

Vision Holly Springs

Comprehensive Plan



SECTION 5: INFRASTRUCTURE AND UTILITIES

Adoption Date: November 18, 2025

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CHAPTER

1

INTRODUCTION

WHAT'S INSIDE:

Introduction and Purpose

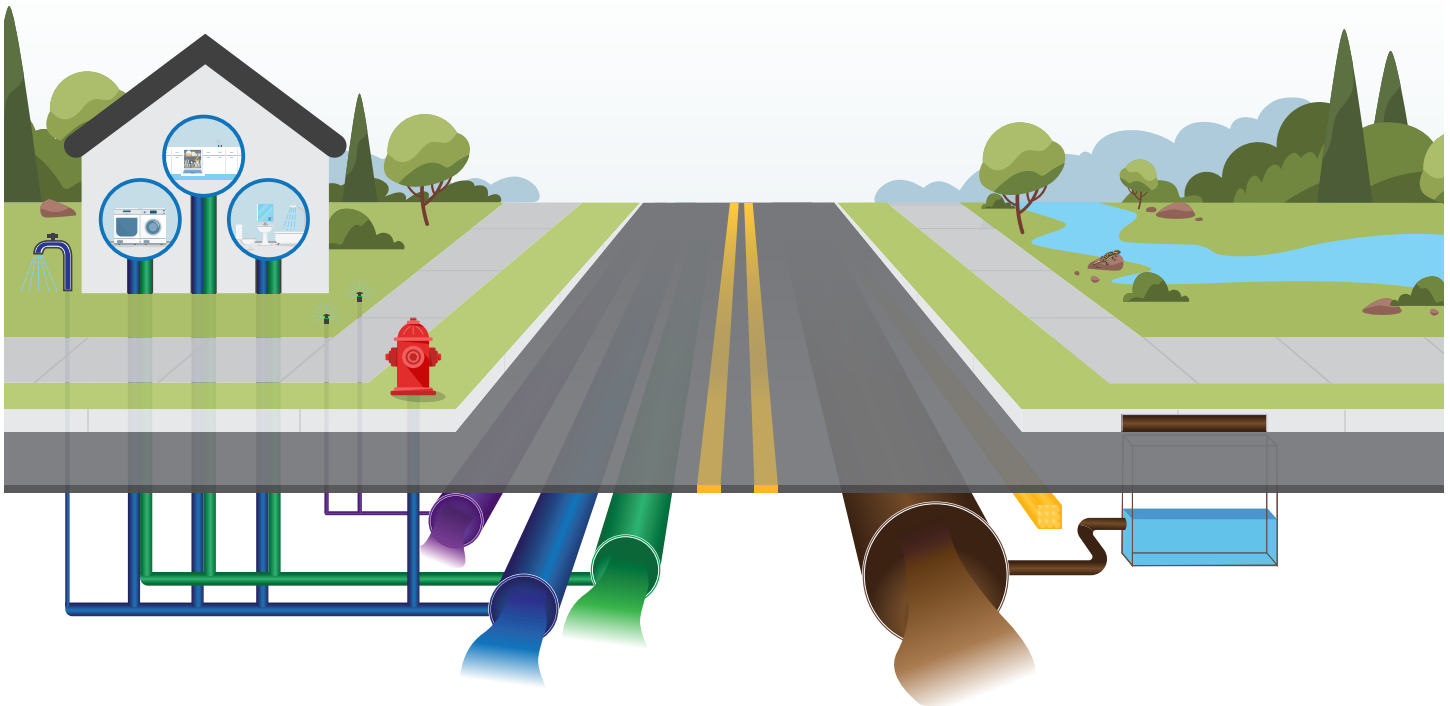
About this Plan

Vision

INTRODUCTION AND PURPOSE

Infrastructure and utilities form the backbone of our communities and support our everyday lives. From accessing clean water to safe wastewater and stormwater management, these essential systems enable homes, businesses, and public spaces to function smoothly.

The Town of Holly Springs is a rapidly growing community that requires prioritization and planning of future improvements to meet the demands of its current and future residents. The goal of Section 5 of the Comprehensive Plan is to provide a roadmap to guide the development of the Town and its infrastructure. This plan sets a vision to enhance resilience, efficiency, and sustainability across all utility services, ensuring that Holly Springs remains a thriving and well-supported place to live for decades to come.



What is a Comprehensive Plan?

A comprehensive plan is a document used by municipalities to establish long-term goals for the community, inform policy decisions, and help coordinate efforts between the Town and its stakeholders. The Infrastructure and Utilities section of the Comprehensive Plan outlines a vision for the essential utility systems in Holly Springs and presents a strategic set of projects designed to advance that vision and support the Town's continued growth.

This Comprehensive Plan is complemented by several ongoing and related initiatives that collectively enhance the Town's approach to infrastructure and utility management.

- **Wake County One Water Plan:** Provides a regional framework for integrated water resource planning, fostering collaboration between jurisdictions and supporting comprehensive management of water resources.
- **Town of Holly Springs Reclaimed Water Master Plan:** Guides the expansion and optimization of reclaimed water use within the town, advancing sustainability and efficient water conservation strategies.
- **Water Distribution and Sanitary Sewer Collection System Asset and Inventory Risk Assessment:** Identifies critical infrastructure needs and helps prioritize future investments by analyzing system vulnerabilities and asset conditions.
- **Sanitary Sewer and Water Modeling and Master Planning:** Enhances decision-making by providing data-driven insights into current system capacity and forecasting future requirements, ensuring proactive and informed management.

ABOUT THIS PLAN

Utilities in this comprehensive plan include the following:



- **Potable Water**—The Town of Holly Springs sources its primary water supply from the Cape Fear River, which is treated at the Harnett Regional Water Treatment Plant. This system delivers clean, reliable water to approximately 65,000 residents through a network of roughly 245 miles of water mains.



- **Sanitary Sewer**—The Town of Holly Springs manages approximately 250 miles of sanitary sewer lines and operates 23 pump stations to collect wastewater. Treatment is provided at the Utley Creek Water Reclamation Facility (UCWRF), which ensures environmentally responsible processing and discharge.



- **Reclaimed Water**—The Town of Holly Springs treats its reclaimed water at the UCWRF and distributes reclaimed water through a dedicated system of purple-colored pipes for non-potable uses such as irrigation and industrial uses.



- **Stormwater**—The Town of Holly Springs operates a stormwater system that manages runoff, protects water quality, and supports sustainable growth. It addresses both point and non-point sources to reduce flooding and erosion, meet Clean Water Act requirements via NPDES permitting, and safeguard aquatic ecosystems from urban development.



- **Fiber Optic**—The Town of Holly Springs has built a resilient and expanding fiber optic network that underpins municipal operations, smart city initiatives, and regional connectivity. This system links critical facilities—including police, fire, EMS, water and wastewater infrastructure—and supports traffic signals, security systems, supervisory control and data acquisition (SCADA) controls, and advanced digital services across the community.

Each utility system was evaluated in this Comprehensive Plan to identify existing infrastructure, future service demands, and future upgrades. Please note that this Comprehensive Plan includes utilities provided directly by the Town. In addition, several essential utilities—such as natural gas, electricity, and private fiber—are located within the Town but operated by external entities. These providers play a vital role in delivering critical services to the Town and its residents.

Why is an Update Needed?

The previous Infrastructure and Utilities Comprehensive Plan was completed in 2009. Since then, the Town has experienced consistent population growth and development, placing increased demand on public utility systems. An update to the Comprehensive Plan ensures that the Town's infrastructure keeps pace with population growth and development to maintain a high level of service.

The Town of Holly Springs has emerged as one of the largest population centers in Wake County and has experienced rapid and sustained growth over the past decade. This expansion has brought increased demand for improved infrastructure and utility services, making it essential to identify top priorities that will support both current and future residents. While active growth during the previous plan was primarily residential, the Town is currently experiencing a combination of commercial, industrial, and residential growth. By realigning plan sections and incorporating current assumptions, the Town can integrate the latest data and projections to better anticipate future needs and maximize its return on investment in utility infrastructure.

As the Town has grown, so have its infrastructure and utilities systems. Many of the recent improvements that have been made to the Town utility systems are based on the Infrastructure and Utilities Section of the Comprehensive Plan last updated in 2009. Water and sanitary sewer capacity has expanded to meet residential, industrial, and commercial needs; stormwater systems have been upgraded to improve resilience; and Town-owned fiber optic connectivity has widened to support a more connected community. These achievements reflect the success of past planning efforts and underscore the importance of updating the plan to maintain momentum and meet evolving demands while ensuring that investments are efficient and yield the greatest value for the community.

Objectives

- 1 Support sustainable growth by ensuring utility systems are resilient, adaptable, and coordinated with anticipated residential, commercial, and industrial development.
- 2 Enhance community quality of life by providing reliable, environmentally responsible utility services and promoting sustainability through water conservation, green infrastructure, reclaimed water use, and energy-efficient technologies.
- 3 Prioritize investment and targeted modernization in areas with the greatest need for upgrades and capacity improvements, guided by Community Investment Plans (CIPs) to support projected growth, maintain service reliability, and enhance resilience.
- 4 Foster collaboration and partnerships with regional agencies, stakeholders, developers, and private sector partners to align with broader water, sanitary sewer, and technology initiatives and leverage resources for accelerated improvements.
- 5 Engage the community through ongoing education, outreach, and transparent planning processes.

Population, Water Demand, and Sanitary Sewer Flow Forecast

Population projections were developed in coordination with the Town's Comprehensive Plan to reflect anticipated growth. These projections impact the growth, needs, and priorities of all utilities included in this Comprehensive Plan. To facilitate future modeling efforts and planning for future infrastructure needs, these projections incorporate existing and future water demand and sanitary sewer flow estimates based on the Future Land Use Map (FLUM), small area plans, and known development activity. Future needs for the Town's reclaimed water, stormwater, and fiber optic systems are also impacted by this growth. Future projections consider the following:

- **Planned residential, commercial, and industrial developments:** Anticipating the growth of neighborhoods, business districts, and industrial developments, helps to identify where increased water and wastewater demands are likely to occur.
- **Per capita water and wastewater generation rates:** By analyzing historical data and demographic trends, the Town estimates the average water used per resident. These rates are crucial for forecasting system loads and ensuring facilities can handle peak demand periods as the Town grows.
- **Industrial development considerations:** While residential and commercial growth tends to follow historical usage patterns and industry standards, industrial development can be less predictable. Considerations must be made for planned industries and nationwide trends in various industrial sectors while continually coordinating with the development community to reasonably project future needs.
- **Inflow and infiltration contributions:** The Plan accounts for groundwater and stormwater entering the sanitary sewer system, which can fluctuate based on weather patterns and aging infrastructure.
- **Water demand patterns:** Evaluating average daily demands, maximum daily demands, and 24-hour usage patterns across varying use types helps the Town plan for sufficient system capacity and ensures reliable service during periods of highest demand.

Future projections guide the capacity, design, and timing of water and sanitary sewer infrastructure improvements, ensuring reliable service and compliance with regulations as the community grows. The Town uses these projections to prioritize upgrades, schedule maintenance, and allocate funding for expansions, so that both current and future residents continue to benefit from safe and efficient water and sanitary sewer systems.



Population Forecast

Historically, the Town has predominantly been a residential community with light commercial development. Coinciding with growth throughout Wake County and much of North Carolina, residential development continues to grow rapidly while also seeing an increase in non-residential growth, including large industrial facilities in the northwest part of town.

Water Demand Forecast

The Town considers water supply and the distribution system when evaluating future infrastructure needs to meet growing demands. Recent per capita residential demands are evaluated to make reasonable assumptions for future residential demands. Non-residential demands are developed based on industry standards but can vary based on actual use. The Town communicates frequently with the local development community regarding anticipated future uses and associated demands throughout the Town to help inform anticipated future demands. Based on current growth forecasts, the Town of Holly Springs anticipates a buildout maximum day water demand up to 22 million gallons per day (MGD).

Sanitary Sewer Flow Forecast

Average daily sanitary sewer flows typically follow similar trends to water demands. Sanitary sewer infrastructure planning for localized areas in Town follows industry standard assumptions for sizing pipelines and sanitary sewer pump stations. North Carolina Administrative Code Title 15A 02T provides guidance for wastewater design flow rates. Similar to the water demand forecast, system-wide sanitary sewer flows follow historical trends specific to the Town's system for residential development and incorporate regional trends for non-residential uses, as well as coordination with the local development community. Based on current growth forecasts, the Town of Holly Springs anticipates a future treatment capacity of up to 16 MGD at buildout.

Community Engagement

The Comprehensive Plan for Holly Springs was developed through community outreach, incorporating feedback from residents, developers, and Town staff to ensure its vision, priorities, and recommendations reflect local needs and values. Engagement efforts included interactive booths at the Farmers Market and Holly Springs Salamanders baseball game, featuring display boards and a trivia game to encourage participation. Additionally, stakeholder interviews were conducted with Town and Wake County staff, emergency service providers, and members of the development sector to gather insights. The project team also sought input from the development community at the annual Developer's Breakfast, supplemented by an online survey that addressed infrastructure challenges and priorities in water, sanitary sewer, stormwater, and fiber, with over 40 respondents providing valuable feedback. Refer to the Appendix for comprehensive summaries of the Community Engagement events, as well as detailed results from the Developer's Breakfast Survey.

VISION

The Holly Springs Infrastructure and Utilities Comprehensive Plan will deliver resilient, efficient, and sustainable infrastructure and utility services that support a thriving, connected, and growing community—today and into the future.

Resilient	Efficient	Sustainable
Withstand challenges and adapt to growth and change to protect community wellbeing.	Maximize resources and optimize operations for reliable utility delivery.	Minimize environmental impact and promote responsible, future-focused strategies.



Potable Water: Safe, reliable water for homes and businesses



Sanitary Sewer: Effective wastewater management



Reclaimed Water: Smart reuse for sustainability



Stormwater: Resilient systems to protect property and environment



Fiber Optic: Robust connectivity for a modern community

The Comprehensive Plan ensures our infrastructure keeps pace with growth, providing top-tier services that strengthen the fabric of Holly Springs—today and for generations to come.

CHAPTER

2

WATER SYSTEM

WHAT'S INSIDE:

System Description

Existing System Analysis

Demand Forecasting

Town Priorities

Implementation Plan

Sustainability and Resilience Initiatives

SYSTEM DESCRIPTION

The Town of Holly Springs operates a potable water distribution system engineered to meet both present and future demands of its growing community. This system consists of an integrated network of water mains, elevated storage tanks (ESTs), and booster pump stations, delivering clean, safe drinking water from supply sources to homes, businesses, and public facilities throughout the service area. The primary objective of the system is to provide dependable and environmentally responsible water delivery, protecting public health and ensuring the reliable availability of this essential resource for all residents.

Water Supply

The Town purchases drinking water from Harnett Regional Water (HRW) in Harnett County and maintains two emergency connections with the Town of Cary and the Town of Apex to ensure a reliable water supply to Holly Springs residents. The current contract allows the Town to purchase up to 10 million gallons per day (MGD) from HRW. To further increase water supply and improve system resiliency, the Town is partnering with TriRiver Water and the Town of Fuquay-Varina to expand the existing Sanford Water Filtration Facility and receive an additional 4 MGD. Water from HRW and TriRiver Water originates from the Cape Fear River prior to treatment at the respective facilities.

In 2015, Holly Springs proactively secured approximately 2.2 MGD of additional water supply in Jordan Lake through the Round 4 allocation process, which can be accessed at a future date to further increase water supply to the Town.

The Town participates as a member of the Triangle Water Supply Partnership (TWP), which allows for regional planning and collaboration for water supply and distribution. Several recent projects include the Distribution Model Infrastructure Update, Emergency Spill Response and Mitigation Plan Coordination, Triangle Regional Water Supply Plan, and Interconnection Model Maintenance.



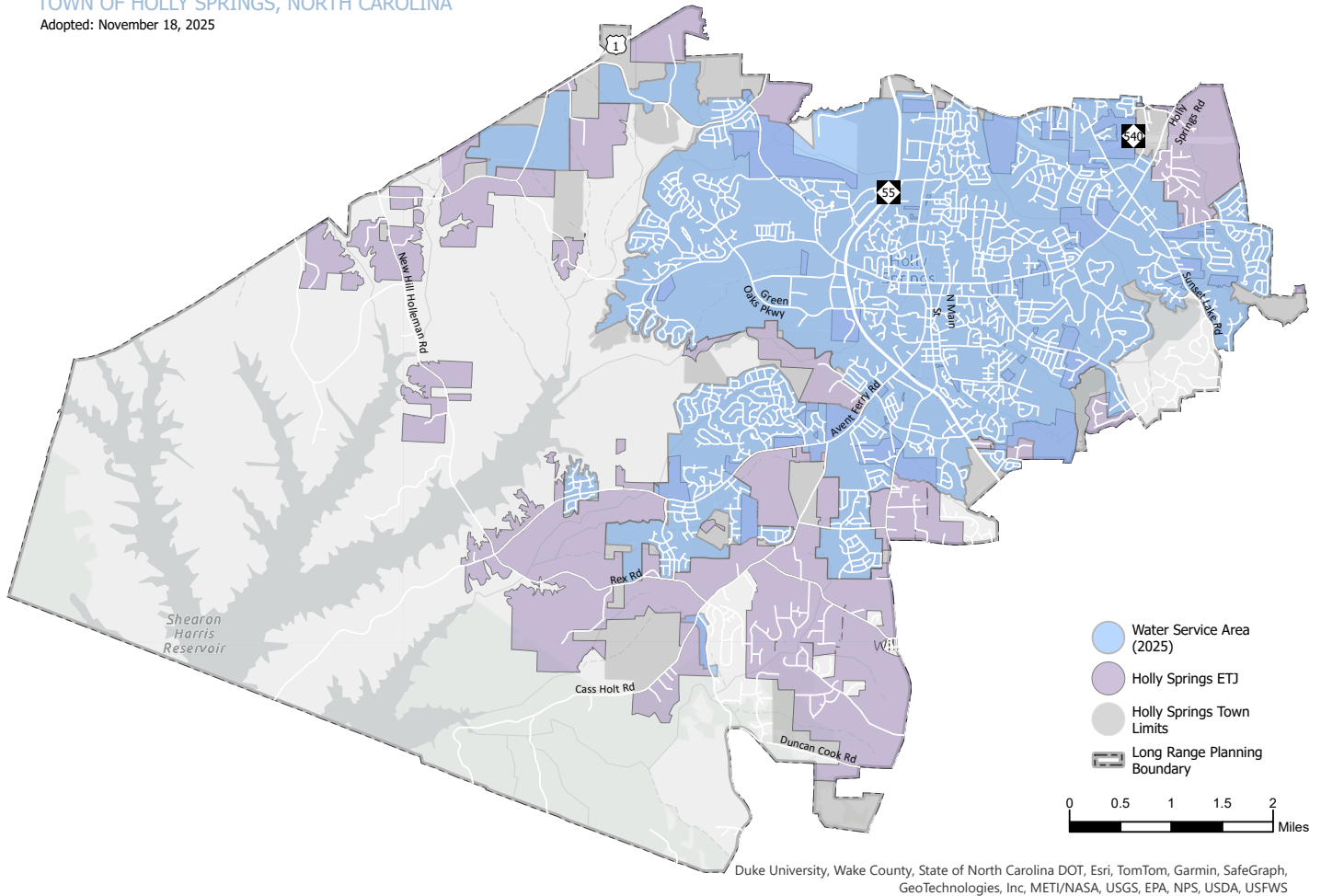
Service Area map

The potable water service area includes residential, commercial, and industrial customers. The boundaries are established to ensure efficient service delivery, minimize environmental impacts, and accommodate future growth.

Water Service Area

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

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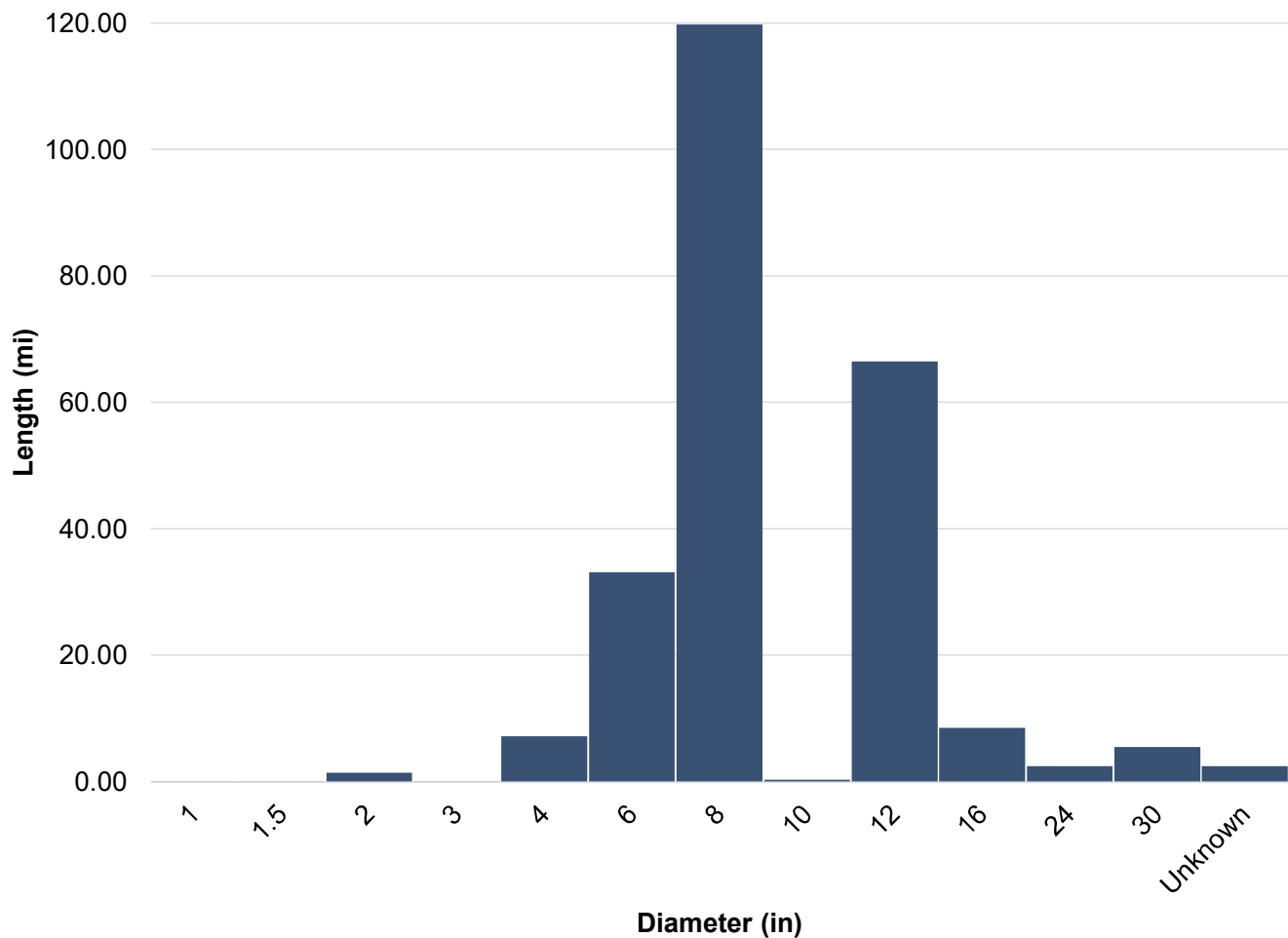


Inventory and Description of Existing Infrastructure

The existing water infrastructure in Holly Springs consists of the following primary components:

- **Water Mains:** Pressurized pipelines deliver potable water throughout the distribution system, connecting supply sources to elevated storage tanks, booster pump stations, and service connections. Holly Springs manages approximately 245 miles of water main pipes, with diameters ranging from 1-inch to 30-inches.
- **Booster Pump Stations:** Potable water booster pump stations are essential for distributing water to customers while maintaining adequate pressure, water quality, and facilitating the efficient movement of drinking water throughout the distribution system. The Town’s system sources water from HRW via a booster pump station outside the southern Holly Springs Planning Area. The Apex interconnect has not been used in recent years and would require evaluation and refurbishments before being placed into active service.
- **Elevated Storage Tanks:** Elevated storage tanks (ESTs) play a critical role in maintaining consistent water pressure and providing emergency reserves for fire protection and peak demand periods. Holly Springs operates three ESTs strategically located throughout the service area, each designed to optimize system reliability and support ongoing community growth. The three ESTs designated as School, Avent Ferry, and Lee Street, have capacities of 1 MG, 1 MG, and 0.3 MG, respectively.
- **Meter Infrastructure:** The Town uses Advanced Metering Infrastructure (AMI) and a WaterSmart interface to allow customers to observe real-time leak/burst detection. The metering system uses 3 base stations and 14 repeaters across the Town to capture metering data multiple times a day allowing the Town to have a continuous look into distribution system operations and provide accurate billing information for customers.

