

Raleigh
Garner
Rolesville
Wake Forest
Zebulon
Wendell
Knightdale

City of Raleigh

Public Utilities Department

2015-2016

Wastewater Collection and Treatment System Report



The City of Raleigh is pleased to present the Annual Wastewater Collection and Treatment System Report for fiscal year 2016. As a requirement of the Collection System Permit issued by the State of North Carolina, the City of Raleigh Public Utilities Department (Department) is required to report the system performance to all of its customers on an annual basis. This report provides information about the performance of the three (3) wastewater treatment plants: Neuse River Resource Recovery Facility (NRRRF), Smith Creek Wastewater Treatment Plant (SCWWTP), and Little Creek Wastewater Treatment Plant (LCWWTP) in addition to the performance of the wastewater collection system for the period of July 1, 2015 through June 30, 2016. All of the information contained in this report is accurate and complete.

Wastewater systems have evolved considerably from early systems in the 1800's. Although the purpose has always been to collect human waste and transport it away from urban areas to protect human health, early systems merely transported the wastewater to a nearby stream, where it was discharged. Today, wastewater systems are not only expected to protect public health, but to protect the environment as well. In 1972, the U.S. Congress passed landmark legislation entitled the "Clean Water Act"

“Wastewater systems are not only expected to protect public health, but to protect the environment as well.”

which ensured environmental protection as a performance benchmark for all wastewater systems. Long before the passage of this act, and every day since, the protection of public health and the environment have been the operating standard of the City of Raleigh's wastewater system.

To learn even more about the wastewater collection system or the treatment facilities, please contact the City of Raleigh Public Utilities Department at **919-996-3245** or visit the City's web site at **www.raleighnc.gov**.

Ruffin Hall
City Manager

En Español
*Éste folleto contiene información importante acerca del sistema de alcantarillado sanitario de la Ciudad de Raleigh. Si tiene preguntas acerca del sistema, llame al Departamento de Servicios Públicos al **919-996-4540** durante las horas de trabajo.*

Wastewater Collection System

Wastewater collection in Raleigh dates from 1890, when the City built a system of sewers that carried wastewater to discharge points on the Walnut Creek and Crabtree Creek tributaries to the Neuse River. The Walnut Creek WWTP, the City's first wastewater treatment plant, was constructed in 1955. In 1976, the Neuse River RRF was completed to replace the Walnut Creek Plant. In addition to the Neuse River RRF, the Department utilizes two other wastewater plants for wastewater treatment. Those plants are the Smith Creek WWTP and Little Creek WWTP.

The City of Raleigh provides wastewater collection and treatment services for areas within the City's corporate limits and many areas in the City's Extraterritorial Jurisdictional area (ETJ). Raleigh also provides wastewater collection and treatment services for Garner, Rolesville, Wake Forest, Knightdale, Wendell and Zebulon. Temporary contracts are also in place to treat specific amounts of wastewater from the Towns of Clayton and Middlesex as well as Johnston County.

The wastewater collection system functions primarily by gravity flow and it consists of approximately 2,500 miles of pipeline ranging in diameter from six inches to six feet. Every day an average of 49 million gallons per day (MGD) of wastewater for this reporting period travels through the sanitary sewer collection system.

The sewer pipes of the collection system are connected by a series of sewer manholes needed for maintenance of the collection system. Some manholes are flush with the pavement, some are located one foot above the ground and sometimes higher due to flood plain conditions. Some pipes are located above ground as well (aerial mains), particularly across streams. Ventilation is necessary at most manholes and is provided through vent holes in the lids or separate vent stacks. Although the collection system functions primarily by gravity, 113 public pump stations are necessary to keep the wastewater flowing to the wastewater treatment plants.

In an effort to continually improve its program, and in conjunction with the goals and objectives of the Public Utilities Department's Multi-Year Business Plan, the Sewer Maintenance Division fully implemented an ISO 14001:2004 Environmental Management System (EMS). The results of the most recent third party surveillance audit for this certification are available by contacting Carlos Perez, Process Control Training Officer at Carlos.Perez@raleighnc.gov or by calling **919-996-2320**.

