Kerr Lake Regional Water System Interbasin Transfer Process Status

November 12, 2014

Presentation to:

NC Environmental Management Commission – Water Allocation Committee

Prepared by:

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Agenda

- Background on KLRWS
- Available Supply and Future Water Demand/IBT Projections
- IBT Request History
- Roanoke River Basin Hydrological Model
- IBT Statutory Changes
- Path Forward

Kerr Lake Regional Water System

- Primary Partners
  - City of Henderson
  - City of Oxford
  - Warren County
- Water withdrawal from Kerr Lake
- WTP operated by the City of Henderson
- Water sales to 15 additional communities/water users in Vance, Warren, Granville, and Franklin Counties

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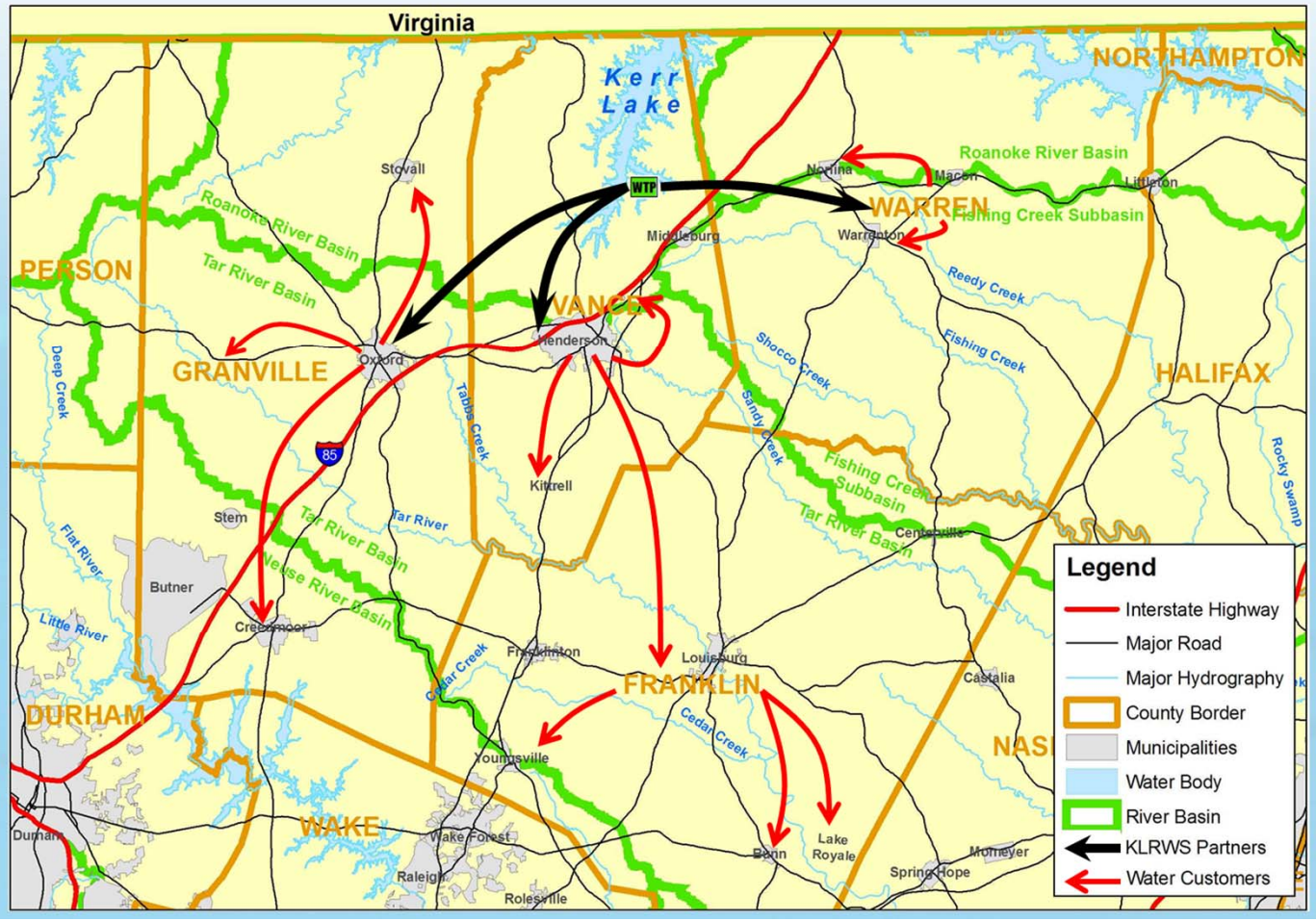
Where the water is being used



