2024

THE CITY OF NORFOLK®

DEPARTMENT OF UTILITIES

CONSUMER CONFIDENCE REPORT

WATER QUALITY

WWW.NORFOLK.GOV/UTILITIES

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In 2023, Norfolk water continued to meet all federal and state requirements, as it has in past years. This is all thanks to the dedication of nearly 400 staff members who tirelessly work 24/7 to ensure our customers have access to top-tier water.

Robert Carteris
City of Norfolk,
Acting Director of Utilities

MESSAGE FROM YOUR WATER UTILITY

The City of Norfolk Department of Utilities is committed to providing our resident and business consumers with top-quality water service. As a Norfolk citizen, and water service consumer, I can personally speak to the importance of public water quality. It gives me great honor to be a part of the team that delivers this service, and sets the curve in the commonwealth. In the following sections, we will speak to the state of your drinking water, as well as the number of noteworthy achievements our staff have accomplished since the 2023 edition of this report.

In 2023, Norfolk water continued to meet all federal and state requirements, as it has in past years. This is all thanks to the dedication of nearly 400 staff members who tirelessly work 24/7 to ensure our customers have access to top-tier water. This Water Quality Report is distributed annually to inform our customers that we are meeting all water quality guidelines set forth by the Environmental Protection Agency (EPA) and its affiliate regulatory agencies.

All the best,

Robert Carteris

Robert Carteris
City of Norfolk,
Acting Director
of Utilities

SHARING THIS REPORT

Please share this report with everyone who enjoys Norfolk water, especially those who may not have received this notice directly. You can help by posting this notice in a public place or distributing copies in-person or by mail. To receive a printed copy of this report, call the Utilities Public Information Office at (757) 664-6730, or email UTpublicinfo@norfolk.gov.

PEOPLE WITH SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as person with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS, or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

QUESTIONS?

For questions regarding this report, contact the Norfolk Water Quality Lab at (757) 441-5678. For more information about decisions affecting your drinking water quality, you may attend Norfolk City Council meetings. For times and agendas, call the City Clerk's Office at (757) 664-4253, or visit www.norfolk.gov.

Este informe contiene información muy importante sobre el agua potable que consume. Si tiene alguna pregunta sobre este informe, comuníquese con el Departamento de Utilidades al (757) 441-5678.

THE CITY OF NORFOLK
DEPARTMENT OF UTILITIES

SAFEGUARDING THE WATER YOU DRINK

NORFOLK'S DRINKING WATER SOURCES

The Department of Utilities obtains its raw (untreated) water from eight reservoirs, two rivers, and four deep wells. The map on page six shows the location of each of your water sources. From these sources, raw water is pumped to one of the Department's two water treatment plants, where it is filtered and disinfected. Once tested to meet water quality standards, Norfolk drinking water is pumped on demand to homes and businesses throughout the city.