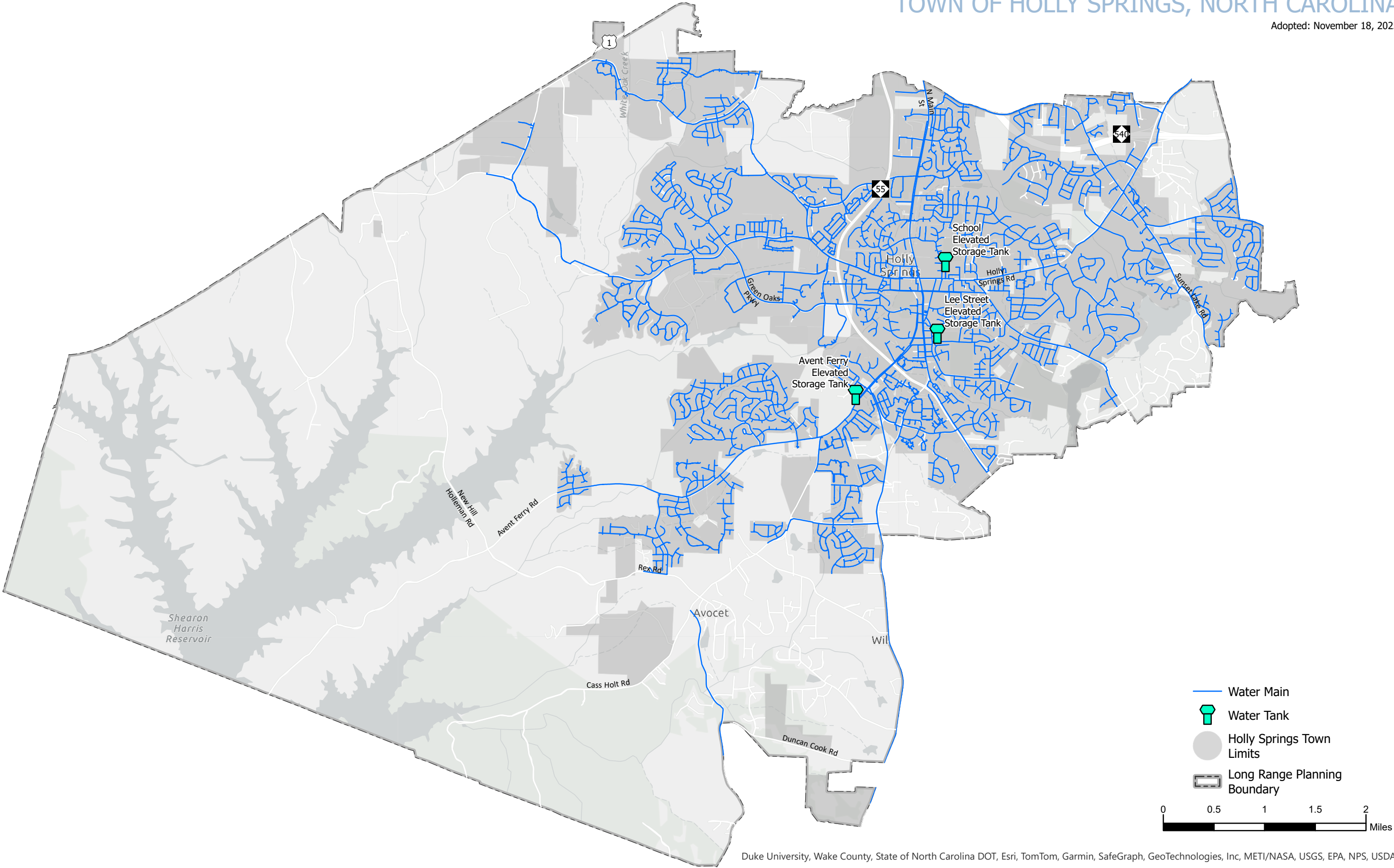
The Town continues to monitor necessary expansion of metering infrastructure to maintain adequate service and optimize system performance.



Existing Water System

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

EXISTING SYSTEM ANALYSIS

The Town of Holly Springs' existing GIS mapping data for the water system, maintained by the Town, was utilized in the water system analysis.

A comprehensive analysis was conducted to assess the capacity and performance of the existing water system.

Water Model Development

The Town's existing water model, originally developed in 2012, is currently undergoing updates as part of a broader master planning effort. These updates aim to identify necessary improvements to the Town's water system, with findings and recommendations to be incorporated into updated documentation scheduled for release in 2026.

The hydraulic model serves as a critical tool in guiding infrastructure planning and serves several key functions:

- **Simulates Water Distribution:** Models how potable water flows through the Town's 245 miles of water mains, booster pump stations, and elevated storage tanks.
- **Supports Planning and Development:** As the Town grows, the model is used to ensure available water supply for new developments for domestic use and fire protection.
- **Informs Community Investment:** Helps prioritize upgrades and expansions, including future transmission mains.

The Town's water model was updated to reflect recent expansion of the pipe network and current system hydraulics. The model will be used by the Town as a tool to understand water availability and storage in the system, and when detailed availability studies may be required.

Field Testing and Calibration

The existing water model calibration for Holly Springs integrated both Hydraulic Grade Line (HGL) testing and Fire Flow Analysis to ensure accurate simulation of system performance and guide infrastructure planning.

- **HGL Testing:** HGL testing was conducted to evaluate the hydraulic performance of transmission mains. Over 18 miles of pipe were tested during the 2025 model update, and the model was updated to ensure it accurately predicts system conditions.
- **Fire Flow Testing:** Pressure recorders are utilized to understand system hydraulics when large volumes of water are flowed from fire hydrants. Results from flow tests are used to evaluate the water system's ability to meet fire protection needs while maintaining adequate system pressures. The 2025 model update included five strategically located fire flow tests.

Following field testing, the model is then used to simulate existing conditions and predict system operations in future years to assist with planning of future infrastructure needs.



DEMAND FORECASTING

Population and land use projections were developed in coordination with **Section 1: Land Use and Character Plan | Small Area Plans** of the Comprehensive Plan. Demand forecasting considers:

- Planned residential, commercial, and industrial developments
- Per capita water usage rates
- Water use patterns (i.e. peak day and peak hour demands)

These forecasts inform the sizing and phasing of future system improvements to ensure adequate water availability is maintained.

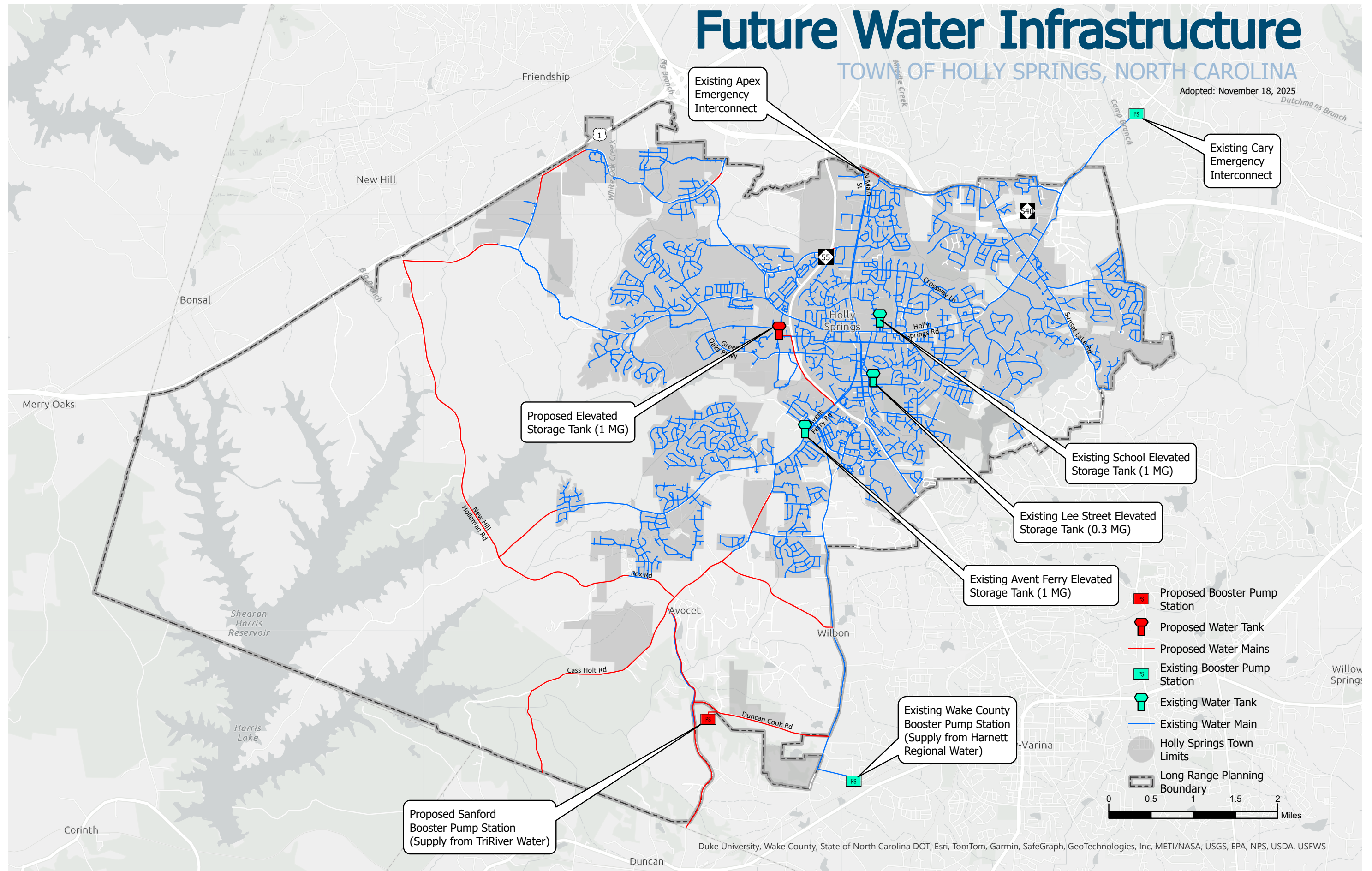
Based on current growth forecasts, the Town of Holly Springs anticipates a buildout water demand of approximately 22 MGD. To meet this projected need, phased infrastructure improvements will be required throughout the planning horizon to ensure the system can reliably support future demand. The Town routinely updates demand projections to ensure anticipated growth is in line with current infrastructure planning.



Future Water Infrastructure

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



TOWN PRIORITIES

Water Planning

The Town's water model serves as a critical planning tool to evaluate system-wide water demand and availability. As Holly Springs continues to grow, the model will be regularly updated to reflect changes in physical infrastructure, current usage patterns, and projected future demands. Large-scale residential and economic development projects often drive increased fire flow requirements across the distribution system.

Holly Springs currently holds an ISO Class 1 Fire Protection rating from the Insurance Services Office—a distinction that reflects the Town's commitment to public safety and infrastructure excellence. Preserving this rating remains a top priority.

Expansion of the Town's water distribution system, including transmission mains, elevated storage tanks, and enhancing a looped system, will be strategically planned to meet immediate needs while supporting long-term growth and resilience.

Water Transmission Mains

Proposed Water Transmission Main routing designs shall consider the following:

- **Topography:** Minimize high points to reduce air release valve needs for transmission mains.
- **Existing Infrastructure:** Align with existing easements and utility corridors where feasible.
- **Roadway Corridors:** Alignments shall avoid using existing NCDOT right-of-way unless approved in advance by the Town.
- **Environmental Constraints:** Minimize impacts to wetlands, riparian buffers, and protected areas.
- **Hydraulic Considerations:** Transmission mains shall be sized in accordance with the Town's water model recommendations.
- **Connectivity:** Water transmission mains sized 16" or larger shall not have individual water service connections unless approved in advance by the Town.
- **Power Transmission:** Waterlines and transmission mains located near or crossing power transmission lines shall be coordinated to meet applicable safety and separation requirements.

Waterline Connectivity

Un-looped water mains can lead to water stagnation, decreased water quality, limited available fire flow, and inconsistent service for residents and businesses located at the ends of these pipelines. By strategically eliminating or looping these mains, the Town aims to promote continuous circulation throughout the distribution system. Improved circulation helps maintain water quality standards such as optimal chlorine residuals, reduces the risk of sediment buildup, increases fire flow availability, and minimizes the potential for microbial growth. These upgrades enhance the reliability, resilience, and consistency of water delivery in all service areas.

Elevated Water Storage Tank Recommendations

The Town of Holly Springs considers the construction of additional elevated water storage tanks—informed by the Town's water model—as strategic infrastructure investments. This initiative is driven by several key objectives:

- Ensuring reliable water pressure and delivery to all users
- Supporting new residential, commercial, and industrial developments
- Improving operational efficiency



Priority Investment Areas

In alignment with the Town's water modeling efforts, Priority Investment Areas will be designated to guide additional future strategic infrastructure investment. These areas represent the highest priorities for water improvements and are selected based on system performance, growth projections, and operational needs.

Continuing to invest in these areas enables the Town to:

- Focus community investment where they will deliver the greatest impact.
- Address aging infrastructure and alleviate capacity constraints in rapidly developing zones.
- Ensure timely upgrades to water transmission mains, distribution waterlines, and elevated water storage tanks.

All infrastructure investments will be evaluated not only for their near-term benefit, but also for their long-term value and alignment with the Town's broader planning and sustainability goals.

Future priority Investment Areas are currently being assessed in conjunction with the Town's ongoing water model development and calibration. A detailed map illustrating these designated areas will be included in the updated documentation, scheduled for release in early 2026.

New Development Coordination

All new developments within the Town must incorporate water infrastructure that meets current Town standards, including both domestic supply and fire flow requirements. Proposed infrastructure sizing will align with the Town's hydraulic model to ensure system reliability and support future residential, commercial, and industrial growth. To accomplish this, the Town will engage proactively with developers during the planning and design phases, confirming that water mains, service connections, and meters are integrated into site plans. Development submissions will undergo review for compliance with water service standards, and technical guidance will be provided to facilitate integration with the Town's water system.

IMPLEMENTATION PLAN

Water—Provide a reliable, safe, and sustainable potable water supply for Holly Springs’ growing population, supporting economic development and protecting public health and the environment.

ACTION NUMBER	ACTION/TASK	DEPARTMENTS	TIMEFRAME
1	Update and implement a multi-year CIP for water projects.	Utilities + Infrastructure	Near-Term
2	Implement advanced metering and leak detection technologies for efficient water management.	Utilities + Infrastructure	Ongoing
3	Monitor water quality and adapt operations to meet evolving regulatory standards.	Utilities + Infrastructure	Near-Term
4	Seek diverse funding sources, including grants and developer contributions, for system improvements.	Utilities + Infrastructure	Near-Term
5	Prioritize investments in aging infrastructure and areas with capacity constraints.	Utilities + Infrastructure	Medium-Term
6	Maintain and upgrade water mains, booster pump stations, and elevated storage tanks to meet future demand.	Utilities + Infrastructure	Ongoing
7	Expand water supply capacity through regional partnerships.	Utilities + Infrastructure	Ongoing
8	Promote water conservation through public engagement and incentive programs.	Utilities + Infrastructure	Ongoing
10	Align water system planning with projected population growth and land use changes.	Utilities + Infrastructure Development Services	Ongoing
11	Regularly update hydraulic model and conduct field testing to guide infrastructure investments.	Utilities + Infrastructure	Ongoing
12	Foster community engagement in water conservation and infrastructure planning.	Utilities + Infrastructure	Ongoing

Key

Near-Term	1 to 2 years
Medium-Term	3 to 5 years
Long-Term	6 to 10 years
Ongoing	Continuous

SUSTAINABILITY AND RESILIENCE INITIATIVES

- **Enhancing Fire Flow:** The Town is committed to improving fire flow capacity across its water distribution network to bolster public safety and ensure that sufficient water is available for emergencies. Targeted system improvements include upgrading undersized water mains, installing additional hydrants in strategic locations, and optimizing the operation of booster pump stations and elevated storage tanks to maintain consistent pressure during periods of high demand. These initiatives are guided by ongoing fire flow testing and hydraulic modeling, which help identify areas where enhancements are needed most. By prioritizing fire flow improvements, the Town supports robust emergency response capabilities, reduces the risk of property damage, and ensures compliance with fire protection standards as the community continues to grow.
- **Replace Aging Pipes and Pipes Constructed of Obsolete Materials:** Proactive replacement of aging water mains and pipes made from obsolete or non-standard materials strengthens system reliability, reduces the risk of breaks, and supports long-term water quality and service continuity. The Town of Holly Springs has prioritized this initiative to address the challenges posed by deteriorating infrastructure, which can lead to leaks, frequent repairs, and potential contamination risks. By systematically identifying sections of the distribution system most in need of upgrades—using asset management data, historical maintenance records, and condition assessments—the Town is able to plan and execute targeted pipe replacement projects. Upgrading to modern, corrosion-resistant pipe materials improves hydraulic performance and reduces maintenance costs over time. Additionally, replacing outdated pipes aligns with regulatory requirements and supports the Town’s broader sustainability goals, ensuring that the water system remains resilient and capable of meeting future demand as the community grows.
- **Community Engagement and Conservation Education:** Ongoing public outreach encourages responsible water use and conservation across households and businesses. Water conservation efforts by Town residents and businesses can reduce strain on the existing water infrastructure systems and allow for additional development with the current Town capacity. Through educational workshops, informational materials, and community events, residents are equipped with the knowledge and tools to reduce consumption, utilize water-efficient fixtures, and adopt best practices such as fixing household leaks. These efforts foster a culture of sustainability, allow for development while reducing the urgency of infrastructure improvements, and empower the community to play an active role in preserving the Town’s potable water resources.



CHAPTER

3

SANITARY SEWER SYSTEM

WHAT'S INSIDE:

System Description

Existing System Analysis

Demand Forecasting

Town Priorities

Implementation Plan

Sustainability and Resilience Initiatives

SYSTEM DESCRIPTION

The Town of Holly Springs maintains a complex sanitary sewer system, designed to support the current and future needs of a rapidly growing community. The system incorporates a network of gravity sewers, pump stations, and force mains, conveying wastewater from homes, businesses, and public facilities to the Utle Creek Water Reclamation Facility (UCWRF). The UCWRF discharges into Utle Creek, a tributary of the Cape Fear River. The system's goal is to ensure reliable, environmentally responsible wastewater collection and treatment, safeguarding public health and the region's vital water resources.

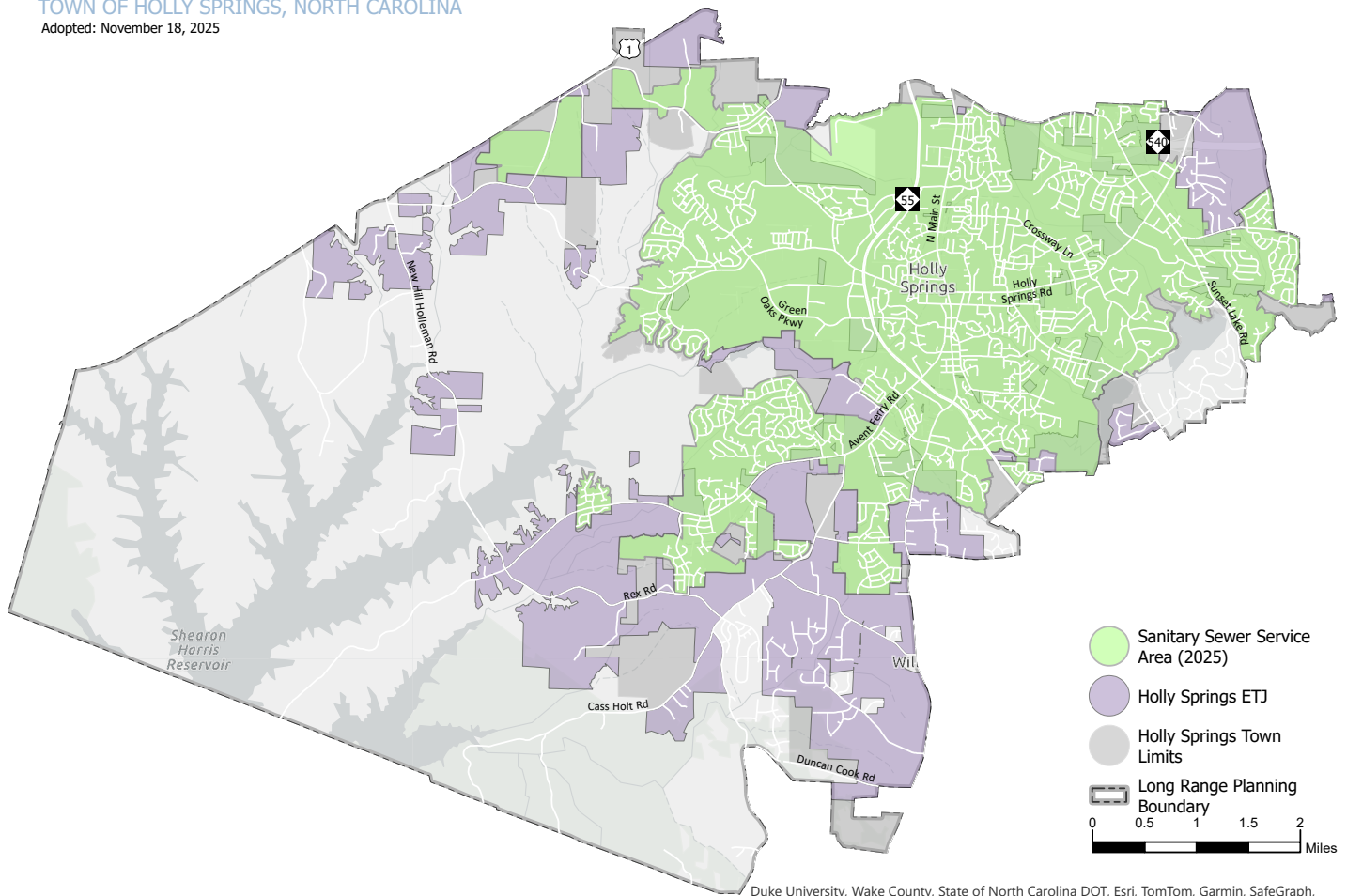
Service Area Map

The sanitary sewer service area includes residential neighborhoods, commercial corridors, industrial parks, and municipal facilities. The boundaries are established to ensure efficient service delivery, minimize environmental impacts, and accommodate future growth