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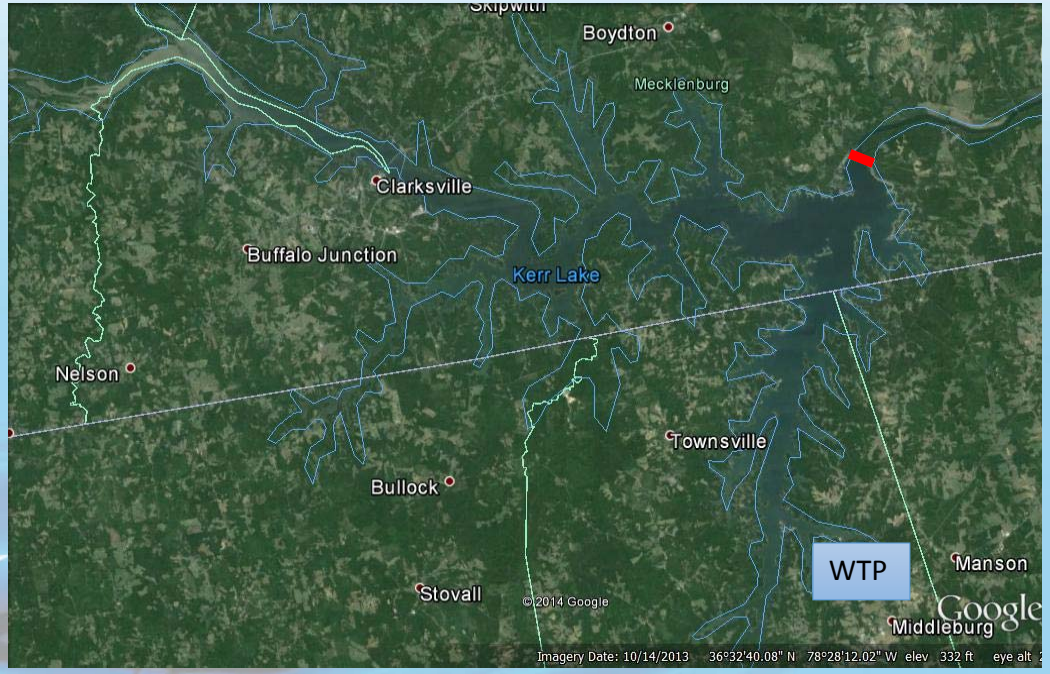
Available Supply and Future Demand Projections

Kerr Lake Water Supply

- Kerr Lake
  - Developed by USACE in 1952 for hydropower, flood control and recreational uses – water supply added through Water Supply Act of 1958
  - Surface area of 50,000 acres and shoreline of 850 miles
  - Virginia and North Carolina



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Kerr Lake Water Supply

- KLRWS Agreements with USACE
  - 1974 water use agreement for up to 20 mgd
  - 2005 allocation of 10,292 acre-feet of storage
    - ✓ Equivalent to 20 mgd average annual withdrawal
  - USACE determined that there would be a slight reduction in the power generation
    - ✓KLRWS is on an annual basis paying the USACE for water storage and power capability compensation

