

Greensboro

2019 ▾

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:	Greensboro	PWSID:	02-41-010
Mailing Address:	PO Box 3136 Greensboro, NC 27402	Ownership:	Municipality
Contact Person:	Dell L. Harney	Title:	Water Supply Manager
Phone:	336-373-7900	Cell/Mobile:	336-430-6240
Secondary Contact:	Ali Khan	Phone:	336-373-4317
Mailing Address:	1041 Battleground Ave Greensboro, NC 27408	Cell/Mobile:	336-430-6245

Complete

Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Cast Iron	2-12	37.00 %
Ductile Iron	2-60	58.00 %
Other	1-60	3.00 %
Polyvinyl Chloride	4-12	2.00 %

What are the estimated total miles of distribution system lines? 1,512 Miles

How many feet of distribution lines were replaced during 2019? 11,351 Feet

How many feet of new water mains were added during 2019? 15,423 Feet

How many meters were replaced in 2019? 7,270

How old are the oldest meters in this system? 15 Year(s)

How many meters for outdoor water use, such as irrigation, are not billed for sewer services? 4,484

What is this system's finished water storage capacity? 31.0000 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, 2 Years or More

Does this system have a valve exercise program? Yes, 2 Years or More

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? Yes

Does this system have a leak detection program? Yes

Water Conservation

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

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

2. Water Use Information

Service Area

Sub-Basin(s)	% of Service Population	County(s)	% of Service Population
Haw River (02-1)	82 %	Guilford	100 %
Deep River (02-2)	18 %		

What was the year-round population served in 2019? 315,328

Has this system acquired another system since last report? No

Water Use by Type

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	96,767	16.4200	0	0.0000
Commercial	8,973	9.7300	0	0.0000
Industrial	63	1.7400	0	0.0000
Institutional	473	0.9600	0	0.0000

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? 3.4200 MGD

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
City of Burlington	02-01-010	0.0600	365	0.0000		Yes	Yes	12,16	Regular
City of Jamestown	02-41-030	0.0931	362	0.0000		Yes	Yes	12	Regular
Reidsville	02-79-020	0.0000	0	0.0000	2024	No	Yes		Emergency

There is no specific amount of contract water sales to Burlington.

There is no specific amount of contract water sales to Reidsville.

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	29.8068	32.1480	May	34.3201	40.7950	Sep	38.7812	41.9230
Feb	28.4508	31.7040	Jun	33.3775	37.9210	Oct	36.7829	42.8620
Mar	28.5836	31.1720	Jul	36.6456	41.9730	Nov	30.9738	33.8180
Apr	31.2102	33.5250	Aug	37.2668	38.4250	Dec	30.5364	31.7270



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	
Brush Creek.	Lake Higgins	0.0000	0	0.0000	0.0000	SY50	792.0000
Reedy Fork Cr.	Lake Townsend	16.3360	365	24.3140	24.0000	SY50	5,385.0000
Reedy Fork Cr.Horsepen Cr.	Lake Brandt	8.4280	365	17.1040	12.0000	SY50	1,752.0000

* 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
Brush Creek.	Lake Higgins	11	Yes	Haw River (02-1)	Guilford		Regular
Reedy Fork Cr.	Lake Townsend	59	Yes	Haw River (02-1)	Guilford		Regular
Reedy Fork Cr.Horsepen Cr.	Lake Brandt	35	Yes	Haw River (02-1)	Guilford		Regular

What is this system's off-stream raw water supply storage capacity? 20 Million gallons

Are surface water sources monitored? Yes, Daily

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

Does this system anticipate transferring surface water between river basins? Yes

For Lake Townsend there is a three tiered minimum release: 7cfs, 5cfs and 2cfs.

