

THE CITY OF
COLUMBUS

ANDREW J. GINTHER, MAYOR

DEPARTMENT OF
PUBLIC UTILITIES

ANNUAL REPORT 2018





*Andrew J. Ginther
Mayor*



*Tracie Davies
Director*

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2018 COLUMBUS CITY COUNCIL

(From left:) Elizabeth Brown; Mitchell Brown; Priscilla Tyson; Shannon Hardin, President; Emmanuel Remy; Michael Stinziano, President Pro Tempore and Public Utilities Committee Chair; and Jaiza Page.

YEAR IN REVIEW

The Department of Public Utilities can look back on 2018 as a year filled with advances aimed at improving our services while continuing to facilitate responsible growth throughout central Ohio.

One significant project nearing completion was the Blacklick Creek Sanitary Interceptor Sewer, which extends the existing sanitary main more than four miles north from its original end point on the east side and will provide improved sewer service to New Albany and Jefferson Township. Crews “holed out,” or finished the tunneling portion, at the northern end of the project in September with anticipated project completion in early 2019 – a full year ahead of schedule. This is welcome news to New Albany, which has already launched their own project to connect their community to the new Columbus sewer. Elsewhere, in the Division of Power, legislation passed to upgrade our existing streetlight system to a “smart” lighting system, by converting most existing streetlight fixtures to light-emitting diode (LED) over the next several years. And the Division of Water was laying the groundwork for the next round of treatment plant improvements, designing ultraviolet disinfection systems as well as backup generators to keep safe water flowing even during extended power outages. These are just a few examples of numerous upgrades in all three divisions that will benefit our customers.

Additionally, the responsibility of maintaining our existing infrastructure remains a priority. Perhaps the best example of this is in our Division of Water, where the program to replace aging and leak-prone water lines continues to grow. Our “Replacement and Rehabilitation,” or “R&R,” initiative annually reviews data that includes number of breaks, line material, age of the line and other factors, then uses that analysis to generate a list of water line replacement projects for the following year. In 2018, the division invested more than \$29 million toward replacing approximately 18.5 miles of water line, improving service and reliability to those customers. The reinvestment highlight in the Division of Sewerage and Drainage remains the Blueprint Columbus program, the city’s comprehensive plan to address sewer overflows. More than 400 rain gardens were added in Clintonville, 350 sump pumps were installed, and almost 700 homes were evaluated for sewer lateral and/or downspout improvements. Plans for the next round of Blueprint

neighborhoods (including Linden and the Hilltop area) are moving forward; these projects, when combined with current and future sewer system upgrades, will result in fewer overflows and better stormwater controls.

Beyond our commitment to cleaner water, we are proud of our role in programs that emphasize responsible environmental stewardship. The EcoSmart Choice program in our Division of Power is growing in popularity; it gives our customers the opportunity to purchase renewable energy certificates that in turn allow us to invest in more power generated by renewable resources such as solar, wind, and hydroelectric. Speaking of hydro, the division began planning for rehabilitation of its hydroelectric plant at O’Shaughnessy Dam, scheduled for completion in 2021. And, the GreenSpot program – celebrating its 10th birthday – continued to see significant membership growth and now totals more than 18,000 homes, businesses and community groups, each committed to behaviors promoting responsible stewardship of the environment. More than 1,200 households participated in the GreenSpot Backyard Conservation cost share program to receive either a rain barrel or native plants.

Going forward, our department is striving to continue modeling environmental responsibility while improving the services necessary to sustain quality of life and promote growth in our region. I am proud of the work our staff performs on a daily basis to deliver clean water and other essential utility services to neighborhoods throughout Columbus and our suburban partner communities.

Tracie Davies, Director

PROTECTING THE ENVIRONMENT

Regulatory Compliance

The department received recertification of its Environmental Management System (EMS) to the environmental standards established by the Organization of International Standards (ISO 14001:2015). First received in 2014, this commitment involves a robust regulatory compliance program. The City of Columbus is one of very few public utilities in the country known to have a fully operational ISO-certified EMS. Other regulatory compliance functions of the department include adhering to the Safe Drinking Water Act, Clean Water Act and Clear Air Act requirements, including multiple National Pollutant Discharge Elimination System (NPDES) permits and Title V air permits issued by Ohio EPA. Several laboratories located in Division of Water and Division of Sewerage and Drainage facilities regularly test raw water, finished drinking water and influent and effluent wastewater.

The Stormwater and Regulatory Management Section in the Division of Sewerage and Drainage (DOSD) oversees non-point source stormwater pollution by administering a Municipal Separate Storm Sewer System NPDES permit. In 2018, the following was done to protect local waterways: 4,883 site inspections on active construction sites, 289 post-construction best management practice inspections, field screened 986 storm sewer outfalls, and investigated 252 reports of spills or suspected illicit discharges to the storm sewer system. Inspections were made at 204 businesses for compliance with the Ohio EPA Multi-Sector General Permit for stormwater discharge. Fines totaling \$113,800 were issued for notices of violation. In coordination with Columbus Public Health, the Septic Tank Elimination Program connected 31 properties to the sanitary sewer system.

The Industrial Wastewater Pretreatment group in DOSD monitors discharges from permitted industries into the Columbus sewer system to ensure compliance with clean water goals. During 2018, through a partnership

with Columbus Public Health, food sanitarians performed 3,599 restaurant inspections on behalf of the pretreatment program. Pretreatment staff investigated 9 grease incidents, met with 19 food service establishments as part of the Fats, Oils and Grease Best Management Program, and distributed 525 door hangers in neighborhoods. This section recovered costs association with removing sewer blockages from six sewer users, and fines totaling \$18,750 were collected for various violations.

The Backflow Compliance Office, under the Division of Water, protects the water distribution system from contamination that could originate at customer premises through backflow. The office oversees and tracks installation and annual testing for 22,834 accounts with backflow prevention devices throughout the service area. About 8,900 of those are non-residential and nearly 14,000 are residential.



EcoSmart Choice Program and Green Power

EcoSmart Choice is offered by the Columbus Division of Power through American Municipal Power (AMP). AMP's

program allows our customers to purchase Renewable Energy Certificates for up to 100% of their electricity usage. The cost is \$0.003 per kilowatt hour (kwh). All city facilities served by Columbus Power have been enrolled in the program since adopting the program in 2016. In 2018, Division of Power participant offset 37,908,000 kwh in energy consumption. As of June, DOP purchased 20% of all energy from renewable resources through its purchase power agreement with AEP Energy partners. In total, the division purchased 156,684,000 kwh in green power through all programs.

Public Education, Outreach and Partnerships

Membership in the city's GreenSpot web-based program, which began in 2008 and is now housed and managed by the department, grew by 1,086 new members in 2018, bringing the total to 18,124. This includes 16,715



households, 1,274 business members and 135 community groups.

