Chesapeake Bay Updates

Agricultural Advisory Board

June 18, 2014

Andy Zemba – Interstate Waters Office
• Total Maximum Daily Load (TMDL)

• Chesapeake Bay Watershed Agreement
Chesapeake Bay TMDL Progress

- **December 2010:** Chesapeake Bay TMDL published by EPA
- **January 2011:** Phase 1 Watershed Implementation Plan (WIP)
- **2011:** EPA Revises Watershed Model – Issue revised TMDL allocations
- **March 2012:** Phase 2 WIP – Draft County Planning Targets
Chesapeake Bay TMDL Progress

• **2017 Evaluation**: Have practices and controls in place that are expected to achieve 60 percent of load reductions necessary to achieve applicable water quality standards compared to 2009 levels.

• **2018**: Phase 3 WIP

• **2025**: Have all practices and controls installed by 2025 to achieve the Bay’s DO, water clarity/SAV and chlorophyll-a standards.
Measuring Progress

- **Two – Year Milestones**
  - **Chesapeake Bay Watershed Model**
    - Best Management Practices (BMPs)
    - Loading (lb/yr) of Nitrogen, Phosphorous and Sediment
  - **Programmatic Milestones**
    - Regulatory
    - Grants, Projects and Partnerships

- **EPA Evaluation**
Where we are:

Since 1985:

- Completed 27% of N reductions needed to meet the TMDL
- Additional 31.4 million pounds to be reduced by 2025
- Downward revisions made to 2010 FSA-supplied data
## Nitrogen Loads (Millions of Pounds/Yr)

<table>
<thead>
<tr>
<th>Source</th>
<th>1985</th>
<th>2012</th>
<th>2013</th>
<th>2017 Checkpoint (60% of WIP)</th>
<th>Reductions by 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>124.28</td>
<td>111.36</td>
<td>112.71</td>
<td>102.52 %</td>
<td>10.19</td>
</tr>
<tr>
<td>Agriculture</td>
<td>72.79</td>
<td>58.63</td>
<td>61.20</td>
<td>52.69 % 51%</td>
<td>8.51</td>
</tr>
<tr>
<td>Urban Runoff</td>
<td>15.66</td>
<td>17.44</td>
<td>17.18</td>
<td>14.55 % 14%</td>
<td>2.63</td>
</tr>
<tr>
<td>Wastewater &amp; CSO</td>
<td>11.64</td>
<td>11.10</td>
<td>10.21</td>
<td>10.93 % 11%</td>
<td>-0.72</td>
</tr>
<tr>
<td>Septic</td>
<td>1.72</td>
<td>2.07</td>
<td>2.22</td>
<td>2.09 % 2%</td>
<td>0.13</td>
</tr>
<tr>
<td>Forests</td>
<td>22.47</td>
<td>21.08</td>
<td>20.85</td>
<td>21.84 % 21%</td>
<td>-0.99</td>
</tr>
</tbody>
</table>
Since 1985:

- Completed 58% of Phosphorus reductions needed to meet the TMDL
- Additional one million pounds needed by 2025
- 2013 results meet 2013 milestone goal
- WWTP Phosphorus loads met 2013 MS and on track for 2017 midpoint loads
### Chesapeake Bay TMDL Progress

#### Phosphorous Loads (Millions of Pounds/Yr)

<table>
<thead>
<tr>
<th>Source</th>
<th>1985</th>
<th>2012</th>
<th>2013</th>
<th>2017 Checkpoint</th>
<th>Reductions by 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>5.957</td>
<td>4.541</td>
<td>4.541</td>
<td>4.400</td>
<td>0.141</td>
</tr>
<tr>
<td>Agriculture</td>
<td>3.045</td>
<td>2.572</td>
<td>2.663</td>
<td>2.395</td>
<td>0.268</td>
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<tr>
<td>Urban Runoff</td>
<td>0.764</td>
<td>0.751</td>
<td>0.689</td>
<td>0.630</td>
<td>0.059</td>
</tr>
<tr>
<td>Wastewater &amp; CSO</td>
<td>1.715</td>
<td>0.787</td>
<td>0.767</td>
<td>0.943</td>
<td>-0.176</td>
</tr>
<tr>
<td>Forests</td>
<td>0.432</td>
<td>0.394</td>
<td>0.385</td>
<td>0.418</td>
<td>-0.033</td>
</tr>
</tbody>
</table>
Chesapeake Bay TMDL Progress

Since 1985:

- Completed 40% of TSS reductions needed to meet the TMDL
- Additional 648 million pounds to be reduced by 2025
- Downward revisions made to 2010 FSA-supplied data
## Chesapeake Bay TMDL Progress

### Total Suspended Solids (Millions of Pounds/Yr)

<table>
<thead>
<tr>
<th></th>
<th>1985</th>
<th>2012</th>
<th>2013</th>
<th>2017 Checkpoint</th>
<th>Reductions by 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>2,998.8</td>
<td>2,553.6</td>
<td>2,565.0</td>
<td>2,353.1</td>
<td><strong>211.9</strong></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td>1,990.4 (66%)</td>
<td>1,602.8 (63%)</td>
<td>1,636.4 (64%)</td>
<td>1,431.4 (61%)</td>
<td><strong>205.0</strong></td>
</tr>
<tr>
<td><strong>Urban Runoff</strong></td>
<td>580.6 (19%)</td>
<td>539.1 (21%)</td>
<td>526.9 (20%)</td>
<td>447.0 (19%)</td>
<td><strong>79.9</strong></td>
</tr>
<tr>
<td><strong>Wastewater &amp; CSO</strong></td>
<td>35.1 (1%)</td>
<td>25.9 (1%)</td>
<td>24.3 (1%)</td>
<td>87.5 (4%)</td>
<td><strong>-63.2</strong></td>
</tr>
<tr>
<td><strong>Forests</strong></td>
<td>392.6 (13%)</td>
<td>385.9 (15%)</td>
<td>377.5 (15%)</td>
<td>387.2 (16%)</td>
<td><strong>-9.7</strong></td>
</tr>
</tbody>
</table>
Monitoring
Chesapeake Bay TMDL Progress

• University of Maryland Center for Environmental Science annual report card
• Sectors have made steady progress
• Newly issued WWTP permit limits have reduced point-source phosphorus loads to below 2017 midpoint loading rates
• More aggressive implementation will be needed in other areas to meet 2017 goals
New Chesapeake Bay Watershed Agreement
Why Now?

- The Chesapeake 2000 Agreement is largely outdated
- Federal Agencies - Executive Order (EO) of 2009
- The Congressional General Accountability Office called for the “alignment” of the federal EO Chesapeake Bay Strategy goals and the Chesapeake Bay Program Agreement goals
- Process started in 2011
- Signatories eligible to receive funding
New Chesapeake Bay Watershed Agreement

What’s New?

• “Headwater” states (NY, DE and WVA) are invited to sign for the first time
• This agreement is shorter than ones in the past
• Goals with focused outcomes
• Management Strategies will be developed for outcomes
• Jurisdictions have flexibility to choose level at which they will participate
New Chesapeake Bay Watershed Agreement

Sustainable Fisheries Goal:

- Blue Crab Abundance Outcome
- Blue Crab Management Outcome
- Oyster Outcome
- Forage Fish Outcome
- Fish Habitat Outcome
Vital Habitats Goal:

- Wetlands Outcome
  - *Black Duck*
- Stream Health Outcome
  - *Brook Trout*
- Fish Passage Outcome
- Submerged Aquatic Vegetation (SAV) Outcome
- Forest Buffer Outcome
- Tree Canopy Outcome
Water Quality Goal:

• 2017 Watershed Implementation Plans (WIP) Outcome
• 2025 WIP Outcome
• Water Quality Standards Attainment and Monitoring Outcome
New Chesapeake Bay Watershed Agreement

Toxic Contaminants Goal:
• Toxic Contaminants Research Outcome
• Toxic Contaminants Policy and Prevention Outcome

Healthy Watersheds Goal:
• Healthy Waters Outcome
Stewardship Goal:

• Citizen Stewardship Outcome
• Local Leadership Outcome
• Diversity Outcome
New Chesapeake Bay Watershed Agreement

Land Conservation Goal:
• Protected Lands Outcome
• Land Use Methods and Metrics Development Outcome
• Land Use Options Evaluation Outcome

Public Access Goal:
• Public Access Site Development Outcome
New Chesapeake Bay Watershed Agreement

Environmental Literacy Goal:
• Student Outcome
• Sustainable Schools Outcome
• Environmental Literacy Planning Outcome

Climate Resiliency Goal:
• Monitoring and Assessment Outcome
• Adaptation Outcome
New Chesapeake Bay Watershed Agreement

What’s Next?

• Development of Management Strategies for Outcomes
• Implementation
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http://www.chesapeakebay.net/chesapeakebaywatershedagreement/page