



CERTIFICATION

CFPUA's Utility Services Division and Environmental Management 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
- Water Environment Research Foundation
- Environmental Stewardship Initiative- Environmental Partner
- Urban Water Consortium



Copies of this report are available at the Cape Fear Public Utility Authority Customer Service Center located at 235 Government Center Dr., our satellite payment center located at 325 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.

Geoffrey D. Cermak, ORC / (910) 332-6736

James A. Loughlin (Northside) Wastewater Treatment Plant
Permit No. NC0023965

Milton S. Vann, ORC / (910) 332-6735

M'Kean Maffitt (Southside) Wastewater Treatment Plant
Permit No. NC0023973

Carol D. Shidal, ORC / (910) 332-6736
Walnut Hills Wastewater Treatment Plant
Permit No. NC0039527

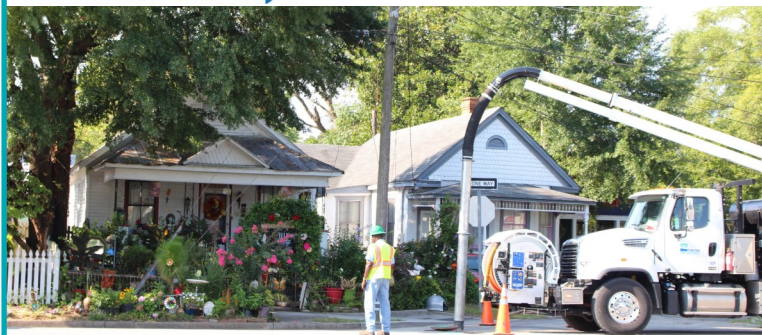
Robert Daughtry, ORC / (910) 332-6737
CFPUA Utilities Collections System Manager
Permit No. WQCS00012



Cape Fear Public Utility Authority

ANNUAL WASTEWATER SYSTEM PERFORMANCE REPORT 2015-2016

Stewardship.



Sustainability.



Service.

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

SYSTEM OVERVIEW

The Cape Fear Public Utility Authority's sewage collection and wastewater treatment facilities provide service to homes, commercial establishments & industries. CFPUA collects wastewater from much of the City of Wilmington and New Hanover County, treats it, and then discharges, either directly or indirectly, into the Cape Fear & Northeast Cape Fear Rivers. 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 & with ensuring compliance with strict environmental standards. This fiscal year, approximately \$35.2 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 daily
3. [Walnut Hills](#) - 17 Little Creek Road (**Decommissioned 6/30/16**)
Permitted to treat up to 100,000 gallons of wastewater daily



MISSION STATEMENT

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

Each year, Cape Fear Public Utility Authority evaluates the wastewater systems and prioritizes needs and resources based on protecting public health, 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 2015-2016, CFPUA treated 9.9 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.

COLLECTION SYSTEM

COLLECTION SYSTEM ACCOMPLISHMENTS

- CFPUA's Utility Services Construction Division achieved ISO 14001 Third Party Certification.
- 131 Air Relief Valves were inspected.
- 13 Telemetry SCADA units were installed.
- All flow meters were calibrated.
- 68 generators were serviced.
- Controls were upgraded for 2 pump stations.
- Of the 49 wastewater collections system positions, 30 hold NC Wastewater Collections System Certification.

COLLECTION SYSTEM PERFORMANCE

- CFPUA collections system staff completed over 14,300 work orders for preventative and/or 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 2015-2016, CFPUA crews cleaned approximately 116 miles of sewer lines which is equal to 13.7% of the system.
- Approximately 52 miles of the gravity system were videoed by closed circuit television to evaluate its condition and to identify the need for further maintenance.
- CFPUA completed 28 emergency repairs in FY 16: replacing & rehabilitating 15 manholes, 12 services, and 889 linear feet of sewer mains, 178 of which were lined, at a cost of \$1,321,812.65. These projects were in areas which had numerous failures and backups.
- Successfully operated 143 pump stations 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 47 main stops & over 450 sewer service calls.
- Of the Sanitary Sewer Overflows that occurred during the fiscal year, 38.4% resulted in zero gallons of sewage reaching surface waters which minimized the environmental impact of the overflow.

TREATMENT PLANTS

TREATMENT PLANT ACCOMPLISHMENTS

- Walnut Hills WWTP was decommissioned and flow was diverted to a more advanced and lower cost treatment facility, Northside WWTP.
- Replacement of 2 odor control system chemical storage tanks at Northside WWTP.
- Improvements to the Southside WWTP include overhaul of grit rakes, primary clarifiers 1 & 2, and scum collector. Replacement of bearing and seal on trickling filters 1 & 2, concrete repairs on secondary clarifier 2, and replacement of the heat exchanger for digester 4 was initiated.
- Of the 30 wastewater treatment positions, 28 hold NC Wastewater Operator Certification.
- CFPUA's Environmental Management Department and Southside WWTP received Department of Labor/OSHA Safety and Health Achievement Recognition Program (SHARP) award for the fiscal year.

