Florida’s Water Quality Trading

Carla Seiwert EPA R4
Seiwert.Carla@epa.gov
404-562-9299
Agenda

- Florida’s motivation for Water Quality Trading
- Background of Florida’s Trading Legislation
- Basin Management Action Plans
- Lower St. Johns River Pilot Program
- Results
- Where are they now?
Motivation

- Allows market forces to find the most cost-efficient solutions to water quality problems
  - Different abatement costs between sources
- Cheaper generally means greater/faster reductions in loading for the same fixed costs
- Allows additional nexus (money) for addressing nonpoint sources
- Provides mechanism to offset loads from new growth, thereby allowing for growth.
- Development of site specific Numeric Nutrient Criteria
Background - Trading Legislation

2008: HB 547

- Revisions to Florida Watershed Restoration Act (FWRA/Section 403.067)
  - Authorized trading, but limited to the pilot project in the Lower St. Johns River Basin
  - Long-term plan: DEP thought that trading will be limited to basins with adopted Basin Management Action Plans (BMAPs)
    - BMAPs are TMDL implementation plans, and include implementation schedules and funding
    - Can include site-specific information needed to ensure trading is protective
Basin Management Action Plans - BMAPs

- In developing and implementing the TMDL for a water body, the department may develop a BMAP that addresses some or all of the watersheds and basins tributary to the water body.

  BMAPs must:

  - Have established schedule for implementing the management strategies
  - Have established basis for evaluating the plan’s management strategies
  - Equitably allocate pollutant reductions to individual basins, as a whole to all basins, or to each identified point source or category of nonpoint sources, as appropriate
  - Include milestones for implementation and water quality improvement, and an associated water quality monitoring component sufficient to evaluate whether reasonable progress in pollutant load reductions is being achieved over time
  - Identify the mechanisms that will address potential future increases in pollutant loading
Basin Management Action Plans - BMAPs

- **Informal or “Pre-BMAP” Trading:**
  - Before the BMAP is finalized the initial allocations are brought to the stakeholders. At this point the stakeholders are able to shift allocation from one facility to the other.
  - When there is agreement with the allocations the BMAP is finalized.
  - No money is involved in this action
  - Most entities with both wastewater facilities and MS4s agreed to this type of trade, with allocation moved from the wastewater facility to the MS4.
  - This type of trading helps evolve the final adopted allocation towards the lowest cost alternatives.

- **Formal Trading:**
  - After the BMAP is finalized stakeholders are able to trade *water quality credits*
# Water Quality Credit Trading

<table>
<thead>
<tr>
<th>SELLER</th>
<th>Wastewater Facility</th>
<th>MS4 (Phase I and II)</th>
<th>Nonpoint Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wastewater Facility</td>
<td>Both Permits Revised</td>
<td>Sellers Permit Revised, and MS4 submits affidavit</td>
<td>Sellers Permit Revised, and NPS submits affidavit</td>
</tr>
<tr>
<td>Phase I MS4s (Phase II MS4s not allowed under pilot)</td>
<td>Both Permits Revised</td>
<td>Sellers Permit Revised, and MS4 Buyer submits affidavit</td>
<td>Sellers Permit Revised, and NPS submits affidavit</td>
</tr>
<tr>
<td>Nonpoint Source</td>
<td>Buyer’s Permit Revised to incorporate NPS Control Activity, and buyer fully liable.</td>
<td>Limited to Phase I MS4s as buyer because Buyers Permit must be revised to include NPS Control Activity</td>
<td>Not Allowed</td>
</tr>
</tbody>
</table>
Lower St. Johns River - Background

- TMDL and BMAP apply to the main stem segments of the Lower St. Johns River between Buffalo Bluff and the mouth
  - 101 river miles
  - 115 sq. miles of water surface area
  - 2,750 sq. mile of drainage area
Lower St. Johns River - Background

Figure 2: Marine and Freshwater Reaches in the Lower St. Johns River
The LSJR BMAP represents the collaborative effort of stakeholders to identify current and planned management strategies to reduce discharges of TN and TP. It contains both structural and non-structural strategies, including:

- Wastewater treatment plant upgrades
- Redirecting wastewater discharges to beneficial reuse for irrigation and other purposes
- Stormwater retrofits
- Urban Structural BMPs
- Urban nonstructural BMPs such as cleaning and maintenance activities
- Agricultural BMPs
- Environmental education
- Water quality credit trading
Lower St. Johns River - BMAP

Figure 4: Point Source Facilities in the Freshwater Reach

Figure 6: Point Source Facilities in the Marine Reach
Lower St. Johns River - Tracking Implementation

- Review BMAP
- TMDL
- Pre-BMAP Trading
- Formal Trading
- Adoption of BMAP

Diagram showing a cycle starting with Review BMAP, followed by TMDL, then Pre-BMAP Trading, Formal Trading, and finally Adoption of BMAP.
# Table 32: Proposed BMAP Annual Reporting Format

## 2008 Lower St. Johns River Main Stem Nutrient Basin Management Action Plan

### Implementation Status – BMAP Management Strategies

<table>
<thead>
<tr>
<th>BMAP Project #</th>
<th>Affected Area (WBID)</th>
<th>Brief Description</th>
<th>Projected Start/End</th>
<th>Project/Activity Status</th>
<th>TN or TP Removal Estimate (LBS/yr)</th>
<th>Project Monitoring Results</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### New Management Strategies

