



## PUBLIC WORKS AND UTILITIES

The Public Works and Utilities Department is comprised of four 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

**Administration:** Oversees the management of all infrastructure improvements, street operations, utilities operations including maintenance and water/wastewater treatment, and all water resources, quality, and engineering services. This includes the creation and management of the department's operating budget, 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 administers the maintenance/asset management program that provides the Department with the resources needed to effectively maintain the many assets that customers use daily.

**Utilities Planning and Engineering:** Responsible for the planning, engineering and construction of the City's raw water, treated water and wastewater systems including collection, distribution and treatment. The Water Quality Group ensures compliance with the City's water and wastewater permits and State and Federal regulations. The Water Resources Engineering Group manages the City's water supply, protecting existing water rights and acquiring sufficient water shares to help the City meet build-out needs. The Utilities Engineering Group oversees the planning, engineering and construction of all water and wastewater capital improvement projects.

### Total Budget by Category

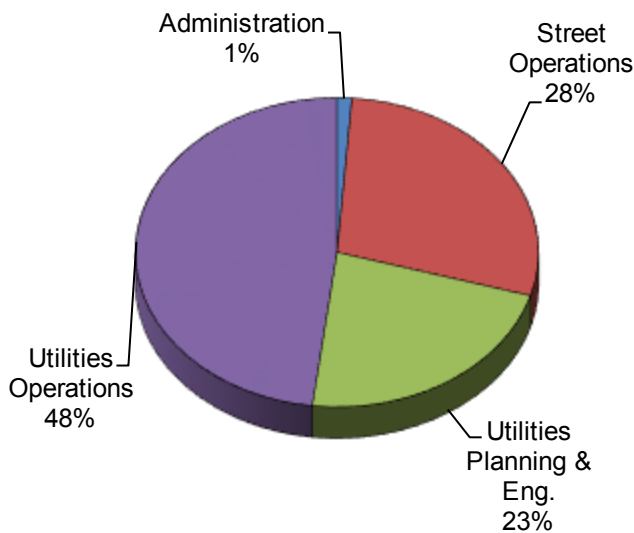
	2013 Actual	2014 Adjusted	2014 Estimated	2015 Adopted	2016 Adopted
Personnel	\$8,162,051	\$8,786,716	\$8,631,942	\$9,369,024	\$9,438,223
Contractual	\$14,706,355	\$17,217,933	\$16,452,331	\$17,912,260	\$18,150,633
Commodities	\$2,131,334	\$2,925,970	\$2,974,299	\$2,999,357	\$3,046,297
Capital Outlay	\$138,523	\$143,836	\$330,663	\$171,875	\$271,825
<b>TOTAL</b>	<b>\$25,138,263</b>	<b>\$29,074,455</b>	<b>\$28,389,235</b>	<b>\$30,452,516</b>	<b>\$30,906,978</b>

**Total Budget by Division**

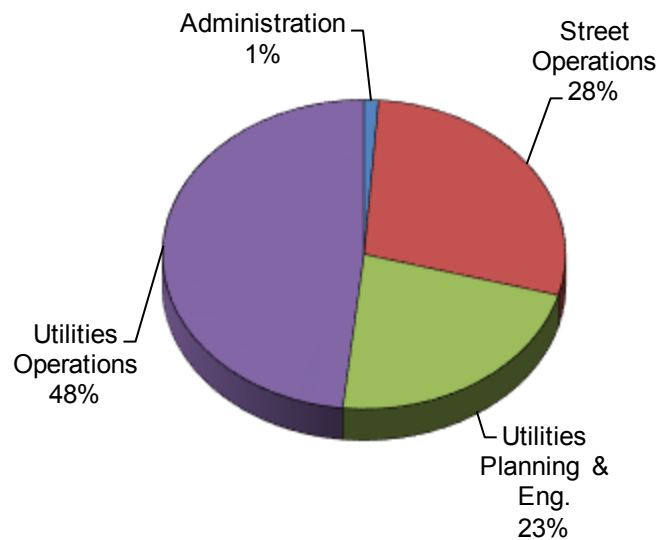
	2013 Actual	2014 Adjusted	2014 Estimated	2015 Adopted	2016 Adopted
<b>Administration</b>	\$303,667	\$348,217	\$305,678	\$359,111	\$359,248
<b>Street Operations</b>	\$7,867,431	\$8,181,812	\$8,156,312	\$8,634,295	\$8,685,623
<b>Utilities Planning &amp; Eng.</b>	\$5,503,484	\$6,432,971	\$6,309,049	\$6,829,162	\$6,927,913
<b>Utilities Operations</b>	\$11,463,681	\$14,111,455	\$13,618,196	\$14,629,948	\$14,934,194
<b>TOTAL</b>	<b>\$25,138,263</b>	<b>\$29,074,455</b>	<b>\$28,389,235</b>	<b>\$30,452,516</b>	<b>\$30,906,978</b>