810 “No Dumping, Drains to Rivers” storm drain markers were distributed to community volunteers to apply to curbs near storm drain inlets to help increase awareness on water quality protection.

The Division of Water’s Watershed Management Office organized two reservoir litter cleanups, one at Hoover Reservoir on the Big Walnut Creek and

the other at O’Shaughnessy Reservoir on the Scioto River. Watershed Management also helps share the message of source water protection by providing educational presentations to school groups, supports several student-led projects, career days, and hosted a Clean Marinas training in partnership with the Ohio Department of Natural Resources. An invasive honeysuckle removal program on Griggs Reservoir continued through Watershed Management’s partnership with BMW Financial Services.

Through continued participation from an employee in the Water Quality Assurance Lab, the department continued its partnership with the the Race for Global Water program, which raises money for Water for People. The program raises money for and awareness on the underserved communities around the globe without access to clean drinking water. This 4th annual race, held at Hoover Reservoir in October, generated \$10,277 for the cause.

The PUP (Pick Up Poop) program encourages pet owners to clean up after their pets, which helps protect stormwater quality. The program gained 551 new households in 2018, bringing the new PUP pledge total to 5,912.

Several partnerships to promote water quality awareness continued. Through its agreement with the City of Columbus, Franklin Soil and Water Conservation

District educated residents, and school groups, and provided resources through the GreenSpot Backyards program and Get Grassy campaign. The Central Ohio Watershed Council met regularly with the director’s office to share information on water quality-related topics. The department continued its sponsorship of and partnership with the Mid-Ohio Regional Planning Commission’s Greenways Water Quality group. 674 households received either a rain barrel, compost bin, or native plants through the GreenSpot Backyard Conservation cost share program.



CAPITAL REINVESTMENT

Division of Power

In 2018, DOP hired a consultant to develop a Smart Street Lighting system implementation plan. The plan is to assess the types of centralized control systems and other city data uses that can be included in the project in the future. In the DOP Capital Budget, \$1.1 million was earmarked for the implementation study and design of Phase I, and the total project is currently estimated at approximately \$60 million. In addition to the Smart Street Lighting program, DOP also purchased nearly \$700,000 in LED (light emitting diode) luminaires to convert existing street lights on 40 smaller circuits, which will reduce production of greenhouse gases in our area.

487 LED street lights were added to the system. The following major streetlight projects were constructed and incorporated into the city's street lighting system:

- Poindexter Phase 2
- Livingston Avenue
- Hayden Run
- Harlem and Sawyers Creek
- Dublin Granville and Deewood/Maple
- American Addition 2 & 3
- Joyce Avenue and 17th Avenue
- Southeast Lions Park

Design work to rehabilitate the department's five-megawatt hydroelectric plant in the O'Shaughnessy Dam began in 2018. All field inspections were completed and the consultant provided preliminary engineering tasks and technical memorandums with recommended pieces of equipment for the powerhouse. It was also determined that all major turbine components will be replaced at the dam. Construction for the hydro plant is expected to begin late 2019, and be complete in 2021. Once the plant is in full operation, it is anticipated to generate 10,000 megawatt hours per year.



DOP is in the final stages of completing the installation of a redundant 69-kilovolt transmission line that will improve reliability and increase capacity to the West Substation. This \$5 million project is expected to be completed by summer 2019.

Division of Sewerage and Drainage

Blueprint Columbus

Blueprint Columbus is the alternative to portions of the Wet Weather Management Plan, submitted to the Ohio EPA in 2005 to address sewer overflows and consent orders with the state in 2002 and 2004. The final Blueprint Columbus integrated plan was approved by the agency in 2015. The plan utilizes greener alternatives to solving wet weather problems instead of building more costly sewer tunnels or “gray solutions.” The four main strategies, or pillars, of the plan include: residential home sewer lateral lining, roof water redirection, sump pumps, and green infrastructure.

Implementation of Blueprint Columbus began in the Clintonville 1 project area in 2017. In 2018, green infrastructure construction neared completion and the project began the second phase of implementation: lining individual home sewer laterals and assessing and implementing solutions for roof water redirection.

Clintonville 1 Accomplishments

- 423 rain garden installations, including a wetland feature in Whetstone Park and the rain garden in the Weisheimer-Indian Springs area shown in the photo
- 31,193 square feet of pervious pavement installed in 3 roadway sections
- 350 sump pumps installed
- 674 homes assessed for lateral/downspout improvements in 2018 (25% of total project area)

Blueprint Columbus is committed to active resident engagement in the development and implementation of neighborhood solutions. Blueprint conducted 22 presentations about the project, concentrating education and outreach efforts in the areas in active design: North Linden 1, Hilltop 1 and 4, Miller-Kelton, and 5th by Northwest.



Clean streams.
Strong neighborhoods.

For more information about Blueprint, please call 614-645-1253 or visit www.columbus.gov/Blueprint.



CAPITAL REINVESTMENT

Division of Sewerage and Drainage (continued)

Sewer System Engineering Capital Improvements

Blacklick Creek Sanitary Intercepting Sewer

Tunneling operations for all 23,000 feet of new 10-foot diameter sewer were substantially completed in September of 2018 (see hole-through event photo). This project will extend the existing sewer from its current end point just south of Blacklick Creek Boulevard, north to Morse Road along Reynoldsburg- New Albany Road, to provide service in the still-developing New Albany area.

Large Diameter Sewer Assessment - Alum Creek Trunk Sewer North Section

Full circumference rehabilitation of 6,371 linear feet of 66" and 72" reinforced concrete pipe via shotcrete lining methods was substantially completed in December of 2018. Approximately 2,048 square feet of spot repairs were also performed. Inspection and design on 11 other large diameter sewer assessment projects continued in 2018.



Big Walnut Sanitary Trunk Extension, Phase 2

This 72-inch diameter, deep rock tunnel will extend sanitary sewer service from the intersection of Central College Road and Sandimark Place northerly to the intersection of Smothers Road and Harlem Road to a rapidly developing region. The project was around the 60% planning stage, with construction planned to begin in 2021.

Lower Olentangy Tunnel

The Lower Olentangy Tunnel will serve as a direct relief for four of the city's major trunk sewers, an indirect relief for three more, and will significantly reduce overflows into the Olentangy River. It will help reduce sewer backup occurrences and sanitary sewer overflows in the area as well. The construction plans progressed to 50% completion and underwent a value engineering process in 2018. The design continues to progress while easement acquisition is underway. Construction of this important consent-ordered sewer will begin in 2021 and be complete in 2025.

Wastewater Treatment Plant Capital Improvements

Chemically Enhanced Primary Treatment

This project will increase total treatment capacity during wet weather at the Southerly Wastewater Treatment Plant. It includes additional raw sewage pumping, screening, primary clarification, disinfection, dechlorination, conveyance to the existing outfall structure, and gravity thickening.



