

Attachment E



Harnett
C O U N T Y
NORTH CAROLINA

HARNETT REGIONAL WATER

2021-2022

Approved Capital Improvement Program

HARNETT REGIONAL WATER

Capital Improvement Plan 2021-22

EXECUTIVE SUMMARY

The capital improvement plan attached herewith is a working tool developed by the HRW staff to give guidance toward the County's water and sewer infrastructure development and capital needs program. It consists of an assessment of the current water and wastewater systems and projects these capital needs over a ten-year period. This plan is offered to the Board to seek their guidance and input as they look toward Harnett County's future. This plan should be a helpful fiscal planning tool that allows us to forecast capital demands on revenues and borrowing power to help avoid overextending ourselves financially during the next ten years and beyond. HRW recommends that the review and approval of this capital improvement plan be accomplished annually as part of the budget process. General approval of this document by resolution does not commit the Board to specific approval of any one project or expenditure, nor does it appropriate money for any project. This would still be accomplished through separate capital project ordinances. The approval by resolution from the Board simply approves the capital improvement plan as a plan for the forecast period.

DESCRIPTION OF COUNTY

Demographics. The County, formed in 1855, has a projected population of 136,031 as of 2019. The per capita income for the County is \$34,604 (82nd in NC) and the median household income is \$53,922 (30th in NC). The poverty rate is to be 18% and the unemployment rate currently stands at 3.9%.

Land Area Configurations. Harnett County is located in the south central portion of North Carolina. It lies partially in the Coastal Plain and partially in the Piedmont section. The eastern two-thirds of the County exhibit topographic features common to the Coastal Plain region of North Carolina. It is an area of level to gently rolling terrain with elevations ranging from 100 to 300 feet above sea level. The major underlying geological formation includes sedimentary rocks consisting mostly of unconsolidated sands and clays. Topographical features of the western part of the County resemble the Piedmont region of North Carolina. It is an area of steeper hills with elevations as high as 450 feet above sea level. The major underlying geological formation includes crystalline rocks, such as granite and slate.

Name and Logo Changes.

The Harnett County Department of Public Utilities underwent name and logo changes in FY 2018-19. The new name of the utility is “Harnett Regional Water”. The new mission statement reads as follows, “Harnett Regional Water provides high quality water and wastewater services to residents and businesses in Harnett County and the surrounding region. The organization is focused on customer service and is committed to environmental stewardship. Its position on the Cape Fear River, combined with significant investments in infrastructure and foresight from past and current leaders, will allow Harnett Regional Water to continue to serve the rapidly growing central region of North Carolina.” This rebranding should

help accentuate the growth of the department from a single county water and sewer department to a regional water and wastewater provider. The old name often confused customers as to what services the department provided. The new logo installations on elevated tanks will continue in earnest this year and the utility will debut a stand-alone website to emphasize easier access and customer service to our consumers.

Description of Existing Facilities. Harnett Regional Water provides water and/or wastewater services to approximately 100,000 Harnett County residents. HRW also provides public water to customers in Counties contiguous to ours. These Counties include Cumberland, Johnston, Moore, Lee, and Wake. The Harnett County Regional Water Treatment Plant supplies water to the Harnett County municipalities of Lillington, Angier, Erwin, and Coats. It supplies water to the Towns of Fuquay-Varina and Holly Springs in Wake County and also the Towns of Spring Lake and Linden in Cumberland County. It also jointly supplies water to Fort Bragg through a partnership with the Public Works Commission of Fayetteville. The Harnett County Regional Water Treatment Plant utilizes the Cape Fear River as the source for the system's drinking water and currently has a treatment capacity of forty-two million gallons a day (42 MGD). HRW's water system consists of nine County water and sewer districts. Each of these districts exists as a separate legal entity pursuant to Chapter 162A of the North Carolina General Statutes. The County maintains and operates the districts for a fee equal to the districts' debt service amount. This amount is paid from general revenues received from water and/or wastewater sales from the various districts. The County established a "Harnett County Public Utilities Fund" in 1998 that consolidated accounting for the operation of these districts. This allowed the department to budget revenues and expenditures in a consolidated manner rather than nine individual district budgets. HRW provides wastewater treatment to the Towns of Angier, Coats and Lillington in Harnett County. HRW also provides wastewater treatment to the Town of Fuquay-Varina in Wake County and Fort Bragg Army Base in Cumberland County. HRW was established in 1982 with approximately 600 water customers and 8 employees. We have grown in the thirty-seven years since to approximately 40,000 water customers, 13,000 sewer customers and 105 employees. HRW infrastructure consists of approximately 1,400 miles of water mains, 360 miles of sewer collection mains and totals over \$325 million dollars in assets. In addition

