

EMERGENCY WATER SHORTAGE RESPONSE PLAN



**CITY OF ELIZABETH CITY
PUBLIC UTILITIES DEPARTMENT**
Public Water System ID # 04-70-010

October, 1994
Latest Review/Revision: May 2018

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City of Elizabeth City Water Shortage Response Plan

May 2018

I. Policy

The primary water source for the City of Elizabeth City is groundwater wells. The city maintains several emergency interconnections with Pasquotank County Water System and South Camden Water & Sewer District. The well field supply shall be managed to insure the citizens of Elizabeth City have an adequate supply of raw water. The finished water supply shall be managed to insure an adequate supply and pressure to the distribution system to meet the daily consumer demand and adequate reserves to provide for fire suppression.

II. Purpose

This plan has been adopted by the Mayor and City Council of the City of Elizabeth City and is designed to conserve raw and finished water in the event of an emergency water shortage of any type including both manmade and natural emergencies and catastrophic equipment failure. The Water Shortage Response Plan has been designed to maximize the efficient use of limited water resources under the water system's control in order to protect the health and safety of the public and the environment. The goals of the Plan are to achieve the greatest public benefit for water use, basic sanitation, and fire suppression.

Several factors may be used in the decision to implement the Water Shortage Response Plan. These factors include, but are not limited to the following:

- Well failure
- Decrease in well yield
- Accidental or intentional contamination of the water system
- Major storm events
- Major pipeline breaks
- High service pump(s) failure
- Any other emergency that would require high volumes of water that would cause demand to exceed supply

The plan's four levels of response are designed to match the severity of the emergency with the level of response. Well operation data, raw reservoir levels, finished water storage levels, pump pressures, water quality parameters, and other critical operational data are continuously monitored by water treatment staff. Upon notification by the Water Plant Superintendent, the Public Utilities Director and the City Manager, will evaluate the severity of the emergency and determine if implementation of the plan is warranted. The level of the emergency shall be determined by the amount of time the existing supplies should last before levels would endanger the public safety and health due to inadequate supply and/or low pressure.

III. Authorization and Implementation

The Elizabeth City Manager shall enact the following water shortage response provisions whenever the trigger conditions outlined below are met. In the manager's absence, the Public Utilities Director will assume this role.

Mr. Richard C. Olson
Elizabeth City Manager
Phone: 252-337-6864
E-mail: rolson@cityofec.com

Vacant
Elizabeth City Public Utilities Director
Phone: 252-337-6628
E-mail:

The activation of this plan will be announced directly to the Water Plant Superintendent and the Water/Sewer Utilities Superintendent by email, phone, and/or interoffice memorandum. Other city staff members will be informed of the plan implementation by a general email or interoffice memorandum from the Public Information Officer.

IV. Emergency Levels, Descriptions and Restrictions

STAGE I – WARNING ADVISORY

Description:

The warning stage shall be initiated when any one or more of the conditions exists as outlined in Section II, Purpose and/or:

1. Finished water demand exceeds 80% of combined well "safe yield" production.
2. Wells are operating in excess of twelve hours in a twenty-four hour period.

Restrictions:

A publicity campaign shall be initiated using public media, the City of Elizabeth City website (www.cityofec.com), notices on utility bills, signs, and water conservation brochures provided in public buildings to inform the public of the **voluntary** water use restrictions. *"Please use water wisely. We respectfully request customers to implement water conservation measures whenever possible."*

Voluntary Water Conservation Measures

- Don't Run water while brushing your teeth
- Wash only full loads of laundry
- Run dishwasher only when full
- Approximately 40% of water used goes down the toilet; install low flush toilets or toilet tank displacements
- Do not use the toilet as a trash can
- Install flow restricting shower heads or other water saving devices
- Insulate hot water pipes
- Repair all leaks in toilets and sinks
- Learn to take shorter showers or baths
- Do not run tap water for a cold glass of water; keep drinking water in the refrigerator
- Rinse vegetables in a basin of water instead of under running water, then water your plants with the basin of water
- Water your lawn only when it needs it. A good way to tell if your grass needs watering is to step on the grass and if it springs back up when you move your foot, it doesn't need watering
- Water during the cool parts of the day or at night

- Plant drought-resistant trees and plants
- Place mulch around trees and plants
- Do not run your hose when washing your vehicle
- Water slowly to prevent runoff. Don't set sprinkler so that it runs off onto paved areas
- Use a broom or leaf blower to clean driveways and sidewalks instead of the water hose
- Avoid watering lawns on windy days to prevent evaporation
- Do not allow children to play with sprinklers or garden hoses
- Check outside faucets and hoses for leaks
- Adjust your lawn mower to a higher setting. Taller grass helps conserve moisture.
- Cover your outdoor pool to prevent evaporation

Water Conservation Measures for Commercial, Industrial & Institutional Use

- Do not run automatic sprinkler systems when not necessary
- Install low flush toilets
- Do not use toilets for trash cans
- Assure that the automatic valves are working properly
- Check your property frequently for signs of water leaks
- Check all outside faucets, hoses, and valves for leaks
- Repair all leaks on water-using equipment, such as water cooling towers, boilers, steam machines, water heaters and processing machines
- Educate your employees, students, patients, etc. on water conservation
- Implement water saving devices

STAGE II – MODERATE EMERGENCY

Description:

The goal during this phase is to achieve a reduction of 15% in residential water usage and 10% in commercial, industrial and institutional usage.

