

ANNUAL REPORT 2015





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2015 in review

FROM THE DIRECTOR

Our primary goal at the Columbus Department of Public Utilities has always been, and will continue to be, delivering the highest quality water, wastewater, and electricity services at affordable rates for residents and businesses. Achieving this requires not only maintaining current infrastructure and expanding facilities to meet the needs of a growing region, but doing so in an environmentally responsible way, and with an eye toward emergency preparedness.

The department maintained certification of its Environmental Management System (EMS), and also successfully completed internal EMS audits at four of our 10 facilities, and environmental compliance audits at every facility. Ohio Environmental Protection Agency (OEPA) compliance inspections conducted at our two wastewater treatment plants and Compost Facility also produced favorable results. We continue to implement capital projects and operational controls to address activities which could most significantly affect the environment, including major upgrades to all three drinking water plants, deactivating all remaining sewage sludge incinerators, and completion of the tunneling phase of the Olentangy-Scioto-Interceptor-Sewer Augmentation Relief Sewer (OARS).

The OARS tunnel is the single largest piece of our Wet Weather Management Plan to reduce sewer overflows. A major milestone was achieved in September with completion of mining operations. When finished in 2017, it will lead to a cleaner Scioto River by intercepting wet weather combined sewer flows from the downtown area and conveying them to the treatment plant.

Also In September, the city submitted the Blueprint Columbus plan to OEPA. This new approach solves sanitary sewer overflows through a combination of rehabilitating existing pipes – maximizing previous investment, versus disruptive new construction – while adding green infrastructure to deal directly with stormwater impacts to our streams and rivers. Improvements include rain gardens, pervious pavement, and remediation of stormwater inflow and infiltration to not only eliminate sanitary sewer overflows, but also improve overall water quality. On

December 1, OEPA approved Blueprint Columbus and these improvements will be implemented in the coming years.

Growth continues in the Division of Power. Almost 400 new customers were brought onto the city's grid, generating additional sales of over \$1.2 million. The division also saw a significant technology upgrade with the implementation of mobile dispatching. Work orders are now transmitted directly to laptops, where field technicians can access them immediately. Benefits include elimination of paper work orders, and all information is accessible real-time so our Customer Service Representatives can share it with affected customers.

The Division of Water continued capacity and treatment upgrades at all three drinking water plants to meet the demands of a growing region. With an eye toward delivering this supply to our residential and business customers in the most efficient way possible, we have quadrupled reinvestment into the distribution system over the past decade to upgrade problem-prone water lines, reduce breaks and improve reliability.

To prepare for the unexpected, we analyze overall emergency preparedness and security on a constant basis to ensure prompt response and, when possible, maintain service in the event of natural or non-natural incidents. The Division of Water's Incident Management Team was activated for events including a gas line break in close proximity to the Dublin Road Water Plant and during a nitrate advisory. Enhancements during the year included updating the Division of Power's Emergency Response Plan, various tabletop exercises and hazardous material scenarios, security improvements, and a department-wide upgrade to a new digital radio system.

There are many complex challenges involved with providing quality water, wastewater, and power services, but our divisions are led by professionals focused on assuring Columbus will continue to offer the utilities that make our community attractive to residents and businesses alike.



environment

PROTECTING THE ENVIRONMENT

While the department's mission is centered around water protection and other environmental concerns, a variety of special initiatives go above and beyond the basic requirements.

Environmental Management System

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. We continued a robust regulatory compliance program while improving systems and operations to reduce adverse environmental impacts associated with core activities of providing safe drinking water, treating wastewater, reducing non-stormwater runoff, and providing reliable power. The City of Columbus is one of very few public utilities in the country known to have a fully operational ISO-certified EMS.

Public Education and Engagement

- Membership in GreenSpot's web-based program, which began in 2008, grew by 2,094 households and 75 businesses, bringing the total to 12,064 homes and 1,081 businesses in central Ohio. The Sawmill Area became a GreenSpot Neighborhood. 18 classrooms participated in GreenSpot Kids. Whole Foods (Upper Arlington), Ohio Department of Correction and Rehabilitation, Chase Bank (Vision Drive), Franklin University, Budros, Ruhlin, Roe Inc., and the Southern Ohio Correctional Facility graduated from the Corporate Sustainability Initiative. Columbia Gas of Ohio hosted the GreenSpotLight celebration where Mayor Coleman presented awards to the Columbus Zoo and Aquarium, The Table, and Green Scoop Pet Recycling.
- Storm Drain Marking - 1,580 "No Dumping, Drains to Rivers" storm drain markers were distributed to community volunteers to apply to curbs near storm drain inlets to increase public awareness.
- Through the PUP (Pick Up Poop) program, 2,325 residents pledged to pick up after their pup, bringing the total participants in the second year of the program to 4,400. Pet waste stations were delivered for installation at the city's three in-stream water reservoirs and in 86 of the most used city parks.
- Litter Cleanups - five waterway or reservoir litter cleanups were either organized or promoted by the department in 2015. Three were part of Central Ohio River Pride month in June. Participants included Friends of the Lower Olentangy Watershed, Adena Brook Community, Scioto Boat Club, Green Columbus and the department's Watershed Management group.

