



## PUBLIC WORKS AND UTILITIES

The Public Works and Utilities Department is comprised of five Divisions that maintain and enhance the safety and well-being of the community by providing exceptional water and wastewater service and maintaining the City's extensive network of street infrastructure.

### OVERVIEW

**Business Operations:** Oversees the management of all infrastructure improvements, street operations, utilities operations including maintenance and water/wastewater treatment, and all water resources, water quality, and engineering services. This includes the creation and management of the department's operating budget, financial sustainability efforts, performance measurement program, public information, and ongoing citywide collaboration efforts.

**Street Operations:** Provides overall maintenance of streets, traffic control devices, stormwater drainage, street sweeping, and snow and ice control. Manages annual street improvement projects, the Adopt-A-Street Program, the Pavement Management Program, and the Public Facility Parking Lot Management Program.

**Utilities Operations:** Maintains approximately 511 miles of water lines, 25 miles of reclaimed water lines, 23 miles of raw water lines, 387 miles of sanitary sewer lines and 10 water storage facilities located within the City. The Division also maintains and operates two water treatment plants, one reclaimed water treatment facility, and one wastewater treatment facility. Utility Operations coordinates water and sewer system improvement projects and programs, and provides meter reading services to approximately 32,000 accounts. The Division also administers the maintenance/asset management program that provides the Department with the resources needed to effectively maintain the many assets that customers use on a daily basis.

**Water Resources and Quality:** This division encompasses two work groups: the Water Resources Engineering group that manages the City's raw water supply, protects existing water rights, plans for future water needs, and administers water conservation programs; and the Water Quality group that monitors the City's water from source to discharge and ensures compliance with state and federal regulations.

**Utilities Engineering:** The Utilities Engineering group oversees planning, engineering, and construction of the City's raw water, drinking water, reclaimed water, and wastewater infrastructure.

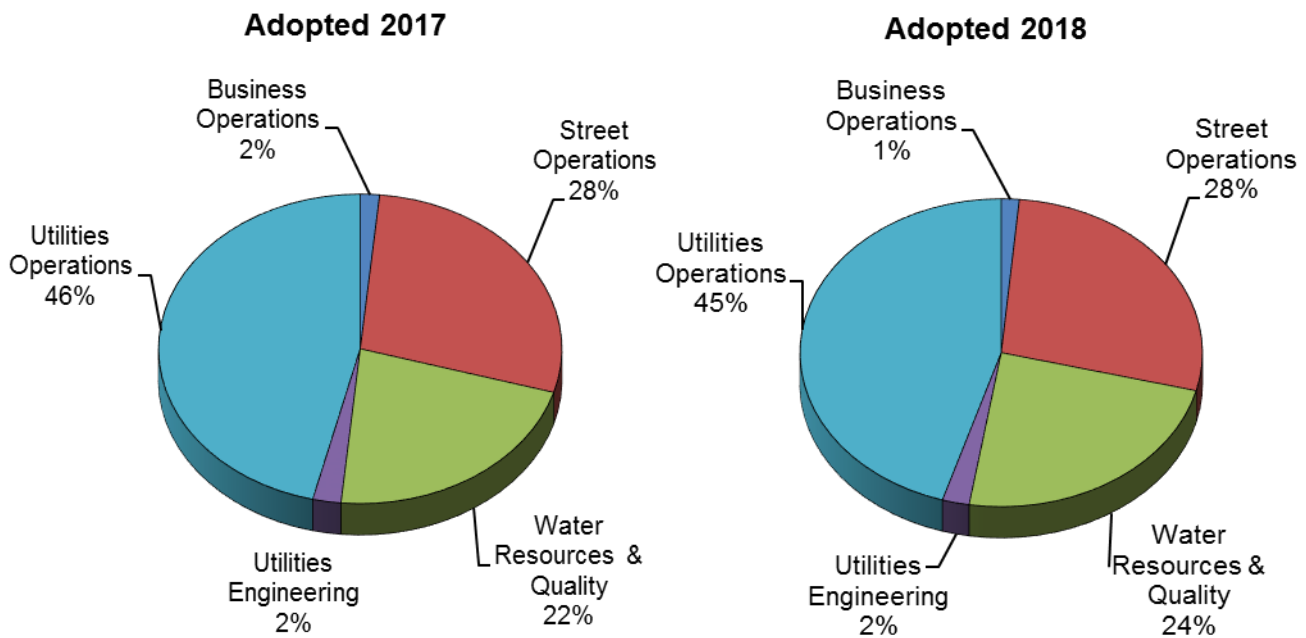
### Total Budget by Category

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
Personnel	\$9,043,594	\$9,664,020	\$9,527,447	\$10,259,679	\$10,364,574
Contractual	\$16,688,214	\$19,323,242	\$19,335,012	\$20,978,726	\$21,980,120
Commodities	\$2,489,485	\$3,054,753	\$3,032,032	\$3,174,139	\$3,373,642
Capital Outlay	\$11,837	\$263,769	\$232,316	\$213,424	\$209,416
<b>TOTAL</b>	<b>\$28,233,130</b>	<b>\$32,305,784</b>	<b>\$32,126,807</b>	<b>\$34,625,968</b>	<b>\$35,927,752</b>