SAFEGUARDING THE WATER YOU DRINK

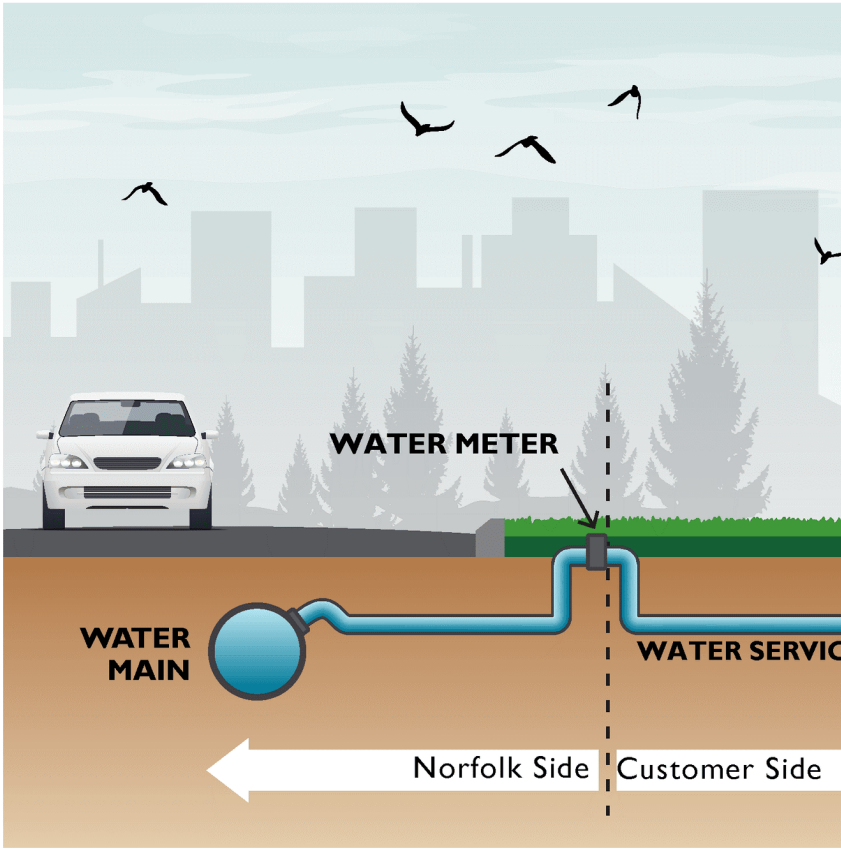
The protection of our water resources, including our drinking water reservoirs, is directly related to how we manage and protect the land around them. The water in the reservoirs comes from the water that falls in the drainage area or watershed. This water flows across streets, driveways, rooftops, lawns, gardens, and may finally enter the reservoir or lake through a storm pipe or ditch. As water travels across all of these areas, it picks up pollutants, such as fertilizers, oil, gasoline, soda cans, paper cups, and pet waste. Each of these pollutants can have a negative impact on the water, from something as simple as floating litter, to more complicated issues that affect wildlife and water quality. The land the water flows across on this journey and the waterways that receive it are called a watershed.

Find Out More: www.norfolk.gov/reservoirs.

THE CITY OF NORFOLK
DEPARTMENT OF UTILITIES

HOW WE MANAGE LEAD

Our chemists monitor drinking water to ensure our treatment helps keep lead out of water in buildings with lead plumbing. The water production team utilizes a corrosion control treatment, which coats the lining of service lines, indoor pipes, fixtures, and solder, to reduce lead leaching into the water. This corrosion control treatment, which is required by federal law under the Lead and Copper Rule (LCR), has been in place for over three decades. To date, sampling results indicate that our treatment is effective.

