

ANNUAL REPORT 2017

CITY OF COLUMBUS
DEPARTMENT OF
PUBLIC UTILITIES



DEPARTMENT OF
PUBLIC UTILITIES



*Andrew J. Ginther
Mayor*



*Tracie Davies
Director*

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2017 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

Every year brings its share of change and progress, but it's safe to say 2017 was particularly eventful for the Department of Public Utilities. We saw several of our largest capital improvement projects achieve substantial completion and go online, including the Olentangy-Scioto-Interceptor-Sewer Augmentation Relief Sewer. Better known as the OARS tunnel, the largest capital project in Columbus history now captures and stores combined sewer overflows in the downtown area for treatment, diverting over a billion gallons of overflow annually and ensuring a cleaner Scioto River. Also in the Division of Sewerage and Drainage, significant progress was attained on the Blueprint Columbus plan to control sanitary sewer overflows: 62 rain gardens were installed, along with nearly one acre of new pervious surface in Clintonville, the first Blueprint neighborhood.

The Division of Power saw continued growth in its customer base and in street-light infrastructure, adding more than 800 new streetlights to the approximately 56,000 lights already illuminating Columbus roadways. Additional capital projects were completed within the Division of Water, including treatment upgrades at the Hap Cremean and Dublin Road water plants which utilize new technology to better protect customers and avoid drinking water advisories. The new ion exchange facility at the Dublin Road Water Plant, for example, was completed and activated in time to treat source water from the Scioto River that temporarily had elevated levels of nitrates. Utilization of this new treatment method assured continued safe drinking water within the distribution system and eliminated the need for a nitrate advisory.

Important advances were made as well in the area of customer service. For our water and sewer ratepayers, we continue to improve access and interaction with the rollout last September of our new customer service portal – initial enrollment was even stronger than expected, with more than 23,000 signing up by the end of December. The portal is ideal for those who prefer online paperless billing, the ability to enroll in autopay, and easier access to their consumption records, among other features. Additionally, the Division of Power's more than 13,000

customers now have access to a new online bill estimator, helping residents and businesses alike better plan their budgets based on estimated usage. All customers now benefit from mobile dispatching, which allows automated scheduling and dispatching of service orders as well as improved accuracy of information for customers.

Continuing a trend spanning several years, department facilities and employees across all three divisions earned recognition for excellence. For example, the Division of Water fielded team and individual award recipients recognized by the American Water Works Association (AWWA)/Ohio section. The division's Tapping Team (members of which emphasize speed and accuracy in the installation of a new water tap) successfully defended their state title in 2017 and will once again represent Ohio at AWWA's national conference. And, individual recognition went out to the division's Bichvan Boyles, presented with the Water for People Founder's Award for her exemplary volunteer work for the city's annual Race for Global Water.

Lastly, we in the Department of Public Utilities take seriously our role in advocating environmental stewardship. Enrollment in the city's GreenSpot program continued to climb in 2017, with more than 2,000 new GreenSpot members added, bringing membership to about 17,000 individuals and businesses. Also administered through out department, the Pick Up Poop or PUP program – which encourages pet owners to clean up after their pets, reducing stormwater contamination – gained almost 400 new pledges, bringing the total to nearly 5,400.

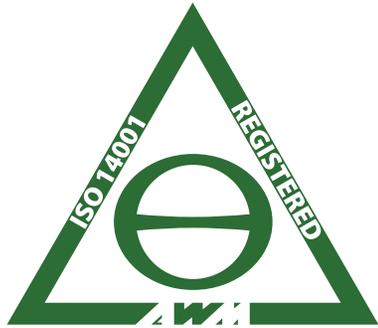
Our employees take pride in providing the essential services that help make Columbus a great city, and I hope you will take the time to review those efforts outlined in this report.

Tracie Davies, Director

PROTECTING THE ENVIRONMENT

Regulatory Compliance

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



laboratories located in Division of Water and Division of Sewerage and Drainage facilities regularly test raw water, finished drinking water and influent and effluent wastewater.

The Stormwater and Regulatory Management Section in the Division of Sewerage and Drainage (DOSD) oversees non-point source stormwater pollution by administering a Municipal Separate Storm Sewer System NPDES permit. In 2017, the following was done to protect local water supplies: 3,763 site inspections on active construction sites, 166 post-construction best management practice inspections, field screened 1,007 storm sewer outfalls, and investigated 218 reports of spills or suspected illicit discharges to the storm sewer system. Inspections were made at 318 businesses for compliance with the Ohio EPA Multi-Sector General Permit for stormwater discharge. \$16,250 was collected for notices of violation. In coordination with Columbus Public Health, the Septic Tank Elimination Program connected 36 properties to the sanitary sewer system.

The Industrial Wastewater Pretreatment group in DOSD monitors discharges from permitted industries into the Columbus sewer system to ensure compliance with clean water goals. During 2017, through a partnership with Columbus Public Health, food sanitarians performed 3,434 restaurant inspections on behalf of the pretreatment program. Pretreatment staff investigated 14 grease incidents, met with 25 food service establishments as part of the Fats, Oils and Grease Best Management Program, and distributed 1,300 door hangers in neighborhoods. This section recovered costs association with removing sewer blockages from three sewer users, and fines totaling \$11,500 were collected for various violations.

The Backflow Compliance Office, under the Division of Water, protects the water distribution system from contamination that could originate at customer premises. The office tracks and enforces installation and annual testing for backflow prevention devices at 23,723 properties throughout the service area.