Sanitary Sewer Service Area

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

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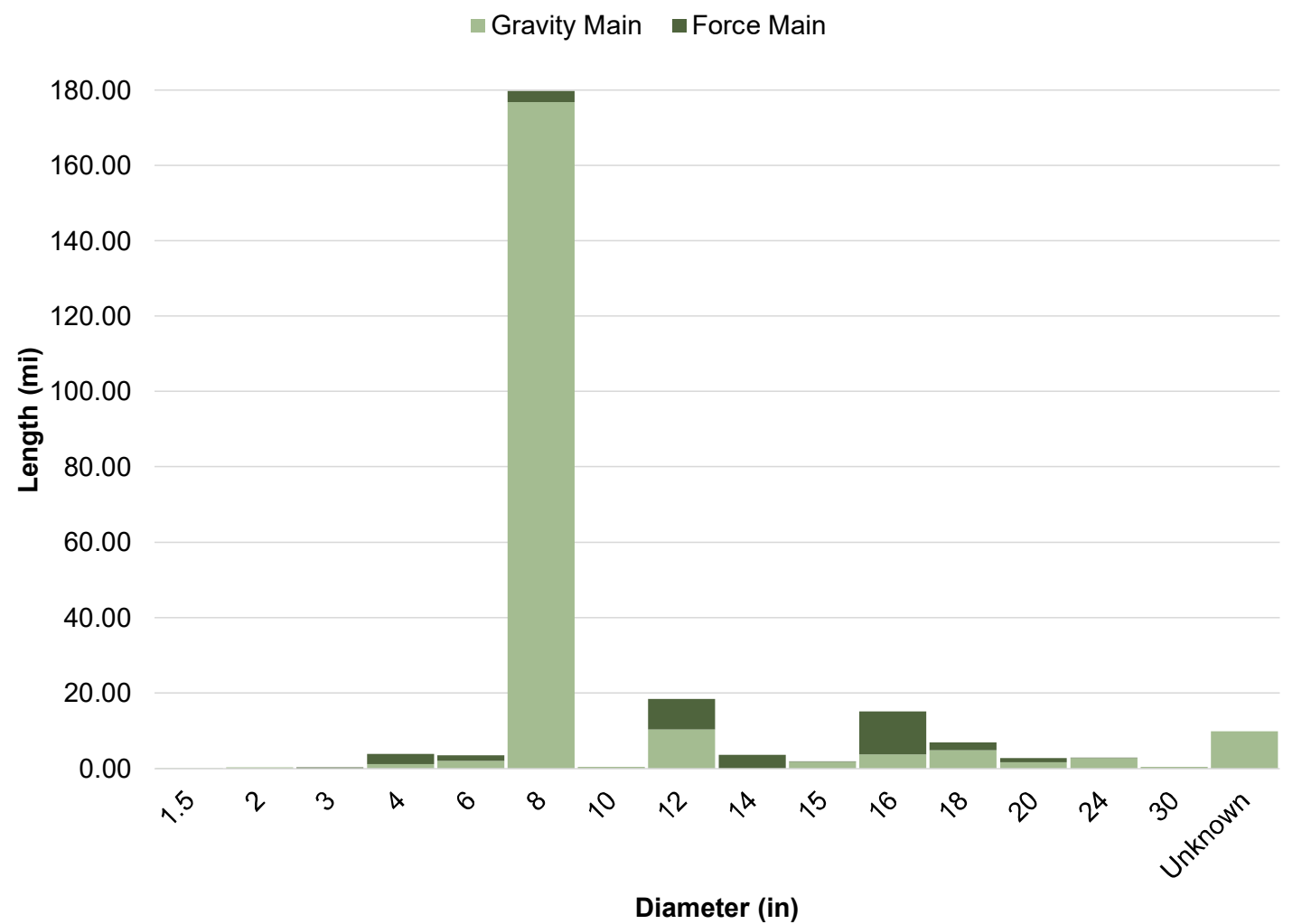


Inventory and Description of Existing Infrastructure

The existing sanitary sewer infrastructure serving current residents and businesses in Holly Springs consists of the following primary components:

- **Utle Creek Water Reclamation Facility:** The UCWRF is the wastewater treatment facility that services the Town of Holly Springs. It receives and treats up to 6 MGD of wastewater collected from gravity sewers, pump stations, and force mains within the Town’s service area, ensuring that discharged effluent meets environmental standards and supports sustainable community growth. The UCWRF treats wastewater to meet the standards for reclaimed water distribution.
- **Gravity Sewers:** Gravity sewers run downhill and are the main method of conveying wastewater to pump stations and treatment plants. Holly Springs maintains approximately 216 miles of gravity sewer pipes ranging from 4-inch diameter laterals serving residential streets up to 30-inch trunk mains transporting flows from multiple sewer basins. A trunk sewer is a large-capacity pipeline that collects wastewater from multiple smaller mains and conveys it toward a regional pump station or treatment facility.
- **Pump Stations:** Sanitary sewer pump stations pressurize and lift wastewater in low-lying areas to convey it towards the UCWRF. The Town currently operates 23 strategically located pump stations.
- **Force Mains:** Pressurized pipelines transport wastewater from pump stations to gravity mains, downstream pump stations, or directly to the UCWRF. Holly Springs maintains approximately 34 miles of force main pipes ranging from 3-inch to 24-inch diameter.

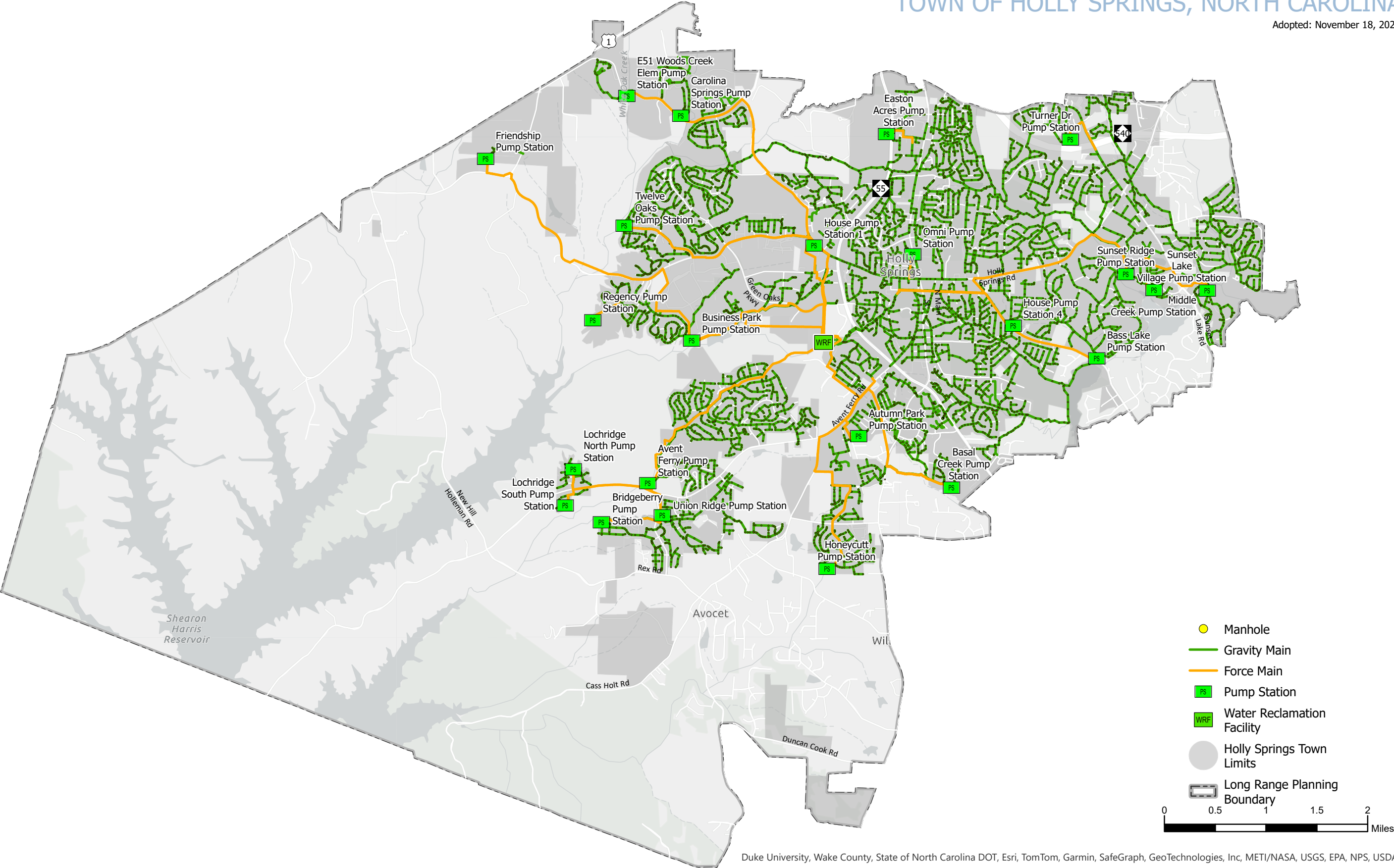
The Town of Holly Springs’ existing GIS mapping data for the sanitary sewer system, maintained by the Town, was utilized in the sanitary sewer system analysis. A comprehensive analysis was conducted to assess the capacity and performance of the existing sanitary sewer system.



Existing Sanitary Sewer System

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

EXISTING SYSTEM ANALYSIS

System Flow Monitoring

Flow monitoring devices and rain gauges were installed for a three month period in strategic locations throughout the sanitary sewer network to collect data on wastewater volumes, velocity, depth, and rainfall amounts. Flow monitoring targets wet weather periods to quantify infiltration and inflow (I/I). Infiltration and inflow (I/I) refers to the unintended entry of groundwater (infiltration) and stormwater (inflow) into the sanitary sewer system, which can lead to sanitary sewer overflows, increased operational costs at pump stations and treatment plants, and infrastructure damage. The data collected informs future system upgrades and maintenance priorities.

Sanitary Sewer Model Development and Calibration

A hydraulic model of the Town's sanitary sewer system was developed to allow the Town to better understand the impact of growth and future sanitary sewer demands. Using a specialized hydraulic modeling software that enables simulation and analysis of complex sewer networks, the model quantifies how much sanitary sewer flow the system can convey and identifies potential deficiencies so that they may be addressed before becoming a problem. The model incorporates infrastructure data from existing GIS and as-built drawings, flow monitoring results, and future land use information. Calibration was performed by adjusting the model to achieve agreement between predicted and observed flows at key locations. This process ensures reliable predictions of system behavior for the current day and in the future.

Wastewater Treatment

The Town of Holly Springs treats wastewater at the UCWRF, which currently operates at 6 million gallons per day (MGD). A planned expansion of this facility will increase capacity from 6 MGD to 8 MGD by 2029, supporting near-term growth projections and maintaining service reliability.

Looking beyond 2029, the Town is proactively exploring additional alternatives to further expand wastewater treatment capacity beyond 8 MGD. Developers are encouraged to design projects that fit within the existing treatment limits or contribute to long-term infrastructure solutions.

Based on current growth forecasts, the Town of Holly Springs anticipates a future treatment capacity at build out of the Town's future service area of approximately 16 MGD. To meet this projected need, phased infrastructure improvements will be required throughout the planning horizon to ensure the system can reliably support future demand.

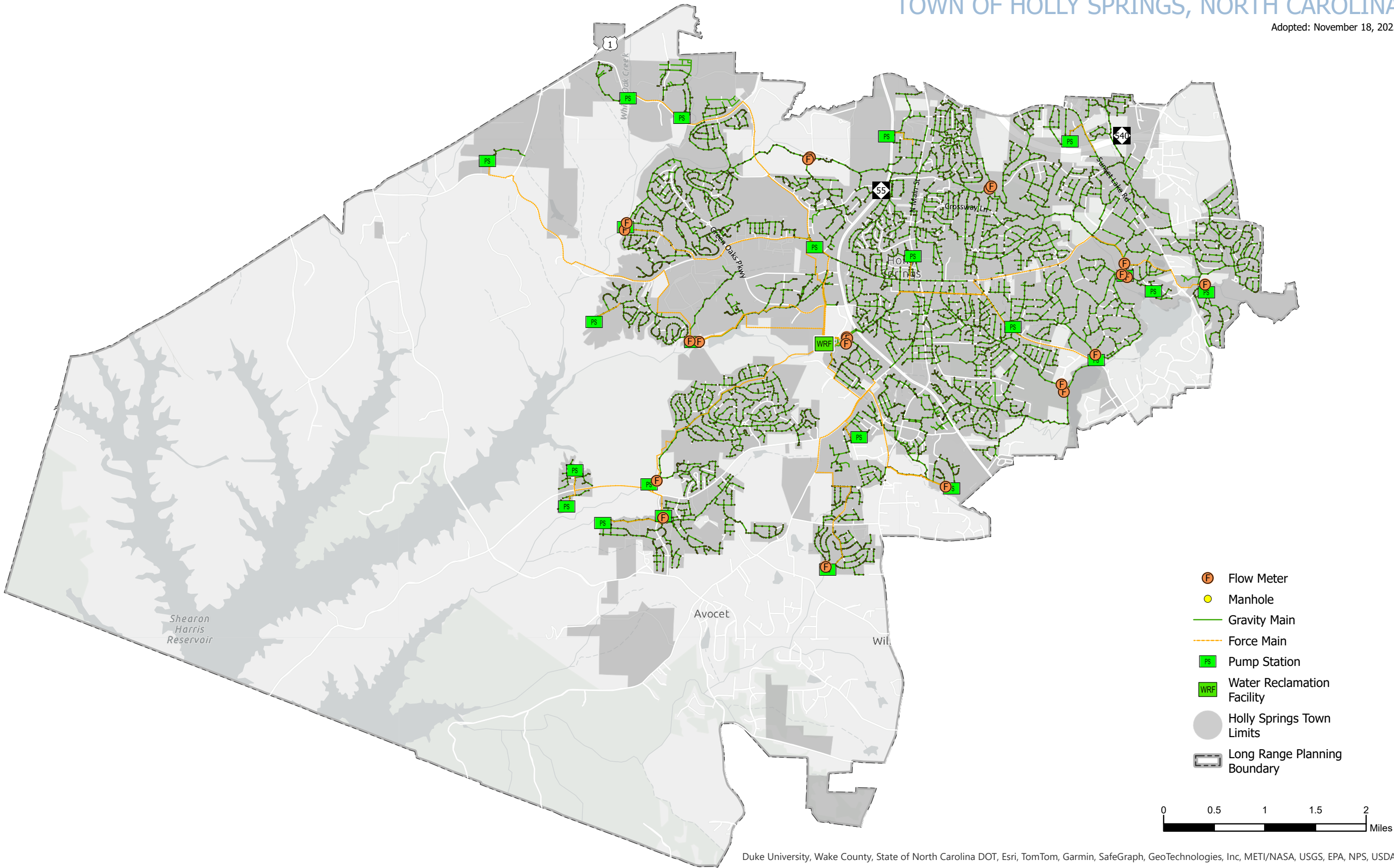
The Town's ability to secure additional treatment capacity will directly influence its capacity to support future development. As such, infrastructure planning and investment remain critical to sustaining growth and protecting public health. The Town routinely updates demand projections to ensure anticipated growth is in line with current infrastructure planning.

This model will be used by the Town as a tool to understand sanitary sewer capacity/availability in the system, and when detailed capacity studies may be required.

Sanitary Sewer Flow Meter Locations

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

DEMAND FORECASTING

Population and land use projections were developed in coordination with **Section 1: Land Use and Character Plan | Small Area Plans** of the Comprehensive Plan. Demand forecasting considers:

- Planned residential, commercial, and industrial developments
- Per capita wastewater generation rates
- Inflow and infiltration contributions

These forecasts inform the sizing and phasing of future system improvements to prevent capacity issues and maintain regulatory compliance.

Future System Analysis

With continued growth expected in Holly Springs, the sanitary sewer system must adapt to serve new development while maintaining service to existing customers. As described in Section 1, sanitary sewer flow forecasting was completed to project future sanitary sewer flows in accordance with the Town's Future Land Use Map (FLUM), which can be found online on the Town of Holly Springs website.

Basin Planning

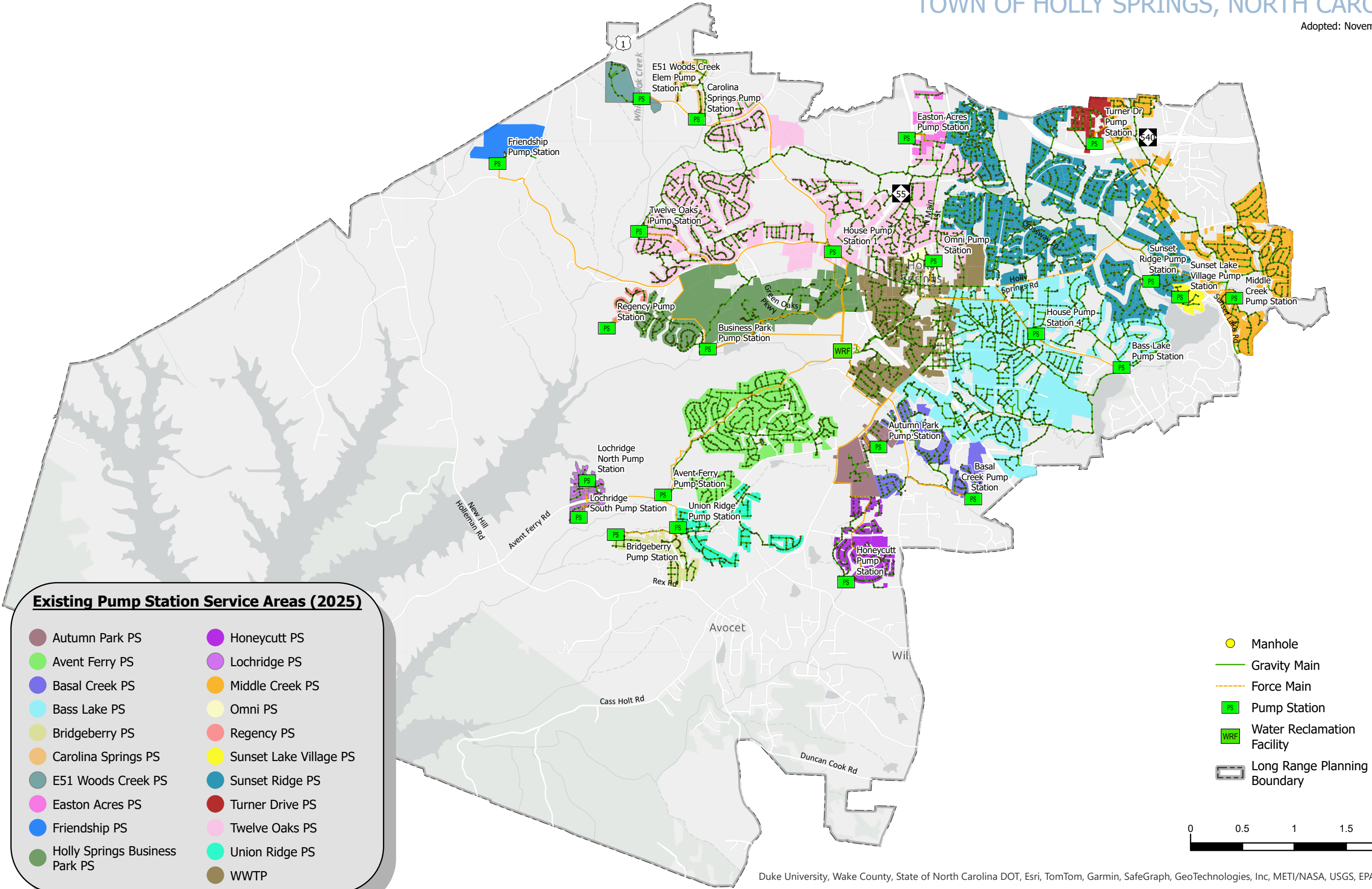
The Town is divided into multiple sanitary sewer basins each draining to the UCWRF. A sanitary sewer basin is a defined geographic area within a town or city where wastewater generated by homes and businesses is collected and conveyed through a network of gravity sewer pipes and outfall to pump stations. Each basin typically includes all the properties and infrastructure that drain into a particular pump station. Basin planning ensures balanced flows, avoids bottlenecks, and prioritizes upgrades where they are most needed. Critical basins are analyzed for capacity limitations and opportunities to optimize pump station placement. These basins are served by existing pump stations or drain directly to the plant. The following map shows existing sanitary sewer connections and their downstream pump stations or other existing sanitary sewer infrastructure.



Existing Pump Station Service Areas

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

TOWN PRIORITIES

Sanitary Sewer Planning

The sanitary sewer model will be used as a tool to understand and evaluate the sanitary sewer capacity/availability in the system. As growth of the Town's sanitary sewer system continues, updates to the sanitary sewer model addressing physical system growth, existing flows, and future growth will be incorporated.

Growth of the Town's sanitary sewer system via gravity sewer, force mains, and pump stations shall balance short-term needs with planned future growth. Designs involving public sanitary sewer infrastructure shall be in accordance with the Town's Engineering Design and Construction Standards.

Proposed trunk sewer and force main routing designs shall consider the following:

- **Topography:** Avoid steep grades and minimize high points to reduce air release valve needs for force mains, and minimize pipelines being installed at depths of 20' or deeper.
- **Existing Infrastructure:** Align with existing easements and utility corridors where feasible.
- **Roadway Corridors:** Force main alignments shall avoid using existing NCDOT right-of-way unless approved in advance by the Town and NCDOT.
- **Environmental Constraints:** Minimize impacts to wetlands, riparian buffers, and protected areas unless unavoidable.
- **Future Development:** Coordinate with the FLUM and anticipated growth zones.
- **Property Limits:** Sanitary sewer lines installed by property owners should be constructed along the full extent of the adjacent right-of-way or through the entire property as appropriate to permit further extension to adjacent properties.
- **Accessibility:** Developers should provide sanitary sewer service to all lots within a subdivision and provide service to all upstream adjacent properties.
- **Force Main Velocity:** Pump station and force main designs shall ensure that velocity ranges for sewage in force mains meet applicable state and local requirements and are adequate to avoid solids settling.
- **Developer Responsibilities:** Developers shall be responsible for funding system upgrades required to accommodate the additional sanitary sewer demands generated by their projects.
- **Power Transmission:** Sanitary sewer pipelines and facilities located near or crossing power transmission lines shall be coordinated to meet applicable safety and separation requirements.

Pump station designs shall consider the following:

- **Sizing:** Each pump station must be sized to serve the entire sanitary sewer basin at buildout, reflecting projected land use and population growth. To size pump stations for buildout, phasing may be implemented.
- **Impacts to Surrounding Areas:** Pump stations should be located and designed to minimize noise, odor, and other nuisance conditions in surrounding areas.
- **Location:** Pump Station locations should efficiently serve the defined sanitary sewer basin with appropriate flow considerations. Locations for future pump stations shall be determined in accordance with the Master Plan and Comprehensive Plan.
- **Gravity Sewer:** It is recommended to evaluate gravity sewer alternatives prior to implementing pump station alternatives. The use of pump stations will be assessed in alignment with the Master Plan under specific conditions.

New Development Coordination

All new developments within the Town must incorporate sanitary sewer infrastructure that meets current Town standards, including required improvements to the Town's sanitary sewer collection system including gravity sewer, pump stations, and force mains. Proposed infrastructure sizing will align with the Town's sanitary sewer model to serve the entire basin at buildout and support future residential, commercial, and industrial growth. To accomplish this, the Town will engage proactively with developers during the planning and design phases, confirming that gravity sanitary sewer, pump stations, force mains, and service connections are integrated into site plans. Development submissions will undergo review for compliance with sanitary sewer standards, and technical guidance will be provided to facilitate integration with the Town's sanitary sewer system.

