



CERTIFICATION

CFPUA's Utility Services Division, Construction Division, Environmental Management Department and Engineering Department achieved ISO 14001 certification and we are committed to gaining certification for all wastewater divisions. As members of professional associations, we actively participate with the following organizations:

- Lower Cape Fear River Program
- NC Water Quality Association
- Cape Fear River Partnership
- Cape Fear River Assembly
- NC WaterWARN
- Water Environment Federation
- American Water Works Association
- NC Pretreatment Consortium
- NC Rural Water Association
- AWWA—Water Research Foundation
- Environmental Stewardship Initiative—Environmental Partner
- Urban Water Consortium
- Local Emergency Planning Committee within New Hanover



Copies of this report are available at the Cape Fear Public Utility Authority Customer Service Center located at 235 Government Center Drive, our satellite payment center located at 305 Chestnut Street or by logging onto our website at www.cfpua.org.

Notification of availability is provided through printed notice on water/sewer bills and the Authority's website. This report was completed by staff of the Cape Fear Public Utility Authority and is accurate to the best of our knowledge and belief.

For more detailed information about this report, contact an Operator in Responsible Charge (ORC) from those listed below.

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users/customers of the CFPUA system and that those users have been notified of its availability.

Geoffrey D. Cermak, ORC / (910) 332-6736
James A. Loughlin (Northside) Wastewater Treatment Plant
Permit No. NC0023965

Steven Styers, ORC / (910) 332-6735
M'Kean Maffitt (Southside) Wastewater Treatment Plant
Permit No. NC0023973

Robert Daughtry, ORC/ (910) 332-6737
CFPUA Utilities Collections System Superintendent



Cape Fear Public Utility Authority

ANNUAL WASTEWATER SYSTEM PERFORMANCE REPORT 2017-2018

Stewardship.



Sustainability.



Service.

235 Government Center Drive
Wilmington, NC 28403
910-332-6550
www.cfpua.org



MISSION STATEMENT

It is our mission to provide high-quality service in an environmentally responsible manner while maintaining the lowest practicable cost.

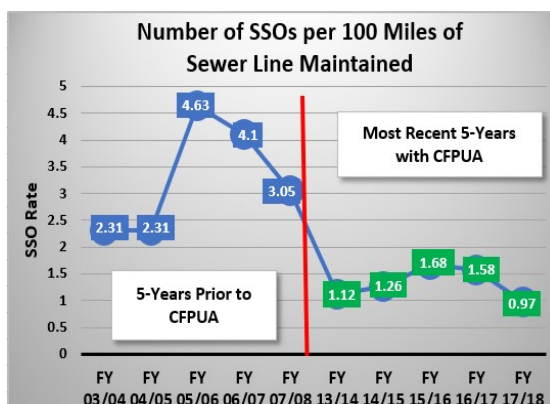
SYSTEM OVERVIEW

The Cape Fear Public Utility Authority's (CFPUA) sewage collection and wastewater treatment facilities provide service to homes, commercial establishments, and industries. CFPUA collects wastewater from much of the City of Wilmington and New Hanover County, treats it, and then discharges into the Cape Fear River. CFPUA also treats wastewater from the Town of Wrightsville Beach and portions of Pender County. CFPUA is responsible for the daily operation of treatment & collection facilities and with ensuring compliance with strict environmental standards. This fiscal year, more than \$34 million was spent to maintain, operate and manage CFPUA's sewer, collection and treatment systems.

1. **James A. Loughlin (Northside Plant)** - 2311 N. 23rd Street
Permitted to treat up to 16 million gallons of wastewater daily
2. **M'Kean Maffitt (Southside Plant)** - 3436 River Road
Permitted to treat up to 12 millions gallons of wastewater

CFPUA HIGHLIGHT

During this milestone tenth year of CFPUA, staff was able to terminate the EPA Consent Decree (CD) as of June 4, for the operation and maintenance of the sewer collection system. Staff has worked diligently to improve sewer collection system operations, maintenance, rehabilitation and repair activities to minimize sanitary sewer overflows over these past years. This milestone is a culmination of a lot of hard work by CFPUA staff and continued partnerships with both the City and County to operate and grow our sewer systems in a manner that protects our regions beautiful natural resources. During this tenth year of operation, CFPUA lost 0.0003% of the approximately 6.38 billion gallons of wastewater collected and treated.



