

The Division of Water Resources (DWR) provides the data contained within this Local Water Supply Plan (LWSP) as a courtesy and service to our customers. DWR staff does not field verify data. Neither DWR, nor any other party involved in the preparation of this LWSP attests that the data is completely free of errors and omissions. Furthermore, data users are cautioned that LWSPs labeled **PROVISIONAL** have yet to be reviewed by DWR staff. Subsequent review may result in significant revision. Questions regarding the accuracy or limitations of usage of this data should be directed to the water system and/or DWR.

1. System Information

Contact Information

Water System Name:	Hillsborough	PWSID:	03-68-015
Mailing Address:	PO Box 429 Hillsborough, NC 27278	Ownership:	Municipality
Contact Person:	K. Marie Strandwitz, PE	Title:	Utilities Director
Phone:	919-296-9631	Cell/Mobile:	--
Secondary Contact:	Kim Copeland	Phone:	919-296-9631
Mailing Address:	PO Box 429 Hillsborough, NC 27278	Cell/Mobile:	--

Complete

Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Asbestos Cement	6-12	2.90 %
Cast Iron	2-12	7.10 %
Ductile Iron	3-20	32.40 %
Galvanized Iron	1-2	0.70 %
Other	1-12	3.60 %
Polyvinyl Chloride	2-12	53.30 %

What are the estimated total miles of distribution system lines? 153 Miles

How many feet of distribution lines were replaced during 2025? 987 Feet

How many feet of new water mains were added during 2025? 13,114 Feet

How many meters were replaced in 2025? 241

How old are the oldest meters in this system? 18 Year(s)

How many meters for outdoor water use, such as irrigation, are not billed for sewer services? 49

What is this system's finished water storage capacity? 2.4500 Million Gallons

Has water pressure been inadequate in any part of the system since last update? Line breaks that were repaired quickly should not be included. No

Programs

Does this system have a program to work or flush hydrants? Yes, Annually

Does this system have a valve exercise program? Yes, Annually

Does this system have a cross-connection program? Yes

Does this system have a program to replace meters? Yes

Does this system have a plumbing retrofit program? No

Does this system have an active water conservation public education program? No

Does this system have a leak detection program? Yes

Third party leak detection is in the operations budget each year.

Water Conservation

What type of rate structure is used? Flat/Fixed, Uniform

How much reclaimed water does this system use? 0.0000 MGD For how many connections? 0

Does this system have an interconnection with another system capable of providing water in an emergency? Yes

The town has interconnections with Durham, OWASA and Orange-Alamance Water System. The rate structure is fixed for the first 2,000 gallons then volumetric charges per 1,000 gallons over 2,000. The rates are the same no matter the type of customer (e.g., commercial, residential, institutional, manufacturing, irrigation).

2. Water Use Information

Service Area

Sub-Basin(s)	% of Service Population	County(s)	% of Service Population
Neuse River (10-1)	100 %	Orange	100 %

What was the year-round population served in 2025? 15,770

Has this system acquired another system since last report? No

Population is based upon residential water accounts and latest census estimate of 2.26 people per household, rounded to nearest ten plus an assumed 1500 people who work or attend school served by our water system.

Water Use by Type

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	6,362	0.7497	1	0.0107
Commercial	368	0.4354	0	0.0000
Industrial	7	0.0013	0	0.0000
Institutional	130	0.3108	1	0.0001

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? 0.2032 MGD

Irrigation accounts are incorporated into the use types. There are 49 irrigation accounts with a combined average of .0002 mgd. Commercial use includes rented hydrant meters (6) and consumption. Residential non-metered connections includes 1 for estimated service line leaks. Institutional includes fire department water use for training and firefighting counted as one unmetered connection in addition to water main breaks. System process includes hydrant and interconnection flushing, backwashing filters, basin cleaning, sewer jetting, and hydrant flow testing.

