

# 2018 | BUDGET



Dillon Reservoir

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# Denver Water Overview



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# CEO LETTER

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We are pleased to provide the 2018 Annual Budget Book for Denver Water.

## The Report

This report is presented in seven sections as follows:

- I. **Denver Water Overview**, which includes this letter of transmittal plus an overview of Denver Water and the City and County of Denver.
- II. **Organizational Structure**, which includes the organization chart, and information on the Board of Water Commissioners and Executive Leadership
- III. **Strategy and Process**, which includes an overview of the Denver Water Strategic Plan, and details around our Annual planning/budgeting process.
- IV. **Financial Section**, which contains the financial schedules (sources and uses, division budgets, FTE, fund structure, debt), and information on relevant financial policies.
- V. **Projects**, which includes an overview of the Systems and Programs process, 5-year capital plan, project summary with budget, and updates on select capital projects.
- VI. **Water Rates and Usage**, which contains information on our current water rates, usage, and drought plan.
- VII. **Other Information**, which contains the 2017 year in review

## Profile of Denver Water

The privately-owned Denver City Water Company was organized in 1870. It was merged into the Denver Union Water Company in 1894, along with several smaller companies serving various parts of a growing Denver. In 1918, Denver residents voted to create a five-member Board of Water Commissioners and buy the Denver Union Water Company's water system for about \$14 million, creating Denver Water. The five-member Board of Water Commissioners (the "Board") structure is still in existence, governed under the Charter of the City and County of Denver Article X.

Denver Water is a public entity funded by water rates and new tap fees, not taxes. Today, its service area covers more than 335 square miles, including the City and several suburban distributors. The majority of Denver's water comes from rivers and streams fed by mountain snowmelt. The South Platte River, Blue River, Williams Fork River and Fraser River watersheds are Denver Water's primary water sources, but it also uses water from the South Boulder Creek, Ralston Creek, and Bear Creek watersheds.

A system of reservoirs networked by tunnels and canals provide water to more than a million people. Three major treatment plants (Marston, Moffat, and Foothills) maintain water quality under the watchful eye of the Denver Water Quality Control Laboratory.

## Local Economy

Denver is the center of economic activity in the state of Colorado. Major industries include aerospace, aviation, beverage production, bioscience, broadcasting and telecommunications, energy, financial services, healthcare and wellness and IT-software. The statewide economy also includes agriculture and tourism. In 2015 Colorado was the second-fastest growing state (2016 U.S. Census Bureau) and continues to increase. Water is essential to making Colorado beautiful and to ensuring the quality of life we enjoy.

## Budgeting and Planning

Although Denver Water is not legally required to adopt budgetary accounting and reporting, the annual budget serves as the foundation for Denver Water's financial planning and control. The budget process involves:

- Long Range Planning - Denver Water maintains long-range capital, operation and maintenance, and financial plans that are updated annually. The Capital Plan projects additions, improvements, and replacements to water system facilities, based on projected demand for water, federal and state regulations, and ongoing system requirements. The Operation and Maintenance Plan includes the ongoing costs of operating and maintaining the water system and the impact of the Capital Plan on operations. The Financial Plan considers compliance with debt covenants and the year-end target cash reserve.
- Annual Work Plan and Strategic Plan Alignment - Prior to the commencement of the annual budget process, a thorough review of ongoing and proposed organizational initiatives is completed. With help from Section Leaders, Chiefs utilize a filtering tool to show how the initiatives link to the updated Strategic Plan, to identify the demands placed on the business, and to reflect the impact to the Strategic Plan. Initiatives are deferred if they do not have a strong enough case, and the remaining initiatives are prioritized. Early in this process, multi-year Initiatives and Programs that roll from year to year are flagged because they limit the number of new initiatives that can be added. Finally, work is done on aligning the Continuous Improvement and Audit activities to better support the Annual Work Plan. The Organizational Scorecard and Dashboard are reviewed and updated, as necessary, to reflect changes to the Strategic Plan.
- Annual Budget Preparation - The annual budget is prepared on a program budget basis that follows the flow of water from its source to customers' taps and cuts across organizational boundaries. The focus is first on what Denver Water as a whole is doing (what our resources are used for), then on organizational structure (the divisions and sections expending the resources), and then by type of expenditures (what types of resources – payroll, services, etc., are being used). The intent of this particular format is to facilitate the reader's understanding of how we are accomplishing our mission to serve our customers' needs in the past, present and future.

## Relevant Financial Policies and Practices – Investment Balance

Denver Water established a comprehensive set of financial policies and practices as a basic framework for the financial management of Denver Water and its planning and budgeting process. These policies and practices are listed in the Budget Book. Two investment balance related policies and practices are as follows:

- Balanced Budget - The Denver Board of Water Commissioners has not adopted an official policy on a balanced budget. Our practice is to balance the budget by the planned use or contribution to investment balances.
- Cash Reserves - The Charter of the City and County of Denver specifically allows the accumulation of reserves “sufficient to pay for operation, maintenance, reserves, debt service, additions, extensions, and betterments, including those reasonably required for anticipated growth of the Denver Metropolitan area and to provide for Denver’s general welfare.”

Denver Water began 2018 with an actual cash and investment balance of \$449 million, at cost. The 2018 budget projects this balance to increase by receipts of \$405 million and decrease by expenditures of \$443 million, resulting in a projected 2018 ending balance of \$411 million.

## Long-Term Financial Planning – Major Initiatives

A representation of major capital projects included in the long range planning process are as follows:

- Approximately \$464 million is budgeted in total project costs for Denver Water’s Gross Reservoir Expansion Project, previously known as the Moffat Collection System Project, for the evaluation, permitting, mitigation, and construction process to augment our supply to the northern service area.
- The Operations Complex Redevelopment (OCR) project includes construction of four new operations buildings consisting of a new consolidated trades shop, a warehouse, fleet services building, and meter shop. The project also includes a new parking structure, administration building, and a wellness building. In addition to the new construction, the three stone buildings and water distribution building will be remodeled. The four operations buildings were completed in September, 2017. Final completion is anticipated in the 1<sup>st</sup> quarter of 2020. The projected budget impact for this project is \$195.8 million.
- Approximately \$600 million is budgeted in capital cost for Denver Water’s North System Renewal project. This includes funds for the planning, design, and construction of a new 75-million gallon per day (MGD) Water Treatment Plant (WTP), expandable to 150 MGD. Upon completion, the Northwater Treatment Plant (NTP) will replace the existing Moffat WTP with a state-of-the-art facility designed to improve reliability and operational flexibility. A portion of the existing Moffat WTP will also remain in service through 2040, and the project includes improvements at the Moffat site to convey treated water from both NTP and Moffat to the distribution system

Revenue adjustments identified in the 2018 Financial Plan are set at levels to meet annual revenue requirements, debt service coverage, and target reserves. Revenue requirements include annual operation and maintenance expenses, payments on existing and proposed debt service, and rate-funded capital projects. Denver Water uses a combination of debt and cash reserves to maintain leveled annual revenue adjustments to meet these requirements. The use of debt to fund specific capital projects distributes the annual cost of facilities over time rather than requiring the full amount in any one year. The adopted revenue adjustment for 2018 was effective beginning March 1, 2018. This adjustment is expected to produce 3.0% of additional revenue over a 10-month period, assuming normal weather and consumption. In addition, annual revenue adjustments of 3.0% are projected in 2019 through 2027. The Financial Plan is updated annually.

## Awards, Recognition and Acknowledgements

Comprehensive Annual Financial Report - The GFOA awarded a Certificate of Achievement for Excellence in Financial Reporting to Denver Water for its CAFR for the fiscal year ended December 31, 2016. This was the 29th consecutive year that Denver Water has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized CAFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

Annual Budget - Denver Water also received the GFOA's Distinguished Budget Presentation Award for its annual budget document for the fiscal year beginning January 1, 2017. This is the 26th consecutive year Denver Water has received this award. In order to qualify for this award, Denver Water's budget document had to be judged proficient as a policy document, a financial plan, an operations guide, and a communications device.

## Acknowledgments

We wish to express our appreciation to all members of Denver Water who assisted and contributed to the preparation of this report. Credit must also be given to the Board of Water Commissioners for their unfailing support for maintaining the highest standards of professionalism in the management of Denver Water's finances.

Sincerely,



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James S. Lochhead  
CEO/Manager



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Angela C. Bricmont  
Chief of Finance



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# ABOUT DENVER WATER

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Denver Water proudly serves high-quality water and promotes its efficient use to 1.4 million people in the city of Denver and many surrounding suburbs. Denver Water serves about a quarter of the state’s population but uses less than 2% of all water, treated and untreated, in Colorado.

- Denver Water is Colorado’s oldest and largest water utility.
- Denver Water was established in 1918 after Denver residents voted to buy the water system from a private company.
- Denver Water is a separate entity from the city of Denver and is funded by water rates and new tap fees, not taxes.
- Denver Water derives its authority from the Charter of The City and County of Denver (Article X).
- Denver Water’s primary water sources include: South Platte River, Blue River, Williams Fork River and Fraser River watersheds.
- Other water sources include: South Boulder Creek, Ralston Creek and Bear Creek watersheds.



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# HISTORY

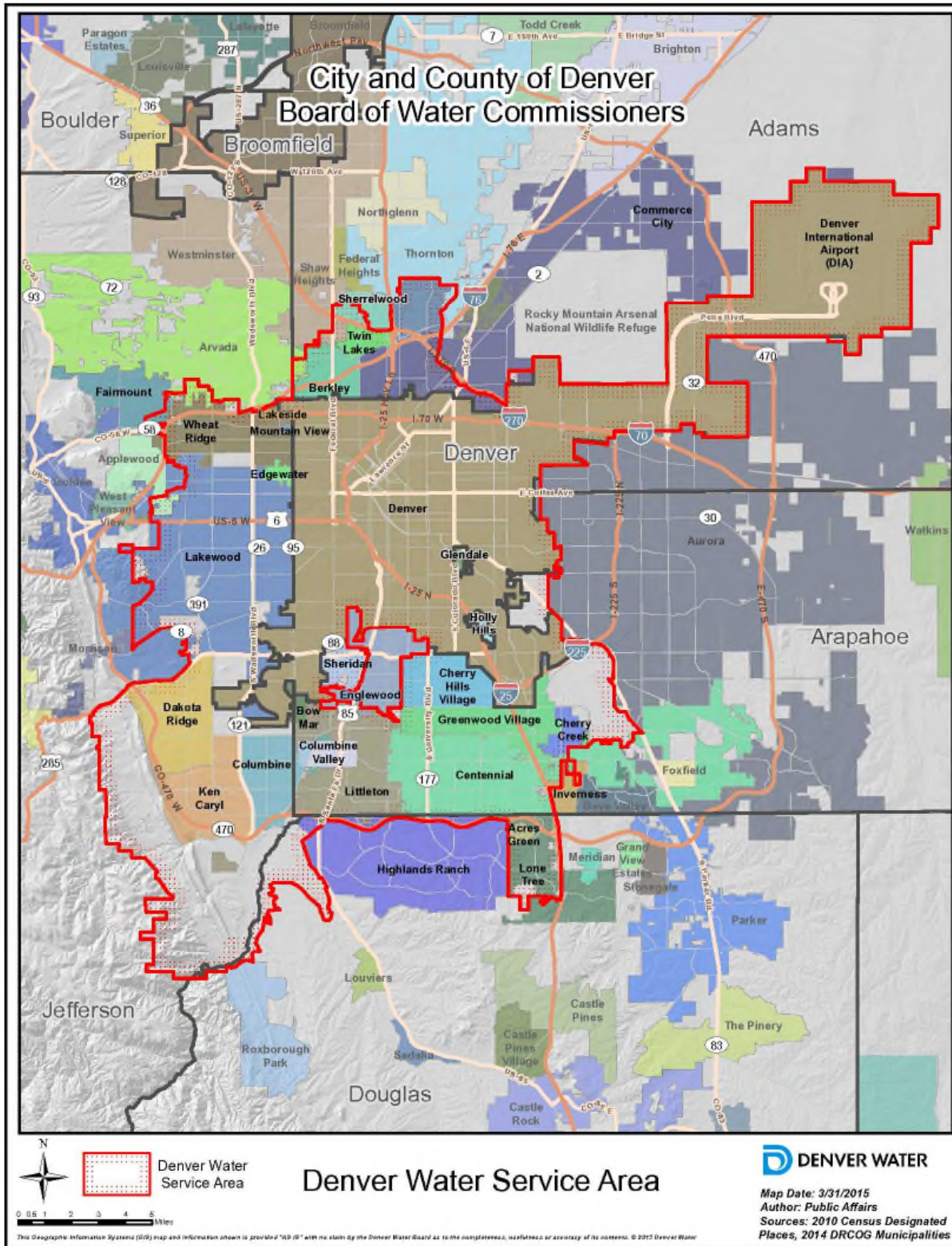
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Long before the city of Denver was established, the South Platte River and Cherry Creek were oases for people who traveled the dry Great Plains. These early travelers could do without many things, but not water. That's why pioneers, and the American Indians before them, camped along the banks of Cherry Creek and the South Platte River. The first residents of the area drank water directly from the creek and river. Surface wells and buckets of water sufficed for a while as a delivery system, but they soon proved inadequate. Irrigation ditches were the next step forward.

Soon, water companies began offering service to settlers. By the late 1800s, several water companies had fought, collapsed or merged. In 1918, Denver residents voted to buy the Denver Union Water Company and form the municipal agency now known as Denver Water. In doing so, voters created an entity that would operate independently from city government, thereby keeping water service separate from local politics.

Today, Denver Water is the largest and oldest water utility in the state. Its service area covers more than 335 square miles, including the City and County of Denver and several suburban distributors. A system of reservoirs networked by tunnels and canals provides water to more than a million people. Three major treatment plants — Marston, Moffat and Foothills — maintain water quality under the watchful eye of the Denver Water Quality Control Laboratory.





