

We met or surpassed all water quality requirements.

## These were the only compounds found in our water during required, regulatory testing, regulatory testing. All were below the regulatory limit.

Required Regulatory Report	Maximum Contaminant Level (MCL) set by EPA	Maximum Contaminant Level Goal (MCLG)	Actual Level in CWS Water for 2018	Possible Sources in Water
<b>Turbidity</b> A measure of the amount of suspended particles in the water (cloudiness); an indicator of overall water quality and filtration effectiveness.	Requires a specific treatment technique; 95% of monthly samples must be less than 0.3 NTU	NA	0.10 NTU Highest level detected 100% of monthly samples met the limit Range: 0.06 - 0.10	Soil runoff
<b>Cryptosporidium</b> A parasite spread through human and animal waste that causes gastrointestinal illness.	None	Zero Cryptosporidium oocysts per liter of water	0.0	Human and animal sources
<b>Giardia</b> A parasite spread through human and animal waste that causes gastrointestinal illness.	None	Zero Giardia oocysts per liter of water	0.0	Human and animal sources
<b>Copper</b> A metal widely used in household plumbing that may corrode into water.	99th percentile of all samples collected must be less than the 1.3 ppm action level	1.3 ppm	0.12 ppm (No samples exceeded the action level) Range: 0.10 to 0.18 ppm	Corrosion of household plumbing materials EPA requires testing for copper and lead once every three years.
<b>Lead</b> A metal no longer used in water pipes, but may be present in plumbing fixtures or old pipes; may corrode into water.	99th percentile of all samples collected must be less than the 1.5 ppm action level	0 ppb	99th percentile = 2.3 ppb (No samples exceeded the action level) Range: 0.10 to 1.1 ppb	Corrosion of household plumbing materials EPA requires testing for copper and lead once every three years.
<b>Nitrate/Nitrite</b> Nitrate and nitrite are nitrogen-oxygen compounds that can become a source of pollution in the form of household chemicals.	10 ppm	10 ppm	0.09 ppm	Runoff from fertilizers
<b>Fluoride</b> A substance that is naturally occurring in some water sources, particularly groundwater. It is also added to drinking water to help prevent tooth decay.	4 ppm	4 ppm	0.16 ppm in source water 0.3 ppm in finished water Range: <0.10 to 0.36 ppm	Naturally occurring in source water and adjusted during treatment to prevent tooth decay.
<b>Chlorine Dioxide</b> A disinfection agent added in small amounts to protect against microbes.	800 ppb	800 ppb	260 ppb Range: 0 to 260 ppb	Added for disinfection
<b>Chloramine Residual</b> A blend of chlorine and ammonia added in small amounts to treated water to protect against microbes.	4 ppm MBRL	4 ppm MBRLG	2.71 ppm Running Annual Average Range: 2.4 - 3.1 ppm	Added for disinfection
<b>Total Trihalomethanes (Stage 2)</b> Stage 1 of the disinfectants and disinfection byproducts rule requires the locational running annual average (LRMA) for each sampling location to be below the MCL. CWS has eight sampling locations.	Locational Running Annual Average must be below 80 ppb	NA	Highest level detected: 17.01 ppb Range: 0 - 17.01 ppb	Byproduct of disinfection
<b>Total Haloacetic Acids (Stage 2)</b> Stage 2 of the disinfectants and disinfection byproducts rule requires the locational running annual average (LRMA) for each sampling location to be below the MCL. CWS has eight sampling locations.	Locational Running Annual Average must be below 60 ppb	NA	Highest level detected: 17.8 ppb Range: 6.97 - 17.8 ppb	Byproduct of disinfection
<b>Chlorite</b> A byproduct formed when chlorine dioxide is used to disinfect water.	1 ppm	1.0 ppm	Highest level detected: 0.78 ppm Range: 0.4 - 0.78 ppm	Byproduct of disinfection
<b>Total Organic Carbon (TOC)</b> The measure of organic substances in a body of water, mostly from naturally occurring sources such as plant material. TOC provides a measurement for the potential formation of disinfection byproducts.	No MCL. EPA requires a specific treatment technique.	Required % removal varies from 35% - 55% TOC removal, depending on source water quality	Removal range: 52% to 66% 52.7% removed	Naturally present in the environment
<b>Total Coliform Bacteria</b> A group of bacteria whose presence in water indicates possible contamination with soil or waste from warm blooded animals.	Presence of coliform bacteria greater than or equal to 5% of monthly samples	0%	3.1% highest % of positive monthly samples All repeat samples were satisfactory	Naturally present in the environment MONITORING VOLUNTARY. Due to human error repeat samples were collected from the wrong locations. The error was corrected as soon as it was discovered.