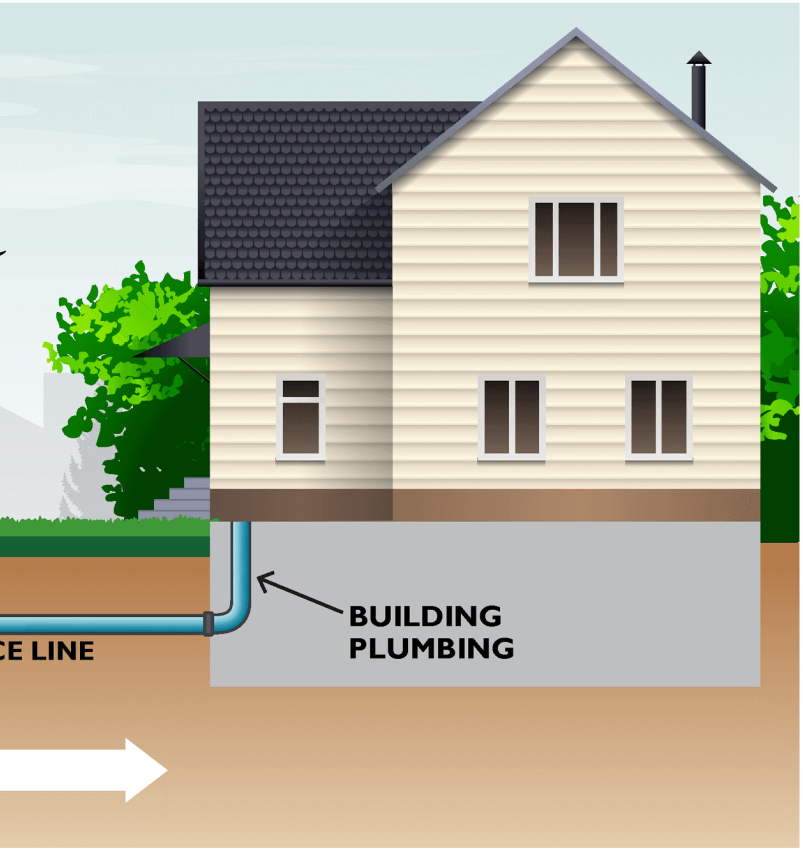


TESTING

The Norfolk Department of Utilities conducted a regulatory lead testing program from June through September 2023. Results from this round of testing show Norfolk complies with the federal LCRR and can be found in the table on page 11.

CONCERNED ABOUT LEAD IN YOUR PIPES?

If you are concerned about lead in your drinking water, you are encouraged to have your water tested. For water testing, you can contact the Water Quality Lab for a sampling kit by calling (757)-441-5678. Visit www.norfolk.gov/waterquality for more information. For service line testing, contact a qualified plumber. You can also purchase lead testing swabs to test your service lines yourself.



