

Dco Utilities CIP – The Nexus of Environmental Stewardship and Community Prosperity:
The Past, Present, and Future



By:

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February 2025

Durham County Utilities has been and remains a critical element in the success of the world-renowned Research Triangle Park (RTP). This symbiotic relationship now spans approximately 60 years as the County purchased 100 acres of land in 1965 on which to establish wastewater treatment operations. This was crucial to enabling the substantial growth RTP would experience beginning with IBM's decision to locate in RTP in the mid-1960's as well as the Federal Government's National Environmental Health Sciences Center. Water and sewer capacity have long been known as "the currency of growth," for without these utility services, it is exceptionally challenging to have meaningful industrial and economic development. The County's investments across time in a forward-looking wastewater treatment and collection system have been essential to RTP's growth – and in turn, the County's economic health and prosperity.

RTP currently represents approximately 2.9% of the County's total area while also representing some 5% of its total tax base and 36.7% of the County's GDP. This translates to over \$2.6 billion in tax base within the RTP special district, and \$16.4 billion in annual economic value. The annual budget for County Utilities, including the TWWTP, is \$17.3 million for FY25. This budget is fully paid from user fees as an Enterprise Fund in accordance with State law. Thus, any property tax or other economic returns generated from new growth and development in RTP flow to the County's General Fund for use in funding education, community services, public safety, and similar needs. Clearly, with property tax revenues comprising over 61% of the FY25 budgeted revenues, it is imperative the County do all possible to continue to support and nurture high quality economic growth. Further, this data also shows the how Utility investments by the County represent an excellent return on investment (ROI) across time.

Today, Research Triangle Foundation (RTF) has embraced a bold new vision for the future of RTP. This new vision, known as RTP 3.0, has been approved by both the RTF Board of Directors as well as RTP's Owners and Tenants Association (OAT). This new vision, intended to remake RTP from a "research campus" into a "Live, Work, Play" assemblage, will transform RTP from the original and current campus-style research park into a modern community comprised of mixed-use elements, multi-modal transportation including bike and pedestrian enhancements, and more dense, urban-style development. The RTP 3.0 vision and accompanying long-range planning documents are now under development as well as in early-stage concept implementation (HUB, Park Center, Frontier, Boxyard, Horseshoe). This framework will transform the park to maintain its relevance and place as a destination of choice for companies over the next 50-60 years. The most recent estimates provided by RTF staff indicate 10,000 to 20,000 new housing units will call RTP home over the next 50 years. Assuming these units are occupied at a per unit level similar to broader Durham average of 2.25 persons per dwelling unit, this translates to 22,500 to 45,000 residents living in RTP. This transformation will also create new challenges, opportunities, and demands for County Utilities.

The County, through DCo Utilities, currently owns and operates an advanced biological tertiary treatment wastewater treatment plant (WWTP), known as the Triangle WWTP, capable of treating 12 million gallons per day (MGD) of wastewater, along with associated sewer collection facilities. This infrastructure serves RTP and adjacent areas of Southern Durham County. The last major upgrades to these facilities were in the mid-2000's, and resulted in a treatment facility that could meet or exceed the anticipated Jordan Lake standards – a significant engineering and operational achievement that fully embraced the County's long-standing commitment of environmental stewardship. Currently this plant is averaging 5.1 MGD of flow, around 43% of permitted capacity. Given the aforementioned residential growth projections provided by RTF, our WWT facilities could see Average Daily Flows (ADF) rise from the current 5.1 MGD to somewhere between 7.0 MGD to 9.0 MGD – withOUT any new industrial growth in the RTP service area. This would mean the Triangle WWTP would be at 58%-75% of permitted capacity even if no industrial growth occurred during this planning horizon. Our collection system also has several major sewers that are now approaching 40-60 years in age, with the average useful lifespan of sewer mains being 50-75 years. State laws mandate when a WWTP facility and/or collection system elements reach 80% of permitted capacity, new improvements must be in the planning/design phases and at 90% of permitted capacity, those expansions must be under construction – or no new permits may be issued for development and growth. In comparing projected flows comprised of our current baseline flow plus the RTF residential growth versus the 80/90 percent standards, it is obvious some level of plant and collection system expansion will be needed during this 50-year planning horizon to ensure ample collection and treatment capacity remains to ensure economic growth. Progressive, responsible utilities like our County Utilities necessarily engage in routine, systematic review to develop both capital improvement and long-range plans for future infrastructure, what those plans will cost, how to pay for those needs, and how best to time and implement those plans. Hence, it is imperative for the County to proactively embrace the development, implementation, and funding of needed Utility Capital Improvements in order to facilitate ongoing economic and community prosperity.