Partnerships

Department staff partnered with groups to promote awareness of ways individuals can protect water quality. Highlights include: Franklin Soil and Water Conservation District educated residents and provided resources through the GreenSpot Backyards program; Grange Insurance Audubon Center and Metro Parks helped conceptualize a new stormwater demonstration site that went into design; Central Ohio Watershed Council met regularly with Director's Office and other staff to share information on water quality-related topics; and Mid-Ohio

environment



Regional Planning Commission began the process of reorganizing the Water Quality working group and assisted the department with various tasks.

Stormwater and Regulatory Management Section

To comply with the city's National Pollutant Discharge Elimination System stormwater permit with the Ohio Environmental Protection Agency and to protect local water supplies, this section under DOSD performed 3,364 site inspections on active construction sites for pollution control, field screened 1,650 storm sewer outfalls, and investigated 135 reports of spills or suspected illicit discharge to the storm sewer system. Inspections were made at 349 businesses for compliance with OEPA Industrial General Permits for stormwater discharge. A total of \$12,500 in fines were collected in 2015 for notices of violation related to stormwater discharge.

Laboratory Testing

In addition to having labs in the department's two wastewater treatment plants and three drinking water plants to check water samples regularly for compliance with Ohio EPA regulatory requirements and drinking water regulations, the department also has a certified Water Quality Assurance Lab at the Dublin Road office and a Surveillance Lab at the Fairwood Avenue facility. Results of the water testing for drinking water regulations are mailed to all customers annually. This Consumer Confidence Report is also posted on our web site at www.columbus.gov/utilities. The Division of Water staff also voluntarily perform various additional testing beyond what is required to stay ahead of any potential contaminants of concern and in order to adjust any treatment methods necessary in order to protect public health.

Industrial Waste Monitoring

The Industrial Wastewater Pretreatment Group under the Division of Sewerage and Drainage monitors discharges from approximately 100 permitted industries into the sanitary sewer system to ensure compliance with clean water goals. Pretreatment staff investigated 20 grease incidents, met with 19 food service establishments as part of the fats, oils and grease best management practice program, and distributed 962 door hangers in neighborhoods. Through a partnership with Columbus Public Health, 4,343 restaurant inspections were performed. There was one cost recovery performed due to a grease blockage. \$9,250 was assessed in fines for industrial violations found.

Compost Facility

The city's Compost Facility was established in 1980 as an environmentally friendly alternative to recycle wastewater residuals through a composting process. The bio-solids are converted into Com-til, an organic mulch and soil amendment. Composting reduces the amount of biosolids that could otherwise be disposed of in a landfill or incinerated. The popular Com-Til product is available for sale at many retail outlets around central Ohio or wholesale at the Compost Facility. Employees participate in events such as the CENTS Show and the Chadwick Arboretum spring plant sale. (For compost production numbers, please see page 25).

communities



To view a video about Columbus street lighting, please visit columbus.gov/streetlighting.

CAPITAL REINVESTMENT

Division of Power

Street Lighting and CIP Projects

In 2015, the division's Streetlight Engineering Design Section was responsible for overseeing the installation of 776 new streetlights. The section initiated the engineering work for several new street lighting projects, which employed the use of new energy efficient LED lighting. Division staff also developed new LED specifications for lighting fixtures for cobra head, teardrop, acorn post-tops, traditional post-top and underpass luminaires. All LED luminaire types will have the latest technology built-in to service future expansions in digital controls.

The following major streetlight projects were constructed and accepted in 2015 by the division and are now incorporated in the city's streetlight grid system: Olentangy Meadows Subdivision, Agler Road/Kipp School, Wildcat Falls Subdivision, Refugee and Chatterton, Upper Albany West Subdivision, Rich and Town Corridor Enhancement, Hilliard Woods Subdivision, Reynoldsburg Crossing, Sunbury Cove, South Linden Alleys, Rail Street Phase 1, Summerlyn 4 Subdivision, American Addition Phase 1 Subdivision, Big Run Ridge 3-1 Subdivision, Reynolds Crossing 3-1, Dennison Place Phase 2 and 3, Jefferson Park, Nationwide (Front to 4th), Buffalo Parkway, Morse Road Preserve, and numerous roadways impacted by the ODOT Interstate 70/71 Project.

The Streetlight Engineering Design Section also performs plan reviews for public and private work. In 2015, the section reviewed 733 improvement plans for regulatory compliance.

Power Distribution System

The Division of Power maintains a network of substations, transmission lines, distribution and street lighting circuits throughout Columbus. Over 12,500 business and residential accounts enjoy reliable city power, which allows the city to provide necessary maintenance and energy to over 56,000 streetlights in Columbus. The division is also responsible for providing maintenance of the O'Shaughnessy hydroelectric unit and ODOT's freeway lights on major highways within city limits.

Following the market for natural gas prices, wholesale electric prices declined during the second half of 2015. This provided an excellent opportunity for the division to secure additional future supply. After a bidding process supply was secured for 2021 and 2022. This supply covers virtually all of division's needs and includes green energy credits for 20% of the contracted energy. During 2015, the division received most of its supply from American Municipal Power, and small portions from New York Power Authority (hydroelectric), and Central Ohio BioEnergy, LLC (COBE). COBE operates a facility on Jackson Pike that converts sewage sludge, restaurant, and other wastes into synthetic natural gas and electric power.

