



CITY OF COLUMBUS  
DEPARTMENT OF PUBLIC UTILITIES

ANNUAL  
REPORT 2019

DEPARTMENT OF  
PUBLIC UTILITIES



Andrew J. Ginther  
Mayor



Tracie Davies  
Director

**2019 COLUMBUS SEWER AND WATER  
ADVISORY BOARD**

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**DEPARTMENT OF PUBLIC UTILITIES  
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Division of Sewerage and Drainage: John Newsome, P.E.  
Division of Water: Rick Westerfield, P.E., Ph.D.



**2019 COLUMBUS CITY COUNCIL**

*From left: Rob Dorans, Public Utilities Committee Chair; Shayla Favor;  
Emmanuel Remy; Shannon Hardin, President; Priscilla Tyson; Mitchell Brown;  
and Elizabeth Brown, President Pro Tempore.*



# YEAR IN REVIEW

Providing reliable and safe public utilities – in our case, drinking water, sanitary sewer, stormwater, and electricity – in an ever-expanding service area means balancing responsible growth with the maintenance of existing infrastructure. Add in evolving regulatory guidelines and the priority of keeping rates affordable, it's a challenging environment for advance planning to meet all goals. I'm proud to say that in 2019, our staff again rose to these challenges for our residential and business ratepayers.

A perfect example of this balancing act is Blueprint Columbus, the Division of Sewerage and Drainage's initiative to address sewer overflows around the city. Several years after the original overflow mitigation plan was submitted to the Ohio Environmental Protection Agency (OEPA) in 2005, our engineers envisioned changes that would simultaneously promote environmental sustainability and create local jobs while reducing the overall price tag. Approved by OEPA in 2015, Blueprint is being implemented in neighborhoods across the city, a process that will continue for some time. You can read about recent progress in this report, and I recommend visiting <https://www.columbus.gov/utilities/projects/blueprint/> to learn more. The division is also approaching completion of a substantial project to expand capacity at our two wastewater treatment facilities: implementation of Chemically Enhanced Primary Treatment will result in additional protections for the Scioto River in particular. A project previously featured in this report, the Olentangy-Scioto-Interceptor-Sewer Augmentation and Relief Sewer (known as the OARS Tunnel), was a finalist for the American Society of Civil Engineers' 2019 Outstanding Civil Engineering Achievement award, well-deserved international recognition for a finished project that now does so much to protect our downtown riverfront and overall water quality.

The Division of Power continues to lead by example as a responsible provider of electricity, in part by offering its growing customer base the option of participating in the EcoSmart Choice program. In 2019, participants purchased over 89 million kilowatt hours of zero-emission energy through renewable energy certificates. The division also continues to convert the city's streetlight system to energy efficient light-emitting diode (LED) technology, which over time will both reduce power usage and improve system reliability through longer lasting LED bulbs. And, I'm proud to share that DOP has been recognized by the American Public Power Association as a platinum level Reliable Public Power Provider, meeting

numerous standards that epitomize the operations of an efficient, safe, and reliable distribution system.

In the Division of Water, the replacement and rehabilitation program continues to prioritize replacement of lines that have a history of breakage and leaks; in 2019, more than \$30 million was invested toward upgrading several neighborhood water lines as well as two transmission mains, further increasing the reliability of safe drinking water to our customers. The division is also continuing a series of upgrades at our three drinking water treatment plants to improve quality – including ultraviolet disinfection – and reliability, through the addition of standby generators that will allow water treatment to continue in the event of an extended power outage.

We're always looking for ways to help our ratepayers save money, and we were proud to join an innovative partnership launched in 2019 which accomplished that goal in several neighborhoods. The Community Energy Savers Program brought together our department, AEP Ohio, and Columbia Gas to offer not only home energy audits for customers, but each participant also generated points toward energy-saving upgrades at schools in their neighborhood. This unique collaborative effort helped customers and schools in the Linden, Franklinton, and Hilltop neighborhoods this past year, and will continue in 2020 with the Near East, Milo-Grogan, and University District/Italian Village neighborhoods.

Lastly, I want to express my heartfelt appreciation to former Division of Water Administrator Rick Westerfield (in photo, right), who wrapped up 35 years in public service when he retired in November. Thanks to his expertise and tireless efforts, dozens of Ohio communities are better places to live and raise a family. Over the years, water treatment technology has drastically changed the way we build the infrastructure that allows us to provide clean, safe drinking water to our ratepayers, and every step of the way, "Dr. Rick" helped usher in new eras of service. All of us thank Dr. Westerfield for his service to central Ohio, and we wish him the best in his well-deserved retirement.

Director Tracie Davies



# 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 2019, the following was done to protect local waterways: 5,168 site inspections on active construction sites, 313 inspections of post-construction best management practices, field screens of 538 storm sewer outfalls, and investigations of 263 reported 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 \$70,000 were issued for notices of violation. In coordination with Columbus Public Health, the Septic Tank Elimination Program connected 16 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. Through a partnership with Columbus Public Health, food sanitarians performed 3,761 restaurant inspections on behalf of the pretreatment

program. Pretreatment staff investigated 8 grease incidents, met with 30 food service establishments as part of the Fats, Oils and Grease Best Management Program, and distributed 229 door hangers in neighborhoods. This section recovered \$10,869 in costs from six sewer users associated with removing sewer blockages. \$4,250 in fines were issued for various violations.