**Total Budget by Division**

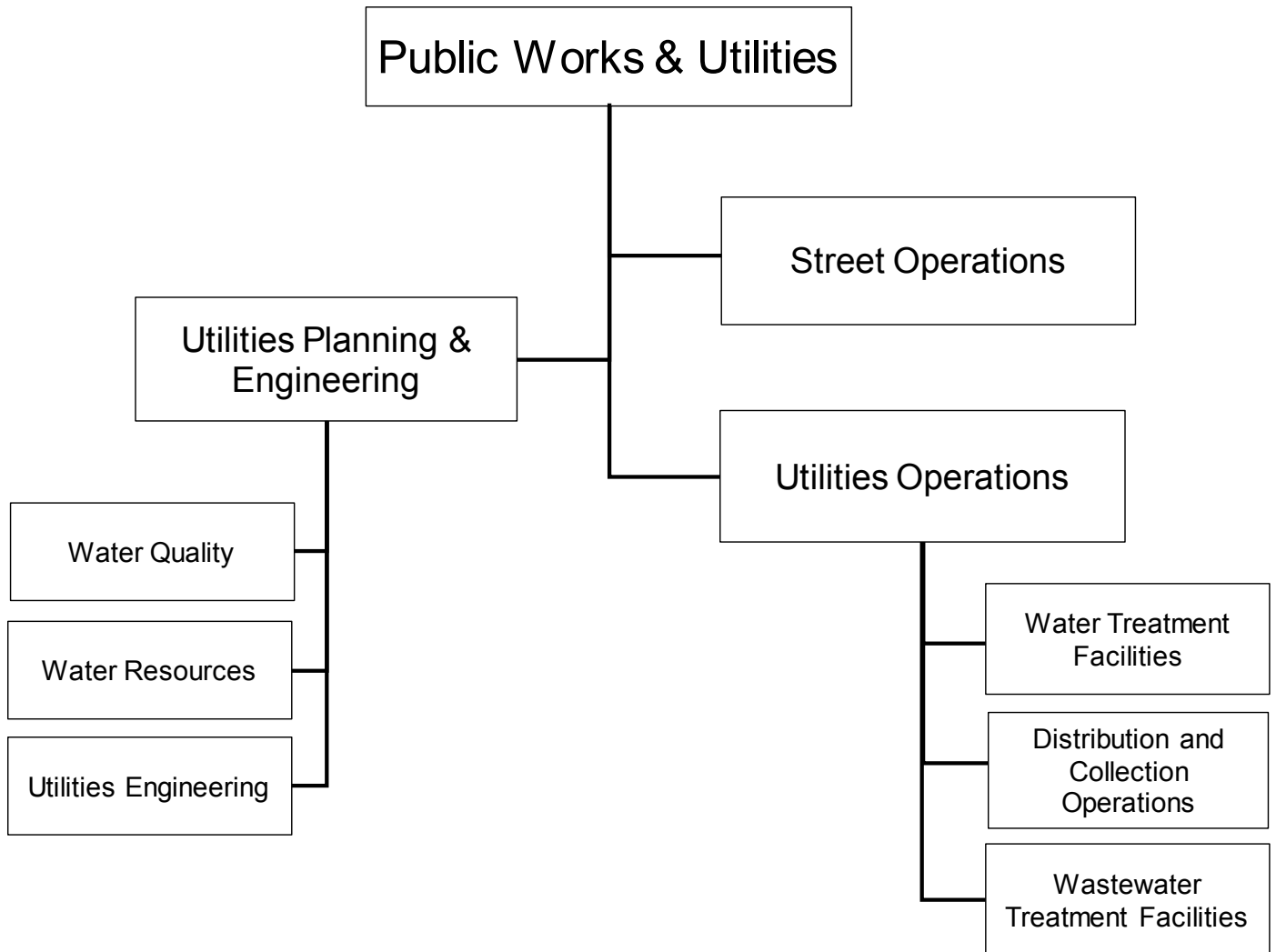
**Adopted 2015**



**Adopted 2016**



**Quick Fact:** Snow control crews provide an average of 48,332 miles of snow removal each snow season.



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

	2013	2014	2015	2016
	Authorized	Authorized	Authorized	Authorized
<b>Administration</b>	3.00	3.00	3.00	3.00
<b>Street Operations</b>	24.00	24.00	24.00	24.00
<b>Utilities Planning &amp; Eng.</b>	27.00	27.00	28.00	28.00
<b>Utilities Operations</b>	78.50	78.50	81.50	81.50
<b>TOTAL</b>	<b>132.50</b>	<b>132.50</b>	<b>136.50</b>	<b>136.50</b>

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

## Administration

### 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.
- Manages 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.
- Oversees the preparation of reports, memorandums and presentations to City Council.
- Provides public information on Departmental operations and projects.

### 2015 Objectives:

- Identify methods of enhancing citizen, business and visitor mobility throughout the City through the proposed Connectivity and Mobility Master Plan.
- Oversee the strategic reorganization of the Utilities Operations Division, which will increase the effectiveness of the City’s critical infrastructure maintenance.