Regional Pump Station Recommendations

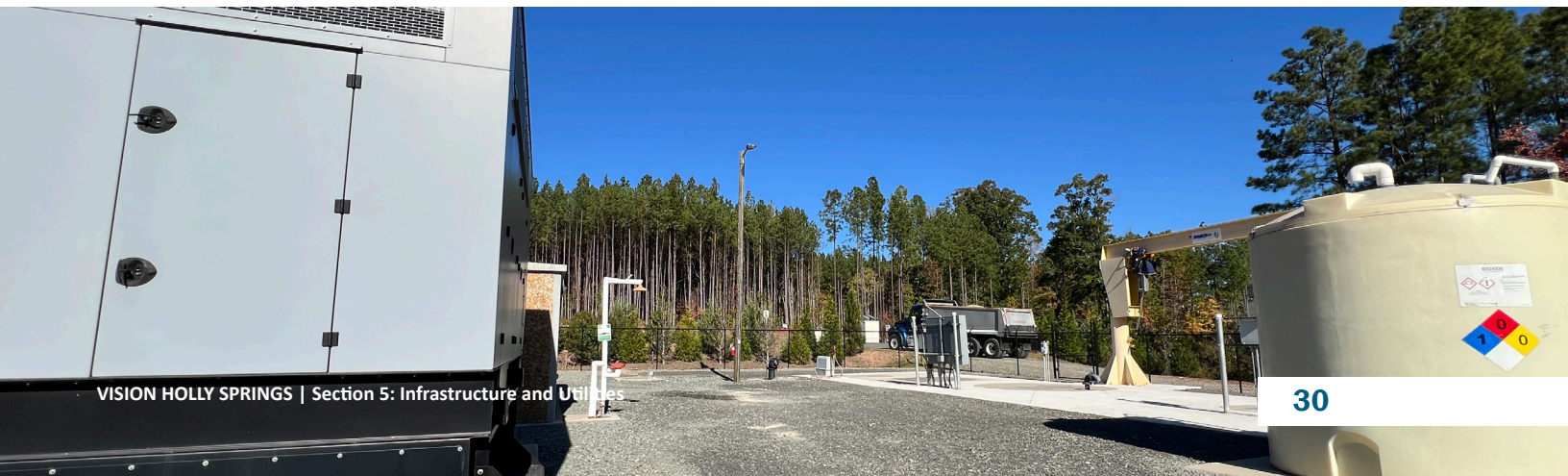
The Town of Holly Springs views the development of regional pump stations as a strategic investment in infrastructure. These regional pump stations will provide regional capacity for sanitary sewer, within the upstream basin. In addition to gravity sanitary sewer extensions, additional local pump stations may be required within the basin boundaries to convey wastewater to the proposed regional pump station locations. The development of these regional pump stations will be driven by several key objectives:

- Enhancing system resilience and redundancy
- Eliminates interim pump stations
- Improving operational efficiency
- Supporting projected growth in targeted sanitary sewer basins at full build out
- Reducing the risk of sanitary sewer overflows (SSOs) during peak flow conditions

Proposed locations for regional pump stations include:

- Sweet Springs Regional Pump Station (Expected to pump to the proposed Buckhorn Creek Regional Pump Station)
- Buckhorn Creek Regional Pump Station
- East Regional Pump Station
- New Hill Regional Pump Station
- Norris Branch Regional Pump Station (Expected to consolidate the Lochridge South, Union Ridge Avent Ferry, and Bridgeberry Pump Stations)
- White Oak Regional Pump Station (Expected to pump to the proposed New Hill Regional Pump Station)
- Middle Creek Regional Pump Station (Upgrades to an existing pump station)

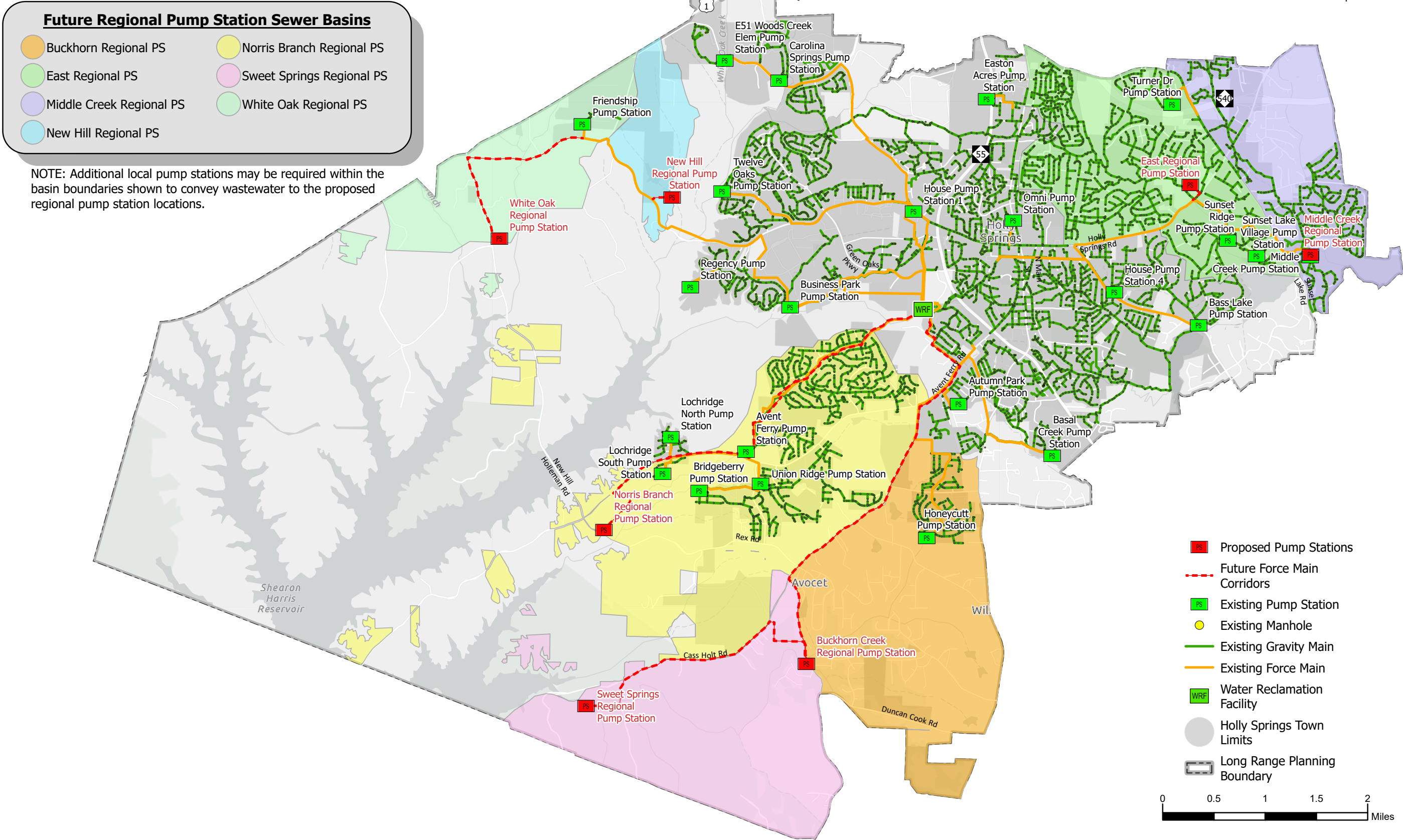
As new regional pump stations are brought online, the Town aims to optimize the sanitary sewer network by redirecting flows and consolidating existing pump stations wherever feasible. Final locations of Regional Pump Stations should consider opportunities to abandon other existing pump stations. For example, the Buckhorn Creek Pump Station may allow for the abandonment of Honeycutt Pump Station and other currently proposed pump stations.



Future Regional Pump Station Locations

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS



Priority Investment Areas

In alignment with the Town's sanitary sewer modeling efforts, Priority Investment Areas will be designated to guide strategic infrastructure investment. These areas represent the highest priorities for sanitary sewer improvements and are selected based on system performance, growth projections, and operational needs.

Investing in these areas enables the Town to:

- Focus community investments where they will deliver the greatest impact.
- Address aging infrastructure and alleviate capacity constraints in rapidly developing zones.
- Ensure timely upgrades to trunk lines, pump stations, and force mains.

All infrastructure investments will be evaluated not only for their immediate utility, but also for their long-term value and alignment with the Town's broader planning and sustainability goals.

Priority Investment Areas are currently being assessed in conjunction with the Town's ongoing sanitary sewer model development, calibration, and master planning. A detailed map illustrating these designated areas will be included in the updated documentation, scheduled for release in early 2026.

IMPLEMENTATION PLAN

Sanitary Sewer—Provide resilient, environmentally responsible wastewater collection and treatment that safeguards public health, supports sustainable growth, and protects regional water resources.

ACTION NUMBER	ACTION/TASK	DEPARTMENTS	TIMEFRAME
1	Update and implement a multi-year CIP for sanitary sewer projects.	Utilities + Infrastructure	Near-Term
2	Reduce inflow and infiltration through proactive maintenance and rehabilitation of aging infrastructure.	Utilities + Infrastructure	Near-Term
3	Upgrade gravity sewers, pump stations, and force mains to accommodate future flows and reduce overflows.	Utilities + Infrastructure	Ongoing
4	Seek diverse funding sources, including grants and developer contributions, for system improvements.	Utilities + Infrastructure	Near-Term
5	Implement comprehensive flow monitoring and hydraulic modeling to identify and address system deficiencies.	Utilities + Infrastructure	Near-Term
6	Expand and modernize the Utley Creek Water Reclamation Facility to increase treatment capacity.	Utilities + Infrastructure	Ongoing
7	Develop regional pump stations to consolidate facilities and enhance system resilience.	Utilities + Infrastructure	Long-Term
8	Engage developers in funding and designing infrastructure upgrades required for new projects.	Utilities + Infrastructure, Development Services	Ongoing
9	Promote community education on water conservation and pollution prevention.	Utilities + Infrastructure	Ongoing

Key

Near-Term	1 to 2 years
Medium-Term	3 to 5 years
Long-Term	6 to 10 years
Ongoing	Continuous

SUSTAINABILITY AND RESILIENCE INITIATIVES

- **Regional Pump Stations:** To support long-term resilience and accommodate anticipated growth, the Town of Holly Springs prioritizes the strategic upgrade and installation of regional pump stations. These investments are designed to enhance system reliability, improve operational efficiency, and reduce the risk of service interruptions. As part of the Town's sustainability initiatives, new pump stations incorporate energy-efficient pumps and advanced control systems, along with backup power capabilities to ensure uninterrupted service during severe weather events or power outages. Additionally, regional pump stations offer opportunities to consolidate existing facilities, thereby reducing the number of assets the Town must operate and maintain—streamlining operations and lowering lifecycle costs.
- **Rehabilitation and Replacement of Aging Gravity Mains:** Proactively identifying and rehabilitating or replacing aging gravity sewer mains is essential to prevent failures, reduce inflow and infiltration, and extend infrastructure lifespan. These efforts protect public health and the environment while maintaining regulatory compliance. Sustainability is supported through trenchless technologies that minimize surface disruption, and resilience is enhanced by prioritizing upgrades in flood-prone or high-risk areas.
- **Inflow and Infiltration Reduction:** Employing comprehensive flow monitoring and proactive maintenance programs helps identify and address sources of inflow and infiltration throughout the sanitary sewer system. Regular inspections and targeted repairs help reduce excess stormwater and groundwater entry, optimizing system capacity and lowering the risk of sanitary sewer overflows. These initiatives support sustainability by reducing unnecessary treatment volumes and energy use, and resilience by improving system performance during heavy rainfall and storm events.
- **Community Engagement and Education:** Ongoing outreach initiatives promote water conservation and pollution prevention among residents and businesses. Through educational campaigns, workshops, and collaborative events, the Town encourages responsible water use and proper waste disposal. These efforts empower the community to actively support the sanitary sewer system, protect water resources, and contribute to long-term sustainability. Resilience is fostered by building public awareness and preparedness for infrastructure challenges.
- **Water Quality Improvements:** Planned upgrades at UCWRF aim to improve the quality of treated effluent, further protecting Utle Creek and the Town's water resources. Sustainability is advanced through the integration of nutrient removal technologies and energy-efficient treatment processes. Resilience is supported by enhancing the facility's capacity to handle peak flows and adapting to future regulatory requirements.



CHAPTER

4

STORMWATER SYSTEM

WHAT'S INSIDE:

System Description

Existing Stormwater Program

Future Stormwater Program

Implementation Plan

Sustainability and Resilience Initiatives

SYSTEM DESCRIPTION

The Town of Holly Springs owns and operates a Municipal Separate Storm Sewer System (MS4) within its corporate limits in Wake County, North Carolina. The MS4 discharges into both the Neuse River Basin and Cape Fear River Basin. Receiving waters include Middle Creek, Basal Creek, Rocky Branch, Little White Oak Creek, White Oak Creek, Big Branch, Little Branch, Utley Creek, Norris Branch, Cary Branch, Jim Branch, Buckhorn Creek, and several unnamed tributaries.

Current MS4 GIS mapping of the public and private storm sewer system includes locations of manholes, junction boxes, culvert pipes and road crossings, ditches and discharges, as well as associated material and size descriptions associated with each of these features. The public system is owned, operated, and maintained by the Town, while the private system is located on private property and not owned or maintained by the Town. These may include pipes serving individual developments, subdivisions, or commercial properties outside the public right-of-way or municipal easements. Most of the storm sewer system (public and private) has been mapped and is regularly updated as new development occurs. The Town requires digital as-built to be submitted as part of the development process, and this information is added to the existing mapping so that a current database is maintained. The map on the following page shows the Town's current service area along with the extent of mapping of the conveyance system owned and maintained by the Town.

Several documents were referenced for the current update of the Comprehensive Plan, including:

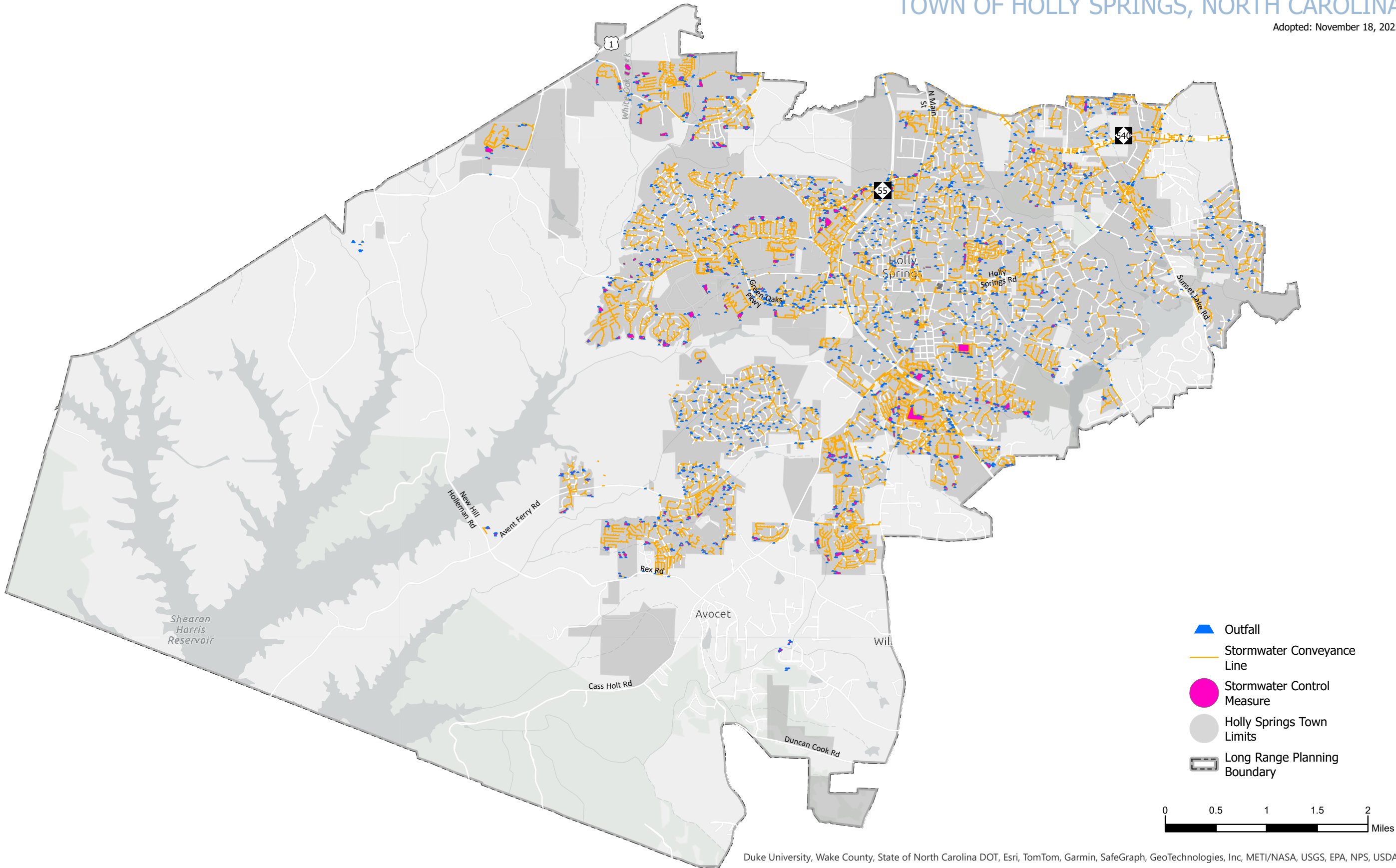
- Town of Holly Springs Secondary and Cumulative Impacts Mitigation Management Plan (2025)
- Town of Holly Springs Stormwater Management Plan (2023)
- Town of Holly Springs NPDES MS4 Permit No. NCS000495 (2023)
- Town of Holly Springs Sustainability Action Plan (2023)
- Upper Middle Creek Watershed Action Plan (2020)
- Vision Holly Springs Comprehensive Plan (2007)
- Interviews with Town staff



Existing Stormwater System

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

EXISTING STORMWATER PROGRAM

Stormwater management in the Town of Holly Springs encompasses both point and non-point source runoff, with the goal of reducing downstream erosion, water quality degradation, and flooding, as well as mitigating the adverse effects that land use changes have on the aquatic environment. Under the Clean Water Act, both point and non-point sources are regulated through the National Pollutant Discharge Elimination System (NPDES) permit program. The Town's NPDES Phase II MS4 Permit became effective December 1, 2005, and requires the implementation of six minimum control measures:



Public Education and Outreach



Construction site stormwater runoff control



Public involvement and participation



Post-construction stormwater management for new development and redevelopment



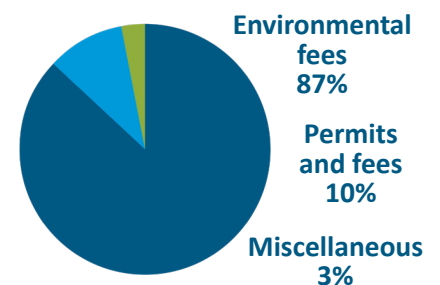
Illicit discharge detection and elimination



Pollution prevention/good housekeeping for municipal operations

The Town must maintain adequate funding and staffing to implement and manage the provisions of the Stormwater Management Plan, comply with the requirements of the NPDES Phase II MS4 Permit, and manage the Town's storm sewer system. The Stormwater Enterprise Fund, established in 2014, funds the programmatic elements that maintain MS4 permit compliance. In FY2024-25, the stormwater fund collected approximately \$1.79 million in operating revenue, with 87% from environmental fees, 10% from permits and fees, and 3% from miscellaneous sources. Residential properties pay a flat monthly fee, while commercial properties are charged a fee according to a unit of measure of impervious surface defined as an "Equivalent Residential Unit" or ERU. The current level of funding allowed the Town to secure a dedicated stormwater maintenance crew that performs needed maintenance and repairs on the existing storm sewer system.

**FY2024-25
Stormwater Fund Revenue
\$1.79M**



In partnership with:



**using outreach and
education to improve
water quality**

The intent of the Stormwater Utility Fee is to provide an avenue for community investment projects and maintenance of the Town's storm drainage network, in addition to the programmatic and administrative functions required for MS4 permit compliance. However, sufficient funding is not currently available to fund these initiatives. Historically, reserve funding has been used to fund larger CIP projects, but the current level of funding is also not sufficient to replenish or build up resources to fund periodic implementation of CIP projects.

Despite the current funding limitations, the Town is proactively managing the storm sewer system, using Cityworks software to track the age of infrastructure and utilize lifecycle management tools to plan for future community investment projects when additional funding becomes available. This tool is also being used to transition to data-driven decision-making for asset management. For example, infrastructure data informs a weighted prioritization matrix developed by the Town to guide decision-making when programming and scheduling maintenance and repair projects as funding allows.

FUTURE STORMWATER PROGRAM

To continue the core mission of meeting regulatory requirements and community needs while also building upon its current success, the Town's Stormwater Program will expand its scope across five strategic focus areas: infrastructure planning, programs, local regulations, treatment regionalization, and implementation. These areas reflect the Town's commitment to proactive planning, environmental stewardship, and resilient development.

Infrastructure Planning

The Town will continue to refine data collected on the stormwater system within the MS4 service area. This data is a foundational component that will enable a Town-wide Stormwater Infrastructure Capacity Study to assess current system capacity and model future conditions that are based on the Future Land Use Map (FLUM) and the impacts of climate change such as increased rainfall intensities. The Town of Holly Springs FLUM can be found online on the Town of Holly Springs website. The Town will utilize its existing framework to prioritize infrastructure upgrades and refine it as needed in response to additional data and priorities.

Programs

Programmatically, the Town will continue successful implementation of the Stormwater Management Program under NPDES Phase II regulations, including the implementation of Nutrient Sensitive Waters (NSW) rules, post-construction stormwater controls, and the Flood Damage Prevention Program. Strict enforcement of post-construction controls and SCM maintenance agreements will continue.

Moving forward, the Town will use the EPA's Nine Minimum Elements of a Watershed Plan (which guides communities in creating effective watershed plans to reduce pollution and improve water quality) to qualify for and pursue funding through the Section 319 Grant Program to assist with project implementation and improve water quality within the MS4 service area. A pilot program for green street designs in Innovation Villages and Regional Centers as defined in the Future Land Use Map will be developed to manage stormwater runoff and enhance placemaking within high-density areas. The Town will encourage low-impact development (LID) and permeable surfaces across all land uses, especially in high-density zones, and incentivize maximizing open space in proposed developments, similar to the approach required for Conservation Developments.



Rain garden integrated to urban environment (KH, Hillsborough Street). Anchors space and creates a “place” / landmark.

Local Regulations

Looking ahead, Holly Springs intends to update its local stormwater regulations to improve alignment of development with environmental stewardship and community resiliency. The Town recognizes that rapid growth places pressure on streams, wetlands, and floodplains, and that stronger local standards are necessary to protect these resources. Future regulatory updates will emphasize green infrastructure and low-impact development as standard practices in higher-density and mixed-use areas, ensuring that new growth contributes to improved water quality, reduced flooding risk, and enhanced community amenities.

The Town also plans to strengthen requirements for hydrologic and hydraulic studies in sensitive basins and areas with known flooding concerns, providing a more standardized basis for project review and capital planning. Building on its existing enforcement of riparian buffer protections and flood damage prevention standards that exceed FEMA minimums, Holly Springs will continue to designate floodplains and critical open spaces for permanent preservation. These updates are intended not only to mitigate risk but also to create long-term benefits for residents, including safer neighborhoods, cleaner waterways, and an interconnected system of open space and greenways that supports both recreation and habitat.

