

COLUMBUS DEPARTMENT OF PUBLIC UTILITIES



ANNUAL REPORT  
2016

DEPARTMENT OF  
PUBLIC UTILITIES



Andrew J. Ginther  
Mayor



Tracie Davies  
Director

COLUMBUS SEWER AND WATER  
ADVISORY BOARD

Steven Gladman, Chairman

Hugh Dorrian, City Auditor

Tracie Davies, Director, Department of Public Utilities

Joe Lombardi, Director, Department of Finance and Management

James Bowman

Jackie Gutter

Danielle Maignan

Robert Patterson

DEPARTMENT OF PUBLIC UTILITIES  
DIVISION ADMINISTRATORS

Division of Power: Patti Austin, P.E.

Division of Sewerage and Drainage: John Newsome, P.E.

Division of Water: Rick Westerfield, P.E., Ph.D.



COLUMBUS CITY COUNCIL

from left: Shannon Hardin; Elizabeth Brown; Mitchell Brown;

Zach Klein, President; Michael Stinziano, Public Utilities Committee Chair;

Jaiza Page; and Priscilla R. Tyson, President Pro Tempore



# YEAR IN REVIEW

Our city's steady growth and the ever-changing landscape of regulatory requirements combine to present a challenging environment in which to maintain affordable utility services. Our Division of Water now provides reliable, safe drinking water to 1.2 million people, and counting. We are finishing a round of significant capacity and treatment improvements at all three drinking water plants while already looking ahead at what will be necessary to meet the needs of our community in future years. Not only will we continue to supply drinking water that meets or exceeds all federal standards, these treatment improvements will – once completed – provide additional barriers against the occasional taste and odor issues that result from algal blooms, and even remove nitrates that can enter our source waters during heavy rains.

Additional investments, all funded by our ratepayers, also continue in our wastewater collection and treatment systems. Our Division of Sewerage and Drainage is wrapping up the largest capital project in Columbus history: the OARS tunnel, which will contribute to a significantly cleaner Scioto River downtown when completed in 2017. Blueprint Columbus, which augments and takes the place of our original Wet Weather Management Plan, is investing directly in neighborhoods to address sewer overflows and will also bring jobs while repurposing several vacant lots to capture excess stormwater.

Details on these projects and others can be found in the pages ahead, but I would like to use this space to highlight two significant accomplishments by the team in our Division of Power. They operate and maintain the nearly 60,000 streetlights that keep our roads and highways illuminated, and do so through the sale of electricity to thousands of homes and businesses – no tax dollars or additional funding is used. This by itself is worth celebrating, but additionally last June, Columbus received the U.S. Department of Transportation and Vulcan Smart City Challenge Award. The Division of Power was a key player in the city's application. Aligning directly with this grant program, the division is committed to reducing its greenhouse gas emissions and diversifying its total energy mix through green power purchasing programs and enhancing the EcoSmart energy choice program for our customers so they can participate directly in the demand for sustainable power. The division has also committed to supporting co-generation projects at our two wastewater treatment plants, rehabilitating the O'Shaughnessy Dam hydroelectric plant, and converting city streetlights to energy efficient LED (light emitting diode) technology.

Speaking of streetlights, the division was also awarded the American Municipal Power/Ohio Public Power Promotion Award for producing a video that highlights the city's street lighting

program. This video details what kinds of lighting options are available and describes the assessment process for residents who wish to have decorative streetlights installed in their neighborhood.

Many cities charge user fees or a one-time special assessment for the installation, operation and maintenance of street lighting. However, Columbus has established a business model that eliminates these fees, and the video outlines how we and other municipal utilities serve the community by investing revenues into the cost of design, installation, operation, maintenance and repair of the public street lighting system.

In an effort to promote our street lighting programs to the public, the division worked with the city's Government Television staff to produce the award-winning informational video, available to view at [www.columbus.gov/streetlighting](http://www.columbus.gov/streetlighting), and on YouTube under Columbus Department of Public Utilities Street Lighting Program.

It is accomplishments like these that highlight the hard work taking place on a daily basis in all three of our divisions. We hope this report helps illustrate how our employees contribute to the quality of life in our community through providing reliable utility services.



# PROTECTING THE ENVIRONMENT

## Regulatory Compliance



The department maintained certification of its Environmental Management System (EMS) to the environmental standards established by the Organization of International Standards (ISO) 14001:2004 received in 2014, continuing 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.

A 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 2016, the following was done to protect local water supplies: 4,747 site inspections on active construction sites, field screening of 1,786 storm sewer outfalls, investigations on 203 reports of spills or suspected illicit discharges, and inspections at 296 businesses. \$13,250 was collected for notices of violation.