- 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.
- Continue to utilize the City’s Pavement Management System as a decision-making tool to stretch maintenance dollars.

### 2016 Objectives:

- Implement solutions identified in the proposed Connectivity and Mobility Master Plan.
- Evaluate the effectiveness of the proposed Utilities Operations Division’s 2015 reorganization.
- Develop and recommend 2017 and 2018 water and wastewater rates to City Council.
- Continue to support the efficiency and interdepartmental coordination of the Department’s infrastructure improvements and operations.
- Continue to utilize the City’s Pavement Management System as an important management tool.

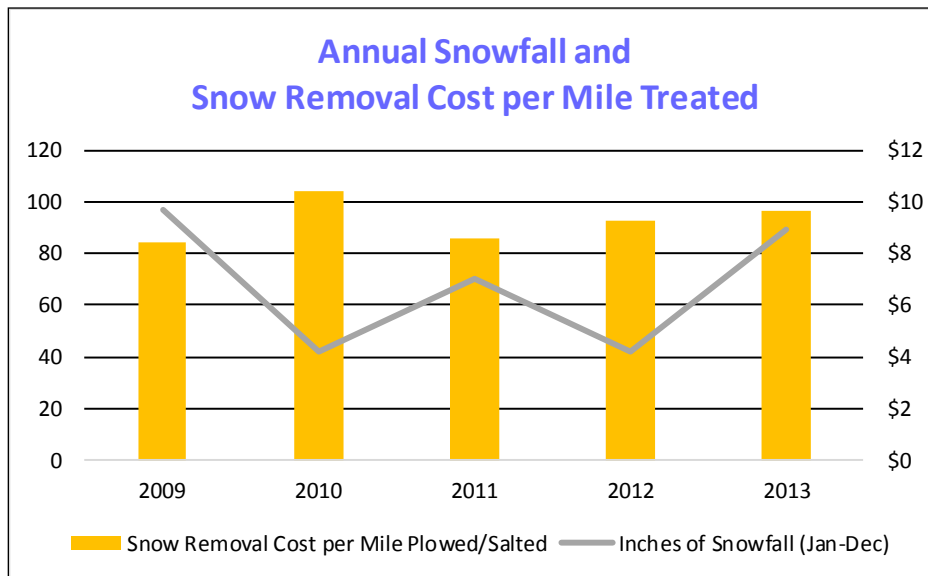
### Total Budget by Category

	2013 Actual	2014 Adjusted	2014 Estimated	2015 Adopted	2016 Adopted
<b>Personnel</b>	\$233,989	\$290,956	\$246,325	\$295,142	\$295,142
<b>Contractual</b>	\$65,960	\$54,261	\$56,553	\$60,969	\$61,106
<b>Commodities</b>	\$3,718	\$3,000	\$2,800	\$3,000	\$3,000
<b>Capital Outlay</b>	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$303,667</b>	<b>\$348,217</b>	<b>\$305,678</b>	<b>\$359,111</b>	<b>\$359,248</b>