## 100th Anniversary

Denver Water is celebrating an amazing milestone in 2018 — 100 years of bringing the gift of mountain snowpack to sustain our vibrant metropolitan community. It has been an honor to be trusted with collecting, treating and delivering safe drinking water to the Denver area for the last century.

As we reflect on the last 100 years, we are grateful to our fellow citizens who also are good stewards of this precious, finite resource — the wondrous gift of water.

From our mountain reservoir caretakers to our treatment plant operators in town, the Denver Water family thanks you for sharing our commitment to water.

### **Past, present and future: Water connects us all.**

Everyone in Colorado shares in the beauty of our water and in the responsibility for taking good care of it. Because water doesn't just sustain our bodies, it nourishes our state's agriculture, industry, recreation, tourism, and environment.

In 2018, Denver Water celebrates its 100th anniversary — a milestone that will usher in a new century of innovation and foresight to preserve and protect our water supply for generations to come.

We have some impressive stories in our past: The longest underground tunnel (Dillon Reservoir of 50 years) in the world, the tallest dam (Cheesman Reservoir) in the world, even a project (the Moffat System of 75 years) built with a blast from President Calvin Coolidge. But between those remarkable engineering feats, we've built something unparalleled: A system that delivers safe, clean water to a quarter of all Coloradans.

Water pioneers knew Denver had potential to be a world-class city, but it couldn't do much without a reliable water source. In Denver's early years, multiple water companies fought, collapsed and merged trying to provide water to the growing city. But nobody stayed for long. That was until 1918, when residents voted to establish Denver Water, supplying the city "with water for all uses and purposes." That progressive move paved the way for 100 years of stable water service, foresight we value now more than ever.







A century later, there are new trails to blaze. And our legacy is only beginning. We're expanding a dam (Gross Reservoir Expansion Project), undergoing a planning process (long range planning)

to guide our water system for 50 years, modernizing our north system (North System Renewal) and using revolutionary sustainability practices in our new operations complex. We're proud of our century of service to the Denver-metro area, and we'll continue to build on our impressive legacy long into the future.

As we enter our next century of service, we're facing new challenges with innovation, hard work and grit, never swaying from our original pursuit to manage and improve the complex system entrusted to us. We stand by and thank our fellow citizens who are also good stewards of water, our life-giving, finite resource. Past, present and future: our commitment to water runs deep.

*Then  
AND  
Now*


In 1918, Denver residents voted to buy the Denver Union Water Company for \$14 million, and Denver Water was born. A lot has changed since that time, except for one: providing high-quality, reliable drinking water to our customers.

1918	<b>VERSUS</b>	2018	
\$0.47/gallon		\$2.29/gallon	
\$0.54/dozen		\$2.39/dozen	
\$0.55/pound		\$3.39/pound	
POPULATION SERVED DENVER ONLY <b>256,491</b>		POPULATION SERVED DENVER & SUBURBS <b>1.4 million</b>	
MAXIMUM DAILY <b>95 million gal.</b> TREATED WATER		MAXIMUM DAILY <b>715 million gal.</b> TREATED WATER	
<b>532</b> MILES OF PIPE		<b>3,102</b> MILES OF PIPE	

To learn more about our past, present and future,  
visit [denverwater.org/100years](http://denverwater.org/100years).

We're looking forward to serving you for the next century.

Source: Denver Water records, U.S. Dept. of the Interior, Bureau of Reclamation, and U.S. Census Bureau. © 2018 Denver Water. All rights reserved. Denver Water is an Equal Opportunity Employer.

 **DENVER WATER | 100 YEARS**  
1918 - 2018

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# MISSION, VISION, VALUES

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## Denver Water's Mission Statement

To expertly manage and supply an essential natural resource to sustain our vibrant community  
— because water connects us all.

## Denver Water's Vision Statement

Denver Water aspires to be the best water utility in the nation.

## Denver Water's Values

Integrity, Respect, Vision, Excellence, Passion



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# CITY & COUNTY OF DENVER

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## Demographics

As a fast-growing region, Metro Denver is a dynamic location where companies can easily attract highly skilled workers and expand their operations.

The Metro Denver region had a 1.6 percent population growth rate between 2010 and 2015 and is consistently ranked as one of the fastest-growing areas in the nation.

The region is one of the top in the country for in-migration of Millennials, which will make up the future workforce. More impressive facts about Metro Denver and Colorado's demographics:

- Colorado was the second-fastest growing state in 2015 (U.S. Census Bureau, 2016)
- Colorado is the nation's second-most highly educated state for residents (39.2 percent) with a bachelor's degree or higher (U.S. Census Bureau, 2016)
- In addition, Colorado has the nation's lowest obesity rate and is No. 1 for physical activity (Trust for America's Health, 2016; Kaiser State Health Facts, 2016)
- Colorado ranks No. 1 for labor supply (Forbes, 2016)

## Population

Metro Denver has a population of more than three million people, and has a growth rate that has consistently outpaced the national rate every decade since the 1930s. The region grew steadily in the past 10 years, and by 2020, Metro Denver's population is anticipated to increase to more than 3.3 million.

To proactively plan for the region's growth, the Denver Regional Council of Governments (DRCOG) created Metro Vision 2035, a long-range strategy that addresses the following issues while preserving Metro Denver's unparalleled quality of life:

- Land use planning
- Development
- Transportation Metro Vision concentrates development in a defined 750-square-mile urban growth boundary, and identifies guidelines for nearly 70 high-density, mixed use developments in the region, many around transit centers.

## Industries

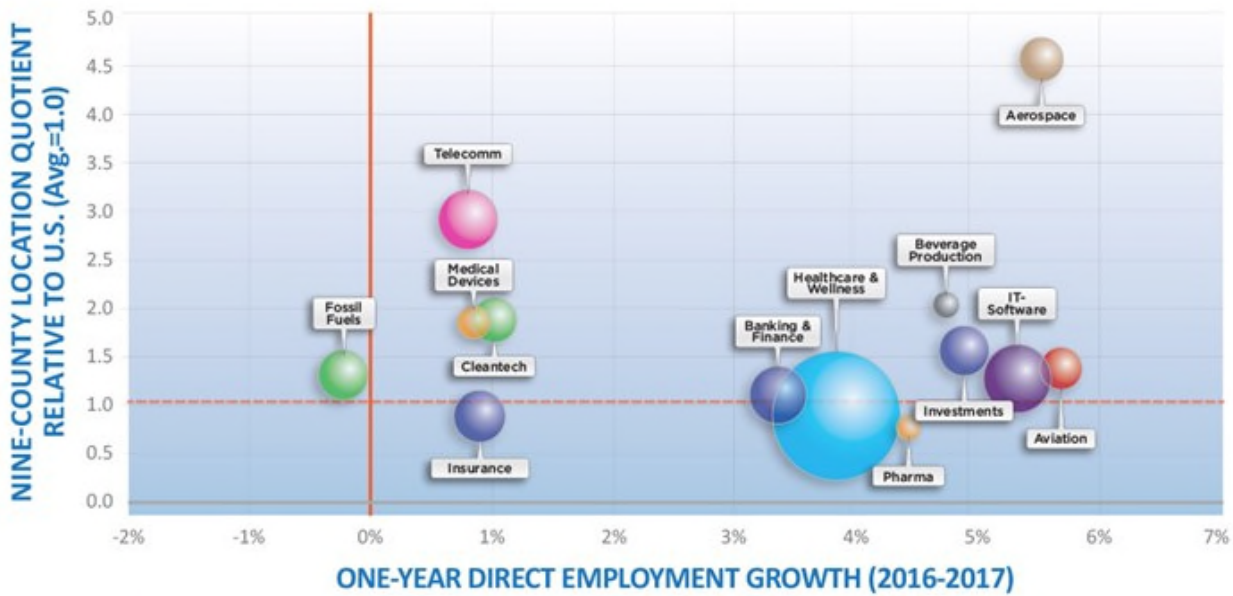
Our major industry clusters are aerospace, aviation, beverage production, bioscience, broadcasting and telecommunications, energy, financial services, healthcare and wellness, and IT-software. Statewide, important components of our economy also include agriculture and tourism.

### Aviation led 2017 industry growth in Metro Denver, aerospace concentration ranks first in the nation

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Aviation was the nine-county region's fastest growing cluster in 2017 and was among five of the 13 clusters/sub-clusters that grew by nearly 5 percent or more between 2016 and 2017, according to the Metro Denver Economic Development Corporation's (Metro Denver EDC) 12th-annual Industry Cluster Study released on Feb. 22, 2018. Six of the 13 clusters/sub-clusters grew over 20 percent between 2012 and 2017.





The study, completed by the Metro Denver EDC's Chief Economist Patty Silverstein and Senior Economist Lisa Strunk, of Development Research Partners, analyzes nine leading industry clusters in the nine-county region, offering an in-depth, competitive analysis of the major industries contributing to the employment base and ongoing economic expansion.

Aviation was the fastest growing cluster in 2017, posting 5.7 percent employment growth between 2016 and 2017. Aviation employment grew for the sixth-consecutive year in 2017. The nine-county region is home to over 20,140 aviation employees in close to 680 companies.

Metro Denver's airport system has a regional impact of nearly \$28 billion and supports more than 195,750 jobs in all industries. Denver International Airport (DEN) is one of the world's busiest hubs. In fact, 2017 was another record-setting year for DEN passenger traffic, topping 61 million passengers.

Metro Denver ranked first in private-sector aerospace employment out of the 50 largest U.S. metropolitan areas, with 21,090 workers. Employment increased for the third-consecutive year in 2017 and grew at its fastest pace since 2007, rising 5.5 percent between 2016 and 2017. Colorado ranked first in the nation for its employment concentration of private sector aerospace workers.

IT-Software was the fastest growing cluster between 2012 and 2017, rising 32.2 percent compared with 26.1 percent nationwide. The region's enviable reputation as a growing startup scene, coupled with a talented high-tech workforce, creates a premier hub for the industry.

"Twelve of the 13 clusters and subclusters expanded, making this the one of the best years of growth since we started tracking Metro Denver's industry clusters," said Lisa Strunk.

New data highlights that Metro Denver's leading industries are also among the best performing in the nation, with six of the 13 clusters/subclusters ranking among the top 10 in employment concentration, led by aerospace (first), beverage production (second), and broadcasting and telecommunications (fifth).

The analysis also includes industry descriptions, largest companies, employment concentration rank compared with the 50 largest U.S. metropolitan areas, and detailed industry news and developments.

"The Metro Denver region's economy is strong, growing, and well diversified," said J. J. Ament, CEO of the Metro Denver EDC. "The Metro Denver EDC, led by Colorado's most engaged companies, is proud to release this comprehensive study on what is making the economy strong and where there are areas for improvement. This incredible research will guide the efforts of the Metro Denver EDC as we work to strategically attract high quality jobs and companies who can help build strong communities going forward."

### **Metro Denver and Northern Colorado Industry Clusters - Competitive Advantages (one-year/five-year employment growth in parentheses):**

**Aerospace** - The region ranked first in private-sector aerospace employment out of the 50 largest metropolitan areas, with 21,090 workers. Colorado is the second-largest space economy in the United States, behind California. (5.5%/7.3%)

**Aviation** - The industry cluster includes companies that manufacture aircraft and provide air transportation services, with DEN serving as the major economic engine for the region's aviation industry. Three reliever airports and five general aviation airports are strategically located throughout the region. (5.7%/23.1%)

**Beverage Production** – Colorado craft beer has grown to a \$3 billion industry, nearly tripling its economic impact since 2014. Colorado craft beer has the highest economic impact per capita of any state. (4.7%/29.4%)

**Bioscience** – The bioscience cluster includes more than 16,100 bioscience workers in nearly 730 companies. Bioscience employment grew 7.5 percent over the last six years, compared with 5.4 percent nationally. (medical devices & diagnostics (0.9%/6.6%); pharmaceuticals & biotechnology (4.4%/1.1%))

**Broadcasting and Telecommunications** - The region is an established, nationally recognized center for the cluster and is the largest region in the United States to offer one-bounce satellite uplinks to six of seven continents in one business day due to its unique geographic location in the Mountain time zone. (0.8%/1.7%)

**Energy** – The energy cluster includes more than 51,280 cleantech and fossil fuels workers in nearly 3,480 companies in the region. Across Colorado, the energy industry supports 260,880 workers in all industries earning \$14 billion annually. Federally funded research facilities contribute \$2.6 billion to Colorado's economy annually. (fossil fuels (-0.2%/4.6%); cleantech (1%/20.5%))

Financial Services - The nine-county region is a global epicenter for financial services activities in three key market segments: banking and finance, investments, and insurance. Investments posted the strongest growth among the three subclusters in 2017. (banking and finance, 3.3%/0.4%; investments, 4.9%/27.9%; and insurance, 0.9%/11%)

Health care and Wellness - The region is the health care and wellness center of the Rocky Mountain West and has one of the most active and fit populations in the nation. With an employment base of over 222,700 workers in 21,160 companies, the health care and wellness cluster is the region's largest cluster in terms of employment. (3.8%/24.1%)

Information Technology-Software - The region is a top location for young entrepreneurs and tech professionals, and ranks among the top regions that foster entrepreneurial growth. The region had the eighth-highest employment concentration out of the 50 largest metropolitan areas. (5.3%/32.2%)