REALLOCATION REPORT

JOHN H. KERR RESERVOIR
WATER SUPPLY STORAGE
REALLOCATION REQUEST FOR
THE CITY OF HENDERSON,
NORTH CAROLINA

May 2005

U.S. Army Corps of Engineers
Wilmington District

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Summary of Projections and IBT

Time Frame	Total Water Demand (mgd) AAD	Total Water Demand (mgd) MMAD	Combined IBT (mgd) AAD	Combined IBT (mgd) MMAD
2013	6.0	7.7	3.7	4.6
2045	13.8	17.4	10.7	**14.2**
2060	15.9	20.1	12.7	16.4
Grandfathered IBT				10

Interbasin Transfer Calculations
Average Day (mgd)
Using 2013 LWSP Data

Year	Withdrawa Sourc								sin Interbasin Transfer		
	Roanol								Tar	Fishing Creek	Neuse
2010	6.2								2.1	0.6	0.1
2013	6.0								2.8	0.7	0.2
2045	13.8								8.1	1.4	1.2
2060	15.9								9.8	1.5	1.4
	USAC										

Interbasin Transfer Calculations
Average Day of a Maximum Mo
Using LWSP Projections Data an

Year	Withdrawa Sourc								sin Interbasin Transfer		
	Roanol								Tar	Fishing Creek	Neuse
2013	7.7								3.6	0.8	0.2
2045	17.4	2.0	1.2	6.8	0.8	1.3	3.2	14.2	10.7	1.7	1.8
2060	20.1	2.1	0.9	6.9	0.9	0.7	3.0	16.4	12.8	1.9	1.7

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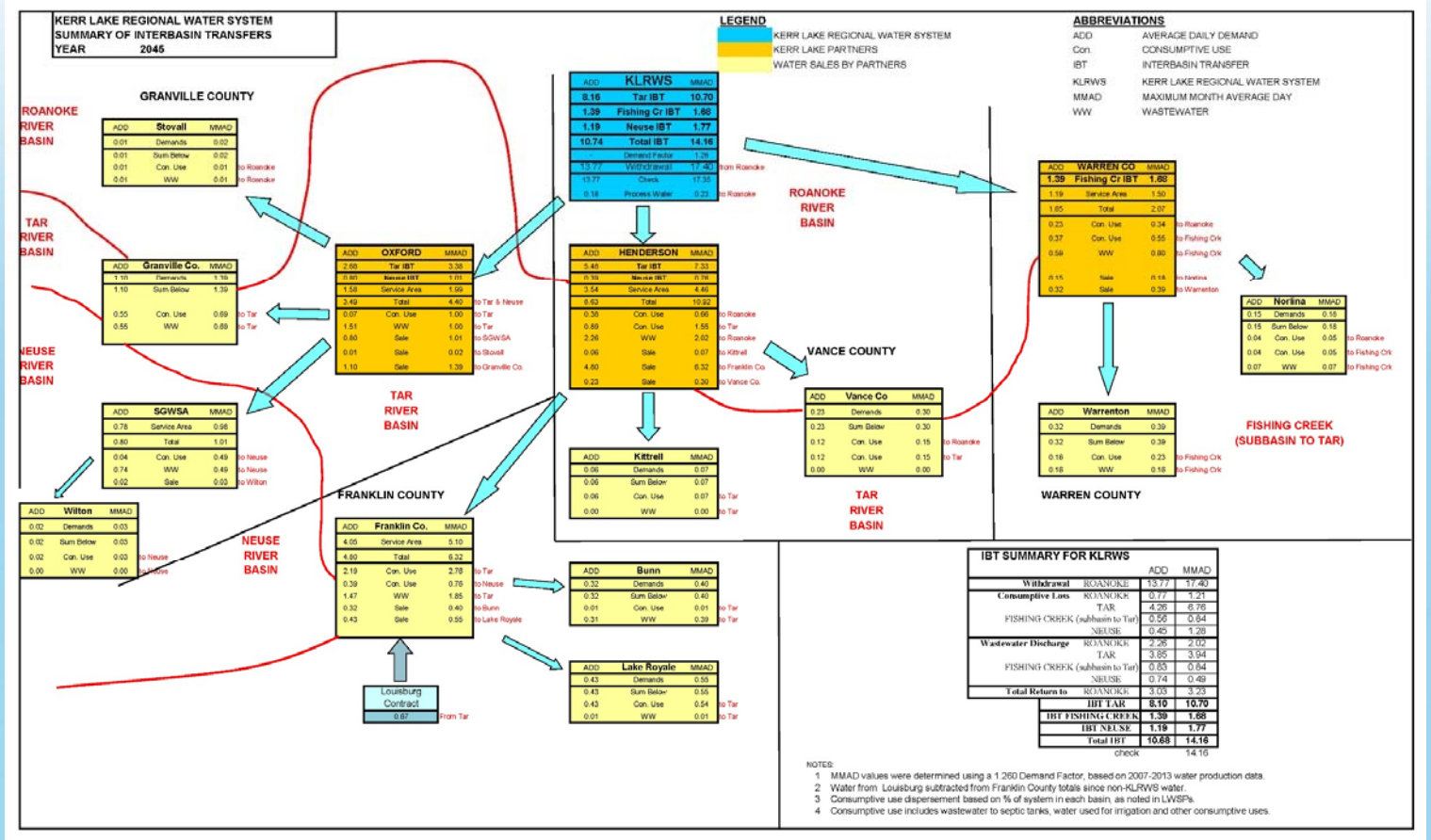
Where the water is being used (2045)