**2013/2014 Achievements:**

- Adapted the City’s water conservation program to notify customers of water leaks and direct them to helpful resources.
- Collaborated across City departments and with external entities to ensure the safety of residents and City infrastructure following the September 2013 floods.
- Initiated an in-house Wastewater Collection System Maintenance Program in 2013 that includes an annual video inspection program, jet cleaning and root and grease control as needed; a crew of 4.0 FTE was added and two new vehicles purchased.
- Utilized the City’s Pavement Management System as a decision-making tool to stretch street maintenance dollars.
- Directed all infrastructure improvements, street operations, utilities operations, and utility planning and engineering capital projects with increased efficiency, consistency, and interdepartmental coordination.
- Planned and completed capital improvement projects within adopted budgets and in accordance with project schedules.
- Teamed with other City departments to ensure the financial sustainability of the Utility.



**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.

### 2015 Objectives:

- Increase street maintenance (resurfacing and seal-coating) from 7% to 9% of the City’s street network in accordance with the \$275,000 increase in 2015 in operating budgets.
- Schedule and plan the replacement of deteriorated curbs, gutters, sidewalks and curb ramps as part of the new Major Concrete Replacement capital project account.
- Utilize the Zonar fleet management system to track and address vehicle idling and to automate vehicle pre- and post-trip inspections.
- Continue to maintain the established traffic control device tracking program for all road traffic signage to meet or exceed federally mandated standards of retro-reflectivity.
- Continue to replace corroded street light poles.
- Continue to establish and manage the City-owned street light network and the tracking/maintenance programs associated with these assets.
- Work with Community Development Engineering Division on assessment of best practices to maintain street light and traffic signal system, and develop recommendations.

### 2016 Objectives:

- Continue best management practices to address storm sewer regulations.
- Maintain the amount of repair and maintenance of the City’s street infrastructure 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.
- Continue to utilize the City’s Pavement Management System as a decision-making tool to stretch maintenance dollars and assure that limited funding is optimized.
- Accomplish preventive maintenance on 10% of the City’s public parking lots.
- Administer capital improvement projects on arterial roadways.

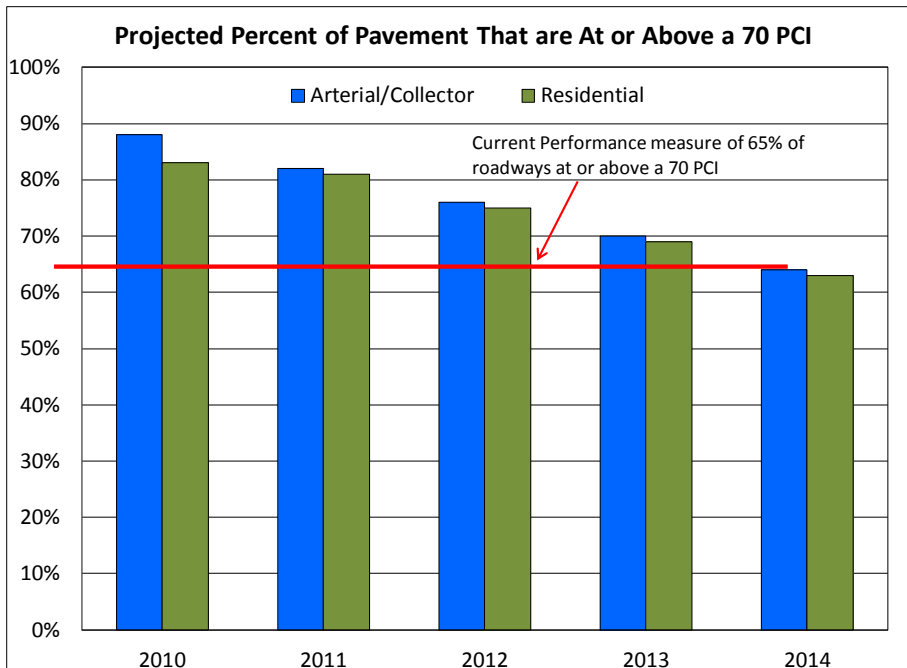
### Total Budget by Category

	2013 Actual	2014 Adjusted	2014 Estimated	2015 Adopted	2016 Adopted
<b>Personnel</b>	\$1,444,976	\$1,472,087	\$1,475,987	\$1,516,933	\$1,516,932
<b>Contractual</b>	\$5,552,422	\$5,827,166	\$5,784,935	\$6,202,674	\$6,254,003
<b>Commodities</b>	\$867,033	\$882,559	\$881,752	\$914,688	\$914,688
<b>Capital Outlay</b>	\$3,000	\$0	\$13,638	\$0	\$0
<b>TOTAL</b>	<b>\$7,867,431</b>	<b>\$8,181,812</b>	<b>\$8,156,312</b>	<b>\$8,634,295</b>	<b>\$8,685,623</b>