New Development Coordination

All new developments within the Town must comply with current stormwater regulations and Town standards. Stormwater infrastructure shall be sized and designed in accordance with the Town's latest requirements to ensure long-term system performance and capacity. To achieve this, the Town will work proactively with developers during planning and design to confirm that all required stormwater components are fully integrated into site plans. Each development submission will undergo a comprehensive review for compliance with stormwater standards, and technical guidance will be provided to support proper design and integration.

Treatment Regionalization

The Town will perform a feasibility study to identify stormwater control measures (SCM) retrofit opportunities or locations where SCMs can be established on Town property. Retrofit projects will be prioritized for existing SCMs located in the Neuse River Basin and other critical areas. Opportunities to leverage public-private partnerships and incentivize exceeding minimum stormwater design requirements for infill development will be explored as well as partnership opportunities to fund and implement SCMs in beneficial locations for watersheds across jurisdictional boundaries. Finally, stream restoration and urban tree buffer preservation and enhancement will be prioritized in the Upper Middle Creek watershed to improve water quality where regional SCM opportunities are limited.



IMPLEMENTATION PLAN

Stormwater—Protect water quality, reduce flooding risks, and enhance community resilience through effective, sustainable stormwater management and infrastructure planning.

ACTION NUMBER	ACTION/TASK	DEPARTMENTS	TIMEFRAME
1	Develop and implement a multi-year CIP for stormwater projects.	Utilities + Infrastructure, Development Services	Near-Term
2	Promote low-impact development, permeable surfaces, and green infrastructure in new and existing developments.	Utilities + Infrastructure, Development Services	Near-Term
3	Implement a pilot program for green street designs in Innovation Villages and Regional Centers to manage stormwater runoff and enhance placemaking within high-density areas.	Utilities + Infrastructure, Development Services	Near-Term
4	Pursue Section 319 Grant Program funding for watershed improvements.	Utilities + Infrastructure, Development Services	Medium-Term
5	Conduct a Town-wide Stormwater Infrastructure Capacity Study to guide future upgrades.	Utilities + Infrastructure, Development Services	Medium-Term
6	Conduct a Town-wide study to identify stormwater control measure (SCM) retrofit opportunities to improve water quality.	Utilities + Infrastructure, Development Services	Medium-Term
7	Prioritize riparian buffer protections and flood damage prevention measures exceeding FEMA standards.	Utilities + Infrastructure, Development Services	Ongoing
8	Maintain and expand the Municipal Separate Storm Sewer System (MS4) to meet regulatory requirements.	Utilities + Infrastructure, Development Services	Ongoing
9	Implement and enforce NPDES Phase II MS4 Permit provisions, including public education, illicit discharge detection, and pollution prevention.	Utilities + Infrastructure, Development Services	Ongoing
10	Strengthen local stormwater regulations to protect streams, wetlands, and floodplains.	Utilities + Infrastructure, Development Services	Ongoing
11	Encourage community involvement in stormwater management and environmental stewardship.	Utilities + Infrastructure, Development Services	Ongoing

Key

Near-Term	1 to 2 years
Medium-Term	3 to 5 years
Long-Term	6 to 10 years
Ongoing	Continuous

SUSTAINABILITY AND RESILIENCE INITIATIVES

Sustainability is a core principle guiding how the Town of Holly Springs manages growth and delivers municipal services. The Town is committed to reducing operational costs and environmental impacts while building long-term resiliency across its systems.

Key efforts include implementing low-impact development practices, adopting sustainable purchasing practices, and supporting urban forestry initiatives—such as the Town’s Tree City USA designation and annual Arbor Day celebrations.

In alignment with these goals, the Town’s stormwater sustainability initiatives include:

- **Continue emphasis on improving water quality:** The Town will pursue available funding to assist with project implementation and improve water quality within the MS4 service area. Additionally, green street designs in Innovation Villages and Regional Centers will be encouraged to manage stormwater runoff and enhance placemaking within high-density areas. The Town will also encourage low-impact development (LID) and permeable surfaces across all land uses, especially in high-density zones, and incentivize maximizing open space in proposed developments, similar to the approach required for Conservation Developments.
- **Enforce riparian buffer protections:** The Town actively enforces regulations that establish and maintain vegetated buffer zones along streams, rivers, and other water bodies. These riparian buffers serve as natural filters, trapping sediment and pollutants before they can enter local waterways, which helps to improve water quality. Additionally, these protected areas provide essential habitat for wildlife, contribute to erosion control, and help moderate stream temperatures, ultimately supporting a healthier and more resilient ecosystem within the community.
- **Implement flood damage prevention measures:** Holly Springs has adopted floodplain management practices that go beyond the minimum standards set by the Federal Emergency Management Agency (FEMA). By instituting stricter standards, enhanced land use planning, and proactive maintenance of drainage systems, the Town reduces the risk of flood damage to homes, businesses, and public infrastructure. These measures ensure greater protection for residents and property owners, lower the likelihood of costly disaster recovery, and foster long-term community resilience in the face of increasingly frequent and severe weather events.
- **Use the Secondary and Cumulative Impacts Mitigation Management Plan (2024):** The Town utilizes this comprehensive plan to systematically assess and address the broader, long-term environmental impacts associated with ongoing growth and infrastructure development. By evaluating both direct and indirect effects on water quality, open space, and habitat, the plan enables Holly Springs to identify cumulative risks and prioritize mitigation actions. This coordinated approach ensures that development proceeds in a manner that safeguards natural resources, balances economic and environmental goals, and preserves the community’s quality of life for future generations.



CHAPTER

5

RECLAIMED WATER SYSTEM

WHAT'S INSIDE:

System Description

Existing System Analysis

Town Priorities

Implementation Plan

Sustainability and Resilience Initiatives

SYSTEM DESCRIPTION

The Town of Holly Springs Reclaimed Water System is a non-potable water distribution network intended to provide reclaimed water for residential, commercial, and industrial users. The system incorporates a network of distribution pipes, a pump station, and an elevated storage tank. Its applications include irrigation, commercial cooling, and industrial process water. The system is supplied by the Utley Creek Water Reclamation Facility (UCWRF), which treats wastewater and pumps reclaimed water into the reclaimed water distribution system. The system's goals include conserving potable water resources, diverting treated wastewater for reuse, promoting environmental sustainability, and supporting the water needs of the community.

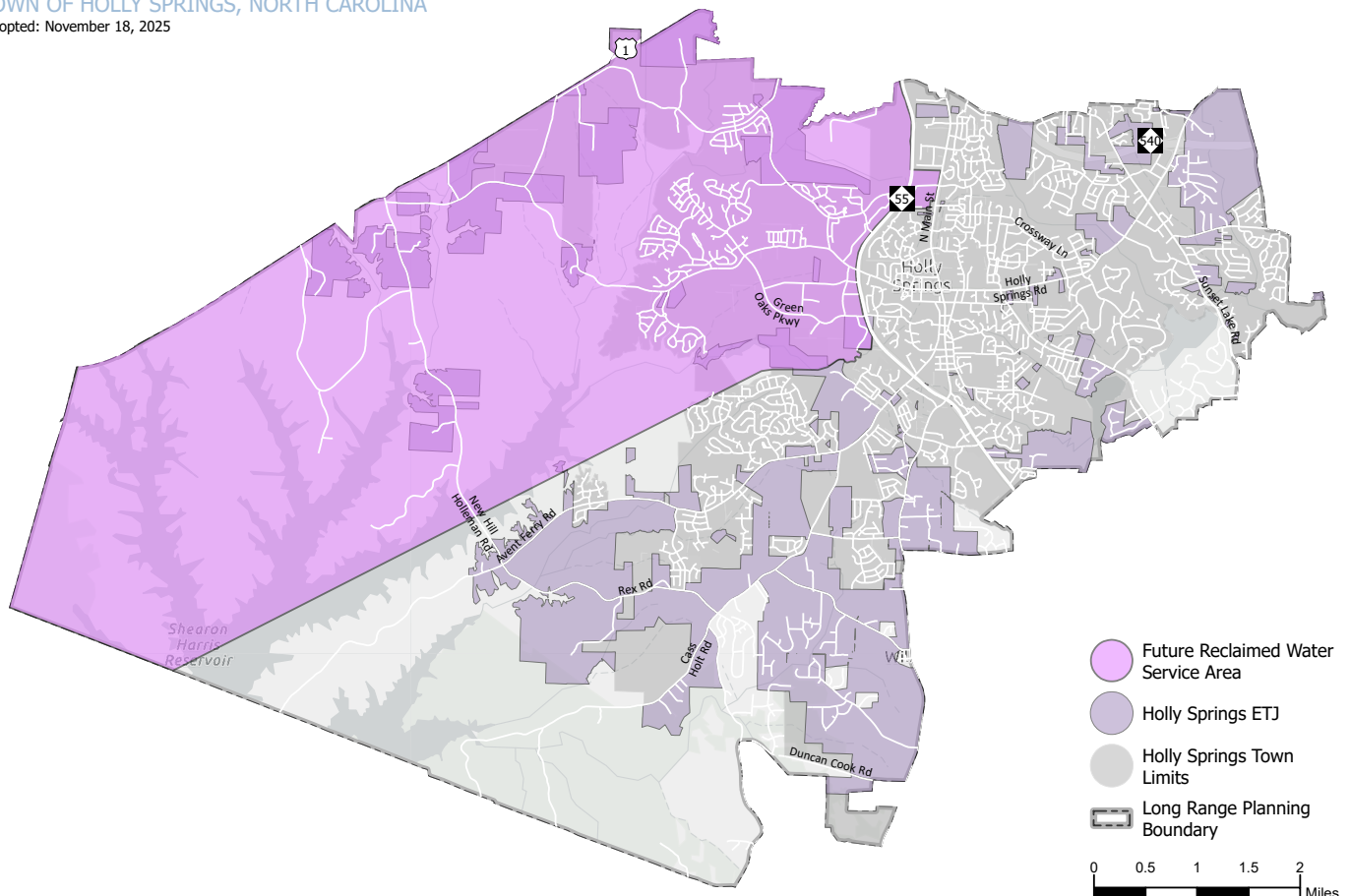
Service Area Map

The reclaimed water service area shown in the map represents the future reclaimed water service area planned by the Town of Holly Springs and spans approximately 18,000 Acres. Currently, not all areas within the Town are served by reclaimed water; service is limited to certain strategic zones that include a mix of residential, commercial, and industrial users. The system is primarily used by residential and commercial areas for irrigation. The reclaimed water service area is west of NC-55, as most development east of NC-55 occurred before reclaimed water was introduced. Installing reclaimed water mains in existing developed areas is not currently planned due to the substantial construction costs and impacts associated with introducing a new utility system into previously developed areas.

Reclaimed Water Service Area

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



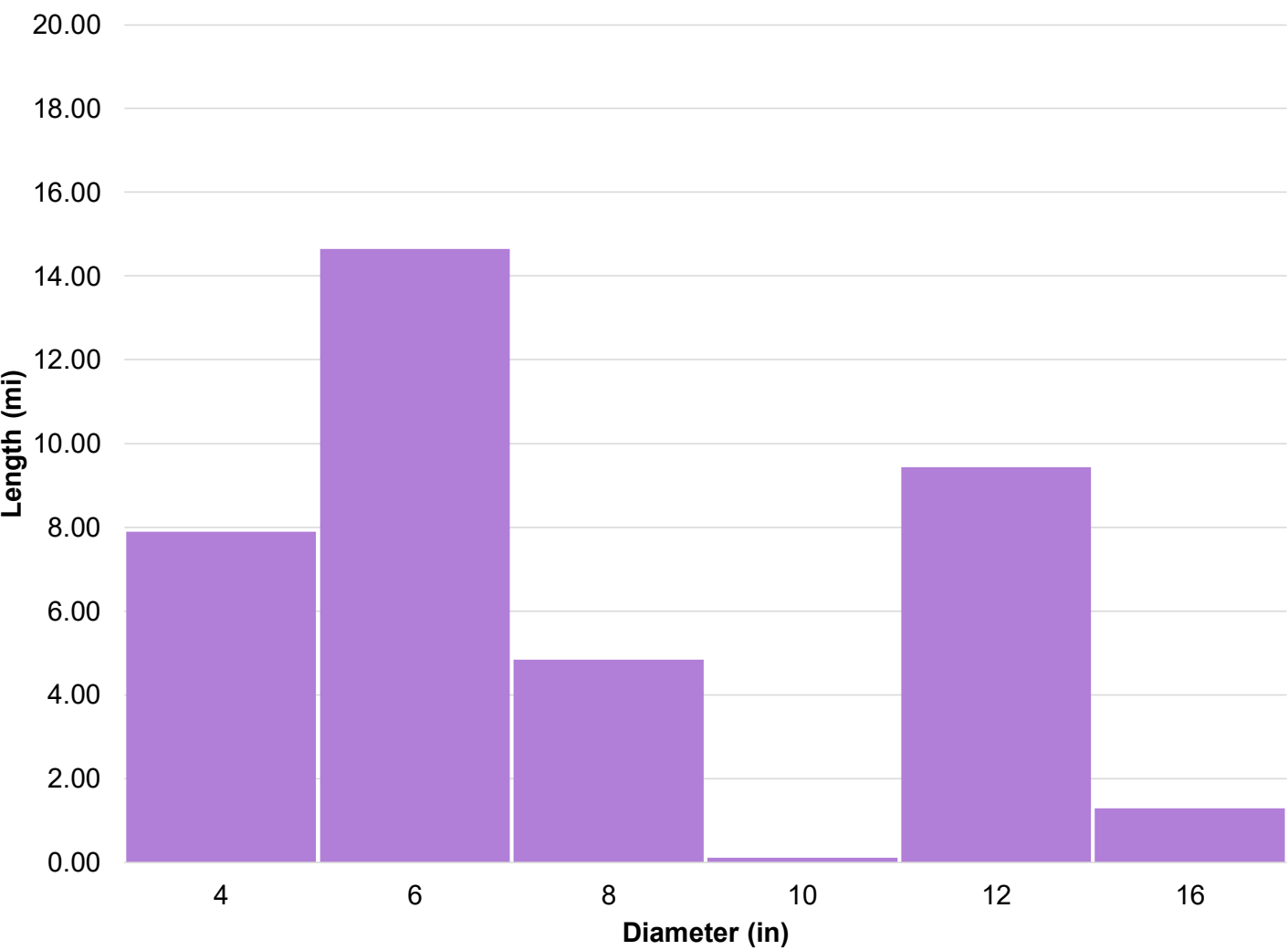
Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Inventory and Description of Existing Infrastructure

The existing reclaimed water infrastructure in Holly Springs consists of the following primary components:

- **Reclaimed Water Mains:** Pressurized pipelines transport reclaimed water from the UCWRF to customers throughout the service area. Holly Springs maintains approximately 38 miles of reclaimed water main pipes ranging from 4- to 16-inch.
- **Pump Station:** Reclaimed water pump stations pressurize effluent from the treatment plant and convey it through the Town’s distribution pipes to customers and storage tanks. The town has one reclaimed water pump station that is designed to pump approximately 1,050 GPM.
- **Storage Tank:** The elevated storage tank stores reclaimed water supplied by the UCWRF, providing reserve capacity to meet peak demand and maintain stable system pressure for users throughout the service area. The town has one reclaimed water storage tank with a capacity of 500,000 gallons.

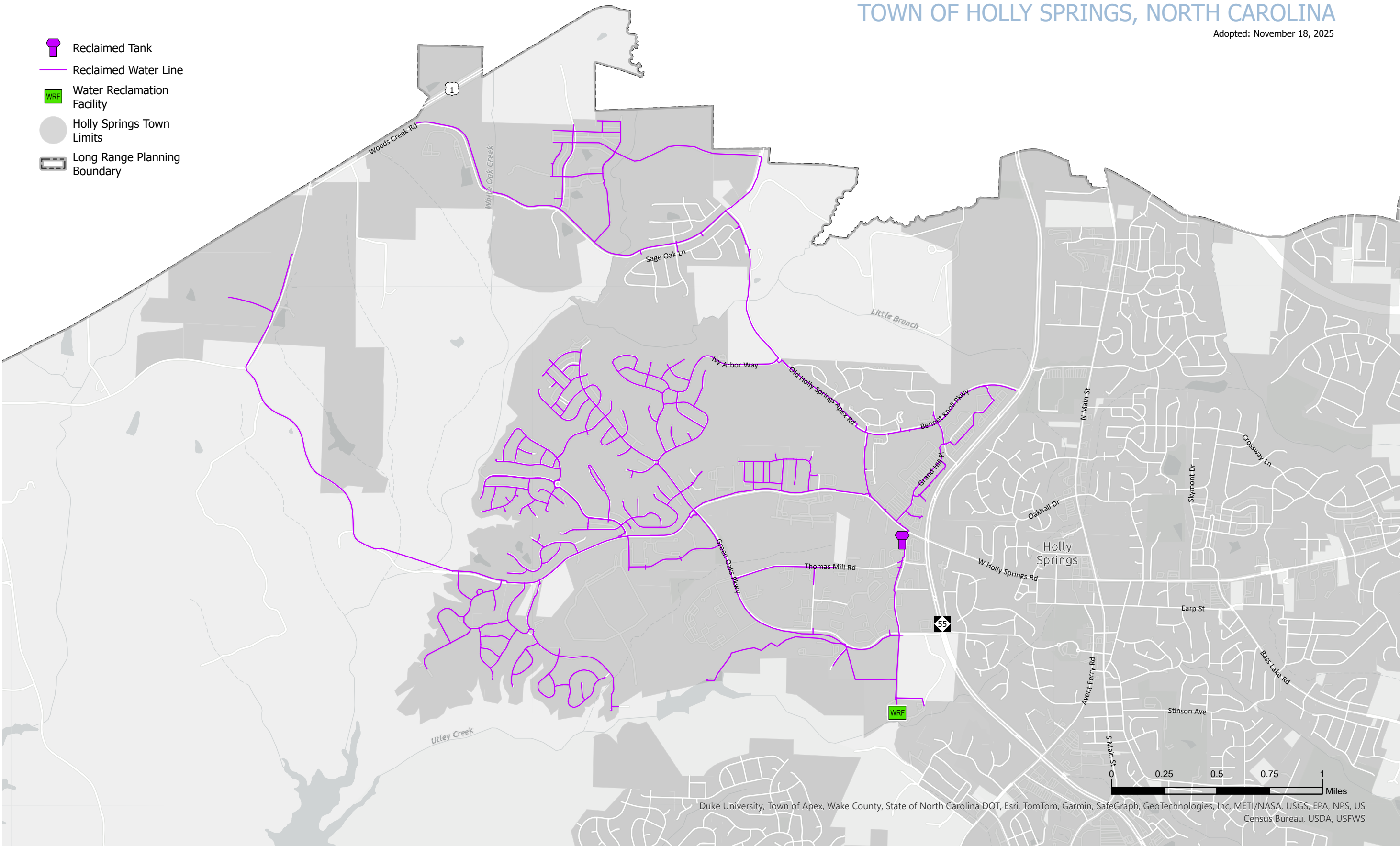
Reclaimed Diameter Figure



Existing Reclaimed Water System

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



EXISTING SYSTEM ANALYSIS

The Town of Holly Springs' existing GIS mapping data for the reclaimed water system, maintained by the Town, was utilized in the reclaimed water system analysis.

As part of the Town's 2025 Reclaimed Water Master Plan, a comprehensive analysis of the Reclaimed Water system, including updates to the Town's reclaimed water hydraulic model, was conducted to assess the capacity and performance of the existing reclaimed water system.

Supply

Supply for the system is sourced from the UCWRF, which currently operates with a capacity of 6 million gallons per day (MGD). Wastewater effluent is then discharged to Utle Creek or distributed by the reclaimed water system. Plans are in place to expand wastewater treatment capacity of the UCWRF to 8 MGD by 2029, with further increases being evaluated in future years.

Reclaimed water use is closely linked to the Town's plans for future wastewater treatment expansion. By redirecting plant effluent from the UCWRF into the reclaimed water system, the Town reduces the volume of treated wastewater discharged into Utle Creek and safeguards local waterways.

Current Demands and Use

Presently, demand is driven primarily by irrigation, resulting in high diurnal peaks, while industrial usage remains limited because the existing industrial users do not require reclaimed water for their industrial processes. It is expected that ongoing improvements at the UCWRF will result in higher water quality and possibly generate more interest in usage from industrial users.

The existing maximum day demand (MDD) for irrigation is approximately 0.6 MGD.

Future System Growth

As the Town of Holly Springs continues to expand its reclaimed water system, understanding and planning for future demand is essential. The Town's reclaimed water hydraulic model will be used to evaluate, measure, and plan for growth of the reclaimed water system. The following key factors highlight the anticipated growth in reclaimed water use across the service area, reflecting both current trends and future opportunities for system expansion and diversification:

- **Irrigation Demands**—as additional residential, commercial, and industrial users in the reclaimed water service area connect to the system, total irrigation demand is anticipated to increase.
- **Process, Cooling, and Industrial Demands**—anticipated demand for reclaimed water for process, cooling, and industrial uses is uncertain at this time. As improvements at the UCWRF are completed resulting in improved water quality, demands for reclaimed water may increase.
- **Diverse Development Types**—areas designated for commercial, mixed-use, and industrial development are priorities for system extensions to support higher and more diverse reclaimed water demand.

TOWN PRIORITIES

Priority Investment Areas

In alignment with the Town's 2025 Reclaimed Water Master Plan, Priority Investment Areas will be designated to guide strategic infrastructure investment. These areas represent the highest priorities for reclaimed water treatment, storage, and distribution and are selected based on system performance, growth projections, and operational needs.

Investing in these areas enables the Town to:

- Focus community investments where they will deliver the greatest impact.
- Facilitate the phased and prioritized expansion of reclaimed water infrastructure to support residential, commercial, and industrial growth, in alignment with the Master Plan.
- Invest in key infrastructure upgrades (e.g., pump stations, storage, transmission mains) to maintain system reliability and performance as the reclaimed water system grows.

All infrastructure investments will be evaluated not only for their immediate utility, but also for their long-term value and alignment with the Town's broader planning and sustainability goals.