Source: Metro Denver Economic Development Corporation

For more information see: <http://www.metrodenver.org>

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# CONTACT US

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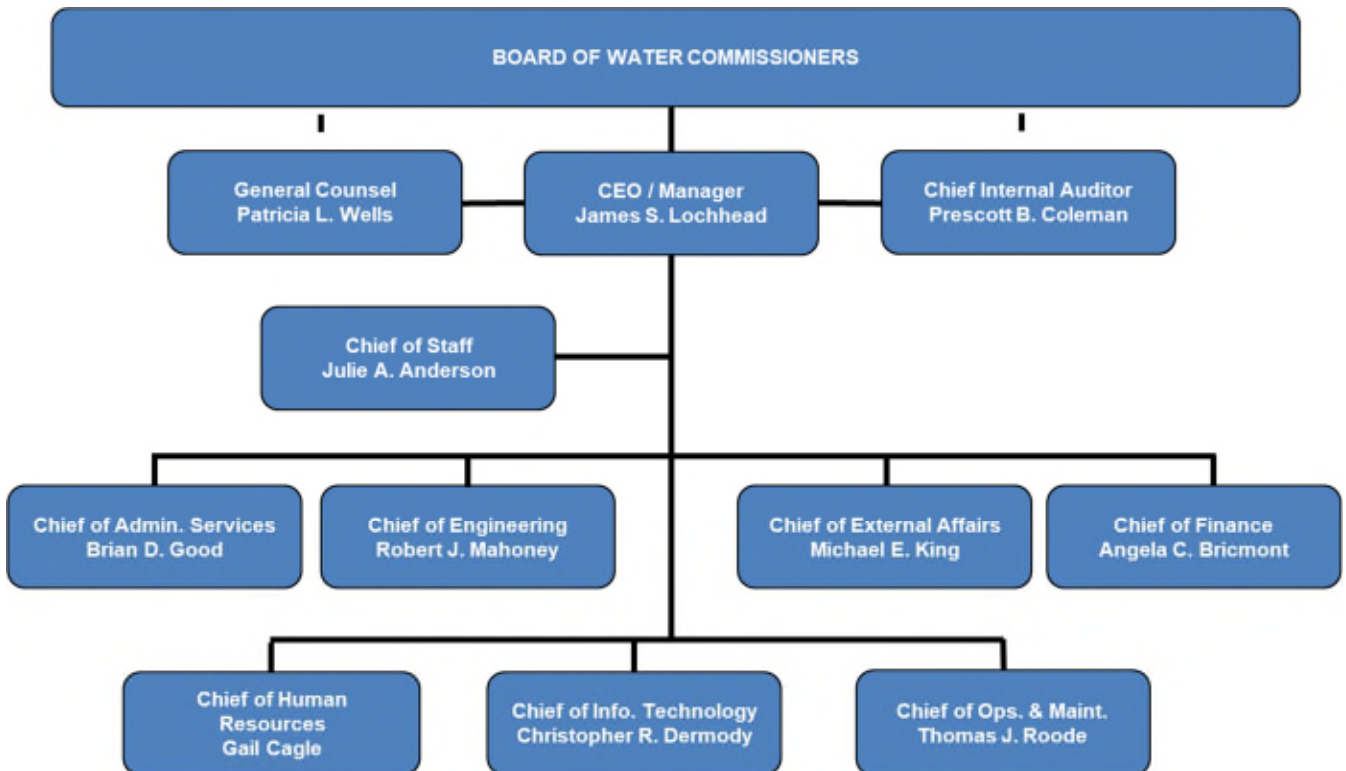
Stephanie Abram, Budget Manager 303.628.6149  
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# Organizational Structure



# ORGANIZATIONAL CHART



# BOARD OF WATER COMMISSIONERS



**Top from left, Paula Herzmark, John R. Lucero;**  
**Bottom from left, Greg Austin, Gary Reiff, Craig Jones**

<b>Paula Herzmark, President</b> Executive director, Denver Health Foundation	Commissioner since April 2009 Term expires July 2019
<b>John R. Lucero, First Vice President</b> Principal, Lucero Development Services	Commissioner since July 2007 Term expires July 2021
<b>Greg Austin, Vice President</b> Former partner, Holland & Hart LLP	Commissioner since July 2009 Term expires July 2019
<b>Gary Reiff, Vice President</b> Managing director and chief admin./legal officer, Black Creek Group	Commissioner since September 2017 Term expires 2023
<b>Craig Jones, Vice President</b> Managing director, Colony Group’s Rocky Mountain Region	Commissioner since October 2017 Term expires 2023

## New Water Commissioners in 2017

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**Commissioner Gary Reiff** fills the spot vacated by Tom Gougeon, whose second term has expired.

Mayor Michael Hancock has appointed Gary Reiff to the Denver Board of Water Commissioners. Reiff is Chief Legal Officer of UCHHealth, a nationally recognized, nonprofit network of 10 acute care hospitals (with the University of Colorado Hospital as its academic anchor) and more than 150 clinics throughout Colorado, southern Wyoming and western Nebraska.

Prior to joining UCHHealth, Reiff was managing director, chief administrative and legal officer of Black Creek Group, a Denver-based real estate private equity firm. Prior to joining Black Creek Group, Reiff was a shareholder at the law firm of Brownstein Hyatt Farber & Schreck, and was a member of the firm's executive committee and co-chair of its corporate and securities department. He previously worked on Governor Roy Romer's senior staff, and also has been an adjunct law professor at the University of Colorado Law School.

Reiff previously has served as chair of the Colorado Transportation Commission, chair of the Board of Trustees of the University of Northern Colorado, and chair of the Board of Trustees of the State Colleges of Colorado.

He graduated with honors from Stanford University with a B.A. in economics, and a M.A. from the Food Research Institute (economics of development), and he graduated magna cum laude from Harvard Law School.

**Commissioner Craig Jones** fills the spot vacated by Penfield Tate, whose second term has expired.

Mayor Michael Hancock has appointed Craig Jones to the Denver Board of Water Commissioners. Jones is a managing director of The Colony Group's Rocky Mountain Region and serves as co-president of Colony Sports and Entertainment, where he provides wealth management expertise to active and retired professional athletes.

He has a background in finance, tax and strategic planning from years of experience working at Mellon Bank, PepsiCo, Price Waterhouse and EW Scripps, and served as one of three co-founding partners of the Denver-based wealth management firm, Jones Barclay Boston, in 1994, which merged with The Colony Group earlier this year. Jones is a Certified Private Wealth Advisor and earned a Juris Doctor and MBA from Case Western Reserve University. He earned his bachelor's degree from Allegheny College, where he double-majored in economics and political science.

Jones is a member of the Investment Management Consultants Association, Colorado and Denver bar associations, and the Sigma Pi Phi Fraternity (The Boule). He has held past board positions with the Denver Metro Chamber Foundation, American Red Cross Mile High Chapter and Delta Eta Boule.



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# EXECUTIVE LEADERSHIP

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**Top:** Jim S. Lochhead, CEO/Manager

**Second row from left:** Julie Anderson, Chief of Staff; Angela Bricmont, Chief of Finance; Christopher Dermody, Chief of Information Technology; Gail Cagle, Chief of Human Resources

**Third row from left:** Brian Good, Chief of Administrative Services; Mike King, Chief of External Affairs; Robert Mahoney, Chief of Engineering; Tom Roode, Chief of Operations & Maintenance; Patricia Wells, General Counsel

## CEO/Manager – Jim Lochhead

Jim Lochhead was appointed Denver Water’s CEO/Manager in 2010. Lochhead also currently serves on the boards of the Association of Metropolitan Water Agencies, the Water Research Foundation, the Water Utility Climate Alliance, the Water Foundation and the Denver Botanic Gardens.

Prior to Denver Water, Mr. Lochhead was in private law practice, dealing with natural resource issues throughout the United States and internationally. He was also executive director of the Colorado Department of Natural Resources. Mr. Lochhead was the Colorado governor’s representative on interstate Colorado River operations, and served on the Colorado Water Conservation Board, Great Outdoors Colorado, The Nature Conservancy and Colorado Conservation Trust.

In 2014, Lochhead received the Wayne N. Aspinall “Water Leader of the Year” award from the Colorado Water Congress, presented annually to a Coloradan demonstrating courage, dedication, knowledge and leadership in the development, protection and preservation of Colorado water.

In 2015, Lochhead received the President’s Award from the Colorado Foundation for Water Education, given to a person with a history of doing meaningful work in the field of water.

Mr. Lochhead has a bachelor’s degree in environmental biology from the University of Colorado and a law degree from the University of Colorado School of Law.

The CEO/Manager is the chief executive officer for Denver Water, secretary to the Board of Water commissioners and custodian of all records. He carries out all other duties and responsibilities as assigned by the Board as it fulfills its charter obligations.

The CEO/Manager executes the policies and decisions of the Board and reviews and recommends to the Board changes in rules and regulations with respect to all matters appropriate for its action.

In addition, the CEO/Manager gives overall direction to employees and oversees the work necessary to provide an adequate supply of water to the residents of the City and County of Denver, and areas economically and socially integrated with the city with whom Denver Water has a water service contract.

The CEO/Manager represents the Board in ongoing relationships with all levels of government, community organizations and the public served, and recommends to the Board a rate structure and other income producing procedures that will assure adequate revenues to meet operating and maintenance costs, finance of ongoing capital improvement programs, and the principal and interest payments on long-term debts.

Eight division chiefs, the general counsel, the internal auditor, and the chief of staff report directly to the CEO/Manager.

## Chief of Staff

### Julie Anderson - Chief of Staff

- Joined Denver Water as manager of Customer Care in 2008.
- Served as director of the Customer Relations division from 2011 to 2016, when the division merged with Public Affairs.
- Group manager of Molson Coors Brewing Company's consumer affairs department, where she oversaw all North American contact center operations, 2001-2008.
- Manager of the advisor and investor services contact center for Oppenheimer Funds, 1996-2001.
- Bachelor of Science degree in business administration from the University of Colorado.

As chief of staff, Julie Anderson reports directly to the CEO and has the full authority to lead, direct and resolve day-to-day operational and organizational issues. The chief of staff oversees the successful implementation of key strategic initiatives and is responsible for monitoring and ensuring the attainment of organizational goals. Anderson also oversees continuous improvement for the organization and functions as a strategic business advisor to members of the executive/senior management team.

## Administrative Services

### Brian Good - Chief of Administrative Services

- Worked for American Water and predecessor Northern Illinois Water Corporation, an investor-owned utility, from 1993 to 1999. Served as a project engineer and production superintendent.
- Joined Denver Water in 2000 as assistant supervisor of Marston Treatment Plant. Later worked as manager of the Recycled Water Treatment Plant.
- Named director of Operations and Maintenance in 2004.
- Served as deputy manager of Organizational Improvement 2011 — 2016.
- Member of American Water Works Association.
- Received a bachelor's degree in civil engineering from the University of Illinois.
- Earned a master's degree in business administration from the University of Colorado.

Administrative Services allows Denver Water to efficiently and effectively deliver services internally and to our customers. The division oversees facilities management: sustainability, environmental compliance, security and recreation. It also oversees organizational functions including purchasing and contracting, records and document administration, safety, emergency management, risk management, and the print shop and mailroom.

## Engineering

### Robert J. Mahoney - Chief of Engineering

- Joined Denver Water as director of Engineering in 2006.
- Worked as vice president/managing engineer, Brown & Caldwell, 2000 to 2006.
- Worked as engineer and principal engineer, Boyle Engineering Corporation, Denver, 1983 to 2000.
- Is a registered professional engineer with the state of Colorado.
- Earned a Bachelor of Science degree in civil engineering, South Dakota State University, Brookings, 1982.
- Earned a Master of Business Administration degree, Regis University, 1991.
- Received a Certificate in Executive Leadership, Regis University, 2007.
- Earned a Master of Science degree in Management, Regis University, 2008.
- Earned Project Management Professional Certification (PMI) in 2011.

Engineering is responsible for the design, construction and related engineering aspects of physical additions or improvements to the water system. It provides surveying and mapping services, engineering functions, contract administration support, as-built drawings, land acquisition services and GIS database administration for system assets, among other duties. Engineering is composed of seven sections: Survey, Programs and Projects, Construction Management, Distribution and Property Management, Asset Recording, Administration, and Technical Support Services.

## External Affairs

### Mike King - Chief of External Affairs

- Joined Denver Water as chief of Planning in 2016.
- Named chief of External Affairs in 2017, when Planning and Public Affairs merged.
- Served as executive director of the Colorado Department of Natural Resources from 2010 to 2016.
- Worked as assistant director for Lands, Minerals and Energy Policy in 2006 before being appointed deputy director of the Department of Natural Resources.
- Worked in the Policy and Regulation Section of the Colorado Division of Wildlife for six years.
- Served as assistant attorney general from 1993 to 1999.
- Earned a bachelor's degree in journalism from University of Colorado at Boulder, law degree from the University of Denver and a master's degree in public administration from the University of Colorado at Denver.

The External Affairs division develops and maintains strategically effective relationships with a broad range of publics, and identifies the future water and facilities needs of Denver Water and develops strategies for meeting those needs. As it plans for the future, External Affairs must consider how new water rights, infrastructure and resource management alternatives will work with the Board's existing raw water collection and treated water distribution systems. The division also is responsible for issues management, internal and executive communications, youth education, and public outreach functions. The division is composed of four main sections: communications and marketing; customer relations; stakeholder relations; and water resources strategy.

## Finance

### Angela Bricmont - Chief of Finance

- Joined Denver Water as the chief of Finance in 2010.
- Worked for Ernst & Young, Arcadis, and Carollo Engineers providing financial planning and rate setting services to public utilities nationwide.
- Vice president of rates and regulatory matters for Comcast/AT&T Broadband from 1995-2003.
- Worked for Denver Water as a senior analyst from 1993 to 1995.
- Earned a bachelor's degree in finance and a master's degree in business administration from the University of Denver, Daniels College of Business.
- Appointed by Mayor Michael Hancock to serve on the Denver Urban Renewal Authority Board of Directors.
- Serves as chair of the American Water Works Association's Finance, Accounting, Management and Controls Committee.
- Officer of the Board of the Hispanic Chamber of Commerce.
- Selected for the Colorado Association of Commerce & Industry's "50 for Colorado" Leadership Program.

Finance manages financial resources and acts as the disbursing authority for the CEO/Manager. The division is responsible for creating long-range financial plans, controlling and disbursing funds, and for planning, developing and administering water rates, among other duties. Finance is composed of four sections: Budget, Accounting, Treasury Operations and Rate Administration.