COLLECTION SYSTEM



COLLECTION SYSTEM ACCOMPLISHMENTS

- CFPUA installed permanent diesel pumps for maintenance operations at Pump Station #10—One Tree Hill and Pump Station #89—Smith Creek.
- CFPUA replaced several key pieces of equipment and vehicles as part of the ongoing equipment replacement program to include:
 - 1 Vactor truck
 - 1 Amphibious Argo
 - 1 C190 skid mower
 - 2 Heavy bush hog rotary cutters
 - 1 Jet Truck
 - 2 CCTV Inspection Vehicles.
- All flow meters were calibrated and generators were serviced.

COLLECTION SYSTEM PERFORMANCE

- Staff completed over 11,000 work orders for preventative and corrective maintenance which are captured within the CMMS/Maximo work order system.
- Our permit requires 10% of the collection system to be cleaned annually. During fiscal year 2017-2018, CFPUA crews cleaned approximately 129 miles of sewer lines which is equal to 14.5% of the system.
- Approximately 60 miles of the gravity system were videoed by closed-circuit television to evaluate its condition and to identify the need for further maintenance.
- Emergency repairs in fiscal year 18 exceeded \$1.6 million in replacing and rehabilitating approximately 780 linear feet of sewer mains along with associated appurtenances.
- Successfully operated and maintained 148 pump stations, more than 22,000 manholes, and over 1,000 miles of sewer lines.
- CFPUA crews are available 24-hours a day, 365 days per year to prevent and respond to sewer service blockages, overflows, and other emergencies. During the reporting period our crews handled 40 main stops and over 400 sewer service calls.
- Of the Sanitary Sewer Overflows that occurred during fiscal year, 70% were less than a thousand gallons and the largest was 8,775 gallons.

The wastewater treatment facilities and sanitary sewer systems are regularly inspected and evaluated as part of our daily operations. System deficiencies and needs are prioritized based on protecting public health and safety, preserving the environment, and managing expenses. With our guiding principles of stewardship, sustainability and service as a back drop, we remain committed to providing reliable wastewater services to our community.

Frank Styers, PE
Chief Operations Officer



HOW DO SPILLS HAPPEN



DON'T FLUSH IT!

Wipes, paper towels, and similar items are one cause of sewer spills in Wilmington and New Hanover County. Products labeled as “flushable” might go down the toilet, but they don’t break down as they should. Toilet paper and human waste are the only things that should be put in

the toilet. A wipe, for example, won’t break down for days or even weeks and can get clogged in household plumbing. When wipes and other flushed materials make it to the neighborhood’s sewer collection system, they can back up lines and pump stations and can cause financially and environmentally costly sewer spills. Customers can help reduce sanitary sewer overflows by putting wipes, cotton balls, Q tips, dental floss, and paper products in the trash rather than the toilet.



CEASE THE GREASE!

Do not pour your cooking grease down the drain. Fats, oils, and grease harden and stick when they cool in the pipes. This can cause costly sewer system clogs and overflows into the environment. Dispose of grease by pouring it into a can; when it’s full throw it into a trash can.

ROOT INVASION

Tree roots can cause sewer overflows. Roots grow through cracks or loose joints in sewer pipe. Once inside, the roots continue to grow, creating a mass. The mass can become matted with grease, paper, wipes, and other solid materials causing a blockage or perhaps an overflow. As roots expand in the sewer pipe, pressure is exerted at their point of entry. If the pipe is not cleared, it may eventually rupture which is costly to fix or replace.

CFPUA’s root control program uses both non-toxic chemical control methods and mechanical equipment to remove tree roots that infiltrate the wastewater collection system. During fiscal year 2017-2018, CFPWA treated 9.16 miles of sewer lines for roots.

Sewer spills are messy and can often be avoided. Sewer spills, overflows, and other water/wastewater emergencies can be reported anytime by calling (910) 332-6565.

TREATMENT PLANTS



TREATMENT PLANT ACCOMPLISHMENTS

- Northside Wastewater Treatment Plant completed digester #4 and #5 cover recoating and cleaning project.
- Northside Wastewater Treatment Plant completed residuals storage tank project (additional two tanks).
- Southside Wastewater Treatment Plant completed weir cover installation on both secondary clarifiers.
- Staff at the two treatment plants conducted over 20 plant tours.
- Southside interim facilities improvement project underway; biosolids building , filtrate pump station , residuals storage pad roof, clarifier structure repairs, under drain pump station, and digester gas piping.
- Design for UV disinfection at Southside Wastewater Treatment Plant to replace dangerous chlorine gas system is at a 30% completion.
- Southside Generator replacement design at 100%.