EcoSmart Choice Program and Green Power

EcoSmart Choice is offered by the Columbus Division of Power through American Municipal Power (AMP). AMP's program allows our customers to purchase Renewable Energy Certificates (RECs) for up to 100% of their electricity usage. The cost is \$0.005 per kilowatt hour (kwh). All 169 city facilities served by Columbus Power have been enrolled in the program since adopting the program in 2016. In 2017, through increased marketing the number of participants doubled to 340, offsetting nearly 34,000,000 kwh in energy consumption.

DOP directly purchased about 12,000,000 kwh of power from green resources in addition to the EcoSmart Choice program offsets. This power is generated from two primary sources: Central Ohio BioEnergy, a bio-waste facility that diverts 25,000 wet tons of bio-solids from incineration and additional 35,000 wet tons of organic waste from landfills each year from regional biomass sources; and the New York Power Authority, which operates three large hydroelectric complexes, four small hydroelectric complexes and seven small, clean power plants fueled by natural gas.



Public Education and Outreach

Membership in city's GreenSpot web-based program, which began in 2008 (housed and managed by the Department of Public Utilities), grew by more than 2,299 new members in 2017, bringing the total to 17,038. That includes 15,667 households, 1,239 businesses and 132 community groups.

570 "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.

Six waterway/reservoir litter cleanups were either organized or promoted by the department in 2017. Participants included Adena Brook Community, Friends of Alum Creek and Tributaries, Friends of the Lower Olentangy Watershed, and the Department of Public Utilities. The Division of Water's Watershed Management group helped to coordinate three reservoir clean-ups and also provided educational talks to several school and scout troops, sharing the message of source water protection.

The Division of Water assisted multiple school groups who were participating in the 2017 First LEGO League Challenge, with the theme of water. LEGO teams were given tours and interviewed water professionals as they completed their research to address a global water issue.

Invasive honeysuckle was removed from areas throughout the reservoir shorelines. The city again partnered with BMW Financial Services, a long-term volunteer partner whose efforts have helped to restore native plants to the Griggs reservoir shoreline. Throughout the reservoirs areas, Division of Water works to balance natural resource and water supply protection while providing access to

reservoir recreational opportunities such as boating, fishing, and bird watching. The PUP (Pick Up Poop) program encourages pet owners to clean up after their pets, which helps protect stormwater quality. The program gained 372 new households in 2017, bringing the new PUP pledge total to 5,361.

Partnerships

Several partnerships to promote water quality awareness continued. Through its agreement with the City of Columbus, Franklin Soil and Water Conservation District educated residents, school groups and provided resources through the GreenSpot Backyards program and Get Grassy campaign. The Central Ohio Watershed Council met regularly with the director's office to share information on water quality-related topics. The department continued its sponsorship of and partnership with the Mid-Ohio Regional Planning Commission's Greenways Water Quality group. More than 644 households received either a rain barrel, compost bin, or native plants through the GreenSpot Backyard Conservation cost share program.



GreenSpotLight award recipient Peter Lowe, representing Dawes Arboretum, and Elizabeth Brown, Columbus City Council.

CAPITAL REINVESTMENT

Division of Power

The Streetlight Section is responsible for overseeing the design and construction of street lights within the city. Following the decision in 2016 to standardize LED (light emitting diode) for City of Columbus street lights, 672 LED lights were completed in 2017. An additional 187 HPS (high pressure sodium) lights were installed, for a total of 859 lights added in 2017. Moving forward, as older projects are completed, the number of HPS lights installed will continue to decline.



Hamilton Road

The following major streetlight projects were constructed and are now incorporated into the city's street lighting system:

- Hard Road – Sawmill to Smoky Row
- Gender Road and Refugee Road
- Fifth Avenue Bridge Replacement
- Riggins Road
- Hamilton Road "S" Curve
- US 23 and I-270
- South Westgate/Sylvan neighborhood
- Willow Creek subdivision

The Distribution Section entered into two contracts to perform projects which will provide greater reliability to the distribution system. The first project is the Alternate 69KV Transmission Line. This project will provide greater reliability by providing a secondary transmission line to the West Substation, which will reduce outages from this station. The second project was the ordering of a new transformer for the Jackson Pike Substation. The existing transformer, which is the largest one in the system, has reached the end of its expected life. With a projected life of over 40 years, this new transformer will provide reliable power for decades to come.



Willow Creek

Division of Sewerage and Drainage

Blueprint Columbus

An 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 contains greener alternatives to solving wet weather problems instead of building more costly sewer tunnel “gray solutions” like the original plan contained. The four main strategies, or pillars, in the plan include: residential home sewer lateral lining, roof water redirection, sump pumps, and green infrastructure. Accomplishments for the program in 2017 are below.

Construction work in the Clintonville 1 project area included installation of:

- 31,193 square feet of pervious pavement
- 62 rain gardens
- 24 curb extension basins and 3 regional basins
- 66 sewer laterals lined
- 27 downspouts redirected
- 112 sump pumps

The following areas were in design phase: North Linden 1 (final design and community outreach), Hilltop 1 and 4, Miller-Kelton, 5th by Northwest, West Franklinton, and Clintonville 3 (surveying and data collection).



Clean streams.
Strong neighborhoods.

A Friends of Blueprint Columbus community group was formed in 2017 to help with community engagement and public education. For more information about Blueprint, please call 614-645-1253 or visit www.columbus.gov/blueprint.



*Above: new rain garden on Glenmont Place in Clintonville.
Below: previous pavement being installed on Cooke Way.*



CAPITAL REINVESTMENT

Division of Sewerage and Drainage (continued)

Sewer System Engineering Capital Improvements

Olentangy-Scioto-Interceptor-Sewer Augmentation Relief Sewer (OARS)

With construction complete, the OARS system was put into operation in July. This major improvement addresses combined sewer overflows (CSOs).

