Chesapeake Bay Program BMP Tracking and Reporting System

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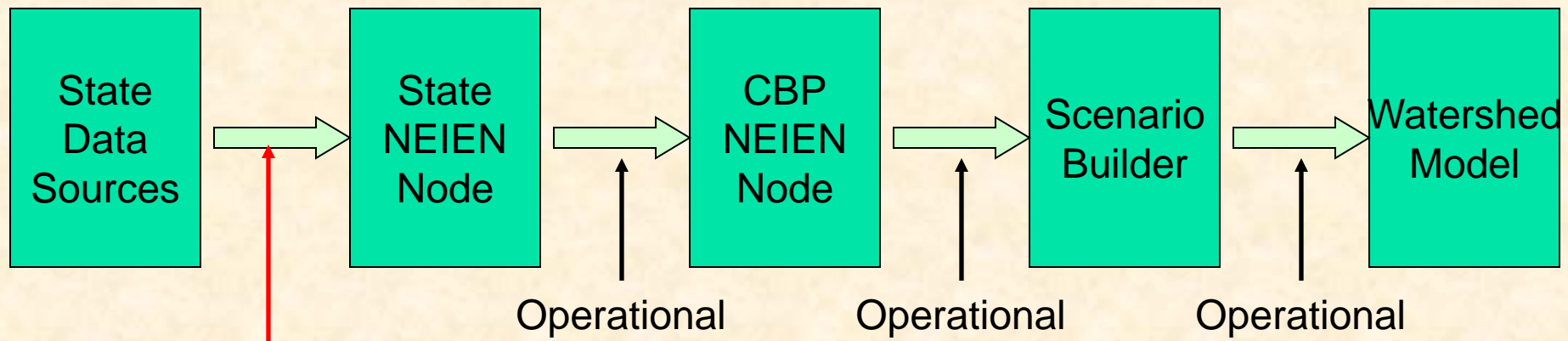CBP WQGIT BMP Verification Committee Meeting
July 19, 2012

Practice and Program Implementation Data
Current Data Flow for "Progress" Assessments

NEIEN (National Environmental Information Exchange Network)

- Built an EPA network node at CBPO and state nodes to support environmental information exchanges in an automated fashion
- Developed standard templates to be used on the NEIEN to move tabular and spatial data for non-wastewater BMPs
- Mapped jurisdictional NPS BMP data from state sources into the templates
- Transfer the BMP data from CB jurisdictions to CBPO network node for assembly by ScenarioBuilder into Watershed Model inputs and for use in other tools for the region

State Data Sources	→	State NEIEN Node	→	CBP NEIEN Node	→	Scenario Builder	→	Watershed Model

Operational   Operational   Operational

State efforts continuing – BMP type, measure, amount, unit, location, etc.

Model Progress Assessments
BMP Data and Feedback

- BMP data accuracy
  - o Implementation dates and location
  - o Mapping NEIEN BMPs to CBP BMPs
  - o Identifying land uses (land use groups) BMPs apply to
  - o Conversion factors

- Summary reports and feedback
  - o BayTAS reports
  - o ScenarioBuilder reports
  - o Watershed Model loads

- Historic BMP record
  - o 1985 → 2005 (end of calibration)
  - o 1985 → 2007 (end of land use-change BMPs = "back-out")
  - o Address "cut-off"
  - o Need to prepare for the TMDL mid-point evaluation

Model Progress Assessments
Deadlines

- Timely reporting
- Careful review
- Clear communication, feedback

Model Progress Assessments
Resources

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- Marty Hurd
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Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

    - 2012 data from each jurisdiction is going to be thoroughly reviewed as it was for 2011

Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

  - Location
    - Political (e.g., county) versus hydrologic (e.g., model segment)

Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

  - Implementation date
    - Valid implementation date must be specified for all BMPs.
      - Jurisdictions will need to support BMPs with the same implementation date across all entries.
    - BMPs with efficiencies: If implementation date was post-calibration (1985 → 2005) but not in the current July 1 – June 30 BMP period, can still get "credit" in progress if other date is specified.
    - BMPs involving land use changes: If implementation date was post-2007 but not in the current July 1 – June 30 BMP period, can still get "credit" in progress if other date is specified.

Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

  - NEIEN BMPs mapped to partnership-approved BMPs and need to follow definitions of CBP BMPs:
    - Watershed Implementation Plan Tools @ http://www.chesapeakebay.net/about/programs/watershed_implementation_plan_tools/
    - ScenarioBuilder @ http://archive.chesapeakebay.net/pubs/SB_V22_Final_12_31_2010.pdf
  - Multiple-counting of BMPs
    - Components of a practice mapped to the more-general practice name need to be unique acres.
      - For example, the many components of a Conservation Plan should no be counted as part of the Plan acres if they could already included in the acres of the more-general practice; vice-versa.
  - Need uniformity among jurisdictions

Chesapeake Bay Watershed Model
Agricultural Practice Groups

Nutrient Management

- Nutrient Management
- Decision Agriculture
- Enhanced Nutrient Management

Conservation Tillage

- Continuous No-Till
- Other Conservation Tillage

Cover Crops

- Cover Crops and Commodity Cover Crops
  - Early, standard, late-planting
  - Species
  - Seeding method