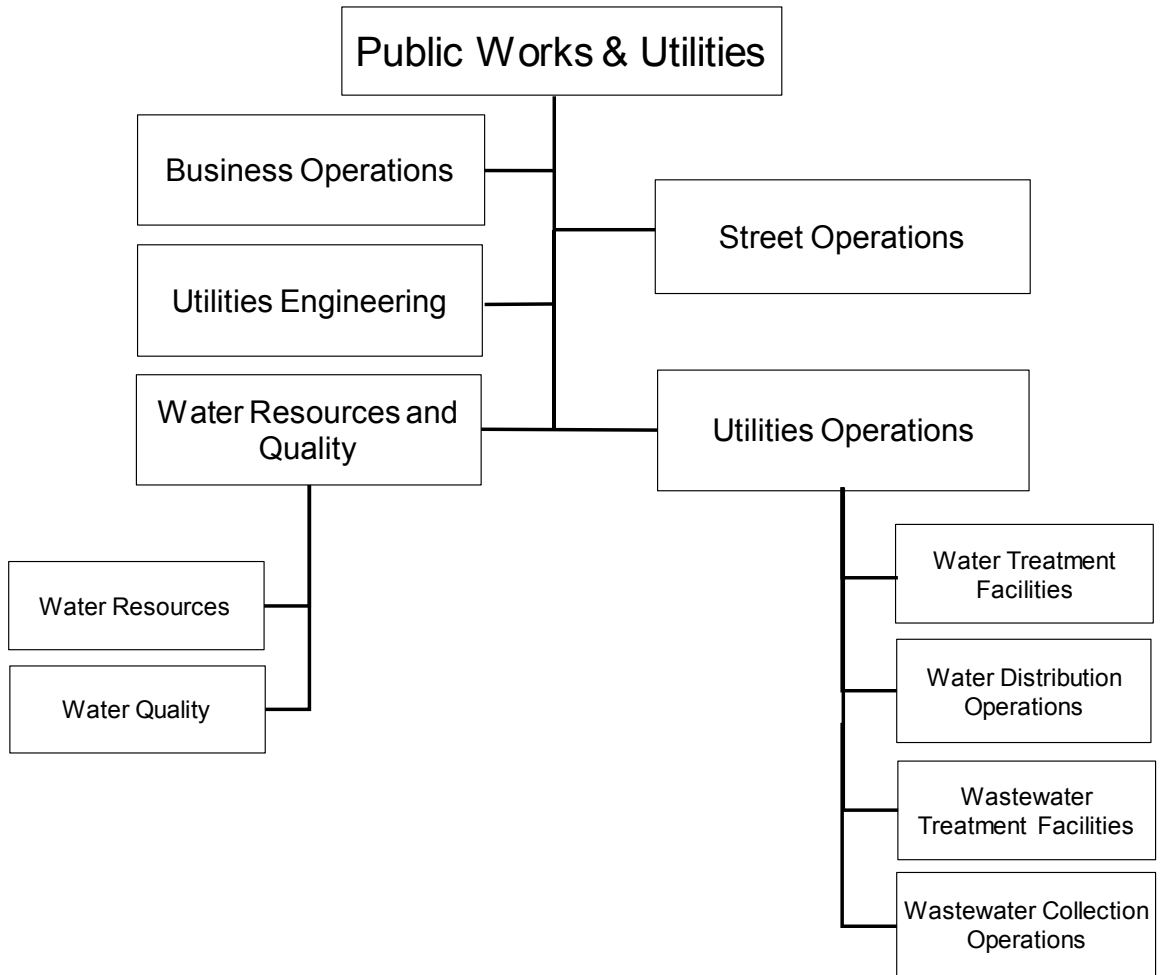
**Total Budget by Division**

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
<b>Business Operations</b>	\$338,313	\$349,973	\$332,474	\$532,974	\$517,931
<b>Street Operations</b>	\$8,343,310	\$9,258,731	\$9,226,238	\$9,699,291	\$9,893,041
<b>Water Resources &amp; Quality</b>	\$7,188,949	\$7,684,764	\$7,759,688	\$7,608,221	\$8,470,152
<b>Utilities Engineering</b>	\$0	\$0	\$0	\$783,398	\$778,708
<b>Utilities Operations</b>	\$12,362,558	\$15,012,316	\$14,808,407	\$16,002,084	\$16,267,920
<b>TOTAL</b>	<b>\$28,233,130</b>	<b>\$32,305,784</b>	<b>\$32,126,807</b>	<b>\$34,625,968</b>	<b>\$35,927,752</b>

**Total Budget by Division**



**Quick Fact:** The City’s water/wastewater utility infrastructure is currently valued at \$3.7 billion. The City’s water rights are worth an additional \$1 billion.