The Backflow Compliance Office, under the Division of Water (DOW) 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 over 23,000 accounts with backflow prevention devices throughout the service area. About 8,400 of those are non-residential and nearly 14,900 are residential.



## EcoSmart Choice Program and Green Power

In addition to the 20% green purchase power component, the Division of Power (DOP) continued to offer the EcoSmart Choice opt-in program. In 2019, participants of the program purchased 89,380,000 kWh of zero-emissions energy through renewable energy certificates (REC). These RECs are the legal instruments used in renewable electricity markets to account for renewable electricity and

its attributes whether that renewable electricity is installed on the organization's facility or purchased from elsewhere. All city facilities served by DOP have been enrolled in the program at a 50% participation level, which includes the water and wastewater treatment plants.

## Public Education, Outreach and Partnerships

Membership in the city's GreenSpot web-based program, which began in 2008 and is housed and managed by the department, grew by 2,385 new members in 2019, bringing the total to 20,499. This includes 19,036 households, 1,320 business members and 143 community groups. Additionally, Columbus was rated as the number one "water-wise" city in the large city category in the Wyland Foundation's 2019 National Mayor's Water Conservation Challenge. The GreenSpot Advisory Board completed a GreenSpot New Homeowners' Green



Guide, GreenSpot restaurant leave-behind card, recycling video, and helped with recruiting new members.

387 “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 three reservoir litter cleanups (one at Hoover and

two at O’Shaughnessy), hosted a honeysuckle/invasive plant removal volunteer day at Griggs Reservoir, and sponsored an Eagle Scout project to plant a native plant buffer to protect eroding shoreline at Hoover Reservoir near the Buckeye Boat Club.

The PUP (Pick Up Poop) program encourages pet owners to clean up after their pets, which helps protect stormwater quality. The program gained 428 new pledges in 2019, bringing the new PUP pledge total to 6,340.

Several partnerships to promote water quality awareness continued. Through its agreement with the City of Columbus, Franklin Soil and Water Conservation District implements several stormwater education programs for Columbus residents. This year, 5,117 Columbus students participated in various programs and activities related to stormwater pollution, water quality, soils, and soil erosion. 1,486 Columbus residents participated in the “Get-Grassy!” lawncare education campaign



and the GreenSpot Community Backyards program, which provided 596 rebates for rain barrels or native plants.



# CAPITAL REINVESTMENT

## Division of Power

In 2019, DOP began finalizing the Smart Street Lighting implementation plan with consultant support. 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. The division expects to spend \$3 million annually on smart street lights and LED (light emitting diode) conversions until all city street lights are converted.

Throughout the year, crews converted 616 existing street lights to LED luminaires, updating 25 circuits. DOP also accepted 532 newly constructed LED street lights into our system. The following are some of the major street light projects for the year:

- Poindexter Phase 3
- Valley View Improvements
- Warner Road Phase 2
- Parsons and Hosack Improvements
- Milo-Grogan Improvements (shown in photo)
- Lockbourne and Refugee Road Improvements
- Cleveland Avenue and Schrock Road

Final design work to rehabilitate the department's five-megawatt hydroelectric plant in the O'Shaughnessy Dam wrapped up in 2019. The team advertised a Request for Statements of Qualifications. Construction for the hydro plant is expected to begin in 2020 and be complete in late 2021.

To improve overall reliability, DOP has a plan to update one underground and one overhead circuit annually. In 2019, design work was completed and bid out for the overhead circuit. This project is expected to cost \$2.4 million. Additionally, crews began work on an underground circuit; this work will be done all in-house and is set to complete in 2020.



## 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 and residential infrastructure improvements to solve 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.

Clintonville 1, the first of 21 Blueprint project areas, broke ground in 2017.



Construction of 423 rain gardens (see example in photo) and a wetland feature in Whetstone Park wrapped up in 2019, and the project began the second phase of implementation: lining individual home sewer laterals and assessing and implementing solutions for roof water redirection. In 2019, 1,084 sewer laterals had been lined and 1,009 homes had some or all downspouts redirected.

In 2019 Blueprint Columbus began installing sump pumps in the North Linden 1 project area, which will also begin green infrastructure construction in summer 2020. Blueprint has installed 646 sump pumps in residential homes in Clintonville 1 and North Linden 1.

**BLUE  
PRINT  
COLUMBUS**  
Clean streams.  
Strong neighborhoods.

For more information about Blueprint, please call 614-645-1253 or visit [www.columbus.gov/Blueprint](http://www.columbus.gov/Blueprint).