to the 42 million gallon per day regional water plant mentioned above, other assets include 2 wastewater treatment plants with a combined treatment capacity of 22.5 million gallons per day, 20 elevated water storage tanks with 8.9 million gallons of capacity, 18.2 million gallons of ground storage capacity, a 60 million gallon reservoir, 24 water booster stations with pumping capacity of 133 million gallons per day and 98 sewer lift stations. Approximately 95% of Harnett County residents now have access to public water. As is apparent from the above history, HRW has experienced tremendous growth and accomplishment through the valiant efforts and foresight of past and present Harnett County Commissioners and staff. Their dedication to a countywide water and strategically located sanitary sewer system is the reason for the utility's success.

WATER SYSTEM

Treatment Facility. HRW's existing 42 mgd (million gallons per day) regional water treatment facility was recently upgraded to that capacity in FY 2016-17 at a cost of approximately \$12 million dollars. The project added four new filters, an upgraded alum sludge disposal system, new backwash/chemical storage and modified the raw water intake and raw water/reservoir low-lift pump stations. In conjunction with the project, the County entered into a formal water supply capacity agreement with Moore County in which Moore purchased 3 million gallons of daily water capacity in the Harnett Regional Water Treatment Plant. Moore joins Johnston County, the Towns of Holly Springs and Fuquay-Varina in Wake County, as well as Fort Bragg in Cumberland County as capacity holders in the Harnett County Regional Water Treatment Facility. Harnett Regional Water is also committed to building a new 8-10 mgd water treatment facility in the Erwin area of the County. Our planning estimates project the new plant will be needed to supplement the existing Harnett Regional Water Treatment Plant by the end of this decade. Cost estimates are approximately \$50 million dollars for the project as it will be funded by revenue bonds and HRW reserves.

Water Supply Plan. The State of North Carolina requires that all water systems submit an approved water supply plan annually. This plan is currently being updated by the HRW staff. The purpose of this plan is to provide evidence to the State that the water system is providing adequate planning for the supply of water through a designated planning period. Water supply planning is also continuing in the area of hydraulic modeling as the engineering firm of Hazen & Sawyer is engaged in providing an updated water hydraulic model of our entire distribution system. This will be critical importance in planning and directing future water resources to accommodate new growth.

Water Conservation Measures. Harnett County amended its Water Shortage & Conservation Ordinance in the spring of 2008. The ordinance was amended in response to the drought conditions in our area over the last several years. The ordinance now more clearly defines the stages of water conservation and what triggers their enactment. It also established a normal irrigation schedule and increased the department's enforcement authority during emergencies. Our water supply is a critical resource that must be protected at all costs.

Water Distribution System. Three water transmission projects were recently completed in FY 2018-19. The most significant was the West Central Transmission Project which consisted of the construction of approximately thirteen miles of 20 inch water transmission main complete with a booster pump station from Lillington to the Seminole community near the Lee County line along US Hwy 421. This project costs approximately \$8 million dollars and greatly improves our hydraulic efficiency in the west central part of the County. Another water distribution projects completed in FY 2018-19 was the South Central Transmission Project. It consisted of the installation of 7,500 feet of 12 inch water transmission main to alleviate low pressure zones in the South Central portion of the County and cost approximately \$700 thousand dollars. The final water distribution project completed in FY 2018-19 was the WHIP Transmission Project. It consisted of the construction of 7,800 feet of 16 inch transmission main along Hwy 87 to serve the new Benhaven Elementary School being constructed in the Western Harnett Industrial Park (WHIP). This project was completed at a cost of approximately \$1 million dollars. The North Harnett Elementary School Utility Extension Project is scheduled to begin in FY 2021-22 and