Water Sales

Purchaser	PWSID	Average Daily Sold (MGD)	Days Used	MGD	Contract Expiration	Recurring	Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
Durham	03-32-010	0.0000	0				Yes	12	Emergency
Orange-Alamance	03-68-020	0.0000	0			Yes	Yes	6	Emergency
OWASA	03-68-010	0.0000	0			Yes	Yes	16	Emergency

3. Water Supply Sources

Monthly Withdrawals & Purchases

	Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)
Jan	2.0589	2.3080	May	1.9365	2.3900	Sep	2.1937	2.6720
Feb	1.8709	2.2880	Jun	2.0161	2.2670	Oct	1.4226	1.7530
Mar	1.8782	2.2590	Jul	2.0632	2.4720	Nov	1.9816	2.3890
Apr	1.8847	2.3750	Aug	2.2324	2.6230	Dec	2.0329	2.3980



Surface Water Sources

Stream	Reservoir	Average Daily Withdrawal		Maximum Day Withdrawal (MGD)	Available Raw Water Supply		Usable On-Stream Raw Water Supply Storage (MG)
		MGD	Days Used		MGD	* Qualifier	
Eno River	Lake Ben Johnston	1.9957	365	0.0000	1.2130	SY20	24.0000
West Fork of the Eno River	West Fork of the Eno Reservoir	0.0000	0	0.0000	3.0000	SY20	1,829.0000

* Qualifier: C=Contract Amount, SY20=20-year Safe Yield, SY50=50-year Safe Yield, F=20% of 7Q10 or other instream flow requirement, CUA=Capacity Use Area Permit

Surface Water Sources (continued)

Stream	Reservoir	Drainage Area (sq mi)	Metered?	Sub-Basin	County	Year Offline	Use Type
Eno River	Lake Ben Johnston	65	Yes	Neuse River (10-1)	Orange		Regular
West Fork of the Eno River	West Fork of the Eno Reservoir	9	No	Neuse River (10-1)	Orange		Regular

What is this system's off-stream raw water supply storage capacity? 3 Million gallons

Are surface water sources monitored? Yes, Weekly

Are you required to maintain minimum flows downstream of its intake or dam? Yes

Does this system anticipate transferring surface water between river basins? No

The only intake for our water system is at Lake Ben Johnston on the Eno River. Past state advice is to leave West Fork of the Eno Reservoir in this plan even though water is only released from it.

Water Purchases From Other Systems

Seller	PWSID	Average Daily Purchased (MGD)	Days Used	Contract		Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
				MGD	Expiration	Recurring		
Durham	03-32-010	0.9451	8			Yes	12	Emergency
Orange-Alamance	03-68-020	0.0000	0			Yes	6	Emergency
OWASA	03-68-010	0.0000	0			Yes	16	Emergency

The Durham interconnection was utilized during TS Chantal to support the town over 8 days in July 2025. The 1.000 MGD is a rounded figure.

Water Treatment Plants

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Output Metered?	Source
Hillsborough WTP	3.0000	Yes	Yes	Eno River

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2025? No

If yes, was any water conservation implemented?

Did average daily water production exceed 90% of approved plant capacity for five consecutive days during 2025? No

If yes, was any water conservation implemented?