# CAPITAL REINVESTMENT

## Division of Sewerage and Drainage (continued)

### Sewer System Engineering Capital Improvements

#### Lockbourne Intermodal Sewer

The Lockbourne Intermodal Sewer was put into service in December. This 3.26 mile, 78" diameter sewer, installed by microtunnel and open cut methods, serves a 10,000 acre area southwest of Rickenbacker International Airport. The photo below shows when the tunnel boring machine made it to the end, called a "hole out."

#### Large Diameter Sewer Assessment

All sanitary and storm sewers greater than or equal to 36" in diameter are inspected under the Large Diameter Sewer Assessment Program. Projects to rehabilitate or replace sections found to be in poor condition are then designed and constructed. In 2019, shotcrete rehabilitation of the Alum Creek Trunk Middle Phase B was begun (photo to right) and Phase C was bid. Inspection and design on seven other large diameter sewer assessment projects continued in 2019.



#### Terrace/Broad Stormwater System Improvements

A new 66-78" diameter storm sewer on North Eureka Avenue and West Broad Street was completed in 2019. This project addresses chronic flooding on West Broad Street near its intersection with North Terrace Avenue and provides an outlet for flood waters from the area. The project is part of the stormwater capital improvement program to address flooding and stormwater infrastructure.

#### 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 basement sewer backups and sanitary sewer overflows (SSOs) in the area as well. The construction plans progressed through 95% completion and property acquisition began in 2018. Bidding of this important consent order sewer will take place in 2020 with construction beginning in early 2021, and completion scheduled for 2026.



### Wastewater Treatment Plant Capital Improvements

#### Chemically Enhanced Primary Treatment (CEPT)

This project provides the Southerly Wastewater Treatment Plant with the ability to treat additional wet weather flows and will increase total wet weather treatment capacity to 440 million gallons per day (MGD). The improvements include additional raw sewage pumping, screening, primary clarification, disinfection, de-chlorination, conveyance to the existing outfall structure, and gravity thickening. This project is being implemented by four construction contracts: Site Preparation, Preliminary Treatment, Clarification, and Disinfection; the first was completed in 2017. The remaining three met the OEPA consent order operational date in December, began their six-month demonstration period, and are scheduled for substantial completion in 2020.

#### 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 equipment. New composting equipment will allow for improved monitoring and optimized compost processing. The project completed detailed design in 2019 and is scheduled for construction in 2020.



### Jackson Pike Wastewater Treatment Plant Biosolids Land Application

This project will increase the plant's capacity to store biosolids and facilitate their maximum beneficial agricultural use. Four existing land application storage tanks will be rehabilitated, and pumping stations will be installed to a new loadout facility that will be used to fill trucks that will haul biosolids to area farm fields for application as a fertilizer. Construction Notice to Proceed was issued in 2019.

### Jackson Pike Wastewater Treatment Plant Cogeneration Facility

This project will design and install equipment for 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. Preliminary design began in 2017 and detailed design will continue into 2020.

### Jackson Pike Primary Clarifiers Electrical Upgrade

The primary clarification process is one of the initial treatment processes. It removes settleable 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. Construction of this upgrade was completed in 2019.

### Whittier Street Storm Tank Facilities and Equipment Upgrade

This facility is located on the Whittier Peninsula, adjacent to the Greenlawn Dam. Built in the 1930s, it has not had any significant upgrades since 1986. Equipment and instrumentation is nearing the end of its useful life and requires upgrades to remain operational. After installation of the OARS tunnel, the storm standby tanks are no longer needed. However, full rehabilitation of the gatehouse is needed to ensure continued operation of the sewer system. Detailed design was completed in 2019 and construction will be bid in 2020.

### Real Time Control Sewer Optimization

The goal of this project is to reduce combined sewer overflows by using real

time data to maximize storage and treatment of wet weather events. During 2019, installation of the basic framework needed for monitoring, reporting, and making decisions based on real time conditions found in the sewer system was performed. A dashboard was constructed to be used by plant staff for monitoring and understanding conditions in the sewer system, providing a two-hour prediction of future conditions at the headworks of the plant.



*Jackson Pike Digester Cover Replacement*

### Small Capital Projects

This program was utilized in 2019 to replace digester gas piping and valves and improve the lightning protection around Aeration Control Building A at the Jackson Pike Wastewater Treatment Plant. At the Southerly Wastewater Treatment Plant, a new water meter, vault, and backflow preventer were installed and the HVAC system was replaced.

### Roofing Replacement

This program was funded to address roofs that are approaching the end of their useful lives at various DOSD facilities. Replacement started in 2014 and will continue through 2030 under consecutive phases.

### HVAC and Air Purification

This program was funded to address the Jackson Pike and Southerly wastewater treatment plants, Sewer Maintenance Operation Center and the Compost Facility's HVAC and air purification units that are beyond their useful lives and difficult to repair or maintain. The program started in 2018 and will continue until 2022. Four HVAC construction contracts were underway in 2019.

### Facilities Equipment Maintenance

Approximately 11 department-wide maintenance contracts utilize operating funds to maintain, test, repair and/or replace support facility components, process and ancillary equipment, infrastructure, and building components. These contracts are highly effective because funding for repairs is established, resulting in a timely response to emergencies.