**2013/2014 Achievements:**

- Completed the Public Safety Center parking lot reconstruction project.
- Completed \$4 million in street improvement projects totaling 100 lane miles of city streets.
- Established a traffic control device tracking program for all road traffic signage, to meet or exceed federally mandated standards of retro-reflectivity.
- Initiated a tracking and maintenance system for City-owned, new street light installations.
- Maintained citywide storm sewers, open drainage and catch basins.
- Provided efficient snow and ice control to assure safety for the public during 14 full crew deployments throughout the 2013/2014 snow season.
- Utilized the City’s Pavement Management System as a decision-making tool to stretch maintenance dollars.



**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. Presently 73% of residential roadways and 78% of arterial/collector roadways fall within these parameters.

## Utilities Planning and Engineering

### 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.
- Manages raw water supply planning and operations, including the development of new raw water supplies and the assurance of their quality.
- Maintains and protects the City’s water rights portfolio, participates on the boards of local irrigation ditch companies and on the Standley Lake Operating Committee, and manages various raw water facilities, including Jim Baker Reservoir and the Kinneer Ditch Pipeline.
- Oversees planning, coordination, and completion of utility capital infrastructure design and construction on behalf of both the Utilities Operations Division and the Utilities Planning and Engineering Division within adopted Capital Improvement Program (CIP) budgets and in accordance with project schedules.
- Administers the reclaimed water and conservation programs.
- Identify the appropriate water and wastewater tap sizing and fees for new development in the City.

### 2015 Objectives:

- Add a new 1.0 FTE Utilities Construction Engineer to save costs and improve quality of field inspection services on capital projects.
- Design major water improvements to improve system performance and create redundancy in central Westminster (Pressure Zone 3).
- Prepare, finance and construct sewer pipeline repairs in south Westminster 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.
- Plan, design, and construct new water main projects needed due to new development or redevelopment.
- Install distribution system water quality sampling stations.
- Install measurement gauges on Clear Creek and implement an enhanced flow monitoring program.

### 2016 Objectives:

- Construct major water capital projects to improve system performance and create redundancy in central Westminster (Pressure Zone 3).
- Rehabilitate or replace several of the City’s aging master meters and vaults.
- Plan, design, and construct repairs to a major water transmission main located in Sheridan Boulevard from 92nd Avenue to the southern limits of the City.
- Defend the City’s water rights portfolio by actively participating in key water court cases scheduled for 2016.
- Update the distribution system monitoring plan to comply with the Federal Revised Total Coliform Rule to ensure system safety.
- Plan, design, and permit improvements to the Countryside storage tank and pump station to facilitate 2017 construction.
- Continue monitoring all raw potable water and wastewater effluent to maintain compliance with the Clean Water Act and Safe Drinking Water Act regulations.