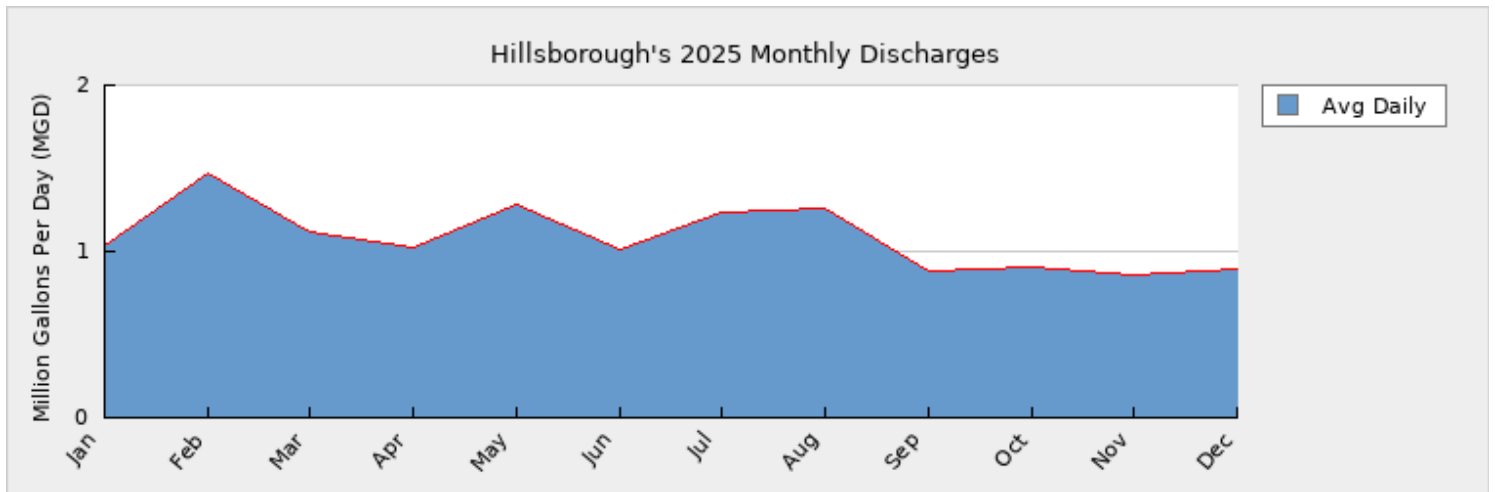
Are peak day demands expected to exceed the water treatment plant capacity in the next 10 years? No

4. Wastewater Information

Monthly Discharges

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)
Jan	1.0410	May	1.2770	Sep	0.8870
Feb	1.4710	Jun	1.0130	Oct	0.9050

Mar	1.1220	Jul	1.2360	Nov	0.8570
Apr	1.0270	Aug	1.2540	Dec	0.8910



How many sewer connections does this system have? 5,008

How many water service connections with septic systems does this system have? 1,307

Are there plans to build or expand wastewater treatment facilities in the next 10 years? No

The town is completing a wastewater treatment master plan as it is currently nutrient discharge limited due to Falls Lake Rules. The town is an active participant in the Upper Neuse River Basin Association and is vying for a rules revision as to upgrade our treatment plant for more nutrient removal with little beneficial improvement to Falls Lake is an extreme monetary investment our customers and our financial benchmark obligations cannot support.

Wastewater Permits

Permit Number	Type	Permitted Capacity (MGD)	Design Capacity (MGD)	Average Annual Daily Discharge (MGD)	Maximum Day Discharge (MGD)	Receiving Stream	Receiving Basin
NC0026433	WWTP	3.0000	3.0000	1.1000	3.9000	Eno River	Neuse River (10-1)

5. Planning

Projections

	2025	2030	2040	2050	2060	2070
Year-Round Population	15,770	17,411	21,227	25,880	31,552	31,552
Seasonal Population	0	0	0	0	0	0
Residential	0.7604	0.7992	0.8829	0.9753	1.0780	1.0780
Commercial	0.4354	0.4464	0.4692	0.4932	0.5185	0.5185
Industrial	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013
Institutional	0.3109	0.3187	0.3350	0.3522	0.3702	0.3702
System Process	0.2032	0.2042	0.2063	0.2083	0.2104	0.2104
Unaccounted-for	0.3052	0.3157	0.3379	0.3621	0.3885	0.3885

The town has a finite water and sewer system boundary established by intergovernmental agreement with surrounding jurisdictions. The wastewater plant is limited in nutrient discharge. The roads through town are limited by lack of space to widen and NCDOT's schedule. Only so much capacity can be accommodated in all infrastructure. Thus it is anticipated that the town will reach its desired capacity by 2060, if not before. A 2% growth rate in population was utilized for residential and 1500 persons was added to each for non-residential customers served by our water system. In the past, population was projected based upon the number of connections by the census population. However given there are non-residential users on the system, this may have been an overstatement. Census population has historically been lower than projected in the past. For this plan, we multiplied the residential connections by the census population per household and added 1500 non-residential population to account for being the county seat, having several schools and for commercial and retail.

