


THE ROANOKE RIVER BASIN WATER RESOURCES PLAN: THE RIVER BASIN & THE PLANNING PROCESS

Roanoke River Bi-State Commission – NC Delegation
November 2013



The Roanoke River Basin Bi-State Commission was established as a bi-state commission composed of 18 members from the State of North Carolina and the Commonwealth of Virginia.

The purposes of the Commission, as defined by NC General Statutes §77-91, are:

- Provide guidance and make recommendations to local, state, and federal legislative and administrative bodies, and to others as it deems necessary and appropriate, for the use, stewardship, and enhancement of the water, and other natural resources, for all citizens within the Basin.
- Provide a forum for discussion of issues affecting the Basin's water quantity and water quality and issues affecting other natural resources.
- Promote communication, coordination, and education among stakeholders within the Basin.
- Identify problems and recommend appropriate solutions.
- Undertake studies and prepare, publish, and disseminate information through reports, and in other forms, related to water quantity, water quality, and other natural resources of the Basin. (2002 177, s. 1.)

Outline

Basinwide Planning

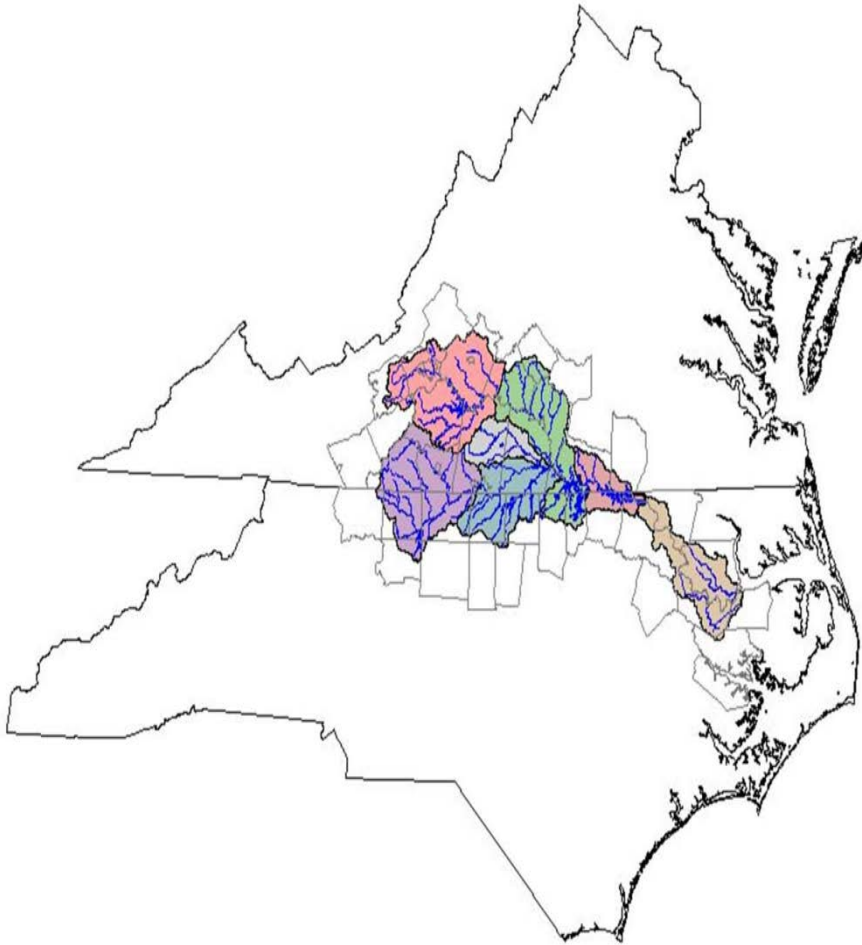
Basinwide Water
Quantity Modeling

Current Schedules

IBT: Kerr Lake Regional
Water System



Basin Description



Seven 8-digit HUC units
across NC and VA

Five sub-basins in NC

The Roanoke Bi-State
Commission and
Advisory Committees
have been established
to consider and
address some of the
interstate issues.