Lockbourne Intermodal Subtrunk

Construction, which began in late 2016, continued in 2017. The subtrunk



Ice forms on Lockbourne Subtrunk Shaft.

sewer will service the western portion of the Rickenbacker Airport, the Village of Lockbourne, the intermodal transportation facility, and the Joint Economic Development District. This project will also create additional storage capacity within the city's sewer system and will make it possible to eliminate existing household sewage treatment systems in the future.

Lower Olentangy Tunnel

The division began engineering Phases 1 and 2, moving toward final alignment. This large diameter sewer will provide



relief at several key connection points along existing interceptor sewers. Phase 1 is a key improvement to meet the Long Term Control Plan to control CSOs along the Olentangy River. Phase 2 will control sanitary sewer overflows (SSOs) and basement backups.

Blacklick Creek Sanitary Intercepting Sewer

This project will extend the existing sewer from its existing end point just south of Blacklick Creek Boulevard, north to Morse Road along Reynoldsburg-New Albany Road, to provide service in the still-developing New Albany area. Due to the required depths and geologic conditions, the project will be constructed via tunneling methods and will have a finished diameter of 10 feet. The tunneling operation nearly reached 11,500 of a total of 23,000 feet. The picture above shows the tunnel with supporting utilities.

Wastewater Treatment Plant Capital Improvements

Chemically Enhanced Primary Treatment (CEPT)

This improvement will provide treatment for additional wet weather flow and increase total treatment capacity during wet weather at the Southerly Wastewater Treatment Plant. The CEPT facility will be implemented by the following four construction phases: Site Preparation, Preliminary Treatment, Clarification, and Disinfection. The Site Preparation construction contract was completed and the remaining three went under construction.

2017 marked the first year that the city achieved 100% beneficial reuse of biosolids. Building on this success, the department has several projects underway that will help ensure future beneficial reuse of Jackson Pike and Southerly wastewater treatment plant bio-solids, which include the following:

Southwesterly Composting Facility Odor Reduction Improvements

The city's Compost Facility has produced Com-Til, an exceptional quality soil amendment, reliably for nearly 30 years. Com-Til is used in numerous applications in central Ohio for its nutrient value, organic content and moisture retaining characteristics. In 2017 DOSD began planning to ensure the facility is productive for the next 30 years. This project will reduce odors by adding air capture to the curing step and replacing the odor control. New composting equipment will allow for close monitoring and optimized processing of compost.

Southerly Digesting Progress Expansion

To support recent capital improvements that will increase wet weather treatment (CEPT) and allow for beneficial use of methane gas (co-generation), DOSD initiated detailed design for the addition of a seventh anaerobic digester. Construction of this project will allow Southerly the ability to expand production of Class B bio-solids for beneficial use while capturing the methane gas generated for production of electricity.

Jackson Pike Land Application Improvements

Mirroring recent improvements at Southerly's Bio-solids Land Application Facility,

DOSD anticipates beginning construction on improvements to ensure the Class B biosolids produced at Jackson Pike will be beneficially reused for agriculture or in an innovative way like at the city's Hybrid Poplar Tree Farm Outlet. To contain costs, DOSD will rehabilitate existing tanks that are underutilized rather than construct new facilities.

Jackson Pike and Southerly Cogeneration Facility Projects

These will design and install equipment to provide beneficial reuse of digester biogas, which will produce about half the total electricity used at both plants, and provide large amounts of boiler heat for the treatment processes and buildings. Preliminary design began in 2017. These improvements are expected to provide good payback and significant greenhouse gas reductions.



Early construction on the city's future Chemically Enhanced Primary Treatment facility at the Southerly Wastewater Treatment Plant.

CAPITAL REINVESTMENT

Division of Water

Water Supply

The Division of Water operates and maintains an extensive water supply system consisting of our watersheds, reservoirs, dams, three water treatment plants and a distribution system. Over the past year, the division made significant capital investments in these assets to maintain a safe and reliable water supply and to prepare for future needs. Highlights for 2017 are below.

Watersheds, Reservoirs and Dams

- Rehabilitated the Glick Road bridge deck over the O'Shaughnessy Dam.
- Assisted the Ohio Department of Natural Resources with their project to improve the Oxbow Road boat ramp facilities at the Hoover Reservoir.
- Started detailed design of improvements to the O'Shaughnessy Hydroelectric Facility.
- Completed construction of improvements to the Alum Creek Pump Station.
- Completed bathymetric (water depth) studies for the Griggs, O'Shaughnessy, and Hoover reservoirs.
- Began preliminary design work for the Hoover Dam Improvements - Part 1 project, which will replace aging gates, valves and other equipment.

Water Plants

At the Dublin Road Water Plant (DRWP, see photo), construction was completed on Part 3 and construction continued on Part 4 of the \$200 million DRWP Capacity Increase Project. On Part 4, several major milestones were achieved including completing the installation of six new 900 horsepower high service pumps and completing installation of major equipment items for the new Ion Exchange System. Detailed design work for the DRWP Ultraviolet Disinfection Improvements project and the DRWP Standby Power project was completed.

Construction was completed on the \$70 million Treatment Improvements Project at the Hap Cremean Water Plant (HCWP), which provided new recarbonation and



ozone-biologically active filtration processes. Construction was completed on the \$5 million Bulk Chemical Building Project, which renovated the alum, fluoride and zinc orthophosphate storage systems. Design was completed and construction was started to replace the plant's lime slaking systems. Detailed design was completed for the Standby Power Project, which will install generators to allow the plant to continue operations during extended power outages. Detailed design work for the HCWP Ultraviolet Disinfection Improvements project continued. Condition assessment work on the Basin Concrete Improvements was completed and detailed design of recommended improvements will begin in 2018.