# 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 water 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 our future needs. Some of the major activities and accomplishments for 2019 are below.

### Water Distribution

In 2019, the Division of Water legislated over \$25 million in existing distribution infrastructure improvements through its Replacement and Rehabilitation 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 replacement and rehabilitation projects in 2019 included:

- Dewberry Drive Area Water Line Improvements, which included approximately 21,000 linear feet of new mains ranging in size between 6" and 8"
- Dresden Street Area Water Line Improvements, which included approximately 13,600 linear feet of new mains ranging in size between 6" and 12"
- Union Avenue Area Water Line Improvements, which included approximately 12,000 linear feet of new mains ranging in size between 6" and 8"

The Division of Water also legislated over \$5 million to replace transmission mains. These larger diameter water mains are critical in providing water to every customer and could cause wide spread water disturbances if damaged. Replacing and adding transmission mains ensures the infrastructure is reliable and adds redundancy. Major transmission main projects include:

- Olentangy River Road 24" Water Main Project, which included approximately 3,400 linear feet of new 24" main
- Mound District Booster Station 20" Discharge Line Project, which included approximately 5,700 linear feet of new mains ranging in size between 20-24"

### Henderson Road Booster Station

The Henderson District Booster Station received a significant upgrade in 2019. Most of the equipment in the station was from the original construction in 1965 and had reached the end of its useful service life. The building's roof was replaced and an electrical room addition was constructed. The pumps and process piping have been upgraded and new technologies are being implemented that should reduce the electricity required to pump water at the station.

### Westgate East Tank Replacement

The old Westgate East Tank was built in 1930 and was recently demolished. It had reached the end of its useful life and additional water storage was needed in the area.

The new Westgate East tank is double the size, with a capacity of two million gallons. It features a concrete column (left/center in photo) and painted steel bowl that holds the water. This composite tank is a new style for the City of Columbus and was chosen because it is more cost effective and should require less exterior maintenance than some of the other tanks seen around the city.



## Water Supply

The Division of Water operates an extensive water supply system consisting of our watersheds, reservoirs, dams, and water plants. The division made significant capital investments in these assets in 2019 to maintain a safe and reliable water supply and to prepare for future water supply needs.

## Watersheds, Reservoirs and Dams

- Completed construction of spillway improvements at the O'Shaughnessy Dam, including replacement of the flashboards, a new debris boom, and repair of downstream erosion protection.
- Started detailed design of boat launch improvements at the Griggs Reservoir.
- Continued detailed design of improvements to the O'Shaughnessy Dam Hydroelectric Facility.
- Continued detailed design work for the Hoover Dam Improvements Part 1 project, which will replace aging gates, valves, and other equipment inside the dam.
- Continued work on the Land Stewardship Update.
- Completed embankment repairs at the John R. Douth Upground Reservoir.

## Water Plants

At the Dublin Road Water Plant, substantial completion was achieved on Part 4 of the \$200 million dollar capacity increase project. Construction continued on the Ultraviolet (UV) Disinfection Improvements, where installation of the 78" yard piping was completed and structural modifications to the existing clearwell were started. Construction also continued on the Standby Power Project, which will improve the city's ability to provide water during extended electrical utility power outages. Both generators and the switchgear equipment were delivered to the site and the major ductbank runs were installed. Detailed design work was started on the clarifier replacement project.

Work was completed at the Hap Creman Water Plant on the Washwater Tank Rehabilitation, and construction continued on the UV Disinfection Improvements and the Slaker Replacement projects. On the UV project, five of the planned 24 UV reactors were installed, tested, and placed into service. Under the Standby Power Project, all three generators and the switchgear equipment were delivered to the site and the major ductbank runs were installed. Construction began on the Basin Concrete Rehabilitation, which is addressing age and weather related deterioration of the plant's treatment basins. Detailed design work began on the Hypochlorite Conversion Project, which will convert the plant from a chlorine gas

based disinfection process to a liquid hypochlorite based process, and on Part 2 of the Basin Concrete Rehabilitation.

At the Parsons Avenue Water Plant, detailed design continued on the Well Pump Replacement, the Lime Slaker Replacement and the HVAC Upgrades projects. Preliminary design work was completed on the Hypochlorite Conversion Project, which will convert the plant from a chlorine gas based disinfection process to a liquid hypochlorite based process. Work began on a supervisory control and data acquisition (SCADA) upgrade project, which will upgrade the computer hardware and software that operators use to monitor and control the treatment process.

Work on Part I of the Residuals Management Plan Update continued, including investigation of potential beneficial reuse markets and evaluation of implementation options.



*O'Shaughnessy Dam Spillway Improvements Project - Dam After Installation Of New Flashboards, Debris Boom, And Downstream Erosion Protection Repairs*

# CUSTOMER SERVICE & COMMUNITY RELATIONS

Customer services provided by 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.

The customer portal, originally rolled out in 2017, finished off the year with 45,488 customers enrolled. 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 that began in 2018 continued in 2019. It was made possible by an EcoSmart grant in partnership with the Mid-Ohio Regional Planning Commission and the Local Government Energy Partnership. Around 180 households received a credit of up to \$150 toward their city electric bill under that program in 2019.

