



ANNUAL WASTEWATER SYSTEM PERFORMANCE REPORT 2013 - 2014



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, and industries. There are 141 pump stations and approximately 840 miles of gravity sewer line and 105 miles of pressurized sewer force main. 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 River. CFPUA also treats wastewater from the Town of Wrightsville Beach and portions of Pender County.

Wastewater is treated at one of our three facilities:

1. [James A. Loughlin \(Northside Plant\)](#) - 2311 N. 23rd Street
Permitted to treat up to 10 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
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

HELP PREVENT SPILLS



One of the leading causes of sanitary sewer overflows in our area is pipe blockages caused by fats, cooking oil, and grease. These substances are commonly referred to as FOG and can be found in items such as: lard, meat fats, shortening, peanut butter, food scraps, butter, vegetable oil spreads like margarine, dairy products, batters, dressings, and icing. Even unsaturated fats found in foods like soy, flax, and fish contribute to FOG. These and other products like them should be disposed of properly...in the trash, not into sink drains (even if equipped with a garbage disposal) or toilets.



Customers can help keep FOG out of sewer lines by carefully pouring leftover oils and grease from cooking into a used metal can and then covering it using a lid. Cease the Grease lids are available (while supplies last) at CFPUA's Customer Service Centers. When the can is full, it's thrown in the trash and the lid is saved for the next time it's needed. The can may be used several times or may be thrown away after its first use.



Root Invasion

In addition to FOG, 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 2013/2014, the Authority treated 5.8 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.



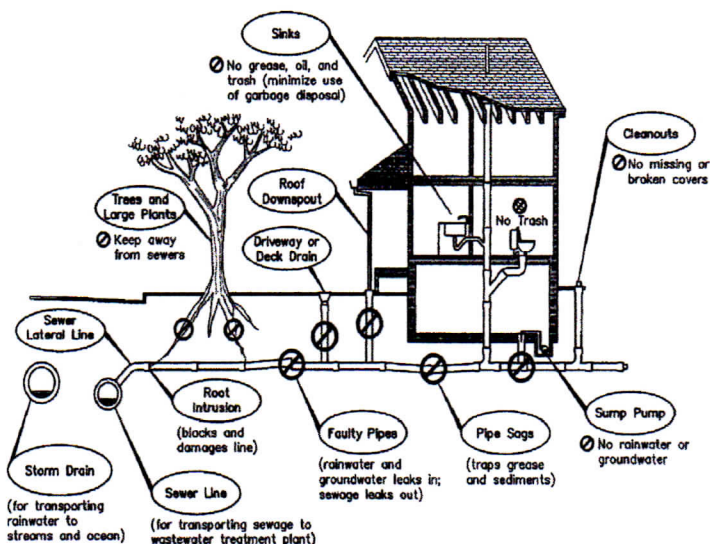
COLLECTION SYSTEM

COLLECTION SYSTEM PERFORMANCE

- CFPUA collections system staff completed over 18,050 work orders for preventative and/or corrective maintenance that is captured within the CMMS/Maximo work order system.
- Our permit requires 10% of the collection system to be cleaned annually. During fiscal year 2013/2014, CFPUA crews cleaned approximately 116 miles of sewer lines which is equal to 14.1% of the system.
- Approximately 34.43 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 11 of the 12 emergency repairs initiated in FY13-14 and replaced/rehabilitated 2,136 linear feet of sewer mains, 14 manholes, and 40 services at a cost of \$1,086,712 of the \$2.6 million under contract. These projects were in areas which had numerous failures and backups.
- 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 78 main stops and 753 sewer service calls.



HOW DO SPILLS HAPPEN?



ACCOMPLISHMENTS



CFPUA is responsible for the daily operation of treatment and collection facilities and with ensuring compliance with strict environmental standards. Approximately \$12,492,000 in operational wastewater expenditures were funded (by bi-monthly user charges) during this report period. Accomplishments during the fiscal year:

- CFPUA's Environmental Management Department achieved ISO 14001 Third Party Certification.
- Improvements to Northside Plant include roof replacement of the Operations building; lighting enhancements at the grit pump process area; painting of the effluent force main 1 and painting concrete tanks; and rebuilding of bar screen. Hauled waste accepted throughout the year.
- Improvements to Southside Plant include implementation of plant process adjustments which resulted in improved effluent toxicity testing results.
- Improvements made to the Walnut Hills Plant include addition of an influent flow meter, process control laboratory, and operator's office; Some deteriorated structures were removed and security fencing was installed.

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 Environment and Natural Resources in an effort to protect the streams receiving our discharges. 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 30,654 lab analyses.



"In mean. Out clean."

During this report period, CFPUA treated about 6.004 billion gallons of wastewater and returned it to the Cape Fear River. In addition, 27,931 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, CFPUA achieved 100% compliance overall.