The CEPT facility will be implemented via four phases: Site Preparation, Preliminary Treatment, Clarification, and Disinfection. The Site Preparation construction contract was completed. The Clarification and Disinfection contracts should be completed by the end of 2019, and Preliminary Treatment in 2020. Pumping, screening, and gravity thickening capacity will be available for the additional wet weather flow the facility will handle by the end of 2019. New screens for the CEPT are shown in the photo.

Southwesterly Composting Facility Odor Reduction Improvements

The Compost Facility produces Com-Til, an exceptional quality soil amendment, which is used in numerous applications in central Ohio for its nutrient value, organic content and moisture retaining characteristics. This project will reduce odors at the facility by adding air capture to the curing step and replacing the odor control. New composting equipment will allow for close monitoring and optimized processing of compost. The project was in the detailed design stage, with construction scheduled for 2019-2020.

Jackson Pike Wastewater Treatment Plant Biosolids Land Application

Mirroring recent improvements at Southerly, DOSD anticipates beginning construction on improvements to ensure the Class B biosolids produced at Jackson Pike are beneficially reused for agriculture or at the city's Hybrid Poplar Tree Farm. The city is rehabilitating existing underutilized tanks rather than constructing new facilities. Design was completed in 2018; construction is expected in 2019.

Jackson Pike Cogeneration Facility Project

This improvement will design and install equipment to provide beneficial reuse of digester biogas, which will produce about half the total electricity used at the plant, and provide large amounts of boiler heat for the treatment processes and buildings. Detailed design will continue through 2019.

JP Primary Clarifiers Electrical Upgrade

The primary clarification process is one of the initial treatment processes. It removes solids to reduce loading to the biological treatment process and protect downstream equipment. Due to the corrosive environment of raw sewage and the age of the electrical wiring, distribution and controls, the electrical infrastructure requires rehabilitation to ensure reliability of this treatment process. The project went under construction in 2018.

Small Capital Projects Program

This was utilized in 2018 to replace HVAC units at the generator and incinerator buildings. These units are past their useful life and replacement parts have become difficult to obtain. This program also addressed stormwater compliance issues with the Fairwood Fueling Station.

Roof Replacement

This program will address roofs that are approaching the end of their useful lives at various DOSD facilities. Nine roofs were designed and replaced under Phase I. The Phase II design stage started in late 2018.

HVAC and Air Purification Program

This will address the Jackson Pike and Southerly plants, Sewer Maintenance Operation Center and Compost Facility's HVAC/Air Purification units that are beyond their useful lives and difficult to maintain. Phase 1 began in 2018.

CAPITAL REINVESTMENT

Division of Water

The Division of Water operates and maintains an extensive water supply system consisting of our watersheds, reservoirs, dams, three water treatment plants and a distribution system. Over the past year, the division made significant capital investments in these assets to maintain a safe and reliable water supply and to prepare for future needs. Some of the major activities and accomplishments for 2018 are below.

Water Distribution

In 2018, the Division of Water legislated over \$29 million in existing distribution infrastructure improvements through its Replacement and Rehabilitation (R&R) Program. This program annually prioritizes replacement of water mains that require repeated maintenance due to breakage and the need to improve flow to service areas. Major R&R projects in 2018 included:

- Scottwood Road Area Water Line Improvements project, which included approximately 17,000 linear feet of new mains ranging in size between 6” and 8”
- Stephen Drive Area Water Line Improvements project, which included approximately 15,200 linear feet of new mains ranging in size between 6” and 8”
- Arcadia Avenue Area Water Line Improvements project, which included approximately 14,700 linear feet of new mains ranging in size between 6” and 12”
- Noe-Bixby Road Area Water Line Improvements project, which included approximately 19,900 linear feet of new mains ranging in size between 6” and 12”
- Sale Road Area Water Line Improvements project, which included approximately 17,400 linear feet of new mains ranging in size between 6” and 8”
- Dundee Avenue Area Water Line Improvements project, which included approximately 13,400 linear feet of new mains ranging in size between 6” and 8”

Mound Street Booster Station

The existing Mound District area received a new booster station located on

Mound Street. This new station replaced the existing station that was built in the early 1930s. The new facility provides increased pumping capacity and redundancy, and features green infrastructure items including a rain garden and energy efficient lighting. The exterior of the building includes low-maintenance materials such as brick walls and a gabled roof (see photo below).



Water Storage Tank Painting

The Division of Water conducts a water storage tank painting program. Projects are completed each year to ensure that the water storage tanks owned by the City of Columbus remain in optimal condition. In 2018 the Division of Water spent \$1.7 million on painting projects that included two water storage tanks. The picture shows the Joyce Avenue tank getting a fresh coat of paint.

Water Supply

Watersheds, Reservoirs and Dams

- Began construction on spillway improvements at the O'Shaughnessy Dam.
- Started preliminary design of boat launch improvements at the Griggs Reservoir.
- Continued detailed design of improvements to the O'Shaughnessy Hydroelectric Facility.
- Started detailed design work for the Hoover Dam Improvements - Part 1 project, which will replace aging gates, valves, and other equipment inside the dam.
- Began work on the Land Stewardship Update project.

Water Plants

At the Dublin Road Water Plant (DRWP), construction continued on Part 4 of the \$200 million dollar DRWP Capacity Increase Project, including startup of a new ion exchange system (see photo) to reduce finished water nitrate levels when needed. The city also broke ground on construction of the DRWP Ultraviolet (UV) Disinfection Improvements project and the DRWP Standby Power project, which will enhance public health protection and increase the resiliency of the water supply system.

Construction continued at the Hap Cremean Water Plant (HCWP) on the lime slaker replacement project and began construction on the Washwater Tank Rehabilitation Project, the UV disinfection improvements project, and the standby power project. Condition assessment work was completed and detailed design work started on the HCWP Basin Concrete Rehabilitation Project, which will address age/weather related deterioration of the plant's treatment basins. Preliminary design work was started for the hypochlorite conversion project that will convert the plant from a chlorine gas based disinfection process to a liquid hypochlorite based process.

At the Parsons Avenue Water Plant (PAWP), construction was completed on the \$65 million PAWP Treatment Upgrades Project. Preliminary design was started for the Well Pump Replacement Project and the Lime Slaker Replacement Project. Preliminary design work for the HVAC Upgrades project was completed.

Preliminary design work was started for the hypochlorite conversion project that will convert the plant from a chlorine gas based disinfection process to a liquid hypochlorite based process.

Work on the Residuals Management Plan Update project continued including work on the following tasks: characterization of treatment residuals at all the three water plants, gathering information about potential beneficial reuse markets, and identification and evaluation of potential management options.



