



# **PUBLIC UTILITIES**

---

## **I. INTRODUCTION**

Following nearly 15 years of study that began in 1991, the Knightdale Town Council made the decision to merge its public water and sewer utility systems with those of the City of Raleigh on February 6, 2006. As part of the merger agreement, the Town of Knightdale secured ample water and sewer capacity from the City of Raleigh and set out a schedule of capital improvements for approximately the next five (5) years. The purposes of the merger agreement were identified as follows:

- To assure the continued provision of high quality, reliable, economical, safe and sanitary water and sewer service within the present and future corporate limits and Urban Service Area limits of Knightdale;
- To provide for the orderly and permanent transfer of responsibility for the ownership, construction, operation, maintenance, management and financing of Knightdale's water and sewer utility system from Knightdale to Raleigh; and
- To transfer the managerial, operational and financial responsibility of operating, maintaining and expanding the water and sewer utility systems service to the present and future corporate limits and Urban Service Area limits of Knightdale from Knightdale to Raleigh.

The City of Raleigh agreed to assume full responsibility for the provision of water and sewer services in Knightdale, including responsibility for Knightdale's water and sewer utility systems and related equipment and property rights. They further agreed to operate, maintain and expand the water and sewer systems to accommodate planned growth and development within Knightdale's planning and zoning jurisdiction per the terms of the agreement.

## **II. CITY OF RALEIGH PUBLIC UTILITIES**

The City of Raleigh Public Utility Department has become a regional entity, providing utility service to the towns of Garner, Knightdale, Rolesville, Wake Forest, Wendell and Zebulon. Although the operations of the utility are ultimately the responsibility of the City of Raleigh, all city/town managers play a role in overall system guidance by appointing staff members to a permanent Water and Sewer Utility Advisory Committee (UAC). The UAC meets periodically to review and develop recommendations for the upgrade, expansion and extension of water and sewer services throughout the regional service area.



Driven by population growth, demand for water and sewer has been growing. Between 2000 and 2007, average daily demand at the E.M. Johnson Water Treatment Plant at Falls Lake rose from 44.4 to 50.7 million gallons per day (MGD). However, this rise was not linear. In 2003, a drought year, demand actually dropped to 43.4 MGD from 47.4 MGD in 2001. The vast majority of wastewater, including that generated from the Town of Knightdale, is delivered for treatment to the Neuse River Wastewater Treatment Plant, where volumes have grown from 36.2 to 42.0 MGD between 2000 and 2007. The peak volume during this period occurred in 2005 with an average daily throughput of 46.2 MGD.

Significant growth is anticipated in the future. Knightdale was cited by the State Demographer's Office as the fastest growing municipality for 2009. As a result, water treatment plants must be sized for peak daily demand, which is expected to grow from 80 MGD in 2006 to 130 MGD in 2030. Current plans to meet this demand include the recently opened Dempsey Benton plant at Lake Benson, rated at 20 MGD; an expansion of the E.M. Johnson plant to add 34 MGD of capacity; and the Little River plant that is to be built on a future reservoir and rated at 20 MGD. Expansions at existing wastewater treatment plants will increase total treatment capacity to a little over 84 MGD, mostly coming from a 15 MGD expansion at the Neuse River plant. Water and wastewater projects with the current Raleigh Capital Improvements Program (CIP) total \$545 million, the bulk of which is funded with Revenue Bonds backed by future utility billing receipts.

Beyond major fixed investments, the utility systems require continual investment to keep pace with demand, replace aging facilities and keep systems in a state of good repair. Financing of these systems depends upon future revenue streams. The water and sewer utilities are funded through water bills as well as one-time connection fees. Utility acreage, capacity and development fees; one-time fees assessed on new development, help Knightdale pay off the merger costs associated with constructing major water and sewer lines in the Town's Urban Service Area.