## Human Resources

### Gail Cagle - Chief of Human Resources

- Joined Denver Water in 2014 as chief of Human Resources.
- Worked in HR for more than 20 years with Ryder Systems, American Express, USAA and Revel Entertainment.
- Earned a bachelor's degree in business management from Tampa College.
- Earned a master's degree in education/human resource studies from Colorado State University.

The Human Resources division is responsible for interpreting, updating and enforcing Denver Water's personnel policies; maintaining and revising Denver Water's classification and pay plans; establishing, maintaining and processing employees' personnel records; implementing policies, procedures and programs relative to recruiting, hiring, managing and retaining Denver Water employees; developing training and education programs for personal, professional and organizational development; implementing programs related to wellness, counseling, support, employee relations and equal opportunity; administering Denver Water's employee compensation, benefits and retirement programs; finding solutions to employee and managerial concerns while monitoring and developing a healthy work environment; and developing community outreach efforts with the goal of establishing Denver Water as an employer of choice.

## Information Technology

### Christopher R. Dermody – Chief of Information Technology

- Joined Denver Water as chief information officer in 2000.
- Served as chief architect, Health Systems Management Inc., 2000.
- Served as chief operating officer, Caribou Systems Inc., 1999.
- Served as assistant vice president, Great-West Life, 1981 to 1999.
- Earned a Bachelor of Science degree in computer science, Brandon University, 1981.
- Co-founder of the Water & Wastewater CIO Forum.

The Information Technology division plans, develops, implements and supports all information technology-enabled business systems and operational technology-enabled water process instrumentation and industrial control systems, including enterprise infrastructure and communication systems for Denver Water. This involves providing appropriate resources to deliver secure technology solutions that produce net productivity gains and enhanced information management capabilities, while minimizing the risk of obsolescence and nonsupport.

## Office of General Counsel

### Patricia L. Wells - General Counsel

- Joined Denver Water in 1991.
- Served as either city attorney or deputy city attorney, City and County of Denver, 1983 to 1991.
- Serves as a governor-appointed member on the Colorado Water Conservation Board, 2013 to present, also served 1995 to 2001.
- Served on the governor-appointed Colorado Water Quality Control Commission, 2007 to 2013.
- Worked as staff attorney for the Environmental Defense Fund and judicial clerk for Ninth Circuit Court of Appeals.
- Earned a Bachelor of Science degree from Auburn University.
- Earned a Juris Doctorate from Harvard Law School.

The Office of General Counsel provides legal counsel and advice and handles all legal representation for Denver Water, acting through its Board, CEO/Manager and employees.

The Office works closely and proactively with employees and managers at all levels of Denver Water, and has a direct reporting responsibility to the CEO/Manager and the Board. Several areas of legal practice are involved in providing legal counsel to Denver Water, including water rights, contracts, civil rights, tort claims, real estate, natural resources, and municipal, employment, construction, environmental and regulatory law. The Office represents Denver Water in litigation, administrative and regulatory hearings, and internal appeal hearings.

## Operations and Maintenance

### Tom Roode - Chief of Operations and Maintenance

- Joined Denver Water in 2009 as assistant chief of Engineering.
- Named chief of Operations and Maintenance in 2011.
- Has 15 years of experience in the municipal water and wastewater industries in roles as utility owner, consultant and construction contractor.
- Received a bachelor's degree in mechanical engineering from Colorado State University.
- Received a master's degree in business administration from the University of Colorado at Denver.
- Is a registered professional engineer in the state of Colorado.

Operations and Maintenance is responsible for operating and maintaining the physical and natural assets used to deliver water to Denver Water customers. These assets include rivers, canals, reservoirs, dams, tunnels, pipelines, valves, hydropower, tanks, pump stations and treatment plants. Operations and Maintenance establishes and implements criteria for the proper operation of all assets to the satisfaction of outside regulating agencies and Denver Water customers. It is composed of five sections: Source of Supply, Water Quality and Treatment, Water Distribution, Support Services, and Business Operations. Support Services provides fleet services, warehouse and trade shop functions, including mechanical, electrical, plumbing, welding, carpentry and grounds maintenance to Denver Water.



# Strategy and Process





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# STRATEGIC PLAN

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The Strategic Plan is the overarching document that defines the vision, perspectives, goals, and objectives of the organization. Denver Water revised and refreshed its Strategic Plan in 2017 to ensure it was relevant for the next five years and that it resonated with our customers and employees. The Board adopted the refreshed plan in February 2017.

[We use the following guiding principles to evaluate all our decisions and purposefully move us toward our vision to be the best water utility in the nation.](#)

**We are customer-centric.** We strive to earn the support and trust of our customers – everyone who pays for our service or uses our water. They are our top priority, and we are motivated to serve them.

**We are industry leaders.** We understand, help develop, implement and share best industry practices. We are forward thinking – we anticipate future trends, and look for and responsibly implement progressive solutions. We are adaptable, resilient and experts in our work.

**We take the long-term view.** We weigh the consequences of our decisions and actions against multiple scenarios to preserve future options and the sustainability of our community. We provide the best possible outcome for our customers, as well as future generations.

## **Our Mission**

To expertly manage and supply an essential natural resource to sustain our vibrant community — because water connects us all.

Additionally, the Strategic Plan is built on four foundational elements called Strategic Perspectives. Aligning business goals to the strategic perspectives gives the organization a balanced and holistic approach to creating goals and objectives. All goals, objectives, strategies and initiatives should align to one of the strategic perspectives. To achieve the organization's vision, each perspective needs to have equal focus. The Strategic Perspectives are listed below:

- **Excellent Operations.** An organization that is effective, efficient and strategically driven.
  - We strategically align our projects and programs to provide the best value to our customers.
  - We employ best business practices in our day-to-day operations to increase efficiency and delivery of service to our customer.
  - We lead the utility industry in environmental stewardship and sustainability.
  
- **Strong Financials.** An organization that is financially strong and stable.
  - We sustain a financial plan that supports our strategic objectives.
  - We make financial decisions keeping in mind the best long-term interests of our customers.
  
- **Inspired People.** An organization that is passionate about our customers and our community.
  - We are inspired by our mission, vision and values and we know we are a part of something meaningful and larger than our own self-interest.
  - We have leadership that inspires, fosters meaningful work and develops our people.
  
- **Trusted Reputation.** An organization with satisfied and supportive customers and strategically effective relationships.

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# ANNUAL PROCESS

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The following defines and documents the process and commitments for execution in the development of Denver Water's Annual Organizational Work Plan and corresponding annual budget — including the ongoing governance cycle.

The Work Plan's foundation is Denver Water's Strategic Plan (see page 37) which is evaluated and refreshed every three to five years — with the next refresh scheduled for 2023 at the latest. This is the overarching document that defines the vision, perspectives, goals and objectives of the organization. It is expected that all of Denver Water's work is connected back to this plan to ensure we are continuously taking meaningful steps toward our aspiration to be the best water utility in the nation.

In order to help us identify our progress, the Executive Team developed the Organizational Dashboard (see page 39) which contains metrics that correlate to each objective in our strategic plan. The Executive Team reviews these metrics on a monthly basis during our organizational performance review and discusses opportunities and implements countermeasures. The dashboard is reviewed with the Board on a quarterly basis to share successes and discuss opportunities and the countermeasures that we are taking to improve.

The Annual Work Plan (see page 38) is a high level summary of the work the organization has committed to accomplish in the upcoming year. It describes the connection of each activity to a Strategic Plan perspective, goal and objective, the organizational metric the activity is intended to move, and the corresponding annual budget amount and estimated total cost. The Annual Work Plan is comprised of organizational priorities, divisional initiatives, programs, continuous improvement activities and the annual audit plan (these elements are described below). The Plan is developed in conjunction with a review of key organizational risks and potential risk-mitigation strategies which are tracked in the organizations Risk Matrix. Progress towards Plan implementation is reviewed with the Board on a quarterly basis. The Plan is developed annually by the end of the second quarter. A draft of the plan is shared with the Board in July, and forms the basis for the annual budget that is presented to the Board at the budget workshop in November (See the Annual Budget Development process, below).

- **Organizational Priorities:** During the month of April, within each division, the Executive Team sources strategic ideas and builds business cases for organizational priorities for the upcoming year. These ideas are shared amongst the team during a series of meetings in May to vet the business cases, and choose and prioritize those highly strategic priorities that surface to the top as strong levers to move us closer to our vision. The organizational priorities are finalized by the end of May.
- **Divisional Initiatives, Programs and Continuous Improvement:** During the month of June, the divisions vet business cases for specific divisional initiatives for inclusion into the upcoming budget — all of which roll into individual goals for the upcoming year. At this time, the divisions are also

developing strategies, continuous improvement activities and corresponding budgets around ongoing programs for budget consideration. This activity is complete by the end of June.

- **Audit Plan:** As the organizational priorities and Initiatives begin to firm up, around the beginning of June Denver Water's Internal Audit team partners with the Board and Executive Team to develop the body of work for the upcoming year's audit plan. Internal Audit takes into consideration Board and Executive Team feedback, the strategic approach, the contents of the audit bin, and the organizational heat map to determine focus areas. This work is concluded by the end of July and a draft plan, is presented to the Board at its October Audit Committee Meeting.

Capital and Operating Projects are selected on an annual basis based on Denver Water's Integrated Resource Plan and long term capital plan, and using Denver Water's Capital Budgeting Philosophy and a business-driven process directed by the systems and programs managers. The long term capital plan is updated quarterly. Potential projects are requested using a business case format called a JERI (Just Enough Right Information) form, which includes: evaluation of the business need or problem, comparison of alternative solutions, risk and asset management data, and strategic alignment. Projects are categorized and prioritized by the end of August. The systems and programs managers hold bimonthly meetings that focus on project status (scope, schedule and budget, including variances, forecasting and acknowledgement of the Systems Project Status Report).

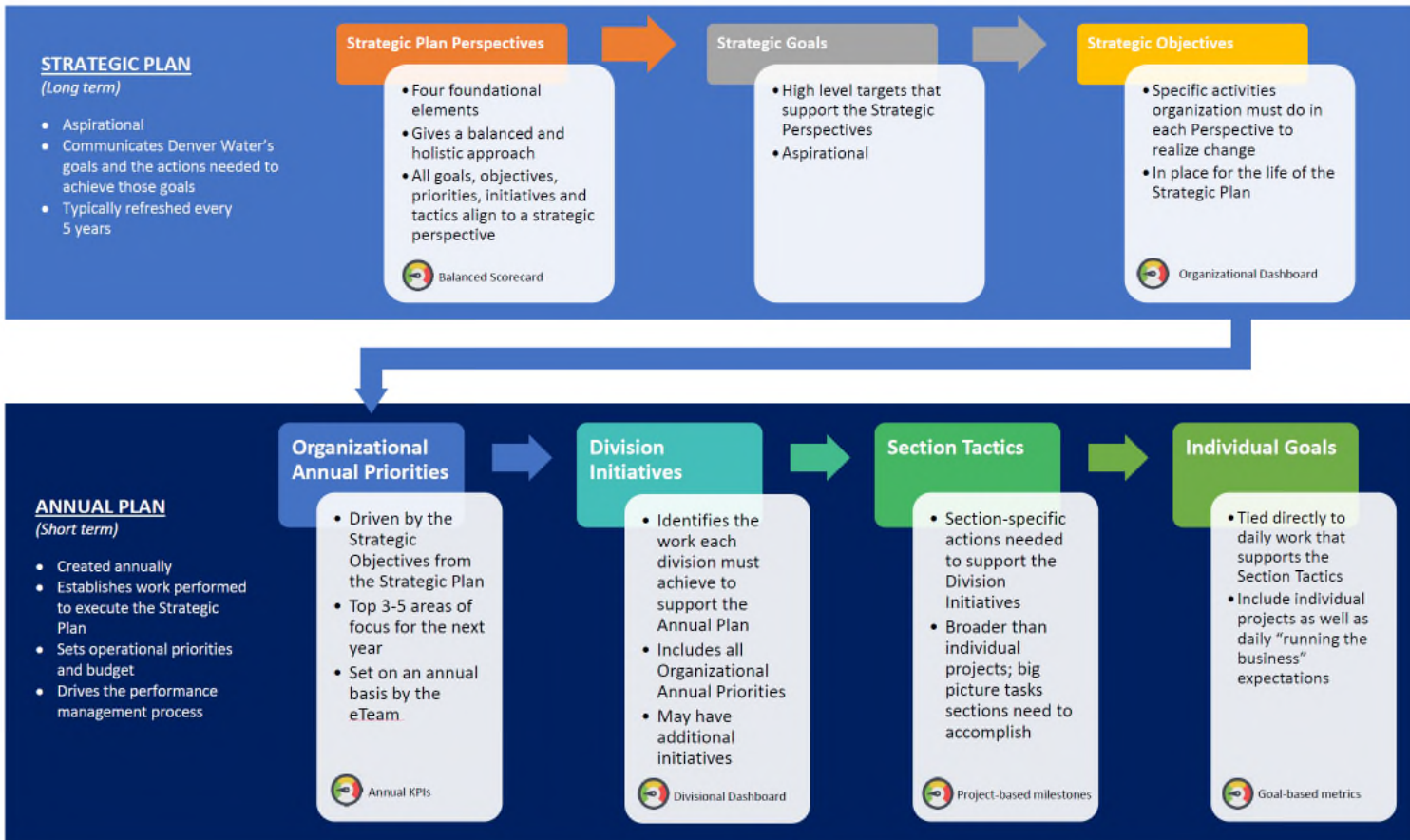
Business Technology Projects are selected by a business-driven process directed by the Business Technology Management Office (BTMO). The BTMO guides each requestor through the business case development process, which includes: evaluation of the prompting business need or problem, application of CI tools for process improvement, comparison of alternative solutions, strategic alignment, etc. The BTMO engages representatives from across Denver Water (BT System Managers) to recommend project selections to the Executive Oversight Committee. Business Technology Projects are categorized and prioritized by the end of August. The BT systems managers hold bi-monthly meetings to monitor project performance and review value verification reports.