At the Parsons Avenue Water Plant (PAWP), construction continued on the \$65 million PAWP Treatment Upgrades Project with several major milestones completed including commissioning of clarifier improvements and placing the new 11 million gallon clearwell into operation. Construction was completed



on pump replacement work at Collector Well #103 and design work for replacing pumps at three other collector wells was started.

- The Residuals Management Plan was started, which will characterize current treatment residuals at the three water plants and provide guidance for how the division can manage the disposal and/or reuse of the residuals in the future.

Water Distribution

In 2017, the Division of Water legislated over \$24 million in existing distribution

infrastructure improvements through its Replacement and Rehabilitation (R&R) Program. This program annually prioritizes replacement of water mains that require repeated maintenance due to breakage and the need to improve flow to service areas. Major R&R projects in 2017:

- Lamont Avenue Area Water Line Improvements project, which included approximately 13,500 linear feet of new 8” mains.
- Acton Road Area Water Line Improvements project, installing about 10,500 linear feet of new mains ranging in size between 6” and 8.”
- Maize Road Area Water Line Improvements project (photo above), providing around 14,000 linear feet of new mains ranging between 6” and 12.”
- Silver Drive Area Water Line Improvements project, which included approximately 15,700 linear feet of new mains ranging in size between 8” and 12.”

- Dewberry Road Area Water Line Improvements project, constructing about 20,300 linear feet of new mains, between 6- 8.”

SCADA System

The upgrade to the water distribution supervisory control and data acquisition (SCADA) system was a multi-faceted project that improved the reliability of remotely-operated booster pump stations, elevated storage tanks, and control valves. Improvements included renovation of the existing main control center, construction of a remote backup control center, radio network improvements, software and hardware upgrades, and improved security of the system.

Bethel Booster Station Improvements

The Bethel Booster Station (picture below) was upgraded to better utilize the station in the water distribution system. Work included the replacement of two pumps, a new roof, new electric service and equipment, installation of a 30” water main, and a standby power generator.



CUSTOMER SERVICE & COMMUNITY RELATIONS

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

A new customer portal that was rolled out in September resulted in over 23,000 customers enrolled by the end of the year and is expected to grow immensely in 2018 and beyond. The customer portal provides ways for customers to sign up for paperless e-bills, to pay online, enroll in autopay and other features.

Prospective new city electricity customers can now use a new online bill estimator to compare with their current provider.

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.

Residents continued to benefit from the Project Dry Basement sewer backup prevention program, which began in 2004. 25 new valves were installed, bringing the total to 949 homes in the program by the end of the year.

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

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

Customer Service Highlights	2017	2016	2015
Total customer calls	402,514	403,192	442,845
Total field/meter related service calls	90,115	101,193	106,923
Low income water/sewer discount participants	5,401	5,833	5,884
Senior water discount participants	3,476	3,424	3,288
Senior power discount participants	190	186	188
Customer Accounts Billed			
Water (includes contracted communities)	277,428	276,534	275,723
Sewer (includes contracted communities)	274,000	272,968	271,251
Stormwater	197,583	197,754	197,020
Power	13,487	12,934	12,497

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. In 2017, Evan DiSanto with the Division of Water received the Young Engineer of the Year Award.

Columbus Public Utilities continues to be a major partner in the Children's Water Festival, usually held during national Drinking Water Week. Approximately 630



local fifth grade students from various schools and districts attended the festival, held on the grounds of the city's beautiful Franklin Park. This event, which in 2017 celebrated its 10th anniversary, provides a fun and educational day of hands-on learning and demonstrations. Students learn the importance of protecting our water supplies and meet the scientists and engineers who treat and distribute drinking water. Always a big hit with the students is the Division of Water's award-winning Tap Team demonstration. Photos are from the annual Children's Water Festival: left - an educational demonstration; above - the city's Tap Team performs an exciting drill.

MAINTAINING OUR SYSTEMS

Power Distribution System

The Division of Power maintains a network of substations, transmission lines, distribution and street lighting circuits throughout Columbus. 13,400 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.

In 2017, the Division of Power added 650 new customers to its service which included projects like Vets Memorial, a new government facility that was under construction on North Front Street (to be later dedicated the new Michael B. Coleman Government Center), the Barrett School Apartments, The Deco, a new Marshall's store at Lennox, and the Bethel Road Booster Station.

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.

Power Maintenance	2017	2016	2015
Wire/cable repaired (feet)	127,585	117,414	108,843
Transformer KVA	24,644	11,014	20,643
Luminaires	1,917	1,940	1,707
Lamps	6,397	6,412	6,719
Wooden poles	247	244	276
Standard poles	154	175	164
Total work orders	12,571	9,140	10,199

Sewer Collection System

4501 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 2,556 miles of sanitary sewers, 1,786 miles of storm sewers and 160 miles of combined sewers. An additional 44 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, flap gates, inlets and manholes, as well as the maintenance of the Franklinton Floodwall gates and 14 gate wells.

Sewer Maintenance	2017	2016	2015
Repairs	1,557	1,551	1,556
Catch basins inspected	10,721	10,120	14,221
Catch basins, inlets, manholes cleaned	14,737	13,340	12,953
Miles power cleaned	310	292	313
Miles closed circuit televised	66	63	74
Total work orders	9,172	9,043	10,604

Water Distribution System

Water Distribution Maintenance crews maintain 3,539 miles of waterline, which includes 2,526 miles in Columbus and 1,013 miles in contracted suburban service areas. Included in the waterline repair totals are leaks discovered by pitometer survey crews, who perform proactive testing to locate underground system leaks that do not surface.