The hydroelectric generator at the city's O'Shaughnessy Reservoir operated during eight months of the year to produce a \$117,000 financial credit, benefitting our customers.

BLUE PRINT COLUMBUS

Clean streams.
Strong neighborhoods.

To learn more about Blueprint Columbus, please visit columbus.gov/blueprint.



South Side Settlement Heritage Park bioswales ready for planting

CAPITAL REINVESTMENT

Division of Sewerage and Drainage

Sewer Collection System

Blueprint Columbus pilot projects continued in the Clintonville, Barthman/Parsons, Linden, Hilltop and Miller/Kelton neighborhoods. Improvements include rain gardens, pervious pavement and aggressive public and private source remediation of stormwater inflow and infiltration (I/I) to not only eliminate sanitary sewer overflows, but also improve overall water quality. 2015 highlights include:

- The department received Ohio EPA approval for the Integrated Plan and 2015 Wet Weather Management Plan Update Report
- A letter of support for the program from the Community Advisory Panel
- Construction of Phase 1 and 2 Barthman/Parsons green infrastructure pilot projects
- development of final engineering plans for green infrastructure in Clintonville
- The voluntary sump pump program kicked off with 76 participants and continues to grow
- Field investigations were completed and preliminary recommendations made for the sizes and locations of new storm sewers
- Green infrastructure facilities were developed for areas of Linden
- Consultants were identified to begin work in the Miller-Kelton and Hilltop areas

The OARS project completed mining operations of the 4.5-mile-long tunnel on September 10, 2015, and a dedication event was held, allowing elected officials and members of the media to tour the completed tunnel section near Neil Avenue and the Goodale Connector. With mining complete, the work turned to removal of the tunnel boring machine, and wrap up utilities and tunnel cleanup work. Site work was completed at shafts 3, 4 and 5.

Sewer lining and rehabilitation continued to be utilized throughout the system where possible as a way to reduce I/I without the cost or disruption of excavating to replace the entire pipe. Sewer lining was completed in the Livingston/James and Linden areas and began in the Hilltop area. Various additional rehabilitation sections identified by our Sewer Maintenance Operations Center were also lined.

Large diameter sewers, ranging in size from three to ten feet in diameter, serve the largest portions of our population. A study was complete in 2015 on the Big Walnut Trunk that will allow engineers to consider alignments of the sewer. Proposals were received and the construction team was selected for the Blacklick Creek Main Trunk Sewer.

The division accepted proposals from design professionals for the Lower Olentangy Tunnel (LOT) in December for detailed design, geotechnical baseline report and supporting documents required for the construction of the sewer from the upstream end of OARS, north to Dodridge Street.

Design began in 2015 for the use of Chemically Enhanced Primary Treatment at the Southerly Wastewater Treatment Plant to treat wet weather flows in excess of the plant's full biological capacity and reduce the number of untreated bypasses from the plant.



OARS tunnel shaft and transport cage



Mayor Michael B. Coleman and Councilmembers Zachary Klein and Eileen Paley in front of “Marsha,” the OARS tunneling machine after it bored through to the shaft at Neil Avenue and Vine Street, completing its journey

Wastewater Treatment Plants

Jackson Pike Wastewater Treatment Plant Biosolids Land Application Improvements

The division determined that it would be better to cease operation of the biosolids incineration process and provide a beneficial re-use alternative for biosolids by increasing the agricultural use by land application. This project was in the late design stage. The project will modify existing facilities at the Jackson Pike plant for liquid storage, pumping, truck loading stations and associated facilities for liquid biosolids handling.

Southerly Wastewater Treatment Plant Biosolids Land Application Facility

It was also decided to cease operation of the biosolids incineration process at this plant and provide a beneficial re-use alternative for biosolids by agricultural use by land application. This project, which went into construction, includes: construction and installation of new biosolids storage tanks, a biosolids control building housing pumps, piping, electrical equipment, and mechanical equipment; a new parts storage building; four biofilters that will serve the biosolids tanks; and a three-bay truck load-out facility. The construction of this facility has been performed on an accelerated schedule in order to meet a compliance date of March 2016.

Southerly Wastewater Treatment Plant Chemically Enhanced Primary Treatment

This project will help mitigate wet weather overflows in order to improve the quality of water entering local waterways through the addition of Chemically Enhanced Primary Treatment (CEPT), to be installed at Southerly and provide additional treatment capability during wet weather events. This project was in the design stage.

communities



Henderson Road tank refurbishing underway



Cooke Road water line work

CAPITAL REINVESTMENT

Division of Water

Water Distribution

The Cooke Road Area Water Line Improvements project included the installation of 12,600 linear feet of water mains ranging in size from 2 inches to 12 inches in diameter. Installation methods included both open-cut trenching and horizontal directional drilling. In addition to water main installation, the project also included the transfer of approximately 40 water services from small diameter mains to the larger main located in Indianola Avenue. While a majority of the project was residential in nature, the work performed on Cooke Road and Indianola Avenue presented more of a challenge with regard to maintenance of traffic. A small portion of the work was required to be performed on the weekend to minimize impacts to traffic.