CUSTOMER SERVICE & COMMUNITY RELATIONS

Customer services provided by the department staff include support for Columbus water, sewer, stormwater and electricity accounts, and for the city's contracting water and sewer suburban communities. A 50-person call center answers billing questions, schedules service calls, and helps resolve issues, 55 hours per week. Customers can pay their bills online, over the phone, by mail and in person at various locations.

A new customer portal that was rolled out in late 2017 resulted in 61,062 new enrollees during the year, bringing the total to 84,523. The portal provides ways for customers to sign up for paperless e-bills, to pay online, enroll in autopay and other features.

A 20% discount for water and sewer consumption charges continued to be offered for qualifying low-income residents in single and multi-family homes. Qualifying senior households also received an additional discount on their water bill. Senior power customers eligible for that program enjoyed a 10% consumption discount.

A pilot program to provide emergency funding to power customers having difficulty paying their bills began in 2018, made possible by an EcoSmart grant in partnership with the Mid-Ohio Regional Planning Commission and the Local Government Energy Partnership. 248 households received a one-time credit of up to \$150 toward their city electric bill under that program.

A new service developed by the Division of Power now allows city power customers to get information about outages via Twitter, @DOPOutages, and a boundary map web feature was developed, found at <https://www.columbus.gov/poweroutage/>.

The Communications Office coordinated media and public records requests, public meetings, printed materials and reports, and OEPA-required customer notifications. The Sustainability Office coordinated various public meetings and outreach related to the Columbus Blueprint initiative, and attended many events to promote the city's GreenSpot program. Facebook and Twitter social media followers continued to grow.

Customer Service Highlights	2018	2017	2016
Total customer calls	409,810	402,514	403,192
Total field/meter related service calls	96,316	90,115	101,193
Low income water/sewer discount participants	5,459	5,401	5,833
Senior water discount participants	3,482	3,476	3,424
Senior power discount participants	197	190	186
Customer Accounts Billed			
Water (includes contracted communities)	278,139	277,428	276,534
Sewer (includes contracted communities)	274,872	274,000	272,968
Stormwater	197,831	197,583	197,754
Power	14,950	13,487	12,934

Residents continued to benefit from the Project Dry Basement sewer backup prevention program, which began in 2004. 70 new homes received backflow valves in 2018, bringing 1,019 total homes in the program since inception.

To learn more about these programs, please visit columbus.gov/utilities.

Special Events

The department participates annually in an Engineer for a Day event with the Department of Public Service. High school students considering engineering as a career choice can participate to learn more about engineering and opportunities with the City of Columbus. The day also includes recognition of the city's Engineer of the Year and Young Engineer of the Year awards.

Columbus Public Utilities continues to be a major partner in the Central Ohio Children's Water Festival. Approximately 650 local fifth grade students from various schools and districts attended the festival, held on the grounds of the city's beautiful Franklin Park. This event, which was its 11th year, provides a fun and educational day of hands-on learning and demonstrations. Students learn the importance of protecting our water supplies and meet the scientists and engineers who treat and distribute drinking water. Always a big hit with the students is the Division of Water's award-winning Tap Team demonstration. The 2018 conservation poster-winner student is shown in the photo with Michael Stinziano, Columbus City Council President Pro Tempore and Public Utilities Committee Chair.

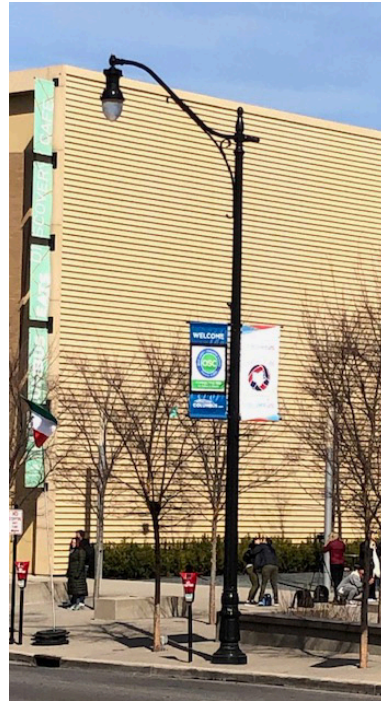


MAINTAINING OUR SYSTEMS

Power Distribution System

The Division of Power maintains a network of substations, transmission lines, distribution and street lighting circuits throughout Columbus. Around 14,950 business and residential accounts enjoy reliable city power, which allows the city to provide the necessary maintenance and energy to over 57,540 streetlights in Columbus. The division is also responsible for providing maintenance of the Ohio Department of Transportation's freeway lights on major highways within city limits and the Division of Water's O'Shaughnessy Reservoir dam's hydroelectric unit.

Columbus Power provides a reliable, cost competitive electricity alternative in the Columbus service area. For more information, please call 614-645-7216 or visit columbus.gov/utilities.



Sewer Collection System

4,519 miles of city-owned sewers are maintained by the Sewer Maintenance Operations Center (SMOC), the largest staffed section of the Division of Sewerage and Drainage. This responsibility includes 2,567 miles of sanitary sewers, 1,795 miles of storm sewers and 157

miles of combined sewers. An additional 44 miles of county-owned sewers are maintained under contract. Other responsibilities include 16 sanitary and 15 storm pump stations monitored by a Supervisory Control and Data Acquisition system, 20 regulators, 45 detention/retention basins, 15 siphons, 34 sluice gates, five bio-filters, the Alum Creek Storm Tank (pictured), numerous catch basins, ditches, flap gates, inlets and manholes, as well as the maintenance of the Franklinton Floodwall gates and 14 gate wells.



Power Maintenance	2018	2017	2016
Wire/cable repaired (feet)	105,693	127,585	117,414
Transformer KVA installed/removed	15,242	24,644	11,014
Luminaires repaired	1,600	1,917	1,940
Lamps repaired	6,212	6,397	6,412
Wooden poles replaced	245	247	244
Standard poles replaced	174	154	175
Total work orders	13,242	12,571	9,140

Sewer Maintenance	2018	2017	2016
Repairs	1,558	1,557	1,551
Catch basins/inlets inspected	10,669	10,721	10,120
Catch basins, inlets, manholes cleaned	10,436	14,737	13,340
Miles power cleaned	223	310	292
Miles closed circuit televised	73	66	63
Total work orders	8,149	9,172	9,043

Water Distribution System

Water Distribution Maintenance crews maintain 3,541 miles of waterline, which includes 2,524 miles in Columbus and 1,017 miles in contracted suburban service areas. Included in the waterline repair totals are leaks discovered by pitometer survey crews, who perform proactive testing to locate underground system leaks that do not surface.