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



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

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

Water Maintenance	2017	2016	2015
Main Line Leak Repairs			
Columbus	345	408	387
Suburban contracted	148	204	200
Total	493	612	587
Taps/Service Lines			
Repaired	243	65	94
Replaced	1,911	688	707
Cut-off at main	86	84	84
Put-in-shapes	725	478	562
New taps main line	62	18	17
Valves			
Repaired	88	70	79
Replaced	99	170	219
Hydrants			
Repaired	1,903	1,792	2,148
Replaced	233	169	53
Total work orders	3,752	4,383	4,554

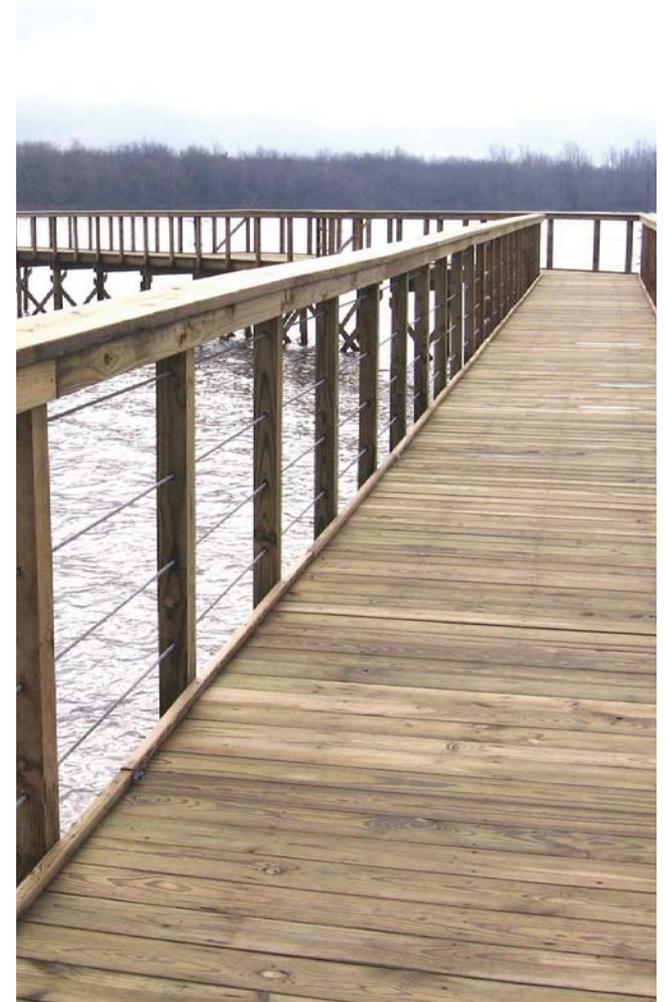
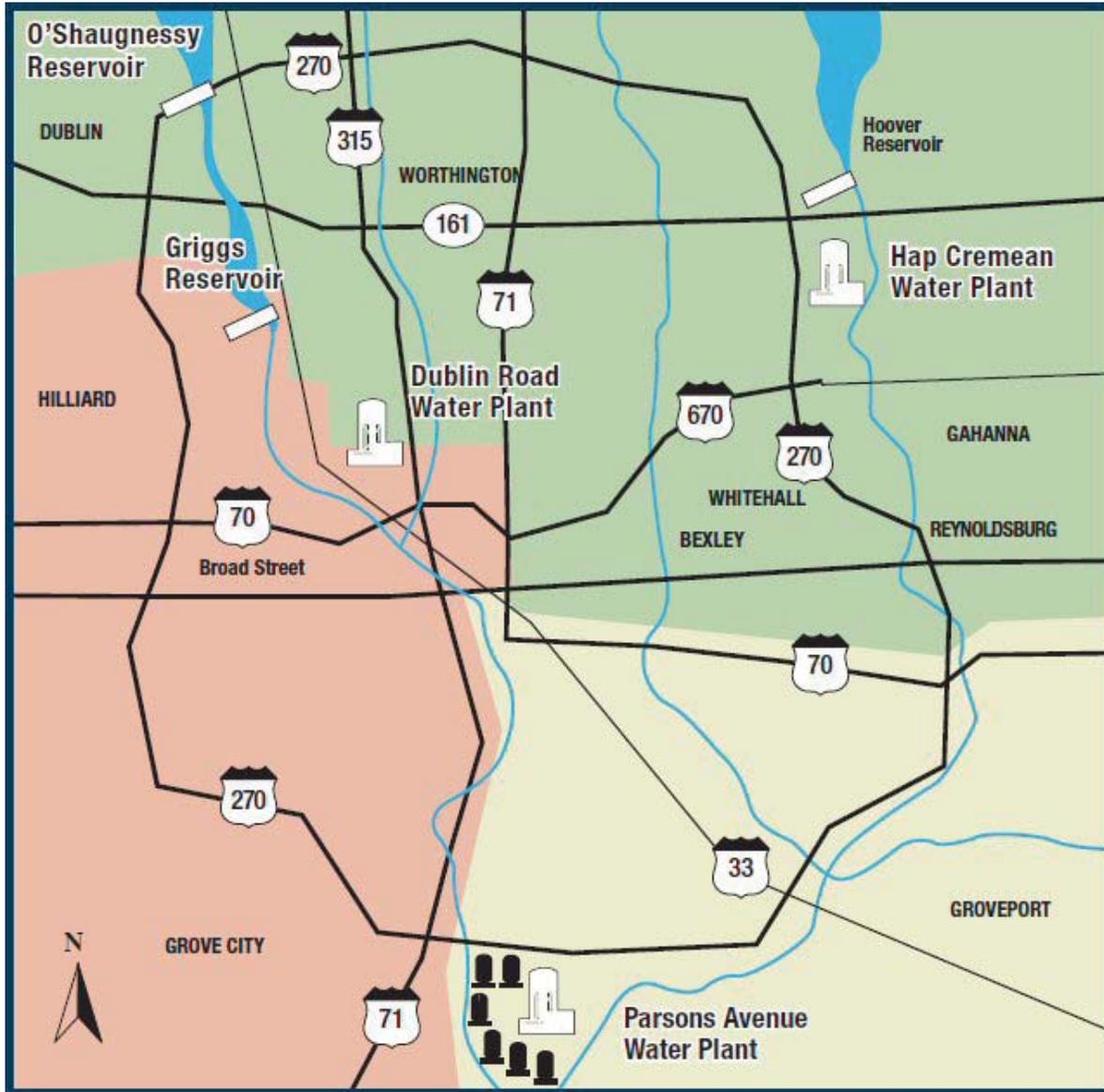
WATER TREATMENT