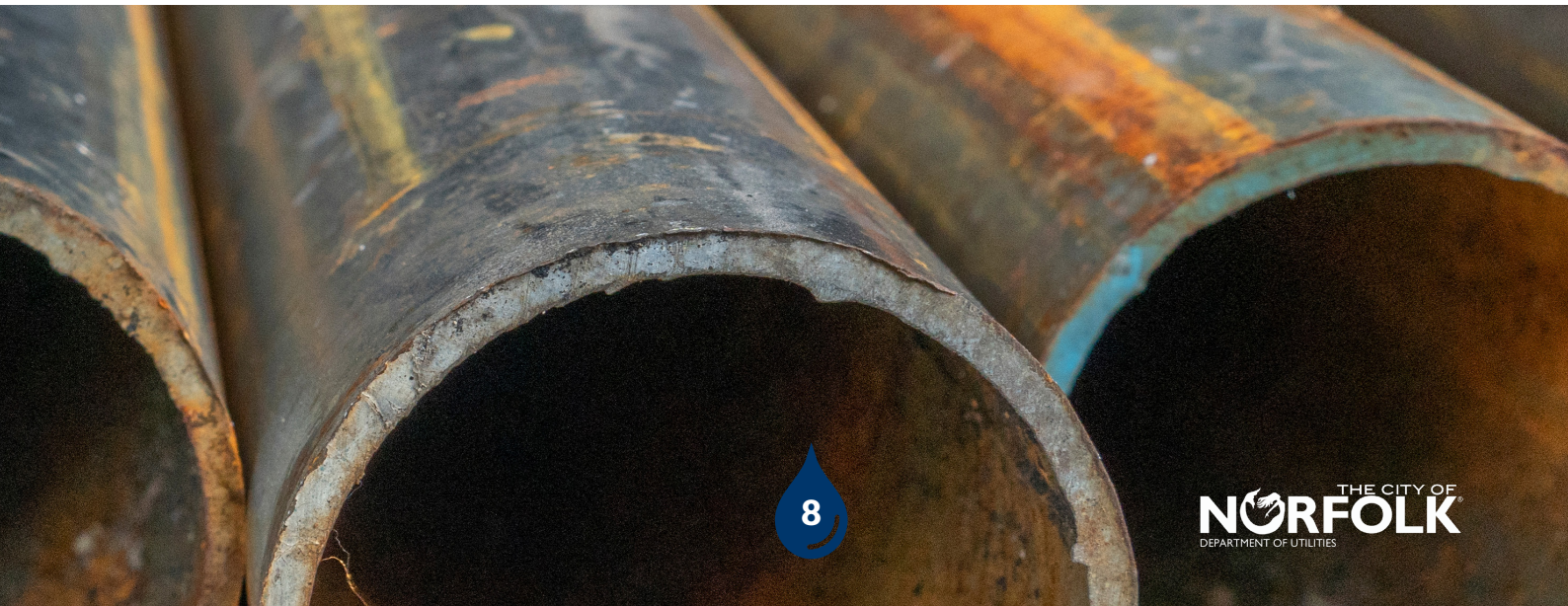
LEAD SERVICE LINE RESOURCES

Safe Drinking Water Hotline: (800)-426-4791

EPA: www.epa.gov/safewater/lead

Ask HR Green: www.askhrgreen.org/leadpipes

Norfolk Utilities:
www.norfolk.gov/leadreductionresources



THE CITY OF NORFOLK
DEPARTMENT OF UTILITIES

MONITORING WATER QUALITY:
WHAT WE LOOK FOR

Drinking water sources include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and in some cases radioactive material. It can also pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source (raw) water include:
Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. Radioactive contaminants, can be naturally occurring or be the result of gas production, and mining activities.

In 2001 the Hampton Roads Planning District Commission (HRPDC), our regional government entity, conducted a study on all the raw water sources in the area, including Norfolk's, to determine the susceptibility of reservoirs, rivers, and wells to contamination. Norfolk's susceptibility has been rated high. Norfolk's water treatment process ensures you receive high-quality treated drinking water that meets all Federal Safe Drinking Water Act requirements. For a copy of this study, contact Norfolk's Water Quality Lab at (757)-441-5678.

And once again in 2023, Norfolk drinking water met or exceeded those standards.

To ensure drinking water quality, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limitations for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably contain trace amounts of some contaminants, but their presence does not necessarily indicate a health risk is present.

Your Water Meets All Standards

The EPA and Virginia Department of Health (VDH) water quality standards guide the treatment of Norfolk drinking water. And once again in 2023, Norfolk drinking water met or exceeded those standards. Nearly 87,000 annual water quality tests were conducted at reservoirs, treatment plants, homes and throughout the distribution system. None of these tests reported elevated levels of substances identified by drinking water standards as potentially harmful to public health.

0 Health and quality violations

27 Substances detected but within limits

123 Additional substances tested for but not found

THE CITY OF NORFOLK
DEPARTMENT OF UTILITIES

2023 CONSUMER CONFIDENCE REPORT DATA

Regulated Substances

Substance	Likely Source	Norfolk's Measured Range	Norfolk's Highest Level	Norfolk's Average Level	National MCL	National MCLG	Unit	Meets EPA Standards
Barium	Erosion of natural deposits	0.02 – 0.04	0.04	0.03	2	2	ppm	✓
Chloramine	Drinking water disinfectant	1.3 – 4.6	3.3[1]	3.3	4[2]	4[3]	ppm	✓
Cyanide	Discharge from factories	ND – 0.021	0.021	0.011	0.2	0.2	ppm	✓
Fluoride	Added to prevent tooth decay	0.1 – 1.2	0.8[4]	0.5	4.0	4.0	ppm	✓
Free Chlorine	Drinking water disinfectant	2.0 – 3.6	2.7[1]	2.7	4[2]	4[3]	ppm	✓
Nitrate as Nitrogen	Erosion of natural deposits, runoff	0.03 – 0.30	0.30	0.12	10	10	ppm	✓

[1] Highest quarterly average for calendar year [2] MRDL [3] MRDLG [4] Highest monthly average for calendar year

Substance	Likely Source	Percent Removal[1]	Range	National MCL	National MCLG	Unit	Meets EPA Standards
Total Organic Carbon	Occurs naturally in the environment	54% removal (45% is required)	47% – 70% removal	TT	n/a	%	✓