A 16" water main on East Wilson Bridge Road broke in December of 2014. An attempt was made to repair the water main by conventional methods by the maintenance staff. After several attempts of installing a repair clamp and having the pipe fail in other locations several feet away, it was decided to remove and replace an entire section of water main. Through the use of a repair contract, the pipe was replaced within several months and put back in service prior to peak summer demand.

The Division of Water owns 28 storage tanks in the water distribution system. To control corrosion of steel tanks, a coating system is applied to the tank. Once the coating system reaches its service life, a new coating system is applied. In 2015, as part of the divisions' annual maintenance program, exteriors of the Henderson East and West tanks were over coated. Due to the close proximity of Henderson Road, the contractor was required to install containment around the exterior of each tank to avoid overspray to the surrounding businesses and heavy traffic on Henderson Road. The contractor completed the work in approximately three months.



Dublin Road Water Plant treatment expansion under construction



Relocated and expanded parking, sidewalks and green space at the Dana G. "Buck" Rinehart Public Utilities Complex at 910 Dublin Road

communities

Water Supply

The Division of Water (DOW) operates and maintains an extensive water supply system consisting of watersheds, reservoirs, dams, and water treatment plants. During this year, significant capital investments in these assets were made to maintain a safe and reliable water supply and to prepare for future water supply needs. Some of the major activities and accomplishments for 2015 are summarized below.

Watershed, Reservoirs, and Dams

- Construction of roadway improvements at Hoover Reservoir and Griggs Reservoir was completed to improve water quality and enhance public access and enjoyment of these facilities.
- Design of additional roadway improvements for the Griggs Reservoir was completed.
- Reservoir pollution reduction improvements were constructed at the Hoover Nature Preserve to reduce erosion and stormwater pollutant impacts to the reservoir.
- Design completed for Hoover Twin Bridges and Griggs Site 10 reservoir pollution reduction projects.
- Independent consultant reviews were completed for the O'Shaughnessy, Hoover, and Griggs dams to assess facility condition and identify improvement needs. O'Shaughnessy assessment was performed in accordance with Federal Energy Regulatory (FERC) regulations.
- Construction was started on the Alum Creek Pump Station Improvements project, which will replace aging raw water pumps and renovate major building components.

Water Plants

- At the Dublin Avenue Water Plant (DRWP), construction continued on Parts 1, 2, 3, and 5 of the DRWP Capacity Increase Project and construction began on part 4. Several milestones were reached including substantial completion of a new electrical substation, new sludge pump station, new sludge force main, and nine of 18 filters were brought online with new underdrains and new Granular Activated Carbon (GAC) media. When completed in 2017, the Capacity Increase Project will increase plant capacity to 80 MGD, provide new treatment processes to enhance water quality, and increase treatment reliability. The total construction cost for all contracts is estimated at \$200 million.
- At the Hap Cremean Water Plant (HCWP), construction continued on the \$70 million Treatment Improvements Project, which will add new treatment processes to enhance water quality and improve process control. Construction was started on the Alum Feed Improvements Project. Design was completed on the Bulk Chemical Building Improvements project to improve chemical system reliability, storage and containment.
- At the Parsons Avenue Water Plant (PAWP), construction began 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 began on the Collector Well #103 project to replace two aging well pumps and add one additional pump to increase the capacity of this collector well. A study was started to explore options for future additional groundwater supply.

Other

- A program construction management team was selected to help manage the design and construction of several upcoming large capital improvement projects including DRWP and HCWP Standby Power Projects, the DRWP and HCWP UV Disinfection projects, and the PAWP and HCWP Hypochlorite Conversion projects.
- Design work began on the DRWP and HCWP UV Disinfection projects.
- Design work was started on the DRWP and HCWP Standby Power Projects.
- Design consultants were selected for the PAWP and HCWP Hypochlorite Conversion projects.



The student winner of the Children's Water Festival poster contest gives Mayor Coleman a hug at the 2015 event

service

Customer Service Highlights	2015	2014	2013
Total customer calls	442,845	459,719	452,196
Total field/meter related service calls	106,923	116,319	120,139
Low income water/sewer discount participants	5,884	5,868	6,003
Senior water discount participants	3,288	3,068	2,845
Senior power discount participants	188	185	183
Total customer accounts billed:			
Water (includes some contracted communities)	275,723	281,278	280,094
Sewer (includes some contracted communities)	271,251	271,947	271,393
Stormwater	197,020	197,571	197,410
Power	12,497	12,151	12,202

CUSTOMER SERVICE & COMMUNITY RELATIONS

Call Center

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 dedicated call center of about 50 staff members answer billing questions, schedule service calls and help resolve issues. Customers can pay their bills on-line, over the phone, by mail or in person.