Abbreviations: ppm: Parts per million (mg/L) ppb: Parts per billion (ug/L) ppt: Parts per trillion (ng/L) LRMA: Locational Running Annual Average RMA: Running Annual Average NTU: Nephelometric Turbidity Units

## These unregulated compounds have EPA Health Advisories and all were detected below their EPA Health Advisory level.

Compounds With Health Advisories	Units	Aug 2018	Nov 2018	Feb 2019	May 2019	Aug 2019	Nov 2020	Feb 2021	May 2021	Aug 2021	Nov 2022	Feb 2023	May 2023	EPA Health Advisory	Secondary Drinking Water Standards	Notes
Atrazine	ppb	22	19	7.2										700,000 ppt*		Thirty-four compounds on the EPA Health Advisory list were not analyzed because there are no analytical methods available at this time.
Barium	ppb	14	12	16										7,000 ppb*		August 2018: we analyzed 597 individual compounds.
Bromodichloromethane	ppb	5.6	3.7	3.3										100 ppb*		November 2018: we analyzed 627 individual compounds.
Chloroform	ppb	7.2	2.7	2.6										350 ppb*		February 2019: We analyzed 627 individual compounds.
Dibromochloromethane	ppb	2.6	2.0	1.6										700 ppb*		An EPA Health Advisory is an estimate of acceptable drinking water levels for a substance based on health effects information. It's not a legally enforceable federal standard, but serves as technical guidance to assist Federal, State, and local officials.
Manganese	ppb	13	6.4	3.3										1,600 ppb*		*EPA Drinking Water Equivalent Level (DWEL).
Perchlorate	ppb	NA	NA	0.13										0.025 ppb*		**EPA Lifetime Health Advisory, as the data is not available as DWEL.
PFOA	ppt	5.0	4.1	4.4										70 ppt**		See our Unregulated Compounds Position Statement on the Water Quality Reports page at <a href="http://www.charlestonwater.com">www.charlestonwater.com</a> .
PFOS	ppt	9.7	6.1	6.3										700,000 ppt*		
Simazine	ppt	NA	6.9	14										20,000 ppt*		
Strontium	ppb	53	41	43										20,000 ppb*		
Zinc	ppb	NA	NA	6.3										10,000 ppb*		

Additional unregulated compounds detected during unregulated compound testing.

1,4-Dioxane	ppb	0.11	0.14	0.32										NA		
6,2-Fluorotelomer sulfonic acid (6:2 FTS)	ppt	NA	4.0	NA										NA		
Acetosulfame-K	ppt	NA	32	160										NA		
Aluminum	ppb	74	58	38										NA	50 to 200 ppb	
Boron	ppb	37	32	26										NA		
Chromium, hexavalent	ppb	0.06	0.06	0.06										NA		
DEET	ppt	NA	12	NA										NA		
lohexal	ppt	NA	19	19										NA		
Lincomycin	ppt	NA	24	NA										NA		
NDMA	ppt	7.5	3.4	5.6										NA		
NMEA	ppt	NA	2.5	NA										NA		
PFBA	ppt	7.0	NA	NA										NA		
PFBS	ppt	3.8	4.0	3.2										NA		
PfHPA	ppt	3.2	2.9	2.3										NA		
PFHxS	ppt	5.6	5.7	4.3										NA		
PFHxS	ppt	3.3	2.8	2.1										NA		
PFPeA	ppt	7.5	7.5	4.7										NA		
Quinoline	ppt	NA	19	NA										NA		
Sucralose	ppt	NA	950	640										NA		
Tribromine	ppt	NA	NA	16										NA		
Total Trihalomethanes	ppb	15.4	8.4	7.5										NA		