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			
City of Burlington	02-01-010	1.9800	365	5.0000	2019	Yes	Yes	12,16	Regular
City of High Point	02-41-020	0.0000	0	0.0000		Yes	Yes	12,12	Emergency
City of Reidsville	02-79-020	0.9800	351	1.0000	2024	Yes	Yes	30	Regular
City of Winston-Salem	02-34-010	1.2650	84	3.0000	2030	Yes	Yes	12	Regular
Piedmont Triad Regional Water Authority	30-76-010	6.8200	365	7.9300	2057	Yes	Yes	48	Regular

The contract purchase amount of water from PTRWA is 7.83 MGD. The difference between 7.93 MGD and 7.83 MGD is the amount of contracted water Greensboro wheels through their system to Jamestown.

Water Treatment Plants

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Output Metered?	Source
Lake Townsend WTP	30.0000	Yes	Yes	Haw River Basin-Reedy Fork Creek
Mitchell Water Treatment Plant	24.0000	Yes	Yes	Haw River Basin-Reedy Fork Creek

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2019? No

If yes, was any water conservation implemented?

Did average daily water production exceed 90% of approved plant capacity for five consecutive days during 2019? No

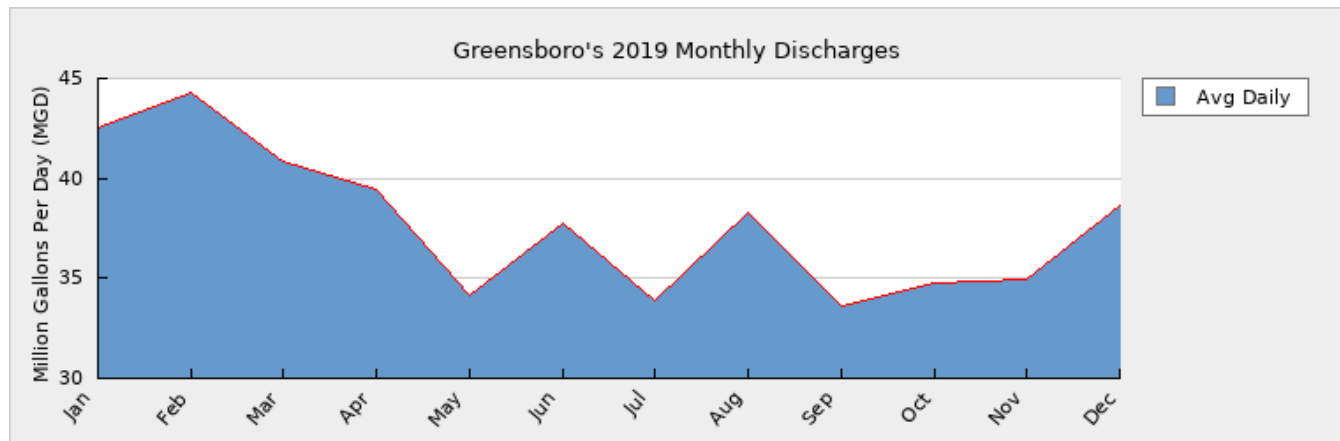
If yes, was any water conservation implemented?

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	42.5260	May	34.1480	Sep	33.6270
Feb	44.3100	Jun	37.8080	Oct	34.7810
Mar	40.8930	Jul	33.8640	Nov	34.9710
Apr	39.4670	Aug	38.3040	Dec	38.6340



How many sewer connections does this system have? 100,798

How many water service connections with septic systems does this system have? 949

Are there plans to build or expand wastewater treatment facilities in the next 10 years? Yes

Currently under construction for upgrade and expansion to be completed in December 2020. Project includes expansion to 56 MGD and Biological Nutrient Removal (BNR) upgrade.