An Industrial Wastewater Pretreatment Section group in DOSD monitors discharges from over 100 permitted industries in the Columbus sewer system to ensure compliance with potential industrial contaminants. During 2016, in partnership with Columbus Public Health, 3,579 restaurant

inspections were done for the pretreatment program and 17 grease incidents were investigated. \$28,000 in notices of violation fines were issued from this DOSD section.

A Backflow Compliance Office under the Division of Water protects the water distribution system from contamination that could originate at the customers' premises. The office tracks and enforces installation and annual testing for backflow prevention devices at nearly 22,000 properties throughout the service area.

## Public Education and Engagement

- Membership in GreenSpot's web-based program, which began in 2008, grew by 2,040 households and 64 businesses in 2016, bringing the total to 14,266 homes and 1,224 businesses in central Ohio and 129 community groups. A new on-line feature allows members to track commitments and log data. More than 400 GreenSpot Kids books were distributed to families at various events. The 2016 GreenSpot Sustainability Initiative class graduates include: Goodwill Industries, Children's Hunger Alliance, Ohio History Connection, Mars PetCare US, Nationwide Children's Hospital, and CT Consultants. The Ohio State University School of Environment and Natural Resources hosted the GreenSpotLight Celebration where Mayor Ginther presented awards to Nationwide Insurance, the Market Italian Village, and Coldwater Consulting, LLC.
- Storm Drain Marking - 635 "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.
- Litter Cleanups - five waterway or reservoir litter cleanups were either organized or promoted by the department in 2016. Two were part of



Central Ohio River Pride month in June. Participants included Adena Brook Community, Friends of Alum Creek and Tributaries, Friends of the Lower Olentangy Watershed, and the Department of Public Utilities (two reservoir cleanups).

- Each year volunteers devote time and energy to benefit the health of Columbus' reservoirs. From scout troops who collect litter from the shorelines, to a high school student who sought to make a lasting impact by developing a solution to litter generated by shoreline anglers, volunteers are making a difference at the reservoirs. One group in particular has shown a sustained commitment to the problem of invasive species. Honeysuckle is an invasive plant with aggressive growth that can displace valuable native vegetation. For the past 11 years, a group of volunteers from BMW Financial Services has worked, in cooperation with the City and Friends of the Scioto River, to remove honeysuckle from Griggs Reservoir parkland. Their efforts have allowed a restoration and reforestation of approximately 20 areas of parkland.

### Partnerships

Several partnerships to promote water quality awareness continued. Franklin Soil and Water Conservation District educated residents, school groups and provided resources through the GreenSpot Backyards program and Get Grassy campaign; Central Ohio Watershed Council met regularly with the director's office to share information on water quality-related topics; and the department continued its sponsorship of and partnership with the Mid-Ohio Regional Planning Commission's Greenways Water Quality group. More than 400 households received either a rain barrel, compost bin, or native plants through the GreenSpot Backyard Conservation cost share program.



Mayor Ginther and Tama Ricks with The Market Italian Village.

# CAPITAL REINVESTMENT

## Division of Power

The Streetlight Engineering Design Section was responsible for overseeing the installation of 394 new streetlights in 2016. The division is moving forward with installing new energy efficient LED (light emitting diode) lighting that will have the latest technology built in to service future expansions with digital controls. During the year a pilot program reached out to the community asking their opinion on which LEDs they preferred. The two options were 3,000 Kelvin (producing a more yellow/gold appearance) or 4,000 Kelvin (producing a more white appearance). The results showed the community preferred the 3,000K lights, which has become the new LED standard throughout the city.



New streetlights on Buffalo Parkway on the north side.



New decorative streetlights on East 11th Avenue in the Milo Grogan area.



The following major streetlight projects were constructed and are now incorporated in the city's streetlight grid system:

- North High Street - Flint Road to Lazelle Road
- Weinland Park - Fifth Avenue
- Weinland Phase 3b
- Wall Street
- Morse and Sunbury Roads,
- Rail Street Phase 2
- Big Run Ridge 3-1
- Milo-Grogan - Fifth Avenue between Cleveland Avenue and Corrugated Way
- Milo-Grogan - and also Third Avenue and Cleveland Avenue
- East Eleventh Avenue
- Easton Square Phase 2
- West Broad Street Improvements
- North High Street - west side, Woodruff Avenue to Lane Avenue

The section also performs plan reviews for public and private work. The section reviewed 1,417 permit and improvement plans for regulatory compliance.



New decorative streetlights on N. High Street in the OSU area.