Other maintenance responsibilities include: 37 water tanks (25 Columbus, 12 suburban contracted areas); 25 booster stations (15 Columbus, 10 suburban); three in-stream reservoirs (Hoover, Griggs and O'Shaughnessy), one upground reservoir (John R. Doutt), a facility on Alum Creek Reservoir where additional

water can be pumped over to supplement Hoover; about 26,000 fire hydrants in Columbus in partnership with the Division of Fire; and various valves throughout the system.

The Division of Water also maintains meters and curb boxes for nearly 280,000 accounts in the Columbus metro area. Please see the Customer Service page for totals on those field service calls.

The photo to left shows an existing waterline undergoing a rehabilitation and replacement project through the division's capital program.



Water Maintenance	2018	2017	2016
Main Line Leak Repairs			
Columbus	364	345	408
Suburban contracted	148	148	204
Total	512	493	612
Taps/Service Lines			
Repaired	270	243	65
Replaced	2,005	1,911	688
Cut-off at main	106	86	84
Put-in-shapes	202	725	478
New taps main line	27	62	18
Valves			
Repaired	55	88	70
Replaced	308	99	170
Hydrants			
Repaired	1,208	1,903	1,792
Replaced	81	233	169
Total work orders	4,384	3,752	4,383

WATER TREATMENT

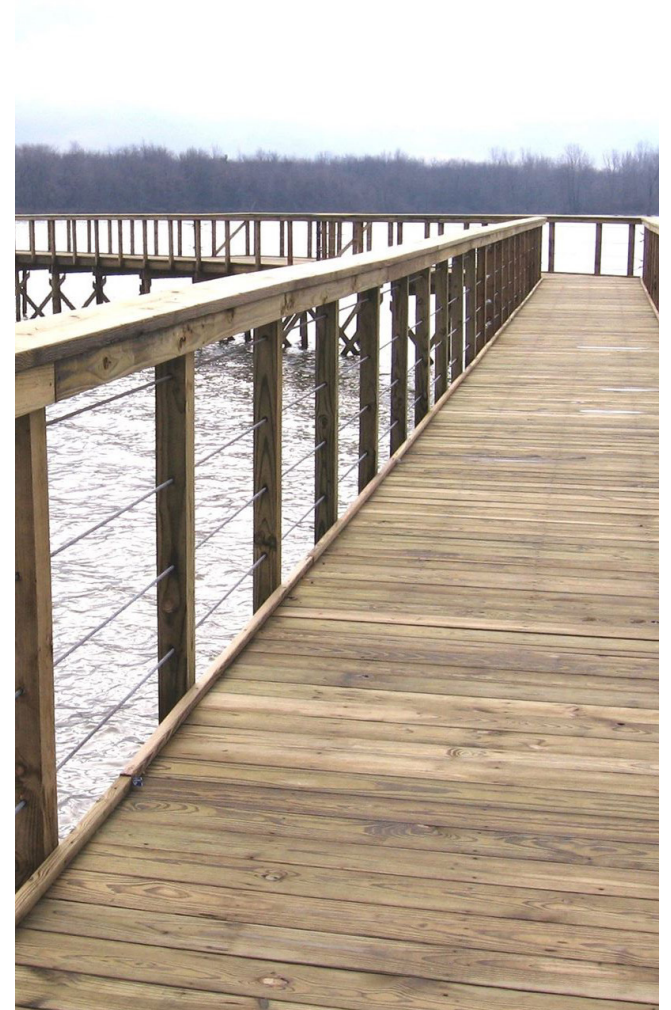
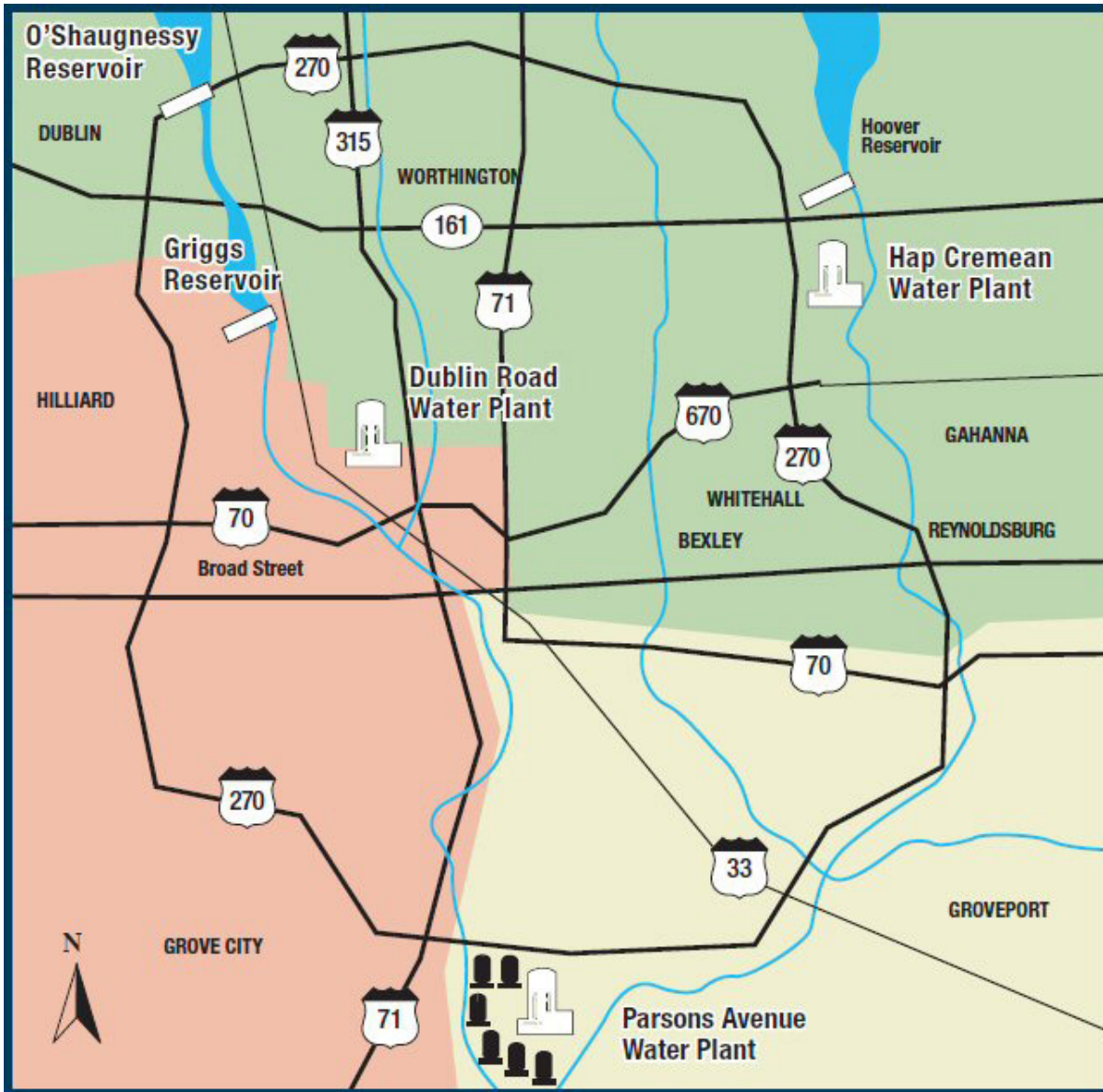
The water treatment staff, supported by the Water Quality Assurance Laboratory, ensure that the water delivered to your tap meets or exceeds all requirements of the Safe Water Drinking Act. Columbus' water plants use a complex multi-barrier treatment process to assure safe drinking water is delivered to nearly 1.2 million consumers in Columbus and in 22 contracting suburban communities.

