

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:	Shelby	PWSID:	01-23-010
Mailing Address:	PO Box 207 Shelby, NC 28150	Ownership:	Municipality
Contact Person:	Michael Mull	Title:	WTP Supervisor/ORC
Phone:	704-484-6885	Fax:	704-484-6853
Secondary Contact:	David Hux	Phone:	704-484-6840
Mailing Address:	PO Box 207 Shelby, NC 28151-0207	Fax:	704-484-6808

Provisional

Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Cast Iron	4-16	51.12 %
Ductile Iron	6-16	42.24 %
Galvanized Iron	2	0.90 %
Other	2-10	2.30 %
Polyvinyl Chloride	2-12	3.44 %

What are the estimated total miles of distribution system lines? **220 Miles**
 How many feet of distribution lines were replaced during 2014? **1,778 Feet**
 How many feet of new water mains were added during 2014? **2,007 Feet**
 How many meters were replaced in 2014? **287**
 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? **501**
 What is this system's finished water storage capacity? **9.750 Million Gallons**
 Has water pressure been inadequate in any part of the system since last update? **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, As Needed**
 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**

The City uses geophones and electroacoustic leak device for checking waterlines for leaks. During hydrant testing, contractor uses leak detection equipment to identify leaks.

Water Conservation

What type of rate structure is used? **Flat/Fixed**
 How much reclaimed water does this system use? **0.000 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
Broad River (01-1)	100 %	Cleveland	100 %

What was the year-round population served in 2014? 20,323

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	8,284	1.277	0	0.000
Commercial	1,469	0.308	0	0.000
Industrial	77	1.896	0	0.000
Institutional	309	0.777	0	0.000

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? 0.750 MGD

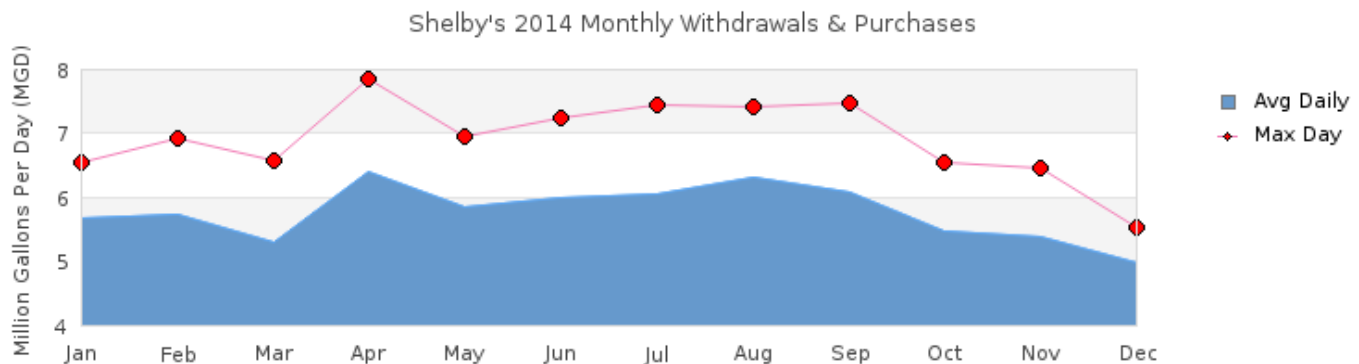
Water Sales

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
Cleveland County Water	01-23-055	0.000	0	1.000		Yes	No	12	Emergency
Town of Boiling Springs	01-23-025	0.368	365	1.000	2034	Yes	Yes	16	Regular

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	5.669	6.555	May	5.846	6.949	Sep	6.085	7.489
Feb	5.717	6.932	Jun	6.006	7.253	Oct	5.470	6.559
Mar	5.299	6.575	Jul	6.047	7.449	Nov	5.394	6.465
Apr	6.413	7.862	Aug	6.299	7.421	Dec	4.978	5.522



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	
1st Broad River	Broad River 01-5-510	5.768	365	0.000	18.000	F	0.000
Broad River		0.000	0	0.000	9.000	F	0.000

* 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
1st Broad River	Broad River 01-5-510	226	Yes	Broad River (01-1)	Cleveland		Regular

Broad River 884 No Broad River (01-1) Cleveland Regular

What is this system's off-stream raw water supply storage capacity? 18 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? No

Water Treatment Plants

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Output Metered?	Source
City of Shelby	12.000	Yes	Yes	First Broad River; Broad River

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2014? No

If yes, was any water conservation implemented?

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If yes, was any water conservation implemented?

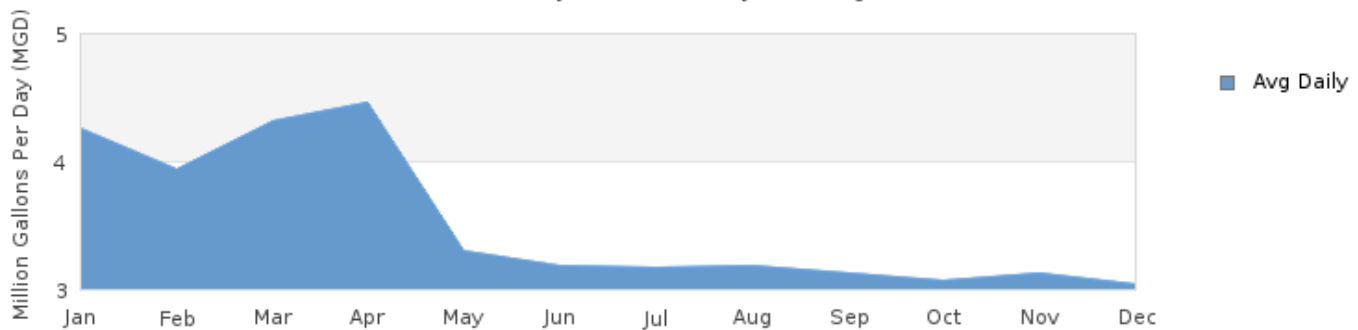
Are peak day demands expected to exceed the water treatment plant capacity in the next 10 years? No