TREATMENT PLANT PERFORMANCE

CFPUA’s treatment plants operate under National Pollutant Discharge Elimination System permits, more commonly known as NPDES permits. These are complex permits that include monitoring requirements and effluent discharge limits, some of which vary from season to season. The NC Department of Environmental Quality sets limits in an effort to protect the receiving streams. Permits are available at our treatment plants and can be reviewed upon request. In compliance with these permits and to assist with operational needs, our laboratory conducted over 21,000 lab analyses during the fiscal year.



During this report period, CFPWA treated about 6.38 billion gallons of wastewater and returned it to the Cape Fear River. In addition, 29,834 cubic yards of treatment plant residuals were Class-B processed and successfully land applied. We are proud of the facilities’ outstanding performance, made possible by the dedicated efforts of the professionals who operate, maintain, and conduct

tests daily. Comparing all numerical limits within the NPDES permits with all corresponding measurements, CFPWA achieved **100% compliance** overall.

Annual Performance Summary Report July 1, 2017 through June 30, 2018

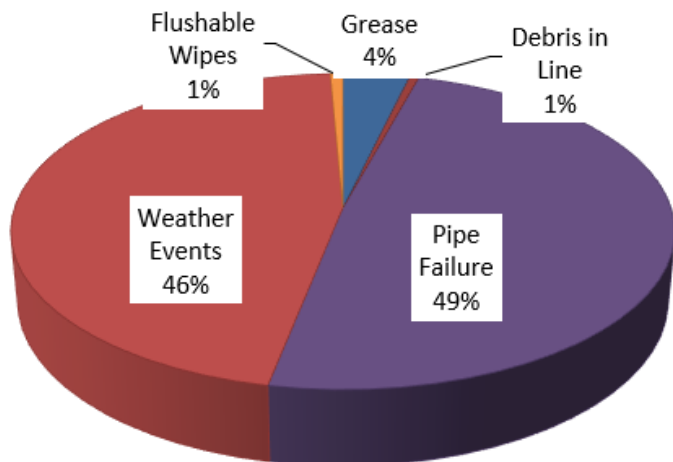
LOCATION/NPDES PERMIT	TYPE OF VIOLATIONS OR DEFICIENCY	DATE	PARAMETER	CORRECTIVE ACTION
James A. Loughlin (Northside) WWTP / NC0023965	None	N/A	N/A	N/A
M'Kean Maffitt (Southside) WWTP / NC0023973	None	N/A	N/A	N/A
Collection System / WQCS00012	None	N/A	N/A	N/A

System Overflows July 1, 2017 through June 30, 2018

MONTH OF OVERFLOW	INCIDENT START DATE	VOLUME (GALLONS)	WATERSHED	LOCATION	PROBABLE CAUSE
August 2017	8/22/2017	1800	Whiskey Creek	Leak on FM from PS 71 near 241 Navaho Trail	Pipe Failure
November 2017	11/22/2017	800	Greenfield Lake	Intersection of Carolina Beach Rd. and Wellington Ave	Grease
	11/23/2017	150	Intercoastal Waterway	Near Intersection of Wrightsville Ave & Summer Rest Rd	Wipes
December 2017	12/11/2017	110	Intercoastal Waterway	400 block of Stokely Dr	Debris
	12/12/2017	7500	Whiskey Creek (Purviance Creek)	Force main from Whiskey Creek Pump Station	Pipe Failure
April 2018	4/4/18	200	Cape Fear River	Quincey Alley near Market & Water Streets	Pipe Failure
May 2018	5/2/18	950	Greenfield Lake	820 Wellington Ave	Pipe Failure
	5/9/18	450	Burnt Mill Creek	South 22nd and Creecy Ave	Weather Event
	5/28/18	650	Burnt Mill Creek	End of Grady Ave at Wallace Park	Weather Event
	5/28/18	8775	Intercoastal Waterway	Shinnwood Rd and Inlet View Dr	Weather Event

The above system overflows were reported per NC DEQ regulations and guidance.

FY 17-18 Sanitary Sewer Overflow by Percentage of Volume



Total Gallons Spilled- 21,385

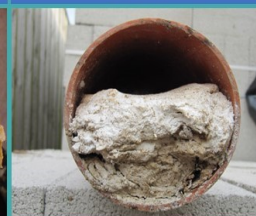
HELP PREVENT SPILLS

You can prevent sewer spills!

NO grease or oil in your sink! Grease will build up and clog pipes.



Do not flush wipes! "Flushable" wipes are NOT actually flushable. Wipes clog pipes!



Keep trees and plants away from sewer lines! Roots grow quickly and cause blockages.