[1] Running Annual Average, calculated quarterly

Substance	Likely Source	Norfolk's Measured Range (Individual Results)	Norfolk's Average Level (Individual Results)	Norfolk's Highest Quarterly Locational Running Annual Average	Quarterly Running Annual Average		Unit	Meets EPA Standards
					National MCL	National MCLG		
Haloacetic Acids (HAA5)	Byproduct of disinfection process	13 – 34	23	26	60	0	ppb	✓
Trihalomethanes (TTHM)	Byproduct of disinfection process	20 – 50	36	40	80	0	ppb	✓

Turbidity

Substance	Likely Source	Norfolk's Lowest Monthly % of Samples Meeting Limit	Norfolk's Highest Level (NTUs)	National MCL	National MCLG	Unit	Meets EPA Standards
Turbidity	Soil runoff	100%	0.12	<1.0 maximum, and ≤0.3 95% of the time	n/a	NTU	✓

Public Notice to Consumers

This Public Notice does not require that you take immediate action, yet as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation. There is nothing you need to do at this time. You may continue to drink the water as it is safe to drink.

Water Utilities are required by Waterworks Regulations to continuously monitor the turbidity level of water leaving each of the filters in the treatment plant, and to record this information every 15 minutes. On January 7, 2024, an individual filter turbidity monitor for 1 of 29 filters at our treatment plants began reporting a consistent 0.01 NTU (Nephelometric Turbidity Unit), indicating a malfunction. We did not conduct the required grab sampling from the filter. The faulty monitor went undiscovered for approximately 30 days and was discovered by utilities staff on February 8, 2024. The filter was immediately taken out of service until the monitor could be replaced. Utilities staff also reported the violation to our state regulatory agency on that date as required. Since the erroneous readings were not immediately detected, the required monitoring was not conducted. There is no indication that water quality was affected. However, this is considered a violation of facility operations monitoring standards. To avoid a reoccurrence, we are improving our method of detecting this type of failure in our turbidity monitoring equipment, so that we may avoid these incidents in the future.

Please note that the turbidity values of our combined filter effluent remained within normal operating range, indicating that there was no effect on the quality or safety of the water being produced by the treatment plant.

Lead and Copper in Customers' Homes (data from 2023 triennial sampling)

Norfolk has extremely low lead levels in its drinking water system. Because of this, the EPA has placed Norfolk on a reduced monitoring schedule. No lead was detected at the monitoring level during this monitoring period.[1]

Substance	Likely Source	Norfolk's Results[1]	Norfolk Homes Exceeding Action Level	National Action Level	Unit	National MCLG	Meets EPA Standards
Lead	Household plumbing corrosion	< 2.5	0	15	ppb	0	✓
Copper	Household plumbing corrosion	0.10	0	1.3	ppm	1.3	✓

[1]Lead and copper compliance is measured at the 90th percentile of all samples taken during the triennial sampling period

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Norfolk Department of Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800) 426-4791 or at www.epa.gov/safewater/lead.

Secondary and Unregulated Monitored Substances

Substance	Likely Source	Norfolk's Range	Norfolk's Highest Level	Norfolk's Average Level	National SMCL	Unit
Aluminum	Erosion of natural deposits; also, from use of chemicals at water treatment plant	ND – 0.04	0.04	0.02	0.05 - 0.20	ppm
Boron	Natural in environment and manmade origins	ND – 0.07	0.07	0.06	n/a	ppm
Chloride	Natural in environment	14 – 20	20	16	250	ppm
Iron	Natural in environment	ND – 0.04	0.04	ND	0.3	ppm
Nickel	Corrosion of plumbing materials	ND – 0.004	0.004	ND	n/a	ppm
pH	Adjusted during water treatment process	7.4 – 8.2	7.8[1]	7.7	6.5 – 8.5	pH units
Sodium	Natural in environment; also, from use of chemicals at water treatment plant	13 – 33	33	20	n/a[2]	ppm
Sulfate	Natural in environment; also, from use of chemicals at water treatment plant	30 – 41	41	33	250	ppm
Total Dissolved Solids	Natural in environment	115 – 127	127	122	500	ppm
Zinc	Natural in environment; also, from use of chemicals at water treatment plant	0.03 – 0.36	0.36	0.20	5	ppm

[1] Highest monthly average for calendar year [2] For physician-prescribed "no salt diets," a limit of 20 ppm is suggested

Additional Information

Substance	Norfolk's Range	Norfolk's Average Level	Unit
Alkalinity	29 – 53	40	ppm
Ammonia	ND – 0.4	0.4	ppm
Hardness	37 – 69	51[1]	ppm
Silica	6 – 9	8	ppm

[1] Norfolk's water averages in the range between soft and slightly hard. This means there is enough hardness for soaps and detergents to work properly, yet not too much to interfere with most industrial applications. To find grains per gallon, divide ppm value by 17.