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. Limits are set by the NC Department of Environmental Quality 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 28,328 lab analyses during the fiscal year.

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.



During this report period, CFPUA treated about 6.87 billion gallons of wastewater and returned it to the Cape Fear River and the NE Cape Fear River. In addition, 29,256 cubic yards of treatment plant residuals were Class-B processed, 24,648 cubic yards of which were successfully land applied and 4,608 cubic yards of which were landfilled. 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, CFPUA achieved **100% compliance** overall.

Annual Performance Summary Report July 1, 2015 through June 30, 2016

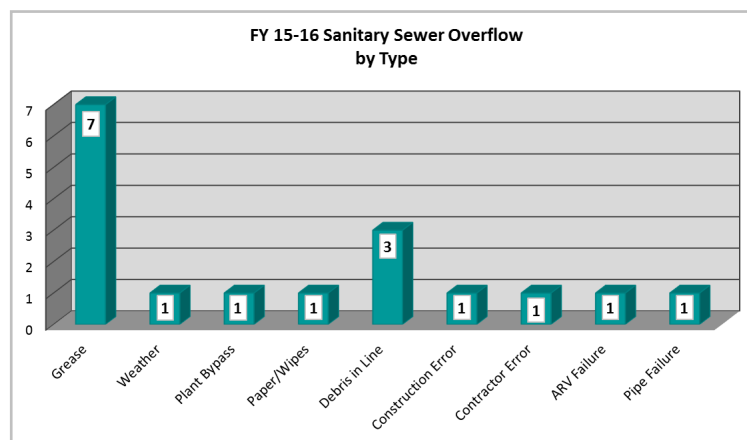
LOCATION/NPDES PERMIT	TYPE OF VIOLATIONS OR DEFICIENCY	DATE	PARAMETER	CORRECTIVE ACTION
James A. Loughlin (Northside) WWTP / NC0023965	None	N/A	N/A	N/A
M'Kean Maffitt (Southside) WWTP / NC0023973	None	N/A	N/A	N/A
Walnut Hills WWTP / NC0039527	None	N/A	N/A	N/A
Collection System / WQCS00012	None	N/A	N/A	N/A

System Overflows July 1, 2015 through June 30, 2016

MONTH OF OVERFLOW	INCIDENT START DATE	VOLUME (GALLONS)	WATERSHED	LOCATION	PROBABLE CAUSE
July 2015	7/11/15	50	Barnards Creek	Manhole near 325 Long Meadows Drive	Grease
September 2015	9/28/15	3,050	N/A	1310 Brookside Gardens Drive	Grease
October 2015	10/4/15	1,000	Tributary to NE Cape Fear River	Walnut Hills WWTP	Plant Bypass (due to weather event)
	10/5/15	30,000	Burnt Mill Creek	Burnt Mill Creek Outfall	Weather Event
	10/7/15	500	Barnards Creek	Between Sunnyvale Drive and Melton Road	Paper/Wipes
	10/15/15	25	Cape Fear River	Parsley Street and Front Street	Grease
November 2015	11/10/15	840	Cape Fear River	106 Wright Street	Grease
December 2015	12/4/15	150	Burnt Mill Creek	College Road and Maple Avenue	Debris in Line
	12/8/15	975	Whiskey Creek	902 Deer Spring Lane	Debris in Line
January 2016	1/29/16	300	Greenfield Lake	2000 Block of East Lake Shore Drive	Grease
February 2016	2/2/16	1,500	N/A	3200 Block of North Kerr Avenue	Contractor Error
	2/18/16	27,000	Cape Fear River	Pump Station along River Road	Construction Error
	2/29/15	40	Cape Fear River	1600 Block of 13th Street	Grease
April 2016	4/22/16	140	Burnt Mill Creek	Manhole at Walnut and 12th Streets	Grease
May 2016	5/5/16	1,150	Greenfield Lake	Central Avenue and Washington Street	ARV Failure
June 2016	6/15/16	27	Burnt Mill Creek	Maides Park (off Princess Place Drive)	Pipe Failure
	6/24/16	750	Motts Creek	Manhole at Honeybee Lane & Willoughby Park Court	Debris in Line

No known adverse environmental impacts were associated with these overflows.

Collection System Overflows	Total Gallons Lost	67,497
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Rev. Date: 08/14/12
Rev. #:0

