Running Out of Water is Not an Option

The Jordan Lake Partnership: Interlocal Cooperation for a Sustainable and Secure Water Supply

Don Greeley WRRI Annual Conference

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Presentation Outline

- Background
- Partnership
- Future Water Demands
- Preferred Regional Alternative
- Next Steps
- Questions





Background





The Triangle Region...

- ... has grown significantly;
- ... will continue to grow;
- ... is located in the headwaters of two river basins;
- ... has a history of differences;
- ... has a history of collaboration; and,
- ... has experiences two historic droughts since 2001.





Triangle Population Will Continue to Grow

Regional Population Estimate						
Year	2010 2020 2030 2040 2050				2060	
Total Regional Population	1,066,100	1,421,100	1,785,500	2,130,900	2,452,300	2,773,600



Historic Droughts





Little River Reservoir & Dam

Falls Lake at NC50



Image credit: https://www.sercc.com/drought

Jordan Lake

Image credit: http://carync.activerain.com/post/203096/north-carolina-real-estate--drought--2007-style-

Partnership





Drivers for Collaboration

- Mutual need to reduce drought risk
- Economies of scale
- Technical constraints (one more intake allowed; limited sites)
- Streamline the approval process
- Strength through collaboration



Learning from others...

"We learned you have to work together – stop fighting wars. If you don't, you will have other people deciding what happens in your cities and towns."

Wayne Hill, former Chair of Gwinnett County, Georgia Commissioners, regional Chamber of Commerce event, *Cary, NC, May 13, 2008*



The Jordan Lake Partnership

What is the Partnership?

- Interlocal effort begun in 2009 to coordinate planning and further development of the regional water supply to meet future needs
- Local government led initiative demonstrate that local leadership can solve regional water planning challenges



Purpose of Partnership

Long term sustainable and secure regional <u>water supply</u> for the Research Triangle area.





Who are the Partners?

Арех	Morrisville
Cary	Orange County
Chatham County	OWASA
Durham	Pittsboro
Hillsborough	Raleigh
Holly Springs	Sanford
	Wake County



Water Service Areas





What are the Goals?

- <u>A secure, sustainable water supply for the</u> region
- Water conservation and efficiency
- Model for cooperation and communication
- Provide a forum to address mutual interests and work through challenges
- Ensure regional/basin-wide ability to meet long term water supply needs





Key Objectives

- Develop & maintain buy-in from all governing boards
- Develop regional water supply plan
- Submit coordinated Jordan Lake allocation requests to State
- Explore options for additional facilities to access Jordan Lake water supply
- Coordinate with upstream & downstream stakeholders, state agency staff, and environmental groups



Future Water Demands





fordon Lake Partners

Peer Review Was Key

- Peer Review Process was set up to check each Partner's long range water demand projections
- Facilitated information sharing and trust building among the Partners
- Produced benefits at a regional level
- · Had a positive impact on individual water systems



Demand Projections

Projected Triangle Area Water Demand (JLP Members)						
Year:	2010	2020	2030	2040	2050	2060
First Draft of Needs Assessment	130	173	216	261	290	331
Most Recent Projections	118	157	197	234	264	292





Projected Surplus / Need

Regional Alternatives







Overarching Frameworks



Collections of Sources

Collection of Sources	E1 — Self-Supply
A1 – Preferred Options	F1 — Large New Sources
A2 — Alternate Choice Option	Pipeline from Phosphate Mine
B1 – No New Reservoirs	F2 — Large New Sources
B2 – Non-reservoir Sources	Kerr Lake Transfer
B3 — Minimize new storage	F3 — Large New Sources
C1 – Build New Sources	Quarries and Reclaimed
C2 — New Sources/Purchases	F4 — Large New Sources
C3 — Max. New Sources	Maximize Upper Neuse 1
D1 – Minimize New Sources	F5 — Large New Sources
D2 – Min. New Neuse Sources	Maximize Upper Neuse 2
D3 – Min. Number of Sources	G — No Action

Preferred Regional Solution

- Based on information aggregated by partners and refined under a peer review process so that all partners agree it is accurate and will be supported by state.
- Meets all future water supply needs for partners through 2060.
- With regional solution downstream users will be able to meet their needs.
- Represents the preferred solution of the region and also reflects the preferred alternatives for each partner's individual system.







Jordan Lake is Operated by the US Army Corps of Engineers to Meet Multiple Objectives



Jordan Lake Water Supply

Jordan Lake Water Supply Pool			
Allocated Water Supply	63%		
Unallocated Water Supply	37%		

Jordan Lake Water Supply Pool



The Jordan Lake water supply pool is estimated to safely yield 100 MGD under all modeled conditions.

Triangle Regional Water Supply Plan: Recommended JL Allocation Requests

Applicant	Current	Round 4		Future (2060)	
Apex	32	39.2		41.4	
Cary			46.2		48.5
Morrisville	3.5	3.5		3.6	
Wake Co. RTP South	3.5	3.5		3.5	
Chatham County N	6	13.0		18.2	
Durham	10	16.5		16.5	
OWASA	5	5		5	
Holly Springs	2	2		2.2	
Orange County	1	1.5		2	
Hillsborough	0	0 1		1	
Pittsboro	0	6		6	
Raleigh	0	0		0	
Sanford	0	0		0	
TOTAL	63	91.2		99.4	

Accomplishments

- Peer-reviewed population and water demand projections
- Identification of future water supply needs
- Consensus approval of preferred regional solution
- Phase I Interconnections Inventory
- Interconnection Improvements
 - Chatham Durham and Cary Raleigh
- Phase II Interconnections Modeling underway
- Western Intake feasibility study
- Coordinated Jordan Lake allocation requests





Partnership Next Steps

- Plan future infrastructure investments
 - Western Intake, treatment and transmission facilities
 - Regional interconnections
- Broaden focus of regional collaboration
 - Emergency response planning
 - Water efficiency education
 - Water shortage indicators



3/25/2015

Questions?

www.jordanlakepartnership.org





Western Intake Study

A shared intake will be more efficient and likely to obtain regulatory approval than individual intakes for each Partner

Feasibility Study was completed in 2014

Conceptual level study evaluated the feasibility of a shared raw water intake for:

Chatham, Durham, Pittsboro, OWASA

Study Included:

Evaluation of three (3) alternatives: Review of Partnership options Development of a conceptual level permitting and a construction schedule for the Preferred Alternative