### Total Budget by Category

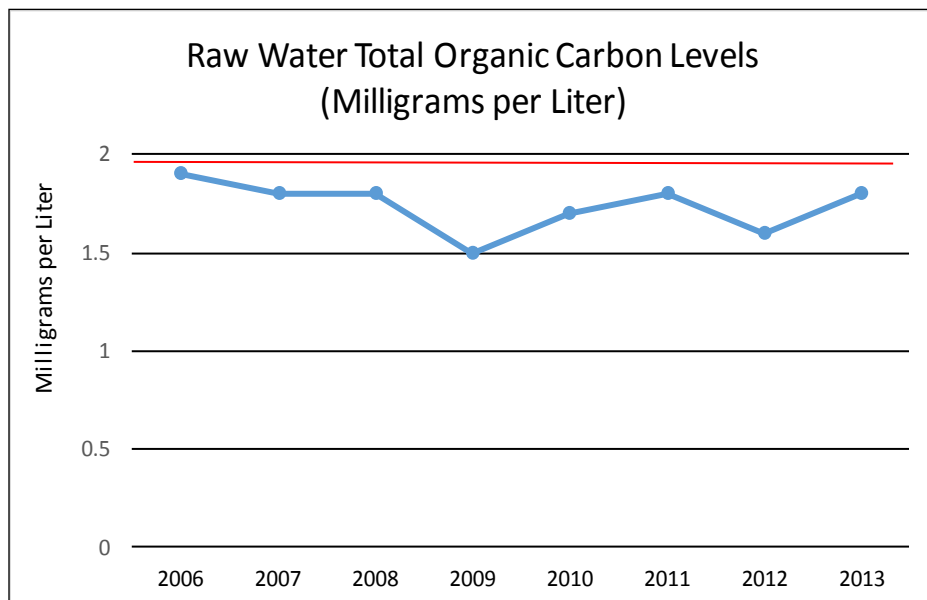
	2013 Actual	2014 Adjusted	2014 Estimated	2015 Adopted	2016 Adopted
<b>Personnel</b>	\$1,944,306	\$2,152,075	\$2,087,514	\$2,265,221	\$2,343,722
<b>Contractual</b>	\$3,477,738	\$4,201,919	\$4,147,495	\$4,485,141	\$4,506,616
<b>Commodities</b>	\$78,649	\$77,477	\$74,040	\$77,575	\$77,575
<b>Capital Outlay</b>	\$2,791	\$1,500	\$0	\$1,225	\$0
<b>TOTAL</b>	<b>\$5,503,484</b>	<b>\$6,432,971</b>	<b>\$6,309,049</b>	<b>\$6,829,162</b>	<b>\$6,927,913</b>





**2013/2014 Achievements:**

- Completed replacement of the 87th Avenue and Wadsworth Boulevard sewage lift station.
- Completed the Little Dry Creek Sewer Interceptor in the transit-oriented development area between Lowell Boulevard and Federal Boulevard near the future commuter rail Westminster Station.
- Continuously monitored the water quality stations located throughout the Clear Creek watershed and at Standley Lake to alert the water treatment plant operators about changing conditions that could affect treatment of the drinking water.
- Implemented a leak notification system in partnership with Utility Billing in the Finance Department to notify customers of leaks and direct them to helpful resources.
- Rehabilitated the Farmers' High Line Canal headworks infrastructure at Clear Creek, a major source of water for City residents.
- Expanded the reclaimed system service area by 17% to a total of 944 irrigated acres.
- Responded to record flooding in September 2013; assessed and repaired critical infrastructure.



**Performance Measure Snapshot....**

One water quality component that Staff monitors is the level of Total Organic Carbon (TOC), which is naturally present in the environment. This is any organic compound that could combine with chlorine during the water treatment process. Staff has been successful in maintaining TOC levels below 2.0 milligrams per liter, to both comply with the Safe Drinking Water Act and to mitigate

## 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: Semper Water Treatment Facility (44 million gallons per day (mgd)), Northwest Water Treatment Facility (15 mgd), Big Dry Creek Wastewater Treatment Facility (11.9 mgd) and Reclaimed Water Treatment Facility (10 mgd).
- Maintains and operates sanitary sewer lift stations, water pumping stations and potable water storage facilities.
- Manages approximately 1,100 dry tons per year of biosolids through land application and composting.
- Responds to water main and sewer line breaks and other service disruptions.
- 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.

### 2015 Objectives:

- Complete the reorganization of the Field Operations Group, adding 4.0 new FTEs and upgrading two positions to better address system maintenance and to expand testing of water meters to meet established industry standards.
- Complete the reorganization of the Infrastructure Support Services Group, including the transfer of a 1.0 FTE to Information Technology.
- Explore the use of mobile devices and applications to increase the efficiency and accuracy of data entry in the field.
- Evaluate wastewater maintenance program.
- Re-evaluate water distribution system maintenance program to include transmission line valves, pressure reducing valves, air relief valves, and emergency interconnects.
- Continue to administer the Backflow Prevention/Cross Connection Control Program testing to ensure that all devices are tested annually.