The County staff have engaged across time with the leadership of RTF/RTP to better ascertain what new demands might result from RTP 3.0. These conversations continue today and have resulted in County staff initiating several key programs of work designed to ensure the County's WWTP and collection facilities are renewed and expanded to keep pace with the anticipated demands while maintaining the environmental and fiscal stewardship the Utility has long exemplified. A number of these initiatives are well underway including:

- Northeast Creek Sewerage Basin Study – this is the overall sewerage basin contributing to the TWWTP. This study provides both current and future model data from which key collection systems improvements can be developed and implemented.
- TWWTP Future Flow Model and Permit Study – expansions of a wastewater plant generally are a multi-year, high-cost effort due to environmental studies, permitting, and often very significant construction costs due to expanding a treatment facility while it

remains in service. Utility staff have initiated early-stage work to ascertain what would be required to permit expansion of the TWWTP beyond its current 12 MGD flow rating.

- Chin Page Regional Lift Station – this new lift station, currently underway, will provide relief to our Stirrup Iron Creek Lift Station by diverting flow away from the Stirrup Iron Lift Station, providing basin capacity for the next 50 years.
- Slater Road Lift Station – currently underway and funded by ARPA dollars, this project will result in a new lift station with expanded capacity. The replacement lift station will be located in Durham County on the west side of I-540, whereas the current lift station is located on the Wake County side of the highway.
- TWWTP Modernizations – work currently underway to modernize data acquisition systems, treatment systems, security, and other existing plant facilities.

Overall, some \$75 million in Utility capital improvement work is underway with another \$75-\$100 million identified and forthcoming in the next 3-5 years. As the results from some of the studies mentioned above bring additional clarification of needs, those findings coupled with RTP 3.0 demands will result in identification of additional capital investment needs for the TWWTP and sewer utility.

Utility staff also continue to seek outside sources of funding for important capital projects to best leverage our existing funds and mitigate the impacts to existing rates – and our ratepayers. To date, around \$60 million in external funding has been secured from sources such as ARPA, the State's of North Carolina's "State Revolving Fund," and Federal partners. This allows needed utility infrastructure projects to timely proceed without unduly constraining current cashflow of the utility enterprise.

As a "private business with a public owner," the Utility Enterprise is required by State law (NCGS 159) to remain in a strong fiscal position while operating solely on utility revenues. To facilitate that requirement, staff have also initiated a Comprehensive Rate Study. The outcomes from this study will include a robust capital improvement fiscal module that allows us to model various capital improvement scenarios across time. This will allow evaluation of the fiscal impacts of various capital improvement approaches on rates to ensure the Utility can retain its current exceptional fiscal health while meeting these needs. Maintaining a strong fiscal position is key to obtaining a strong financial rating from the various rating agencies such as Moody's and Standard & Poor. A strong rating will enable the Utility enterprise to utilize Revenue Bonds for some capital construction needs while minimizing borrowing costs, and also to remain resilient in these uncertain times.

The County and RTP have long enjoyed a productive partnership over the past 60 years. County Utilities' staff remain committed, with the support of the Board of Commissioners and County Manager, to continue providing the infrastructure basis from which to ensure this relationship remains beneficial and economically sound for all parties for the next 60 years.

References:

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7. North Carolina Administrative Code (15A NCAC 02H .0223)