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 nine sewer lift stations and 4,565 manholes.

Sanford had nineteen wastewater spills this past fiscal year. Of the nineteen (SSO's), four were caused by debris in the lines, three were caused by grease, eleven from inflow and infiltration and one occurred due to a structurally damaged manhole. The volume of wastewater spilled was 8,109 gallons. The volume that reached a stream was 6,775 gallons.

The wastewater treatment plant treated 1.552 billion gallons of wastewater during the year, so the volume of sanitary sewer overflows comprises 0.000005% percent of the total flow. Only one gallon was spilled for every 191,392 gallons treated.

Our largest combined total overflow event was on February 5, 2010 with 5,634 gallons spilled due to inflow and infiltration from heavy rain. Sixty-nine 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 110 years of experience.

Some of the routine maintenance performed in the system includes sewer line cleaning. This past year we cleaned twenty-four percent of our lines. Our staff responded to 225 stoppage investigations. If a stoppage is discovered to be on the citizens' 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 52 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 43 miles of right-of-way, inspected 79 miles of priority (aerial) lines, and inspected 47 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 did not have any lines videoed or smoke tested.

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 and businesses and waterways. Sanford had three spills due to grease this year.

The City of Sanford's "Fats, Oils, and Grease Program" has been in effect for seven years. The purpose of the program is to prevent the accumulation of fats, oils, and grease in the sanitary sewer system. We have 171 commercial facilities with 185 grease traps participating in the program. Our FOG coordinator inspected 19 grease traps this year and 567,663 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 as well.

WASTEWATER SPILLS JULY 1, 2009 - JUNE 30, 2010

DATE	CAUSE	GAL. SPILLED	GAL. TO STREAM	LOCATION
8/17/2009	Debris in line	150	0	Manhole 269, Old Towne/Tidewater
9/6/2009	Grease	175	0	Manhole 2766, Rose and Pinehurst st
9/23/2009	Manhole collapsed, washed down line causing backup and spill	300	0	Manhole 1627, Carbonton and Cool Springs Rd.
11/12/2009	Debris in line	600	500	Manhole 2504, 1330 South Horner
11/18/2009	Grease	150	0	Manhole 1117, near York and Spring Ln
11/20/2009	Debris in line	800	800	Manhole 3864, Gaster Creek Lift Station
11/29/2009	Grease	300	250	Manhole 1765, 616 Sunset Ave.
2/5/2010	Inflow and Infiltration	5,624	5,225	Manhole1833 near 522 Sunset Manhole 1877 Near Hickory and Market Manhole 2013 near 3rd and goldsboro Manhole 2085 near 3rd and alcot Manhole 2250 Near 707 Third St. Manhole 2247, near 305 E. Rose St Manhole 1912 Second and Sycamore Manhole 889 near West Lake Downs Lift Station Manhole 1764, 544 Sunset Manhole 1765, 616 Sunset Manhole 1793 near maple and jenkins
2/8/2010	Debris in line	10	0	Manhole 2863, 3301 Longview
TOTAL SPILLED		8,109	6,775	

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.
***Annual Wastewater Report only requires spills over 1,000 gallons reaching surface water to be listed.

SEWER PROJECTS

Big Buffalo Wastewater Treatment Plant Expansion

The expansion calls for increasing plant capacity to 12 million gallons per day to support growth through 2030. In preparation of this project, the City has been incrementally increasing rates over the past three years to fund the $69 million project. With the present economic climate, construction and finance costs are lower than what has been seen in the recent past. Therefore, the city expects to take advantage of today's pricing while we plan for the future.

Plans and specifications for the project are currently under review and we anticipate receipt of permits in time for an October bid date. Construction start is slated for early 2011 and is expected to take 3 years.

Sewer Rehabilitation

The City has, as a part of its on-going reinvestment in the sewer collection system is undertaking a $1.2 million project to rehabilitate portions of the gravity sewer system that are over 70 years old. The contractor is using cured-in-place pipe technology which involves inserting a liner in the existing sewer and curing it to form a shell. This creates a new pipe within a pipe and renews the sewer for at least another 50 years of service. When this project is complete, approximately 27,000 feet of sewer will be renewed and 150 manholes will be rehabilitated.

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.*

The City of Sanford's Annual Wastewater Treatment and Collection System Report

The City of Sanford is pleased to provide an overview detailing the operation, maintenance and performance of your municipal Water Reclamation Facility and Wastewater Collection System. This report gives us the opportunity to keep you informed and to meet our State compliance requirements.

Big Buffalo Wastewater Reclamation Facility

Treatment Process

Sanford's Big Buffalo Wastewater Reclamation Facility is an advanced treatment facility with a permitted capacity of 6.8 million gallons per day. This past fiscal year we treated over 1.461 billion gallons ofwastewater. This is an average of four million gallons a day. This facility treats waste from eighteen thousand residential customers, fifteen schools and fifteen industries in Sanford. Physical, biological, and chemical processes at the plant treat wastewater before it is released into the environment. When the wastewater is received at the plant through our collection system, it passes through a bar screen and then through a grit chamber where debris is removed prior to reaching the influent pumps that pump it to the aeration basins.