NC Features

Hydrologic Units (HUCs)

- 03010102 - Middle Roanoke
- 03010103 – Upper Dan
- 03010104 - Lower Dan
- 03010106 - Roanoke Rapids
- 03010107 – Lower Roanoke

Major North Carolina Roanoke Water Features

- Dan River
- Mayo River
- Belews Lake
- Mayo Reservoir
- Hyco Lake
- John H. Kerr Reservoir
- Lake Gaston
- Roanoke Rapids Lake
- Roanoke River



Counties (16)

- Beaufort
- Bertie
- Caswell
- Forsyth
- Granville
- Guilford
- Halifax
- Martin
- Northampton
- Person
- Rockingham
- Stokes
- Surry
- Vance
- Warren
- Washington

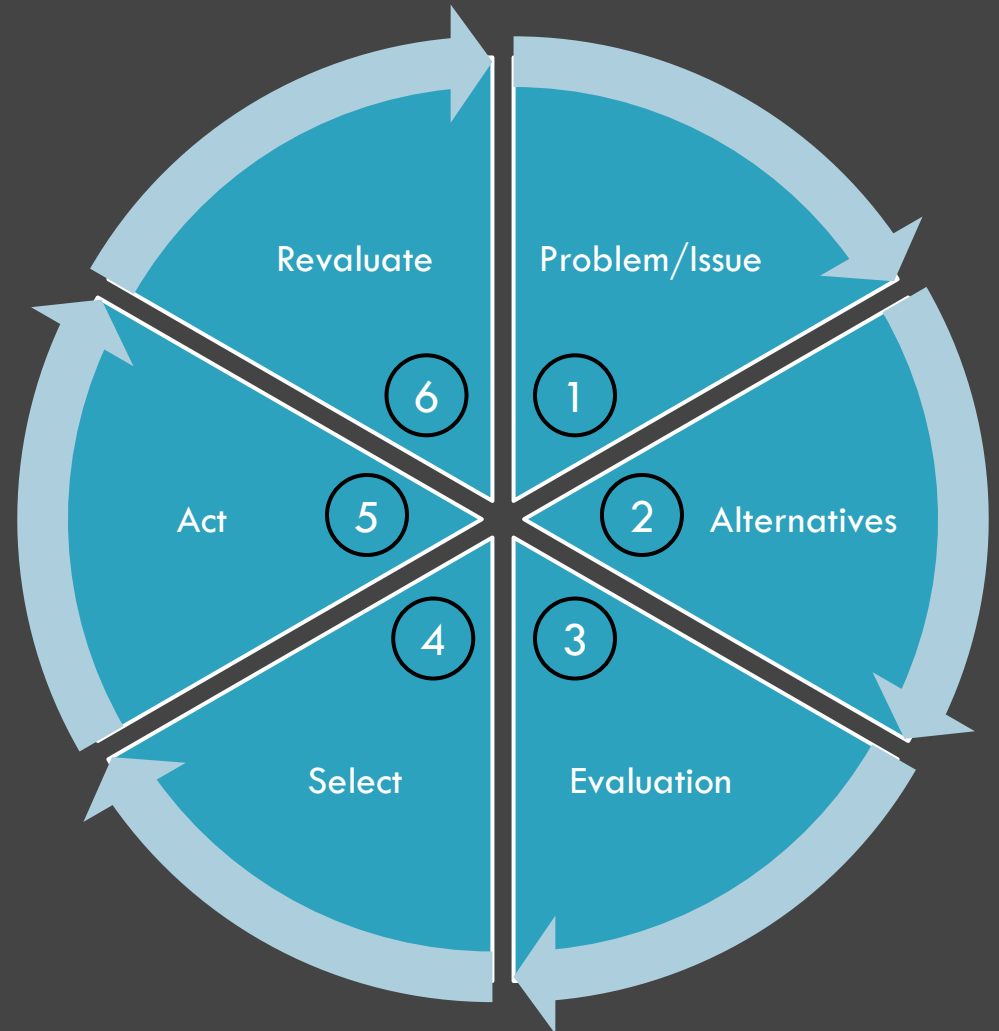
Planning Objective #1



Identify scenarios in which the anticipated water supply at specific locales might not meet the projected demand for all water users (ex. Energy, Agriculture, Industry, Mining, Recreation)

Planning Objective #2

Create a framework by which proposed solutions to water supply issues can be vetted