The Sewer Maintenance Division's EMS is a commitment to prevent pollution through continual improvements in environmental performance and compliance with all regulatory requirements, by identifying aspects of activities having significant environmental impacts, setting performance objectives and targets and establishing



standards and training for staff, including metrics for measuring performance. These processes allow the Sewer Maintenance Division to operate the collection system in a sustainable manner while contributing to the economic, social, and environmental vitality of the communities it serves.

Some of the highlights of the EMS in 2015 include:

Regulatory Compliance:

- Maintained 1.3 sanitary sewer overflows (SSOs) per 100 miles of pipe (National SSO average is 4.5)
- Exceeded the Collection System Permit's annual system flushing/CCTV requirement by 21.6%
- Completed 100% of easement inspections within the annual requirement of the Collection System Permit
- Exceeded the goal of cutting high priority sewer main easements by 1.2%

Environmental Performance:

- Continued to promote environmental stewardship through expansion of the material recycling program
- Launched new sewer acoustic inspection technology which allows operators to assess the condition of the sanitary sewer system without the need for pre-cleaning or contact with the waste flow

Quality Management Practices:

- In conjunction with the GIS program, developed a mobile data gathering software that assists field staff in the collection of work data
- 78.5 percent of staff received North Carolina WPCSOCC Certification, with 23 operators scheduled to receive Pipeline Assessment Certification through the National Association of Sewer Service Companies
- Continued efforts to standardize fleet and equipment, which allowed for greater efficiency in inventory, improving maintenance and operational efficiency and uniformed equipment set-up for crew efficiency
- Gained national recognition of program through presentations given at national industry association conferences and training events

Sanitary Sewer Overflows (SSOs)

Sanitary sewer overflows (SSOs) occur when problems in the system cause sewage to come out of the sewer collection system.

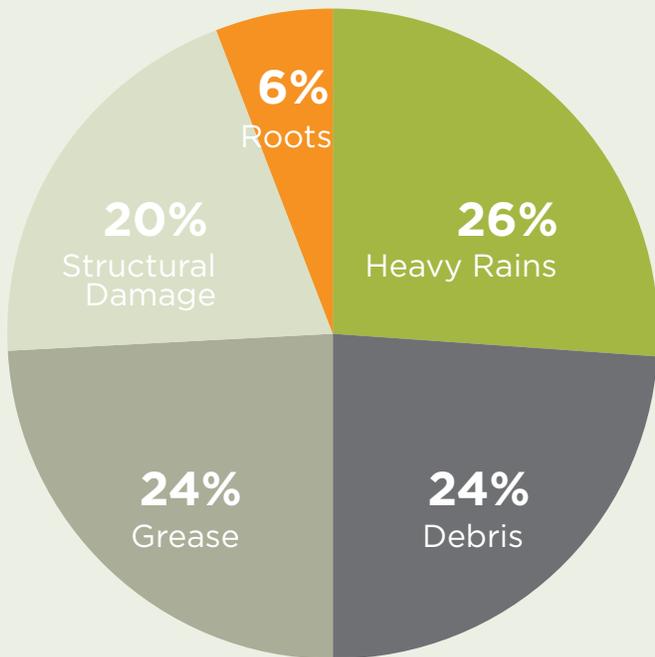
During the fiscal year from July 1, 2015 through June 30, 2016, the collection system experienced 34 SSOs that were each estimated at a volume of 1,000 gallons or greater or that reached surface waters of the State. This is an increase over the SSOs experienced during the previous fiscal year. The Department continues to pursue its goal to reduce the number that occurs each year and spends millions of dollars in that effort. In order to reduce the number of SSOs, the Department also needs the help of each sewer customer by using the sewer system responsibly (see Customer Responsibility section).

Heavy rains due to different rain events was again the leading cause of SSOs this year at 26%, with debris and grease in the sewer as the second leading causes of overflows at 24% each. Structural damage to the sewer collection system accounted for approximately 20%. Debris can be such items as rags, paper towels, flushable and non-flushable wipes, sticks, rocks, feminine hygiene products, etc., all of which are illegal to discharge into the sanitary sewer system. The Department has an ongoing, aggressive program to educate residents and business owners regarding the need to keep grease and other inappropriate materials out of the sewer system as well as a comprehensive preventive maintenance program.