**Staffing (Full-Time Equivalent Employees)**

	2016	2017	2018
	Authorized	Authorized	Authorized
<b>Business Operations</b>	3.00	3.00	3.00
<b>Street Operations</b>	24.00	25.00	25.00
<b>Water Resources &amp; Quality</b>	20.00	19.00	19.00
<b>Utilities Engineering</b>	7.00	8.00	8.00
<b>Utilities Operations</b>	82.50	87.50	89.50
<b>TOTAL</b>	<b>136.50</b>	<b>142.50</b>	<b>144.50</b>

NOTE: Staffing reflects FTE in the General and Utility funds.

## Business Operations

### Overview:

- Provides overall management of the Department and contributes to the effective management of the City through coordination and collaboration with other City departments.
- Directs Department programs, projects, and planning to achieve the service delivery, performance, and financial sustainability goals of the Department.
- Maintains a financially sustainable government by managing the Department’s operating budget, capital improvement budgets and Enterprise Utility Fund, including financial planning, tap fee setting, water and wastewater rate setting, and financial reserves.
- Manages overall Departmental performance, including working with managers and staff to ensure that the appropriate tools, training, practices, and policies are provided to foster an engaged, committed, and high-performing workforce.
- Coordinates with external agencies and authorities; represents the City at the regional, state, and national level; and monitors and comments on relevant legislation.
- Coordinates water demand projections with the City’s Comprehensive Plan and provides impacts to water demands from proposed changes to the City’s Comprehensive Plan.

### 2017 Objectives:

- Implement a Cost of Service Study to review the City’s rates and tap fees to continue to ensure financial fairness and equity for the City’s residents and businesses.
- Implement Mobility Action Plan-Westminster recommendations to improve citizen, business, and visitor mobility, creating a beautiful, desirable, safe and environmentally responsible City.
- Continue to support the efficiency and interdepartmental coordination of the Department’s infrastructure improvements and operations.
- Work with managers and staff to ensure that the appropriate tools, training, practices, and policies are provided to foster an engaged, committed, and high-performing workforce.

### 2018 Objectives:

- Develop and recommend 2019 and 2020 water and wastewater rates and tap fees to City Council to maintain a financially sustainable Utility and government.
- Continue to support the efficiency and interdepartmental coordination of the Department’s infrastructure improvements and operations.

### Total Budget by Category

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
<b>Personnel</b>	\$288,235	\$285,867	\$268,368	\$317,390	\$300,611
<b>Contractual</b>	\$48,281	\$61,106	\$61,106	\$210,084	\$211,820
<b>Commodities</b>	\$1,797	\$3,000	\$3,000	\$5,500	\$5,500
<b>Capital Outlay</b>	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$338,313</b>	<b>\$349,973</b>	<b>\$332,474</b>	<b>\$532,974</b>	<b>\$517,931</b>