Planning Objective #3

Evaluate ecological flow parameters



Plan Report Contents

1. Basin Planning Process

2. Roanoke Basin Description

- Topography and Hydrology
- Counties, Municipalities, and Primary Water Sources

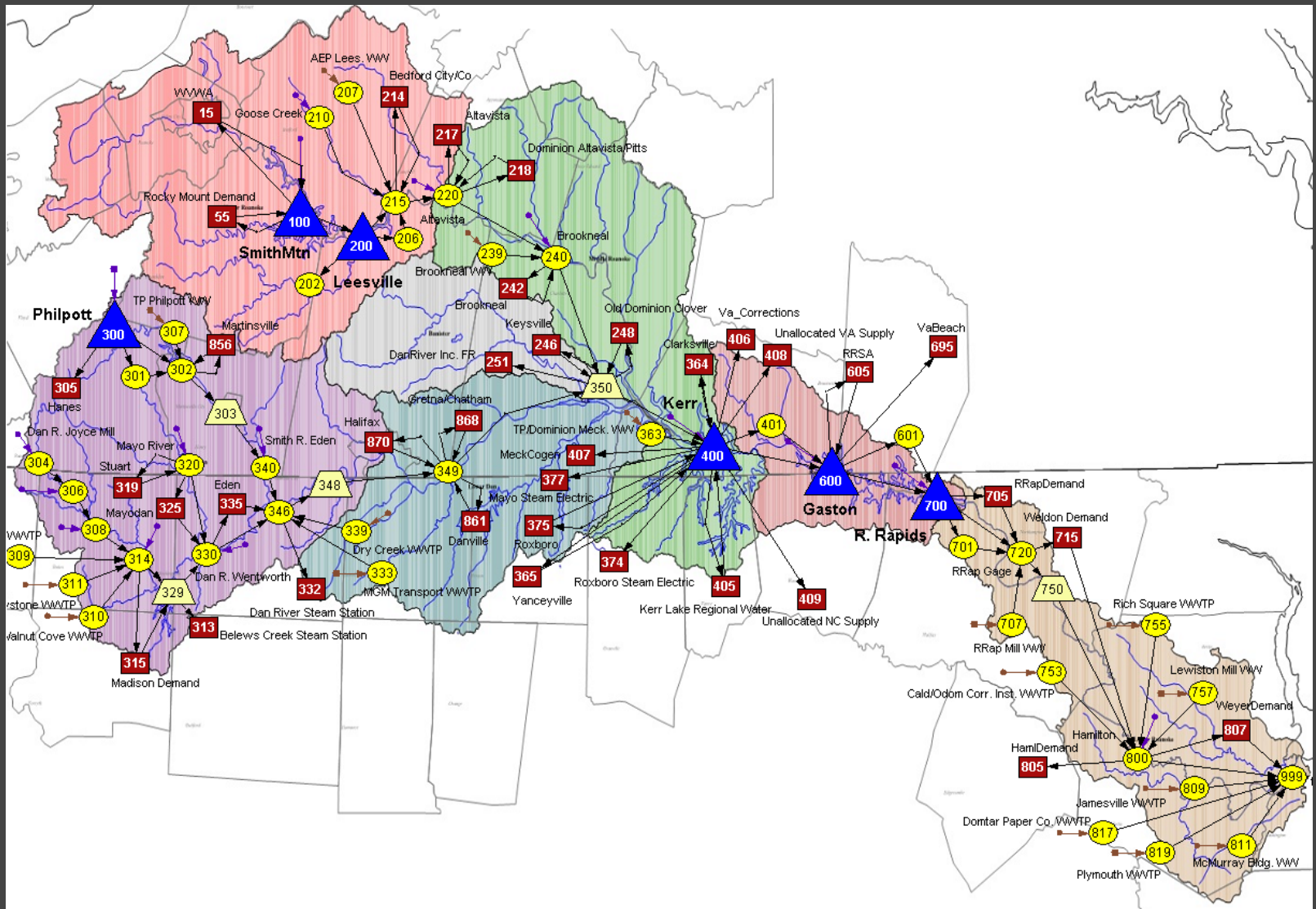
3. Existing Water Supply Conditions and Needs

- Short and Long Term Projected Conditions

4. River Basin Hydrologic Model

- Model Details
- Scenarios
- Future Water Supply Alternatives
- Drought Conditions
- Ecological Integrity
- Model Validation
- Changes in Water Availability and Reliability

Model Schematic



Uses of the Model

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Evaluation of the combined effects of municipal water supply plans

Evaluation of interbasin transfer permit applications

Development of individual water supply plans

A platform for developing risk-based drought plans.



Model Input

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Time series of unregulated inflows

Time series of net evaporation

Physical data (reservoir SAE, turbine characteristics, channel capacities, etc.)

Operating Policies

- Rule curves
- Minimum releases/ecological flows
- Drought and flood management policies
- Energy requirements



Model Output

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Tables and Graphs

- Flow
- Elevation, and
- *Derived attributes*, e.g. habitat availability, energy, revenue, water supply shortages, recreation days

for every time step

at every point in the system

What the Plan Provides

Resource document that provides baseline data and a means to unveil options to resolve current or anticipated water supply issues

Presents a scientific framework for issue resolution with stakeholders, the public, the Commonwealth of Virginia, and other interested parties.