“The Department continues to pursue its goal to reduce the number of SSOs that occurs each year and spends millions of dollars in that effort.”

The Department is developing improvements to the collection system within the Crabtree Creek drainage basin that will reduce SSOs that occur during heavy rain events and to accommodate anticipated population growth within the service area. This project was recommended in the Sanitary Sewer Capacity Analysis as one of multiple projects within the Crabtree basin service area and is included in the Capital Improvement Program (CIP). The estimated cost of this project is \$70-\$80 million. The total estimated cost for the entire list of projects in the Public Utilities Department's CIP is approximately \$1 billion.

PERCENTAGE OF TOTAL SSOs AND THEIR CAUSES



CAUSE OF SSO	PERCENTAGE OF TOTAL SSOs
Heavy Rains	26%
Debris	24%
Grease	24%
Structural Damage	20%
Roots	6%

SSO Location and Causes

July - December 2015

JULY 2015

Total: 10,140 gallons

LOCATION	CAUSE
Daniels Ridge Rd/Iron Mill Dr (Wendell)	Structural damage
Cowper Dr	Debris
Blackthorn Pl (Garner)	Grease

AUGUST 2015

Total: None

SEPTEMBER 2015

Total: 900 gallons

LOCATION	CAUSE
Glendower Rd/Craddock Rd	Structural damage

OCTOBER 2015

Total: None

NOVEMBER 2015

Total: 14,400 gallons

LOCATION	CAUSE
Stadium Dr (Wake Forest)	Debris

DECEMBER 2015

Total: 114,075 gallons

LOCATION	CAUSE
Gresham Trace Ln	Debris
Lonesome Wind Way (Zebulon)	Structural Damage
Atlantic Ave	Structural Damage
Poole Rd/S Raleigh Blvd	Grease
Alleghany Dr/Forsythe St	Heavy Rains
Anderson Dr	Heavy Rains
White Oak Rd	Heavy Rains
Century Dr	Heavy Rains
Alleghany Dr	Heavy Rains
White Oak Rd	Heavy Rains
Alleghany Dr	Heavy Rains
Anderson Dr	Heavy Rains

January - June 2016

JANUARY 2016

Total: 19,890 gallons

LOCATION	CAUSE
Beaver Lake Ct	Debris
Bristol Pl	Grease
Medlin Dr	Grease

FEBRUARY 2016

Total: 152,100 gallons

LOCATION	CAUSE
Primanti Blvd	Debris
E. Holding Ave (Wake Forest)	Heavy Rains

MARCH 2016

Total: 64,800 gallons

LOCATION	CAUSE
Diggs Dr	Debris
Whitebud Dr	Debris

APRIL 2016

Total: 3,750 gallons

LOCATION	CAUSE
North Hills Dr/ Northbrook Dr	Roots
Milburnie Rd	Structural Damage
N. State St/Van Buren Rd	Structural Damage
Van Dyke Ave/Rosemont Ave	Debris

MAY 2016

Total: 8,480 gallons

LOCATION	CAUSE
Waterbury Dr	Grease
Hollowell Ln	Grease
Havisham Ct (Wake Forest)	Structural Damage
Qual Meadow Dr/Paddock Dr	Roots

JUNE 2016

Total: 11,700 gallons

LOCATION	CAUSE
Cherry Pond Ct (Wake Forest)	Grease
Greencastle Ct	Grease

Treatment

From Start to Finish

The Neuse River Resource Recovery Facility, Smith Creek Wastewater Treatment Plant, and the Little Creek Wastewater Treatment Plant process wastewater for approximately 180,000 metered customers and a service population of approximately 530,000.

For National Pollutant Discharge Elimination System (NPDES) permitted wastewater treatment facilities (Neuse River RRF, Smith Creek WWTP and Little Creek WWTP), wastewater is treated both physically and biologically. As the wastewater enters the plant it goes through the area called preliminary treatment which is a physical process to remove debris, sand and other inorganics that can't be biologically treated. The first stage of treatment is referred to as primary treatment and is a physical process to remove the settleable and floatable organics. The second stage of treatment is a biological process referred to as "activated sludge" in which microorganisms consume organic matter (suspended and dissolved) and convert ammonia-nitrogen to nitrogen gas through the process of nitrification/denitrification. The microorganisms are separated from the treated water by secondary clarification and returned to the biological process. In the final stage, the clarified water is filtered by sand filters and disinfected by UV disinfection before it is metered and returned to the receiving stream.

