KERR LAKE REGIONAL WATER SYSTEM
INTERBASIN TRANSFER REQUEST AND
DRAFT ENVIRONMENTAL ASSESSMENT SCOPE

PROJECT BACKGROUND

The Kerr Lake Regional Water System (KLRWS) is a public water system serving portions of Vance, Granville, Franklin and Warren Counties in North Carolina. The System serves three bulk customers—the City of Henderson, City of Oxford, and Warren County (a.k.a. Partners)—which currently supply water to the Town of Kittrell, Town of Norlina, Town of Warrenton, Town of Middleburg, Franklin County and the City of Louisburg. The KLRWS consists of a conventional surface water treatment plant, distribution mains, storage tanks, and water meters. John H. Kerr Reservoir (Kerr Lake) serves as the water supply.

On April 22, 1998, a grandfathered capacity of 10 MGD was approved by DWR for the KLRWS to transfer from the Roanoke to the Tar and Neuse River Basins.

The Water Master Plan (Phase II) prepared for KLRWS in 1999 identified demand projections and water supply needs to 2030 for the Kerr Lake Regional Water System. The demand projection techniques utilized in this report provided the KLRWS with an excellent planning tool for determining the need for future treatment plant expansion and a time frame for when the transfer would approach its 10 mgd grandfathered limit. Projections showed that the region served by KLRWS would experience growth and a significant increase in providing water to existing residents and therefore expect to exceed the 10 mgd grandfathered interbasin transfer capacity by the year 2008.

In June 2003, KLRWS submitted an Environmental Assessment (EA) to the North Carolina Department of Environment and Natural Resources (NCDENR) for the Kerr Lake Water System Expansion to increase their existing water treatment plant capacity from 10 mgd to 20 mgd. This EA was granted a Finding of No Significant Impact (FONSI) on June 19, 2003. Having received no comment within the allotted 30 day State Clearinghouse review, NCDENR subsequently issued a statement indicating no further environmental review action was needed.

The previous EA submitted in 2003 will be utilized as the foundation for the IBT environmental documentation required under General Stature § 143-215.22I.

OVERVIEW OF EA SCOPE DEVELOPMENT

A meeting was held at NCDENR's office in Raleigh, NC on February 24, 2004 to review and prepare the scoping document for the KLRWS Interbasin Transfer petition. The compilation of key environmental issues and relevant agency comments at this meeting revealed greater clarity as to the requirements for this petition. Since the magnitude of the impacts from this proposed project is uncertain at this time, an Environmental Assessment (EA) was chosen as the initial document format. If, however, the EA concludes that the environmental impacts will be significant and cannot be fully mitigated, an EIS will be prepared. A determination that an EIS is required may be made at any time during the EA review process.

The EA will be prepared in accordance with the North Carolina Environmental Policy Act of 1971, § 113A-1 through § 113A-10, and Chapter 25 of the North Carolina Administration Code. This scope and following EA report will also identify and eliminate from detailed study the issues which are not significant or *which have been covered by prior environmental review*, as authorized by the federal Council on Environmental Quality (§ 40 CFR 1506.3). Since an EA was performed for the treatment plant expansion in 2003, the elimination of previous environmental review items should be anticipated for this project. The following proposed scope is presented in a format to complement the Interbasin Transfer petition.

PROPOSED SCOPE

I. Description of Proposed Project

The proposed project is the Interbasin Transfer of water from the Roanoke River Basin to the Tar-Pamlico and Neuse River Basins. The exact quantity of additional Interbasin Transfer has not been determined at this point, however, recent projections show that the current grandfathered 10-mgd IBT allocation will be completely utilized during the year 2008. This EA

will verify the final quantity of IBT necessary to provide adequate water resources to the region through the year 2035 and detail the potential environmental effects of this additional IBT.

II. Purpose and Need for the Proposed Project

The KLRWS is committed to providing its Partners with the best quality drinking water possible. In order for the KLRWS to continue maintaining exceptional water quality and to provide a sufficient quantity of drinking water to their Partners, its existing treatment plant has been approved to expand from a 10 mgd capacity under normal operating conditions to a capacity of 20 mgd. Furthermore, the treatment plant has been approved for a higher filter rating, allowing the plant to operate under special circumstances at 15 mgd or potentially operate at 25 mgd after plant expansion.

Although the purpose and need for expansion has been specifically addressed in prior environmental and engineering reports, to demonstrate the necessity and reasonableness of the proposed transfer the following items will be updated:

- Latest per capita water demands will be verified. Industrial and commercial demands will not be included in estimating per capita demands, but will be counted in estimating the interbasin transfer.

    A. Work with the Partners individually to develop this information for a 30-year planning horizon. The populations will be divided into service populations and non-service populations.
        1. Population curves
            a. Vance County
            b. Granville County
            c. Warren County
            d. Franklin County

B. The 30-year residential water demand projections recomputed using population data and projections. The demands will be only for the service population projected.

1. Demand Projections
    a. Vance County
    b. Granville County
    c. Warren County
    d. Franklin County

C. Evaluate per capita demands over time in light of water conservation or other measures to reduce per capita demands.

D. Review and modify as needed the existing conservation/reclamation plans. This effort will establish and document that the IBT will result in an efficient use of water.