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

Special Events

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

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

City Power Customer Development

The Division of Power Customer Development Section handles many requests for new service, private area lights, service increases and upgrades, and other requests. The section brought 377 new customers onto the city's grid in 2015. New large services designed and installed included:

- City projects: Dublin Road Water plant and OARS sewer tunnel
- Veterans Memorial renovation (temporary service)
- The Julian building redevelopment
- Poindexter Development Phase 1
- Wagenbrenner Development at Harrison Park Place (residential)
- Franklin Chemicals
- Medical building on Stelzer Road in Easton
- New building for The Ohio State University on Fred Taylor Drive (temporary service)

Project Dry Basement

Residents continued to benefit from the Project Dry Basement sewer backup prevention program, which began in 2004. During its tenth full year of the program, 43 new valves were installed, bringing the total to 872 homes in the program.

Communications Office

The Communications Office coordinates public meetings, media and public records requests, printed materials and reports, and OEPA required notifications. The Sustainability Office coordinated various public meetings related to the Columbus Blueprint initiative in 2015 as well. Facebook and Twitter social media followers continued to grow.



Sewer Maintenance	2015	2014	2013
Repairs (manholes, catch basins, etc)	1,556	1,711	1,952
Catch basins inspected	14,221	14,161	12,651
Catch basins, inlets, manholes cleaned	12,953	13,644	17,841
Miles of sewer power cleaned	313	340	499
Miles of sewer closed circuit televised	74	73	119
Total work orders completed	10,604	9,530	11,235

Water Maintenance	2015	2014	2013
Main Line Leak Repairs:			
Columbus	387	475	532
Suburban Contracted Areas	200	239	229
Total	587	714	761
Taps/Service Lines:			
Repaired	94	116	115
Replaced	707	664	652
Cut-Off at Main	84	95	79
Put-in-Shapes	562	402	302
New Taps Main Line	17	11	29
Valves:			
Repaired	79	78	76
Installed/Replaced	219	132	158
Hydrants:			
Repaired	2,148	1,184	945
Replaced	53	55	59
Total work orders completed	4,554	3,461	3,177

MAINTAINING OUR SYSTEMS

Sewer Maintenance Operations Center

The maintenance of 4,495 miles of sewers is performed by the Sewer Maintenance Operations Center (SMOC), the largest staffed section of the Division of Sewerage and Drainage. This responsibility includes 2,515 miles of sanitary sewers, 1,773 miles of storm sewers and 155 miles of combined sewers. An additional 52 miles of county sewers are maintained under contract.

Maintenance responsibilities also 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 2015 are in the chart to the left, top section.

Water Distribution System Maintenance

Water Distribution Maintenance crews maintain 3,530 miles of waterline, which includes 2,520 miles in Columbus and 1,010 miles in contracted suburban service areas. A summary of the repairs made in 2015 are in the chart to the left, bottom section.

Included in the waterline repairs to the left were 147 leaks discovered by the pitometer survey crews, which performed testing on 1,493 miles of pipe to locate underground system leaks that do not surface. Subsequent repair of these unreported leaks reduced water loss by an estimated four million gallons each day.

The Backflow Office oversees the protection of the water distribution system from potential sources of contamination. The team tracks and enforces annual testing requirements for backflow prevention devices throughout the service area. Staff continue to improve the quality of the backflow database. In 2015, a total of 8,983 inspections were performed by the backflow group relative to service line installation, meter settings, installation of backflow devices for new construction and backflow test enforcement. More field inspections were performed on hydrants permitted for temporary use to ensure proper system protection and best business practices.



Power Maintenance Activity	2015	2014	2013
Wire/Cable Repaired (feet)	108,843	107,562	88,862
Tranformer KVA	20,643	10,899	5,112
Luminaires	1,707	1,304	1,367
Lamps	6,719	5,682	6,440
Wooden Poles	276	237	212
Standard Poles	164	137	152

