



MEMORANDUM

To: Mayor and City Councilors
From: Rich Olson, City Manager
Date: May 7, 2015
Re: Consideration – Adoption of Resolution Approving Local Water Supply Plan

BACKGROUND:

In 2012, the City staff updated the required Local Water Supply Plan for Elizabeth City (copy attached). The City is required to update its Local Water Supply Plan every five years, submit it to NCDENR for approved and then adopt the plan by a resolution of the City Council.

ANALYSIS:

Elizabeth City's 2012 Local Water Supply Plan was submitted to NCDENR as required in 2012. In a letter dated April 7, 2015 (copy attached) the City was notified that the plan was complete and met all of the minimum criteria established in North Carolina General Statute 143-355 (1). The only remaining step is for the City Council to adopt the plan by resolution.

STAFF RECOMMENDATION:

By motion adopt the attached Resolution approving the Elizabeth City 2012 Local Water Supply Plan as required.

PF/vdw

RESOLUTION #2015 – 05-_____
APPROVING LOCAL WATER SUPPLY PLAN

WHEREAS, North Carolina General Statute 143-355 (I) requires that each unit of local government that provides public water services or plans to provide such services shall, either individually or together with other such units of local government, prepare and submit a Local Water Supply Plan; and

WHEREAS, as required by the statute and in the interests of sound local planning, a Local Water Supply Plan for the City of Elizabeth City, has been developed and submitted to the Elizabeth City City Council for approval; and

WHEREAS, the Elizabeth City City Council finds that the Local Water Supply Plan is in accordance with the provisions of North Carolina General Statute 143-355 (I) and that it will provide appropriate guidance for the future management of water supplies for the City of Elizabeth City as well as useful information to the Department of Environment and Natural Resources for the development of a state water supply plan, as required by statute.

NOW, THEREFORE, BE IT RESOLVED, that the Local Water Supply Plan entitled "Elizabeth City Water System 2012 LWSP", is hereby approved by the City Council of the City of Elizabeth City and shall be submitted to the Department of Environment and Natural Resources, Division of Water Resources; and

BE IT FURTHER RESOLVED that the City Council of the City of Elizabeth City intends that this plan shall be revised to reflect changes in relevant data and projections at least once every five years or as otherwise requested by the Department, in accordance with the statute and sound planning practice.

ADOPTED, this the 11th day of May 2015.

Joseph W. Peel
Mayor

ATTEST:

Vivian D. White, CMC/NCCMC
City Clerk



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

April 7, 2015

Mr. Paul A. Fredette, Public Works Director
Elizabeth City Water System
P. O. Box 347
Elizabeth City, NC 27907-0347

Subject: LWSP Meets Minimum Criteria
Elizabeth City Water System
PWSID Number: 04-70-010
Dare County

Dear Mr. Fredette,

This letter is to notify you that our staff has reviewed the information contained in the 2012 Local Water Supply Plan (LWSP) update submitted by your office. Since all the required information is complete, the 2012 LWSP for the Elizabeth City water system hereby meets the minimum criteria established in North Carolina General Statute 143-355 (l).

Your water system's 2012 LWSP is now viewable online from the *Local Water Supply Plans* link at <http://www.ncwater.org/>. The plan has been made available after our best efforts to screen any errors. As a final check, please review and report any mistakes or omissions to Dennis Ramsey, the review engineer. Unless notified otherwise, the Division of Water Resources considers your 2012 LWSP complete.

The 2012 LWSP must next be adopted by your water system's governing board; a model resolution is enclosed for guidance. A copy of the signed resolution must be submitted to Linwood Peele, Supervisor, Water Supply Planning Branch, at the address printed at the bottom of this letter. The LWSP cannot be considered compliant with the requirements of NCGS 143-355(l) until an adopted resolution is received.

Thank you very much for your efforts to provide your customers with a safe and reliable supply of drinking water. We look forward to continuing to work with you in these efforts. Please contact Dennis Ramsey at dennis.ramsey@ncdenr.gov or 919/707-9037 or me at linwood.peele@ncdenr.gov or 919/707-9024 if we can be of further assistance.