# CAPITAL REINVESTMENT

## Division of Sewerage and Drainage

### Blueprint Columbus (Integrated Plan)

An alternative to portions of the Wet Weather Management Plan submitted to the Ohio EPA in 2005 to address sewer overflows (as a result of consent orders with the state in 2002 and 2004), the final Blueprint plan was approved in 2015. The plan contains greener alternatives to solving wet weather problems instead of building more sewer tunnels. The four main strategies, or “pillars,” in the plan include: home sewer lateral lining, roof water redirection, sump pumps, and green solutions. Achievements in 2016 included:

- Sump Pump Program - A contract was awarded to the Ohio Basement Authority to install sump pumps in eligible homes in the Clintonville 1 Blueprint areas and 26 sump pumps were installed in 2016.
- Public Outreach  
RAMA was awarded a three-year contract for community outreach. A Blueprint website and social media pages and a dedicated phone line (614-645-1253) were created to keep residents informed of construction activities.  
In the Linden area, the



outreach team conducted informational interviews and participated in neighborhood events. In the Clintonville 1 project area, public comment was solicited from the 3,062 residents and property owners and incorporated in the final designation order, and numerous other outreach activities were done, including an open house. Brainstorm Media produced five videos that will help residents better understand the four pillars and know what to expect when finished.

- Partnering - The city partnered with The Ohio State University for monitoring of the green infrastructure to be constructed. The team installed flow and water quality monitoring equipment and began sampling shortly thereafter to establish baseline data. An initial round of surveys was sent to residents of one of the project areas and a control area. These surveys are part of the effort to study the social, ecological, and economic effects of green infrastructure.
- Lower Olentangy Tunnel - The design professional contract was executed and preliminary geotechnical investigations were conducted. Computer hydraulic modeling of the various tunnel alignments and connections to optimize tunnel performance and ensure requirements are met by the selected design were also done.
- Olentangy-Scioto-Interceptor-Sewer Augmentation Relief Sewer (OARS) - Construction was completed for the Pump Electric Building, Diversion Structure, Flow Diversion Extension Structure, and River Outfall Structure. Final completion is expected in 2017.
- Chemically Enhanced Primary Treatment (CEPT) - The detailed design of the Site Preparation and Improvements, Preliminary Treatment, Clarification, and Disinfection was done in 2016.
- Blueprint Clintonville 1 - Engineering design and plan development continued, along with Ohio EPA loan requirement coordination. Three projects were advertised and two were awarded.
- Blueprint North Linden 1 - Engineering design work was underway.

- Blueprint Hilltop 1 + Miller-Kelton - Mainline sewer lining got underway.
- Blueprint 5th by Northwest + W. Franklinton + Hilltop 4 - Professional design service selections were made for the project sub-areas.
- Blueprint Clintonville 3 - The design procurement process was started, and consulting teams were selected for design.
- Moler Street Overflow Intercepting Sewer - Engineering proposals were received, evaluated and a design professional was selected.

### Wastewater Treatment Capital Improvements

Both the Jackson Pike and Southerly wastewater treatment plants produce large amounts of methane-rich biogas from the anaerobic digesters. A feasibility study was done on beneficially using the biogas as fuel in large electrical cogenerators known as Combined Heat and Power. These cogenerators would burn the biogas as fuel in a large engine that drives a generator to produce electricity used at the plants, and they would also produce hot water and steam used in boilers for building and process heat. Professional engineering design services got underway for a complete and fully functional cogeneration system at Jackson Pike and Southerly. After the cogeneration systems are built and fully operational, they are expected to consume all of the biogas being produced, and provide about half of the total electricity used at each plant. The systems are relatively large and complex and the generators will produce about 3 million watts of output power. The systems will include substantial amounts of equipment to clean the biogas of contaminants that might harm the large engines. The connections for hot water and steam into the plant boiler systems will be substantial, and significant amounts of instruments and controls equipment will be required.





# CAPITAL REINVESTMENT

## Division of Water

### Water Supply

The Division of Water (DOW) operates and maintains an extensive water supply system consisting of our watersheds, reservoirs, dams, and water treatment plants. Over the past year, the DOW made significant capital investments in these assets to maintain a safe and reliable water supply and to prepare for future water supply needs. Some of the major activities and accomplishments for 2016 are summarized below.

#### Watershed, Reservoirs and Dams

- Construction of roadway improvements at Griggs Reservoir was completed to improve water quality and enhance public access.
- Reservoir pollution reduction improvements were constructed at the Twin Bridges facility located on Hoover Reservoir. The improvements will assist in reducing erosion/stormwater pollutant impacts to the reservoir and will also improve enjoyment by the public.
- Detailed design was started on improvement needs for the O'Shaughnessy, Hoover, and Griggs dam facilities. O'Shaughnessy improvements will be in accordance with Federal Energy Regulatory (FERC) regulations. A study was completed to assess the condition of the O'Shaughnessy hydroelectric facility.
- Construction continued on the Alum Creek Pump Station Improvements project, to replace aging pumping equipment and making needed renovations to the pump building.
- The reservoir bathymetrics project began. The study for Griggs Reservoir was completed.