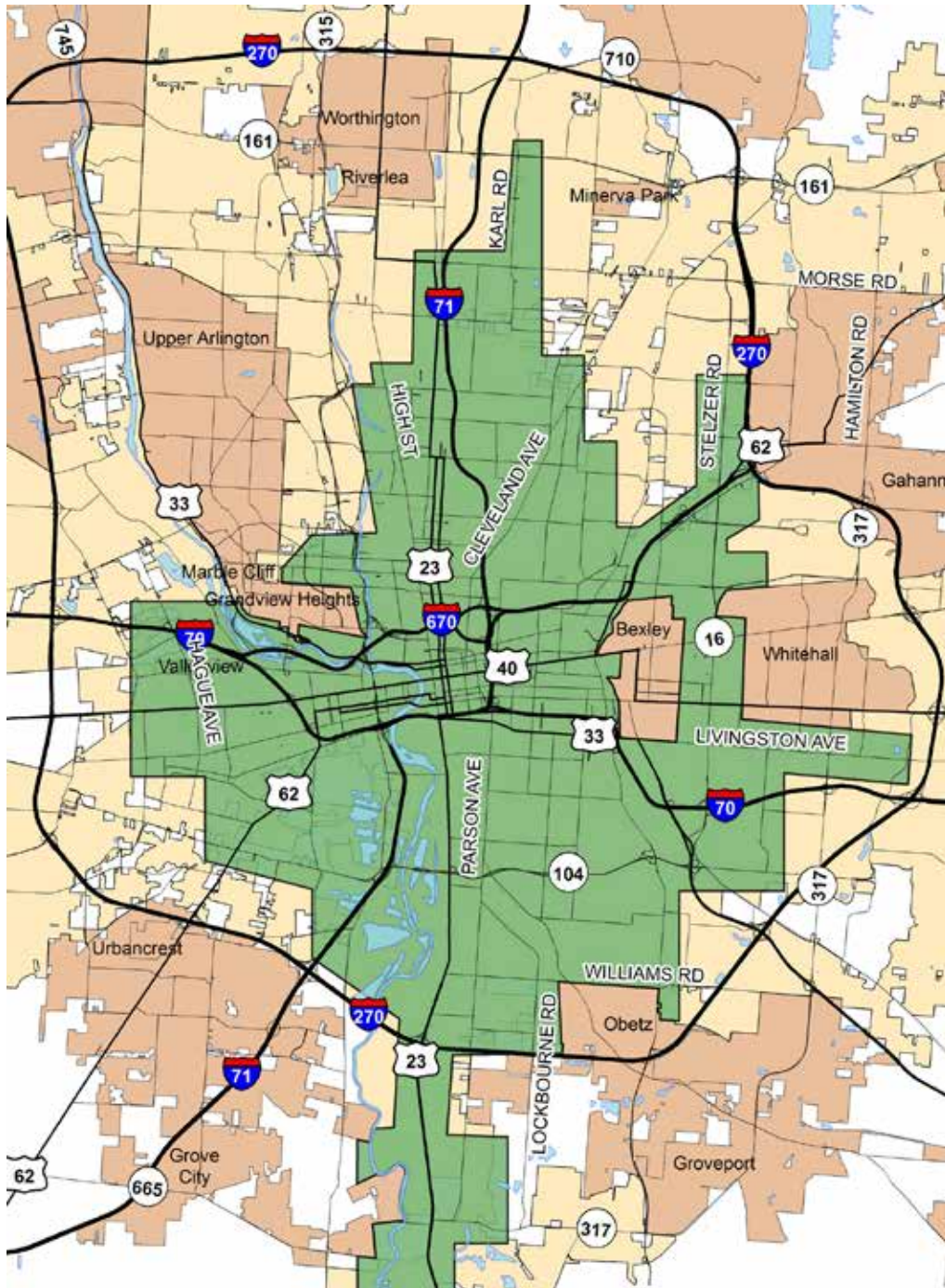


maintenance

Power Distribution System

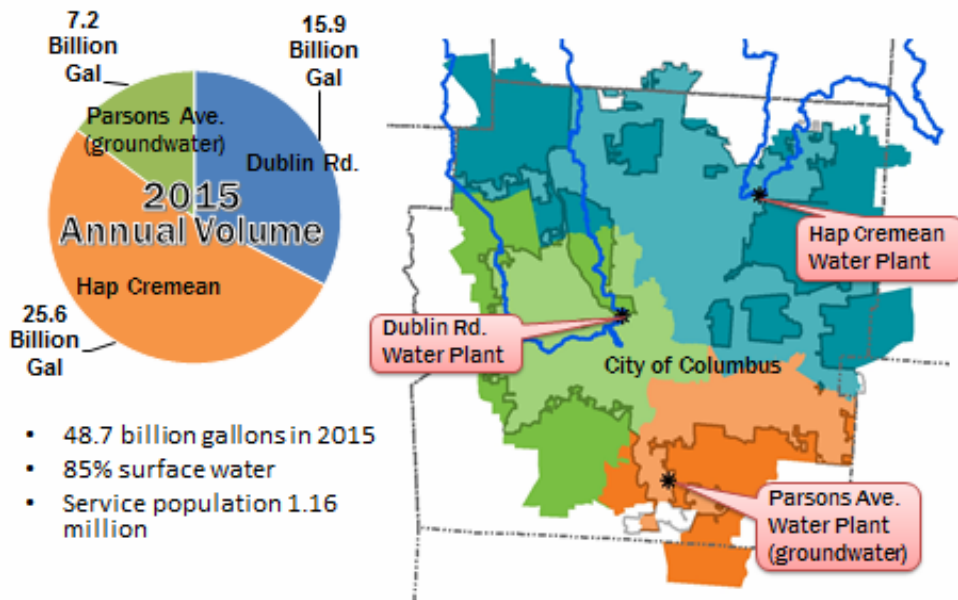
The Division of Power maintains a network of substations, transmission lines, distribution and street lighting circuits throughout Columbus. Over 12,000 business and residential accounts enjoy reliable city power, which allows the city to provide the necessary maintenance and energy to over 55,000 streetlights in Columbus. The division is also responsible for providing maintenance of the O'Shaughnessy Reservoir dam's hydroelectric unit and ODOT's freeway lights on major highways within city limits.

Columbus Power Service Area



The City of Columbus provides reliable, cost competitive electricity in the service area shown in green. For more information, please call (614) 645-7216.

Service Area



Did you know?

Columbus was a pioneer in water treatment. Learn more at columbus.gov/utilities in the About Us section.