Sources of Columbus' drinking water include rivers, creeks, reservoirs and wells. Columbus water customers receive water from one of the following three plants, which have undergone many upgrades and expansions since being put into service to keep pace with Ohio EPA regulations and population growth:

- The Dublin Road Water Plant serves downtown Columbus and the western and southwestern portions of Franklin County, using water from the Griggs and O'Shaughnessy reservoirs on the Scioto River and the John R. Doult Upground Reservoir in Delaware County. Put into service in 1975, the current water plant replaced a 1908 plant, which had replaced the first water treatment works from 1871. This plant provided 35% of the water in the service area in 2018 and has a capacity of 80 million gallons per day (MGD).

- The Hap Cremean Water Plant on Morse Road, opened in 1956, serves the largest area that includes northern and northeastern Franklin County and The Ohio State University. The water source is Hoover Reservoir on Big Walnut Creek, and supplemental water is pumped in from the Alum Creek Reservoir during dry periods as needed. This plant provided 49% of water in the service area and has a 125 MGD capacity.
- The Parsons Avenue Water Plant, which went into service in 1984, draws water from wells and serves southeastern Franklin County. The Parsons Avenue plant provided 16% of the water in the service area and can treat up to 50 MGD.
- A report on drinking water quality is released to the public annually, known as the Drinking Water Consumer Confidence Report. Please visit columbus.gov/drinkingwater/ to view the current report or request a copy by calling Customer Service at 614-645-8276. For water quality questions, please call the Water Quality Assurance Lab at 614-645-7691.

Finished Drinking Water Summary	2018	2017	2016
Total billion gallons	48.8	48.6	49.5
Average million gallons per day	133.7	133.2	135.1
Estimated service population	1,215,363	1,196,848	1,178,332
Average per capita consumption gallons per day <i>(Includes industry and business usage, total pumped divided by estimated population)</i>	110	111	115
Central Ohio precipitation	55"	47"	38"

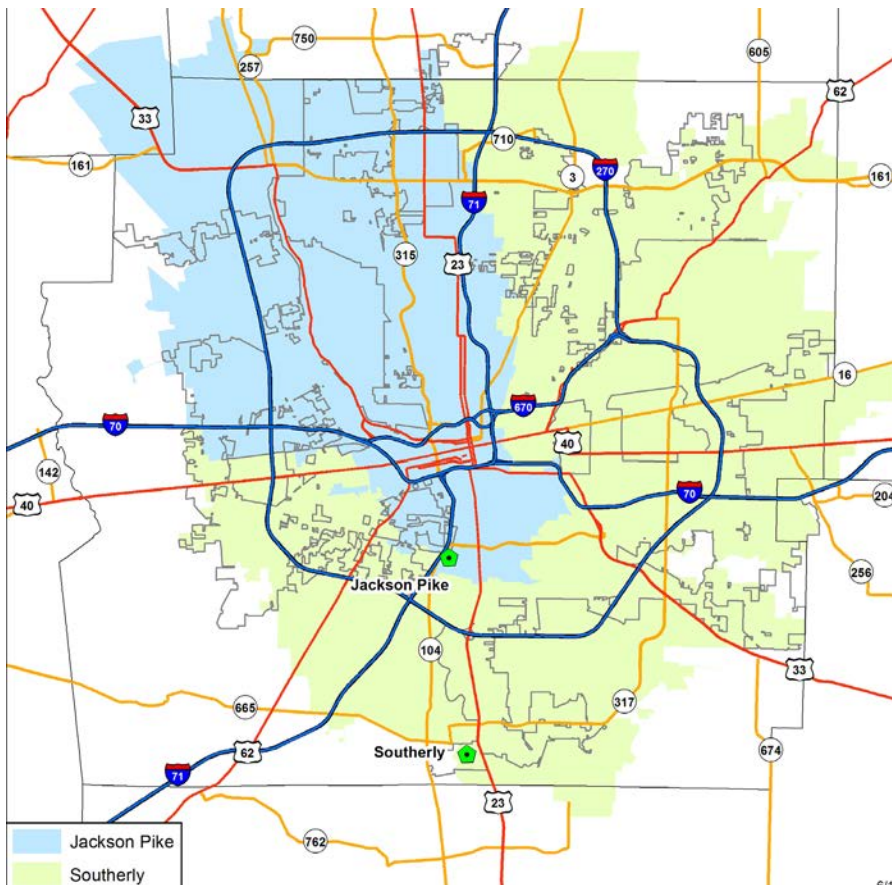


WASTEWATER TREATMENT

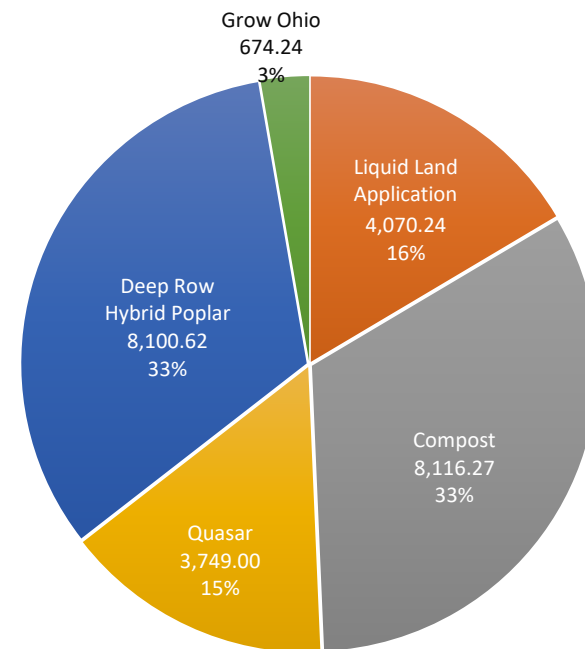
The City of Columbus operates two 24-hour, award-winning wastewater treatment plants serving the city and 25 contracting suburban communities. The Jackson Pike Wastewater Treatment Plant, located just south of downtown along I-71, was built in 1935 and has a design capacity of 68 million MGD, with a peak treatment capacity of approximately 150 MGD. It serves the central and western half of Franklin County. The Southerly Wastewater Treatment Plant, on the south side near Lockbourne, was built in 1967 and

serves eastern Franklin County. Average daily design flow is 114 MGD with a peak capacity of 330 MGD. Both plants discharge treated water into the Scioto River and have undergone numerous upgrades in recent years to keep pace with central Ohio's growth and Ohio EPA regulatory requirements. Tours of the plants are available to the public by appointment (Jackson Pike 614-645-3138 or Southerly 614-645-3248).

