesapeake Bay WQS
- Influence of climate change (CC) on Chesapeake WQ standards and the 2010 Bay TMDL
- James River chlorophyll criteria and James River TMDL allocations
- Influence of oyster filter feeders on water quality, with increased aquaculture and sanctuary development

Developed Land Uses

Phase 6 Proposed

- Pervious
 - Turf
 - Open space
 - Tree canopy
- Impervious
 - Roads
 - Buildings, parking lots, etc.
 - Tree canopy over impervious
- Construction
- Extractive
 - Disturbed/Active
 - Abandoned/Reclaimed

Phase 5

- Pervious developed
- Impervious developed
- Construction
- Extractive

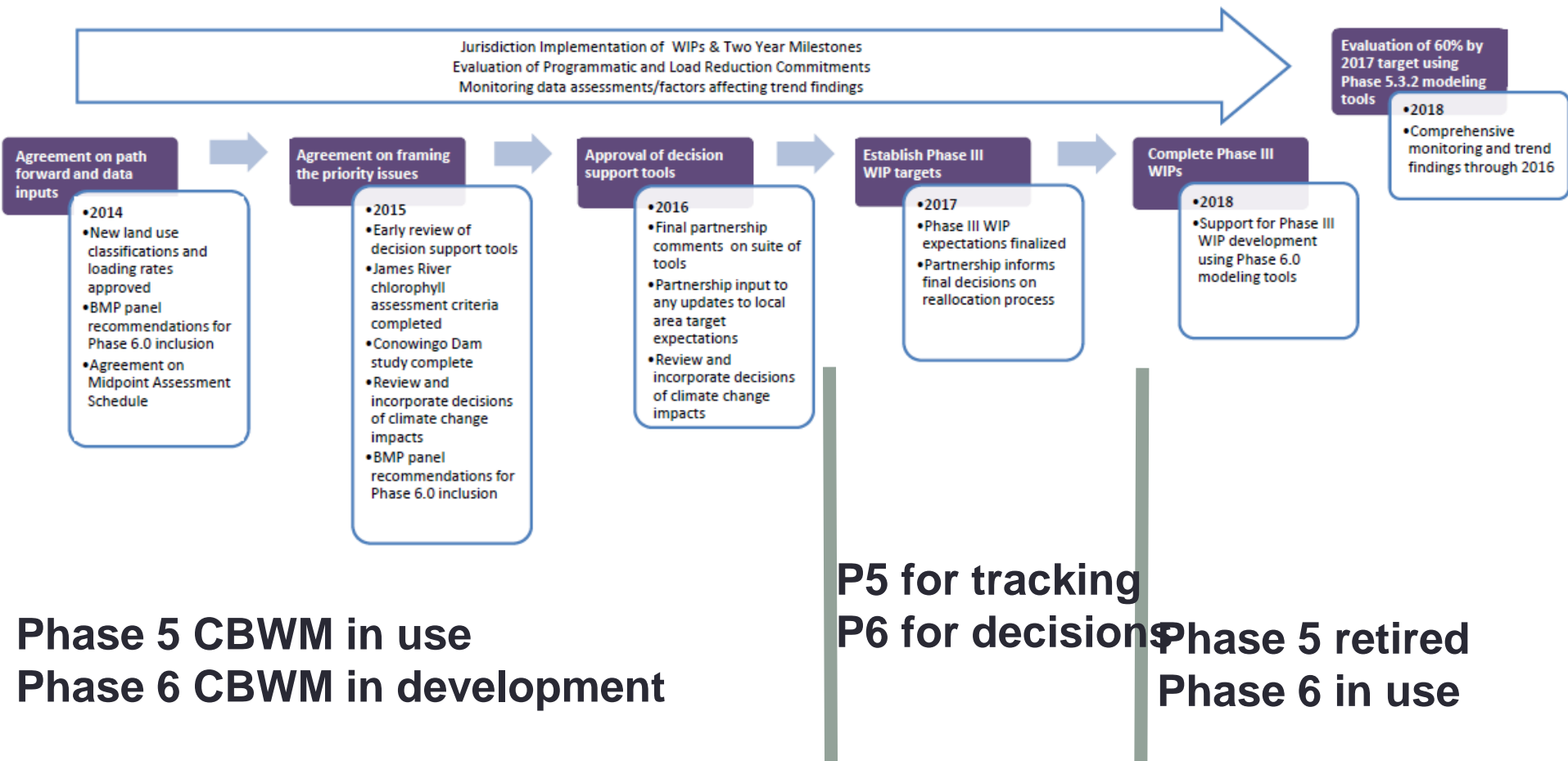


All are also divided by federal, MS4-regulated, and Combined Stormwater Sewer (CSS)

Proposed Phase 6 Definitions of “Forests” and “Urban Tree Canopy”

- Forests
 - Developed areas
 - Un-fragmented patches of trees ≥ 1 acre
 - Rural areas
 - All trees
- Tree canopy
 - In patches < 1 acre within developed areas

Midpoint Assessment Timeline



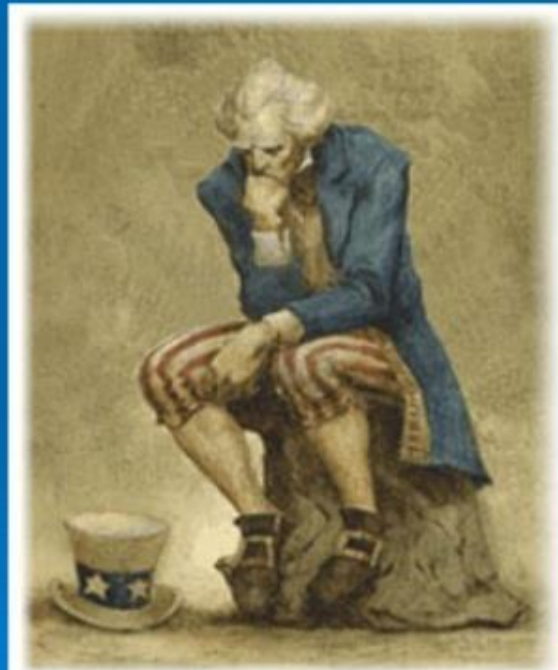
Guiding Principles: The 2017 Chesapeake Bay TMDL Midpoint Assessment Document

PRINCIPLE 5: PRIORITIZE MIDPOINT ASSESSMENT ACTIONS AND USE ADAPTIVE MANAGEMENT TO ENSURE WATER QUALITY GOALS ARE MET

- Partnership will consider the need for updates to the current TMDL and WIPs to address any needed modifications informed by the changes to the decision-support tools,
- EPA's expectations for the scope and content of the Phase III WIPs may vary by jurisdiction depending on their implementation progress through 2017. Using this review, the jurisdictions will make necessary adjustments to their WIPs during Phase III to achieve the 2025 goal.

Questions ???

Decision-making under uncertainty



painting by Sean Cheetham