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 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; in fact, the Joyce Avenue Water Tank pictured on the cover placed 5th nationally in an online contest mostly driven by social media. To see all winners, visit: <https://www.tnemec.com/about/tankoftheyear/>.

<b>CUSTOMER SERVICE HIGHLIGHTS</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
Total customer calls	438,245	409,810	402,514
Total field/meter related service calls	93,350	96,316	90,115
Low income water/sewer discount participants	5,679	5,459	5,401
Senior water discount participants	3,505	3,482	3,476
Senior power discount participants	205	197	190
<b>CUSTOMER ACCOUNTS BILLED</b>			
Water (includes contracted communities)	278,582	278,139	277,428
Sewer (includes contracted communities)	275,535	274,872	274,000
Stormwater	198,176	197,831	197,583
Power	15,895	14,950	13,487

Residents continued to benefit from the Project Dry Basement sewer backup prevention program, which began in 2004. 26 additional homes received backflow valves in 2019, bringing the total homes in the program to 1,045.

To learn more about these programs, please visit [columbus.gov/utilities](http://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.

On May 15th, approximately 644 fifth-grade students from Franklin County attended the 12th annual Central Ohio Children's Water Festival at the Franklin Park Adventure Center in Columbus. The festival promotes environmental awareness of our valuable water resources through interactive displays and hands-on workshops with fun presentations about drinking water, storm water and wastewater and specifics about the department's Division of Water and Division of Sewerage and Drainage. Photos to right show a class group and the Columbus Division of Water's award-winning Tap Team doing a demonstration for the students.

The 5th annual Race for Global Water 5k, which took place at Hoover Reservoir on October 5, was once again met with great support for the non-profit organization, Water for People. The event grew by 15% with 242 registrants, raised over \$12,100 for Water for People and helps raise awareness to the greater impact of proper water and sanitation access to underserved communities worldwide. The Columbus Race for Global Water was also integral in helping start the 1st annual Cleveland Race for Global Water in 2019.



# 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 15,895 business and residential accounts enjoy reliable city power, which allows the city to provide the necessary maintenance on and energy to over 57,975 street lights 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](http://columbus.gov/utilities).

POWER MAINTENANCE	2019	2018	2017
Wire/cable repaired (feet)	119,348	105,693	127,585
Transformer KVA installed/ removed	10,125	15,242	24,644
Luminaires repaired	1,334	1,600	1,917
Lamps repaired	7,389	6,212	6,397
Wooden poles replaced	251	245	247
Standard poles replaced	190	174	154
Total work orders	14,790	13,242	12,571

## Sewer Collection System

4,529 miles of city-owned sewers are maintained by the Sewer Maintenance Operations Center, the largest staffed section of the Division of Sewerage and Drainage. This responsibility includes 2,574 miles of sanitary sewers, 1,799 miles of storm sewers and 156 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 SCADA system, 20 regulators, 45 detention/retention basins, 15 siphons, 34 sluice gates, five bio-filters, the Alum Creek Storm Tank, numerous catch basins, ditches, flap gates, inlets and manholes, as well as the maintenance of the Franklinton Floodwall gates and 14 gate wells.

SEWER MAINTENANCE	2019	2018	2017
Repairs	1,419	1,558	1,557
Catch basins/inlets inspected	7,092	10,669	10,721
Catch basins, inlets, manholes cleaned	8,830	10,436	14,737
Miles power cleaned	166	223	310
Miles closed circuit televised	57	73	66
Total work orders	7,437	8,149	9,172

## Water Distribution System

Water Distribution Maintenance crews maintain 3,551 miles of waterline, which includes 2,528 miles in Columbus and 1,023 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) and one upground reservoir (John R. Douth); 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.)

WATER MAINTENANCE	2019	2018	2017
<b>Main Line Leak Repairs</b>			
Columbus	353	364	345
Suburban contracted	205	148	148
Total	558	512	493
<b>Taps/Service Lines</b>			
Repaired	224	270	243
Replaced	1,996	2,005	1,911
Cut-off at main	65	106	86
Put-in-shapes	204	202	725
New taps main line	63	27	62
<b>Valves</b>			
Repaired	75	55	88
Replaced	303	308	99
<b>Hydrants</b>			
Repaired	1,383	1,208	1,903
Replaced	61	81	233
Total work orders	4,176	4,384	3,752

# 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 over 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. To the right is a photo of ultraviolet treatment equipment being installed at Hap Cremean Water Plant in 2019.