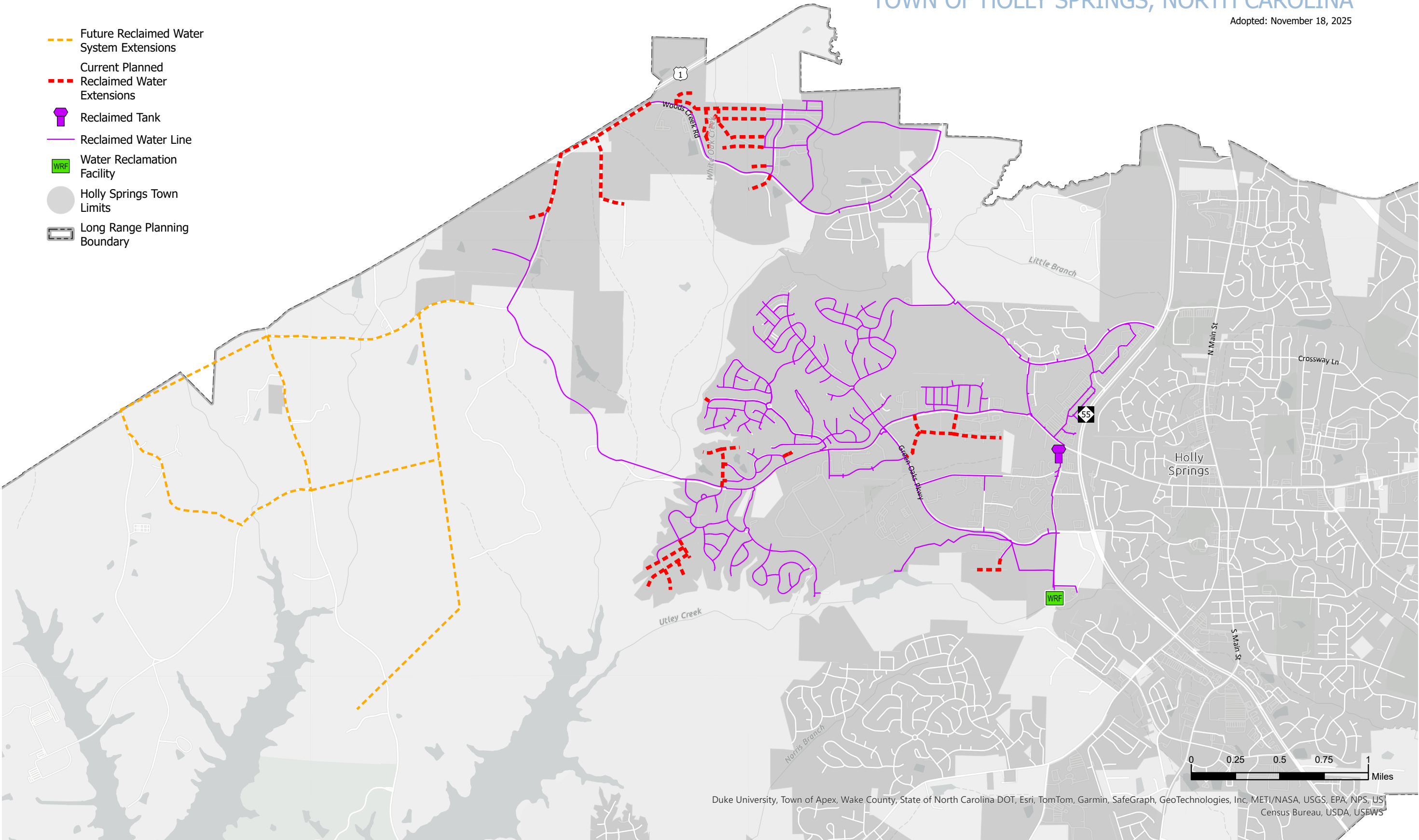
Priority Investment Areas are currently being assessed in conjunction with the Town's ongoing 2025 Reclaimed Water Master Plan. A detailed map illustrating these designated areas will be included in updated documentation, scheduled for release in early 2026.



Future Reclaimed Water Infrastructure

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



New Development Coordination

All new developments within the Town's reclaimed water service area are required to include reclaimed water infrastructure for irrigation, ensuring these areas are "reclaimed-ready" when service becomes available. The Town is committed to facilitating strategic expansion of the reclaimed water system in alignment with the Master Plan, supporting residential, commercial, and industrial growth.

To achieve this, the Town will coordinate early with developers during the planning and design phases, ensuring that reclaimed water lines, connections, and meters are incorporated into site plans. Development plans will be reviewed for compliance with reclaimed water requirements, and technical guidance will be provided to support reclaimed water system integration.

Industrial Outreach

Ongoing, proactive engagement with industrial users is essential to promote the use of reclaimed water for non-irrigation purposes such as cooling systems, process use, and cleaning. The Town should implement a robust outreach strategy that includes educational workshops, partnership opportunities, and technical support to help industries transition to reclaimed water and reduce their reliance on potable sources.

Outreach activities may include regular surveys and direct engagement with industrial users to understand their specific water quality needs and assess the potential for reclaimed water applications. Additionally, the Town will coordinate closely with large employers and facilities to identify and facilitate opportunities for process or cooling water use.

This Site Irrigated With
Reclaimed Water

DO NOT DRINK OR WASH

Este sitio irrigado con
agua reclamada.
No beba ni lavase.



IMPLEMENTATION PLAN

Reclaimed Water—Advance sustainable water use by expanding reclaimed water infrastructure, promoting non-potable applications, and reducing reliance on potable water for irrigation and industrial processes.

ACTION NUMBER	ACTION/TASK	DEPARTMENTS	TIMEFRAME
1	Develop and implement a multi-year CIP for reclaimed water projects	Utilities + Infrastructure	Near-Term
2	Expand reclaimed water service area and infrastructure in alignment with the Reclaimed Water Master Plan	Utilities + Infrastructure	Near-Term
3	Seek grants and developer contributions to fund infrastructure improvements	Utilities + Infrastructure	Near-Term
4	Engage industrial users to promote reclaimed water for cooling, process, and cleaning applications	Utilities + Infrastructure, Development Services	Near-Term
5	Monitor reclaimed water quality and implement advanced treatment technologies as needed	Utilities + Infrastructure	Medium-Term
6	Integrate reclaimed water planning with wastewater treatment expansion	Utilities + Infrastructure	Long-Term
7	Promote irrigation scheduling and responsible water use among residential and commercial users	Utilities + Infrastructure	Ongoing
8	Coordinate with developers within the future reclaimed service area to ensure new projects are “reclaimed-ready”	Utilities + Infrastructure, Development Services	Ongoing
9	Foster public education on the benefits of reclaimed water and sustainability	Utilities + Infrastructure	Ongoing

Key

Near-Term	1 to 2 years
Medium-Term	3 to 5 years
Long-Term	6 to 10 years
Ongoing	Continuous

SUSTAINABILITY AND RESILIENCE INITIATIVES

Irrigation Scheduling

Implementing watering schedules (i.e. odd/even day irrigation watering) helps to distribute water use more evenly throughout the week, reducing strain on the reclaimed water system during peak demand periods. By encouraging residents and businesses to irrigate on alternating days, the utility can manage system capacity more efficiently, minimize pressure fluctuations, and promote responsible water use within the community.

Monitoring and Adaptation

Regular tracking of reclaimed water consumption and system performance allows for data-driven decision-making. By monitoring flow rates, pressure levels, and usage patterns, operators can identify trends, detect inefficiencies, and implement adaptive management strategies. Continuous evaluation ensures the system remains reliable, responsive to changing conditions, and capable of meeting community needs into the future.

Water Quality Improvements

Planned upgrades at UCWRF are designed to enhance the quality of reclaimed water, making it more attractive for industrial users with stringent requirements. Improvements may include advanced filtration, disinfection, and nutrient removal technologies. Higher water quality not only expands potential applications but also increases confidence among users, encouraging broader adoption and supporting overall sustainability goals.



CHAPTER

6

FIBER OPTIC SYSTEM

WHAT'S INSIDE:

System Description

Future Needs/Analysis

Implementation Plan

Sustainability and Resilience Initiatives

SYSTEM DESCRIPTION

The Town of Holly Springs operates a fiber optic network spanning over twenty miles, strategically connecting critical municipal assets including town offices, water and sanitary sewer facilities, traffic signals, CCTV cameras, and SCADA-controlled infrastructure such as pump stations and elevated water tanks. This system is designed to ensure high-reliability communication and operational safety across all connected facilities. The network also interfaces with state traffic operations and other regional fiber partners, positioning Holly Springs to meet the demands of a growing population and evolving technology landscape.

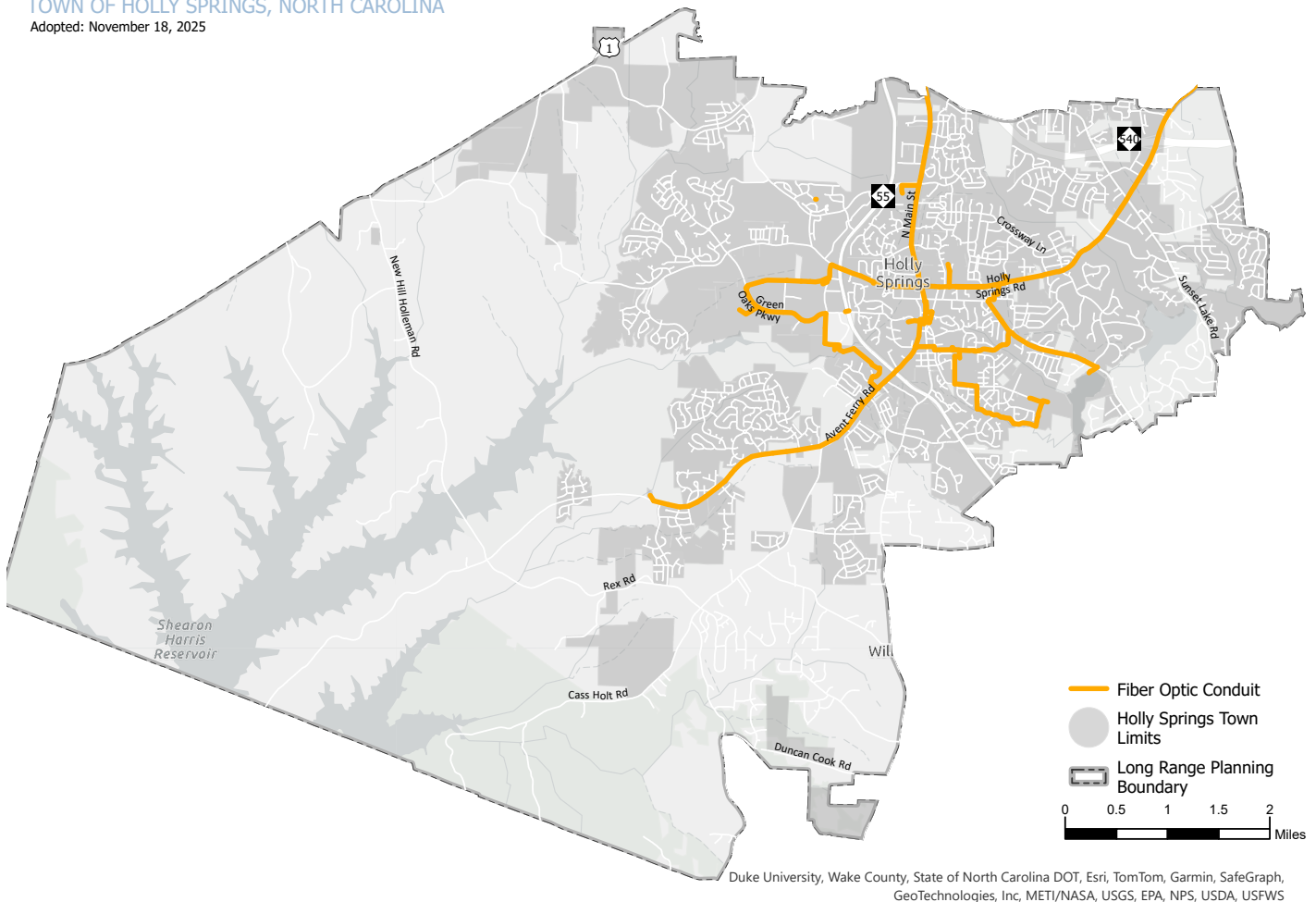
Service Area Map

The Town of Holly Springs' existing fiber optic cable network connects multiple town offices, water and sanitary sewer facilities, traffic signals, CCTV cameras, and SCADA-controlled infrastructure such as pump stations and elevated water tanks.

Existing Fiber Optic System

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Inventory and Description of Existing Infrastructure

The Town of Holly Springs' existing GIS mapping data for the fiber optic system, maintained by the Town, was utilized in the fiber system analysis. The Town is also actively updating its GIS data to accurately document Town-owned fiber assets.

The Town owns, operates, and maintains over 20 miles of fiber optic cable. The fiber optic cable connects to Town owned facilities (buildings), leased spaces, the SCADA network for water and sanitary sewer facilities (including the wastewater treatment plant, pump stations, and water tanks), traffic signals, CCTV cameras, connections with other municipalities, and other fiber partners.

ITEM	OWNER	TOTAL FACILITIES	CONNECTED	NOT CONNECTED
Town Facilities	Town	14	13	1
Leased Facilities	Others	2	2	0
SCADA Monitored Facilities	Town	37	10	27
Traffic Signals	NCDOT	44	42	2
CCTV Cameras	Town	309	254	55*

*Wireless or cellular connectivity.

Connectivity Gaps

Closing gaps in fiber connectivity is essential to achieving a fully integrated and resilient communications network across the Town of Holly Springs. To support seamless operations and enhance inter-facility coordination, the Town aims to expand its fiber optic infrastructure and eliminate existing coverage gaps. Below is a list of Town facilities that are currently not connected to the municipal fiber network.

FACILITY	LOCATION	GAP DISTANCE
Town Facilities	Various Facilities – See CIP for Actual Locations	2,500'
SCADA Monitored Facilities (Pump Stations and Water Tanks)	Various Facilities – See CIP for Actual Locations	109,850'
Traffic Signals	Piney Grove Wilbon Road/Honeycutt Road	1,000'
	Sunset Lake Road/Stephenson Road	6,100'

*Fiber is installed at the location but not yet connected to the network.





Redundancy

Redundant connectivity is vital to ensuring uninterrupted operations at critical Town facilities, particularly in the event of emergencies or physical damage to existing fiber infrastructure. A review of the Town’s current fiber network maps has identified several strategic link opportunities. By installing new fiber in these areas, the Town can enhance physical path redundancy, strengthening the resilience and reliability of its communications system. The Town is actively updating its GIS data to accurately document Town-owned fiber assets. This enhanced mapping will show connectivity gaps within the existing network, and will guide future fiber extensions as development continues. Addressing both current and anticipated gaps in the system is a key objective to improve redundancy.

FACILITY	LOCATION	DISTANCE
New Operations Center	Green Oaks Parkway and Bumgardner Drive	4,450’
SCADA Monitored Facilities (Pump Stations and Water Tanks)	Bennet Knoll Pkwy to Sportsmanship	3,600’
	Green Oaks Pkwy to Avent Ferry	5,500’
	Avent Ferry Road to Honeycutt Road	13,200’
	Stephens Road and Piney Grove Wilbon Road	9,000’
North Main Athletic Complex	Bennet Knoll Pkwy to Sportsmanship via G.B. Alford Highway	3,600’
MCNC BTOP Secondary Path	Bass Lake Road to Highway 401	20,000’

To further enhance network resilience and operational reliability, additional redundant fiber optic paths should be considered for key facilities, such as the Town of Holly Springs Operations Center located at 425 Innovate Avenue.

FUTURE NEEDS AND ANALYSIS

As Holly Springs continues to grow in population and traffic congestion, Town leadership has made a commitment through a Sustainable Action Plan, to plan, maintain, and invest in sustainable and resilient infrastructure. An important part of this resilient infrastructure will be integrating technology through fiber connections. Fiber connections ensure reliability and redundancy to the Town's facilities, SCADA-controlled infrastructure (including pump stations and water tanks), traffic signals, CCTV cameras, and other traffic management locations. While the Town of Holly Springs has established a robust fiber optic network, continued innovation and strategic planning will be essential to meet the evolving demands of a growing community. Proactive investment in infrastructure, technology upgrades, and regional connectivity will ensure the Town remains resilient, well-connected, and operationally efficient.

Town-Owned Facilities and Future Facilities

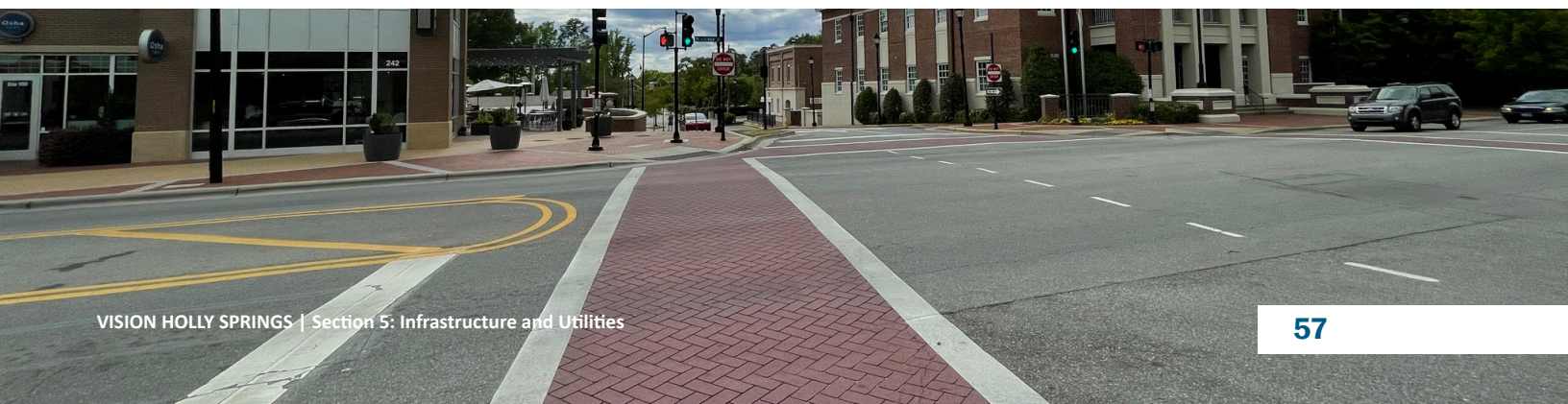
To support a resilient and connected community, the Town of Holly Springs desires to extend fiber connectivity to existing facilities not yet linked to the network. The Town also plans to continue its proactive policy of ensuring that all new facilities are connected—either through direct fiber installation or by leasing available existing fiber infrastructure. As future town owned facilities are planned, provisions for fiber connectivity should be included. Below are examples of existing and future town-owned facilities where fiber connections are desired:

- Town of Holly Springs Operations Campus (redundant connection)
- North Main Athletic Park (redundant connection)
- Fire Station #4 and Future Fire Stations
- Future Town-Owned Facilities
- Future SCADA Facilities
- Future Traffic Signals

SCADA Monitored Facilities

To enhance operational resilience and ensure uninterrupted communication, the Town of Holly Springs plans to establish a dedicated fiber optic connection between all existing SCADA monitored facilities and the Town of Holly Springs Operations Center. SCADA monitored facilities may include existing or proposed pump stations, elevated water storage tanks, and treatment facilities. The network is planned to include both a primary physical fiber path and a secondary route to provide redundancy.

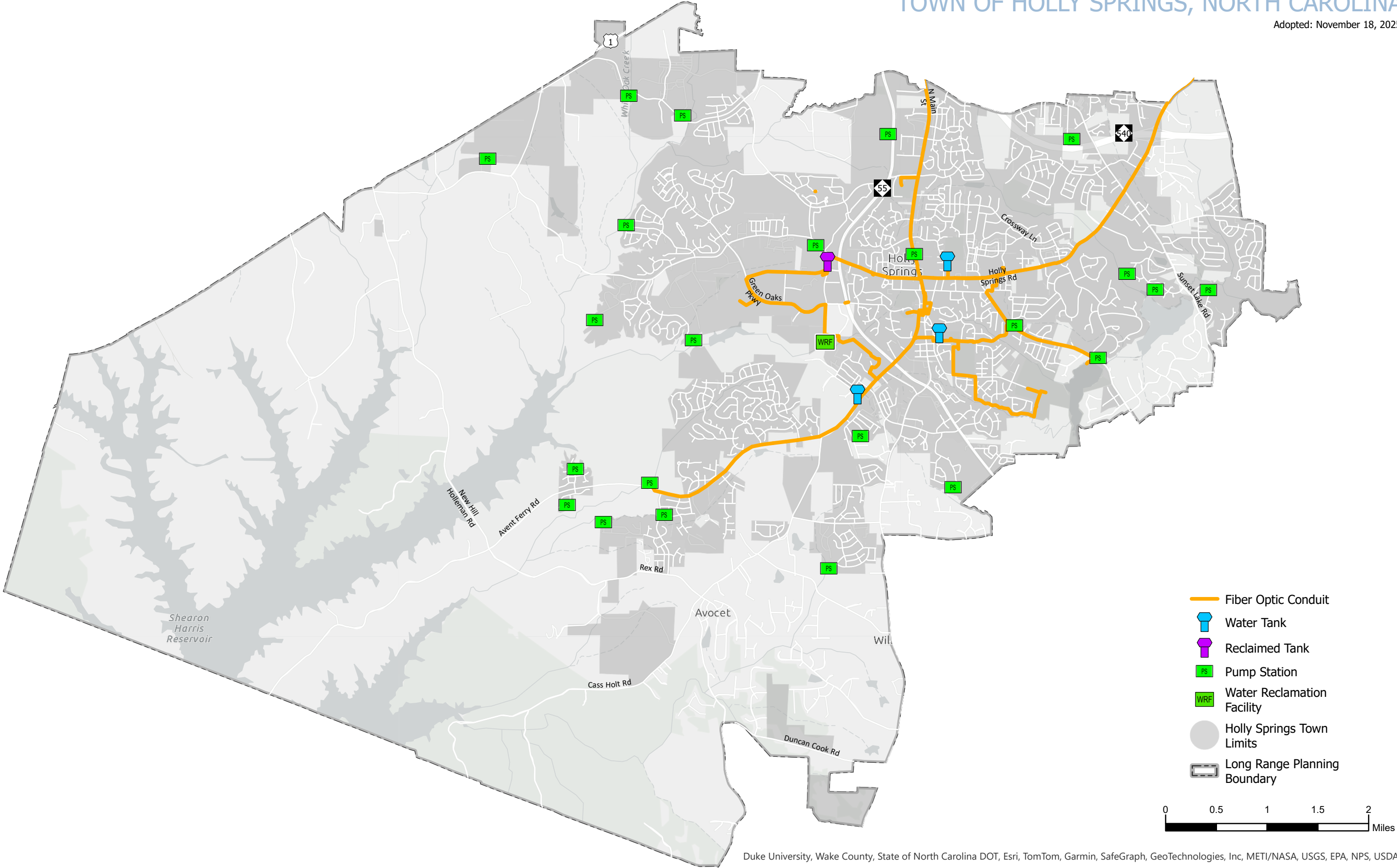
When development includes the construction of new SCADA monitored facilities, the development must include fiber and conduit being installed to the nearest SCADA served facility or as required by current Town standards, thereby supporting long-term connectivity and infrastructure expansion. The Town of Holly Springs' current Unified Development Ordinance (UDO) includes general provisions requiring new development pump stations to connect to the nearest Town fiber-optic network access point. To ensure consistent and future-ready infrastructure, it is recommended that the Town maintain enforceable requirements mandating that developments include the installation of fiber and conduit meeting the Town's current standards. See Community Investment Plan for future costs.



SCADA-Controlled Infrastructure

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Adopted: November 18, 2025



Duke University, Wake County, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS



Traffic Signals and Traffic Signal Cameras

As the Town of Holly Springs continues to grow, it will be essential to implement a comprehensive traffic signal monitoring strategy that leverages real-time data and historical analytics to proactively address congestion and respond to citizen concerns. Integrating live camera feeds with signal performance data will enable Town staff to quickly identify and resolve operational issues, alert emergency services, and manage traffic flow during incidents or special events. These capabilities will also support the delivery of timely alerts to road users regarding potential delays along key corridors.

To maximize efficiency and coordination, it is planned that all traffic signal data and camera feeds have the ability to be centralized and monitored from a single location—such as the new Operations Campus—using a dedicated video wall and data management system. This centralized approach will enhance situational awareness, streamline response times, and support long-term planning.

Additionally, the Town plans to continue collaborating with NCDOT to explore opportunities for signal timing adjustments and integration with statewide traffic operations systems, where permitted. The traffic signal data will also allow the Town to give alerts to road users of potential delays along a corridor.