#### Water Plants

At the Dublin Avenue Water Plant (DRWP), construction continued on Parts 1, 2, 3, and 4 of the DRWP Capacity Increase Project. Several milestones

were reached in 2016 including substantial completion of the new Ozonation and Recarbonation Facility. All 18 filters were brought online with new underdrains and new granular activated carbon media. The new ion exchange facility was put under roof and major equipment items were delivered and partially installed. When the projects are completed in 2018, capacity will increase to 80 million gallons per day, provide new treatment processes to enhance water quality, and increase treatment reliability. The total construction cost for all contracts is estimated at \$200 million. Detailed design work continued on the standby power project. Equipment procurement for the ultraviolet (UV) disinfection project was completed and detailed design work started.

At the Hap Cremean Water Plant (HCWP), construction continued on the \$70 million Treatment Improvements Project, where a new recarbonation/ozonation/biologically active filtration process was brought online to enhance water quality and improve process control. Construction was completed on the Alum Feed Improvements Project. Construction began on a \$5 million project to renovate the alum, fluoride and zinc orthophosphate storage facilities, and detailed design was completed for a project to replace outdated lime slaking equipment. Detailed design work continued on the standby power project. Equipment procurement for the UV disinfection project was completed and detailed design work started.

At the Parsons Avenue Water Plant (PAWP), construction continued on the \$65 million PAWP Treatment Upgrades Project, which will renovate or replace aging treatment structures, equipment and systems, and improve treatment process reliability. Construction also continued on the Collector Well #103 project to replace two aging well pumps and add one additional pump to increase the firm capacity of this collector well. Also, a study continued to explore options for future additional groundwater supply.

## Water Distribution

The division invests in existing distribution infrastructure through its Replacement and Rehabilitation (R&R) Program, which 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 2016 included the following projects: Deland Avenue Area Water Line Improvements project, which included approximately 12,000 linear feet of new mains ranging in size between 8" and 12"; Simpson Drive Area Water Line Improvements project, which included approximately 15,000 linear feet of new mains ranging in size between 6" and 8"; E. Deshler Avenue Area Water Line Improvements project, which included approximately 12,500 linear feet of new mains ranging in size between 6" and 12"; and Berrell Avenue Area Water Line Improvements, which included approximately 12,700 linear feet of new mains ranging in size between 6" and 12". Overall, approximately \$11 million was invested toward water main replacement.

Two water storage tanks located on Fairwood Avenue were demolished as part of a capital improvement project, because they were no longer being utilized. Improvements were made to two water storage tanks along State Route 710 as part of the division's annual maintenance program to extend service time and improve reliability. A project got underway that includes the demolition of an existing storage tank located in Westgate Park, as the tank has exceeded its useful life. A replacement tank will be constructed as part of a future project. A project was also constructed in 2016 that installed stand-by power generators at both the Cleveland Avenue and Morse/Hamilton water booster stations.



New ion exchange facility at Dublin Road Water Plant being put under roof.



# CUSTOMER SERVICE & COMMUNITY RELATIONS

Services provided include customer support for water, sewer, stormwater and electricity accounts, and, in the case of water and sewer services, also to our contracting communities. A 50-person call center answers billing questions, schedules service calls, and helps resolve issues. Customers can pay their bills on-line, over the phone, by mail and in person at various locations.

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.

The Damage Protection section responded to 147,883 request-to-locate tickets from the Ohio Utilities Protection Service and made 39,216 site visits to locate underground utilities prior to excavation.

An online test submittal process initiated by the Backflow Compliance Office

led to a customer service improvement of what used to be up to a three-week backflow test processing time frame down to one business day. This helped reduce the number of past due testing notices and paper usage. The Ohio EPA and Ohio Administrative Code requires that backflow testing be done on all backflow prevention devices to prevent water contamination into the public water system.

Residents continued to benefit from the Project Dry Basement sewer backup prevention program, which began in 2004. During its 11th full year, 49 new valves were installed, bringing the total to 924 homes in the program.

The Communications Office coordinated public meetings, media and public records requests, printed materials and reports, and OEPA required notifications. The Sustainability Office coordinated various public meetings and outreach related to the Columbus Blueprint initiative. Facebook and Twitter social media followers continued to grow.

Customer Service Highlights	2016	2015	2014
Total customer calls	403,192	442,845	459,719
Total field/meter related service calls	101,193	106,923	116,319
Low income water/sewer discount participants	5,833	5,884	5,868
Senior water discount participants	3,424	3,288	3,068
Senior power discount participants	186	188	185
<b>Total customer accounts billed:</b>			
Water (includes some contracted communities)	276,534	275,723	281,278
Sewer (includes some contracted communities)	272,968	271,251	271,947
Stormwater	197,754	197,020	197,571
Power	12,934	12,497	12,151

## 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 also be a major partner in the Children's Water Festival event, designed to educate elementary school children about the importance of protecting our water supplies. About 500 local 5th grade students were provided a very fun and educational day, held at Franklin Park Adventure Center.



Customer Service Representative Brandi Vance.