After the Annual Work Plan is developed, the organization begins the Annual Budget Development process. This process is the formal method through which Denver Water ensures alignment between fiscal resources and organizational priorities for the upcoming year. It results in an Approved Budget, which is the defined plan of revenue and expense activities for the upcoming year. Updates to the multi-year financial plan are made to determine the level of revenue adjustments needed to meet annual revenue requirements and financial performance measures. From this, operating and capital budget targets are developed. Human Resources also presents proposed salary adjustment and health benefits budgets. Based on the Annual Work Plan, the organization uses these targets to plan the budget for the upcoming year. The budget is presented to the Board in November at the annual Budget Workshop. Official approval by the Board occurs in December.

The Approved Budget is the main internal control document used to monitor and manage revenues and expenditures for Denver Water. The organization takes an active role in regular management of the budget to ensure proper fiscal governance and controls. This is done through the Monthly Budget Management process, Comprehensive Quarterly Performance Reviews and the Comprehensive Annual Financial Report (CAFR), described below.

- **Monthly Budget Management:** Each month, each division reviews its budget for accuracy and potential variances, and forecasts future expenditures. The budget section works with each division to review forecasts, identify exceptions to the forecast, and provide reporting on the forecast. Once this review is complete, the forecast is reviewed with the Executive Team. Variances are discussed and addressed in the context of the organizational strategy. After Executive Team review, a monthly reporting package is provided to the Board.
- **Comprehensive Quarterly Performance Reviews:** The budget office with assistance from the Executive Team, creates a comprehensive report of the organization's performance. The report includes a detailed review of our financial performance — including capital, operating and business technology projects. It includes a review of our organizational dashboard and progress towards our work plan — including our organizational priorities, programs, continuous improvement, risk management and audit plan. Finally, the report includes information on procurement and contracting, including performance toward SMWBE and SBE goals and targets. This report is developed and reviewed with the Executive Team and Board quarterly.
- **Comprehensive Annual Financial Report:** Annually the accounting section with assistance from various areas of the business compiles the CAFR. The CAFR is a set of government financial statements comprising the financial report of Denver Water which complies with the accounting requirements promulgated by the Governmental Accounting Standards Board (GASB). The CAFR is composed of three sections: Introductory, Financial and Statistical. The introductory section includes information about Denver Water. The second section is comprised of the audited financial statements and required supplementary information of Denver Water. The last section is the statistical section which includes revenue, customer, demographic, and other operational information. External auditors audit the financial information and review supporting data in March-April. Management reviews the CAFR and management letter from the external auditors in April-May. The external auditor presents the CAFR to the Board at the second Board meeting in May, for acceptance.

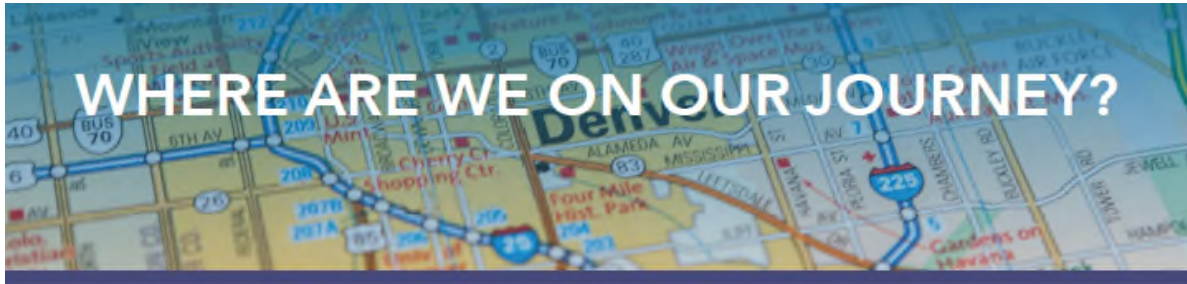
## Workflow for Strategic Plan and Annual Plan



## 2018 Organizational Work Plan

Denver Water 2018 Work Plan								
Priority Type	Strategic Perspective	Duration	Start Quarter	Annual Priority	Organizational Metric	2018 Budget	Estimated Total Cost	Owner(s)
<b>TOP ORGANIZATIONAL PRIORITY</b>	Excellent Operations	2018-2022	Q1	<b>Business Technology Transformation</b> *Enterprise Resource Planning - Finance and HR *Security	IT Project Performance	Internal Labor	\$19.0M*	Anderson, Dermody, Good
<b>ORGANIZATIONAL PRIORITIES</b>	Excellent Operations	2017-2018	Q1	<b>Integrated Resource Plan</b>	Systems & Programs Project Performance (Capital & Operating)	\$1.0M	\$3.7M	King
	Excellent Operations	2017-2023	Q1	<b>North System Renewal</b> (Gross Reservoir Expansion, Northwater Treatment Plant, Conduit 16, Ralston Outlet Works) *Facilities *Public Awareness *Organizational Readiness	Systems & Programs Project Performance (Capital & Operating)	\$49.6M	\$999.8M	Mahoney, Roode, King
	Trusted Reputation	2017-2023	Q1	<b>National Western</b> *Water Quality Lab *Water Resource Center/4 Pillars	Systems & Programs Project Performance (Capital & Operating)	\$1.8M	\$38.1M	King, Roode
	Excellent Operations	2017-2019	Q1	<b>Operations Complex Redevelopment</b> *Facilities * Organizational Readiness	Systems & Programs Project Performance (Capital & Operating)	\$49.0M	\$197.3M	Good, Mahoney
	Excellent Operations	2017-2018	Q3	<b>Sustainability Implementation</b>	Net Energy Usage	\$125.6K	\$137.4K	Good
	Inspired People	2018-2020	Q1	<b>Organizational Health</b> *Leadership Development *Robust Internal Communications *Career Development (competency maps; succession planning)	Net Promoter Score	\$287.1K	\$347.0K	Anderson, Cagle, King
<b>PROGRAMS</b>	Trusted Reputation	2017-2019	Q1	<b>Lead Reduction Program</b>	Lead sampling program	\$3.5M	\$9.0M	Price
	Excellent Operations	2018-2022	Q1	<b>Water Efficiency Plan</b>	Water efficiency index	\$2.3M	\$6.8M	Antolovich
		2018	Q1	<b>Watershed Plan</b>	% Watershed inventory complete (South Platte)	\$250.0K	\$500.0K	Burri
		2017-2023	Q1	<b>Highline Transformation</b>	Surface Supply Index	\$800.0K	\$3.0M-\$10.0M	Roode
<b>CONTINUOUS IMPROVEMENT</b>	Excellent Operations	2017-2019	Q1	<b>Customer Experience</b>	Quarterly Customer Satisfaction Index	Internal Labor	Internal Labor	Aragon
		2017	Q1	<b>Safety</b>	Preventable Vehicle Accident Rate	Internal Labor	Internal Labor	Good
		2018	Q1	<b>Northwater Treatment Plant: 3P's</b>	Continuous improvement engagement index	Internal Labor	Internal Labor	Mahoney
		2018	Q1	<b>Security</b>	IT Project Performance	Internal Labor	Internal Labor	Good
	Trusted Reputation	2018	Q1	<b>National Western Center</b>	Systems & Programs Project Performance (Capital & Operating)	Internal Labor	Internal Labor	Antolovich
	Excellent Operations	2018	Q3	<b>Business Technology Transformation:</b> Enterprise Resource Planning - Finance and HR	IT Project Performance	Internal Labor	Internal Labor	Cagle, Bricmont
		2018	Q3	<b>Operations Complex Redevelopment: 6S &amp; 2P's</b>	Continuous improvement engagement index	Internal Labor	Internal Labor	Good

## 2018 Balanced Scorecard



### Denver Water Balanced Scorecard MARCH — 2018

	Measurement	12 Month Trend	YTD Target	YTD Actual	Variance
 <b>EXCELLENT OPERATIONS</b> An organization that is effective, efficient and strategically driven	Quarterly Customer Satisfaction Survey Index	→	85%	84%	-1%
	Operating Costs per Account in Dollars <small>(does not include operating projects)</small>	↗	\$171.6	\$162.0	-\$9.6
 <b>STRONG FINANCIAL</b> An organization that is financially strong and stable	Operating Budget Performance <small>(does not include operating projects)</small>	→	+/- 2%	-5.0%	-3.0%
	Capital Budget Performance	↗	+/- 5%	-7.0%	-2.0%
 <b>INSPIRED PEOPLE</b> An organization that is passionate about our customers and our community	Net Promoter Score	★	NEW on our journey! Coming April 2018		
	Leadership Engagement	★	NEW on our journey! Coming April 2018		
 <b>TRUSTED REPUTATION</b> An organization with satisfied and supportive customers and strategically effective relationships	Content Impressions <small>(views of TAF stories per month)</small>	→	33,198	37,049	3,851
	MWBE Total Construction and Construction-related (Eng and O&M)	↗	14.0%	10.2%	-3.8%

#### EXPLANATION OF RED MEASUREMENTS:

**Quarterly Customer Satisfaction Survey Index:** While we missed the Customer Satisfaction Survey Index by one percentage point, it is important to note that satisfaction with Street Maintenance has increased 23% since 2014 (from 47% to 58%). This is a continued area of focus for us and we anticipate continued increases as we address customer concerns.

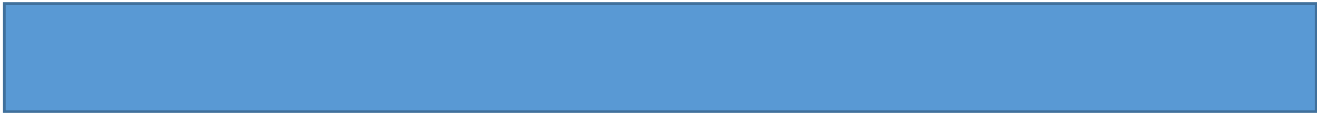
**Operating Budget Performance:** The metric is based on YTD information. Through March, expenditures were \$2.8M lower than the budget. Based on the annual forecast, we are currently expecting to end the year at -0.5%, which is within the defined metric.

**Capital Budget Performance:** The metric is based on YTD information. Through March, expenditures were \$2.6M lower than the budget. Based on the annual forecast, we are currently expecting to end the year at +6.4%. We will continue to monitor and manage expenditures with a goal of staying within the defined metric.

**MWBE:** O&M exceeding goal, Engineering close to their goal for first quarter. We believe we will reach the 12% target by year end.

[See Inflow for more information.](#)





# Financial



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# BUDGET SUMMARY

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## Annual Work Plan and Strategic Plan Alignment

Prior to the commencement of the annual budget process, a thorough review of ongoing and proposed organizational initiatives was completed. With help from Section Leaders, Chiefs utilized a filtering tool to show how the initiatives link to the updated Strategic Plan, to identify the demands placed on the business, and to reflect the impact to the Strategic Plan. Initiatives were deferred if they did not have a strong enough case and the remaining initiatives were prioritized. Early in this process, we flagged that there were many multi-year Initiatives and Programs rolling from 2017 into 2018 and that these would limit the number of new initiatives that could be added. As a result, you will not see a lot of new Initiatives, and we have decided to include large ongoing Programs into the Work Plan. Finally, we continued to work on aligning the Continuous Improvement and Audit activities to better support the Annual Work Plan. You will notice that the Organizational Scorecard and Dashboard have been updated to reflect the new Strategic Plan.

## Budget process

The budget development process is the formal method through which Denver Water ensures alignment between fiscal resources and organizational priorities for the upcoming year. It results in an Approved Budget, which is the defined plan of revenue and expense activities for the year.

The general timeline for budget development is as follows:



Each year, Denver Water creates a multi-year financial plan to determine the level of revenue adjustments needed to meet annual revenue requirements. The annual revenue requirements include operating expenses, debt service on existing and proposed bonds, and capital expenditures. These expenditures are offset through miscellaneous revenues such as hydropower, customer-related fees, system development charges (SDC), bond proceeds, participation, and interest income. The net requirement is the amount recovered through the user rates.

Operating expense budgets capture the day-to-day, ongoing expenses incurred to run the business. Budget targets for operating expenses are developed annually by reviewing prior year expenditures, determining what expenditures are no longer needed and adding new expenditures for the upcoming year.

For this review, expenditures are classified into expense categories and are evaluated to ensure alignment with the organizational goals.

Project budgets, which are generally capital expenditures but can also be operating, are funded by debt, system development charges, or reserves. They are incurred with the intent of improving future operations. Budget targets for capital projects are based on the prioritized list of projects found within the Long Term Capital Forecast.

The 2018 budget process was based on a number of key requirements, including:

- **Capital and Operating projects prioritized by System and Program Managers.** Two-years of projects were prioritized across the entire system by the System and Program Managers based upon a review of the 5-year capital plan, projects in design, and resource availability. New for 2018, Operating projects were included in this process.
- **IT Projects prioritized and reviewed by the Executive Oversight Committee.** New for 2018, as part of the Business Technology Transformation Initiative, IT Projects have been removed from Systems and Programs. All IT projects went through a business case submittal and review process, and were prioritized to align with organizational strategy.
- **2018 Work Plan.** The Strategic Initiatives and Programs included in our 2018 Work Plan and budget are listed below, with Initiatives in priority order:
  - Business Technology Transformation
  - Integrated Resource Plan
  - North System Renewal
  - National Western Water Quality Lab and Water Resource Center
  - Operations Complex Redevelopment
  - Sustainability Implementation
  - Organizational Health
  - Program: Lead Reduction
  - Program: Water Efficiency Plan
  - Program: Watershed Plan
  - Program: High Line Canal Transformation

The Work Plan reflects both the 2018 Budget for these Initiatives and Programs and estimated total costs.