consists of the extension of 6,800 feet of 8 inch water main and 7,700 feet of 4 inch sewer force main with the construction of a wastewater pump station to serve that new school site. The estimated cost of this project is \$1,496,537 and will be funded from Harnett Regional Water's capital reserves.

Regional Interconnects. As you are aware, Harnett County's water system is interconnected to several area public water systems that we do not provide water to including: the City of Dunn, the Town of Benson, the City of Raleigh, the Town of Apex, the City of Fayetteville (PWC), the City of Durham, and finally the Town of Cary. These connections are of a vital importance in the event of emergency water shortage conditions. The ability to provide and receive additional water from these various sources makes all of these systems more dependent upon each other and truly interconnected in a regional manner. HRW is now a member of the newly formed Triangle Water Supply Partnership. Because of this alliance, our water system will participate with the triangle water utilities in regional water supply planning, with the goal of collaboratively planning for, maintaining, and implementing, long-term sustainable and secure water supplies for our region in the future.

WASTEWATER SYSTEM

Wastewater Treatment and Collection. The County currently owns two active wastewater treatment plants, the North Harnett Regional Wastewater Treatment Plant and the South Harnett Regional Wastewater Plant. The South Harnett plant began operation in June 2009 and has a capacity of 15 mgd. It serves all of the southern area of the County and Fort Bragg. The North Harnett Wastewater Treatment Plant has a capacity of 7.5 MGD and recently underwent major modifications to its filters and bio-solids storage facilities as part of the North Harnett Wastewater Treatment Plant Upgrade Project. This project was completed in FY 2020-21 at a cost of approximately \$11 million dollars. The North Harnett Wastewater Treatment Plant is also scheduled for a capacity upgrade in FY 2022-23 to serve the explosion of residential growth the northern area of the County is currently experiencing. This project is estimated to cost

approximately \$36 million dollars and will include participation from our regional wastewater partner towns of Angier, Fuquay-Varina and Lillington. HRW is currently expanding its wastewater collection system as well by extending sewer to the only two existing Harnett County schools currently not on public sewer. The South Harnett Elementary/Anderson Creek Primary School Wastewater Project is currently under construction at a cost of approximately \$3 million dollars. It is scheduled for completion this fiscal year.

Regional Wastewater Facilities. Harnett County has commissioned four different engineers since 1968 to look at comprehensive approaches to the long-range planning of Harnett County's water and wastewater needs. The most recent of these is the Northern Harnett Wastewater Master Plan for the Districts in the northern section of the County. This study was authored by Hazen and Sawyer and was completed in FY 2017-18. All of these wastewater plans have concluded that a regional approach utilizing a consolidation of systems is the best plan practical for protection of public health and economic development. There will continue to be County development of services which will extend from existing facilities; and, due to the escalating cost of expansion and operating expenses, it is likely that other regions within the County will be attempting to regionalize systems within the next ten years. In addition to this, regulatory restraints will force regionalization to happen in order to eliminate as many discharges into our water basin as possible. Areas outside the County, which are tributary to our drainage basins and wastewater treatment facilities, (i.e. southern Wake County and northern Cumberland County as recent examples) also provide realistic opportunities for regionalization. These relationships should be nurtured to provide the greatest scale of economy in building additional wastewater collection lines to serve Harnett County citizens.

FINANCIAL PLANNING

Revenue Projections. Revenue projections for the next 10 years are difficult if not impossible to correctly predict. They are tied to a myriad of factors including residential and commercial growth in the County, local and regional economic

conditions, and the ability of our utility to meet all future water and sewer needs throughout the County and region. Before we can attempt to predict future revenues, we need to look at current revenue trends for the last several fiscal years.