Mayor Ginther and the 2016 Children's Water Festival poster winner Madison McKeller and her teacher Heather Giles.



# MAINTAINING OUR SYSTEMS

## Power Distribution System

The Division of Power maintains a network of substations, transmission lines, distribution and street lighting circuits throughout Columbus. Over 12,000 business and residential accounts enjoy reliable city power, which allows the city to provide the necessary maintenance and energy to over 56,000 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.

During 2016, the division received most of its power supply from American Municipal Power, and small portions from New York Power Authority (hydroelectric), and Central Ohio BioEnergy, LLC. Conditions were conducive for the O'Shaughnessy dam's hydroelectric unit to operate during two months of the year to produce a \$9,250 financial credit, benefitting our customers.

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

## Sewer Maintenance Operations Center

4,467 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 2,528 miles of sanitary sewers, 1,779 miles of storm sewers and 160 miles of combined sewers. An additional 51 miles of county-owned sewers are maintained under contract.

Other SMOC responsibilities include 12 sanitary and 16 storm pump stations monitored by a Supervisory Control Data and Acquisition system, 17 regulators, 27 detention/retention basins, 15 siphons, six sluice gates, five bio-filters, the Alum Creek Storm Tank, numerous catch basins, ditches, flapgates, inlets and manholes, as well as the maintenance of the Franklinton Floodwall gates and 14 gate wells.

A summary of repairs made in 2016 are in the chart to the right.

## Water Distribution System Maintenance

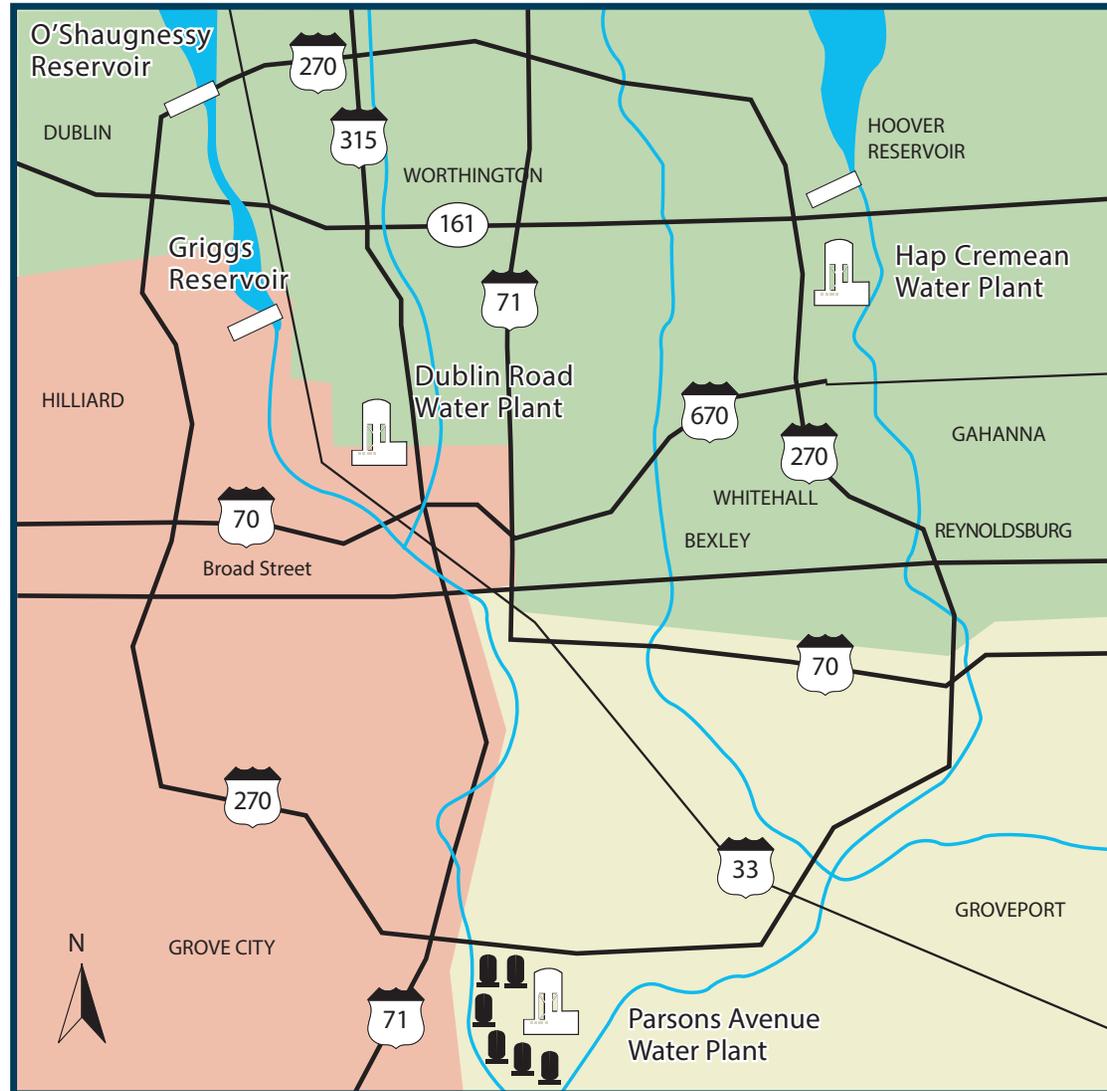
Water Distribution Maintenance crews maintain 3,528 miles of waterline, which includes 2,521 miles in Columbus and 1,007 miles in contracted suburban service areas. A summary of the repairs made in 2016 are in the chart to the right. Included in the waterline repairs are leaks discovered by pitometer survey crews, which perform proactive testing to locate underground system leaks that do not surface. 48 of the leaks were identified from the pitometer group, which helped reduce water loss by 1.6 million gallons per day.

