

COLLECTION SYSTEM PERFORMANCE

Sanitary Sewer Overflow (SSO)

On a daily basis, approximately 4 million gallons of wastewater moves through the collection system from bathtubs, showers, kitchen sinks, toilets, washing machines, and dishwashers from homes and businesses to the Big Buffalo WRF. The collection system is made up of mechanical devices such as pump stations and sewer lines that are subject to malfunction or have unavoidable clogs or cracks. Sanitary sewer overflows occur when wastewater escapes from the sanitary sewer system to the ground. Any wastewater spill (SSO) in excess of 1,000 gallons or any amount that reaches surface waters must be reported to the Division of Water Quality and revealed in this report to our customers. One common reason for a sanitary sewer overflow is heavy rainfall accumulation in the storm water system that overflows into the sewer collection lines causing the sanitary sewer overflow to occur. Other sanitary sewer overflows may result from pump station malfunction, tree roots or debris in lines, structural damage, vandalism, grease, and electrical failures. The chart that follows details the amount, location, and cause of our (SSO's) during this reporting period.

Sanford has a wastewater collection system with a total of 215 miles of gravity wastewater lines and pressurized force mains ranging in diameter from six inches to thirty-six inches. This system also encompasses ten sewer lift stations and 4,565 manholes. Sanford had thirty-five wastewater spills this past fiscal year. Of the thirty-five (SSO's), twenty-six were due to a severe natural condition of heavy rain from tropical storms Fay and Hanna. The other nine spills were due to inflow and infiltration, debris or roots in the lines, vandalism, and equipment failure. The volume of wastewater spilled was 180,385 gallons. The volume that reached a stream was 171,203 gallons.

The wastewater treatment plant treated 1.461 billion gallons of wastewater during the year, so the volume of sanitary sewer overflows comprises 0.0001% percent of the total flow. Only one gallon was spilled for every 9,090 gallons treated. Our largest combined total overflow event was with tropical storm Hanna on September 6, 2008, when 95,845 gallons were spilled in fifteen different spill locations. Twenty-five percent of the total volume spilled for the year occurred during this event.

Sewer Collection System Activities

The City of Sanford's Sewer Construction and Maintenance Department performs routine and preventative maintenance on the collection system daily and are on call for any problems with the system twenty four hours a day. This department consists of twelve highly trained and certified employees with a combination of ninety-eight years of experience.

Some of the routine maintenance performed in the system includes sewer line cleaning. This past year we cleaned fifty-four percent of our lines. Our staff responded to 215 stoppage investigations. If a stoppage is discovered to be on the citizen's property, city staff will explain to the property owner or business owner the next step in getting the problem fixed. The property owner may be required to contact a plumber to clear the line, or install a new line and cleanout. A line stoppage often involves rodding and jetting to clear a clogged line and this fiscal year we rodded and jetted 74 miles of sewer main. Easement-clearing is also part of the maintenance performed in the collection system because wastewater lines are located along utility easements. Our staff performs inspections of the lines and mows the easements. This past fiscal year the staff mowed

thirty-three miles of right-of-way, inspected thirty-four miles of priority (aerial) lines, and inspected 71 miles of collection lines.

Smoke testing is still an efficient and inexpensive way to identify problems in lines. The pressurized smoke fills the line and escapes wherever there is an opening. TV-ing a line involves a closed circuit inspection unit that takes actual video of the lines. This year we videoed and smoke tested approximately two miles of sewer line.

Grease in the collection system

In North Carolina and other states grease is one of the main causes for sewer overflows. These overflows are related to the improper disposal of oil and grease from kitchen drains. Grease congeals in sewer pipes and can cause wastewater to back up into homes, businesses, and waterways. Sanford did not experience any sewer overflows this year due to grease.

The City of Sanford's "Fats, Oils, and Grease Program" has been in effect for six years. The purpose of the program is to prevent the accumulation of fats, oils, and grease in the sanitary sewer system. We have 166 commercial facilities participating in the program with 179 grease traps. Our FOG coordinator inspected 103 grease traps this year and 680,160 gallons of grease-containing fluids were removed through routine maintenance. Our staff strives to maintain the City's infrastructure at the highest quality possible, while providing you with continuous service and protecting the environment. All of us can work together to protect the environment and maintain the sewer infrastructure.



YOU CAN HELP!

Please follow these guidelines:

- Collect fat, oils, and grease in a container and dispose of it in the garbage.
- Place personal hygiene products and diapers in a wastebasket. Do not flush plastics.
- Place food scraps in the trash or start a compost area. Use the garbage disposal as little as possible.
- Don't pour hazardous materials, such as pesticides, paint, and herbicides down the drain.
- Check before you dig! Do not plant trees, shrubs, and other vegetation or erect fences and other structures on or near sewer lines, easements, or manholes.