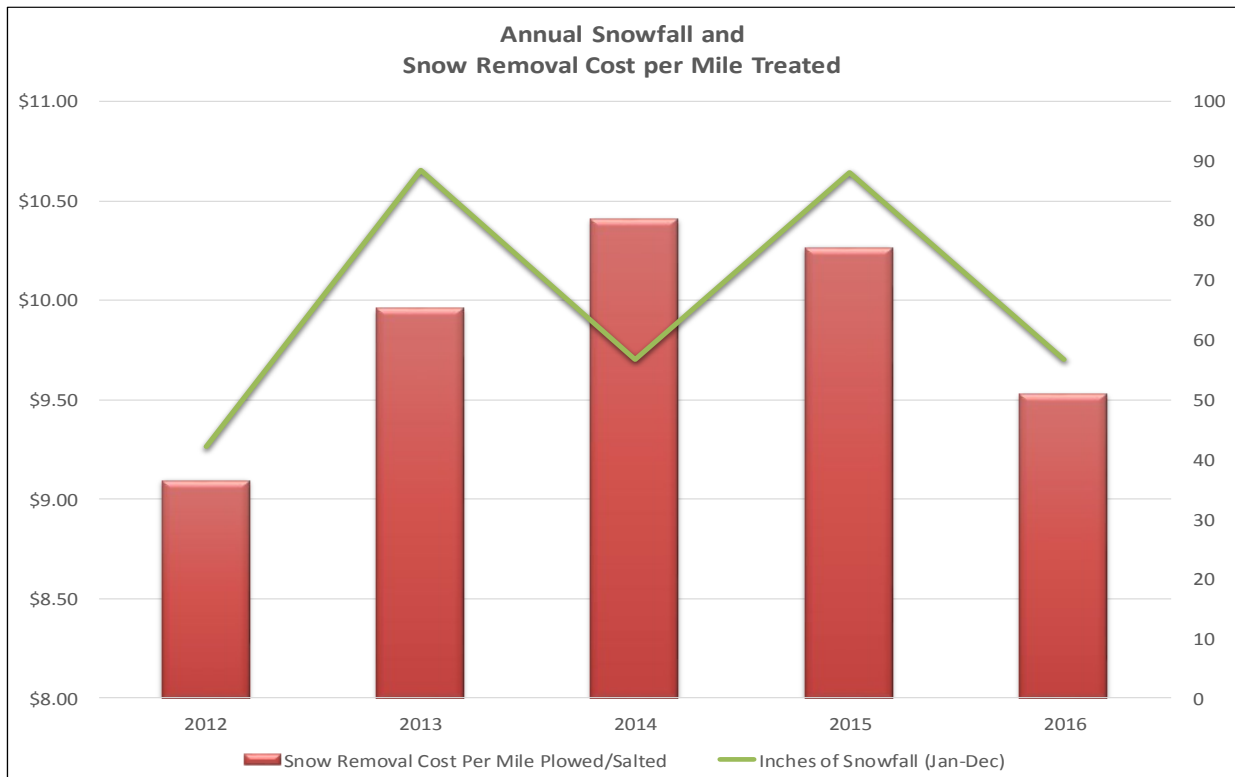


**2015/2016 Achievements:**

- Oversaw the strategic reorganization of the Utilities Operations Division, which increased the effectiveness of the City’s critical infrastructure maintenance.
- Issued \$50 million in bonds to finance high priority projects needed to address utility infrastructure.
- Kicked off the City’s Mobility Action Plan (MAP) Westminster project, to identify methods of improving the ease of citizen, business and visitor mobility throughout the City.
- Developed and recommended 2017 and 2018 water/wastewater rates and water/wastewater tap fees to City Council.
- Continued to support the efficiency and interdepartmental coordination of the Department’s infrastructure improvements and operations.
- Worked with managers and staff to ensure that the appropriate tools, training, practices, and policies are provided to foster an engaged, committed, and high-performing workforce.

**Performance Measure Snapshot...**

Staff takes pride in the speed and quality of snow and ice removal after winter storms. Staff utilizes performance measures to compare the amount of snowfall experienced and the cost per mile to remove that snow. This information allows staff to gauge the effectiveness of snow removal methods and to ensure that the City continues to provide cost-efficient snow removal.



## Street Operations

### Overview:

- Manages the City’s street system infrastructure improvements, including pavement resurfacing, reconstruction, sealcoating, crack sealing, concrete replacement, line painting, street sweeping, traffic sign maintenance and bridge railing repainting.
- Utilizes the computerized Pavement Management System to inventory and monitor City streets, prepares the Five-Year Street Improvement Master Plan, and manages the City’s \$349 million street network.
- Manages the Public Facility Parking Lot Management Program and Adopt-a-Street Program.
- Provides snow and ice control to ensure safe conditions for the public.
- Maintains storm sewers and open drainage to minimize damage to private and public properties.
- Ensures the safety of all users of the City’s street infrastructure network.

### 2017 Objectives:

- Continue to provide ease of mobility on City streets by implementing the expanded crack seal, sealcoat, and overlay programs and decreasing the level of total street reconstruction needed through timely, less costly resurfacing projects.
- Upgrade to a newer pavement management system to more efficiently manage the street network and expedite the creation of the Five-Year Street Improvement Master Plan.
- Increase the overall pavement condition of City facility parking lots by preserving parking lots in “good” condition and rehabilitating parking lots in “poor” condition.
- Institute a storm water maintenance and inspection program to clean and inspect the entire storm water network.
- Continue to proactively collaborate with regional community members by offering local school districts the opportunity to use the City’s asphalt and concrete contract pricing and de-icing material pricing.
- Hire a new 1.0 FTE Equipment Operator I to provide City services, such as snow removal and the operation of heavy and light construction equipment for daily performance and activities related to all phases of street maintenance.

### 2018 Objectives:

- Continue to provide ease of mobility on City streets by continuing the expanded crack seal, sealcoat, and overlay programs and decreasing the level of total street reconstruction needed through timely, less costly resurfacing projects.
- Utilize a new pavement management system to optimize the street maintenance and increase pavement condition ratings.
- Continue to re-paint City owned railings and architectural enhancements on bridges over state highways and railroads.
- Continue to provide efficient snow and ice control to assure safety for the public.

### Total Budget by Category

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
<b>Personnel</b>	\$1,451,824	\$1,527,040	\$1,590,843	\$1,558,709	\$1,576,253
<b>Contractual</b>	\$5,884,273	\$6,762,003	\$6,676,877	\$7,127,176	\$7,274,305
<b>Commodities</b>	\$1,000,625	\$959,644	\$958,518	\$1,013,406	\$1,042,483
<b>Capital Outlay</b>	\$6,588	\$10,044	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$8,343,310</b>	<b>\$9,258,731</b>	<b>\$9,226,238</b>	<b>\$9,699,291</b>	<b>\$9,893,041</b>