- 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 37% of the water in the service area in 2019 and has a capacity of 80 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

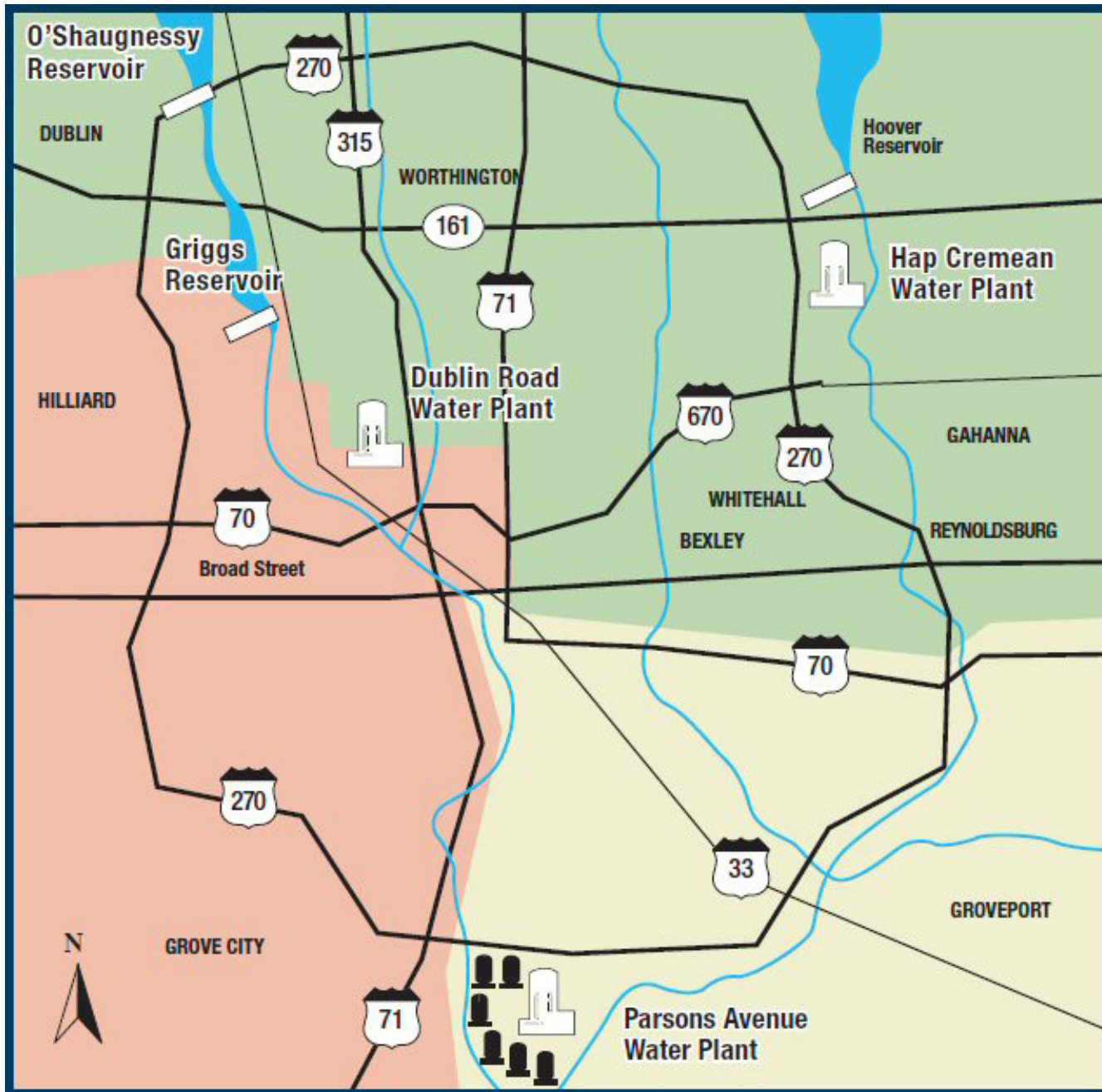
Big Walnut Creek, and supplemental water is pumped in from the Alum Creek Reservoir during dry periods as needed. This plant provided 46% of water in the service area and has a 125 MGD capacity.

- 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 17% 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 Consumer Confidence Report. Please visit [columbus.gov/drinkingwater/](http://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.



