

ALTERNATIVES ANALYSIS

A list of 40 potential water supply alternatives identified in previous studies was reduced to 26 unique alternatives which were considered worthy of further consideration. Alternatives included a wide array of non-structural and structural measures such as:

- Implementing additional water efficiency measures
- Implementing a regional drought management plan
- Changing operation of Normandy Reservoir
- Modifying river constraints
- Raising Normandy Dam
- Constructing tributary reservoirs (Fountain Creek Reservoir)
- Building offstream storage reservoirs (pumped storage)
- Utilizing quarries
- Constructing pipelines from reservoirs, rivers or other water systems

A summary matrix was developed which described each of the alternatives and documented key aspects of the alternative related to seven criteria: reliable capacity, raw water quality, cost, implementability (permitting), flexibility (phasing), environmental benefits, and recreation. During public work sessions with stakeholders, the alternatives were discussed and sorted into four categories:

- Baseline (water efficiency, drought management, etc.)
- Fatally Flawed or Highly Unlikely (unreliable, permitting obstacles, etc.)
- Backup (alternative which may be suitable for implementation with a cornerstone alternative)
- Cornerstone (alternatives capable of satisfying entire river deficit in 2060)

More detailed investigations are currently being conducted and implementation plans are being generated on four candidate cornerstone and four backup alternatives to assist with identification of a recommended alternative.

EXTENSIVE PUBLIC INVOLVEMENT

The Comprehensive Regional Water Supply Plan is being conducted using a uniquely open process, with extensive opportunities for input from the public, elected officials, and governmental agencies through the use of public workshops and informational meetings, routine updates via our website, agency briefings and press coverage. The DRA is conducting six public workshops and several public meetings to obtain input from the public. Among the many stakeholders are the public water systems, represented by the Duck River Agency Technical Advisory Committee (DRATAC), and the DRA's Water Resources Council, which includes over 25 governmental and non-governmental organizations.

WHAT ARE THE NEXT STEPS?

DRA is accepting input on the Alternatives Analysis at the public meetings scheduled in March 2010. Comments can also be sent to Doug Murphy at the address below.

In the near term, the Strategic Planning Team will:

- Further evaluate cornerstone and backup alternatives that address the water supply needs.
- Develop possible implementation plans.
- Plan for Workshop No. 5, where the results of the investigations of the cornerstone and backup alternatives will be discussed.

The Duck River Agency is moving forward aggressively to complete the Comprehensive Regional Water Supply Plan by the summer of 2010.

MORE INFORMATION

For information on the Study Approach, a listing of Stakeholder agencies, workshop materials and more, please visit the project website at:

www.duckriveragency.org

For more information, please call or e-mail:

DOUG MURPHY
Executive Director

Tennessee Duck River Development Agency
210 East Depot Street
Shelbyville, TN 37160
931-684-7820
doug@duckriveragency.org



TENNESSEE DUCK RIVER DEVELOPMENT AGENCY

Comprehensive Regional Water Supply Plan

Spring 2010





INTRODUCTION

The Tennessee Duck River Development Agency (DRA) has undertaken a Comprehensive Regional Water Supply Plan for Bedford, Coffee, Marshall, Maury, and southern Williamson counties to meet future water demands and address concerns with possible water shortages brought on by drought conditions. The goal is to develop a plan with a 50-year projection and a 100-year planning horizon that will provide direction to the DRA for the management of available water resources, including the implementation of specific water supply infrastructure projects if necessary. The plan will include specific recommendations, including budgets and implementation timelines, for water supply and water management projects.

The Tennessee General Assembly created the DRA in 1965 as a comprehensive regional development agency. Its broad powers include the “control and development of the water resources” of those portions of the Duck River Watershed lying in Bedford, Coffee, Hickman, Marshall and Maury Counties. Any county or municipality in the Duck River Basin or any governmental entity from which flows any tributary stream of the river, or any county adjoining the river basin may become a sponsoring and participating entity.

In 1998, the DRA Board of Directors adopted the following mission statement:

“To develop, protect, and sustain a clean and dependable water resource for all citizens of the Duck River region.”

The DRA represents seven water utilities that serve approximately 250,000 people and industries that include car manufacturers, food processing plants, and other businesses utilizing water for production. In addition to these uses, the river provides a wide range of other values including recreation, an excellent fishery and some of the most biologically rich freshwater habitat in North America.

The drought of 2007 highlighted the issue that in extended dry weather conditions the citizens of the Duck River Region primarily depend on the water stored in Normandy Reservoir to meet multiple uses, including drinking water, wastewater dilution, recreation, and natural resource protection. The dramatic decrease in rainfall, combined with the multiple uses of the reservoir and the river, caused record low water levels in Normandy Reservoir that resulted in temporary dam operational changes to protect all water uses. Weather patterns and growth projections have created the need for a comprehensive regional water supply plan for the Duck River Region.

STRATEGIC PLANNING TEAM

DRA has assembled a Strategic Planning Team to develop a Comprehensive Regional Water Supply Plan. The Team consists of O’Brien & Gere (Prime Consultant), CTI Engineers, Inc. (Sub-consultant), HydroLogics (Hydrologic Modeling), BDY Environmental, LLC (Environmental), and

Trauger & Tuke (Legal). The Plan will provide direction to the DRA regarding the management of available water resources, including the implementation of specific water supply infrastructure projects.

NEEDS ASSESSMENT

The first step in the Comprehensive Regional Water Supply Plan is the assessment of the need for additional water supply through the year 2060. The draft Needs Assessment combines an evaluation of the available supply from Normandy Reservoir and the Duck River, with a projection of water demands for domestic, commercial, industrial, and agricultural purposes. The OASIS computer model is being used to examine the operations of Normandy Dam and the hydrology of the Duck River to help gain a better understanding of how we can satisfy the future need for public water supply while meeting the instream river flows necessary for wastewater dilution, recreation and natural resource protection. Water demands were projected using studies by United States Geological Survey (USGS), and population projections developed by the University of Tennessee Center for Business and Economic Research (CBER). The study indicates that there is adequate supply for the users of Normandy Reservoir through 2060, but a deficit of up to 32 mgd for users of the Duck River between Shelbyville and Columbia.