The **moderate** stage shall be initiated when any one or more of the conditions exists as outlined in Section II, Purpose and/or:

1. Drop in normal static and/or pumping Well Levels in excess of 3 feet.

Restrictions:

A publicity campaign shall be initiated using public media, posting the proclamation on the City website (www.cityofec.com), notices on utility bills, signs and hand-outs displayed in public buildings to inform the public of the **mandatory** water use restrictions.

1. Do not use water supplied by the City of Elizabeth City water system to water lawns, grass, shrubbery, trees, flower and vegetable gardens, except under the following conditions:
 - a) Such watering is to be done by hand-held hose, container, or drip irrigation system.
 - b) Such watering is performed under the schedule as outlined in the Appendix, "Landscape watering schedule-Phase II"
2. No filling of newly constructed swimming and/or wading pools which have been drained. A minimal amount of water may be added to maintain continued operation of an existing pool.
3. Do not operate city source water-cooled air conditioners or other equipment That does not recycle cooling water, except when health and safety are adversely affected.

4. No washing of automobiles, trucks, trailers, boats, campers, airplanes, or any other type of mobile vehicle or equipment, except at commercial washing establishments.
5. Do not wash down outside areas such as streets, driveways, service station aprons, parking lots, office buildings, exteriors of existing or newly constructed homes or apartments, sidewalks or patios, or use water for other similar purposes.
6. Do not introduce city water into any ornamental fountain, pool or pond or make similar use of water except to sustain aquatic life in an existing pond.
7. No serving of drinking water in restaurants, cafeterias, or other food establishments, except upon request.
8. No use of water for dust control or compaction.
10. Do not use water for any unnecessary purpose or intentionally waste water.
11. Contractors are asked to reduce water usage to bare essential needs.

STAGE III- SEVERE EMERGENCY

Description:

The goal during this phase is to achieve a reduction of non-essential water use of 20% in residential water usage and 15% in commercial, industrial and institutional usage.

The **severe** stage shall be initiated when any one or more of the conditions exists as outlined in Section II, Purpose and/or:

1. Drop in normal static and/or pumping Well Levels in excess of 5 feet.
2. Break in raw water transmission line with anticipated repair time of >24 hrs.

Restrictions:

A publicity campaign shall be initiated using public media, posting the proclamation on the City website (www.cityofec.com), notices on utility bills, signs and hand-outs displayed in public buildings to inform the public of the **mandatory** water use restrictions.

1. No water usage outside a structure for any purposes other than an emergency, fire, or use by the water department to maintain the system.
2. No operation of a city source water evaporative air conditioning unit. An exception is made when health and safety are adversely affected.
3. No water to be introduced into any swimming pool. The city's Splash Pad will be closed.
4. Large industrial customers are asked to delay projects consuming large quantities of water wherever possible.
5. Whenever practical, fire trucks shall use raw water. The Fire Chief shall determine this.
6. The City of Elizabeth City shall investigate all other sources of water for use (both raw and finished) as a possible supply.
7. Cut off water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so.
8. Cease the installation of irrigation taps on the water system
9. No watering of lawns, plants, trees, gardens, etc. except that which is necessary to sustain plant life. The utility shall control landscape watering by staggered watering times. (See appendix)
10. No domestic or commercial washing of motorcycles, boats, cars, etc.

STAGE IV - EXTREME EMERGENCY

Description:

The goal during this phase is to achieve a reduction of essential and non-essential water usage of 30% in residential water usage and 25% in commercial, industrial and institutional usage.

The **extreme** stage shall be initiated when any one or more of the conditions exists as outlined in Section II, **Purpose** and/or:

1. Break in raw water transmission line with anticipated repair time of >48 hrs.
2. Areas in distribution system with pressure below 20 psi, excluding breaks.

Restrictions:

A publicity campaign shall be initiated using public media, reverse 911, proclamation posted on the city website (www.cityofec.com), individual mailing to all customers, signs and hand-outs displayed in public buildings to inform the public of the **mandatory** water use restrictions.