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

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

- The Dublin Road Water Plant serves downtown Columbus and the western and southwestern portions of Franklin County, using water from the Griggs and O'Shaughnessy reservoirs on the Scioto River and the John R. Douth 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 34% of the water in the service area in 2017 and has a capacity of 80 million gallons per day (MGD).
- The Hap Cremean Water Plant on Morse Road, opened in 1956, serves the largest area that includes northern and northeastern Franklin County and The Ohio State University. The water source is Hoover Reservoir on Big Walnut Creek, and supplemental water is pumped in from the Alum Creek Reservoir during dry periods as needed. This plant provided 51% 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 15% of the water in the service area and can treat up to 50 MGD.
- A report on drinking water quality is released to the public annually, known as the Drinking Water Consumer Confidence Report. Please visit columbus.gov/drinkingwater/ to view the current report or request a copy by calling Customer Service at 614-645-8276. For water quality questions, please call the Water Quality Assurance Lab at 614-645-7691.

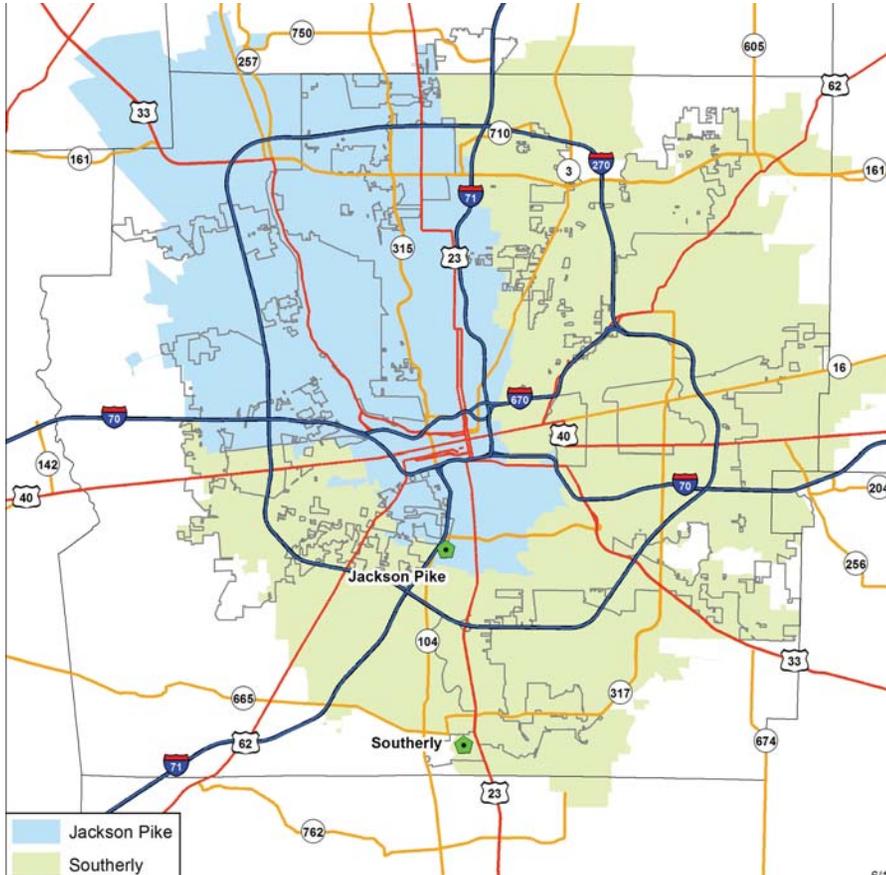
Finished Drinking Water Summary	2017	2016	2015
Total billion gallons	48.6	49.5	48.7
Average million gallons per day	133.2	135.1	133.4
Estimated service population	1,196,848	1,178,332	1,159,817
Average per capita consumption (gallons per day)	111	115	115
Central Ohio precipitation	47"	38"	45"