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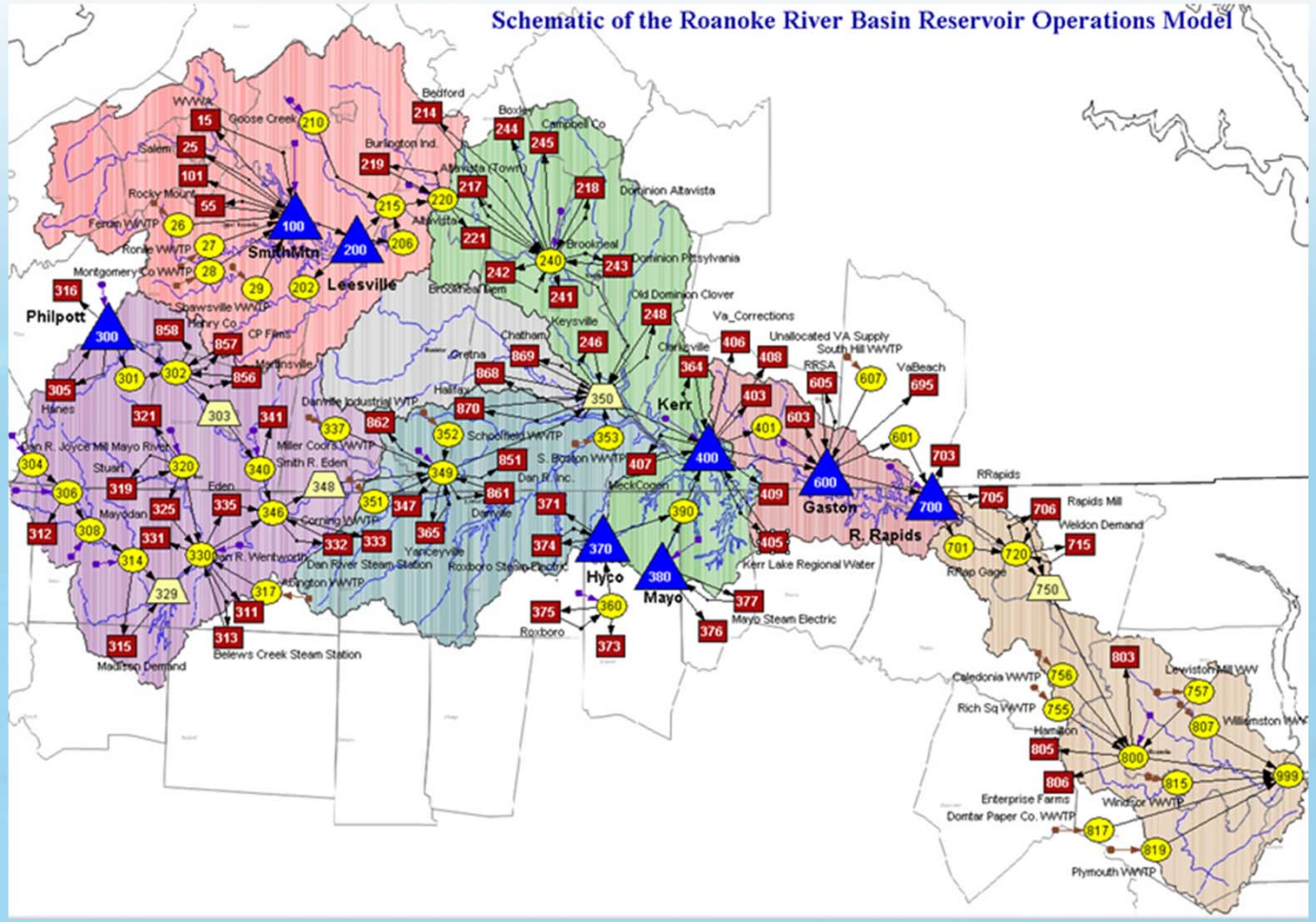
IBT Request History