The Town of Holly Springs should initiate integration of its traffic signals with the Advanced Traffic Management System (ATMS) operated by NCDOT or neighboring municipalities. This collaborative effort would leverage existing fiber optic infrastructure and modern traffic signal controller devices to enhance regional traffic coordination. The Town plans to expand connectivity, close infrastructure gaps, and support smart city initiatives that improve mobility, safety, and operational efficiency across its growing transportation network.

CCTV Cameras

The Town of Holly Springs currently operates CCTV cameras at 309 locations, with 254 connected via fiber and 55 relying on wireless or cellular connectivity. As the Town continues to grow, ensuring real-time visibility of Town-owned facilities—especially during emergencies, special events, or off-hours—will be increasingly critical for operational oversight. To enhance situational awareness and streamline monitoring, it is recommended that all CCTV cameras be integrated into the Town's fiber optic network to allow for monitoring from a dedicated location such as the Law Enforcement and/or Operations Center. This centralized approach would allow for live video feeds to be displayed on a video wall, enabling rapid response coordination, traffic management, and incident tracking across municipal assets.

Redundant Fiber Connection to Adjacent Municipalities

The Town of Holly Springs currently maintains redundant fiber connections with the adjacent municipalities of Apex and Cary, supporting regional traffic signal coordination and resilient communications infrastructure. To further strengthen intermunicipal connectivity and system reliability, it is recommended that the Town establish a redundant fiber link to Fuquay-Varina and pursue additional fiber pathways to Apex and Cary. These enhancements will help close existing infrastructure gaps, support future smart city initiatives, and ensure robust data exchange across the region.

As the Town of Holly Springs continues to grow and evolve, it is essential to implement a forward-looking suite of strategic initiatives aimed at strengthening infrastructure, expanding connectivity, and enhancing the overall quality of life for residents. These initiatives—spanning fiber optic network expansion, community investments planning, and advanced traffic management technologies—are foundational to building a resilient, efficient, and future-ready community. By proactively addressing current infrastructure challenges and anticipating future demands, the Town can ensure sustainable development that supports public safety, mobility, and access to essential services. These strategies reflect the Town’s commitment to innovation and its vision for a well-connected, livable, and thriving municipality.

New Development Coordination

The Town of Holly Springs’ current Unified Development Ordinance (UDO) includes general provisions requiring new developments, pump stations, and traffic signals to connect to the nearest Town fiber-optic network access point. To ensure consistent and future-ready infrastructure, it is recommended that the Town maintain enforceable requirements mandating that developments include the installation of fiber and conduit meeting the Town’s current standards.

Possible Route Partners

As part of its long-range infrastructure planning, the Town of Holly Springs plans to pursue partnerships with other fiber network owners and third-party communication providers. These collaborations, particularly through joint trenching and dark fiber leasing, can significantly reduce capital costs, streamline installation efforts, and minimize disruption to residents during construction. If the Town elects to lease dark fiber, it will be a short-term solution, and the dark fiber will be replaced with Town owned fiber and conduit later. The Town should be aware of installation of Town owned fiber may be needed due to changes in the market. By aligning with regional and private sector partners, the Town can expand its fiber footprint more efficiently while supporting scalable, resilient, and future-ready connectivity across municipal facilities and service corridors.

IMPLEMENTATION PLAN

Fiber Optic—Build a reliable fiber optic network for communication across all connected facilities that supports municipal operations, connects with regional partners and grows smart city initiatives, public safety, and community connectivity

ACTION NUMBER	ACTION/TASK	DEPARTMENTS	TIMEFRAME
1	Develop and implement a multi-year CIP for fiber optic projects	Information Technology	Near-Term
2	Centralize traffic signal and CCTV camera monitoring at new Operations Campus for improved situational awareness and emergency response	Information Technology	Medium-Term
3	Implement advanced traffic management systems and real-time data analytics	Information Technology	Medium-Term
4	Expand fiber optic infrastructure to close connectivity gaps and enhance redundancy	Information Technology	Long-Term
5	Integrate all Town-owned and future facilities into the fiber network, including SCADA-monitored sites	Information Technology, Utilities + Infrastructure	Long-Term
6	Collaborate with regional partners and third-party providers to optimize installation and reduce costs	Information Technology	Ongoing
7	Maintain enforceable requirements for fiber installation in new developments and infrastructure projects	Information Technology	Ongoing
8	Regularly update GIS mapping to guide network expansion and prioritize investments	Information Technology	Ongoing
9	Pursue federal and state funding to accelerate deployment and reduce financial burdens	Information Technology	Ongoing
10	Foster community engagement in technology planning and smart city applications	Information Technology	Ongoing

Key

Near-Term	1 to 2 years
Medium-Term	3 to 5 years
Long-Term	6 to 10 years
Ongoing	Continuous

SUSTAINABILITY AND RESILIENCE INITIATIVES

As the Town of Holly Springs continues to grow, implementing robust technology solutions are essential to meet increasing mobility demands while advancing sustainability goals. Below are initiatives that align with the Town's commitment to reducing its environmental footprint and enhancing public service functionality.



Traffic Signal Integration: By leveraging real-time traffic data and congestion analytics, the Town can proactively manage roadway performance, issue alerts to drivers, divert traffic to alternate routes, and—where permitted by NCDOT—adjust signal timing to optimize flow. Ultimately, this technology-driven approach will reduce vehicle idle times, lower emissions, and improve the overall quality of life for residents by creating a safer, more efficient, and environmentally responsible transportation network.



CCTV Cameras: Integrated camera systems streaming to a centralized video wall at the new Operations Campus will enable staff to monitor incidents, respond to citizen concerns, and manage traffic during special events with greater precision. These smart city applications may include sensor-based data collection, cloud computing, and fiber-enabled communication networks that support dynamic decision-making and continuous system improvement.



SCADA Monitored Facility Connectivity: Establishing fiber optic connections to both existing and future Town-owned facilities—such as pump stations, elevated water storage tanks, and treatment plants—enables enhanced real-time monitoring and operational control. This connectivity is critical to ensuring the safe, reliable, and resilient performance of municipal infrastructure. As part of the Town's broader sustainability initiatives, integrating these facilities into a centralized fiber network supports long-term infrastructure expansion, reduces operational risks, and aligns with Holly Springs' commitment to smart growth and environmental stewardship.



CHAPTER

7

APPENDIX

APPENDIX

Holly Springs Project Community Engagement Summary

The Comprehensive Plan and infrastructure planning should reflect the needs and values of the Town's residents. As such, the development of the Comprehensive Plan was guided by community engagement that was carried out to ensure transparency and collect feedback from residents.

To gather feedback from residents, the Town hosted multiple events with a focus on Section 4 (Community Facilities), Section 5 (Utilities & Infrastructure), and Section 6 (Natural Resources) of the Comprehensive Plan.

Farmers Market and Holly Springs Salamanders Baseball Game Outreach

At both of these events, two booths were set up—one by Town staff and one by Kimley-Horn—to facilitate public engagement and provide information regarding the comprehensive plan. The Town's booth served as a general resource for questions related to Holly Springs and ongoing development initiatives. Kimley-Horn's booth focused specifically on the Comprehensive Plan, aiming to engage attendees around proposed Comprehensive Plan updates. The booth featured two display boards: one illustrated the current status and direction of the Comprehensive Plan, while the other offered a trivia game designed to draw interest and participation.



Developer's Breakfast and Online Survey

In addition to more public facing outreach, the project team solicited feedback in person from the development community at the annual Holly Springs Developer's Breakfast and then supplemented the in-person event with an online survey. The survey sought to gather feedback on challenges and priorities related to the role water, sewer, stormwater, and fiber infrastructure plays in development decision making as well as the ease with which developers can deliver projects. Over 40 individuals provided feedback via the survey, and the full results are included in this appendix.

Stakeholder Interviews

Stakeholder interviews were conducted to gather focused, expert insights from key sectors of the community to help shape infrastructure, utility, and development strategies that align with the Town's growth objectives. Participants included staff from the Town of Holly Springs and Wake County, emergency service providers, and members of the development community, each offering valuable perspectives to inform the Comprehensive Plan.



Holly Springs Comprehensive Plan Stakeholder Meeting Summary

The Holly Springs Comprehensive Plan Stakeholder Meeting brought together Wake County staff and community representatives to align on waste management, farmland preservation, and recreation priorities. The landfill remains a critical part of county infrastructure with significant remaining capacity, no current expansion plans, and recent improvements such as transfer station upgrades, a mattress shredder addition, roadway expansions, and ongoing reconstruction of the gas energy facility following a fire. These efforts are aimed at improving efficiency, safety, and environmental stewardship without the need for new capital investments in expansion.

Farmland and conservation were another major focus. Wake County, with consultant Equinox, is developing a Farmland Preservation Plan to guide both short- and long-term strategies. Priority areas have already been identified within the Holly Springs extraterritorial jurisdiction (ETJ), and efforts are underway to secure conservation easements and promote Voluntary Agricultural Districts (VADs). Stakeholders encouraged stronger municipal involvement in these initiatives and recommended that Holly Springs update its Unified Development Ordinance (UDO) to include farmland protections within town limits, similar to neighboring Cary. Sugg Farm was highlighted as a successful model of conservation and innovation, operating under a private conservation easement and offering incubator opportunities for new farmers. Expanding cooperative agreements with the County could help leverage the farm as both a community asset and a source of local food access through the Holly Springs Farmers Market.

Recreation and open space also featured prominently. Stakeholders emphasized the need for more greenways, improved connectivity to county parks, and stronger open space regulations to ensure that new development contributes to the community's recreational fabric. Wake County's ongoing Harris Lake master plan update and potential Crowder County Park expansion present opportunities for further coordination. The growing popularity of mountain biking, driven in part by closures at Lake Crabtree, has placed additional demand on Holly Springs facilities, underscoring the need for more trail development. Similarly, the rising use of parks by schools for athletic events points to the need for clearer scheduling and shared-use strategies. Preserving additional land for greenways and park facilities was seen as critical to maintaining quality of life as the town grows.

In terms of next steps, stakeholders agreed on four key priorities:

- 1. Formalizing municipal–county coordination on landfill, conservation, and recreation issues.**
- 2. Updating ordinances to strengthen farmland preservation and open space protections.**
- 3. Expanding recreational resources with an emphasis on connectivity and sustainability.**
- 4. Engaging local farmers, schools, and residents to ensure development reflects community values.**

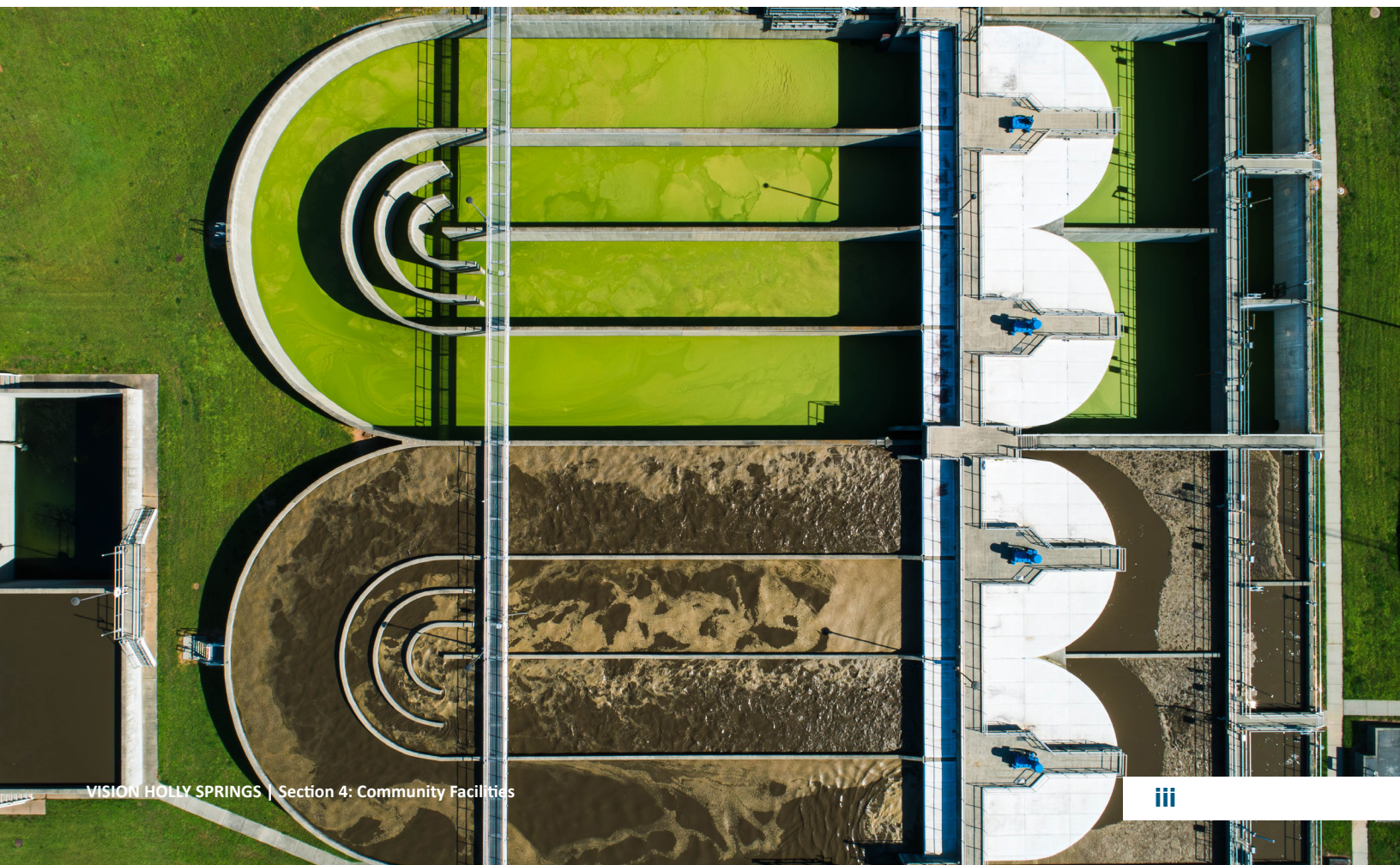
Overall, the meeting highlighted the importance of collaborative planning and forward-thinking policies. By balancing growth with conservation and recreation, Holly Springs is positioned to honor its agricultural heritage while creating a resilient, vibrant future for its residents.

Duke Energy Coordination Meeting Summary

A coordination meeting between the Town of Holly Springs and Duke Energy was held to review updates to the Comprehensive Plan and discuss infrastructure coordination. The Town provided an overview of the Comprehensive Plan process, which began in February 2025. Data collection and public engagement occurred throughout the summer, and draft documents were released in the fall for review by the public, Planning Board, and Town staff. The current update includes Sections 4, 5, and 6 of the plan, covering Community Facilities, Infrastructure and Utilities, and Natural Areas. Section 5 focuses on Town-owned utilities such as potable water, sanitary sewer, reclaimed water, stormwater, and fiber optic infrastructure, while privately owned utilities are not included.

Key elements of the update were discussed, including fire stations, sanitary sewer infrastructure, and waterline infrastructure. The Town currently operates three fire stations, with two additional stations programmed in the Community Investment Plan. Long-term projections indicate a need for up to ten stations at full build-out, and the Community Facilities map identifies future emergency service facility search areas. For sanitary sewer infrastructure, the Future Regional Pump Station Locations map outlines potential sites aligned with the Future Land Use Map. Areas designated as Natural Areas are not expected to generate sewer flow. Sanitary sewer force mains will be required to convey flow from proposed pump stations to downstream facilities, and detailed routing studies will be conducted during future design phases. Coordination with Duke Energy will occur when alignments intersect with power facilities. Regarding waterline infrastructure, the Future Water Infrastructure map shows proposed water mains needed to support build-out, generally following existing roadways such as Rex Road. Final routing studies will include coordination with Duke Energy where infrastructure may intersect transmission corridors or be near Duke-owned property.

Duke Energy expressed interest in partnering with the Town to ensure safe and efficient coordination of infrastructure projects near power transmission mains and overhead lines. They emphasized the importance of early engagement to maintain safety standards and separation requirements. The Town agreed to include language in the Comprehensive Plan stating that proposed pipelines and facilities located near or crossing power transmission lines shall be coordinated to meet applicable safety and separation requirements.



Holly Springs Comprehensive Plan

Project Engagement

VIEWS

1,134

PARTICIPANTS

44

RESPONSES

255

COMMENTS

134

How does water and sewer infrastructure influence your decision-making process for new development?

Water and sewer infrastructure is crucial. As a Civil Engineer, my clients and development partners need access to water and sewer to support our development projects. Extending and upgrading water and sewer infrastructure from offsite locations is often too costly for a private developer to bare alone and results in the loss of quality development projects.

6/9/2025

⬆ 5 Agree

Most of my clients, will decide not to develop a property of public water and sewer are not available.

6/9/2025

⬆ 4 Agree

And let them go elsewhere. Sorry but they need to be responsible.

6/9/2025

⬆ 1 Agree

First and foremost, everyone needs clean water. That includes removal of dirty water too. We must plan ahead for an over abundant supply. Storm water handling is another critical issue. Removing trees completely as has been approved in the past and recent, must come to an end.

6/9/2025

⬆ 3 Agree

Water and sewer costs are through the roof. Developers need to share a part of this burden.

5/27/2025

⬆ 3 Agree

If that was all they were being required to pay. At Kildaire, they are also required to build the Edwards Drive extension.

6/12/2025

Without access to water and sewer infrastructure, development is not feasible. The sooner we can get an answer on utility availability, the better. The current requirement for determining utility availability along with rezoning approval is onerous and makes clarity on project feasibility very challenging or impossible. Our understanding is that there is significant availability in the system, but unlocking availability at rezoning has created a surplus of availability that new projects are unable to tap into.

6/11/2025

⬆ 2 Agree

Lack of sewer capacity stops E&M Johnson Enterprises, Inc. cold. Whenever a potential developer calls with an Interest in our land, I tell them to contact Holly Springs Development Services first. There is no use wasting my time because Holly Springs' outlandish requirements just kill the deal. We will not go under contract until something can be done.

6/12/2025

⬆ 1 Agree

The availability is critical for making a decision to invest time and money into a development project.

6/11/2025

⬆ 1 Agree

It influences the viability of new development.

6/11/2025

⬆ 1 Agree

Since we are a host community for Wake County for the landfill, we shouldn't be charged. Let the other towns pay a little more to cover us since we are providing the area for their use. The increase for our water is outrageously expensive as well.

6/10/2025

⬆ 1 Agree

What decision making rights do we have when it comes to new development? It's a matter of the town taking land and holding it hostage by restricting development while still taking in taxes year after year. The combination of your restrictive comprehensive plan that wants high density residential and commercial on our property (Sunset Lake), coupled with the lack of available water and sewer infrastructure is simply tying our hands. We want to sell to a developer! But we cant due to your restrictions and lack of sewer infrastructure. You have really failed your residents by your lack of planning for this much needed infrastructure.

6/9/2025

⬆ 1 Agree

Availability of water and sewer is critical for developments, along with properly scoping the amount of work to ensure adequate capacity of the existing infrastructure.

6/9/2025

⬆ 1 Agree

it is crucial

6/9/2025

⬆ 1 Agree

If the necessary infrastructure is not in place, the financial burden shifts to property owners. As a result, funds that could be allocated for future infrastructure improvements and maintenance are not able to grow.

6/2/2025

⬆ 1 Agree

Critical. Having a comprehensive plan to expand the Town's service area is critical in decision making. Ensuring the projects develop within the vision of the Town would ideally gain the support needed by staff and board members.

6/2/2025

⬆ 1 Agree

Very much so, it dictates how we develop and choose parcels for development. Without enough water and sewer we cannot continue to develop

5/27/2025

⬆ 1 Agree

We are putting a strain on our current system. New developments need to pay for any increase in improvements to the water system. Our current costs are thru the roof. \$95 a month for a one person home is ridiculous!

5/27/2025

1 Agree

Water costs have been going up and new development means increased demand, especially given the high demand industrial processes have for water. Considering new development needs to take into account our finite water supply.

5/27/2025

1 Agree

Water and sewer infrastructure is a key component when deciding where to invest in development. This comes in two forms. First, availability and second, whether the municipality uses access to infrastructure as a negotiating tool to drive up housing costs or to require the developer to take on cost burdens that are typically the town's responsibility.

6/24/2025

In most cases this is a do or die for all our projects. Most developers will extend public water and sewer lines provided the availability of easements. Of biggest concern is when the rights of way for DOT roads are not owned fee simple by them.

6/20/2025

Reasonable distance to utilities is vital. Capacity is vital.

6/18/2025

Very much so. No utilities or capacity, the project does not move forward.

6/18/2025

It has to be available and/or cost effective to bring it to the property

6/12/2025

The availability of water and sewer at the site, capacity and required downstream upgrades.

6/12/2025

The availability of water and sewer infrastructure is critical to any project. The earlier we know about current or planned infrastructure, capacity, and required upgrades or improvements means we can decide if a project is viable or not early in the due diligence phase of a potential project. If a project is not viable, many times it is due to water and sewer infrastructure availability.

6/11/2025

We need reliable and clean systems.

6/10/2025

Public water and sewer availability/capacity play into all new developments

6/10/2025

I would rather water infrastructure than well water

6/10/2025

We need to slow down on the amount of residences coming into our worn which could put a strain on our pocketbooks. As mentioned by others, developers need to share in the cost of water and sewer usage.

6/10/2025

Developers need to be made to made to cover the cost of their water water and sewer installations rather than passing upon to the citizens. I am in a condo with one single water main into the building. 16 units Are on that water line. In other words we don't have single water lines. On several occasions in the last couple of years we have been charged exorbitant amounts over \$1K at a time, And then on top of that each one of the 16 units has an individual charge on our condo bill Even though we don't have individual lines into the building. So we are being charged twice for something we don't even have.

6/9/2025

Your lack of sewer infrastructure is limiting my ability to develop my property. You say that developers often times pay for these upgrades, NOT TRUE. They simply ask the OWNER to reduce their price. So yes sewer infrastructure is extremely important but you're making the land owner pay for these upgrades which is not fair. We need better sewer infrastructure planning from Holly Springs.

6/9/2025

Will my property perk OK before I invest in it.

6/9/2025

want to know that we are no longer using fluoride treatment?

6/9/2025

Not sure how this differs from the previous question. It's critical

6/9/2025

I live outside city limits and water pressure is always an issue so its something to consider

6/9/2025

NA. I am outside the water system

5/28/2025

Sewer infrastructure is a huge determinant of whether or not development makes sense and is even feasible in Holly Springs. The knowledge that pump stations and/or forcemains are at capacity makes it financially unfeasible to develop in certain areas of town. Without a fee structure to pay into larger system upgrades, there is no way for some parcels to work - they can't get enough residential units to support the upgrades needed downstream.

5/28/2025

That is the most dominant factor. Town of HS desperately needs these infrastructure and has been trying to make unreasonable demands from their developers for infrastructure improvement. The part near Holly Springs road and sunset lake road will never be developed unless the town is thoughtful and expect developers to pay for the whole infrastructure.

5/27/2025

So leave it undeveloped. The status quo is unacceptable. Developers don't build here for public good - they do it for profit - there's are infrastructure costs that they need to share. We don't need more corporate welfare.

6/12/2025

* What are the top two (2) challenges you face regarding water infrastructure in your development projects?

4%	Other	Rank: 1.00	1 ✓
14%	Capital Improvement Plan (CIP) project timelines	Rank: 1.25	4 ✓
46%	Proximity	Rank: 1.38	13 ✓
54%	Capacity	Rank: 1.40	15 ✓
7%	Data Availability	Rank: 1.50	2 ✓
46%	Timing of other / adjacent development projects	Rank: 1.54	13 ✓

28 Respondents

* What are the top two (2) challenges you face regarding sewer infrastructure in your development projects?