4. Wastewater Information

Monthly Discharges

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)
Jan	4.257	May	3.299	Sep	3.127
Feb	3.938	Jun	3.181	Oct	3.059
Mar	4.321	Jul	3.168	Nov	3.128
Apr	4.459	Aug	3.181	Dec	3.041

Shelby's 2014 Monthly Discharges



How many sewer connections does this system have? 8,303

How many water service connections with septic systems does this system have? 1,882

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

Wastewater Permits

Permit Number	Permitted Capacity (MGD)	Design Capacity (MGD)	Average Annual Daily Discharge (MGD)	Maximum Day Discharge (MGD)	Receiving Stream	Receiving Basin
NC0024538	6.000	6.000	3.340		First Broad River	Broad River (01-1)
NC0027197	0.400	0.000	0.174		Unnamed tributary 1st Broad Riv	Broad River (01-1)

Wastewater Interconnections

Water System	PWSID	Type	Average Daily Amount		Contract Maximum (MGD)
			MGD	Days Used	
Kingstown	01-20-055	Receiving	0.035	365	0.000
Town of Fallston	01-23-035	Receiving	0.028	365	0.000

5. Planning

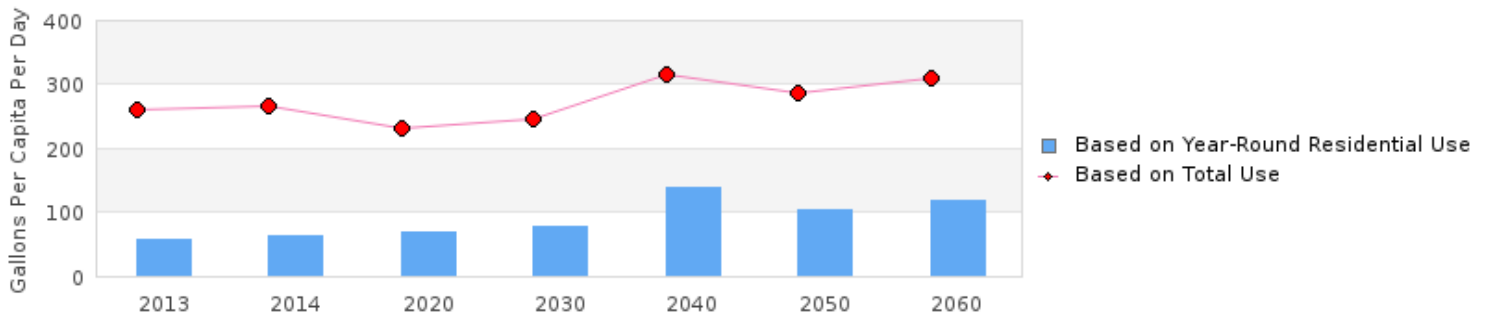
Projections

	2014	2020	2030	2040	2050	2060
Year-Round Population	20,323	20,562	20,651	20,740	20,828	20,920
Seasonal Population	0	0	0	0	0	0
Residential	1.277	1.376	1.597	2.853	2.150	2.496
Commercial	0.308	0.316	0.332	0.349	0.367	0.385
Industrial	1.896	1.944	2.043	2.148	2.258	2.373
Institutional	0.777	0.000	0.000	0.000	0.000	0.000
System Process	0.750	0.750	0.750	0.750	0.750	0.750
Unaccounted-for	0.392	0.343	0.370	0.477	0.432	0.470

Demand v/s Percent of Supply

	2014	2020	2030	2040	2050	2060
Surface Water Supply	27.000	27.000	27.000	27.000	27.000	27.000
Ground Water Supply	0.000	0.000	0.000	0.000	0.000	0.000
Purchases	0.000	0.000	0.000	0.000	0.000	0.000
Future Supplies		0.000	0.000	0.000	0.000	0.000
Total Available Supply (MGD)	27.000	27.000	27.000	27.000	27.000	27.000
Service Area Demand	5.400	4.729	5.092	6.577	5.957	6.474
Sales	0.368	1.000	1.000	1.000	1.000	1.000
Future Sales		0.000	0.000	0.000	0.000	0.000
Total Demand (MGD)	5.768	5.729	6.092	7.577	6.957	7.474
Demand as Percent of Supply	21%	21%	23%	28%	26%	28%

Shelby's Projected Gallons Per Capita Per Day (GPCD) Over Time



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 **63** 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? **The City maintains rates that encourage conservation and are full cost recovery structures. City operates an active leak detection program.**

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, Cleveland County Interconnections/Future Water Supply 1999; Broad River Basin Modeling**

What major water supply reports or studies were used for planning? City of Shelby Water and Wastewater Report 2004; Water Treatment Plant Condition Assessment Report 2009; Water and Sewer Asset Management Plan 2011 and Programs to Address State Drought Requirements 2011

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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