Sequence of Events

- January 2009 – NOI submitted by KLRWS
- March/April 2009 – 5 public Meetings
- May 2010 - Initial analysis with Roanoke River Basin Hydrological Model
- September 2011 – Draft EIS
- 2012 to August 2014 – DWR updates to RRBHM including updates from Virginia

Roanoke River Basin Hydrological Model

RRBHM Schematic



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Preliminary Results

- 2045 Scenarios
  - Evaluated results for 2045 Baseline vs 2045 IBT (with requested IBT)
  - Compared stage to determine differences in lake elevation especially during drought events
  - Evaluated changes in
    - ✓Lake level
    - ✓Reservoir Releases (Discharge)
    - ✓Hydropower generation
- 2060 Scenarios
  - Very similar results

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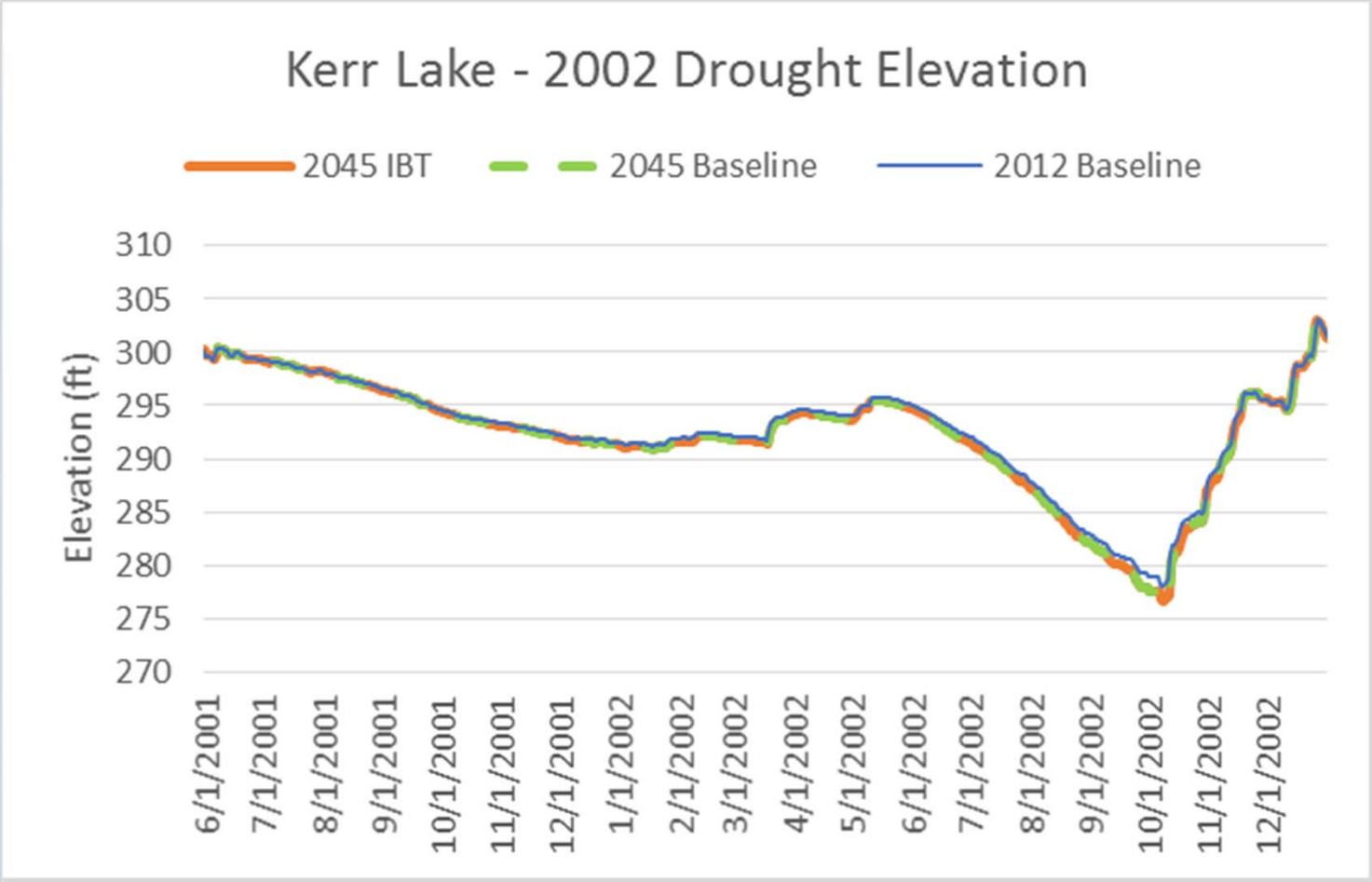
Kerr Lake – Extreme Drought