Microorganisms in the aeration basin are used to convert organic matter to a solid residue. The aeration basins discharge the wastewater to the clarifiers where solids are broken down further. Clear water in the clarifiers then travels to the filters. The reclaimed water is disinfected by a chlorination process and safely dechlorinated prior to being discharged through an outfall pipe into the Deep River under the National Pollutant Discharge Elimination System permit (NPDES) number NC0024147.

Staffing

Critical plant equipment is monitored twenty-four hours a day by thirteen highly trained and certified employees at the Big Buffalo WRF. Employees are certified by the State of North Carolina for proficiency in plant operation, pump station maintenance, laboratory analysis, land application of biosolids, and pretreatment management. City employees are on duty twenty-four hours, seven days per week monitoring all system activity from the plant control room. The Big Buffalo staff together has a combination of 118 years of experience

Biosolids

The nutrient-rich organic materials resulting from the treatment of domestic sewage at the Big Buffalo WRF are called biosolids. The nutrients in these biosolids contain calcium, nitrogen, phosphorous, and micronutrients like copper and zinc, which are essential for plants. Recycling these biosolids is the most environmentally friendly and cost effective method for the City to manage its biosolids. Farmers have been using these biosolids for years because of their benefits as a fertilizer to maintain productive soils. These solids are converted to a dense residue, removed, and reused on permitted land. Sanford has seventy eight permitted fields for recycling of biosolids. This fiscal year we applied 4.5 million gallons or 562.62 dry tons to 14 of the 72 fields which equals 280.6 acres of land in Lee, Chatham, and Montgomery Counties.

Reuse Program

Sanford's reuse program decreases the amount of nutrients and flow discharged into the river. Treated wastewater in recent years has been used to irrigate the local municipal golf course. The City is also looking into expanding its reclaimed water usage to industries in an effort to curb overall water usage, free up more capacity in the river, and to extend the life of the wastewater plant. We have asked local industries to examine the feasibility of introducing the use of reclaimed water into their operations.

Pretreatment Program

Pretreatment programs help water reclamation facilities maintain the requirements of water quality before it is returned to the river basin. Big Buffalo WRF is designed to handle domestic waste. Therefore, industries that produce certain amounts of non domestic waste are required to have a permit for disposal. We currently have ten industries in the program. The City issues permits to these industries specifying the parameters of concern and flow limitations. Industrial discharges are monitored to specify the maximum amounts of pollutants that may be discharged into the facility. Staff conducts routine monitoring and inspections of these industries to ensure compliance.

Laboratory Analysis

Sanford's reclamation facility maintains a certified analytical laboratory approved by the State of North Carolina and the EPA. Our lab is certified to perform environmental analysis and report monitoring data to the Division of Water Quality for compliance with NPDES effluent and pretreatment regulations. Technicians observe wastewater discharge at local industries in order to monitor compliance, and laboratory personnel monitor the effluent daily by testing twenty wastewater parameters. All data reported this year was in compliance with the NPDES permit.

Community Participation

You are invited to participate in our public forum and voice your concerns about wastewater treatment. The City of Sanford Council meets the first and third Tuesdays of each month beginning at 7 P.M. at City Hall, 225 East Weatherspoon Street, Sanford, NC.

Information on the Internet:

Visit the City of Sanford's Web site to view and print this report at (www.sanfordnc.net) and for information on all city departments and departmental contacts. Also, the North Carolina Department of Environment and Natural Resources has a Web site (www.ehnr.state.nc.us) that provides complete and current information on water and wastewater issues in North Carolina.

City of Sanford Public Access Channel

Please view the City of Sanford's Public Access Channel on Charter Cablevision Channel 11 for coverage of Council meetings, sewer and water construction activities, street closings, community announcements, and other information relevant to City activities.

For more information about this report, copies, or any questions relating to the wastewater treatment system, please call Laura Spivey, Public Works Administrator, at (919) 775-8299.

ANNUAL
WASTEWATER
REPORT
Wastewater System
Performance 2009-2010

Big Buffalo
Wastewater Treatment Plant
5327 Iron Furnace Road, Sanford, NC 27330
Jay Grainger
Operator in Responsible Charge,
Wastewater Treatment Plant
Phone (919) 775-8305
Permit #NC0024147/#WQ0000543

City of Sanford Public Works Center
601 N. Fifth Street, Sanford, NC 27330
Fedd Walker
Operator in Responsible Charge, Collection
Phone (919) 775-8336
Permit #NC0024147/#WQCS00047

CITY OF SANFORD, N.C.
CHARTERED 1875

PHONE NUMBERS

IMPORTANT

Public Works Service Center .....(919)775-8247
Water Billing Department .....(919)775-8216
Police Emergencies 911
Fire Emergencies 911
Police Dept.(non-emergencies) ...(919)775-8266
Fire Dept. (non-emergencies).....(919)775-8313

We certify that this report is accurate to the best of our knowledge. It is being mailed to The NC Division of Water Quality and to all City of Sanford wastewater customers. The report is also available at City Hall, the Public Works Center, and the Wastewater Treatment Plant.