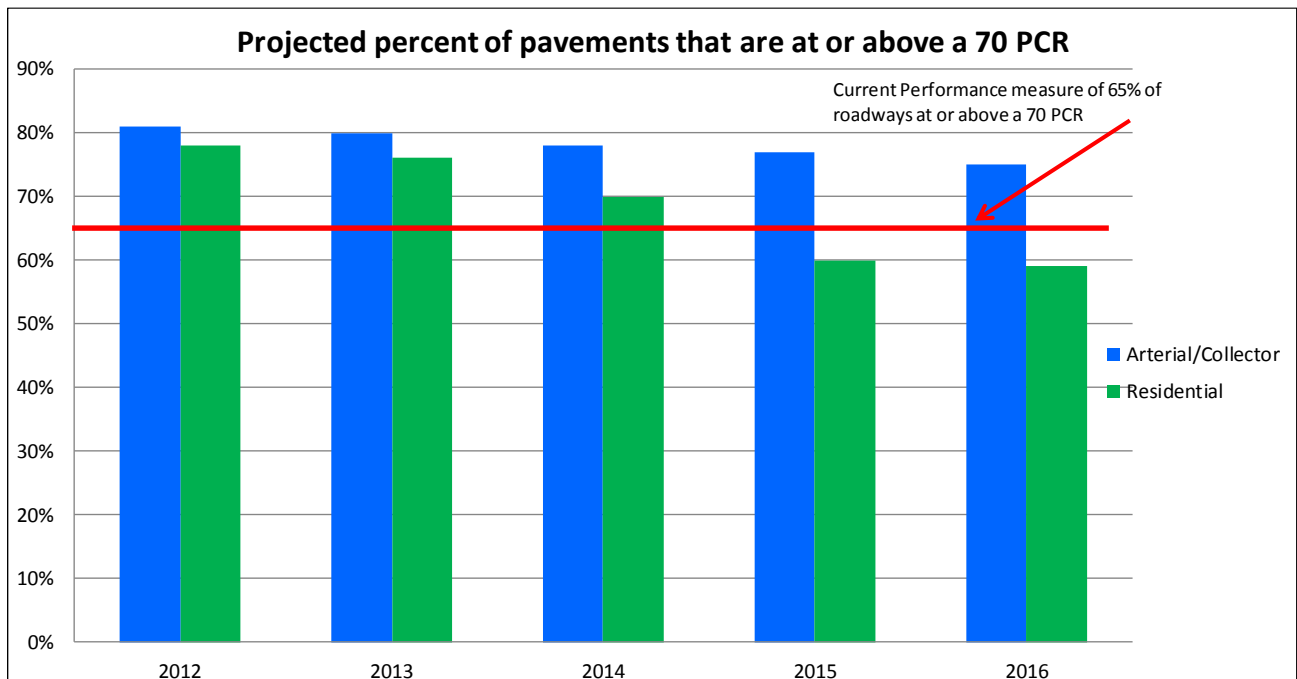


**2015/2016 Achievements:**

- Continued to work towards ease of mobility for the City’s residents, businesses, and visitors by increasing the amount of street maintenance implemented in 2015 and 2016 with budget increases and carry-over funds in both years.
- Maintained the established traffic control device tracking program for all road traffic signage to meet or exceed federally mandated standards of retro-reflectivity.
- Replaced deteriorated curbs, gutters, sidewalks, and curb ramps in the King’s Mill and Sunstream subdivisions using the Major Concrete CIP funds.
- Provided efficient snow and ice control to assure safety for the public during 14 full crew deployments throughout the 2015/2016 snow season.
- Reinstated and accomplished the Large Item Cleanup Program spring 2016.
- Continued to proactively collaborate with regional community members by offering local school districts the opportunity to use the City’s asphalt and concrete contract pricing and de-icing material pricing.

**Performance Measure Snapshot....**

Staff utilizes a pavement management program to assign a pavement condition index (PCI) number to each roadway in the City (85-100 Excellent, 70-84 Good, 51-69 Fair, 40-50 Poor and 0-39 Very Poor). The goal for the Street Operations Division is to maintain 65% of all roadways at a 70 PCI or above. As of 2016,



## Water Resources and Quality

### Overview:

- Monitors drinking water and wastewater quality to ensure compliance with all regulatory standards.
- Performs extensive analysis of the raw water quality in Standley Lake and its watershed to protect public health.
- Manages raw water supply and planning, including the development of new raw water supplies and the assurance of their quality.
- Manages raw water supply operations, including various facilities such as Jim Baker Reservoir and the Kinnear Ditch Pipeline.
- Participates on the boards of local irrigation ditch companies and on the Standley Lake Operating Committee to protect City interests.
- Maintains and protects the City’s water rights portfolio, currently valued at \$1 billion.
- Collaborates water acquisition, conservation and optimization efforts as part of the Comprehensive Water Supply Plan to help achieve a beautiful, desirable, safe, and environmentally responsible city.
- Administers the reclaimed water and conservation programs.

### 2017 Objectives:

- Expand the reclaimed water service area in accordance with the 2016 Master Plan to provide a sustainable and environmentally responsible water source for irrigation.
- Initiate a water court project to change water rights for municipal use.

### 2018 Objectives:

- Expand the reclaimed water service area in accordance with the 2016 master plan.
- Continue to pursue the water rights changes initiated in 2016 and 2017.