HRW Operating Revenues

<u>Financial Period</u>	<u>Operating Revenues</u>
FY 10-11	\$28,042,836
FY 11-12	\$30,130,929
FY 12-13	\$30,732,953
FY 13-14	\$34,624,099
FY 14-15	\$32,162,037
FY 15-16	\$34,446,531
FY 16-17	\$35,872,649
FY 17-18	\$39,203,558
FY 18-19	\$39,987,902
FY 19-20	\$41,091,355

You can see from these figures that revenues increased by \$113,048,519 in the last nine fiscal years. This represents a 46% increase in annual operating revenues in that time span. The majority of this increase is due to the growth of water and wastewater infrastructure throughout the County and increasing growth of water supply to the surrounding region. Rates must be adjusted to cover the ever increasing cost of service to include debt repayment and meet capital reserve targets to cover emergencies and capital project funding. The overall financial strategy of the Department is to continue to maximize revenues consistent with an even pace of residential and commercial/industrial growth within the County. Expenditures will be kept in line consistent with adequately maintaining treatment and distribution systems while emphasizing regulatory compliance in all areas. Harnett Regional Water is at a historical crossroads in the sense that 95% of all County residents have access to water. Additional access to water has been the primary source of a growing revenue base in the past. However, since most areas within the County now have access to water, future revenue growth will be directly correlated to the Department's goal to provide access to sewer to densely populated unincorporated areas

of the County and the Department's ever increasingly important role as a regional water and wastewater treatment provider to surrounding municipalities, counties and most importantly Fort Bragg.

CUSTOMER SERVICE IMPROVEMENTS

HRW recently had a "Public Utilities Efficiency Study" completed by the Management Consulting firm of Martin-McGill out of Asheville, NC. Although the overwhelming result of the study was positive, one of the main recommendations for improvement within the department was in the area of customer service. Specifically, the need to upgrade existing outdated technologies such as water/sewer customer billing software that was over a decade old, asset management /work order software, automated customer telephone systems, etc. HRW has aggressively started that process and has recently completed the installation of a new and enhanced customer information system (CIS) software system that includes a mobile work order and enhanced internet pay platform. We have also engaged with new providers to enhance our existing Interactive Voice Response (IVR) telephone system to give customers access to enhanced technological features. HRW is currently underway with the automated Metering Infrastructure Project in FY 21 in which we will upgrade all of our existing meters to new smart meters. These new meters will send usage data to HRW through a wireless network and provide much more information to our customers and staff. This project has an estimated cost of \$14.9 million dollars and will take approximately two more years to totally complete.

Capital Project Budget Summary

Attachment 1 is a capital project budget summary that combines all the proposed capital projects discussed earlier in this report. It provides a snapshot of anticipated capital needs over the next ten years. The expenditures section shows each projects total budget. The revenue section shows the expected funding sources for each year.

EXPENDITURES

Project Name	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	Totals
Automated Meter Infrastructure Project	\$14,982,043										\$14,982,043
NWHE School Utility Extension Project	\$2,096,537										\$2,096,537
Benhaven School WW Extension Project	\$435,535										\$435,535
NHWWTP Capacity Upgrade		\$36,000,000									\$36,000,000
Wake County Distribution Upgrade		\$8,500,000									\$8,500,000
BCC Collection System Upgrade Ph I			\$4,093,000								\$4,093,000
NW Water Transmission			\$8,200,000								\$8,200,000
Northeast Harnett Regional WTP Project				\$50,000,000							\$50,000,000
SHWWTP Upgrade					\$2,500,000						\$2,500,000
SW WW PS & FM					\$6,894,000						\$6,894,000
WTP Property Acquisition-Watkins 50 acres						\$1,000,000					\$1,000,000
SC Tank 5 Construction (Doc's/Nursery)							\$2,090,000				\$2,090,000
BCC Collection System Upgrade Ph II								\$3,750,000			\$3,750,000
Southwest Regional GST									\$3,004,180		\$3,004,180
MW Tank 6/SW Transmission Connect										\$390,000	\$390,000
Totals	\$17,514,115	\$44,500,000	\$12,293,000	\$50,000,000	\$9,394,000	\$1,000,000	\$2,090,000	\$3,750,000	\$3,004,180	\$390,000	\$143,935,295