Hap Cremean Water Plant, with Hoover Reservoir visible to the north

treatment

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 1.1 million consumers in Columbus and in 20 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:

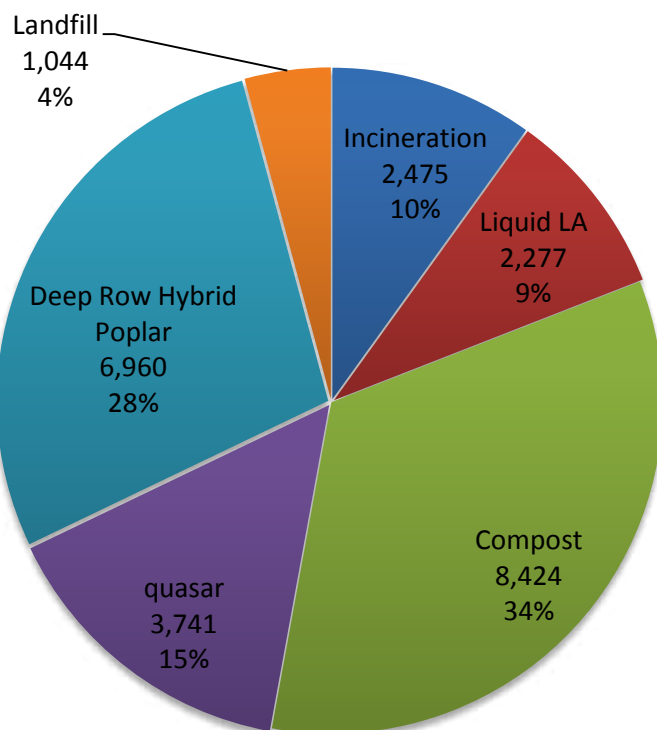
- The Dublin Road Water Plant serves downtown Columbus and the western and southwestern portions of Franklin County, using water from the Griggs and O'Shaughnessy reservoirs on the Scioto River and the John R. Douth Upground Reservoir in Delaware County. Put into service in 1975, it replaced a 1908 plant, 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 52% of water in the service area in 2015 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 15% of the water in the service area and can treat up to 50 MGD.

The Cross Connection Control and Backflow Office oversees the protection of the water distribution system from potential sources of contamination. The team tracks and ensures compliance with annual testing requirements for backflow prevention devices throughout the service area. In 2015, 8,983 inspections were performed by the backflow group relative to service line installation, meter settings, installation of backflow devices for new construction and backflow testing.

For water quality information, please request a copy of Columbus' current Drinking Water Consumer Confidence Report by calling Customer Service at (614) 645-8276 or visit our Document Library at columbus.gov/utilities. For any water quality questions, please call our Water Quality Assurance Lab at (614) 645-7691.

Finished Drinking Water Summary	2015	2014	2013
Total billion gallons	48.7	49.4	50.2
Average million gallons per day	133.4	135.3	137.6
Estimated service population	1,159,817	1,152,993	1,146,169
Average per capita consumption (gallons per day)	115	117	120
Central Ohio precipitation	45"	38"	41"

Columbus Biosolids Distribution 2015, Dry Tons



treatment

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.

Wastewater Treatment Summary	2015	2014	2013
Total billion gallons	65.43	63.5	63.5
Average million gallons per day	179.26	184.02	174.01
Carbonaceous biological oxygen demand removed	98%	98%	98%
Suspended solids removed	97%	97%	97%
Total dry tons bio-solids handled:	42,124	31,962	40,953
Composted	8,424	7,820	6,219
Liquid land application	2,278	2,742	2,666
Incinerated	2,475	3,001	6,200
Solids to energy	17,202	16,173	15,906
To Quasar (converts biosolids/waste to electricity)	3,741	4,200	4,507
To mulch (deep row hybrid poplar)	6,960	6,800	5,455
Landfill	1,044	0	0
Central Ohio precipitation	45"	38"	41"
Compost Facility Production	2015	2014	2013
Incoming sludge: wet tons	44,766	41,339	31,300
Incoming sludge: dry tons	8,424	7,820	5,814
Average percent dry solids	19%	19%	19%
Com-Til sold/donated (cubic yards)	65,455	29,237	27,849
Total yard waste received (wet tons)	8,617	8,868	10,044
Total Com-Til revenue	\$411,345	\$376,327	\$366,597



Division of Sewerage and Drainage

(sanitary and stormwater enterprise funds)

Sanitary Enterprise Fund	2015	2014	2013
Revenue			
Beginning cash balance	\$102,732,941	\$119,610,557	\$108,576,301
Sewer service charges	\$199,254,808	\$193,162,978	\$190,692,377
Wet weather fees	\$34,327,463	\$32,587,890	\$31,125,466
Investment earnings	\$2,074,453	\$1,654,336	\$1,073,981
System capacity charges	\$5,879,322	\$5,971,738	\$4,990,726
Storm sewer reimbursements	\$8,205,977	\$8,307,135	\$8,072,050
Other	\$2,053,885	\$2,761,579	\$2,831,058
Total revenues	\$251,795,908	\$244,445,656	\$238,785,659
Expenditures			
Personnel	\$43,107,023	\$43,238,791	\$42,456,998
Supplies and materials	\$7,054,834	\$6,292,346	\$7,045,367
Services	\$25,765,062	\$26,245,535	\$26,517,766
Pro-rata	\$11,269,710	\$10,908,572	\$10,481,662
Electricity	\$8,017,420	\$8,485,487	\$8,928,725
Capital equipment	\$3,387,250	\$2,349,448	\$3,826,094
Other	\$8,580	\$762,748	\$257,154
Debt service	\$145,232,533	\$123,552,630	\$123,316,776
Sewer share of DPU	\$6,746,805	\$39,487,716	\$4,920,862
Total expenditures	\$250,589,217	\$261,323,273	\$227,751,403
Ending cash balance	\$103,939,632	\$102,732,941	\$119,610,557