- **Operating target based on historic data.** The 2018 operating budget was initially built based on the 2017 approved budget. Any increases to this amount required justification and review by the CEO. The ultimate goal was to identify efficiencies and redundancies within the existing targets, so that any approved increases would be offset by savings in other areas.
- **Salary budget and FTEs.** Throughout 2017, all vacancies were reviewed to ensure proper staffing levels to meet the strategic objectives of the organization. Additionally, building on the process initiated in 2015, all new positions requested for 2018 required a business case and a review by the CEO. The outcome of this process was a reduction of 31.0 FTEs in the 2018 budget, primarily from the IT and Operations & Maintenance divisions.

## 2018 Budget Comparison

- **Salaries and Benefits.** The 2018 budget is \$1.5 million less than 2017 budget primarily due to the reduction of 31.0 FTE from the 2018 budget.
- **Operating Expenditures (without Salaries and Benefits or Debt Service).** The 2018 Operating expense budget, including Operating projects, is \$2.2 million less than the 2017 budget. We are seeing the benefits of improved reporting with ORCA, and that, along with monthly forecasting, has allowed us to have greater visibility and accountability into the amounts budgeted.
- **Debt Service.** The 2018 budget for Debt Service is \$3.7 million more than 2017 budget due to the 2017 bond issuance.
- **Capital.** The \$11.7 million increase to capital expenditures was previously presented to the Board as part of the capital plan. More detail on the planned projects for 2018 can be found in the Projects section.
- **FTEs.** Budgeted FTEs for 2018 total 1,088.4. This includes a reduction of 31.0 FTEs. Throughout the course of the year, retirements, movement between divisions, career progressions, and employees entering and leaving the organization account for the variance in positions at any one time during the year.

# SOURCES AND USES

COMPARISON OF SOURCES AND USES OF FUNDS							
	2015 Budget	2015 Actual	2016 Budget	2016 Actual	2017 Budget	2017 Actual	2018 Budget
<b>SOURCES OF FUNDS</b>							
Water Sales	\$ 269,255,927	\$ 242,225,402	\$ 273,111,853	\$ 274,298,744	\$ 269,481,322	\$ 284,303,773	\$ 282,658,399
Hydropower	4,422,000	3,606,655	4,528,000	4,009,125	4,607,001	4,499,265	4,607,000
Participation and Reimbursements	4,415,001	10,794,701	8,129,000	2,334,688	-	9,239,962	4,800,000
System Development Charges	17,294,000	36,108,723	20,294,000	38,751,565	34,035,416	42,486,012	34,000,000
Interest	1,235,000	977,478	2,260,000	1,638,158	847,639	3,974,000	2,912,000
All Other Revenue	6,640,001	12,715,922	1,440,000	10,242,775	7,230,017	12,713,143	8,130,000
Non-Operating	7,654,384	5,474,986	11,254,000	4,214,711	7,619,598	8,669,826	7,874,751
<b>Revenue</b>	<b>\$ 310,916,313</b>	<b>\$ 311,903,866</b>	<b>\$ 321,016,853</b>	<b>\$ 335,489,766</b>	<b>\$ 323,820,993</b>	<b>\$ 365,885,982</b>	<b>\$ 344,982,150</b>
Bond Proceeds	42,000,000	30,000,000	56,923,000	71,238,348	205,000,000	205,864,368	60,000,000
<b>Total Sources of Funds</b>	<b>\$ 352,916,313</b>	<b>\$ 341,903,866</b>	<b>\$ 377,939,853</b>	<b>\$ 406,728,114</b>	<b>\$ 528,820,993</b>	<b>\$ 571,750,350</b>	<b>\$ 404,982,150</b>
<b>USES OF FUNDS</b>							
Regular Wages and Other Pay	\$ 79,485,838	\$ 82,878,013	\$ 83,516,809	\$ 84,734,631	\$ 87,949,667	\$ 84,515,169	\$ 86,218,409
Applied Labor <sup>1</sup>	-	-	(3,647,169)	(7,199,461)	(12,390,822)	(7,533,403)	(10,833,017)
Benefits	38,966,801	39,348,597	39,713,297	37,308,295	45,414,575	42,153,201	44,006,320
<b>Personnel Costs</b>	<b>\$ 118,452,639</b>	<b>\$ 122,226,610</b>	<b>\$ 119,582,937</b>	<b>\$ 114,843,465</b>	<b>\$ 120,973,420</b>	<b>\$ 119,134,967</b>	<b>\$ 119,391,712</b>
Materials and Supplies	\$ 18,342,469	\$ 18,525,025	\$ 18,567,841	\$ 18,595,796	\$ 17,746,163	\$ 16,489,554	\$ 16,366,967
Utilities	10,403,662	9,430,359	10,409,575	9,218,208	9,258,239	9,282,238	7,811,777
Professional and Other Services	39,500,429	39,388,214	37,209,071	37,012,591	35,979,931	29,946,009	33,955,799
Other expense	10,282,781	7,754,033	3,542,809	3,484,507	4,737,227	4,669,713	3,715,841
<b>Operating Costs</b>	<b>\$ 78,529,340</b>	<b>\$ 75,097,631</b>	<b>\$ 69,729,297</b>	<b>\$ 68,311,101</b>	<b>\$ 67,721,560</b>	<b>\$ 60,387,514</b>	<b>\$ 61,850,384</b>
Debt Service	48,822,316	47,919,191	43,835,247	41,120,947	45,455,772	43,686,138	49,149,270
<b>Subtotal Operating Costs w/o Projects</b>	<b>\$ 245,804,295</b>	<b>\$ 245,243,432</b>	<b>\$ 233,147,481</b>	<b>\$ 224,275,513</b>	<b>\$ 234,150,752</b>	<b>\$ 223,208,618</b>	<b>\$ 230,391,366</b>
Collection	-	-	1,450,000	1,959,643	1,986,689	3,047,811	558,612
Distribution	-	-	805,500	357,805	1,975,520	6,387,270	4,337,491
Expansion	-	-	3,897,000	2,794,084	4,509,740	6,464,257	7,432,377
Information Technology	-	-	-	9,359	1,877,942	462,336	2,479,457
Operations Support	-	-	650,000	1,669,698	630,442	1,118,842	666,150
Treatment	-	-	750,000	1,115,112	1,594,229	830,036	798,904
<b>Operating Projects<sup>2</sup></b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 7,552,500</b>	<b>\$ 7,905,701</b>	<b>\$ 12,574,562</b>	<b>\$ 18,310,552</b>	<b>\$ 16,272,991</b>
<b>Total Operating Costs</b>	<b>\$ 245,804,295</b>	<b>\$ 245,243,432</b>	<b>\$ 240,699,981</b>	<b>\$ 232,181,214</b>	<b>\$ 246,725,314</b>	<b>\$ 241,519,170</b>	<b>\$ 246,664,357</b>
<b>CAPITAL EXPENDITURES</b>							
Collection	14,668,412	15,697,984	20,045,002	20,414,925	16,068,447	10,532,706	17,566,078
Distribution	49,944,602	44,231,788	50,536,828	45,152,605	76,758,551	70,405,590	79,408,200
Expansion	10,419,697	7,928,722	19,751,500	12,224,831	15,293,017	13,169,802	7,769,178
Information Technology	8,963,631	4,332,215	5,634,307	3,847,220	6,445,949	4,899,202	1,285,703
Operations Support	7,297,075	13,332,813	38,093,002	55,506,154	52,884,265	47,669,057	57,037,983
Treatment	6,920,910	4,187,962	6,221,500	9,574,662	17,375,496	21,331,664	33,458,781
Applied Labor	-	-	3,647,169	-	-	-	-
<b>Total Capital Costs</b>	<b>\$ 98,214,326</b>	<b>\$ 89,711,483</b>	<b>\$ 143,929,308</b>	<b>\$ 146,720,397</b>	<b>\$ 184,825,725</b>	<b>\$ 168,008,021</b>	<b>\$ 196,525,923</b>
<b>Total Uses of Funds</b>	<b>\$ 344,018,621</b>	<b>\$ 334,954,915</b>	<b>\$ 384,629,289</b>	<b>\$ 378,901,611</b>	<b>\$ 431,551,039</b>	<b>\$ 409,527,192</b>	<b>\$ 443,190,280</b>

1) Applied Labor was implemented in 2016; in 2017 it was allocated within the Capital systems

2) Operating projects tracked separately beginning in 2016

# DIVISION BUDGETS

DENVER WATER BY DIVISION - OPERATING EXPENSE SUMMARY							
Division Name	PERSONNEL COSTS		OTHER OPERATING COSTS		TOTAL OPERATING COSTS		
	2017 Budget	2018 Budget	2017 Budget	2018 Budget	2017 Budget	2018 Current Budget	% Budget Change
Administrative Services	5,765,835	6,593,100	5,220,925	5,361,547	10,986,760	11,954,647	8.8%
Engineering	15,092,049	17,068,250	1,453,299	1,590,667	16,545,348	18,658,917	12.8%
External Affairs	17,970,757	18,092,010	10,811,477	9,969,639	28,782,234	28,061,649	-2.5%
Finance	4,129,565	4,454,947	1,941,099	1,651,287	6,070,664	6,106,234	0.6%
Human Resources	5,724,633	5,099,830	2,428,812	2,536,737	8,153,445	7,636,567	-6.3%
Information Technology	14,288,973	13,973,667	14,978,743	12,927,944	29,267,715	26,901,611	-8.1%
Manager and Staff	6,334,002	7,159,253	2,035,160	2,025,846	8,369,162	9,185,099	9.7%
Operations and Maintenance	44,024,773	44,016,046	27,040,906	24,802,857	71,065,679	68,818,903	-3.2%
Non Divisional	7,642,834	2,934,609	1,811,140	983,860	9,453,974	3,918,469	-58.6%
<b>TOTAL DIVISION OPERATING</b>	<b>\$ 120,973,420</b>	<b>\$ 119,391,712</b>	<b>\$ 67,721,560</b>	<b>\$ 61,850,384</b>	<b>\$ 188,694,980</b>	<b>\$ 181,242,096</b>	<b>-3.9%</b>



# REGULAR EMPLOYEES

DENVER WATER - FTE HISTORY					
Regular Employee Count					
Division	2014 Budget	2015 Budget	2016 Budget	2017 Budget	2018 Budget
Administrative Services	-	-	-	61.0	61.0
Engineering	174.0	169.8	167.8	171.8	171.8
External Affairs	-	-	-	185.8	185.6
Finance	59.0	59.8	60.1	35.0	35.0
Human Resources	27.0	34.0	33.8	30.0	29.0
Information Technology	85.0	113.3	115.4	112.8	103.8
Manager & Staff	26.0	29.0	29.2	36.1	36.4
Operations & Maintenance	553.0	515.5	516.0	487.0	466.0
Planning	52.0	52.6	52.5	-	-
Public Affairs	154.0	147.5	148.8	-	-
<b>Total</b>	<b>1,130.0</b>	<b>1,121.5</b>	<b>1,123.6</b>	<b>1,119.4</b>	<b>1,088.4</b>

Notes:

1. Administrative Services was new division in 2017
2. Planning and Public Affairs merged in 2017 to become External Affairs.



# FUND STRUCTURE

Denver Water is an “enterprise” of the City within the meaning of Article X, Section 20 of the Colorado Constitution. The Board maintains a single fund as mandated by the City Charter which states:

“There is hereby created a Water Works Fund into which shall be placed all revenues received from the operation of the Water Works system and plant together with all monies received by the Board from other sources.”

Although the Board approves the rates and the annual budget, no funds are appropriated. Denver Water defines fund balance for the Water Works Fund as the balance at the beginning of the period, plus the total sources of funds, less total uses of funds for the period.

Within the Water Works Fund there are legally restricted funds and Board designated funds. As outlined above, the Board targets reserves to pay for operating, capital, self-insurance and debt service in an emergency, in addition to the restricted and designated funds. Any excess funds above these target amounts are considered available for future operating and capital projects.

<b>2017 Cash &amp; Investment Balance Summary</b>	
<b>\$ in thousands</b>	<b>2017 Actual</b>
Beginning Balance 01/01	287,394
Total Sources	571,750
Total Uses	409,527
Cash Balance Adjustment	(238)
<b>Ending Investment Balance 12/31</b>	<b>\$ 449,379</b>
Less: Board Designated Cash	
Blue River Decree Litigation	4,350
Total Board Designated Cash	4,350
Less: Bond Reserve	17,380
<b>Available Investment Balance</b>	<b>\$ 427,649</b>
Less: 50% of next year's annual debt service minus Bond Reserve	24,353
Less: Operating/Insurance Reserve (25% of Operating + \$10,000,000)	62,354
Less: Capital Reserve (Greater of Average Amortization or 2% of Capital less Depreciation)	64,631
Less: OCR Reserve	102,729
<b>Available for Future Operating &amp; Capital</b>	<b>\$ 173,582</b>



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# DEBT INFORMATION

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Denver Water issues debt to fund capital improvements and to refund existing debt. Denver Water has the discretion to issue debt for purposes other than capital improvements if deemed necessary by the Board. Operating expenses and capital improvements of a normal recurring nature are included in the calculation of the revenue requirement from rates and are financed on a “pay-as-you-go” basis.

The Treasury section of the Finance division monitors the marketplace and evaluates the appropriateness of various financing sources for specific capital projects. The evaluation considers the expected life of the asset, the nature of any covenant requirements, the impact on Denver Water’s financial flexibility and the organization’s capacity to support the projected level of debt.

Denver Water uses the following guidelines in its financial planning activities:

- The Debt Ratio (Total Debt divided by the sum of net fixed assets plus net working capital) should not exceed 40%.
- Water rates are established to provide Net Revenues sufficient to produce Annual Debt Service Coverage 1.8x to 2.00x.