### Total Budget by Category

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
<b>Personnel</b>	\$2,304,642	\$2,423,564	\$2,436,102	\$1,701,190	\$1,711,884
<b>Contractual</b>	\$4,788,271	\$5,182,125	\$5,243,530	\$5,828,775	\$6,680,892
<b>Commodities</b>	\$92,591	\$77,575	\$80,056	\$77,376	\$77,376
<b>Capital Outlay</b>	\$3,445	\$1,500	\$0	\$880	\$0
<b>TOTAL</b>	<b>\$7,188,949</b>	<b>\$7,684,764</b>	<b>\$7,759,688</b>	<b>\$7,608,221</b>	<b>\$8,470,152</b>



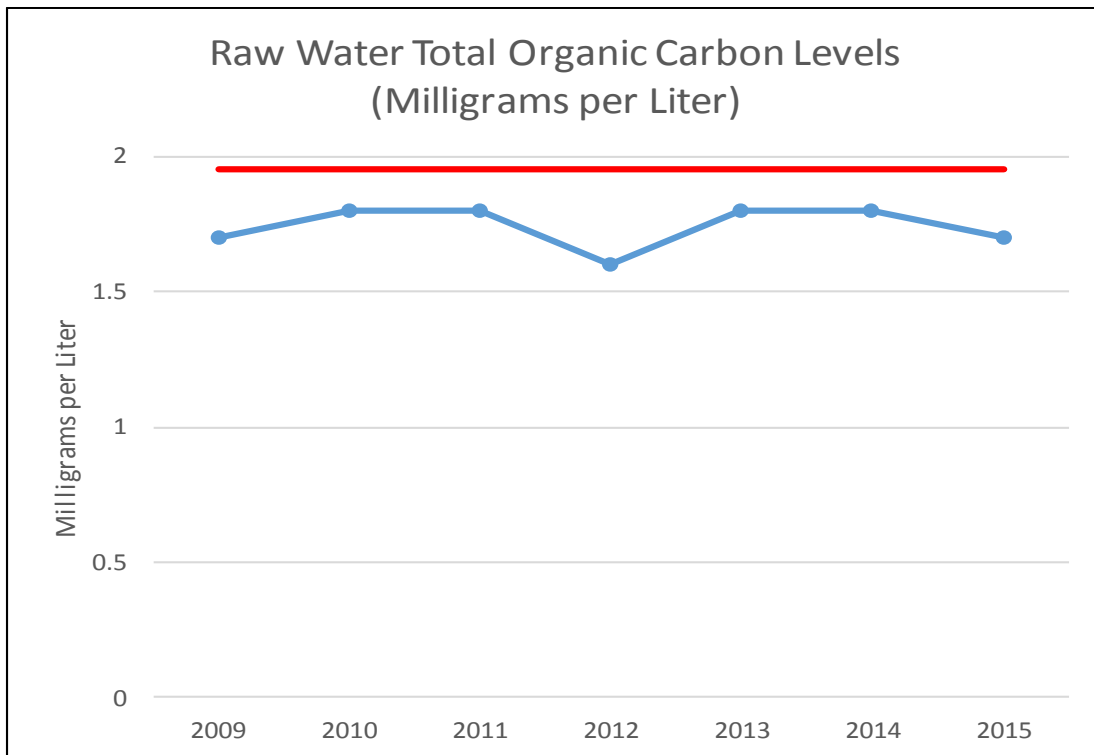


**2015/2016 Achievements:**

- Defended the City’s water rights portfolio by actively participating in key water court cases in 2016.
- Updated the City’s comprehensive water supply plan to incorporate land use and water demand changes.
- Completed the master plan for the reclaimed water system that identifies the areas to be serviced by buildout.
- Continued monitoring all raw potable water and wastewater effluent to maintain compliance with the Clean Water Act and Safe Drinking Water Act regulations.

**Performance Measure Snapshot....**

Water Quality Staff monitors the level of Total Organic Carbon (TOC), which is naturally present in the environment. TOC is any organic compound that could combine with chlorine during the water treatment process to produce unwanted byproducts. Staff has successfully maintained TOC levels below 2.0 milligrams per liter to comply with the Safe Drinking Water Act.





## Utilities Operations

### Overview:

- Provides high-quality drinking water and safely treats the City’s wastewater to meet or exceed all applicable regulations and standards.
- Maintains and operates the City’s water distribution and wastewater collection systems, reclaimed water distribution system, and water, wastewater and reclaimed water treatment facilities.
- Maintains and operates sanitary sewer lift stations, water pumping stations and potable water storage facilities.
- Manages approximately 1,100 dry tons per year of bio-solids through land application and composting.
- Responds promptly to water main and sewer line breaks and other service disruptions to provide excellence in City services to residents and businesses.
- Replaces and rehabilitates deteriorating water and sanitary sewer lines.
- Administers the asset management, document management, and Geographic Information Systems (GIS) applications for the City’s water and wastewater infrastructure.
- Utilizes a mobile radio-read system to provide meter reading services to residents in the City.
- Performs snow and ice control in conjunction with Street Operations.