WASTEWATER SPILLS JULY 1, 2008 - JUNE 30, 2009

DATE	CAUSE	GAL. SPILLED	GAL. TO STREAM	LOCATION
7/23/08	Pump Station Equipment Failure	280	280	MH 3724 Near Carr Creek Lift Station
8/27/08	Severe Natural Condition - Heavy Rain (Tropical Storm Fay)	29,245	27,430	two spills @ Little Buffalo Lift Station Manholes 4210, 889, 4234, 4220 Intersection of Hickory & Market Near 522 Sunset Behind 528 Summit & 544 Sunset Northview Lift Station
9/5/08	Equipment Failure (contractor left pump valve off)	10,500	10,000	Manhole #3724 by Carr Creek Lift Station
9/6/08	Severe Natural Condition - Heavy Rain (Tropical Storm Hanna)	95,845	89,858	Little Buffalo Lift Station Manholes 4234, 4220, 4210, 2110, 1912, 1793, 2274 Manholes 904, 889, 4235 522 Sunset 616 Sunset 544 Sunset Hickory & Market Near Northview Lift Station
9/10/08	Inflow and Infiltration	210	210	MH 1765 Near 616 Sunset MH 1833 Near 522 Sunset
9/24/08	Pipe Failure (break)	500	500	Near MH 546, near 615 McNeil Rd.
10/22/08	Vandalism	4,725	4,725	Carr Creek lift station
11/2/08	Debris in line	200	200	Behind 2625 Wellington Drive
6/9/09	Roots	38,880	38,000	MH 818 Tanbarkway/Jamestown MH 664 Robinhood lane/ Tucks Drive
TOTAL SPILLED		180,385	171,203	

Notes:

*Spill is not reportable to State if 1,000 gallons or less & does not reach surface waters.

**Spill is reportable to State if over 1,000 gallons, or if any amount reaches surface waters.

What is a River Basin?

A river basin drains all the land around a major river. Everyone lives in a river basin and there are seventeen river basins in North Carolina. The City of Sanford is located in the Cape Fear River basin. The Cape Fear River basin is the largest river basin located entirely in North Carolina and is made up of 9,149 square miles. It is home to many different species of wildlife, such as the Cape Fear shiner. The Cape Fear shiner is an endangered species that lives nowhere else in the world.

The headwaters (origin) of the basin are the Deep and Haw Rivers. These rivers converge in Chatham County just below B. Everett Jordan Dam to form the Cape Fear River. The river ends as a 35-mile-long coastal estuary that is an important nursery area for juvenile fish, crabs, and shrimp. Large industries lining the lower Cape

Fear make the basin North Carolina's most industrialized. The basin also contains one-fifth of the state's population.

The river basin is part of our ecological address. We can change what happens in the basin daily by how we treat the natural resources like the soil, water, air, plants, and animals. As the water moves down through the basin, it can carry and leave gravel, sand, silt, bacteria and chemicals that can damage the natural balance of nutrients and oxygen for wildlife downstream. Therefore, it is critically important for municipalities and other stakeholders to manage growth, monitor water quality, restore wetlands, and protect the other valuable resources of the Cape Fear River Basin. There are many opportunities for people to get involved with grass roots efforts to protect community creeks, streams, and rivers. For more information on the Cape Fear River Basin and watersheds in our area please visit the state Office of Environmental Education at www.ee.enr.state.nc.us.

Big Buffalo Wastewater Treatment Plant Expansion

With normal growth, the Big Buffalo plant will be at capacity by 2015 or in eight years. However, if Sanford experiences more rapid growth, we could reach capacity sooner. The City will expand the existing plant to 12 million gallons a day to withstand expected growth through 2030.

Construction of the project should begin 2010 and be completed in 2013. The seventy-million-dollar upgrade will have an impact on our sewer rates in the future. However, the expansion will give Sanford the ability to continue to grow and attract industry.

We will continue to search for the most cost effective and efficient ways to maximize our plant and sewer infrastructure's growth. Our goal is to protect the environment and increase the effectiveness of our system.

Sewer Projects

Northview Sewer Improvements

The \$4.3 million Northview Sewer Improvements Project is 100 percent complete as of December 2008. This project has reduced the number of overflows in the Amos Bridges Road area, and has increased the capacity of the Big Buffalo outfall to allow additional growth in east Sanford and the industrial park.