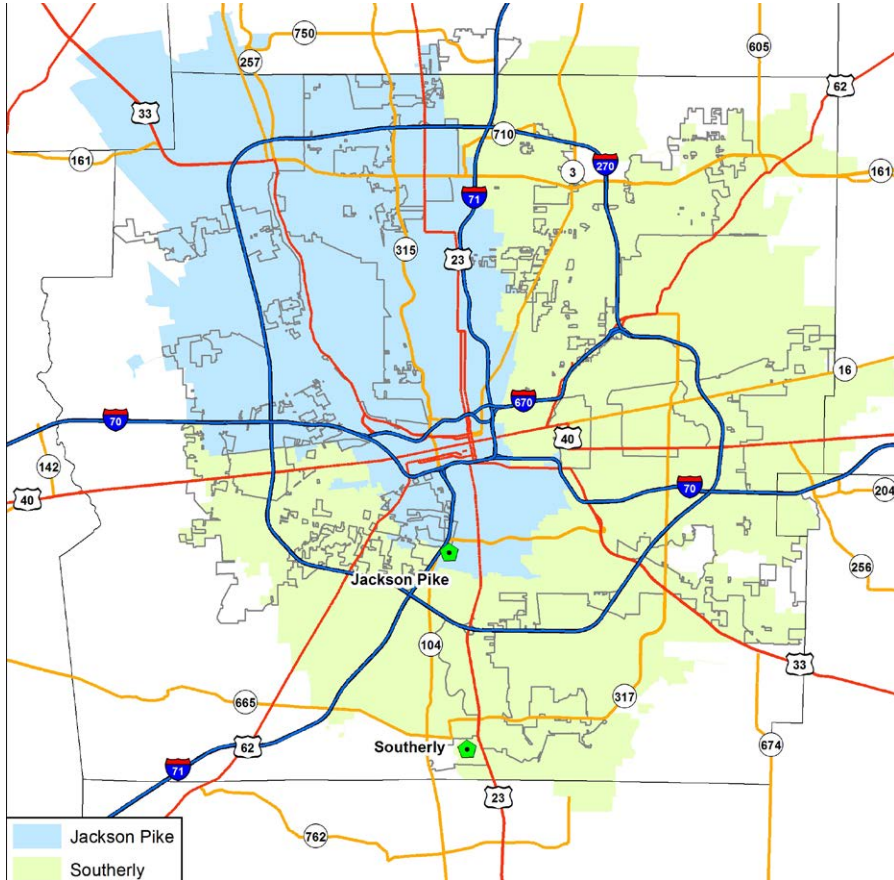
FINISHED DRINKING WATER SUMMARY	2019	2018	2017
Total billion gallons	50.6	48.8	48.6
Average million gallons per day	138.51	133.7	133.2
Estimated service population	1,233,879	1,215,363	1,196,848
Average per capita consumption gallons per day (Includes industry and business usage, total pumped divided by estimated population)	112	110	111
Central Ohio precipitation	44"	55"	47"





# 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 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



*Sludge digesters at Jackson Pike WWTP, visible from I-71 south of downtown*

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](http://columbus.gov/comtil) or call 614-645-3153.

<b>WASTEWATER TREATMENT SUMMARY</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
Total billion gallons	69	78	68
Average million gallons per day	188	212	185
Carbonaceous biological oxygen demand removed	98%	98%	98%
Suspended solids removed	98%	98%	98%
Central Ohio precipitation	44"	55"	47"
<b>Dry Tons Biosolids Handled</b>			
To compost	9,811	8,116	8,089
To beneficial reuse	15,084	16,594	16,513
Dry tons to energy (gas)	19,377	18,382	16,012
Total	44,272	43,092	40,614
<b>Compost Facility Production</b>			
Incoming sludge (wet tons)	48,597	43,993	43,181
Incoming sludge (dry tons)	9,811	8,116	8,089
Average percent dry solids	19%	19%	19%
Com-Til sold/donated (cubic yards)	45,222	39,470	57,168
Total yard waste received (wet tons)	10,092	9,041	9,421
Total Com-Til revenue	\$485,680	\$410,110	\$503,839

# REVENUES AND EXPENDITURES

## Division of Sewerage and Drainage

SANITARY ENTERPRISE FUND	2019	2018	2017
<b>Revenue</b>			
Beginning cash balance	\$133,536,335	\$121,566,039	\$102,682,301
Sewer service charges	\$219,059,242	\$219,020,009	\$219,479,928
Wet weather fees	\$38,343,891	\$37,515,626	\$36,935,862
Investment earnings	\$8,772,871	\$5,156,888	\$3,563,475
System capacity charges	\$8,821,484	\$7,334,835	\$8,533,390
Storm sewer reimbursements	\$8,706,623	\$7,956,033	\$8,723,621
Other	\$2,203,665	\$2,023,160	\$1,671,401
Debt refinancing	-	-	-
Adjustments	-	-	-
<b>Total revenue</b>	<b>\$285,907,777</b>	<b>\$279,006,552</b>	<b>\$278,907,677</b>
<b>Expenditures</b>			
Personnel	\$43,004,066	\$45,543,167	\$44,629,409
Supplies and materials	\$9,001,555	\$7,194,613	\$6,669,527
Services	\$33,564,350	\$33,187,201	\$36,511,049
Pro-rata	\$12,285,284	\$11,740,743	\$11,946,611
Other	\$254,728	\$130,263	\$69,116
Capital equipment	\$4,552,769	\$2,789,329	\$3,265,583
Debt service	\$154,145,816	\$156,266,048	\$149,726,109
Sewer share of DPU	\$12,303,740	\$10,184,891	\$7,206,537
<b>Total expenditures</b>	<b>\$269,112,309</b>	<b>\$267,036,256</b>	<b>\$260,023,940</b>
Ending cash balance	\$150,331,803	\$133,536,335	\$121,566,038