### 2017 Objectives:

- Complete implementation of the use of mobile devices and applications to increase the efficiency and accuracy of data entry in the field, and monitoring of water and wastewater plant operations.
- Hire a new 2.5 FTE to administer the Fats, Oils, Grease and Grit (FOGG) program.
- Hire a new 2.5 FTE to the City’s Backflow Prevention/ Cross Connection Control Program.
- Complete rehabilitation of the anaerobic digesters at the Big Dry Creek facility.
- Complete the replacement of the filtering material in approximately 50% of the Semper Water Treatment Facility.
- Complete rehabilitation of multiple various chemical feed systems in the Semper and Northwest water treatment facilities.
- Research the possibility of further reducing phosphorus and nitrogen levels discharged from Big Dry Creek Wastewater Treatment Facility.
- Continue the ongoing rebuild of high service pumps at the Semper high service pump stations.

### 2018 Objectives:

- Expand the ability to edit GIS maps and data in the field to increase data accuracy and performance.
- Evaluate the effectiveness of field staff’s mobile devices and applications.
- Implement a Facility Inspection Program to comply with state requirements.
- Plan the connection of the water and wastewater field stations to mobile devices.
- Replace the filtering material in a portion of the Semper Water Treatment Facility.

### Total Budget by Category

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
<b>Personnel</b>	\$4,998,893	\$5,427,549	\$5,232,134	\$5,908,952	\$6,006,328
<b>Contractual</b>	\$5,967,389	\$7,318,008	\$7,353,499	\$7,807,181	\$7,807,593
<b>Commodities</b>	\$1,394,472	\$2,014,534	\$1,990,458	\$2,074,157	\$2,244,583
<b>Capital Outlay</b>	\$1,804	\$252,225	\$232,316	\$211,794	\$209,416
<b>TOTAL</b>	<b>\$12,362,558</b>	<b>\$15,012,316</b>	<b>\$14,808,407</b>	<b>\$16,002,084</b>	<b>\$16,267,920</b>

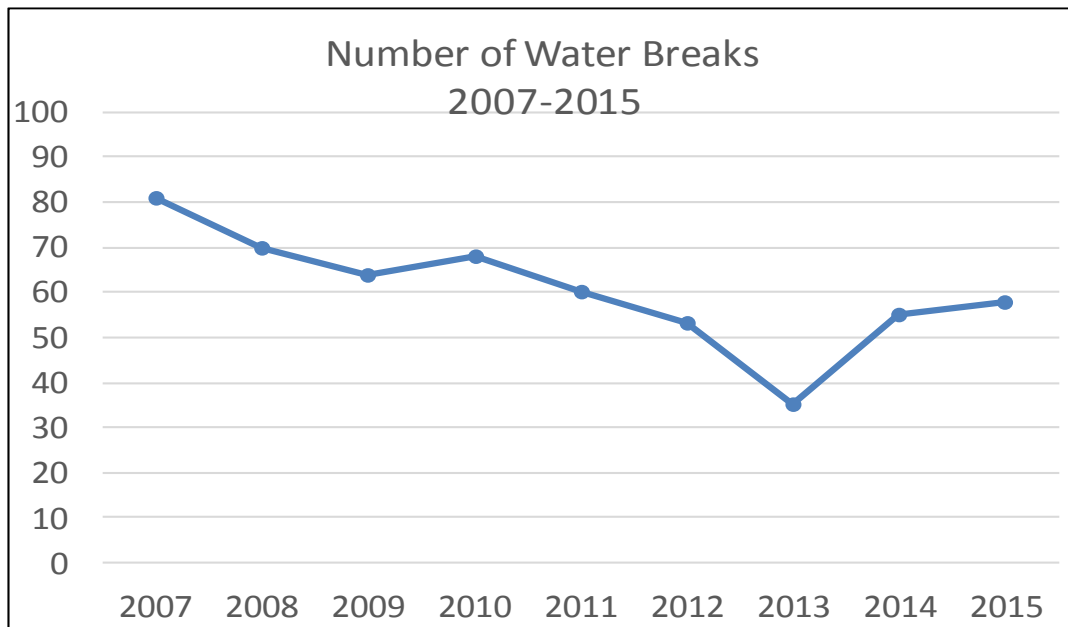


**2015/2016 Achievements:**

- Completed the reorganization of the Field Operations Group, adding 4.0 new FTEs and upgrading two positions to better address system maintenance, to expand testing of water meters to meet established industry standards, and to provide overall excellent City services to residents and businesses.
- Completed the reorganization of the Infrastructure Support Services Group, including the transfer of a 1.0 FTE to the Information Technology Department.
- Implemented the operation of Standley Lake Bypass using Farmer’s Highline Canal water.
- Replaced the meter test bench with new technology to ensure accurate billing of the City’s water meters.
- Completed replacement of the 87th & Wadsworth and 95th & Federal lift stations.
- Added 1.0 FTE Wastewater Superintendent to provide leadership to the wastewater operations and Infrastructure Support Services groups.
- Replaced 22,000 feet of damaged fiber optic cable used to operate and monitor the wastewater facility.
- Completed Semper reclaim lagoon and flash mixer improvements.
- Refurbished the Standley Lake raw water high service pumps; rebuilt two Semper high service pumps to as-new condition.
- Completed the tracer study of the Semper treatment facility pretreatment unit process to determine chlorine contact times as mandated by the Colorado Department of Public Health and Environment.
- Rebuilt all pneumatic valves on all micro membrane treatment infrastructure.
- Implemented intern/apprentice program to recruit and train next generation of plant operators.