Parameter	2018 Average	Highest Level Recommended by EPA
Chloride	19 ppm	250 ppm
Color	4 PCU	15 PCU
Iron	<0.10 ppm	0.3 ppm
Manganese	<0.05 ppm	0.05 ppm
Total Dissolved Solids (TDS)	115 ppm	500 ppm
Sodium	13 ppm	
Alkalinity	29 ppm	
Conductivity	197 µmhos/cm	
Hardness	58 ppm (3.39 gpg)	No Standard
Ortho-phosphate		
Silica	1.2 ppm	
Temperature	69.8° F (21°C)	

Abbreviations: ppm: Parts per million PCU: Platinum Cobalt Units gpg: Grains per gallon µmhos/cm: Micromhos/cm

**Questions / Extra Copies:**  
Communications Manager: (843) 727-7146

**En Español:**  
Este informe contiene información muy importante sobre su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

**Get Involved:**  
Our Board of Commissioners meets monthly and meetings are open to the public. Citizen participation is welcomed. Meetings are typically held the fourth Tuesday of every month at 9 a.m. at 103 St. Philip Street. More information: [www.charlestonwater.com](http://www.charlestonwater.com).

**This report is published annually in May.**  
**Public Water System ID#: 1010001**



@CharlestonWater  
@ChasWaterSystem  
[YouTube.com/CharlestonWater](http://YouTube.com/CharlestonWater)  
[www.charlestonwater.com](http://www.charlestonwater.com)

**24/7 Customer Service: (843) 727-6800**

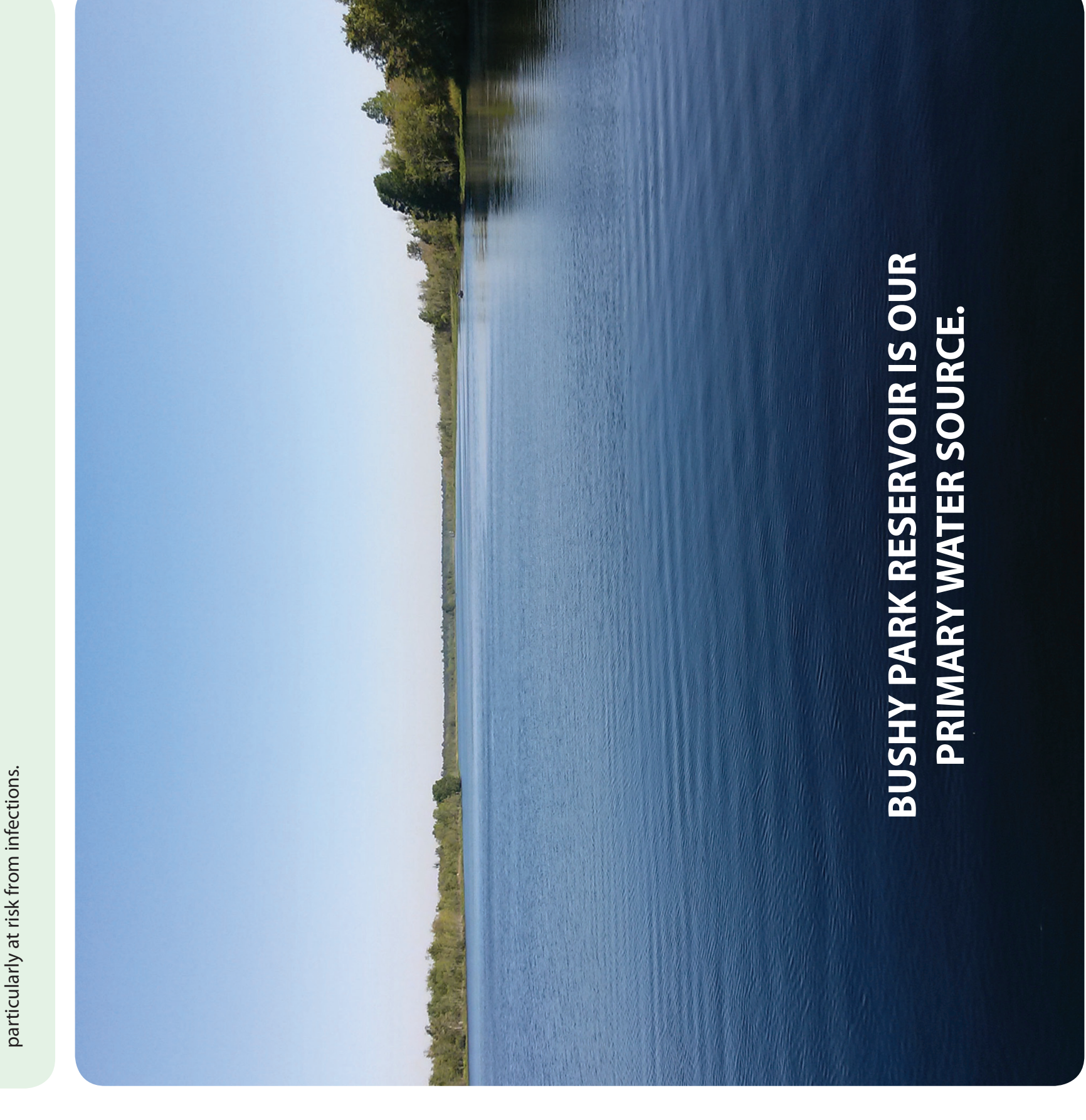
**Main Office (Downtown)**  
103 St. Philip Street  
Charleston SC, 29403