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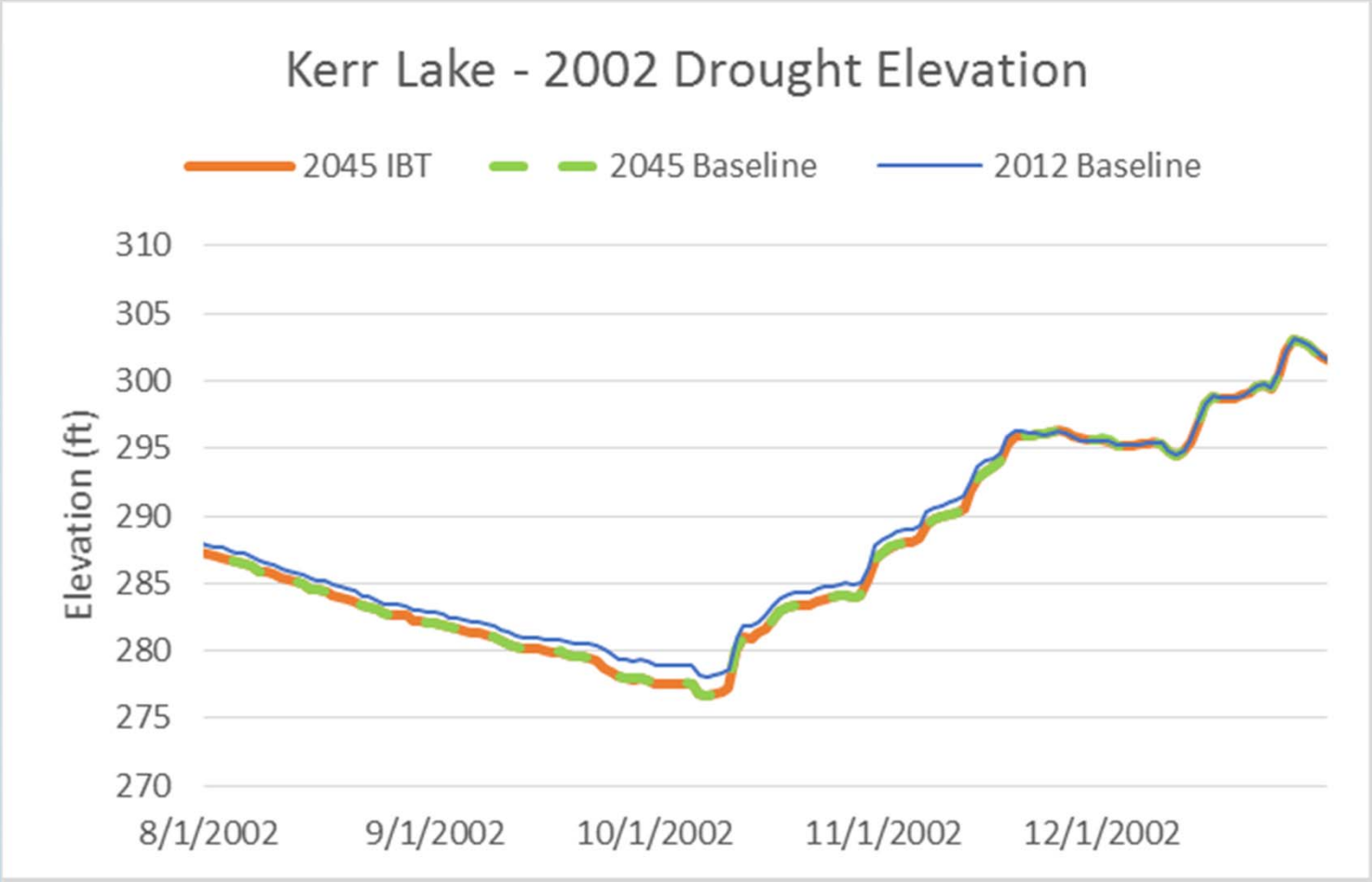
Kerr Lake – Extreme Drought Close-up



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Summary of Modeling Scenarios Results

- Projected demands and IBT are significantly less than for 2010 Draft EIS
  - USACE Allocation of 20 mgd not projected to be exceeded by 2060
- Modeled results show no impact of transfer
  - ✓Lake levels during extreme drought
  - ✓Low flow duration
  - ✓Hydropower

IBT Statutory Changes

Changes in Statutory Requirements

- Initiated IBT based on 2007 amendments to IBT statute
  - Multiple up-front public meetings and similar multiple final public hearings
  - EIS required
  - IBT regulated based on Max Day Transfer
- Session Law 2013-413
  - Changed regulation of IBT to maximum daily average of a calendar month
- Proceeding with KLRWS IBT Based on Senate Bill 734 (Session Law 2014-120)
  - Allows for approval process based on General Statutes pre-2007 amendments (similar to coastal counties)
  - Expedited process for certain USACE reservoirs
    - ✓Allows for approval based on an EA
    - ✓One public hearing required

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Path Forward

Path Forward

- Anticipated Schedule
  - Submitted Modeling Technical Memorandum – Week of Oct. 10
  - Submitted draft EA – Week of Oct. 27
  - Presentation to EMC Water Allocation Committee – Nov. 12
  - FONSI – Dec. 2014 or Jan. 2015
  - EMC approval to go to public hearing – Jan. 2015
  - Public hearing – Feb. 2015
  - EMC Action – May 2015

Thank you!