Unregulated Contaminant Monitoring Rule

EPA uses the Unregulated Contaminant Monitoring Rule (UCMR) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Every five years EPA reviews the list of contaminants and selects no more than 30 for a nationwide drinking water survey to provide occurrence data for potential future regulation. Norfolk's final sampling event for UCMR5 occurred in 2023.

Substance	Likely Source	Norfolk's Range	Norfolk's Highest Level	Norfolk's Average Level	National MCL	Unit
Perfluoropentanoic acid (PFPeA)	Industrial / Man-made	ND – 0.0051	0.0051	ND	n/a	ppb
Perfluorohexanoic acid (PFHxA)	Industrial / Man-made	ND – 0.0037	0.0037	ND	n/a	ppb
Perfluorooctanesulfonic acid (PFOS)	Industrial / Man-made	ND – 0.0058	0.0058	ND	0.004	ppb

For more information on the UCMR program, visit EPA online at: https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule.

PHARMACEUTICALS AND SOURCE WATER


Moores Bridges Water Treatment Plant

Pharmaceuticals can enter the waterways through excretion from the body and the practice of improper disposal methods, such as flushing unused or expired medications down the toilet. Everyone can help keep unused pharmaceuticals out of the water supply by properly disposing of unused medications. A permanent drug drop-off location is Norfolk's Public Safety Building, 811 E. City Hall Avenue, Norfolk, VA 23510. If disposing at home, discard with the trash. Always remove personal information, seal in a container, and disguise contents by mixing with coffee grounds or kitty litter.


Kristen M. Lentz Water Treatment Plant

PER AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Federal maximum drinking water contaminant levels for PFAS were finalized on April 10, 2024. Water systems will be required to comply with the rule within three years.

To find out more about PFAS, visit www.norfolk.gov/PFAS.

IMPORTANT CONTACT INFORMATION

Water Quality
(757) 441-5678
www.norfolk.gov/waterquality

Water/Sewer Main Breaks and Emergencies
(757) 823-1000
www.norfolk.gov/4759/Report-a-Problem

Customer Service
(757) 664-6700
www.norfolk.gov/utilities

Public Information
(757) 664-6730
www.norfolk.gov/UTpublicinfo

Reservoir Management (Boating)
(757) 441-5678 ext. 253
www.norfolk.gov/reservoir

Storm Water
(757) 823-4000
www.norfolk.gov/stormwater

Keep Norfolk Beautiful
(757) 441-1347
www.norfolk.gov/KNB

150 YEARS OF NORFOLK UTILITIES

Last year, the department turned 150 years old! Operations began in 1873 with the planning and development of Norfolk's preliminary water infrastructure and Moores Bridges WTP, its first treatment plant. The image above is the oldest historical photo on record for Moores Bridges.

Want to learn more about the history of Norfolk Utilities? Check out www.norfolk.gov/utilities.

OUR MISSION

The mission of the Norfolk Department of Utilities is to enhance quality of life by providing excellent water and wastewater services at the best possible value to our customers.

OUR VISION

The City of Norfolk Department of Utilities is a premier service provider that meets our customers' needs for affordable, dependable and high-quality drinking water and wastewater services.

OUR GOALS

- To exceed customer expectations through fast, effective and courteous service.
- Embrace new and better ways of achieving quality results through creativity, initiative and technology.
- Protect and respect our natural resources and foster a healthy, safe and clean environment.
- Act as exemplary stewards of the public funds entrusted to us.