**North Area Office**  
6296 Rivers Avenue  
North Charleston, SC 29418

### MESSAGE FROM THE EPA

Some people may be more vulnerable to contaminants in drinking water than the general population. Vulnerable people include: infants and young children; pregnant women; nursing and elderly people; people with HIV/AIDS or other immune system disorders; people with cancer, organ transplants, some elderly and some infants can be particularly at risk from infections.

These people should seek advice from their health care provider. EPA/CDC guidelines on appropriate precautions to lower the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline: (1-800-426-4791).



**BUSHY PARK RESERVOIR IS OUR PRIMARY WATER SOURCE.**

### POSSIBLE CONTAMINANTS IN SOURCE WATER

The sources of drinking water, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs, and wells.

As water travels over land and into waterways, it dissolves natural minerals and picks up substances from animals or human activity.

To protect public health, water treatment plants reduce contaminants to safe levels established by regulations.

**Microbes**, such as viruses and bacteria, may come from septic systems, livestock, pets and wildlife.

**Organic compounds**, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, can also come from gas stations, runoff, and septic systems.

**Inorganic compounds**, such as salts and metals, which can be naturally occurring or the result of storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Radioactive compounds** can be naturally occurring or the result of oil and gas production and mining activities.

**Pesticides and herbicides** may come from agriculture, runoff, and residential uses. NOTE: None were found in our source water or treated water when we tested for more than 250 of them in 2017. See website for complete list at [www.charlestonwater.com](http://www.charlestonwater.com).



**FLUORIDE PROMOTES DENTAL HEALTH**

### FLUORIDE POSITION STATEMENT

Adopted by the Board of Commissioners October 24, 2017

The Charleston Water System (CWS) supports the recommendations of the World Health Organization, American Medical Association, Canadian Medical Association, Centers for Disease Control and Prevention (CDC), American Dental Association, Canadian Dental Association, South Carolina Dental Association and other professional organizations in the medical community for the proper fluoridation of public water supplies as a public health benefit. We also support the position of the most current peer reviewed research on fluoride and the positions of the medical and dental community.