Treatment Facilities

Neuse River Resource Recovery Facility (NRRRF)

The NRRRF was designed to serve the City of Raleigh and surrounding communities. The facility is located in Wake County, approximately 12 miles southeast of Raleigh, near the Johnston County line and operates with a capacity of 60 MGD.

The City of Raleigh's NRRRF did not experience any NPDES permit (NC0029033) performance violations during the past fiscal year, while treating approximately 16.9 billion gallons of wastewater. Through improvements and excellent operation of the facility, the NRRRF has experienced 13 consecutive years of 100% compliance, resulting in the facility's Platinum 13 Award issued by the National Association of Clean Water Agencies. The City is proceeding with a project to expand the facility's capacity from 60 million gallons per day to 75 million gallons per day.

Smith Creek Wastewater Treatment Plant (SCWWTP)

The SCWWTP was designed to serve the Town of Wake Forest and was transferred to the City of Raleigh on July 1, 2005. The plant is located in Wake Forest, approximately 14 miles north of Raleigh and operates with a capacity of 3.0 MGD.

The SCWWTP did not experience any NPDES permit (NC0030759) performance violations during the past fiscal year, while treating 706 million gallons of wastewater. As a result of the SCWWTP experiencing 100% compliance, it received the Platinum 11 Award, which is issued by the National Association of Clean Water Agencies for 11 consecutive years of such compliance.

Little Creek Wastewater Treatment Plant (LCWWTP)

The LCWWTP was designed to serve the Town of Zebulon and was transferred to the City of Raleigh on October 1, 2006. The plant is located in Zebulon, approximately 24 miles east of Raleigh and operates with a capacity of 2.20 MGD.

The LCWWTP did not experience any NPDES permit (NC0079316) violations during the past fiscal year while treating 303 million gallons of wastewater. The Little Creek WWTP has earned a second Gold Award as no discharge violations have occurred in the past year.

The following table shows the permit limits and performance history of the wastewater treatment plants for this past fiscal year.

	Permit Limits	NRRRF	SCWWTP	LCWWTP
Ammonia-Nitrogen (mg/l)	2.00/1.00/1.00	0.03	0.00	0.00
Fecal Coliform (col/100mls)	200	4.10	1.50	1.80
Biological Oxygen Demand (BOD) (mg/l)	5.00	0.35	0.00	0.14
Total Suspended Solids (TSS) (mg/l)	30.0	0.11	0.00	0.05
Total Phosphorus (mg/l)	2.00/2.00/1.00	1.23	0.47	0.53
Total Nitrogen (Annual Pounds)		<i>Permit Limit</i> 687,373	<i>Permit Limit</i> 70,814	<i>Permit Limit</i> 26,660
		<i>Actual Pounds</i> 439,280	<i>Actual Pounds</i> 20,189	<i>Actual Pounds</i> 4,307

Further information concerning the wastewater treatment program can be obtained by calling **919-996-3700** or by email at Wastewater.treatment@raleighnc.gov.

Reuse Program

Reuse or reclaimed water (used interchangeably) is defined in North Carolina as effluent from a wastewater treatment plant that is treated to an exceptional high level. Reuse water has many benefits which include preservation of potable water by provision of reuse water for irrigation, process cooling water, construction, dust control, ornamental fountains, indoor toilet flush water, fire protection and the reduction of nutrients in receiving waters.

Reuse Distribution System

The Neuse River RRF uses reuse water for irrigation of the agricultural land that serves the facility. From July 1, 2015 to June 30, 2016, approximately 15 million gallons of reuse water was used to irrigate cropland.

The reuse system has bulk reuse water loading stations at the E. M. Johnson, Neuse River, Little Creek and Smith Creek* water and wastewater treatment plants. “Bulk” distribution of reuse water allows certified landscape contractors or citizens to obtain reclaimed water at no cost if that person will transport and responsibly use the reclaimed water for approved purposes.