Pasture Grazing Practices

- Alternative Watering Facilities
- Stream Access Control with Fencing
- Prescribed Grazing
- Precision Intensive Rotational Grazing
- Horse Pasture Management

Other Agricultural Practices

- Forest Buffers
- Wetland Restoration
- Land Retirement
- Grass Buffers
- Tree Planting
- Carbon Sequestration/Alternative Crops
- Conservation Plans/SCWQP
- Animal Waste Management Systems
- Barnyard Runoff Control
- Mortality Composters
- Manure Transport
- Water Control Structures
- Non-Urban Stream Restoration
- Poultry and Swine Phytase
- Dairy Precision Feeding and/or Forage Management
- Ammonia Emissions Reductions

Chesapeake Bay Watershed Model
Practices on Developed Lands

Stormwater Management

- Wet Ponds and Wetlands
- Dry Detention Ponds and Hydrodynamic Structures
- Dry Extended Detention Ponds
- Infiltration Practices
- Filtering Practices
- (Urban Stormwater Retrofit)
- (New State Stormwater Performance Standards)

Septic BMPs

- Septic Connections
- Septic Denitrification
- Septic Pumping

Other Urban/Suburban Practices

- Forest Conservation
- Impervious Surface and Urban Growth Reduction
- Forest Buffers
- Tree Planting
- Grass Buffers
- Stream Restoration
- Erosion and Sediment Control
- Nutrient Management
- Street Sweeping
- Abandoned Mine Reclamation
- Dirt and Gravel Road Erosion and Sediment Controls
- Shoreline Erosion Control

Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

    - Identify appropriate land uses and land use groups the BMPs apply to – or defaults will be used.

Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

  - Cumulative versus annual BMPs
    - Most NEIEN inputs to ScenarioBuilder are added to cumulative record of history, which was 1985 → 2009 for 2010 Progress
    - Exception is "annual" BMPs such as Cover Crops, Erosion & Sediment Control, Forest Harvesting Practices, etc.
    - Other exceptions by jurisdiction where, for example, cumulative Nutrient Management or cumulative Conservation-Tillage is reported through NEIEN – not just new implementation.

Model Progress Assessments
BMP Data and Feedback

- BMP data that's submitted through NEIEN must be in the proper format – and will be reviewed with feedback.

  - Confirming NEIEN conversions
    - Conversion factors supplied by jurisdictions according to what was historically done prior to spreadsheet submissions.
    - For example, when Pasture Fencing is reported in feet, conversion factor is width between fence and top of stream bank (10-foot default, 35-foot if justified) to get to acres.
    - If reported in acres, ScenarioBuilder needs to see riparian pasture corridor area, not upland benefit of fencing.
  - Need uniformity among jurisdictions

Model Progress Assessments
BMP Data and Feedback

- Summary reports
  - NEIEN – BayTAS
  - ScenarioBuilder
    - Inputs – from NEIEN to ScenarioBuilder
    - Outputs – from ScenarioBuilder to Watershed Model
    - Submitted versus credited at various spatial scales
    - Summary BMP implementation levels at the jurisdictional level, i.e., acres and as percents
  - Watershed Model Phase 5.3.2
    - Outputs = loads

Model Progress Assessments
BMP Data and Feedback

- Both EPA and the jurisdictions must promptly and carefully review progress run submissions.

- Always working on consolidating and clarifying reports to assist your review.

- Feedback on how these reports could be modified to facilitate your review.

Model Progress Assessments
BMP Data and Feedback

- Request for detailed data and expanding universe of data suppliers
  - Need to "connect" more databases of tracked implementation to NEIEN
  - Gaps in progress because of lack of NEIEN data

Model Progress Assessments
BMP Data and Feedback

- Documentation needs/gaps
  - Jurisdictional QAPP (Quality Assurance Project Plans) for collection and use of environmental data need to reflect the source of the data that goes to CBPO and any methods used to determine each BMP's coverage.
- CBPO documentation of the NEIEN → ScenarioBuilder process.

Model Progress Assessments
BMP Data and Feedback

- Cleaning Up Historic Implementation Data
  - BMP implementation "cut-off"
    - Cut-off = not enough land to apply the BMPs to
    - Typically historic over-reporting, but not necessarily
    - We can't credit practices that were reported years ago and are likely no longer in place.

Model Progress Assessments
BMP Data and Feedback

- Cleaning Up Historic Implementation Data
  - What needs to happen by mid-2015 = calibration of the next version of the Watershed Model and next version of ScenarioBuilder
    - Cleaning up these records will help us to prepare for the TMDL mid-point evaluation using upgraded tools.
    - Default rules
    - Accommodating FSA/NRCS data
    - Accommodating federal facilities data
    - Accommodating voluntary practice data

Model Progress Assessments
BMP Data and Feedback

- Cleaning Up Historic Implementation Data
  - Resources to complete tasks
    - Please let us know where you need help with this cleanup.
      - Tetra Tech
      - CBRAP grants