<b>STORMWATER ENTERPRISE FUND</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Revenue</b>			
Beginning cash balance	\$18,135,026	\$16,192,110	\$15,166,270
Storm sewer charges	\$41,575,640	\$41,075,693	\$40,759,716
Investment earnings	\$1,255,397	\$853,926	\$591,320
Storm penalties	\$397,433	\$407,529	\$403,465
Other	\$64,301	\$77,762	\$107,574
Debt refinancing	-	-	-
Adjustments	\$35,844	\$97,386	(\$71,114)
<b>Total revenue</b>	<b>\$43,328,615</b>	<b>\$42,512,296</b>	<b>\$41,790,961</b>
<b>Expenditures</b>			
Personnel	\$2,367,978	\$1,844,017	\$1,600,528
Supplies and materials	\$49,736	\$32,523	\$46,743
Services	\$871,451	\$1,023,027	\$2,344,399
Pro-rata	\$1,918,475	\$1,841,607	\$1,857,003
Capital equipment	\$90,233	-	\$11,495
Other	-	\$100,000	-
Debt service	\$14,897,029	\$14,194,892	\$14,531,415
Reimbursement to sanitary	\$8,706,623	\$7,956,033	\$8,515,414
Storm share of DPU	\$3,209,552	\$2,704,119	\$1,848,278
Department of Technology allocation	\$1,354,032	\$1,241,782	\$1,129,277
Street cleaning	\$9,846,358	\$9,631,381	\$8,880,572
<b>Total expenditures</b>	<b>\$43,311,467</b>	<b>\$40,569,381</b>	<b>\$40,765,122</b>
Ending cash balance	\$18,152,174	\$18,135,025	\$16,192,109

# REVENUES AND EXPENDITURES

## Division of Power

POWER ENTERPRISE FUND	2019	2018	2017
<b>Revenue</b>			
Beginning cash balance	\$26,644,261	\$24,828,231	\$19,382,418
Commercial	\$71,152,581	\$70,640,364	\$69,381,410
Residential	\$8,787,722	\$8,216,297	\$6,625,665
Investment earnings	\$1,069,554	\$676,213	\$371,973
Kilowatt hour tax reduction	(\$3,369,256)	(\$3,320,402)	(\$2,915,539)
Other	\$2,792,041	\$2,182,208	\$3,372,078
Power Cost Reserve Adjustment (PCRA)	\$6,347,455	\$8,279,789	\$7,067,914
Debt refinancing	-	-	-
Adjustments	-	-	-
Transfer in	-	-	\$3,167,645
<b>Total revenue</b>	<b>\$86,780,098</b>	<b>\$86,674,470</b>	<b>\$87,071,145</b>
<b>Expenditures</b>			
Personnel	\$10,455,132	\$10,338,536	\$9,996,989
Purchase power	\$52,838,931	\$56,703,554	\$55,073,868
Supplies and materials	\$1,320,421	\$1,845,916	\$1,511,066
Services	\$6,005,781	\$6,220,639	\$6,461,126
Pro-rata	\$3,852,824	\$3,779,225	\$3,745,181
Other	\$6,854	-	\$2,087
Capital equipment	\$4,176,267	\$3,429,664	\$2,498,104
Debt service	\$419,089	\$1,159,466	\$1,351,021
Power share of DPU	\$1,716,001	\$1,381,440	\$985,891
<b>Total expenditures</b>	<b>\$80,791,300</b>	<b>\$84,858,440</b>	<b>\$81,625,333</b>
Ending cash balance	\$32,633,059	\$26,644,261	\$24,828,231

## Division of Water

<b>WATER ENTERPRISE FUND</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Revenue</b>			
Beginning cash balance	\$83,093,704	\$70,950,155	\$57,879,781
Water charges	\$184,540,332	\$182,698,556	\$181,945,822
Water billing penalties	\$2,202,372	\$2,322,769	\$2,289,797
Investment earnings	\$5,450,284	\$3,079,718	\$2,173,129
System capacity	\$8,036,559	\$5,793,870	\$6,841,695
Sewer billing charges	\$1,870,856	\$1,579,911	\$6,883,319
Meter service fees	\$808,326	\$800,133	\$780,624
Other revenue	\$2,637,003	\$2,706,906	\$3,665,290
Debt refinancing	-	-	-
Adjustments	-	-	-
<b>Total revenue</b>	<b>\$205,545,733</b>	<b>\$198,981,864</b>	<b>\$204,579,675</b>
<b>Expenditures</b>			
Personnel	\$44,973,167	\$46,209,375	\$50,192,804
Supplies and materials	\$18,470,634	\$17,735,996	\$17,061,301
Services	\$24,956,400	\$24,069,700	\$24,720,283
Pro-rata	\$8,941,206	\$8,537,771	\$8,632,267
Other	\$23,080	\$669,026	\$51,995
Capital equipment	\$1,084,492	\$1,110,294	\$1,761,845
Debt service	\$79,057,864	\$79,577,678	\$81,472,156
Water share of DPU	\$10,741,559	\$8,928,474	\$6,193,827
Transfers	-	-	\$1,422,823
<b>Total expenditures</b>	<b>\$188,248,403</b>	<b>\$186,838,515</b>	<b>\$191,509,301</b>
<b>Ending cash balance</b>	<b>\$100,391,034</b>	<b>\$83,093,704</b>	<b>\$70,950,155</b>