1. No washing down of sidewalks, walkways, driveways, parking lots, tennis courts, streets and other hard surfaced areas.
2. No washing down of buildings for purposes other than immediate fire protection.
3. No flushing of gutters.
4. No domestic or commercial washing of motorcycles, boats, cars, etc.
5. No use of water to maintain fountains, ponds and decorative water bodies for scenic purposes, except where it is necessary to support aquatic life.
6. No filling or maintaining public or private swimming pools. The city's Splash Pad will be closed.
7. No watering of lawns, plants, trees, gardens, etc. except that which is necessary to support plant life. The utility shall control landscape watering by staggered watering times. (See appendix)
8. No fire drills for any purpose other than fire-fighting or flushing necessary to maintain water quality.
9. Cut off water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so.
10. Cease to install new irrigation taps on the water system.

V. Enforcement

Under the direction of the City Manager, the Elizabeth City Code Enforcement Officer, Elizabeth City Law enforcement agency, designated water system agents or employees, and/or other authorized water regulatory agencies shall enforce the provisions of the **mandatory** conservation measures as outlined in this plan. If any customer, or customer employee, contractor or agent violates a **mandatory** water restriction measure, the customer shall be verbally warned and/or served by written notice of failure to comply. The citation shall include the date, time and type of water use violation. After a warning has been issued, penalties shall be assessed individually for each occurrence for any type of prohibited activity.

- **Warning:** A customer shall be notified at any time by any means, i.e. in writing such as a door hanger or in person by the Elizabeth City Code Enforcement Officer, law enforcement officer or any other authorized agent appointed by the City Manager, that a water violation has been observed on the customer's premises.

- **First Violation:** A written citation issued to the customer's billing address that describes the violation(s) and that mandatory water conservation measures are in-place. This citation shall be hand-delivered or delivered by registered mail; at the discretion of the City Manager. A \$50 penalty shall be added to the customer's water bill.
- **Second Violation:** A \$100 penalty shall be added to the customer's water bill for each violation noted by the City of Elizabeth City after the first violation citation has been issued and received by the customer.
- **Third Violation:** An additional \$200 penalty shall be added to the customer's water bill for each and any violation(s) after the second violation.
- **Fourth Violation:** The customer's water service shall be immediately terminated and restored only after payment of a \$500 penalty in addition to all previously assessed penalties and water charges that may be due.

VI. Variances

It is recognized that situations may occur where customers, who in their belief, are unable to comply with the mandatory water use restrictions. Any customer may petition for a variance from restrictions by filing a written petition with the City of Elizabeth City within ten working days after the issuance of the proclamation requiring water use restrictions.

All petitions for variance shall contain the following information:

- Name and address of the customer and the name and address of the person filing the petition, if different
- Purpose of water usage
- Special provision from which the petitioner is requesting relief
- Detailed statement as to how the restriction adversely affects the petitioner
- Description of the relief desired
- Period of time for which the variance is sought
- Damage or harm to the petitioner or others if the petitioner complies with the water conservation measure
- Steps the petitioner is taking to meet the restrictions from which the variance is sought and the expected date of compliance.

In order for the variance to be granted, the petitioner must demonstrate clearly that compliance with the water conservation measures cannot be technically accomplished during the duration of the water supply shortage without having an adverse impact upon the petitioner's interest. Any variance requests will be reviewed and acted upon by the City Manager.

VII. Plan Effectiveness and Maintenance

The effectiveness of the Elizabeth City water shortage response plan will be determined by comparing the stated water conservation goals with observed water use reduction data. Other factors to be considered include frequency of plan activation, any problem periods without activation, total number of violation citations, desired reductions attained and evaluation of demand reductions compared to the previous year's seasonal data.

The water treatment staff, under the direction of the Public Utilities Director, will maintain this plan. This plan will be reviewed annually by the water treatment staff, Public Utilities Director and City Manager and, where necessary, revised subject to approval by the Mayor and City Council.

VIII. Public Comment

Customers will have multiple opportunities to comment on the provisions of the water shortage response plan. First, a draft plan will be available at City Hall for customers to view. A notice will be included in all customer water bills to collect comments on the draft. All subsequent revisions to the draft plan will be published at least thirty (30) days prior to an adoption vote by the Elizabeth City Town Council.

IX. Appendix

LANDSCAPE WATERING SCHEDULE – Stage II

Outdoor landscape watering shall be limited to the hours of 8:00 p.m. until 8:00 a.m., using the following schedule

- Even number addresses are allowed to water on even days of the month
- Odd number addresses (and locations without a discernible address), are allowed to water on odd days of the month

LANDSCAPE WATERING SCHEDULE – Stages III & IV

Extended water restrictions. Limit lawn watering to once per week during the hours of 8:00 p.m. until 8:00 a.m., using the following schedule.

If your house number ends in.....

- **0 or 1**, water only on Monday
- **2 or 3**, water only on Tuesday
- **4 or 5**, water only on Wednesday
- **6 or 7**, water only on Thursday
- **8 or 9** (and locations without a discernible address), water only on Friday