E. Identify future IBT vs. non-IBT

1. Identify existing and future users
2. Identify ridge lines and pipe routes
3. Map pipe routes and basin crossings
4. Calculate lost amounts not returned to Roanoke Basin

F. Using the revised per capita demand figures, refine the required IBT amounts for the System.

1. Roanoke to Tar
2. Roanoke (through Tar) to Neuse
    a. The transfer from the Roanoke River Basin to the Neuse River Basin is anticipated to be less than the regulated transfer amount of 2,000,000 gallons per day (§ 143-215.22I.(a)(1)). The proposed transfer to the Neuse will be

included in the total quantity of water leaving the source basin (Roanoke). The environmental document will address impacts on both source and receiving basins.

III. Alternatives to the Propose Project

The alternatives to this proposed project were addressed in the EA prepared for the Water Treatment Plant Expansion in 2003. Although a portion of the alternatives section will be utilized in this EA, new information regarding potential alternatives will need to be developed. Therefore research into this issue will be necessary. The following notes are offered as a suggested approach.

- **Alternatives Evaluation**

  Reasonable alternatives to the proposed transfer will be identified.

  1. No action.
  2. Alternative raw and treated water sources.
  3. Returning treated wastewater to the source basin.
  4. Probable costs & feasibility of each viable alternative.

  The environmental assessment document for the new City of Oxford wastewater treatment plant and the Franklin wastewater treatment plant will be obtained and reviewed.

IV. Existing and Predicted Environmental Characteristics of the Proposed Project Area and Mitigation

The existing environment for the proposed IBT study area will be divided into two distinct and obvious partitions. The two areas will correlate to the Roanoke River Basin (source basin) and the Tar River and Neuse River Basins (receiving basins). Each area (basin) will be

further sub-divided and described by the following potentially affected environmental resources: wetlands, land use, prime or unique agricultural lands, public lands, scenic areas, areas of archaeological or historic value, fish and wildlife resources, water resources/water quality, air quality, groundwater resources, noise level, and toxic substances/hazardous waste. The existing environment will be described for each sub-division studied and will be followed by a discussion of the primary consequences of the proposed IBT. The necessary data for this section will be gathered through interviews, internet research, GIS layer queries, modeling calculations, literature review, various resource agencies, and meetings. To provide a more thorough description of the IBT environmental characteristics review, the following research guide is offered:

- **Revise Roanoke River Basin Model**

  Modify the existing model to reflect the KLRWS future withdrawals.

  1. General Impact
  2. Withdrawal impact on lake levels
     a. Boat Ramp Use
     b. Hydropower loss (MW)
     c. Downstream low flow targets
  3. Duration Curve
  4. Critical Drought Period

- **Identify Registered Withdrawals from the Roanoke River Basin**

  The locations and quantities of registered withdrawals and transfers of water into and out of the Roanoke River Basin will be identified.

  1. Only major withdrawals and operations that will affect lake levels

  The operating policy used by the U.S. Army Corps of Engineers (COE) for the Kerr Lake dam will be reviewed and summarized.

Existing agreements between the COE and power producers will be reviewed.

- **Water Quality and Quantity Trending**

Water quality and quantity data will be gathered for Kerr Lake to assess seasonal trends related to draw down, nutrient and sediment inputs.

1. Obtain as much information as possible from existing sources.
2. Focus on quality trending, reduction in quantity should be minimal.

Water quality trending will need to be predicted for the Tar River (receiving) basin, but a hydrologic model will not be developed for the Tar River Basin.

- **Fish and Wildlife Habitat Status**

Fish restoration program plans will be studied for the Roanoke and Tar River Basin.

Lists of state and federally protected species will be reviewed to assess impact from proposed IBT.

Potential wetland issues will be identified using National Wetland Inventory (NWI) maps and aerials photographs.

- **Preexisting Storage Allocations**

Since the water to be withdrawn or transferred is stored in a COE multipurpose reservoir, the purposes and water storage allocations established at the time it was authorized by Congress will be documented.

V. Predicted Cumulative and Secondary Impacts of the Proposed Project and Mitigation

The predicted cumulative and secondary impacts (CSIs) of the proposed project and mitigation due to population growth were specifically addressed in the EA prepared for the Water Treatment Plant Expansion in 2003. Due to the nature of the proposed Inter-Basin Transfer project and its direct correlation to the treatment plant expansion, no additional CSIs beyond those previously attributed to population growth are anticipated. Although a summary will be provided in this EA, no new information regarding further CSIs will be provided. Research into this issue should not be duplicated.

VI. Unavoidable Adverse Impacts and Mitigation Measures

The potential direct impacts associated with the proposed transfer are mostly related to the potential lower lake levels and/or reduced downstream flows affecting water resources and water quality. Other direct impacts may be found during this environmental study, however, at this time no adverse impacts from this project are anticipated that cannot be adequately addressed and/or remediated. Until proper research and hydrologic modeling calculations are performed, no conclusions about potential direct impacts can be predicted. Each item presented in Section IV of this scope will be individually addressed should adverse impacts be discovered.

VII. Summary

Our expectation is that a 'Finding of No Significant Impact' (FONSI) will be issued at the conclusion of this Environmental Assessment.