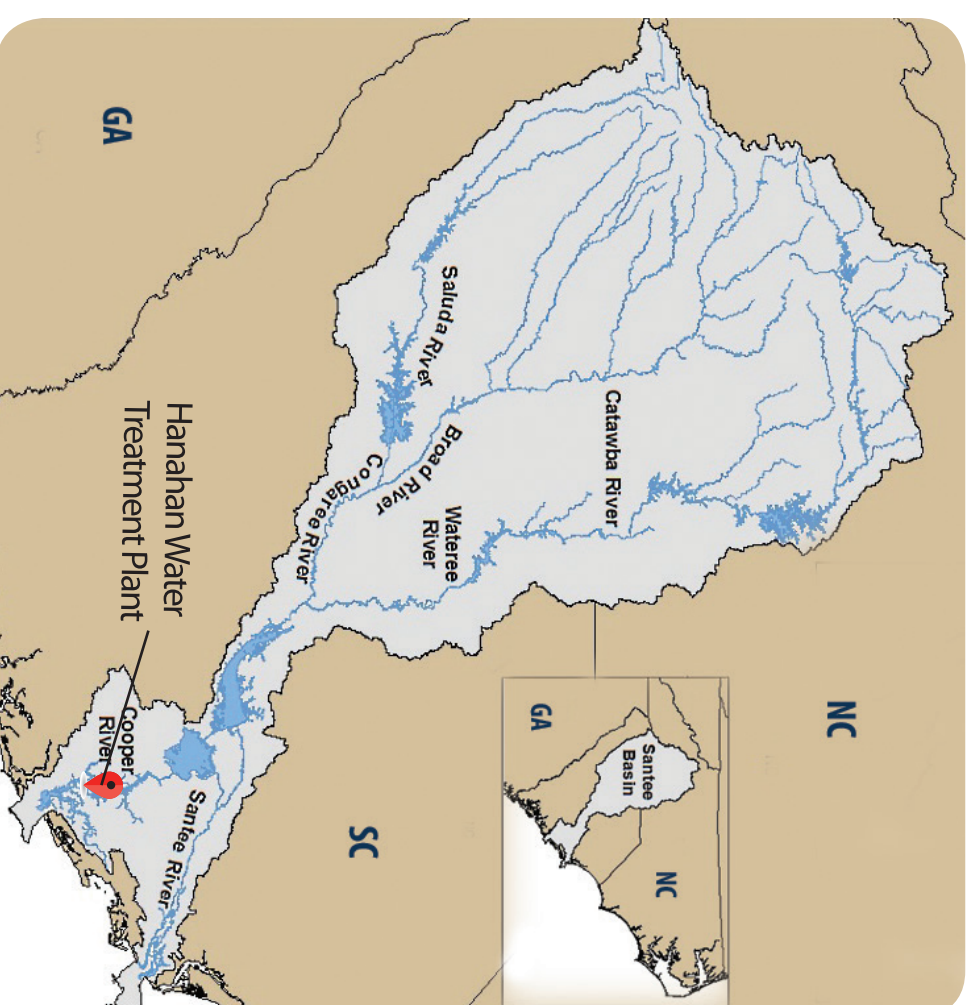
We adjust the naturally occurring level of fluoride in our drinking water in a responsible, effective, and reliable manner that includes monitoring and controlling fluoride levels as mandated by state and/or federal laws, regulations and recommendations. We carefully monitor and adjust potable water to achieve the scientifically recommended concentration of fluoride for protection against dental caries, which is 0.7 parts per million. Our annual cost for this program is about \$110,000, which equates to \$0.25 per person across the approximately 450,000 people in our water service area.

The CWS participates in the fluoridation of water under the guidance of the South Carolina Department of Health and Environmental Control (SCDHCEC), Oral Health Division. SCDHEC coordinates their program in conjunction with the CDC and the U.S. Department of Health and Human Services.

If there are questions regarding these programs, please contact:  
SCDHEC, Division of Oral Health, 2100 Bull Street, Columbia, S.C. 29201  
P: (803) 898-9577 • F: (803) 898-2065