<b>Debt Principal and Interest Obligations (in millions of dollars)</b>			
Year	Principal	Interest	Total
2018	\$ 22.5	\$ 26.3	\$ 48.8
2019	22.1	25.1	47.2
2020	19.9	24.0	43.9
2021	19.3	23.1	42.4
2022	19.1	22.2	41.3
2023	19.9	21.4	41.3

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# FINANCIAL POLICIES

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The Board has established financial policies that constitute the basic framework for the financial management of Denver Water. These policies are intended to assist members of the Board and Denver Water’s staff in evaluating current activities and proposals for future programs, and are reviewed on an annual basis and modified to accommodate changing circumstances or conditions. A summary of these policies is presented below:

## Balanced Budget

The Denver Board of Water Commissioners has not adopted an official policy on a balanced budget. Our practice is to balance the budget by the planned use or contribution to investment balances.

## Revenues

Denver Water is completely funded through rates, fees, and charges for services provided by Denver Water. There are no transfers to or from the city’s general fund. Water rates pay for operation and maintenance expenses, repair, capital replacements and modifications to existing facilities, debt service, a portion of the costs of new facilities, and water supply.

## Expenditures

In planning expenditures, Denver Water follows the city charter’s mandate to keep rates as low as good service will permit. This means Denver Water will properly maintain its facilities and continue to seek ways to operate more efficiently.

## Cash Reserves

The Charter of the City and County of Denver specifically allows the accumulation of reserves “sufficient to pay for operation, maintenance, reserves, debt service, additions, extensions, and betterments, including those reasonably required for anticipated growth of the Denver Metropolitan area and to provide for Denver’s general welfare.” The Board’s practice is to maintain reserves that are sufficient to provide:

- 25 percent of the next year’s operating costs.
- The greater of average annual depreciation cost and 2 percent of current total capital assets (before depreciation) for replacement capital and equipment purchases.
- 50 percent of expected annual debt service for next year.
- \$10 million in exposure reserve.

## Capital Policy

Initial acquisition costs of assets are capitalized if they have a service life of more than one year and a cost of \$50,000 or more. Costs not meeting these criteria are expensed. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the respective asset classes.

## Risk Management

The Board is exposed to various risks of losses including torts, general liability, property damage (all limited under the Colorado Governmental Immunity Act to \$350,000 per person and \$990,000 per occurrence), and employee life, medical, dental, and accident benefits. The Board has a risk management program that includes self-insurance for liability, employee medical (including stop-loss coverage), dental, and vision. The Board carries commercial property insurance for catastrophic losses, including floods, fires, earthquakes and terrorism, for scheduled major facilities including the Westside Complex, Marston Treatment Plant and Lab, Moffat Treatment Plant, Foothills Treatment Plant, the Recycling Plant, and water turbines. It carries limited insurance for other nonscheduled miscellaneous locations. The Board also carries commercial insurance for life, accident, short and long-term disability, employee dishonesty, and fiduciary exposure.

The Board is self-insured for workers' compensation and carries an excess liability (stop-loss) policy for individual claims exceeding \$500,000. Prior to February 1, 2016, the Board was insured for workers' compensation insurance by a large deductible policy whereby the Board was responsible for the first \$250,000 per claim with a maximum aggregate cost of \$2.6 million. In addition, the Board is at times party to pending or threatened lawsuits under which it may be required to pay certain amounts upon their final disposition. Settled claims have not exceeded this commercial coverage in any of the past three fiscal years.

Medical, dental, and workers' compensation claims liabilities are reported in *Payroll and Other Employee Benefits*; and legal claims, if any, are reported in *Accounts Payable* on the *Statements of Net Position*. It is expected the claims will be paid in the next twelve months.

## Investments

The Board established an Investment Policy for funds not needed for current operations and delegated its authority to invest these funds to the chief of finance. The Investment Policy establishes the investment objectives, the standards of care, broker and dealer requirements, custody and safekeeping requirements, permitted investments, and investment parameters. The primary objectives, in order of priority, are safety of principal, liquidity, and yield.

## Debt Policy

The Board adopted a debt policy in 2013 establishing the philosophy, objectives and practices to issue debt. In accordance with the Debt Policy, debt may be issued to fund capital improvements that expand the system or are otherwise unusual in nature or amount and to refund existing debt. Denver Water is not subject to legal debt limits.

## Measurement Focus and Basis of Accounting

The Board, as a business type activity, is accounted for in an enterprise fund, which is used to report any activity for which a fee is charged to external users for goods or services. The Board's basic financial statements are accounted for on the flow of economic resources measurement focus, using the accrual basis of accounting. Under this method, all assets and liabilities associated with operations are included on the statements of net position, revenues are recorded when earned, and expenses are recorded at the time liabilities are incurred. This is different from the basis of budgeting. Denver Water's budget is

prepared using the budget basis in which revenues are recorded when they become available and expenditures are recorded at the time liabilities are incurred. Under the terms of grant agreements, the Board funds certain programs using a combination of cost-reimbursement grants and general revenues. It is the Board's policy to first apply cost-reimbursement grant resources to such programs, followed by general revenues.

### **Accounting Standards**

The Board's financial statements are prepared in accordance with principles generally accepted in the United States of America (Generally Accepted Accounting Principles). Additionally, the Board applies all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

### **Chart of Accounts**

In 2016, the Board reimplemented the financial system and chart of accounts which resulted in certain variances in year over year comparisons. In addition, certain reclassifications have been made to prior year's information to conform to the current year presentation.

### **Operating Revenues and Expenses**

Operating revenues consist primarily of charges to customers directly or indirectly related to the sale of water. Operating expenses consist of the cost of providing water and power, including administrative expenses and depreciation on capital assets. All other revenues and expenses are classified as nonoperating.

The Board accrues for estimated unbilled revenues for water provided through the end of each year from the last reading of the meters, based on the billing cycle.

### **Rates and Fees**

Under Article X, Section 10.1.9 of the City Charter, the Board is empowered to set rates for all of its customers. These rates "...may be sufficient to pay for operation, maintenance, reserves, debt service, additions, extensions, betterments, including those reasonably required for the anticipated growth of the Denver metropolitan area, and to provide for Denver's general welfare...."

### **Consumption and Service Charges**

On November 15, 2017, the Board approved a water rate increase, effective March 1, 2018. The rate increase is designed to increase overall total system water rate revenue by 3.0%.



# Projects



# PROJECT PRIORITIZATION

Project budgets, which consist of both capital and operating expenditures, follow the standard work of the Systems and Program Managers. Collection, Distribution, Expansion, Operations Support, and Treatment are prioritized together. Information Technology is prioritized separately through the Business Technology Management Office.

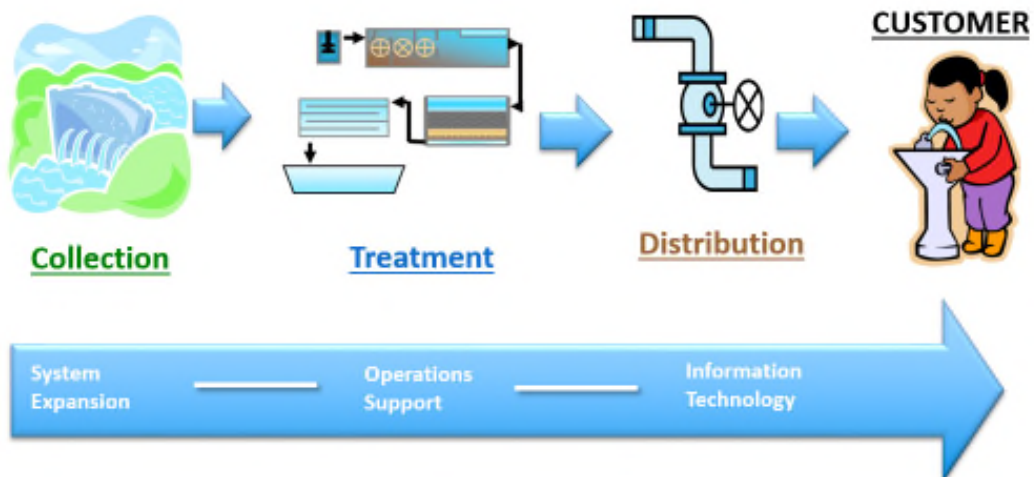
Each year, the system managers prioritize needs and develop a 2-year detailed budget for projects, along with a less detailed forecast for years 3 through 10. The outcome of this work is the Long Term Project Forecast.

Like Operating Expenses, the proposed budget targets for projects must align with the annual financial plan and recommended revenue adjustments.

To be considered for prioritization, the project managers first develop background information on potential projects, including associated scope, schedule, and budget. That information is submitted on a JERI (Just Enough Right Information) form and is approved by the appropriate system manager.

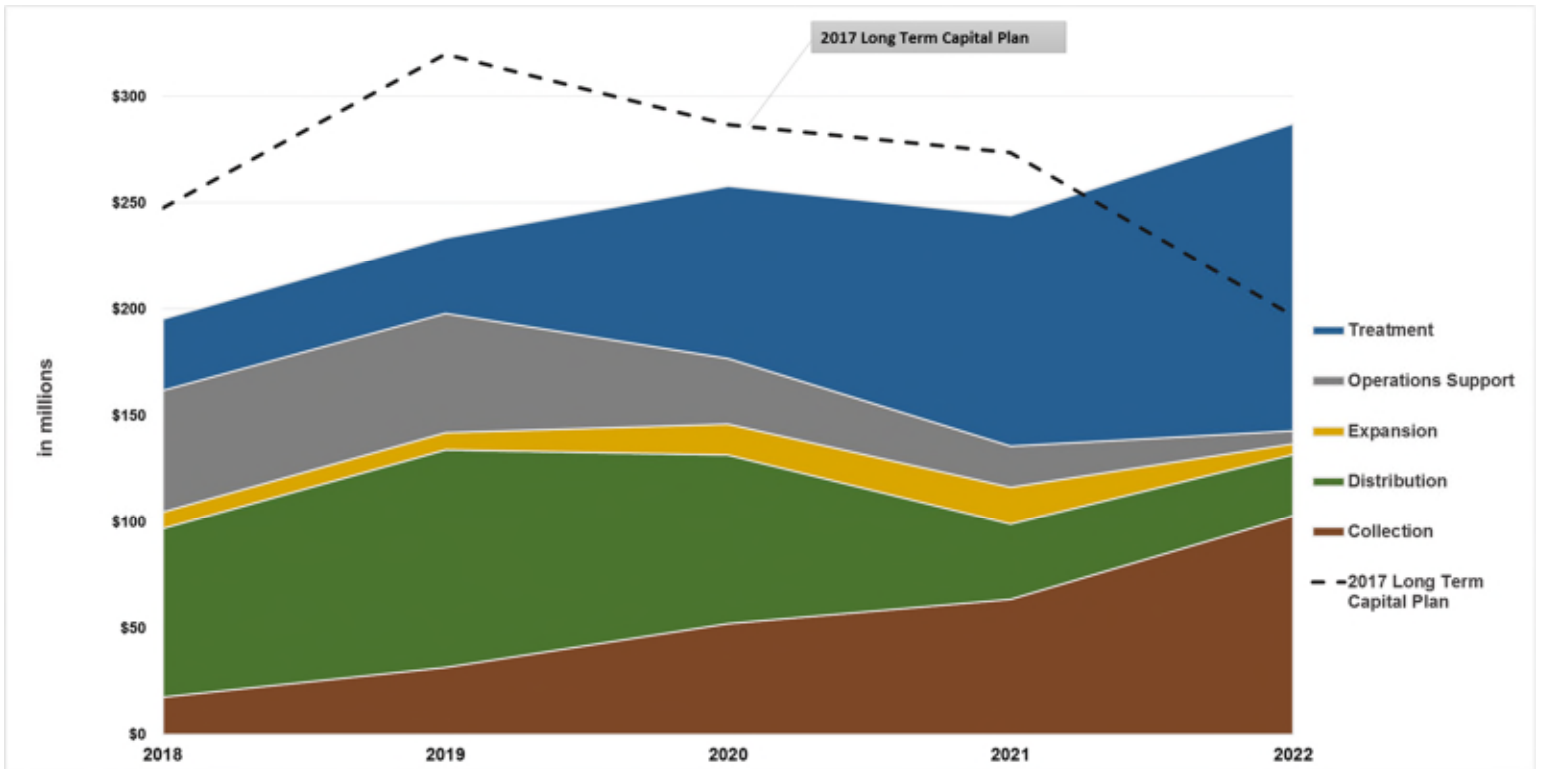
All approved projects are compiled into the preliminary Long Term Forecast. The system managers conduct a series of meetings to categorize and prioritize the approved projects until they are able to meet the defined budget targets for the next two years. Once this process is complete, the project managers develop detailed budgets for each project.

## Customer-Centric Approach Requires Teamwork



# 5-YEAR CAPITAL PLAN

The chart below illustrates the 5-year capital plan for Denver Water. Over the next five years, we expect to spend \$1.3 billion improving and maintaining our system.