ANNUAL PERFORMANCE SUMMARY REPORT JULY 1, 2013 THROUGH JUNE 30, 2014

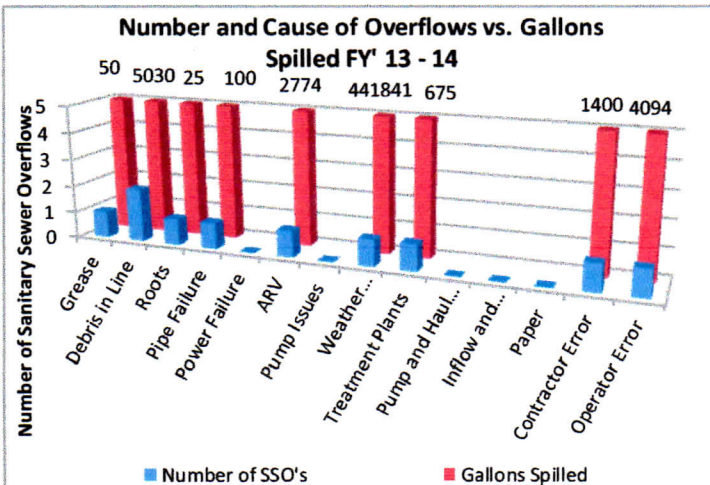
LOCATION/NPDES PERMIT	TYPE OF VIOLATIONS OR DEFICIENCY	DATE	PARAMETER	CORRECTIVE ACTION
James A. Loughlin (Northside) WWTP / NC0023965	None			
M'Kean Maffitt (Southside) WWTP / NC0023973	None			
Walnut Hills WWTP / NC0039527	None			
	SSO - Discharge without valid permit	02/23/2013	NOV - 1002 Cypress Dr.	Internal administrative controls implemented; blockage cleared, root control performed
Collection System / WQCS00012	SSO - Discharge without valid permit	03/10/2013	NOV - 1800 Burnett Blvd.	Internal administrative controls implemented; blockage cleared, root control performed
	SSO - Discharge without valid permit	09/11/2013	NOV - Fox Run force main ARV	Internal administrative controls implemented; failed ARV was replaced

SYSTEM OVERFLOWS JULY 1, 2013 THROUGH JUNE 30, 2014

MONTH OF OVERFLOW	INCIDENT START DATE	VOLUME (GALLONS)	WATERSHED	LOCATION	PROBABLE CAUSE
July 2013	7/24/13	1,400	Cape Fear River	Force main along River Rd. at Rockledge Rd.	Contractor error
	7/29/13	441,841	Hewlett's Creek	PS #34 - Pine Grove Rd.	Commercial power and telemetry failure
August 2013	8/9/13	4,094	Pages Creek	7800 block of Market St.	Contractor error
September 2013	9/1/13	2,774	Whiskey Creek	Fox Run force main ARV	ARV failure
October 2013	10/18/13	380	Greenfield Lake	Delaney Ave. and 17th St.	Towels and wipes
March 2014	3/6/14	4,650	Hewlett's Creek	Force main from Sun Court Villas off Pine Grove Dr.	Failure of force main
	3/30/14	100	Cape Fear River	Cleanout at 402 Dawson St.	Wipes, paper, plastics, sewer debris
April 2014	4/7/14	50	Cape Fear River	Quince Alley between Dock and Market Sts.	Grease
	4/22/14	25	Greenfield Lake	Manhole at corner of Fordham and Sweetbriar	Roots
May 2014	5/5/14	675	N/A	Walnut Hills WWTP	Blockage
June 2014	6/27/14	2,000	Pages Creek	8' Force Main from Country Haven near 7718 Market St.	Failure of force main

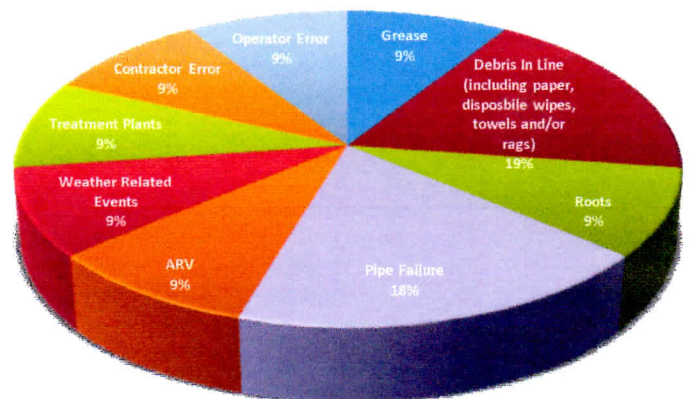
No known adverse environmental impacts were associated with these overflows.

Collection System Overflows	Total Gallons Lost	457,314
Wastewater Plant Bypasses	Total Gallons Lost	675



WWAP - 2014.443
Rev. Date: 08/14/12
Rev. #0

FY' 13 - 14 Sanitary Sewer Overflow/Plant Bypass Reported Cause





CERTIFICATION

CFPUA's Wastewater Collections System Division has been ISO 14001 certified since 2011 and we are committed to gaining certification for all wastewater divisions. As members of professional associations, we actively participate with the following organizations:

- Water Environment Federation (WEF)
- Lower Cape Fear River Program
- American Water Works Association (AWWA)
- NC Water Quality Association
- New Hanover County Water Quality Roundtable
- Cape Fear River Partnership
- North Carolina Pretreatment Consortium
- Cape Fear River Assembly
- NC WaterWARN



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.cfpuu.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

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