WASTEWATER TREATMENT

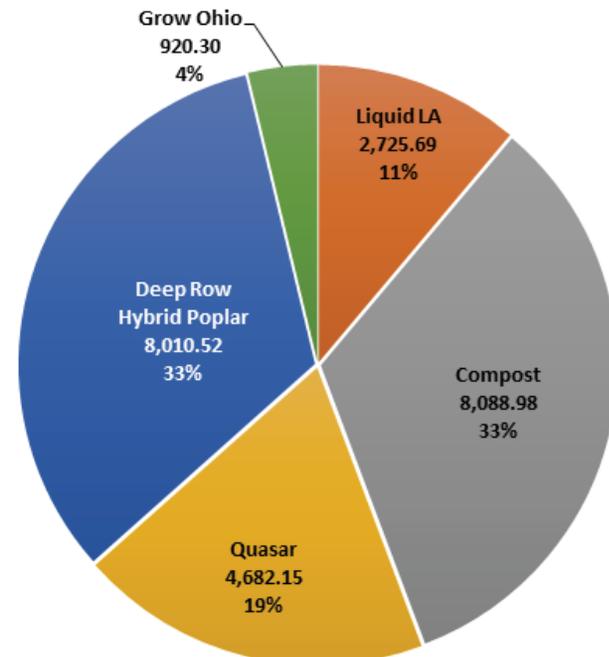
The City of Columbus operates two 24-hour, award-winning wastewater treatment plants serving the city and 25 contracting suburban communities. The Jackson Pike Wastewater Treatment Plant, located just south of downtown along I-71, was built in 1935 and has a design capacity of 68 million MGD, with a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

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



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

2017 Bio-solids Distribution, Dry Tons

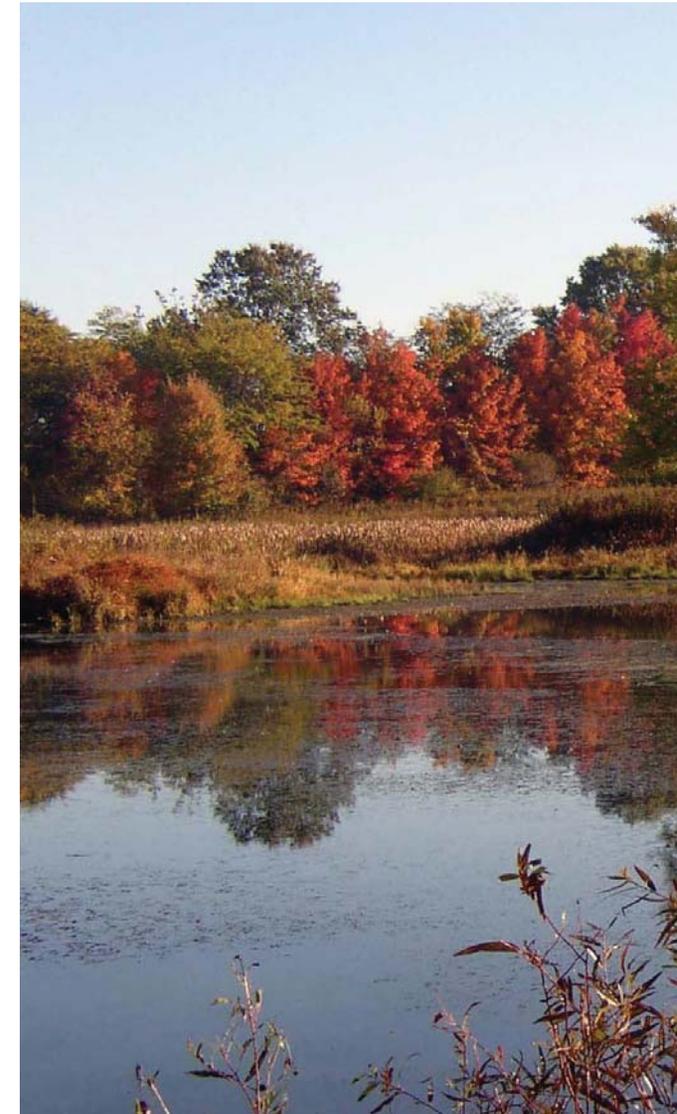


Wastewater Treatment Summary			
	2017	2016	2015
Total billion gallons	68	61	65
Average million gallons per day	185	176	179
Carbonaceous biological oxygen demand removed	98%	98%	98%
Suspended solids removed	98%	97%	97%
Total dry tons bio-solids handled:	40,614	39,559	42,124
Composted	8,089	7,492	8,424
Liquid land application	2,740	2,591	2,278
Incinerated	0	0	2,475
Solids to energy (gas)	16,012	17,574	17,202
To Quasar (converts bio-solids/waste to electricity)	4,682	3,417	3,741
To mulch (deep row hybrid poplar, Grow Ohio tree farm)	9,091	7,818	6,960
Landfill	0	667	1,044
Compost Facility Production			
	2017	2016	2015
Incoming sludge: wet tons	43,181	41,132	44,766
Incoming sludge: dry tons	8,089	7,492	8,424
Average percent dry solids	19%	19%	19%
Com-Til sold/donated (cubic yards)	57,168	42,038	65,455
Total yard waste received (wet tons)	9,421	9,543	8,617
Total Com-Til revenue	\$503,839	\$425,702	\$411,345

REVENUES AND EXPENDITURES

Division of Sewerage and Drainage

Sanitary Enterprise Fund	2017	2016	2015
Revenue			
Beginning cash balance	\$102,682,301	\$89,939,630	\$102,732,941
Sewer service charges	\$219,479,928	\$205,929,376	\$199,254,808
Wet weather fees	\$36,935,862	\$35,406,627	\$34,327,463
Investment earnings	\$3,563,475	\$2,538,990	\$2,074,453
System capacity charges	\$8,533,390	\$8,530,324	\$5,879,322
Storm sewer reimbursements	\$8,723,621	\$7,194,461	\$8,205,977
Other	\$1,671,401	\$1,592,486	\$2,053,885
Debt refinancing	-	-	-
Adjustments	-	-	-
Total revenue	\$278,907,677	\$261,192,264	\$251,795,908
Expenditures			
Personnel	\$44,629,409	\$42,984,896	\$43,107,023
Supplies and materials	\$6,669,527	\$6,385,448	\$7,054,834
Services	\$36,511,049	\$33,710,793	\$33,782,482
Pro-rata	\$11,946,611	\$11,300,796	\$11,269,710
Other	\$69,116	\$25,222	\$8,580
Capital equipment	\$3,265,583	\$3,390,645	\$3,387,250
Debt service	\$149,726,109	\$143,921,450	\$145,232,533
Sewer share of DPU	\$7,206,537	\$6,783,387	\$6,746,805
Total expenditures	\$260,023,940	\$248,502,637	\$250,589,217
Ending cash balance	\$121,566,038	\$102,629,257	\$103,939,632