<table>
<thead>
<tr>
<th>BMAP Project #</th>
<th>Affected Area (WBID)</th>
<th>Brief Description</th>
<th>Projected Start/End</th>
<th>Project/Activity Status</th>
<th>TN or TP Removal Estimate (LBS/yr)</th>
<th>Project Monitoring Results</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shade if also an MS4 activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility Name</td>
<td>Project Number</td>
<td>Description</td>
<td>Deadline</td>
<td>Project TP Reduction (kg/yr)</td>
<td>Project TP Reduction (lbs/yr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td>------------------------------</td>
<td>------------</td>
<td>-----------------------------</td>
<td>------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>PAL-1</td>
<td>Reuse to golf course</td>
<td>Completed</td>
<td>1,730</td>
<td>3,606</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>PAL-2</td>
<td>Reuse to ball fields</td>
<td>10/31/2008</td>
<td>691</td>
<td>1,520</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>PAL-3</td>
<td>Reuse to cemeteries</td>
<td>10/31/2008</td>
<td>1,205</td>
<td>2,651</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>PAL-4</td>
<td>Reuse at WTP</td>
<td>12/31/2008</td>
<td>1,555</td>
<td>3,421</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>PAL-5</td>
<td>Zero discharge</td>
<td>12/31/2010</td>
<td>4,774</td>
<td>10,503</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>Total Project Reductions</td>
<td></td>
<td></td>
<td>9,915</td>
<td>21,901</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatka WWTF</td>
<td>Credit/(Deficit)</td>
<td></td>
<td></td>
<td>5,954.7</td>
<td>13,100.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Implementation Schedule**

- **Reuse at WTP**
  - Final Plans and Specifications Complete: 11/30/2007
  - Begin Construction: 12/01/2007
  - End Construction: 09/30/2006
  - Begin Operation: 09/30/2008
  - Operational Level Attained: 10/31/2008

- **Zero Discharge**
  - Preliminary Plans Complete: 01/31/2008
  - Final Plans and Specifications Complete: 10/31/2006
  - Begin Construction: 11/01/2006
  - End Construction: 05/30/2010
  - Begin Operation: 05/30/2010
  - Operational Level Attained: 12/31/2010
Results: 2014

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>% OF CONTROLLABLE LOAD</th>
<th>STARTING LOAD (KG/yr)</th>
<th>2014 LOAD (KG/yr)</th>
<th>ALLOCATION (KG/yr)</th>
<th>REMAINING REDUCTIONS (KG/yr)</th>
<th>% COMPLETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWTF*</td>
<td>45%</td>
<td>81,015</td>
<td>37,881</td>
<td>44,386</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>MS4</td>
<td>1%</td>
<td>1,500</td>
<td>1,256</td>
<td>1,256</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Non-MS4</td>
<td>7%</td>
<td>12,538</td>
<td>10,157</td>
<td>9,408</td>
<td>749</td>
<td>73%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>47%</td>
<td>83,435</td>
<td>75,626</td>
<td>70,974</td>
<td>4,652</td>
<td>63%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>178,329</td>
<td>124,920</td>
<td>126,025</td>
<td>5,401</td>
<td>90%</td>
</tr>
</tbody>
</table>

*Exceeded the total required reductions for the source category.*

**Figure 23: Progress Towards the TP TMDL in the Freshwater Reach**
### Results: 2014

**Table 14: Progress Towards the TN TMDL in the Freshwater Reach**

*Exceeded the total required reductions for the source category.*

<table>
<thead>
<tr>
<th>Source</th>
<th>% of Controllable Load</th>
<th>Starting Load (kg/yr)</th>
<th>2013 Load (kg/yr)</th>
<th>Allocation (kg/yr)</th>
<th>Remaining Reductions (kg/yr)</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWTF*</td>
<td>47%</td>
<td>384,650</td>
<td>195,560</td>
<td>237,200</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>MS4</td>
<td>1%</td>
<td>9,731</td>
<td>8,685</td>
<td>8,685</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Non-MS4</td>
<td>11%</td>
<td>88,705</td>
<td>75,978</td>
<td>74,119</td>
<td>1,859</td>
<td>87%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>40%</td>
<td>310,700</td>
<td>232,709</td>
<td>194,336</td>
<td>38,373</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>773,786</strong></td>
<td><strong>512,932</strong></td>
<td><strong>514,340</strong></td>
<td><strong>40,232</strong></td>
<td><strong>84%</strong></td>
</tr>
</tbody>
</table>

**Figure 24: Progress Towards the TN TMDL in the Freshwater Reach**
Results: 2014

Note: TMDL mean concentrations were derived from the daily values for the verification simulation, based on hydrologic conditions for 1995–99 and all point and nonpoint source discharges at their allocated load. These concentrations are only a general reference, and should not be construed as river targets and compliance with the TMDL, which is based on chlorophyll-a and DO.

**Figure 30**: Geometric mean TP and TN concentrations for the TMDL condition (blue), the 1995–99 baseline condition (red), and 2014 (green)
What now?

- Annual Progress Reports are done for every finalized BMAP found at [http://www.dep.state.fl.us/water/watersheds/bmap.htm](http://www.dep.state.fl.us/water/watersheds/bmap.htm)

- Since the initial rule making for the Lower St. Johns River Basin BMAP:
  - 21 new BMAPs state wide
  - 4 new BMAPs are currently un-finalized and holding public meetings
Thank you!

Carla Seiwert
NPDES Permit Specialist
NPDES Permitting and Enforcement Branch
EPA Region 4
Phone: 404-562-9299
Email: Seiwert.Carla@epa.gov

Kevin Coyne
Program Administrator
Watershed Planning and Coordination Section
FL Department of Environmental Protection
Phone: 850-245-8555
Email: kevin.coyne@dep.state.fl.us

http://stjohnsriveralliance.com/
http://www.dep.state.fl.us/water/watersheds/bmap.htm