**Performance Measure Snapshot....**

A key indicator of a reliable water distribution system is the frequency of water main breaks per 100 miles of pipe per year. Over the past nine years, the City has experienced an overall downward trend in main breaks per 100 miles of pipe each year. This is due to aggressive water line replacement efforts through the capital repair and re-placement program. 2014 had 8.5 breaks per 100 miles of pipe, and 2015 had 10.5 breaks per 100 miles of pipe. These breaks are well below the industry standard of 15 breaks per 100 miles of pipe. A slight increase or decrease in water main breaks on a yearly basis is to be expected for reasons including water demand, weather, construction, pumping issues, or pressure changes. Staff plans to continue water line replacement efforts through the capital repair and replacement program.



## Utilities Engineering

### Overview:

- Oversees and conducts long-term planning of utility infrastructure to sustainably meet the City’s utility needs through build-out.
- Oversees the design and implementation of utility capital projects within adopted Capital Improvement Program (CIP) budgets to provide excellence in City services.

### 2017 Objectives:

- Construct major water capital projects to improve system performance and create redundancy in central Westminster (Pressure Zone 3).
- Construct repairs to a major water transmission main located in Sheridan Boulevard from 92nd Avenue to the southern limits of the City.
- Construct sewer pipeline repairs in south Westminister needed to address aged piping in poor condition and to improve hydraulic capacity for City growth, development, and redevelopment in the southern third of the City.
- Replace the existing Countryside Pump Station with a new facility and make repairs to the Countryside storage tank to address age, condition, reliability, and safety issues.
- Rehabilitate or replace aging infrastructure at the Big Dry Creek Wastewater Treatment Facility to maintain safe, effective, and high-level service.
- Rehabilitate or replace aging infrastructure and enhance reliability of the City’s High Service Pump Station to maintain safe, effective, and high-level service. This facility provides potable water to the majority of the City.
- Initiate design for the Big Dry Creek Wastewater Treatment Facility Dewatering project.

### 2018 Objectives:

- Initiate the first of two phases to replace all of the residential water meters in the City.
- Continue construction of major water capital projects to improve system performance and create redundancy in central Westminister (Pressure Zone 3).
- Replace aged electrical and computer equipment throughout the City that is used to control the potable water infrastructure.
- Initiate studies to confirm the best locations for a future new water treatment plant.

### Total Budget by Category

	2015 Actual	2016 Amended	2016 Estimated	2017 Adopted	2018 Adopted
<b>Personnel</b>	\$0	\$0	\$0	\$773,438	\$769,498
<b>Contractual</b>	\$0	\$0	\$0	\$5,510	\$5,510
<b>Commodities</b>	\$0	\$0	\$0	\$3,700	\$3,700
<b>Capital Outlay</b>	\$0	\$0	\$0	\$750	\$0
<b>TOTAL</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$783,398</b>	<b>\$778,708</b>

NOTE: No expenditures reflected for 2015-2016 as this division was created subsequent to a department reorganization.

**2015/2016 Achievements:**

- Built the Standley Lake Bypass Pipeline to provide sufficient water to the City in the event of an emergency or planned maintenance activities.
- Constructed repairs to the City's Hydropillar elevated storage tank and repainted its exterior with a modern color.
- Constructed a new 3.5-million gallon potable water storage tank at the Northridge tank and pump station site adjacent to City Hall.
- Completed the design and initiated construction for the first phase of the Pressure Zone 3 project. Started design of the remaining portions of this project to improve system performance and create redundancy in central Westminster.
- Completed design for sewer pipeline repairs needed to address aged piping in poor condition and to improve hydraulic capacity for City growth, development, and redevelopment in south Westminster.
- Planned, designed, and constructed new water mains in 88th Avenue and Zuni Street to replace old infrastructure and to meet demands of new development and redevelopment.
- Updated the distribution system monitoring plan to comply with the Federal Revised Total Coliform Rule to ensure system safety.
- Completed infrastructure design reviews for over 200 potential private developments throughout the City.
- Replaced 600 membrane filter modules at the City's Northwest Treatment Facility to maintain reliable potable water treatment capabilities.
- Designed and constructed a new potable water pump station near the intersection of Eaton and 88th avenue.
- Added a new 1.0 FTE Utilities Construction Engineer to improve quality of field inspection services on capital projects at a cost savings of \$140,000.
- Installed dedicated distribution system water quality sampling stations to increase efficiency and reliability.

***Performance Measure Snapshot....***

The performance goal for the Utilities Engineering Division is to initiate 100% of all capital improvement projects within the calendar year they are initially funded. At any point in time, the Utilities Engineering Division is managing +30 capital projects. The Division's goal is to keep pace with project needs and budget as it becomes available.



WESTMINSTER