### 2016 Objectives:

- Expand the ability to edit GIS maps and data in the field to increase accuracy and performance.
- Expand the Backflow Prevention/Cross Connection Control Program to comply with state regulations.
- Evaluate the effectiveness of field staff’s mobile devices and applications.
- Expand the current Water Storage Tank Facility Inspection Program to comply with state requirements.
- Research the possibility of further reducing phosphorus and nitrogen levels discharged from the Big Dry Creek Wastewater Treatment Facility to proactively meet lower anticipated limits.
- 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.

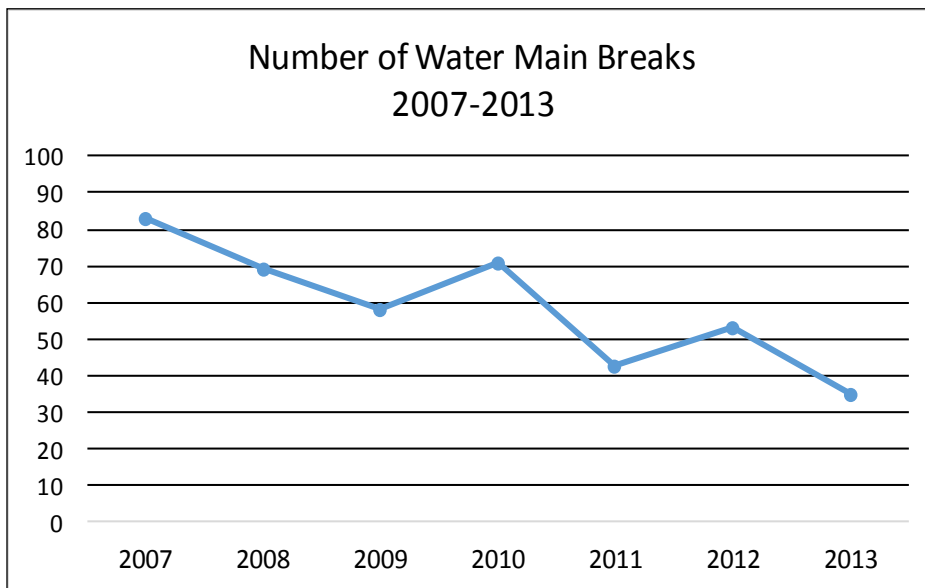
### Total Budget by Category

	2013 Actual	2014 Adjusted	2014 Estimated	2015 Adopted	2016 Adopted
<b>Personnel</b>	\$4,538,780	\$4,871,598	\$4,822,116	\$5,291,728	\$5,282,427
<b>Contractual</b>	\$5,610,235	\$7,134,587	\$6,463,348	\$7,163,476	\$7,328,908
<b>Commodities</b>	\$1,181,934	\$1,962,934	\$2,015,707	\$2,004,094	\$2,051,034
<b>Capital Outlay</b>	\$132,732	\$142,336	\$317,025	\$170,650	\$271,825
<b>TOTAL</b>	<b>\$11,463,681</b>	<b>\$14,111,455</b>	<b>\$13,618,196</b>	<b>\$14,629,948</b>	<b>\$14,934,194</b>



**2013/2014 Achievements:**

- Initiated an in-house Wastewater Collection System Maintenance Program that includes video inspecting approximately 85 miles of the collection system annually, jet cleaning, and root and grease control as needed. A crew of 4.0 FTE was added and two new vehicles purchased in 2013.
- Continue to provide safe drinking water to residents after the September 2013 rain events and subsequent floods caused large amounts of stormwater to enter Standley Lake due to diligent teamwork of water treatment operators and water quality staff.
- Purchased leak detection equipment to survey water distribution system and detect water loss.
- Purchased valve turning equipment to assist with the efficiency and standardization of valve maintenance.
- Hired a 1.0 FTE Utility Technician to the maintenance team at the Big Dry Creek Wastewater Treatment Facility to improve operations.
- Added a 1.0 FTE Water Plant Operator as a part of the 24/7 rotating operator shifts.
- Operated the new Eco Wash filter system at the Reclaimed Water Treatment Facility, which improves the efficiency of the filtering process and the quality of the final product.
- Completed and began operation of the refurbished irrigation system at the Strasburg Natural Resources Farm, where the City’s biosolids are applied.



**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 seven years, the City has experienced a downward trend of main breaks per 100 miles of pipe each year. 2013 had only 6.6 breaks per 100 miles, the lowest number of breaks in recent history and exceeding the industry standards. This is due to aggressive water line replacement efforts through the capital repair and replacement program.



WESTMINSTER