REVENUES

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	Totals
Grants from all sources											\$0
Revenue Bonds				\$25,000,000							\$25,000,000
State Revolving Loans				\$10,000,000							\$10,000,000
Developer Participation					\$3,447,000						\$3,447,000
Holly Springs		\$8,500,000									\$8,500,000
Fuquay Varina		\$12,000,000									\$12,000,000
Angier		\$6,000,000									\$6,000,000
Lillington		\$12,000,000									\$12,000,000
Reserves	\$17,514,115	\$6,000,000	\$12,293,000	\$15,000,000	\$5,947,000	\$1,000,000	\$2,090,000	\$3,750,000	\$3,004,180	\$390,000	\$66,988,295
Totals	\$17,514,115	\$44,500,000	\$12,293,000	\$50,000,000	\$9,697,000	\$1,000,000	\$2,090,000	\$3,750,000	\$3,004,180	\$390,000	\$143,935,295

Debt Summary

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	Totals
Actual New Debt	\$0	\$0	\$0	\$35,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$35,000,000

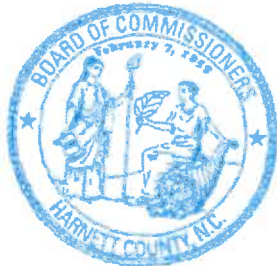
Planned Rate Increases

Current Rates/Water	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	Totals
\$20/2,000 min	no change	no change	\$22.00	no change	no change	no change	\$24.00	no change	no change	no change	
\$5.50/1,000 gal above min	no change	no change	\$5.75	no change	no change	no change	\$6.00	no change	no change	no change	
\$2.38 Bulk Rate	no change	no change	no change	\$2.85	no change	no change	no change	\$3.15	no change	no change	
\$1.85 Bulk Rate Capacity Holders	no change	no change	no change	\$2.25	no change	no change	no change	\$2.50	no change	no change	
% increase	no change	no change	7.5%	10.0%	no change	no change	7%	10%	no change	no change	
Monthly \$ Increase in Avg Bill	n/a	n/a	\$2.75	n/a	n/a	n/a	\$2.75	n/a	n/a	n/a	
Revenue from increase	\$0	\$0	\$1,386,000	\$820,000	\$0	\$0	\$1,435,500	\$975,000	\$0	\$0	\$4,616,500

Current Rates/Sewer	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	Totals
\$15 Flat	no change	no change	\$16.00	no change	no change	no change	\$17.00	no change	no change	no change	
\$6/1,000 gals	no change	no change	\$6.50	no change	no change	no change	\$7.00	no change	no change	no change	
\$2.05 Bulk Rate Capacity Holders	no change	no change	no change	\$2.55	no change	no change	no change	\$2.85	no change	no change	
% increase	no change	no change	7.5%	11%	no change	no change	7.5%	12%	no change	no change	
Monthly \$ Increase in Avg Bill	n/a	n/a	\$3.50	n/a	n/a	n/a	\$3.50	n/a	n/a	n/a	
Revenue from increase	\$0	\$0	\$450,000	\$340,000	\$0	\$0	\$585,000	\$450,000	\$0	\$0	\$1,825,000

Duly adopted this the 7th day of June 2021, upon motion made by Commissioner Weatherspoon,
seconded by Commissioner Nicol, and adopted by the following vote:

Ayes: 5 Noes: 0 Absent: 0



Board of Commissioners of the County of Harnett

By: W. Brooks Matthews

W. Brooks Matthews, Chairman of the Board and of the governing body of all
Water and Sewer Districts of Harnett County

ATTEST:

Lindsey Lucas

Lindsey Lucas, Interim Clerk to the Board