The Raleigh service area system also includes a reuse pipeline distribution system and elevated storage tank. The construction of the fourth pipeline phase to the Lonnie Poole Golf Course on North Carolina State University’s Centennial Campus has been completed.

The Department also operates the Zebulon service area reclaimed water distribution system, which takes treated effluent from the Little Creek WWTP and provides the product to seven permitted customers through 21,400 linear feet of distribution pipe and a 250,000 gallon elevated storage tank.

The chart on the following page shows the total amount of reuse water distributed by the various reuse systems for the reporting period of July 1, 2015 through June 30, 2016.

2015-2016 Reuse Distribution

	E.M. Johnson WTP Bulk Reuse Flow	Neuse River RRF Bulk Reuse Flow	Smith Creek WWTP Bulk Reuse Flow	Little Creek WWTP Reuse Distribution (includes bulk) Flow	Neuse River RRF Reuse Irrigation Flow	Neuse River RRF Reuse Distribution (off-site)
Annual Total (gallons)	2,975	15,446	4,525	26,278,800	15,598,367	312,919,300

During March of 2016, SCWWTP experienced one Reuse permit violation for fecal coliform.

**Beginning in June 2016, the Smith Creek WWTP bulk load station will be closed indefinitely. Please utilize the other stations located at:*

- *Neuse River RRF - 8500 Battle Bridge Road, Raleigh, NC*
- *EM Johnson WTP - 10301 Falls of Neuse Road, Raleigh, NC*
- *Little Creek WWTP - HWY 39 (behind the Mudcats Stadium), Zebulon, NC*

Further information concerning the reuse program can be obtained by calling **919-996-3700** or by email at Water.reuse@raleighnc.gov.

Biosolids Program



Sludge is a by-product of all wastewater treatment plants. Biosolids are defined as treated, stabilized sludge and are produced at two of the City's wastewater treatment plants. The city chooses to beneficially reuse these biosolids by processing them into products that can be utilized by local farmers, landscapers and homeowners on both public and privately owned land. Close monitoring of these biosolids product constituents, environmental conditions and the utilization of extensive pretreatment methodologies allow the city to ensure that these products are safe for their intended use.

Putting Biosolids to Work

The sludge from the Smith Creek WWTP is discharged into the sewer collection system and is recovered and processed into biosolids at the Neuse River RRF. The Little Creek WWTP solids, and a portion of the solids produced at the Neuse River facility, are processed into a Class B biosolids product. This product is then beneficially reused on the City's farm and by local farmers as a fertilizer on agricultural crops. The nutrients in the biosolids are taken up by the crops, which are then harvested and sold for non-human uses such as animal feed and biodiesel production.

The Neuse River facility also processes a large percentage of its biosolids into lime stabilized Class A biosolids. In this process, sludge is dewatered with belt presses and blended with lime kiln dust to produce Class A biosolids by raising the product pH and temperature. This material is marketed under the name "Raleigh Plus" and is distributed as a soil amendment to agricultural and institutional properties in the region. Interested customers should call **919-996-3700** Monday through Friday, 8 a.m. to 4 p.m.

The final process utilized at the Neuse River facility is to ready its sludge for beneficial reuse through additional processing. A private firm receives a portion of the dewatered primary sludge and produces a Class A biosolids product in the form of compost. Once regulatory requirements are met, the compost is distributed to the public as a soil amendment and growing media. Class A and Class B are regulatory designations defined by the EPA. These designations are determined by the level of required treatment and the resulting pathogen and vector attraction levels. Other analyses are also utilized in determining application rates and cumulative loading.

Further information concerning the biosolids program can be obtained by calling **919-996-3700** or by email at Biosolids@raleighnc.gov.

Environmental Management Systems

The biosolids Environmental Management System (EMS) at the NRRRF was first verified through the independent third party process in December of 2006 to become a National Biosolids Partnership (NBP) certified agency, making the biosolids program at the plant an accredited model program. The following year the biosolids EMS earned the designation of Platinum Level Certification. The Platinum Level designation represents the highest achievement of biosolids management and environmental stewardship. Subsequent audits continue to verify that the system meets NBP expectations and requirements for maintaining certification.