Power Maintenance Activity	2016	2015	2014
Wire/Cable Repaired (feet)	117,414	108,843	107,562
Transformer KVA	11,014	20,643	10,899
Luminaires	1,940	1,707	1,304
Lamps	6,412	6,719	5,682
Wooden Poles	244	276	237
Standard Poles	175	164	137
<b>Total Service Requests</b>	<b>9,140</b>	<b>10,199</b>	<b>10,607</b>



Sewer Maintenance	2016	2015	2014
Repairs (manholes, catch basins, etc)	1,551	1,556	1,711
Catch basins inspected	10,120	14,221	14,161
Catch basins, inlets, manholes cleaned	13,340	12,953	13,644
Miles of sewer power cleaned	292	313	340
Miles of sewer closed circuit televised	63	74	73
Total work orders completed	9,043	10,604	9,530

Water Maintenance	2016	2015	2014
<b>Main Line Leak Repairs:</b>			
Columbus	408	387	475
Suburban Contracted Areas	204	200	239
Total	612	587	714
<b>Taps/Service Lines:</b>			
Repaired	65	94	116
Replaced	688	707	664
Cut-Off at Main	84	84	95
Put-in-Shapes	478	562	402
New Taps Main Line	18	17	11
<b>Valves:</b>			
Repaired	70	79	78
Installed/Replaced	170	219	132
<b>Hydrants:</b>			
Repaired	1,792	2,148	1,184
Replaced	169	53	55
Total work orders completed	4,383	4,554	3,461



The Columbus Department of Public Utilities is regulated by the Ohio Environmental Protection Agency.



# 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.

The source of Columbus' drinking water includes 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. Douth Upground Reservoir in Delaware County. Put into service in 1975, it replaced a 1908 plant, which had replaced the first water treatment works from 1871. This plant provided 33% of

the water in the service area and has a capacity of 65 million gallons per day (MGD).

- The Hap Cremean Water Plant on Morse Road, put into service 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 51% of water in the service area in 2016 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 and mailed to customers annually, known as the Drinking Water Consumer Confidence Report. Please visit our Document Library at [columbus.gov/utilities](http://columbus.gov/utilities) to view the current report or request a copy by calling Customer Service at 614-645-8276. For water quality questions, please call our Water Quality Assurance Lab at 614-645-7691.

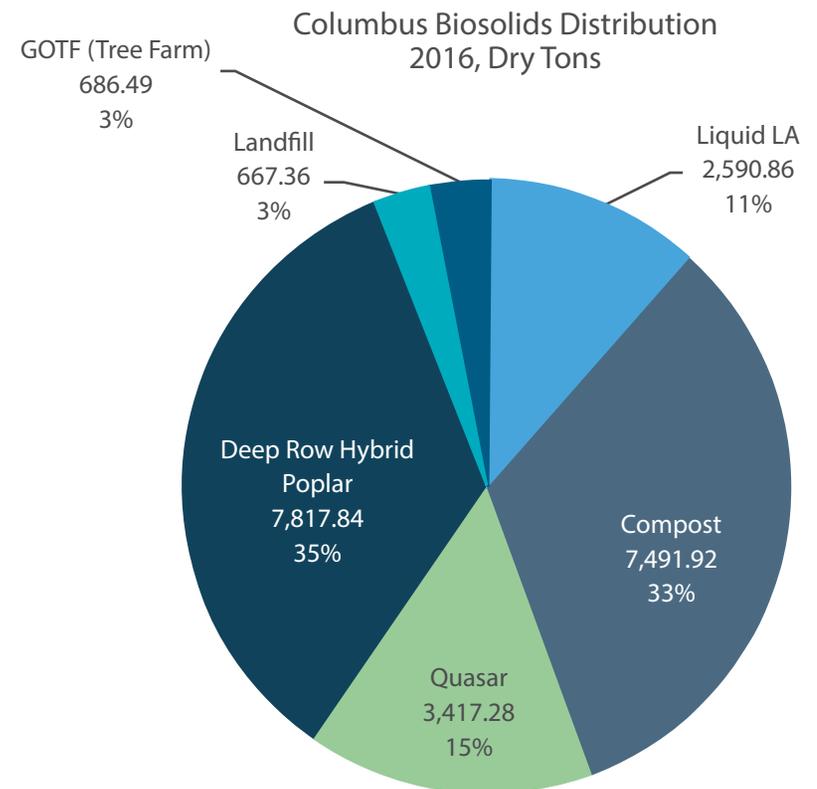
Finished Drinking Water Summary	2016	2015	2014
Total billion gallons	49.5	48.7	49.4
Average million gallons per day	135.1	133.4	135.3
Estimated service population	1,178,332	1,159,817	1,152,993
Average per capita consumption (gallons per day)	115	115	117
Central Ohio precipitation	38"	45"	38"