Sincerely,

Linwood E. Peele, Supervisor
Water Resources, NCDENR

Enclosure

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

Water System Name	Elizabeth City	PWSID	04-70-010
Mailing Address	P.O. Box 347 Elizabeth City, NC 27907-0347	Ownership	Municipality
Contact Person	Paul A Fredette	Title	Public Utilities Director
Phone	252-337-6825	Fax	252-338-1946
Secondary Contact	Ava K. Goodwin	Phone	252-335-2196
Mailing Address	PO Box 347 Elizabeth City, NC 27907-0347	Fax	252-333-1497

Line Type	Size Range (Inches)	Estimated % of lines
Asbestos Cement	6-10	5.00 %
Cast Iron	4-12	42.00 %
Ductile Iron	4-12	20.00 %
Galvanized Iron	1-2	10.00 %
Polyvinyl Chloride	4-10	23.00 %

What are the estimated total miles of distribution system lines? 133 Miles
 How many feet of distribution lines were replaced during 2012? 5,445 Feet
 How many feet of new water mains were added during 2012? 0 Feet
 How many meters were replaced in 2012? 363
 How old are the oldest meters in this system? 8 Year(s)
 How many meters for outdoor water use such as irrigation are not billed for sewer services? 30
 What is this system's finished water storage capacity? 6,000 Million Gallons
 Has water pressure been inadequate in any part of the system since last update? No

Does this system have a program to work or flush hydrants? Yes, Annually
 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? No

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

Sub-Basin(s)	% of Service Population	County(s)	% of Service Population
Albemarle Sound (12-1)	100 %	Pasquotank	100 %

What was the year-round population served in 2012? **17,815**

Has this system acquired another system since last report? **No**

In May 2012 Elizabeth City began to purchase water from the Pasquotank Co. R.O. Plant (PWSID # 60-70-000) and that portion of the distribution system along the Halstead Corridor was then designated as a purchased system (Elizabeth City Annex PWSID #60-70-001)

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	6,574	0.723	0	0.000
Commercial	957	0.373	0	0.000
Industrial	16	0.015	0	0.000
Institutional	100	0.319	0	0.000

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? **0.056 MGD**

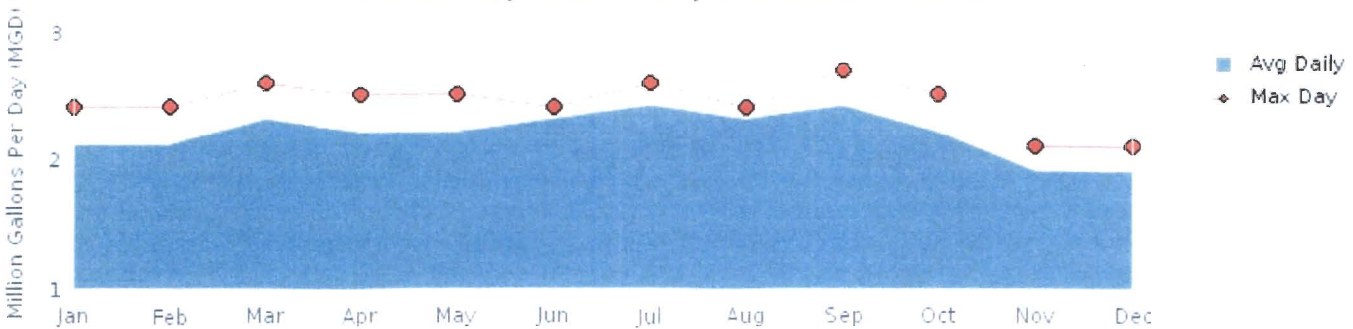
Purchaser	PWSID	Average Daily Sold (MGD)	Days Used	Contract		Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
				Expiration	Recurring			
Pasquotank Co	04-70-015	0.002	365	0.750		No	8	Emergency
South Camden W & S District	04-15-015	0.000	0			No	6	Emergency

Although a small volume of water is supplied to Pasquotank County on a regular basis, the interconnection and the commitment for 0.750 MGD is for emergency use.