To coincide with its biosolids EMS, the NRRRF implemented an ISO 14001 EMS for the wastewater treatment operations at the plant. In February of 2014, the NRRRF received ISO 14001:2004 certification for its wastewater EMS.

The results of the third party audits are available by contacting Emily Fentress, Process Control Training Officer at Emily.Fentress@raleighnc.gov or calling **919-996-3680**.

2015 Biosolids Program Annual Report

The biosolids program at the Neuse River Resource Recovery Facility (NRRRF) is continuing to improve through the use of an Environmental Management System (EMS) approach to managing the program. Some of the highlights of this year's program include:

Regulatory Compliance

- 100% regulatory compliance by NRRRF, LCWWTP, SCWWTP
- No NPDES permit violations by NRRRF, LCWWTP, SCWWTP
- One of the City's Biosolids contractors experienced one non-related NOV in 2015. Other than that, 100% compliance was achieved by these contractors.
- All biosolids produced and distributed met all EPA 40 CFR 503 compliance requirements
- NRRRF and SCWWTP received a Platinum award and LCWWTP received a Gold Award from the National Association of Clean Water Agencies (NACWA) for 100% regulatory compliance
- Received continuation of ISO 14001 and National Biosolids Partnership (NBP) EMS certification

Biosolids Program cont.

2015 Objectives and Targets

- Completed 83% of established objectives and targets
- Continued to 2016
 - Implement engineering feasibility study recommendations related to optimization
 - Identify and evaluate three potential Industrial Pretreatment software programs

While some objectives and targets were not completed in 2015, the WEMS team will continue to work towards their completion in 2016. The objectives and targets program continues to be a key process in the continual improvement of the Wastewater Environmental Management System.

2016 Objectives and Targets

- Improve and monitor reuse water quality
- Reduce total nitrogen discharge in the NRRRF effluent
- Initiate ISO 17025 certification for laboratory
- Continue to produce exceptional quality Class A biosolids
- Optimize new biological phosphorous removal at NRRRF
- Manage key elements of Industrial Pretreatment Program with software
- Distribute LCWWTP's biosolids under NRRRF outlets
- Improve efficiency of biosolids handling by reducing volume and hauling requirements
- Improve staff development and competency by cross training
- Improve laboratory chemical inventory, handling and receiving
- Increase level of equipment preventive maintenance
- Improve remote facilities inclement weather readiness and response planning
- Develop Equipment Operation Instructions for plant equipment at LCWWTP & SCWWTP
- Increase the amount of basin profile sampling for SCWWTP
- Maintain 100% regulatory compliance

Internal and Interim Audits

Internal Audits

Internal audits help to identify the strengths and weaknesses of the environmental management program and allow for opportunities to continuously improve the system. Three internal audits were conducted in 2015 on the Land Application of Class B process, the Emergency Preparedness and Response process and the Citizen/Neighbor Contact process to verify that these processes were functioning effectively and as intended. Findings identified during these audits were addressed through the CAPA (Corrective and Preventive Action) process.

Interim Audit

To meet the requirements of a certified Environmental Management System, the National Biosolids Partnership requires the City's biosolids environmental management system be re-verified every five years and conduct interim audits annually in the years between the re-verification audits. The ISO 14001:2004 EMS requires the system be re-verified every three years with annual surveillance audits conducted in the years between re-verification audits. Audits for both systems are conducted simultaneously each year. During this year's audit, two minor nonconformances and six opportunities for improvement were identified. Nonconformances were addressed through the CAPA process.

If you would like more information on the audit or a full copy of the report please visit www.raleighnc.gov and search biosolids or contact Emily Fentress at **919-996-3680** or Emily.Fentress@raleighnc.gov.

Customer Responsibilities

The City of Raleigh is committed to protecting the quality of the Neuse River and the environment. The water returned to the Neuse River from the NPDES permitted wastewater treatment plants is higher quality water by most parameters than when it was removed for drinking water treatment from Falls Lake.

While grease continues to be a significant cause of sanitary sewer overflows in the sewer collection system, you can help the City of Raleigh Public Utilities Department reduce the number of overflows by following these simple steps.