REVENUES AND EXPENDITURES

Stormwater Enterprise Fund	2015	2014	2013
Revenue			
Beginning cash balance	\$11,172,543	\$10,323,225	\$9,380,951
Storm sewer charges	\$38,630,233	\$37,877,002	\$35,974,336
Investment earnings	\$309,719	\$206,570	\$25,908
Storm penalties	\$423,912	\$458,843	\$432,433
Other	\$17,200	\$40,742	\$289,973
Total revenues	\$39,381,064	\$38,583,158	\$36,822,650
Expenditures			
Personnel	\$1,585,641	\$1,391,740	\$1,292,560
Supplies and materials	\$14,593	\$11,317	\$18,989
Services	\$1,829,451	\$19,015,839	\$5,443,296
Pro-rata	\$1,771,305	\$1,702,369	\$13,638,205
Capital equipment	\$29,191	\$28,775	\$43,550
Other	\$19,933	\$230,526	\$53,076
Debt service	\$13,714,664	\$13,971,135	\$14,119,349
Storm share of DPU	\$1,737,953	\$1,382,139	\$1,271,353
Total expenditures	\$38,744,706	\$37,733,840	\$35,880,376
Ending cash balance	\$11,808,902	\$11,172,543	\$10,323,225



Division of Power

Power Enterprise Fund	2015	2014	2013
Revenue			
Beginning cash balance	\$16,777,156	\$11,350,015	\$5,406,906
Commercial service	\$64,635,720	\$65,340,363	\$65,384,730
Residential	\$6,243,940	\$6,152,089	\$6,152,339
Investment earnings	\$221,680	\$155,732	\$79,034
Kilowatt hour tax reduction	(\$3,199,955)	(\$1,578,866)	(\$1,689,077)
Other	\$3,353,601	\$3,921,499	\$4,017,275
Power Cost Reserve Adjustment (PCRA)	\$7,700,531	\$10,261,220	\$14,300,074
Total revenues	\$78,966,697	\$84,252,037	\$88,244,376
Expenditures			
Personnel	\$10,133,516	\$9,303,940	\$8,391,374
Purchased power	\$52,217,514	\$54,297,039	\$58,512,595
Supplies and materials	\$1,196,778	\$1,045,345	\$1,144,226
Services	\$5,107,342	\$4,536,732	\$4,274,870
Pro-rata	\$3,610,380	\$3,734,812	\$3,924,778
Other	\$5,295	\$258,239	\$32,623
Capital equipment	\$2,206,618	\$1,445,493	\$1,274,855
Debt service	\$3,213,430	\$3,469,139	\$4,057,667
Power share of DPU	\$932,513	\$734,156	\$688,280
Total expenditures	\$78,623,386	\$78,824,895	\$82,301,268
Ending cash balance	\$17,109,468	\$16,777,156	\$11,350,015



Division of Water

Water Enterprise Fund	2015	2014	2013
Revenue			
Beginning cash balance	\$41,037,605	\$43,997,405	\$32,331,179
Water charges	\$163,490,335	\$159,410,225	\$158,672,628
Water billing penalties	\$2,111,304	\$2,196,140	\$2,063,531
Investment earnings	\$1,539,989	\$1,450,541	\$1,241,051
System capacity	\$5,858,247	\$4,947,609	\$4,763,123
Sewer billing charges	\$6,657,256	\$6,301,390	\$6,355,055
Meter service fees	\$923,164	\$941,984	\$582,490
Other revenue	\$5,196,124	\$5,603,011	\$9,950,068
Total revenues	\$185,776,419	\$180,850,900	\$183,627,946
Expenditures			
Personnel	\$47,845,558	\$45,740,910	\$44,844,666
Supplies and materials	\$3,816,256	\$4,075,067	\$3,655,604
Chemicals	\$16,541,485	\$16,812,883	\$15,942,539
Services	\$14,676,459	\$15,036,637	\$14,479,983
Pro-rata	\$8,227,858	\$8,049,951	\$8,014,611
Electricity	\$7,870,471	\$8,049,514	\$8,287,932
Other	\$362,549	\$1,052,443	\$306,606
Capital equipment	\$1,821,245	\$1,912,640	\$973,233
Debt service	\$74,869,414	\$78,472,631	\$71,244,520
Water share of DPU	\$5,767,842	\$4,608,021	\$4,212,027
Total expenditures	\$181,799,137	\$183,810,699	\$171,961,720
Ending cash balance	\$44,948,068	\$41,037,606	\$43,997,405