# 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 gallons per day (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 and 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>2016</b>	<b>2015</b>	<b>2014</b>
Total billion gallons	61	65	64
Average million gallons per day	176	179	184
Carbonaceous biological oxygen demand removed	98%	98%	98%
Suspended solids removed	97%	97%	97%
<b>Total dry tons bio-solids handled:</b>	<b>39,559</b>	<b>42,124</b>	<b>31,962</b>
Composted	7,492	8,424	7,820
Liquid land application	2,591	2,278	2,742
Incinerated	0	2,475	3,001
Solids to energy	17,574	17,202	16,173
To Quasar (converts biosolids/waste to electricity)	3,417	3,741	4,200
To mulch (deep row hybrid poplar)	7,818	6,960	6,800
Landfill	667	1,044	0
Central Ohio precipitation	38"	45"	38"
<b>Compost Facility Production</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Incoming sludge: wet tons	41,132	44,766	41,339
Incoming sludge: dry tons	7,492	8,424	7,820
Average percent dry solids	19%	19%	19%
Com-Til sold/donated (cubic yards)	42,038	65,455	29,237
Total yard waste received (wet tons)	9,543	8,617	8,868
<b>Total Com-Til revenue</b>	<b>\$425,702</b>	<b>\$411,345</b>	<b>\$376,327</b>



# REVENUES AND EXPENDITURES

## Division of Sewerage and Drainage

(sanitary and stormwater enterprise funds)

Sanitary Enterprise Fund	2016	2015	2014
<b>Revenue</b>			
Beginning cash balance	\$89,939,630	\$102,732,941	\$119,610,557
Sewer service charges	\$205,929,376	\$199,254,808	\$193,162,978
Wet weather fees	\$35,406,627	\$34,327,463	\$32,587,890
Investment earnings	\$2,538,990	\$2,074,453	\$1,654,336
System capacity charges	\$8,530,324	\$5,879,322	\$5,971,738
Storm sewer reimbursements	\$7,194,461	\$8,205,977	\$8,307,135
Other	\$1,592,486	\$2,053,885	\$2,761,579
Debt refinancing	-	-	-
Adjustments	-	-	-
<b>Total revenue</b>	<b>\$261,192,264</b>	<b>\$251,795,908</b>	<b>\$244,445,656</b>
<b>Expenditures</b>			
Personnel	\$42,984,896	\$43,107,023	\$43,238,791
Supplies and materials	\$6,385,448	\$7,054,834	\$6,292,346
Services	\$33,710,793	\$33,782,482	\$34,731,022
Pro-rata	\$11,300,796	\$11,269,710	\$10,908,572
Other	\$25,222	\$8,580	\$762,748
Capital equipment	\$3,390,645	\$3,387,250	\$2,349,448
Debt service	\$143,921,450	\$145,232,533	\$123,552,630
Sewer share of DPU	\$6,783,387	\$6,746,805	\$5,914,185
<b>Total expenditures</b>	<b>\$248,502,637</b>	<b>\$250,589,217</b>	<b>\$261,323,273</b>
<b>Ending cash balance</b>	<b>\$102,629,257</b>	<b>\$103,939,632</b>	<b>\$136,306,471</b>