WATER QUALITY REPORT
GLOSSARY

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. The action level is not based on one sample; instead, it is based on many samples.

Alkalinity: A measure of the water's ability to resist changes in the pH level and a good indicator of overall water quality. Although there is no health risk from alkalinity, we monitor it to check our treatment processes.

E. coli (Escherichia coli): A type of coliform bacteria that is associated with human and animal fecal waste.

gpg (grains per gallon): A unit of water hardness. One grain per gallon is equal to 17.1 parts per million.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

mg/L (Milligrams per liter): One milligram per liter is equal to one part per million.

MRDL (Maximum Residual Disinfection Level): The highest level of disinfectant that is allowed in drinking water. The addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG (Maximum Residual Disinfection Level Goal): The level of a disinfectant in drinking water below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Minimum Residual Disinfectant Level: The minimum level of residual disinfectant required at the entry point to the distribution system.

ND: Not Detected in the water.

NTU (nephelometric turbidity units): Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units.

Pathogens: Bacteria, virus, or other microorganisms that can cause disease.

pCi/L (Picocuries per liter): A measure of radioactivity.

ppm (parts per million): Denotes 1 part per 1,000,000 parts, which is equivalent to two-thirds of a gallon in an Olympic- sized swimming pool.

ppb (parts per billion): Denotes 1 part per 1,000,000,000 parts, which is equivalent to half a teaspoon in an Olympic-sized swimming pool.

µg/L (Microgram per liter): One microgram per liter is equal to one part per billion.

ppt (parts per trillion): Denotes 1 part per 1,000,000,000,000 parts, which is equivalent to one drop in 20 Olympic- sized swimming pools.

Total Coliform: Coliforms are bacteria that are naturally present in the environment. Their presence in drinking water may indicate that other potentially harmful bacteria are also present.

HAAs (Haloacetic Acids): A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

TOC (Total Organic Carbon): A measure of the carbon content of organic matter. This measure is used to indicate the amount of organic material in the water that could potentially react with a disinfectant to form disinfection byproducts.

TTHMs (Total Trihalomethanes): A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

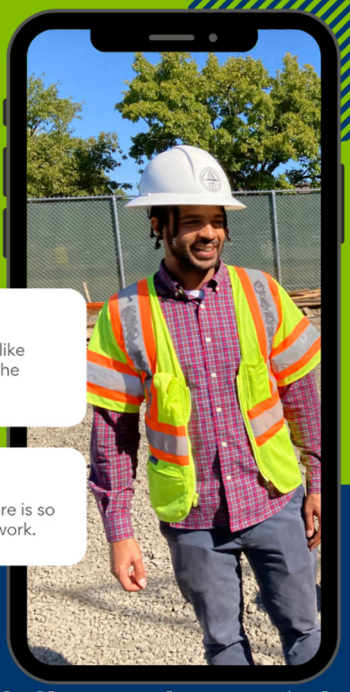
Turbidity: A measure of the clarity of water related to its particle content. Turbidity serves as an indicator for the effectiveness of the water treatment process. Low turbidity measurements, such as ours, show the significant removal of particles that are much smaller than can be seen by the naked eye.

WTP: Water Treatment Plant.

THE CITY OF NORFOLK
UTILITIES

TESTIMONIALS

What People Say About Working Here



★★★★★
It's very rewarding, and I feel like we're making a difference in the community.

★★★★★
I like the people. Everyone here is so great and dedicated to their work.

norfolk.gov/waterjobs

WITHOUT WATER THERE IS NO...