The Division of Sewerage and Drainage also operates a Compost Facility, which was built in 1980 as an environmentally friendly alternative to dispose of wastewater residuals. The bio-solids are made into a popular organic mulch and soil enrichment product known as Com-Til, which is available to the public. For more information, please visit columbus.gov/comtil or call 614-645-3153.



Bio-Solids Distribution, Dry Tons

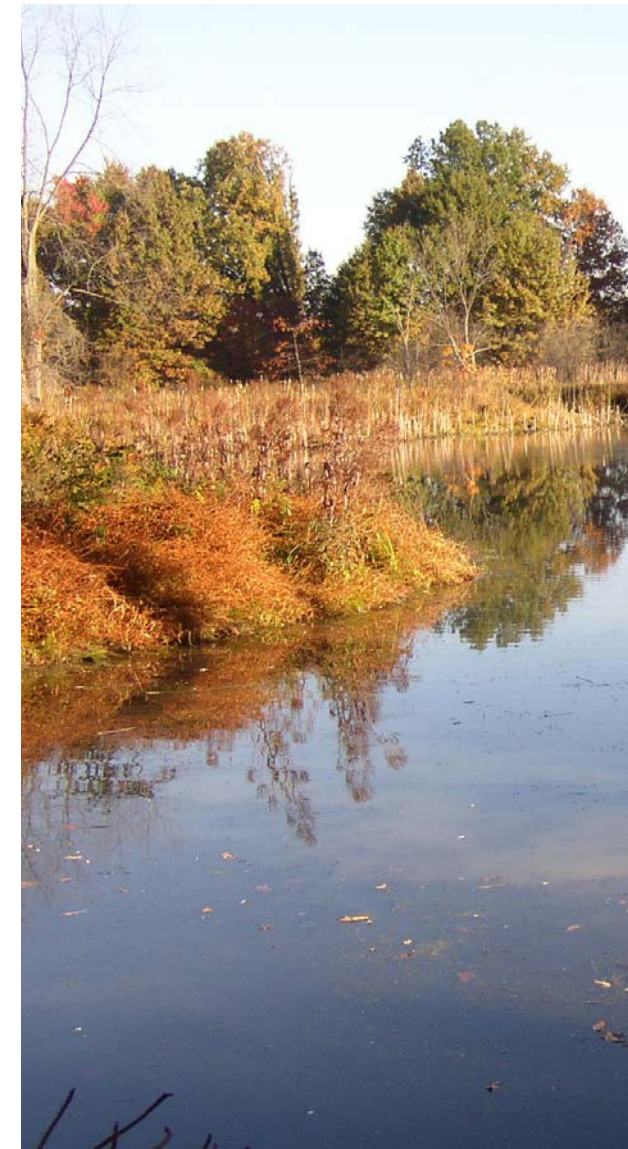


Wastewater Treatment Summary	2018	2017	2016
Total billion gallons	78	68	61
Average million gallons per day	212	185	176
Carbonaceous biological oxygen demand removed	98%	98%	98%
Suspended solids removed	98%	98%	97%
Central Ohio precipitation	55"	47"	38"
Bio-solids Handled, Dry Tons			
Composted	8,116	8,089	7,492
Liquid land application	4,070	2,740	2,591
Dry tons to energy (gas)	18,382	16,012	17,574
To Quasar (converts bio-solids/waste to electricity)	3,749	4,682	3,417
To mulch (deep row hybrid poplar)	8,775	9,091	7,818
Landfill	0	0	667
Total	43,092	40,614	39,559
Compost Facility Production			
Incoming sludge (wet tons)	43,993	43,181	41,132
Incoming sludge (dry tons)	8,116	8,089	7,492
Average percent dry solids	19%	19%	19%
Com-Til sold/donated (cubic yards)	39,470	57,168	42,038
Total yard waste received (wet tons)	9,041	9,421	9,543
Total Com-Til revenue	\$410,110	\$503,839	\$425,702

REVENUES AND EXPENDITURES

Division of Sewerage and Drainage

Sanitary Enterprise Fund	2018	2017	2016
Revenue			
Beginning cash balance	\$121,566,039	\$102,682,301	\$89,939,630
Sewer service charges	\$219,020,009	\$219,479,928	\$205,929,376
Wet weather fees	\$37,515,626	\$36,935,862	\$35,406,627
Investment earnings	\$5,156,888	\$3,563,475	\$2,538,990
System capacity charges	\$7,334,835	\$8,533,390	\$8,530,324
Storm sewer reimbursements	\$7,956,033	\$8,723,621	\$7,194,461
Other	\$2,023,160	\$1,671,401	\$1,592,486
Debt refinancing	-	-	-
Adjustments	-	-	-
Total revenue	\$279,006,552	\$278,907,677	\$261,192,264
Expenditures			
Personnel	\$45,543,167	\$44,629,409	\$42,984,896
Supplies and materials	\$7,194,613	\$6,669,527	\$6,385,448
Services	\$33,187,201	\$36,511,049	\$33,710,793
Pro-rata	\$11,740,743	\$11,946,611	\$11,300,796
Other	\$130,263	\$69,116	\$25,222
Capital equipment	\$2,789,329	\$3,265,583	\$3,390,645
Debt service	\$156,266,048	\$149,726,109	\$143,921,450
Sewer share of DPU	\$10,184,891	\$7,206,537	\$6,783,387
Total expenditures	\$267,036,256	\$260,023,940	\$248,502,637
Ending cash balance	\$133,536,335	\$121,566,038	\$102,629,257