4%	Other	Rank: 1.00	1 ✓
48%	Proximity	Rank: 1.31	13 ✓
67%	Capacity	Rank: 1.33	18 ✓
37%	Timing of other / adjacent development projects	Rank: 1.60	10 ✓
15%	Data Availability	Rank: 1.75	4 ✓
4%	Capital Improvement Plan (CIP) project timelines	Rank: 2.00	1 ✓

27 Respondents

Are you developing in the following geographical areas (multi-select) and are there challenges related to water and sewer in these areas?

65%	Inside Holly Springs ETJ (green)	13 ✓
40%	Inside Holly Springs Planning Boundary (light green)	8 ✓
25%	Redevelopment Inside Town Limits (dark green)	5 ✓
20%	Greenfield Inside Town Limits (dark green)	4 ✓

20 Respondents

Inside the HS ETJ off Sunsetlaket road, 100% the lack of water and sewer is limiting my ability to develop this property

6/9/2025

⊕ 1 Agree

Water Capacity is a huge concern. Timing needs to be nailed down

6/20/2025

"Main is coming from Sanford, but how do we tie in if a connection to a main is not permitted?"

"Moving forward without knowing if there is availability per water allocation policy is risky and frustrating.

6/11/2025

Poll Questions 'Other' Responses:

Main is coming from Sanford, but how do we tie in if a connection to a force main is not permitted?

6/11/2025

Moving forward without knowing if there is availability per water allocation policy is risky and frustrating.

6/11/2025

Prospect of putting in more residences nearby will cause our area to be over saturated as developers is now looking to build on Grigsby near the Fair Hill Subdivision

6/10/2025

ETJ on Sunset Lake near 540

6/9/2025

Arbor Creek

6/9/2025

medium green

6/2/2025

light green

6/2/2025

Are you developing in specific areas where there are challenges related to water and sewer? If so, provide any specific areas and challenges below. (for example, Business Park area, Northeast Gateway, Southwest Corridor, Downtown, North Main Street, etc.)?

Northeast Gateway (multiple developers have come to me but no sewer answers) Southwest Corridor has proximity issues.

6/18/2025

North East Gateway - no sewer capacity and development requirements prohibit development at Kildaire, Holly Springs Road, and the 540 Interchange.

6/12/2025

Duncan Cook Road area

6/12/2025

Northeast Gateway. There are so many owners that own property in this area that have no reasonable timeline or information about ever being able to connect to Town utilities.

6/11/2025

Not looking in these areas, but know that NE Gateway and SW are without available utilities.

6/11/2025

As a consultant, we try to steer our clients to areas where there is known capacity (or can be verified through a study) and the only unknown would be if Council will approve allocation. If there are doubts, speaking with staff early helps us inform our clients.

6/11/2025

Grigsby near Fair Hill

6/10/2025

Yes. Our property is affected by lack of sewage infrastructure. We are located on the corner of Sunset Lake and 540. Closer to the holly springs intersection.

6/9/2025

Not currently. Our current site is along N Main Street.

6/9/2025

Southwest Corridor

6/2/2025

Yes. Holly Springs Road close to Sunset Lake Road.

5/27/2025

* How should the Town prioritize investments in water and sewer utilities?

64%	Treatment plant upgrades	Rank: 1.36	14 ✓
36%	Gravity sewer to unserved areas	Rank: 1.38	8 ✓
50%	Regional pump stations	Rank: 1.45	11 ✓
32%	Waterline extensions to unserved areas	Rank: 1.71	7 ✓
0%	Other		0 ✓

22 Respondents

Are there specific regulatory or compliance hurdles related to water and sewer service that impact your developments?

Yes. You standards are more stringent than industry standards , causing limitations. You are more strict than NCDEQ requirements for flow and capacity. This leads to oversizing, where developer and owner share the extra burden/cost.

6/9/2025

2 Agree

The lack of a regionalized utilities in NC, including Holly Springs, makes it very difficult to work in most municipalities. Instead of working to figure out how to serve the development community, everything is a bargaining chip. This allows the municipalities to force developers to cover the costs but at the expense of those who serve and make up the backbone of the community. Most of these costs are passed on to consumers so ultimately, they are the ones paying for the improvements. The average sales price for a listed home in Holly Springs is north of \$600k.

6/24/2025

No

6/20/2025

Not allowing private pump stations severely limits development.

6/18/2025

no

6/12/2025

Timing of capacity notification. The response time from Town of HS utilities was significantly delayed. Further clarity upfront on capacity constraints. Please do not make individuals go through six months of trying to get a response from the Town.

6/11/2025

The Water Allocation Policy that we are unsure is actually legal (has anyone challenged it?) does not have enough options to move from a Tier 2 or 3 to a Tier 1. The limited options make it hard to move tiers.

6/11/2025

none that I can think of at this time.

6/10/2025

I am okay with rules and regulations that are more strict than other communities. It is our way of maintaining high standards in Holly Springs.

6/9/2025

The Town's standards are typically more stringent than industry standard and other requirements of the area. Resulting in effort by the developer to confirm sizing/capacity and potentially resulting in oversizing of existing infrastructure.

6/9/2025

The Town's standards are more strict than NCDEQ requirements for sewer flow and for water capacity, which results in upgrades to existing lines, born by the developer and oversizing of new lines which benefit the Town, at the expense of the developer.

6/9/2025

Requirement to stub to every upstream property needs to be revisited. Logical stubs to lower areas is ok. Stubbing to an adjacent property that is at a high point should warrant easier exceptions from staff.

6/2/2025

The Town's requirement that "Sanitary sewers shall be designed to carry the projected peak flow at no more than ½ full" is limiting. Maybe this should be revised or apply only to new infrastructure and not considered when evaluating existing infrastructure for capacity. The State of NC only requires that sanitary sewers be designed to carry the average daily flow at half full (Minimum Design Criteria for the permitting of Gravity Sewers-Section III.D.1.c).

5/28/2025

No, it is only lack of capacity

5/27/2025

Can you share any experiences where water and sewer infrastructure significantly impacted your project timeline or budget?

The WRMP process makes it difficult to plan project phasing and timelines and cash flow.

6/11/2025

👍 1 Agree

3 developers who wanted to develop our land, had to back out because of lack of Sewer capacity. No pump station, and the waste water treatment center was not going to be able to acomodate our project. This is really impacting out ability to sell

6/9/2025

👍 1 Agree

No

6/20/2025

Regional pump station requirement has killed more projects than I can count.

6/18/2025

Edwards Drive Mixed-Use by Akridge Kettler. This Rezoning addresses the development of approximately 76.74 acres bordered to the south by future NC 540, to the west by Sunset Lake Road and to the east by Kildaire Farm Road. The property is comprised of four tax parcels, PIN 0760111738 (the "Johnson Tract"), PIN 0750915352 (the "Byler Tract"), and PINs 0750813459 and 0750815984 (the "Francis Tract")(collectively, the "Property"). The Johnson Tract is within the Town limits and the Byler and Francis Tracts are within the Town's Extra Territorial Planning jurisdiction.

6/12/2025

The availability of sewer to serve the southwest portion of Town and future significant upgrades to existing infrastructure that will be required.

6/12/2025

We were unable to successfully transact on a property given the delays, lack of certainty, lack of clarity, and lack of assistance from the Town staff.

6/11/2025

We have a project that was part of a PUD that allocated sewer capacity for the PUD. We were limited to 1100 gpd, even though the sewer system had adequate capacity. We were held to the allocated flow, which reduced the size and quality of the project.

6/9/2025

My project was put on hold even though my project's sewer requirement was infinitesimal to the point of ridiculousness.

5/27/2025

Is there a development-related policy in another North Carolina municipality, regarding water and sewer, that you would like to see implemented in Holly Springs?

Water and sewer policies should not be tied to aesthetic standards - PERIOD.

6/18/2025

👍 1 Agree

City of Raleigh is a perfect example on clarity, planning, and responsiveness.

6/11/2025

👍 1 Agree

Make fees in-line with other Wake County municipalities.

6/11/2025

👍 1 Agree

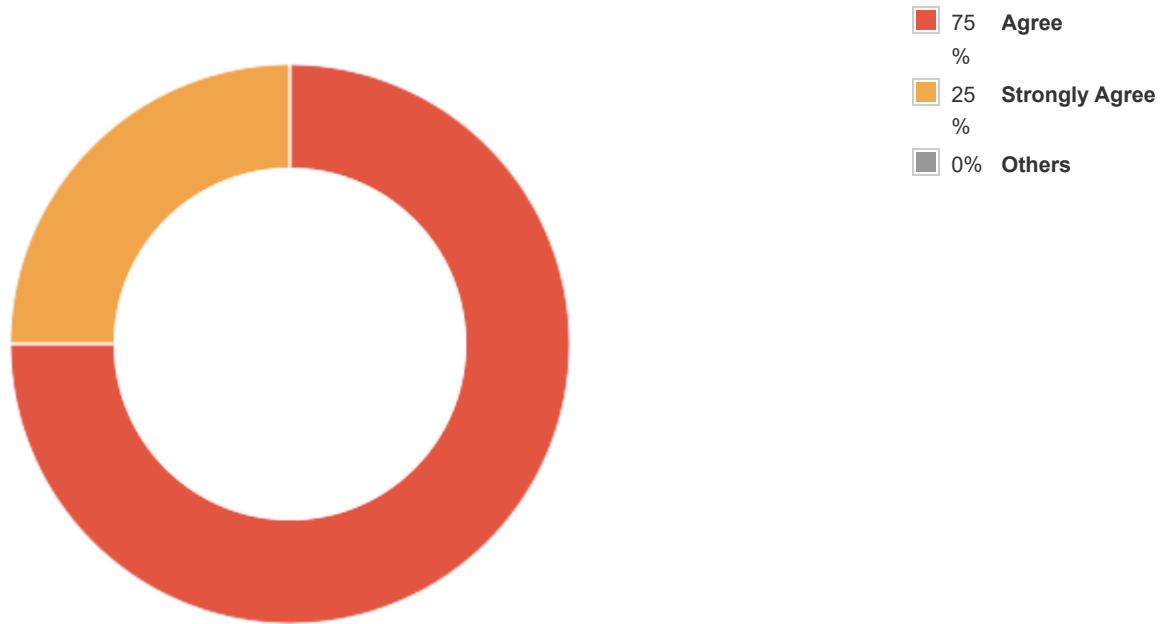
Yes. Shared costs. In Sanford, for example, if a community requires improvements to water or sewer infrastructure, the town voluntarily pays for the portion of the improvements that benefit the community and the do not tack on other burdens such as parks, 8' wide walking paths, light improvements, etc, beyond what is reasonable. I currently know of 2 landowners in Holly Springs' ETJ that will never be able to sell their property based on the town's current policies.

6/24/2025

No

6/20/2025

What is your perspective on the following statement: Stormwater and flood regulations in Holly Springs benefit and protect the community.



20 respondents

Yes it seems adequate

6/9/2025

I somewhat agree. Holly Springs sometimes requires an unreasonable amount of stormwater studies that already meet the peak flow requirements and treatment standards. Those studies provide no benefit, only cost. If peak flow has been accomplished below existing conditions, what is th point of an extensive flood study offsite?

6/9/2025

Have you encountered any issues related to stormwater management in your development projects (for example, SCM sizing, FEMA/local flood studies, erosion control, etc.)?

Local flood studies being required at zoning aren't as useful as they seem on the surface. So little engineering has been done at zoning, it is impossible to know the true impact of any proposed development on flood elevations.

5/28/2025

⬆ 2 Agree

no

6/20/2025

Having them all reviewed together along with the Town Package (even if special study) is helpful for scheduling and being able to react on the design side.

6/10/2025

no

6/10/2025

no

6/9/2025

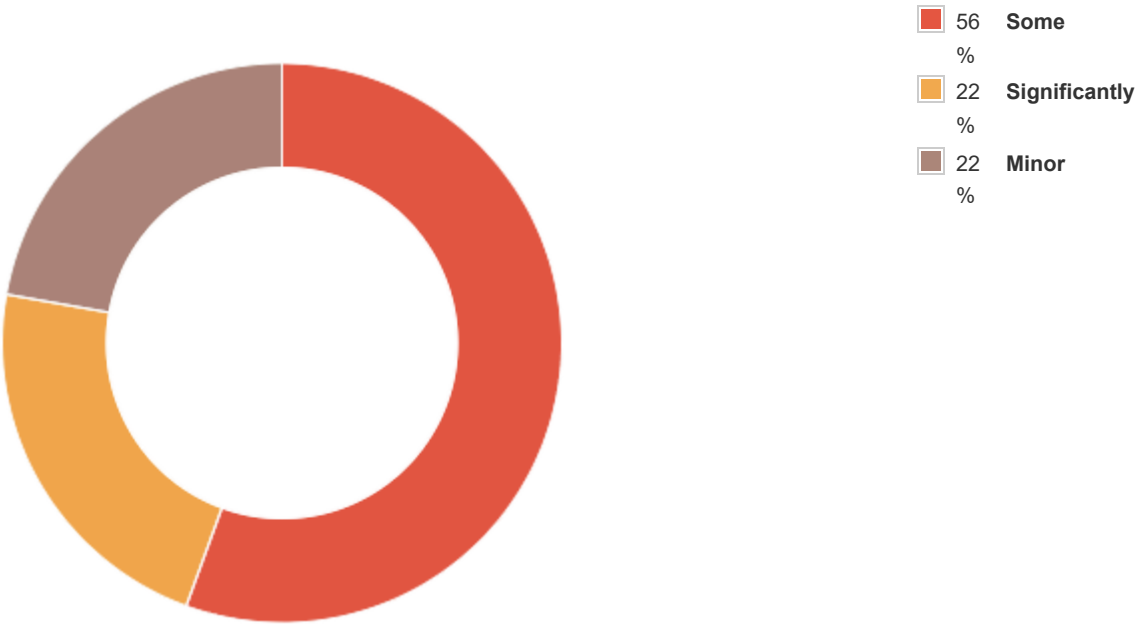
Not yet

6/9/2025

No

5/27/2025

How do existing community facilities influence your decision-making process for new development (for example, Parks, Schools, Greenways, Fire Stations, Police Stations, etc.)?



18 respondents

minimal impact. HS is a desireableo area with plenty of amenities today. We need the capacity to build our projects

6/9/2025

1 Agree

Parks, Schools and Greenways more than anything

6/20/2025

no

6/9/2025

What additional community facilities do you think are needed to support the existing community and future growth? (for example, Greenways, Sidewalks, Town Square / Plaza areas, Fire Stations, Police Stations, etc.)

We need to continue to improve downtown holly springs as our community's core, but we also need to allow for housing and development around what is currently the outer edge. In planning for this, HS needs to consider how a divers set of products can benefit all members of the community, build into your plan the ability to offer cottage homes and (real) mixed use.

6/24/2025

I think Growth Nodes with a town square type feel strategically placed within your Planning District would greatly improve traffic and the ability to provide density around the nodes.

6/20/2025

Sewer

6/11/2025

Places for teens, I don't know what this would be, because teens don't talk to us adults - but they say everything is boring and there is nothing to do. Maybe phone charging stations in public spaces and wifi would at least get them outdoors.

6/11/2025

Stop building neighborhoods. We like to see trees!

6/10/2025

More Greenways

6/10/2025

none

6/9/2025

Power is critical. Developers having to pay to bury power infrastructure handcuffs development goals and is not realized by the community.

6/9/2025

Start with burying power. The Town tries to make the developers bury power in and around downtown and the cost sometimes exceeds the entire site budget. UGE is safer, more reliable, and easier to maintain. Stop with the hap-hazard "public art spaces". Good example, in front of Lowe's Home Improvement, that space was provided to meet the code and it's an eye sore. More thought could have been placed on that space by the Town and development community.

6/9/2025

Town square/park for people to hang out downtown and stay in the area longer. A park like Cary's downtown park would make the area much more desirable.

6/9/2025

How can development projects better integrate with the surrounding natural environment?

I've always liked the idea of regulating that natural corridors flow between projects. That way it isn't just fragments of vegetation based on a calculation, but a requirement that the tree coverage extend across the site in a linear manner connecting with adjacent natural areas for wildlife corridors (naturally occurs on sites with streams).

5/28/2025

 1 Agree

Have a more robust plan with divers product and communicate what the town's vision is to the development community.

6/24/2025

Cluster subdivisions with community open spaces connecting to natural features.

6/20/2025

Everyone understands that alley-loaded houses look nice, but they are not as environment friendly as just having one car-oriented lane either in front or behind the house, not both in front and behind. The Town should be okay with alley loaded homes that front on a green OR front loaded lots that allow some people to enjoy the back yard that they really want. Maybe you have them put a sidewalk between back yards so that there is a protected pedestrian area aside from the sidewalk on the street. Allow creativity in design rather than requiring the alley loaded with a wide road on the front - this is just extra infrastructure for developers to build and taxpayers to maintain. The road widths in your cross-sections are really wide and create more impervious surface. Suggest looking at some cross-sections that have less impervious surface, yet meet safety for pedestrians.

6/11/2025

More state parks, less housing developments

6/10/2025

Stop clear cutting for a new development. Leave as many healthy existing trees as possible, And not just on the perimeter of the development. Plant more mature trees within the development, ie, streets, neww yards, etc.

6/9/2025

n/a

6/9/2025

What other challenges related to infrastructure, community facilities, and natural areas have you faced while developing in Holly Springs?

Disconnect between the Town staff and the Town Council. Projects can go through with positive feedback from Town staff and rejected from the Town Council.

6/11/2025

The unknown costs of development that pop up at different points throughout the development process. Whether that is a "voluntary" contribution, additional off-site improvements, etc. Knowing the unknowns AS EARLY in the process as possible allows the development community to decide early on if they are able to make a project work. HS has increasingly added "volunteer" contributions and requests late in the process and have made a project not viable after much money in Due Diligence has been spent. We get it, every municipality wants developers to cover some costs, the community may expect it, Council may expect it - we just want to know upfront what that may be.

6/11/2025

It is getting VERY crowded. Traffic is horrible any time of the day. We moved here because we liked things simple. Now it's becoming a confusing city.

Stop building useless buildings (we don't need more banks/dentists/mattress stores...) we want out trees and beautiful landscape back

How about putting that money into improving security cameras and ticketing people who run red lights...

6/10/2025

Main Street is too crowded with traffic and instead of widening the road with additional lanes, you allow developers to come in and build more residences and businesses so we have more traffic problems than we've had. In the 21 years that I've lived here, I've seen a lot of change but I also see that the worn allows for overgrowth and it needs to stop. Widen Main Street. Also we need a traffic light at the corner of Main Street and Maple! The back-up is ridiculous at times, specifically rush hour and holidays or when there are events or voting. The request for a traffic light seems to have fallen on deaf ears and something needs to change to allow it to happen! Too many in the area off of Grigsby complain out the problem and nothing gets done about it.

6/10/2025

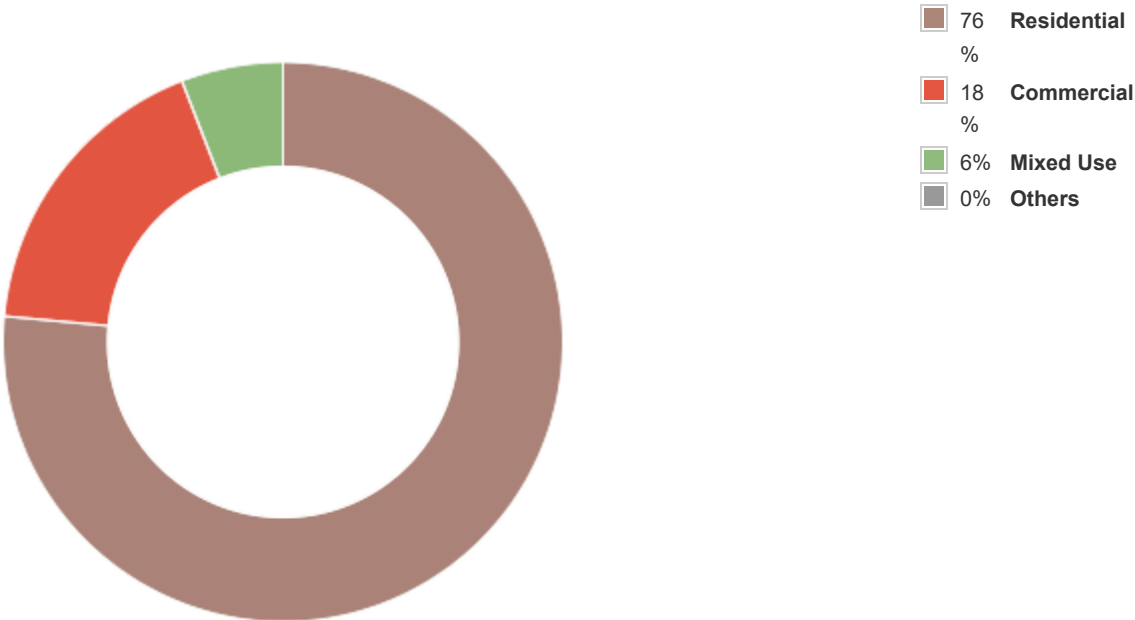
not that im aware of

6/9/2025

Access to buried power is a challenge. The implementation of Super Streets have congested a corridor that was previously operating at a poor level of service and made it worse.

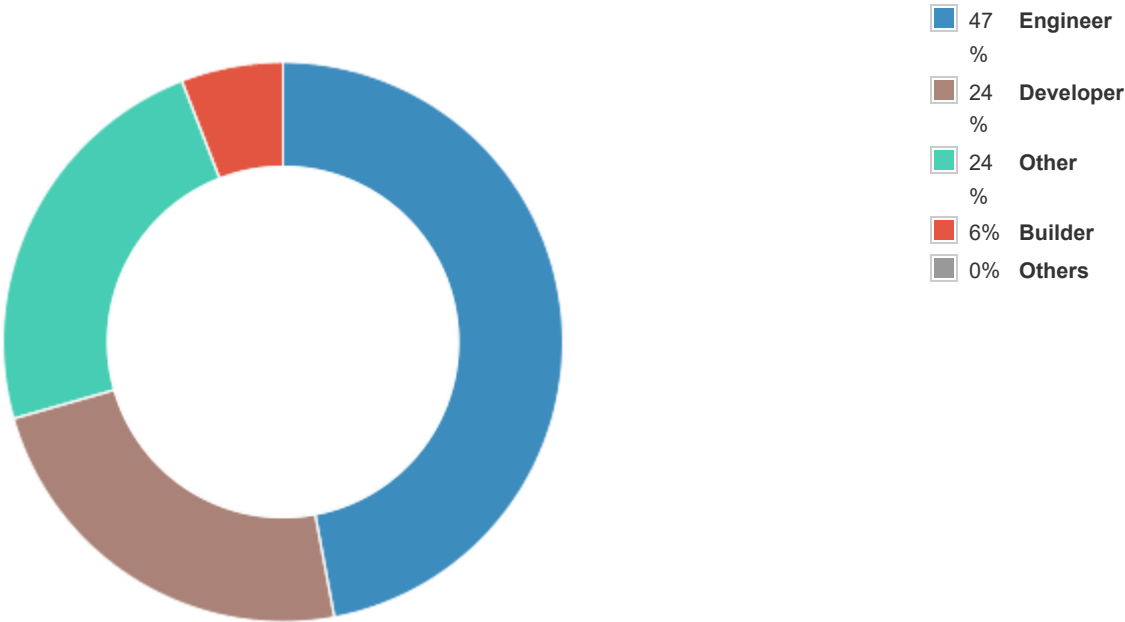
6/9/2025

What is your primary market sector?



17 respondents

What is your role in development?



17 respondents