BEER · SHOWER · HEALTH CARE · FIRE FIGHTING

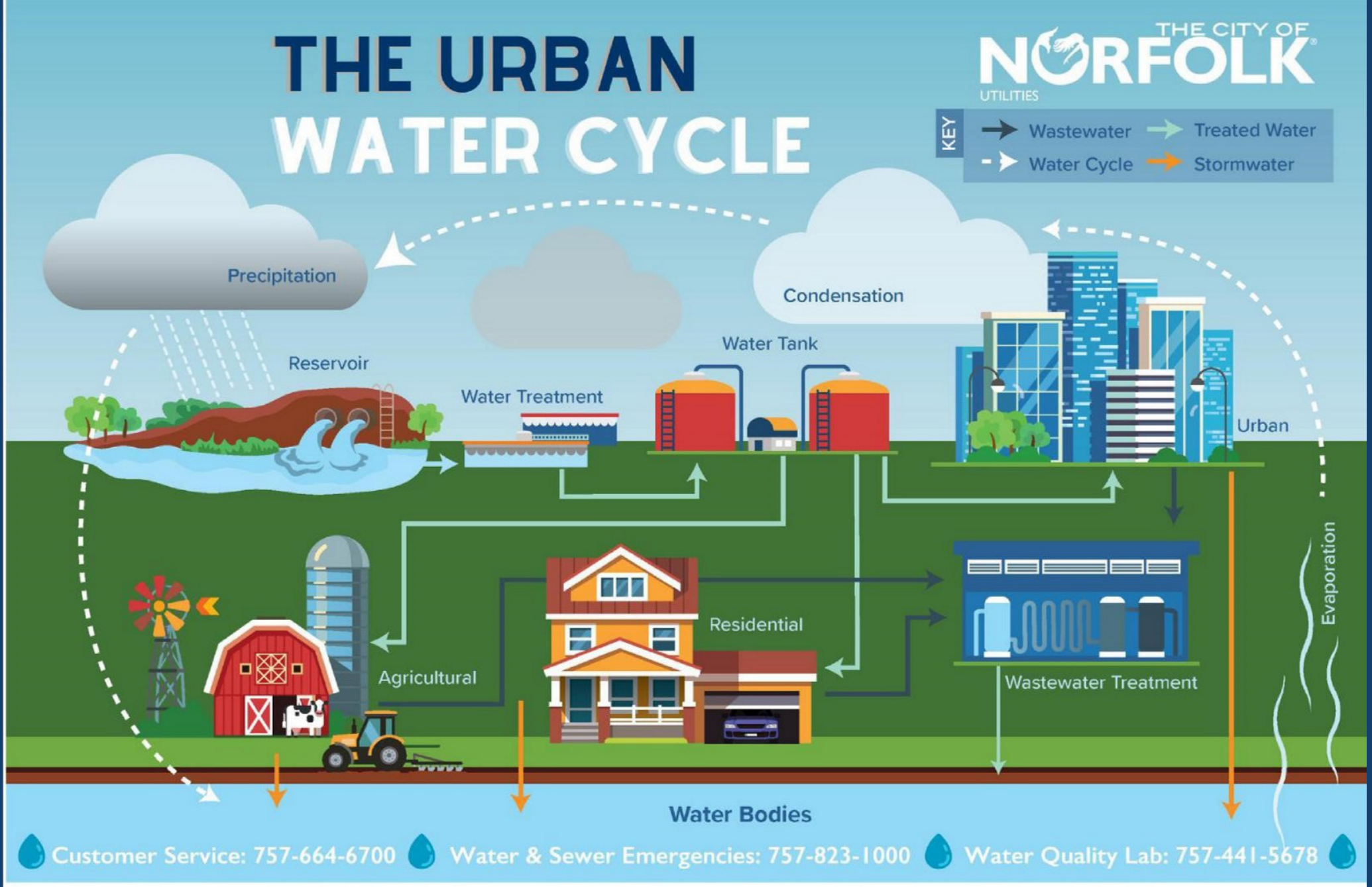
LEARN WHY IT'S IMPORTANT TO SUPPORT OUR WATER INFRASTRUCTURE.

askHRgreen.org

This report and more are available at **www.norfolk.gov/waterquality**. Visit the URL or scan the QR code for more information!

THE URBAN WATER CYCLE

THE CITY OF NORFOLK UTILITIES



Customer Service: 757-664-6700 | Water & Sewer Emergencies: 757-823-1000 | Water Quality Lab: 757-441-5678