Impact of Regional Water Plans On Land Use Planning

Georgia’s State Water Plan
- Water Planning Process Approved by Legislature in 2008
- The wise use and management of water is critical to:
  - Support State’s economy
  - Protect public health and natural systems
  - Enhance quality of life for all citizens

Resource Assessments
- Three Resource Assessments Completed to Assess Availability of the Resource to Meet Future Needs
**Forecasting Water and Wastewater Needs**

- Forecasts developed for 40 year planning horizon (2010-2050)
- 4 Major Demand Sectors
  - Agricultural
  - Municipal (includes commercial and self supplied)
  - Thermoelectric Energy
  - Industrial

**Regional Water Development and Conservation Plans**

- Governor, Lt. Governor, and Speaker appointed 300 people to serve on 10 regional water councils around the state
- Regional Councils met quarterly for 3 years to discuss regional water issues, understand technical work and water demands through 2050, and develop water management practices to meet all future water needs

**These Water Management Concepts...**

- are consistent with current Georgia law
- do not affect the EPD Director’s authority during emergency water shortages
- do not affect water use priorities during emergency periods of water shortage (1st – human consumption and 2nd – farm use)
- do not affect current statutory provisions for water withdrawal permitting
Land use affects water quality and quantity!

- How do we balance water quantity and water quality needs?
- How will increased development affect stream quality?
- How can we make decisions that allow for growth while protecting water resources?

Altamaha Regional Water Plan

Management Practice
- ALTERNATIVE SURFACE WATER SUPPLY PRACTICE based on Land Management Incentives

Why?
- Surface water supply shortages during some periods of dry years

Goal?
- Aquifer recharge & stream baseflow support
Altamaha Regional Water Plan

Management Practice
• NON-POINT SOURCE PRACTICES: Link Nutrient Loading With Current land Use
  How?
• BMP Implementation

What Water Use Sectors?
• Agriculture
• Forestry
• Rural & Urban

APPLICATION?...

• Impervious Surface Reduction
• Ordinances
• Green Infrastructure BMPs

NON-POINT
• Water quality trading
• Incentivising non-point controls

Coastal Regional Water Plan

CHALLENGES
• Salt Water Intrusion
• Low DO
• Water withdrawal Permit restrictions

MANAGEMENT PRACTICES
• Water Conservation
• Alternative Water Supplies
• Engineered solutions (ex. DESAL, ASR)
Suwannee-Satilla Water Planning Region

- 18 counties, in southeastern portion of Georgia
- Common border with Florida
- Major population centers include: Valdosta, Tifton, Waycross, and Douglas
- Major rivers include: Alapaha, Satilla, St. Marys, Suwannee, and Withlacoochee
In April 2009 a total of 46 Georgia Counties declared Disaster Emergency

Suwannee-Satilla Regional Water Plan

Management Practice

- Alternative to Existing Surface Water Supply Sources (ASWS-9) focuses on “Incentives for Greater Wastewater Return Flows; Coordinated Management”

Why?

- address extreme flow conditions (low and high) on the Withlacoochee River

Next Steps...

- Storm Water ordinances in regional communities
- Water retention reservoirs along the river
Land Use Considerations in the Regional Water Plans

- GA Land Use Trends (GLUT) Maps Updated
- Impervious Surface Map
- Land use model to 2050 for use in water quality modeling

* EPO does not regulate land use. Land Use decisions are made by local governments.

2050 Scenario

<table>
<thead>
<tr>
<th>Land Use</th>
<th>BASELINE</th>
<th>2050</th>
<th>DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>area (acres)</td>
<td>% Total</td>
<td>area (acres)</td>
</tr>
<tr>
<td>Open Water</td>
<td>33980</td>
<td>1.21%</td>
<td>27099</td>
</tr>
<tr>
<td>Developed, Low Intens</td>
<td>88071</td>
<td>3.15%</td>
<td>228558</td>
</tr>
<tr>
<td>Mixed Forests</td>
<td>95483</td>
<td>3.41%</td>
<td>48364</td>
</tr>
<tr>
<td>Row Crop</td>
<td>61148</td>
<td>2.19%</td>
<td>42534</td>
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</tbody>
</table>

Example Model Run

<table>
<thead>
<tr>
<th>Sector</th>
<th>Range of Implementation</th>
<th>Percent Land Use</th>
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</thead>
<tbody>
<tr>
<td>Forestry</td>
<td>HIGH</td>
<td>100</td>
</tr>
<tr>
<td>Agriculture – Row Crops</td>
<td>LOW</td>
<td>100</td>
</tr>
<tr>
<td>Agriculture – Pasture</td>
<td>LOW</td>
<td>100</td>
</tr>
<tr>
<td>Urban – MS4 Permittees</td>
<td>HIGH</td>
<td>100</td>
</tr>
<tr>
<td>Urban – Non MS4 Permittees</td>
<td>LOW</td>
<td>100</td>
</tr>
</tbody>
</table>
Regional Water Plan implementation will be primarily the responsibility of the Regions’ Water Users and Local Govt’s.