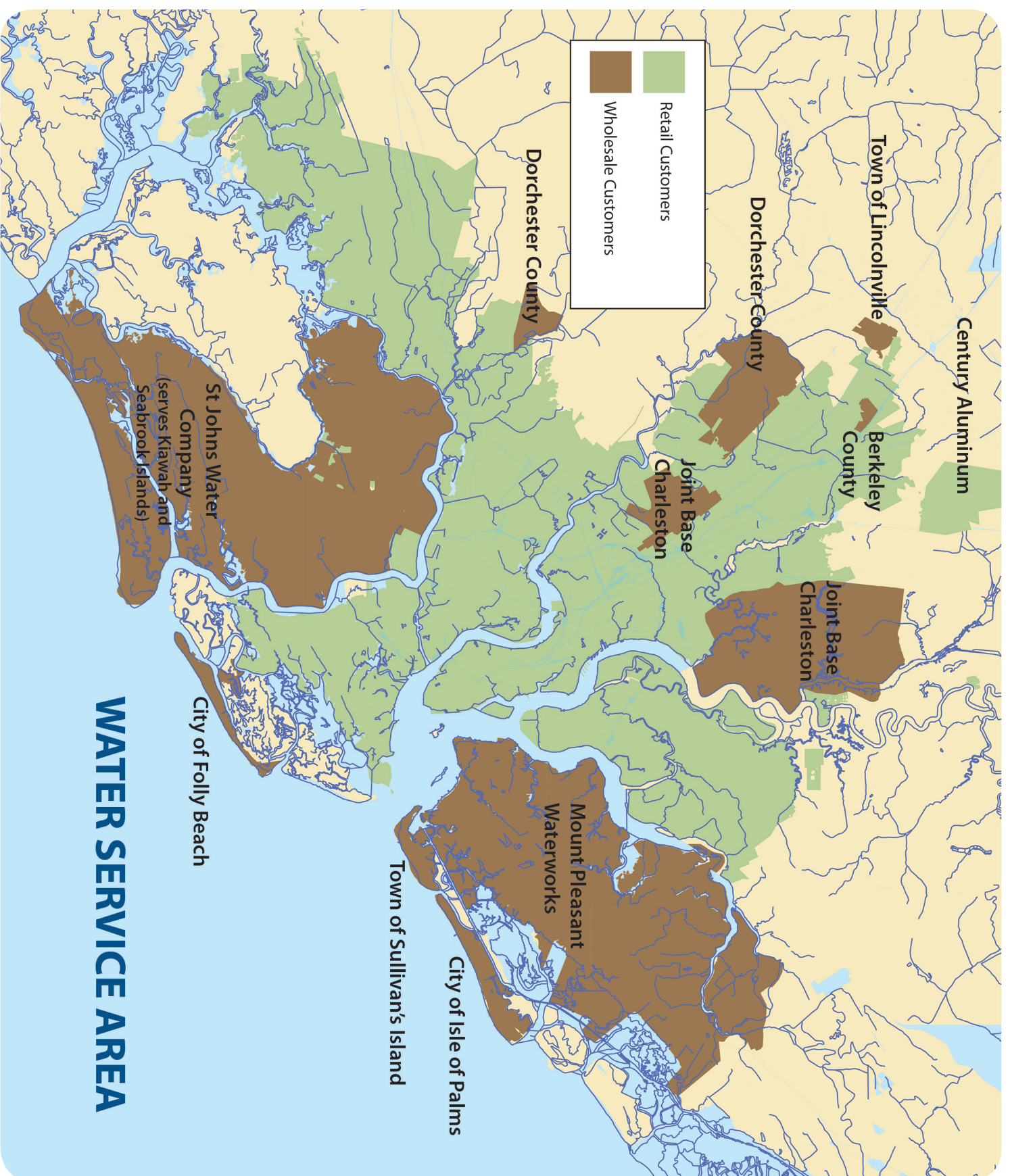
# Hanahan Water Treatment Plant

## BUSHY PARK RESERVOIR WATERSHED



**Source Water Protection**  
To raise awareness about preventing water pollution, SC DHEC identifies potential sources of contamination for each drinking water source in the state. [www.scdhec.gov/Home/AndEnvironment/Water/SourceWaterProtection/](http://www.scdhec.gov/Home/AndEnvironment/Water/SourceWaterProtection/)

**You Can Help!**  
Stormwater runoff pollutes waterways. **Pick up the poop!** Pet waste adds bacteria and excess nutrients, which contribute to algae growth that chokes out plants and wildlife. **Don't over-fertilize your lawn.** It washes into storm drains, streams, rivers and oceans. **No dumping in storm drains.** They empty directly into a waterway. **Proper disposal** of oils, paints, and other chemicals.