3. Water Supply Sources

	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	2.100	2.400	May	2.200	2.500	Sep	2.400	2.700
Feb	2.100	2.400	Jun	2.300	2.400	Oct	2.200	2.500
Mar	2.300	2.600	Jul	2.400	2.600	Nov	1.900	2.100
Apr	2.200	2.500	Aug	2.300	2.400	Dec	1.900	2.100

Elizabeth City's 2012 Monthly Withdrawals & Purchases



Name or Number	Average Daily Withdrawal (MGD)		Max Day Withdrawal (MGD)	12-Hour Supply (MGD)	CUA Reduction	Year Offline	Use Type
	MGD	Days Used					
01	0.255	366	0.251	0.234			Regular
02	0.130	366	0.130	0.133			Regular
03	0.193	366	0.288	0.288			Regular
04	0.206	366	0.202	0.202			Regular

05 A	0.027	366	0.027	0.036		Regular
06	0.000	0		0.000	2003	Emergency
07	0.037	366	0.058	0.054		Regular
08	0.196	366	0.241	0.245		Regular
09	0.154	366	0.162	0.162		Regular
10	0.226	366	0.259	0.259		Regular
11	0.075	243	0.090	0.216		Regular
13	0.126	45	0.234	0.234		Regular
14	0.238	366	0.349	0.349		Regular
15	0.142	366	0.180	0.180		Regular
16	0.170	366	0.216	0.216		Regular

Name or Number	Well Depth (Feet)	Casing Depth (Feet)	Screen Depth (Feet)		Well Diameter (Inches)	Pump Intake Depth (Feet)	Metered?
			Top	Bottom			
01	117	60	98	101	6	65	No
02	113	65	57	87	8	65	No
03	125	60	94	120	10	93	Yes
04	140	80	94	119	10	95	No
05 A	103	103	78	98	8	56	No
06	87	53	77	87	6		No
07	94	28	56	66	6	56	No
08	126	115	90	110	8	80	Yes
09	117	112	97	107	8	47	Yes
10	130	115	85	110	8	58	No
11	126	111	50	65	8	63	Yes
13	107	67	67	102	8	63	Yes
14	121	96	96	116	8	92	Yes
15	112	72	72	107	8	69	Yes
16	115	70	70	110	8	67	Yes

Are ground water levels monitored? No, As Needed

Does this system have a wellhead protection program? No

Water withdrawal rates are calculated by using the well run time times the last know flow rate for each well

Ground water levels have continuous monitoring equipment installed for wells 3 8 11 13 14 15. &16

Seller	PWSID	Average Daily Purchased (MGD)	Days Used	Contract		Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
				Expiration	Recurring			
Pasquotank County	04-70-015	0.124	365	0.250		No	6 - 8	Regular
Pasquotank R.O. System	60-70-000	0.019	245	0.250	2033	No	16	Regular
South Camden Water & Sewer Dist.	04-15-015	0.000	0			No	6	Emergency

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Output Metered?	Source
Elizabeth City WTP	5.000	Yes	Yes	Groundwater

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2012? No

If yes, was any water conservation implemented?

Did average daily water production exceed 90% of approved plant capacity for five consecutive days during 2012? 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

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)
Jan	2.677	May	4.025	Sep	2.831
Feb	2.975	Jun	2.533	Oct	2.066
Mar	3.227	Jul	2.706	Nov	1.992
Apr	2.377	Aug	3.066	Dec	3.395

How many sewer connections does this system have? 6,940

How many water service connections with septic systems does this system have? 550

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

Permit Number	Permitted Capacity (MGD)	Design Capacity (MGD)	Average Annual Daily Discharge (MGD)	Maximum Day Discharge (MGD)	Receiving Stream	Receiving Basin
NC0025011	4.500	4.500	2.825	9.494	Pasquotank River	Albemarle Sound (12-1)
NC0036447	0.000	0.000	0.000	0.000	Knobbs Creek	Albemarle Sound (12-1)