Wastewater Permits

Permit Number	Permitted Capacity	Design Capacity	Average Annual	Maximum Day Discharge	Receiving Stream	Receiving Basin
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	(MGD)	(MGD)	Daily Discharge (MGD)	(MGD)		
NC 0047384	40.0000	40.0000	35.5460	79.9700	South Buffalo Creek	Haw River (02-1)
NC 0081426	99.0000	1.5000	0.0000	0.0000	North Buffalo Creek	Haw River (02-1)
NCG590017	2.8900	32.0000	1.1350	4.1600	Reedy Fork Cr.	Haw River (02-1)

There was no discharge for discharge permit # NC 0081426 in 2019.

Wastewater Interconnections

Water System	PWSID	Type	Average Daily Amount		Contract Maximum (MGD)
			MGD	Days Used	
City of High Point	02-41-020	Discharging	0.5140	365	0.0000
Town of Jamestown	02-41-030	Discharging	0.5825	365	0.0000
City of Burlington	02-01-010	Receiving	0.1490	365	0.9000

5. Planning

Projections

	2019	2020	2030	2040	2050	2060
Year-Round Population	315,328	318,608	337,712	370,213	405,843	444,901
Seasonal Population	0	0	0	0	0	0
Residential	16.4200	18.6830	21.1650	24.4090	28.1500	32.4640
Commercial	9.7300	10.6710	12.0890	13.9420	16.0780	18.5420
Industrial	1.7400	2.2050	2.4980	2.8810	3.3220	3.8310
Institutional	0.9600	0.8750	0.9920	1.1440	1.3190	1.5210
System Process	3.4200	3.1730	3.1730	3.1730	3.1730	3.1730
Unaccounted-for	2.3752	3.1250	3.5210	4.0400	4.6380	5.3280

Future Supply Sources

Source Name	PWSID	Source Type	Additional Supply	Year Online	Year Offline	Type
City of Reidsville	02-79-020	Surface	4.0000	2040		Regular
Piedmont Triad Regional Water Authority	30-76-010	Surface	4.9000	2030		Regular
Piedmont Triad Regional Water Authority	30-76-010	Surface	6.3000	2040		Regular
Piedmont Triad Regional Water Authority	30-76-010	Surface	4.9000	2050		Regular

Demand v/s Percent of Supply

	2019	2020	2030	2040	2050	2060
Surface Water Supply	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000
Ground Water Supply	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Purchases	16.9300	16.9300	16.9300	16.9300	16.9300	16.9300
Future Supplies		0.0000	4.9000	15.2000	20.1000	20.1000
Total Available Supply (MGD)	52.9300	52.9300	57.8300	68.1300	73.0300	73.0300
Service Area Demand	34.6452	38.7320	43.4380	49.5890	56.6800	64.8590
Sales	0.1523	0.1531	0.1531	0.1531	0.1531	0.1531
Future Sales		0.0000	0.0000	0.0000	0.0000	0.0000
Total Demand (MGD)	34.7975	38.8851	43.5911	49.7421	56.8331	65.0121
Demand as Percent of Supply	66%	73%	75%	73%	78%	89%



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 52 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? Greensboro implemented a strategy of water conservation through partnership with our customers with good results. over the last eleven years the average use per day has steadily reduced on a per capita basis.

What supplies other than the ones listed in future supplies are being considered to meet your future supply needs? Yes. The City of Greensboro participating in a Regional Water Supply Planning through partnership with surrounding Communities and Water Authorities. These include Piedmont Triad Regional Water Authority, City of Burlington, City of High Point, City of Reidsville, City of Winston Salem and Jamestown.

How does the water system intend to implement the demand management and supply planning components above? Greensboro is currently conducting a comprehensive capacity development plan through Black and Veatch for our water supply and reclamation systems.

Greensboro has added treatment processes to both water treatment plants that can be used to reduce Perfluorinated Compounds. a long termed solution is planned for the Mitchell water treatment plant with design beginning in next year.

Additional Information

Has this system participated in regional water supply or water use planning? Yes, City of Greensboro is working with Hazen. Hazen updates the water Distribution System Master Plan and City use the Plan to adjust Demand projection and population growth projection.

What major water supply reports or studies were used for planning?

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:

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