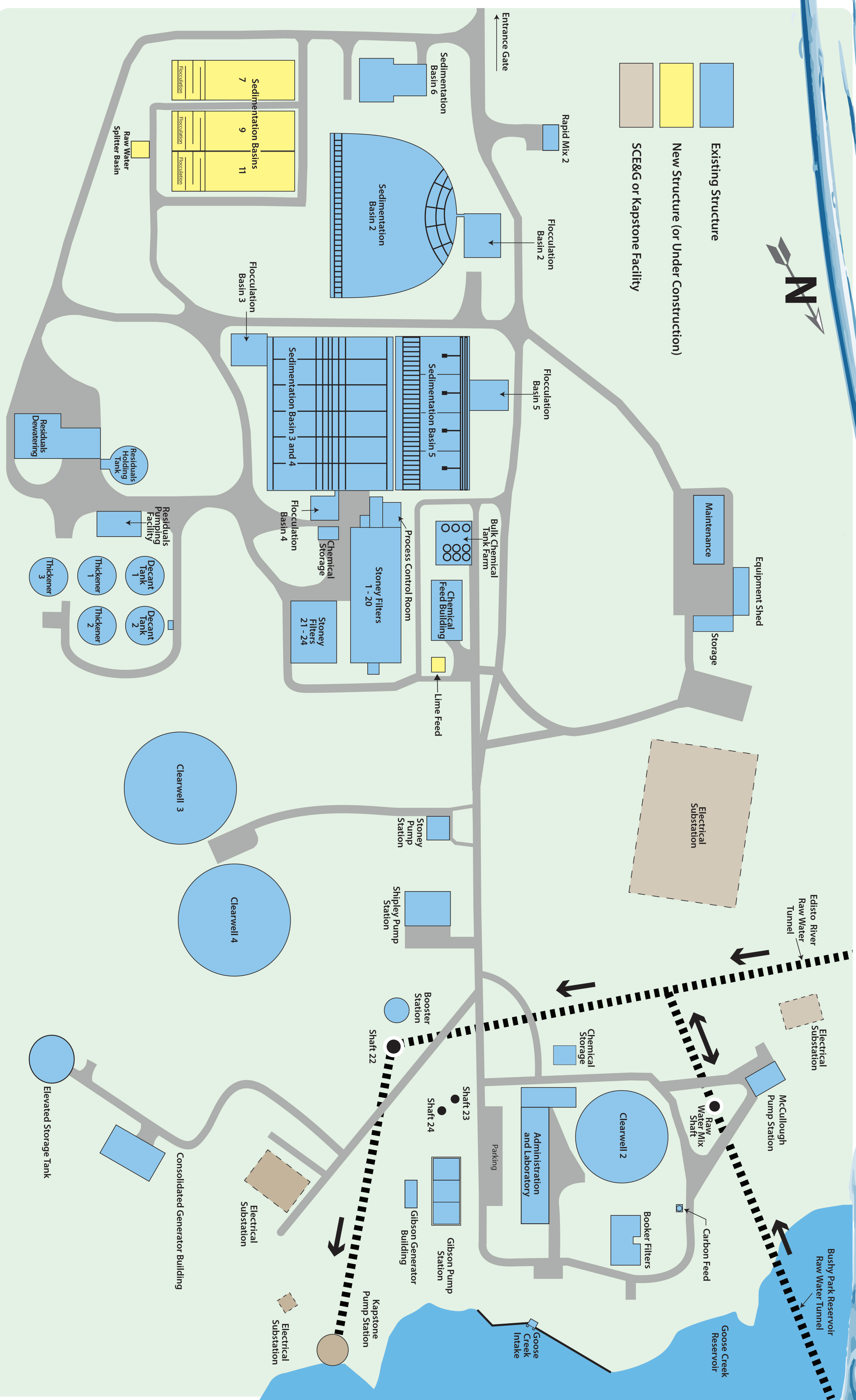


## QUICK FACTS

- 1 Largest water treatment plant by permitted capacity in S.C.
- 2 Second largest watershed on the east coast (Santee-Cooper)
- 9 Wholesale customers

- 20,000 Total annual water quality tests
- \$60,000 Spent annually on voluntary unregulated compound testing
- 120,000 Retail customer accounts
- 450,000 People served in the tri-county area
- 58 MGD Average daily volume of treated water
- 105.5 MGD Largest recorded volume treated in one day
- 115.4 MGD DHEC permitted capacity

MGD = Million Gallons Per Day



## TREATMENT PROCESS