NPDES permit #NC0036447 expired 31 December 2012. Renewal packet has been submitted
There has been no discharge since June 2003

5. Planning

	2012	2020	2030	2040	2050	2060
Year-Round Population	17,815	17,800	18,900	20,100	21,400	22,470
Seasonal Population	0	0	0	0	0	0
Residential	0.723	0.834	0.887	0.943	1.000	1.050
Commercial	0.373	0.388	0.412	0.439	0.467	0.490
Industrial	0.015	0.044	0.046	0.049	0.053	0.056
Institutional	0.319	0.381	0.405	0.431	0.459	0.482
System Process	0.056	0.060	0.064	0.067	0.071	0.076
Unaccounted-for	0.688	0.273	0.290	0.308	0.328	0.344

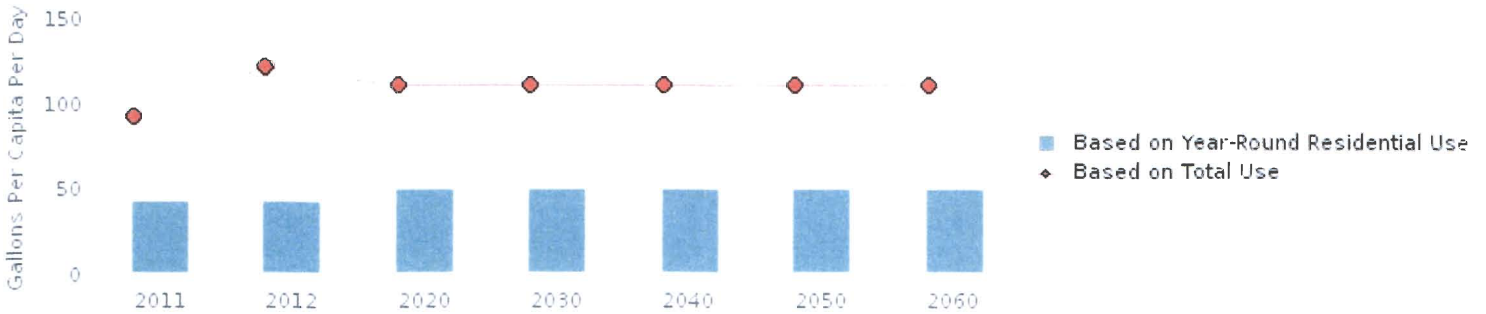
Source Name	PWSID	Source Type	Additional Supply	Year Online	Year Offline	Type
Pasquotank County R.O.	60-70-000	Purchase	0.100	2020		Regular

The City of Elizabeth City is currently in a contract with the Pasquotank County to purchase 0.250 MGD from their reverse osmosis facility (PWSID #60-70-000) and conventional facility (PWSID # 04-70-015). This is an open-ended contract which will be re-negotiated as necessary as system demand increases.



	2012	2020	2030	2040	2050	2060
Surface Water Supply	0.000	0.000	0.000	0.000	0.000	0.000
Ground Water Supply	2.808	2.808	2.808	2.808	2.808	2.808
Purchases	0.500	0.500	0.500	0.250	0.250	0.250
Future Supplies		0.100	0.100	0.100	0.100	0.100
Total Available Supply (MGD)	3.308	3.408	3.408	3.158	3.158	3.158
Service Area Demand	2.174	1.980	2.104	2.237	2.378	2.498
Sales	0.002	0.000	0.000	0.000	0.000	0.000
Future Sales		0.000	0.000	0.000	0.000	0.000
Total Demand (MGD)	2.176	1.980	2.104	2.237	2.378	2.498
Demand as Percent of Supply	66%	58%	62%	71%	75%	79%

Elizabeth City'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 41 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?

Has this system participated in regional water supply or water use planning? No

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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