The focus is now on upgrading linear assets. Increasing plant capacity to accommodate growth is not foreseen in the next 15-20 years unless the

town board determines it is desired and developers assist. Based on an analysis of new customer addresses and consumption, consumption is negative than five years earlier likely due to conservation because of high rates. The average residential growth over the last five years was almost 2% per year, however residential service consumption has gone down by a little over 1% per year since 2019. 1% growth is assumed for residential.

The non-residential portion reflects even worse on consumption, ranging from being between 10% - 35% less consumption than in 2019 for commercial, institutional and manufacturing accounts. As such, future projections are minimized. Little new industrial activity is anticipated so .01% was used. There may be mixed use developments coming to town so commercial growth consumption, being mostly office and retail, is projected at 0.5% per year as is institutional.

System process water is projected to increase by 0.1% each year. In 2025, TS Chantal flooded our finished water clearwell and it had to be drained, cleaned, sanitized and refilled. We also used a lot of water cleaning other flooded facilities which was unmetered. We still had several fiber crews in the area in 2025 that continually struck water services and mains whereby accurate calculations were hard to estimate.

Demand v/s Percent of Supply

	2025	2030	2040	2050	2060	2070
Surface Water Supply	4.2130	4.2130	4.2130	4.2130	4.2130	4.2130
Ground Water Supply	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Purchases	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Future Supplies		0.0000	0.0000	0.0000	0.0000	0.0000
Total Available Supply (MGD)	4.2130	4.2130	4.2130	4.2130	4.2130	4.2130
Service Area Demand	2.0164	2.0855	2.2326	2.3924	2.5669	2.5669
Sales	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Future Sales		0.0000	0.0000	0.0000	0.0000	0.0000
Total Demand (MGD)	2.0164	2.0855	2.2326	2.3924	2.5669	2.5669
Demand as Percent of Supply	48%	50%	53%	57%	61%	61%



The purpose of the above chart is to show a general indication of how the long-term per capita water demand changes over time. The per capita water demand may actually be different than indicated due to seasonal populations and the accuracy of data submitted. Water systems that have calculated long-term per capita water demand based on a methodology that produces different results may submit their information in the notes field.

Your long-term water demand is **48** gallons per capita per day. What demand management practices do you plan to implement to reduce the per capita water demand (i.e. conduct regular water audits, implement a plumbing retrofit program, employ practices such as rainwater harvesting or reclaimed water)? If these practices are covered elsewhere in your plan, indicate where the practices are discussed here.

Are there other demand management practices you will implement to reduce your future supply needs?

What supplies other than the ones listed in future supplies are being considered to meet your future supply needs?

How does the water system intend to implement the demand management and supply planning components above?

Additional Information

Has this system participated in regional water supply or water use planning? **Yes, The town has been a long standing member of the Triangle Water Supply Partnership which performs system modeling and water supply planning for the region.**

What major water supply reports or studies were used for planning? **Census, consumption and billing data , planning department development pipeline projects, MORs.**

Please describe any other needs or issues regarding your water supply sources, any water system deficiencies or needed improvements (storage, treatment, etc.) or your ability to meet present and future water needs. Include both quantity and quality considerations, as well as financial, technical, managerial, permitting, and compliance issues: **In our CIP is a plan to increase capacity at our smallest water tank (Hasell St) by building a new tower at 500 MG.**

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