Stormwater Enterprise Fund	2016	2015	2014
<b>Revenue</b>			
Beginning cash balance	\$11,808,902	\$11,172,543	\$10,323,225
Storm sewer charges	\$40,721,789	\$38,630,233	\$37,877,002
Investment earnings	\$443,463	\$309,719	\$206,570
Storm penalties	\$203,173	\$423,912	\$458,843
Other	\$11,004	\$17,200	\$40,742
Debt refinancing	\$415,088	-	-
Adjustments	(\$535,536)	-	-
<b>Total revenue</b>	<b>\$41,258,981</b>	<b>\$39,381,064</b>	<b>\$38,583,158</b>
<b>Expenditures</b>			
Personnel	\$1,617,481	\$1,585,641	\$1,391,740
Supplies and materials	\$12,464	\$14,593	\$11,317
Services	\$1,737,982	\$1,829,451	\$19,015,839
Pro-rata	\$1,827,449	\$1,771,305	\$1,702,369
Capital equipment	-	\$29,191	\$28,775
Other	-	\$19,933	\$230,526
Debt service	\$13,690,868	\$13,714,664	\$13,971,135
Reimbursement to sanitary	\$7,194,461	\$8,205,977	\$8,307,135
Storm share of DPU	\$1,755,258	\$1,737,953	\$1,382,139
Dept of Technology allocation	\$1,202,532	\$1,071,318	\$1,182,861
Street cleaning	\$8,863,117	\$8,764,678	\$7,840,674
<b>Total expenditures</b>	<b>\$37,901,612</b>	<b>\$38,744,706</b>	<b>\$37,733,840</b>
<b>Ending cash balance</b>	<b>\$15,166,271</b>	<b>\$11,808,902</b>	<b>\$11,172,543</b>



# REVENUES AND EXPENDITURES

## Division of Power

Power Enterprise Fund	2016	2015	2014
<b>Revenue</b>			
Beginning cash balance	\$17,109,468	\$16,777,156	\$11,350,015
Commercial	\$65,710,968	\$64,635,720	\$65,340,363
Residential	\$6,471,399	\$6,243,940	\$6,152,089
Investment earnings	\$270,477	\$221,680	\$155,732
Kilowatt hour tax reduction	(\$3,132,269)	(\$3,199,955)	(\$1,578,866)
Other	\$2,427,829	\$3,353,601	\$3,921,499
Power Cost Reserve Adjustment (PCRA)	\$8,391,142	\$7,700,531	\$10,261,220
Debt refinancing	-	-	-
Adjustments	-	-	-
<b>Total revenue</b>	<b>\$80,139,546</b>	<b>\$78,955,697</b>	<b>\$84,252,037</b>
<b>Expenditures</b>			
Personnel	\$10,068,552	\$10,133,516	\$9,303,940
Purchase power	\$51,240,460	\$52,217,514	\$54,297,039
Supplies and materials	\$1,190,680	\$1,196,778	\$1,045,345
Services	\$6,808,513	\$5,107,342	\$4,536,732
Pro-rata	\$3,534,805	\$3,610,380	\$3,734,812
Other	\$2,003	\$5,295	\$258,239
Capital equipment	\$2,473,348	\$2,206,618	\$1,445,493
Debt service	\$1,595,286	\$3,213,430	\$3,469,139
Power share of DPU	\$952,948	\$932,513	\$734,156
<b>Total expenditures</b>	<b>\$77,866,595</b>	<b>\$78,623,386</b>	<b>\$78,824,895</b>
<b>Ending cash balance</b>	<b>\$19,382,420</b>	<b>\$17,109,468</b>	<b>\$16,777,156</b>



## Division of Water

Water Enterprise Fund	2016	2015	2014
<b>Revenue</b>			
Beginning cash balance	\$39,948,078	\$41,037,605	\$43,997,405
Water charges	\$176,211,914	\$163,490,335	\$159,410,225
Water billing penalties	\$2,182,342	\$2,111,304	\$2,196,140
Investment earnings	\$1,770,450	\$1,539,989	\$1,450,541
System capacity	\$5,923,765	\$5,858,247	\$4,947,609
Sewer billing charges	\$6,039,904	\$6,657,256	\$6,301,390
Meter service fees	\$832,510	\$923,164	\$941,984
Other revenue	\$5,682,480	\$5,196,124	\$5,603,011
Debt refinancing	\$3,415,150	-	-
Adjustments	(\$3,306,771)	-	-
<b>Total revenue</b>	<b>\$198,751,744</b>	<b>\$185,776,419</b>	<b>\$180,850,900</b>
<b>Expenditures</b>			
Personnel	\$48,407,591	\$47,845,558	\$45,740,910
Supplies and materials	\$16,551,330	\$20,357,741	\$20,887,951
Services	\$22,823,417	\$22,546,930	\$23,086,152
Pro-rata	\$8,569,411	\$8,227,858	\$8,049,951
Other	\$47,350	\$362,549	\$1,052,443
Capital equipment	\$2,826,042	\$1,821,245	\$1,912,640
Debt service	\$75,629,981	\$74,869,414	\$78,472,631
Water share of DPU	\$5,870,021	\$5,767,842	\$4,608,021
Transfers	\$94,897	-	-
<b>Total expenditures</b>	<b>\$180,820,040</b>	<b>\$181,799,137</b>	<b>\$183,810,699</b>
<b>Ending cash balance</b>	<b>\$57,879,782</b>	<b>\$44,948,077</b>	<b>\$41,037,605</b>



Sunset at John R. Doutt Upground Reservoir.