These vital infrastructure systems are critical to the area's continued growth and development, and their proper functioning has major environmental implications. Water, and wastewater systems are embedded in the region's hydrology, and the quality of our lakes, rivers and other surface waters is heavily influenced by the operation of these systems.



---

## B. OBJECTIVES

The objectives of Raleigh Public Utilities, as expressed in The 2030 Comprehensive Plan for the City of Raleigh, are hereby adopted as part of the Town of Knightdale's 2027 Comprehensive Plan:

1. To make more efficient use of available water, matching source characteristics with intended uses, and establishing conservation as an ongoing process rather than a tool reserved only for crises;
2. To plan for water in the face of a changing and uncertain climate that may result in greater extremes of rainfall and drought;
3. To provide utility services in the face of rising fossil fuel costs by looking for efficiencies and alternative energy sources throughout the utility's operations;
4. To plan for the future in an ever-evolving regulatory environment at the state and federal level;
5. To plan for future water demands in a competitive resource allocation environment;
6. To provide the utility capacity necessary to accommodate the region's future growth, including the expansion of systems as well as the rebuilding and enhancements of systems in the older parts of cities and towns;
7. To better match the expansion of utility infrastructure with the region's preferred growth patterns and strategies while minimizing costs and maintaining the system's financial health; and
8. To fully educate and involve the public as informed customers and responsible users of vital natural resources.





*City of Raleigh – Neuse River  
Wastewater Treatment Plant*

## **B. ACTION ITEMS**

- UT-1. Assist Raleigh in developing a spatial growth projection for the town's future jurisdictional boundaries that will be used to plan for new water and wastewater infrastructure.
- UT-2. Update any parts of the Town Code or Town Policies governing utility extensions as needed to ensure consistency with the utility extension policies of the City of Raleigh and for new innovations such as water re-use.
- UT-3. Assist Raleigh in routinely updating utility plans based on the latest data and population projections so that plans for capital projects stay up-to-date.
- UT-4. Follow Raleigh's lead and investigate ordinance revisions regarding the provision of re-use pipes for irrigation in subdivisions or other allowable uses of reclaimed water.
- UT-5. Evaluate and consider Raleigh's efforts to study the option of encouraging dual plumbing in houses by offsetting the costs through reduced utility fees.
- UT-6. Support Raleigh's efforts in requesting that the Army Corp of Engineers perform what is known as a 219 study to look at any modifications to the current allocation configuration, including reallocating water in the conservation and flood pools to match changing climate conditions.
- UT-7. Evaluate and consider Raleigh's efforts to change appropriate regulations to mandate water-saving devices in new construction.
- UT-8. Assist with Raleigh's "Slow the Flow" public education campaign to promote water awareness and an ethic of water conservation.
- UT-9. Revise the Town's landscaping ordinance to incentivize the use of drought-resistant species to minimize the need for irrigation.
- UT-10. Evaluate and consider Raleigh's efforts to determine the feasibility of using incentives to encourage existing users to switch to water-saving devices and appliances.
- UT-11. Evaluate and consider Raleigh's efforts to design and implement a residential FOG (fats, oils and grease) collection program, similar in concept



---

to curbside recycling, that is a convenient alternative to dumping FOG down the drain.

- UT-12. Support Raleigh's efforts to construct a demonstration project for Pigeon House Branch, one of the area's most impaired streams, that utilizes re-use water to augment stream flow and improve water quality.
- UT-13. Support Raleigh's efforts to set and achieve a target of treating 100 percent of bio-solids to the Class A level, a level where bio-solids are pasteurized to eliminate all pathogens making them safe for public uses such as composting.
- UT-14. Support Raleigh's efforts to investigate and develop a program for capture and use of methane at the Neuse River Wastewater Treatment Plant site.
- UT-15. Support Raleigh's efforts to investigate and implement solar arrays at the Neuse River Wastewater Treatment Plant farm fields as the fields reach the end of their useful life for bio-solid application.