- Collect grease, fats and oils from cooking in a container and dispose of it in the garbage instead of pouring it down the drain.
- Place a wastebasket in each bathroom for the disposal of solid waste, disposable diapers, baby wipes, disinfecting wipes, condoms and personal hygiene products. These products DO NOT belong in the sewer system. Never use a toilet as a wastebasket.
- Place food scraps in the garbage for disposal with your household solid waste. Even better, start a compost pile using your food scraps instead of disposing of them down the kitchen sink.

Wastewater collection systems are designed to handle three things – used water, human body waste and toilet paper. It is very important to keep all foreign materials, such as grease and other household debris from entering the system, as these can cause blockages. Most sewer backups occur between the house and the City's sewer main. The property owner is responsible for correcting this problem.

Disinfecting wipes and baby wipes are touted as disposable, and some are even labeled as flushable, but both contribute to sanitary sewer overflows (SSOs) throughout the sanitary sewer system. Their cloth-like material doesn't break down in the sanitary sewer system like toilet paper but rather blocks sewer lines and clogs pumps throughout the system, which increases maintenance and repair costs. Please help the city maintain costs and protect the environment by disposing of these items in the trash rather than in the sewer system.

Property owners are responsible for the care and maintenance of service lines from their homes or businesses to the sanitary sewer mains in the street. The Raleigh City Code also prohibits property owners from planting trees, shrubs and other vegetation on sewer lines and easements, covering manholes, erecting fences or permanent structures



on sewer lines and easements, or damaging sewer lines in any manner. These conflicts may not contribute directly to a sanitary sewer overflow, but they could hinder access and/or response time in correcting a sewer backup.

Be aware of whether you may be vulnerable to a back-up of sewage into your home or business. In some instances a serious risk of back-up exists if any points of entry into the plumbing system, such as floor drains, toilets, etc., are located at a level that is lower than the elevation of the next upstream manhole. In such cases, the sewer may back-up into the building if there is an obstruction in the main below that service location. This problem can be avoided with the proper installation and maintenance of a sewer backflow valve. A backflow valve will allow the sewage to flow in one direction only, and will prevent the overflowing of sewage in buildings or residences. It is the home builder/property owner's responsibility to determine whether this situation exists. If you are vulnerable you should install a sewer backwater valve and/or maintain adequate home insurance.

Managing unused or expired medications is a safety as well as an environmental concern. Proper disposal will prevent medications from entering soil and groundwater. The City encourages the following guidelines when disposing of medications.

- Where available, take unwanted or expired medications to a local collection site.
- Remove all medications from their original containers.
- Place the medications in an impermeable, non-descript container (such as an empty laundry detergent bottle or coffee can), and mix with water or coffee to dissolve the medications.
- Mix with an undesirable substance such as used coffee grounds or kitty litter. Tightly seal the container and dispose of it in your household trash.

Report Sanitary Sewer Overflows (SSOs) and Water Main Breaks

To report a sanitary sewer backup, overflow or a water main break please call the City of Raleigh Public Utilities Department at **919-996-3245** (24/7). Thanks for your help!

\$50 SSO Reward Program

The City of Raleigh has a Sanitary Sewer Overflow (SSO) Reporting Reward Program. In this program, concerned citizens who are the first to notify the City of an SSO that they observe are rewarded monetarily with a \$50 check. By promptly reporting the overflow, the City is able to minimize the impact of the overflow to the environment. Although the City has staff that inspects the sanitary sewer collection system every day, with 2,500 miles of sewer mains in the City's service area to maintain, the City certainly needs the help of customers and citizens to find and report these problems when they occur.

Illegal Dumping Reward Program - \$5,000 Reward

Raleigh's service area currently has approximately 2,000 Food Service Establishments (FSEs) that generate grease and that are required to install grease interceptors. The Department is concerned that some of this wastewater from these grease interceptors is being illegally dumped into the sanitary sewer system. Grease and other materials illegally dumped can lead to sanitary sewer overflows (SSOs), which are a public health, environmental and regulatory concern.

Reporting a problem or an illegal dumping incident could earn you a \$5,000 reward if you are the first to notify the Public Utilities Department of a confirmed illegal dumping incident.

To report anything suspicious or a suspected illegal dumping incident, contact the City of Raleigh Public Utilities Department at **919-996-3245** (24/7).