Stormwater Enterprise Fund	2017	2016	2015
Revenue			
Beginning cash balance	\$15,166,270	\$11,808,902	\$11,172,543
Storm sewer charges	\$40,759,716	\$40,721,789	\$38,630,233
Investment earnings	\$591,320	\$443,463	\$309,719
Storm penalties	\$403,465	\$203,173	\$423,912
Other	\$107,574	\$11,004	\$17,200
Debt refinancing	-	\$415,088	-
Adjustments	(\$71,114)	(\$535,536)	-
Total revenue	\$41,790,961	\$41,258,981	\$39,381,064
Expenditures			
Personnel	\$1,600,528	\$1,617,481	\$1,585,641
Supplies and materials	\$46,743	\$12,464	\$14,593
Services	\$2,344,399	\$1,737,982	\$1,829,451
Pro-rata	\$1,857,003	\$1,827,449	\$1,771,305
Capital equipment	\$11,495	-	\$29,191
Other	-	-	\$19,933
Debt service	\$14,531,415	\$13,690,868	\$13,714,664
Reimbursement to sanitary	\$8,515,414	\$7,194,461	\$8,205,977
Storm share of DPU	\$1,848,278	\$1,755,258	\$1,737,953
Department of Technology allocation	\$1,129,277	\$1,202,532	\$1,071,318
Street cleaning	\$8,880,572	\$8,863,117	\$8,764,678
Total expenditures	\$40,765,122	\$37,901,612	\$38,744,706
Ending cash balance	\$16,192,109	\$15,166,271	\$11,808,902

REVENUES AND EXPENDITURES

Division of Power

Power Enterprise Fund	2017	2016	2015
Revenue			
Beginning cash balance	\$19,382,418	\$17,109,468	\$16,777,156
Commercial	\$69,381,410	\$65,710,968	\$64,635,720
Residential	\$6,625,665	\$6,471,399	\$6,243,940
Investment earnings	\$371,973	\$270,477	\$221,680
Kilowatt hour tax reduction	(\$2,915,539)	(\$3,132,269)	(\$3,199,955)
Other	\$3,372,078	\$2,427,829	\$3,353,601
Power Cost Reserve Adjustment (PCRA)	\$7,067,914	\$8,391,142	\$7,700,531
Debt refinancing	-	-	-
Adjustments	-	-	-
Transfer in	\$3,167,645	-	-
Total revenue	\$87,071,145	\$80,139,546	\$78,955,697
Expenditures			
Personnel	\$9,996,989	\$10,068,552	\$10,133,516
Purchase power	\$55,073,868	\$51,240,460	\$52,217,514
Supplies and materials	\$1,511,066	\$1,190,680	\$1,196,778
Services	\$6,461,126	\$6,808,513	\$5,107,342
Pro-rata	\$3,745,181	\$3,534,805	\$3,610,380
Other	\$2,087	\$2,003	\$5,295
Capital equipment	\$2,498,104	\$2,473,348	\$2,206,618
Debt service	\$1,351,021	\$1,595,286	\$3,213,430
Power share of DPU	\$985,891	\$952,948	\$932,513
Total expenditures	\$81,625,333	\$77,866,595	\$78,623,386
Ending cash balance	\$24,828,231	\$19,382,420	\$17,109,468



Division of Water

Water Enterprise Fund	2017	2016	2015
Revenue			
Beginning cash balance	\$57,879,781	\$39,948,078	\$41,037,605
Water charges	\$181,945,822	\$176,211,914	\$163,490,335
Water billing penalties	\$2,289,797	\$2,182,342	\$2,111,304
Investment earnings	\$2,173,129	\$1,770,450	\$1,539,989
System capacity	\$6,841,695	\$5,923,765	\$5,858,247
Sewer billing charges	\$6,883,319	\$6,039,904	\$6,657,256
Meter service fees	\$780,624	\$832,510	\$923,164
Other revenue	\$3,665,290	\$5,682,480	\$5,196,124
Debt refinancing	-	\$3,415,150	-
Adjustments	-	(\$3,306,771)	-
Total revenue	\$204,579,675	\$198,751,744	\$185,776,419
Expenditures			
Personnel	\$50,192,804	\$48,407,591	\$47,845,558
Supplies and materials	\$17,061,301	\$16,551,330	\$20,357,741
Services	\$24,720,283	\$22,823,417	\$22,546,930
Pro-rata	\$8,632,267	\$8,569,411	\$8,227,858
Other	\$51,995	\$47,350	\$362,549
Capital equipment	\$1,761,845	\$2,826,042	\$1,821,245
Debt service	\$81,472,156	\$75,629,981	\$74,869,414
Water share of DPU	\$6,193,827	\$5,870,021	\$5,767,842
Transfers	\$1,422,823	\$94,897	-
Total expenditures	\$191,509,301	\$180,820,040	\$181,799,137
Ending cash balance	\$70,950,155	\$57,879,782	\$44,948,077