Current Schedule

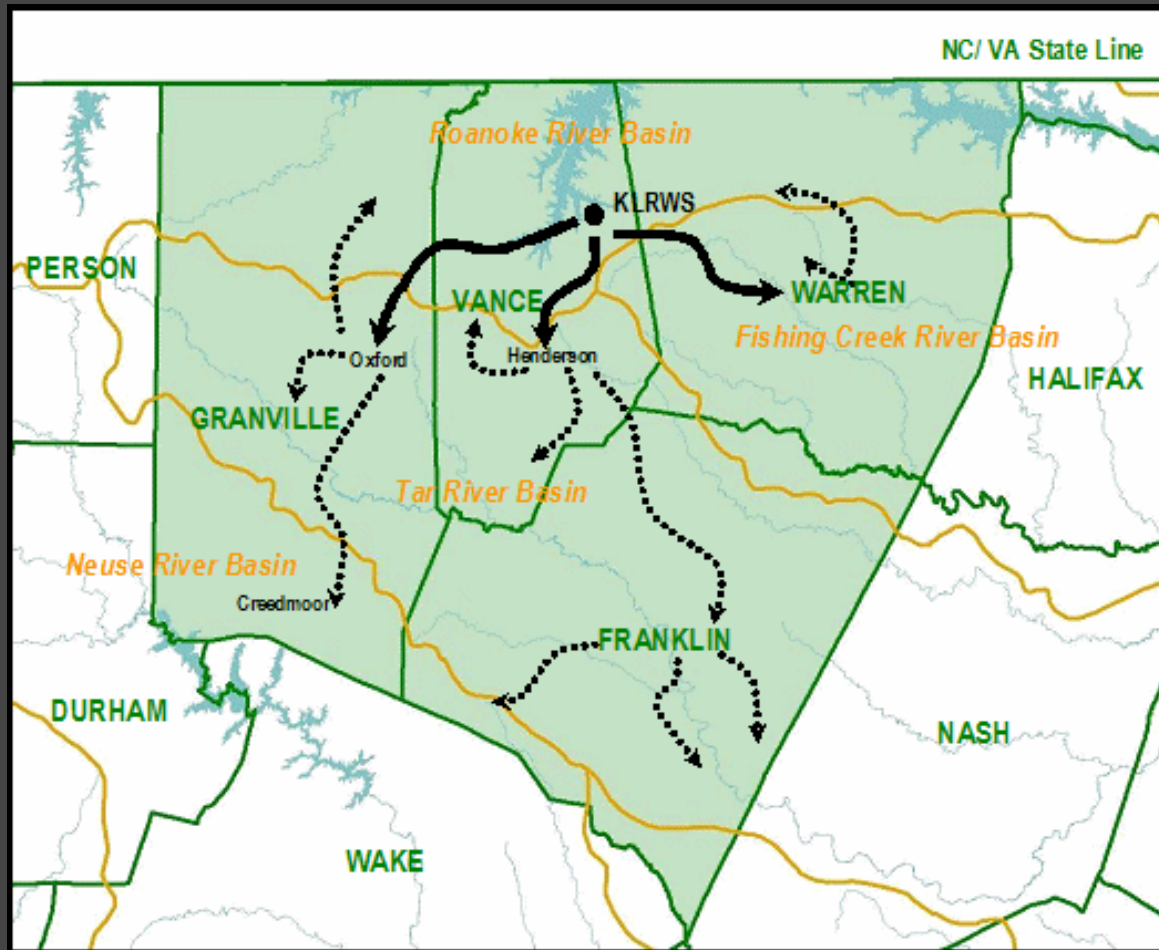
Draft Roanoke Plan: 2015

Draft Roanoke OASIS Model:
Currently in Validation Process

Completed Model: Spring 2014

Kerr Lake Regional Water System

Service Area



IBT Proposal

Primary Applicant:	Kerr Lake Regional Water System (CH2MHill consulting)	
Source Basin:	Roanoke	
Receiving Basins:	Tar, Fishing Creek, Neuse	
<u>Existing Allowable IBT (Maximum Daily)</u>		10.0 MGD
<u>Maximum Daily IBT request based on 2040 demand:</u>		
	Roanoke to Tar:	22.48 MGD
	Roanoke to Fishing:	1.63 MGD
	Roanoke to Neuse:	2.40 MGD



IBT Schedule

Validating Draft Roanoke River Basin OASIS model.

Draft environmental document expected in 2014.

Remaining IBT Process?

Contact Information

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