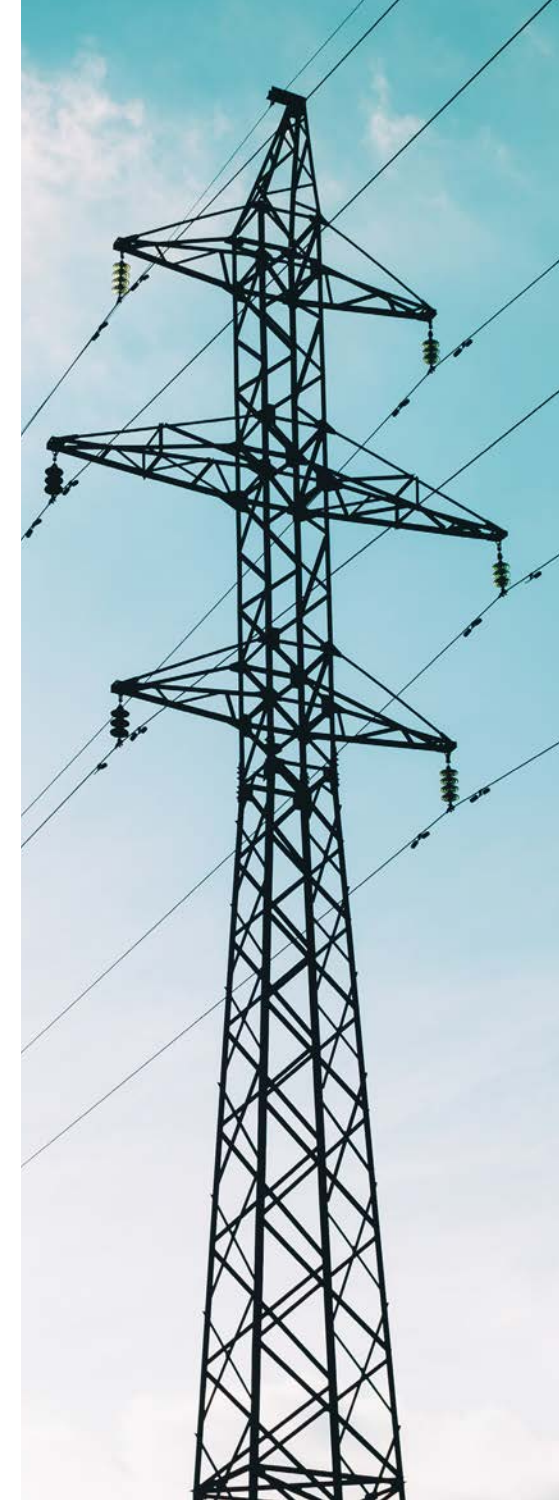


Stormwater Enterprise Fund	2018	2017	2016
Revenue			
Beginning cash balance	\$16,192,110	\$15,166,270	\$11,808,902
Storm sewer charges	\$41,075,693	\$40,759,716	\$40,721,789
Investment earnings	\$853,926	\$591,320	\$443,463
Storm penalties	\$407,529	\$403,465	\$203,173
Other	\$77,762	\$107,574	\$11,004
Debt refinancing	-	-	\$415,088
Adjustments	\$97,386	(\$71,114)	(\$535,536)
Total revenue	\$42,512,296	\$41,790,961	\$41,258,981
Expenditures			
Personnel	\$1,844,017	\$1,600,528	\$1,617,481
Supplies and materials	\$32,523	\$46,743	\$12,464
Services	\$1,023,027	\$2,344,399	\$1,737,982
Pro-rata	\$1,841,607	\$1,857,003	\$1,827,449
Capital equipment	-	\$11,495	-
Other	\$100,000	-	-
Debt service	\$14,194,892	\$14,531,415	\$13,690,868
Reimbursement to sanitary	\$7,956,033	\$8,515,414	\$7,194,461
Storm share of DPU	\$2,704,119	\$1,848,278	\$1,755,258
Department of Technology allocation	\$1,241,782	\$1,129,277	\$1,202,532
Street cleaning	\$9,631,381	\$8,880,572	\$8,863,117
Total expenditures	\$40,569,381	\$40,765,122	\$37,901,612
Ending cash balance	\$18,135,025	\$16,192,109	\$15,166,271

REVENUES AND EXPENDITURES

Division of Power

Power Enterprise Fund	2018	2017	2016
Revenue			
Beginning cash balance	\$24,828,231	\$19,382,418	\$17,109,468
Commercial	\$70,640,364	\$69,381,410	\$65,710,968
Residential	\$8,216,297	\$6,625,665	\$6,471,399
Investment earnings	\$676,213	\$371,973	\$270,477
Kilowatt hour tax reduction	(\$3,320,402)	(\$2,915,539)	(\$3,132,269)
Other	\$2,182,208	\$3,372,078	\$2,427,829
Power Cost Reserve Adjustment (PCRA)	\$8,279,789	\$7,067,914	\$8,391,142
Debt refinancing	-	-	-
Adjustments	-	-	-
Transfer in	-	\$3,167,645	-
Total revenue	\$86,674,470	\$87,071,145	\$80,139,546
Expenditures			
Personnel	\$10,338,536	\$9,996,989	\$10,068,552
Purchase power	\$56,703,554	\$55,073,868	\$51,240,460
Supplies and materials	\$1,845,916	\$1,511,066	\$1,190,680
Services	\$6,220,639	\$6,461,126	\$6,808,513
Pro-rata	\$3,779,225	\$3,745,181	\$3,534,805
Other	-	\$2,087	\$2,003
Capital equipment	\$3,429,664	\$2,498,104	\$2,473,348
Debt service	\$1,159,466	\$1,351,021	\$1,595,286
Power share of DPU	\$1,381,440	\$985,891	\$952,948
Total expenditures	\$84,858,440	\$81,625,333	\$77,866,595
Ending cash balance	\$26,644,261	\$24,828,231	\$19,382,420



Division of Water

Water Enterprise Fund	2018	2017	2016
Revenue			
Beginning cash balance	\$70,950,155	\$57,879,781	\$39,948,078
Water charges	\$182,698,556	\$181,945,822	\$176,211,914
Water billing penalties	\$2,322,769	\$2,289,797	\$2,182,342
Investment earnings	\$3,079,718	\$2,173,129	\$1,770,450
System capacity	\$5,793,870	\$6,841,695	\$5,923,765
Sewer billing charges	\$1,579,911	\$6,883,319	\$6,039,904
Meter service fees	\$800,133	\$780,624	\$832,510
Other revenue	\$2,706,906	\$3,665,290	\$5,682,480
Debt refinancing	-	-	\$3,415,150
Adjustments	-	-	(\$3,306,771)
Total revenue	\$198,981,864	\$204,579,675	\$198,751,744
Expenditures			
Personnel	\$46,209,375	\$50,192,804	\$48,407,591
Supplies and materials	\$17,735,996	\$17,061,301	\$16,551,330
Services	\$24,069,700	\$24,720,283	\$22,823,417
Pro-rata	\$8,537,771	\$8,632,267	\$8,569,411
Other	\$669,026	\$51,995	\$47,350
Capital equipment	\$1,110,294	\$1,761,845	\$2,826,042
Debt service	\$79,577,678	\$81,472,156	\$75,629,981
Water share of DPU	\$8,928,474	\$6,193,827	\$5,870,021
Transfers	-	\$1,422,823	\$94,897
Total expenditures	\$186,838,515	\$191,509,301	\$180,820,040
Ending cash balance	\$83,093,704	\$70,950,155	\$57,879,782

