

# **Regional Water Shortage and Response Planning (AKA Interconnection Model Update)**

## Current MOA Description

This project will support regional reliability, resiliency and redundancy, using the Interconnection Model developed by the Jordan Lake Partnership, and the North Carolina Division of Water Resources' OASIS model of the Neuse/Cape Fear Basins, to further understand the capabilities and limits of the Triangle Region's present water supply network. The goal will be to estimate infrastructure investments needed to meet future needs – at both the regional and local scale – during sustained or short-term shortages or constraints such as short-term or longer-term infrastructure issues, water quality issues, or long-term regional drought.

## Excerpts from June 2017 Project Ideas

### **Background**

This project supports regional reliability, resiliency and redundancy. The ability to readily transfer water among individual local systems can reduce the risks and consequences of prolonged shortages due to severe drought or more temporary events such as facility outages or spills.

The JLP's Interconnection Model and the North Carolina Division of Water Resources' OASIS model of the Neuse/Cape Fear Basins provide a good knowledge base for understanding the capabilities and limits of the Triangle Region's present water supply network as well as an estimate of infrastructure investments needed to meet future needs – at both the regional and local scale – during sustained or short-term shortages or constraints. Partners anticipate that analyses could be completed to prepare for the following types of scenarios that could impact the region's ability to meet our customer needs:

1. Short-term infrastructure issues – for example, OWASA's water emergency in February 2017.
2. Longer-term infrastructure issues – for example, the project to take the Williams WTP offline later in 2017, or an unplanned event such as one of the older dams breaching
3. Water quality issues – for example, a spill near a water supply intake.
4. Long-term regional drought.

### Phase Ia – Scenario Development

Partners will each develop a list of 'what if' scenarios. A compiled, Partnership list will be generated, prioritized by the Partnership, and used to develop budget estimates.

### Phase Ib - Scoping

Refine scope for analysis of high priority scenarios to be evaluated using the regional interconnected hydraulic model. This would include identifying the demand conditions for each scenario. This might or might not include any new Partnership members.

## Phase 1c – Scenario Modeling and Response Planning

### **Project Tasks**

- (This may have an intermediate or concurrent task depending on the desire of any new members to add their systems to the regional, interconnected model).
- Use the Interconnections model to perform vulnerability assessments for defined, prioritized scenarios.
- Identify infrastructure, standard operating procedures, transfers, and/or additional studies needed.

## Phase 2 –Regional Water Supply Optimization

### **Project Tasks**

- Develop Regional Water Shortage Indicators
- Define regional water shortage scenarios (and prioritize them)
  - Use the OASIS model to evaluate the impacts on individual and regional water supply reliability
  - Use the Regional Interconnections model to evaluate impacts on individual system performance and to identify any infrastructure improvements that would significantly enhance regional water supply reliability during drought.
- Develop protocols to transfer water to optimize the Region's water supply based on specific conditions (triggers).

# Triangle Regional Water Supply Planning

## Current MOA Description

This Plan will be much more than a simple update of the Jordan Lake Partnership's Plan. This new plan will include the larger Triangle Water Supply Partnership membership and a comprehensive evaluation of potential water sources.

## Excerpts from June 2017 Project Ideas

### **Background**

The next iteration of the Triangle Water Supply Plan is expected to be more substantial than an "update" since it is anticipated that new members will be included. There are some initial tasks that can be started now to prepare. For instance, each member will need to provide information about water needs now and far into the future. Some Partners are working on their individual water supply master plans now. New members may or may not have the information currently available. It will be at each member's discretion whether they update their analysis of future water supply needs during preparation of the regional plan.

### **Project Tasks**

- Individual partners working on master planning will share their work with the group as the plans progress.
- Consider creating a benchmarking/key performance indicators matrix from each of the studies
- Provide new Partners with an idea of the information and planning activities they will need to undertake for the next version of the Plan
- Develop scope and budget for next iteration of Plan

**Table 1: Triangle Water Supply Partnership 5-Year Project and Funding Plan**

|  | Budgeted Expenses |                   |                   |                   |                   |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|
|  | FY19              | FY20              | FY21              | FY22              | FY23              |
| <b>A. Partnership Management</b>                             |                   |                   |                   |                   |                   |
| Partnership Management Support                               | \$ 75,000         | \$ 75,000         | \$ 78,000         | \$ 78,000         | \$ 81,000         |
| <b>B. Small Projects</b>                                     |                   |                   |                   |                   |                   |
| Data summaries, regulatory evaluation, outreach, etc.        | \$ 24,000         | \$ 36,000         | \$ 30,000         | \$ 30,000         | \$ 30,000         |
| <b>C. Large Projects</b>                                     |                   |                   |                   |                   |                   |
| 1. Regional Water Shortage and Response Planning             | \$ 150,000        |                   |                   |                   |                   |
| 2. Interconnection Model Maintenance (FY24)                  |                   |                   |                   |                   |                   |
| 3. Triangle Regional Water Supply Plan                       |                   |                   | \$ 250,000        |                   |                   |
| 4. Emergency Spill Response and Mitigation Plan Coordination |                   |                   |                   |                   | \$ 150,000        |
| Total Annual Expenditures                                    | \$ 249,000        | \$ 111,000        | \$ 358,000        | \$ 108,000        | \$ 261,000        |
| Total Dues   | \$ 249,600        | \$ 300,000        | \$ 216,000        | \$ 216,000        | \$ 216,000        |
| <b>Partnership Operating Fund Target (beginning of year)</b> | <b>\$ 249,600</b> | <b>\$ 300,600</b> | <b>\$ 405,600</b> | <b>\$ 263,600</b> | <b>\$ 371,600</b> |
| Expected End-of-Year Fund Balance (carry over to next year)  | \$ 600            | \$ 189,600        | \$ 47,600         | \$ 155,600        | \$ 110,600        |