\*Does not include Information Technology projects

# TOP 10 PROJECTS

<i>\$ in thousands</i>	<b>System</b>	<b>2018 Budget</b>	<b>5 Year Total</b>
Operations Complex Redevelopment	Operations Support	\$ 49,014	\$ 99,115
Northwater Treatment Plant	Treatment	24,000	364,000
Conduit 16 & 22 Replacement	Distribution	19,188	74,370
Replacement of Hillcrest Tanks & Pump Station	Distribution	18,205	66,302
Vault Modifications*	Distribution	8,359	19,881
Main Replacements*	Distribution	8,000	38,450
Main Relocations*	Distribution	6,628	7,228
Gross Reservoir Expansion	Collection	6,416	201,536
Fleet Vehicles Replacement*	Operations Support	5,483	27,983
Conduit Improvement Program*	Distribution	4,800	22,800
<b>Top 10 Total</b>		<b>\$ 150,092</b>	<b>\$ 921,666</b>
<b>% of Total Plan</b>		<b>73%</b>	<b>73%</b>

\* Recurring projects



# PROJECT SUMMARY

<b>COLLECTION</b>				
<i>Includes applied labor</i>	<b>Program</b>	<b>Division</b>	<b>Type</b>	<b>2018 Budget</b>
Antero Res Rehabilitation	DAM	ENG	Capital	53,460
Marston Speece Cone	DAM	ENG	Capital	61,720
Ralston Dam Modifications	DAM	ENG	Capital	-
Ralston Spilwy Under Drn Rpr	DAM	ENG	Capital	300,015
Strontia Replc Seats Gate #3	DAM	ENG	Capital	20,660
Strontia Spng Dam ERDS Gates	DAM	ENG	Capital	-
Annual Gravel Pit Program	DAM	ENG	Operating	-
Annual Dam Safety	DAM	ENG	Operating	-
FERC Required Dam Drain Clean	DAM	ENG	Operating	-
Stainless Steel Corrosion Stdy	DAM	ENG	Operating	30,492
Strontia Rock Hazard Assessmnt	DAM	ENG	Operating	30,000
Strontia Sedimentation Study	DAM	ENG	Operating	249,640
Gross Reservoir Expansion	GRO	ENG	Capital	6,415,697
Dillon Hydro Prtctv Relay Rpl	HYD	ENG	Capital	1,488,287

<b>COLLECTION</b>				
<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Foothills Hydro 10yr Mntnc	HYD	ENG	Capital	233,604
Roberts Tun EI&C & 2nd Hydro	HYD	ENG	Capital	343,963
Strontia-Elec & Cntrl Upgrade	HYD	ENG	Capital	449,432
Williams Fork Penstock Slide	HYD	ENG	Capital	2,076,830
C20 Diversion Slide Gate and	RAW	ENG	Capital	1,050,000
Conduit 26 Fiber Optic Line	RAW	ENG	Capital	500,000
Moffat - Siphon No. 1	RAW	ENG	Capital	394,800
Moffat- Jim Creek Siphon	RAW	ENG	Capital	2,796,190
Moffat Tnnl Siphon 2 Accss Imp	RAW	ENG	Capital	98,280
Radial Gate at S. Boulder Div	RAW	ENG	Capital	1,229,900
Ranch Crk Diversion Canal Imp	RAW	ENG	Capital	53,240
SBC - Easement for Siphon 2	RAW	OM	Capital	-
Meadow Creek System Improvemen	RAW	ENG	Operating	248,480
<b>Total COLLECTION</b>				<b>\$ 18,124,690</b>

## DISTRIBUTION

<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Aerial Crossing Replacements	CON	ENG	Capital	739,251
C61 Mississippi & Broadway	CON	ENG	Capital	-
C94 Assessment and Repairs	CON	ENG	Capital	121,360
Cond Cathodic Protctn Imprvmt	CON	ENG	Capital	557,755
Conduit 16&22 Replacement	CON	ENG	Capital	19,187,680
Conduit Improvement Program	CON	ENG	Capital	4,800,000
DIA Conduits & Mains	CON	ENG	Capital	39,700
Replc rectifer on C96 & C94	CON	ENG	Capital	116,520
WISE DIA Connection	CON	EA	Capital	1,086,120
2017 Repl Contract Wk	MN	ENG	Capital	2,284,918
2018 Repl Contract Wk	MN	ENG	Capital	2,500,000
Corrosion Control Remote Mntr	MN	ENG	Capital	80,710
Corrosion prevention	MN	ENG	Capital	29,662
Fire Hydrant Replacement	MN	OM	Capital	500,000

<b>DISTRIBUTION</b>				
<i>Includes applied labor</i>	<b>Program</b>	<b>Division</b>	<b>Type</b>	<b>2018 Budget</b>
Main Improvements	MN	OM	Capital	2,000,000
Main Relocations	MN	ENG	Capital	6,628,360
Main Replacements	MN	OM	Capital	5,500,000
Replace PRV - misc	MN	OM	Capital	100,000
Specialized Main Improvements	MN	ENG	Capital	1,204,640
Stapleton Dist. 16 & 20 in Mns	MN	ENG	Capital	887,903
Total Service Conversions	MN	OM	Capital	14,000
Denver Parks Irrig. Effic.	MN	EA	Operating	668,000
DIA Electrically Shorted Pipin	MN	ENG	Operating	149,106
Lead Line Svcs Program	MN	OM	Operating	3,520,385
64th Ave. PS Modifications	PS	ENG	Capital	324,370
Belleview PS Modifications	PS	ENG	Capital	140,000
Chatfield PS Modifications	PS	ENG	Capital	3,049,618
Cherry Hills PS Modifications	PS	ENG	Capital	-

<b>DISTRIBUTION</b>				
<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Einfeldt Stndby Generator	PS	ENG	Capital	-
Highlands PS Modifications	PS	ENG	Capital	146,264
Hillcrest PS Modifications	PS	ENG	Capital	954,524
Lamar Pump Sta Arc Flash Reduc	PS	ENG	Capital	46,486
Marston PS Elec. & Mech. Upgrds	PS	ENG	Capital	196,175
PS Cathodic Protctn Imprvmt	PS	ENG	Capital	563,555
Capitol Hill Res Embank Restre	TWS	ENG	Capital	-
Replace Hillcrest Tanks	TWS	ENG	Capital	17,250,000
Replace strge res. at Ash	TWS	ENG	Capital	-
2016/17 Vault Modifications	VLT	ENG	Capital	-
2017/18 Vault Modifications	VLT	ENG	Capital	6,648,594
2018/19 Vault Modifications	VLT	ENG	Capital	635,635
2019/20 Vault Modifications	VLT	ENG	Capital	77,240
DIA Vault Program	VLT	ENG	Capital	997,160
<b>Total DISTRIBUTION</b>				<b>\$ 83,745,691</b>

<b>EXPANSION</b>				
<i>Includes applied labor</i>	<b>Program</b>	<b>Division</b>	<b>Type</b>	<b>2018 Budget</b>
DRWSP North Complex EI&C	DSR	ENG	Capital	-
DSRS- Tanabe Fencing	DSR	ENG	Capital	-
Gravel Pit Bambei Walker Res	DSR	ENG	Capital	23,680
Gravel Pit Hazeltine Stabl	DSR	ENG	Capital	497,840
Howe-Haller & Hazel Landscape	DSR	ENG	Capital	-
Lupton Lakes Development	DSR	ENG	Capital	3,201,760
Lupton Lakes Offsite Dewater	DSR	EA	Capital	147,104
N.Complx Dunes & Tanabe WQ Mit	DSR	ENG	Capital	1,519,420
S.Complx Bambei-Walker WQ Mit	DSR	ENG	Capital	1,379,420
Sasaki Well	DSR	EA	Capital	182,144
N Complex Interim PS Feasibili	DSR	EA	Operating	29,432
Temp Pumps to Dewater Stormwat	DSR	EA	Operating	845,392
IRP- Strontia Fish Flow Recov	NSD	EA	Capital	75,430
WISE Project with Aurora	NSD	EA	Capital	514,750

<b>EXPANSION</b>				
<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Aquifer Store and Recovy Pilot	NSD	EA	Operating	545,770
Co Rvr Sys Cons Pilot (CRSCPP)	NSD	EA	Operating	2,064,839
Forest to Faucets	NSD	EA	Operating	543,000
IRP 2065 Planning	NSD	EA	Operating	1,010,214
Pure Water Project	OTH	EA	Operating	75,000
WEP-Communicate Efficiency	OTH	EA	Operating	138,200
WEP- Rate Chng Irrgi Cust	OTH	EA	Operating	41,000
WEP-Direct Install Prog	OTH	EA	Operating	642,540
WEP-Rebates	OTH	EA	Operating	1,317,950
WEP-SFR Audit	OTH	EA	Operating	55,040
WEP-SFR Outdoor Lndscp chng	OTH	EA	Operating	124,000
Rcycld Gateway Prk & Bluff Lak	RCD	EA	Capital	127,630
Recycled Distribution Program	RCD	EA	Capital	100,000
<b>Total EXPANSION</b>				<b>\$ 15,201,555</b>

## INFORMATION TECHNOLOGY

<i>Includes applied labor</i>	Program	Division	Type	<b>2018 Budget</b>
Call Center as a Service	CIS	IT	Operating	180,000
TPA for Payment Processing	EFS	IT	Operating	76,920
Wastewater Management Billing	CIS	IT	Operating	113,500
AMI	CIS	IT	Operating	44,880
Digital Repository for RDA	ECM	IT	Operating	104,100
HR/Clinic Imaging & Rec Mgmt	ECM	IT	Operating	500,000
EMap Migrate from Silverlight	GAM	IT	Operating	165,000
Radio Systems	ICS	IT	Capital	1,025,000
2018 PLC Upgrade & Replacement	ICS	IT	Capital	260,703
Oracle RDBMS upgrades	ITS	IT	Operating	57,600
SQL Server 2016 upgrades	ITS	IT	Operating	100,000
Windows Server 2016 upgrades	ITS	IT	Operating	50,000



## INFORMATION TECHNOLOGY

<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Budget Accelerator	ITS	IT	Operating	-
IT Email Security SaaS	ITS	IT	Operating	-
Plant Wireless Integration	NS	IT	Operating	150,000
SCADA Network Design & Config	NS	IT	Operating	100,000
ProjectWise	OAM	IT	Operating	170,000
Env Services Maximo Work Pack	OAM	IT	Operating	43,200
Maximo 7.6 upgrade	OAM	IT	Operating	40,000
ERP - HCM & EFS Replacement	PMO	IT	Operating	60,000
Interactive Reporting Tool	PMO	IT	Operating	275,000
Office 365	PMO	IT	Operating	249,257
<b>Total INFORMATION TECHNOLOGY</b>				<b>\$ 3,765,160</b>

## OPERATIONS SUPPORT

<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
56th Ave PS Landscape reno	BF	ENG	Capital	396,000
Decntrlztn Stn Ashlnd Prkg Ext	BF	ENG	Capital	-
FH TP Rapid Mix Flow Valve Act	FH	ENG	Capital	-
Natl Western Complex WQ Lab	BF	EA	Capital	1,644,696
Natl Western Complex Plan	BF	EA	Operating	166,150
Roof Maint. Repair & Replaceme	BF	ENG	Operating	-
Vehicle Replacements	FLT	OM	Capital	5,483,451
Operations Complex Redevelopment	OCR	ENG	Capital	49,013,836
Total OPERATIONS SUPPORT				\$ 56,704,133

## OTHER

<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Emerg Capital Unplanned Proj	OTH	ENG	Capital	500,000
Emergency Work	OTH	ENG	Operating	-
Unplanned Expense Work	OTH	ENG	Operating	500,000
Total OTHER				\$ 1,000,000

<b>TREATMENT</b>				
<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
FH Sub Station 1 2 3 Replace	FH	ENG	Capital	1,416,325
FH TP Elec Rev & Mods Analyzer	FH	ENG	Capital	50,130
FH TP Flocc. Basin Valves	FH	ENG	Capital	2,691,652
FH TP Filter Media&Underdrn Rpl	FH	ENG	Capital	129,000
FH TP Wshwtr Recvr Priming Sys	FH	ENG	Capital	3,840
FH TP Wtr Pmp Cntrl Upgrd	FH	ENG	Capital	93,379
FH TP WWR Equal Basin Solids I	FH	ENG	Capital	20,600
FHTP Sediment Basin Imprvm	FH	ENG	Capital	56,112
FHWTP Chemical Feed Systems	FH	ENG	Capital	240,260
Foothills Dry Bed Return Flow	FH	ENG	Capital	-
FH Landfill EDOP and Risk Asse	FH	ENG	Operating	-
FH TP Backwash Hdrs Lining Rpr	FH	ENG	Operating	339,602
FH TP Construct Sm Vehic Path	FH	ENG	Operating	40,742

<b>TREATMENT</b>				
<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Marston Chlorine scrubbers	MAR	ENG	Capital	-
Marston TP Electrical Upgrade	MAR	ENG	Capital	2,114,770
Marston WTP Chemical Feed Syst	MAR	ENG	Capital	120,260
Mrstn Flow Instrumentation Rpl	MAR	ENG	Capital	625,000
Mrstn FP 1 & 2 Hydnic System Rp	MAR	ENG	Capital	408,125
Mrstn Mix&Backwash Corosion Rp	MAR	ENG	Capital	259,682
Mrstn Plnt Ent and Sec Imprvmt	MAR	ENG	Capital	575,000
WTP Corrosion Control Study	MAR	ENG	Capital	-
Marston Solids Handling Imp.	MAR	ENG	Operating	260,000
Marston TP Stairs Addition	MAR	ENG	Operating	-
Moffat Centrifuge	MOF	ENG	Capital	-
Moffat Chlorine Scrub Mod	MOF	ENG	Capital	-
Moffat Treatment Plant Ele Up	MOF	ENG	Capital	33,350

<b>TREATMENT</b>				
<i>Includes applied labor</i>	Program	Division	Type	2018 Budget
Moffat WTP Chemical Feed Syst	MOF	ENG	Capital	90,260
Northwater Treatment Plant	NES	ENG	Capital	24,000,000
Rcycl TP- BAF Aeration Imprvmt	RCY	ENG	Capital	20,020
Rcyclng TP Upgrade PON & POA	RCY	ENG	Capital	511,016
WISE Water Quality Study	TWS	ENG	Operating	158,560
<b>Total TREATMENT</b>				<b>\$ 34,257,685</b>
<b>TOTAL ALL PROJECTS</b>				<b>\$ 212,798,914</b>

TYPE	2018 Budget
Capital	\$ 196,525,923
Operating	\$ 16,272,991
<b>Total</b>	<b>\$ 212,798,914</b>

SYSTEM & PROGRAM CODES	
COL - Collection	DAM - Dams Reservoirs Tunnels, GRO - Gross Reservoir Expansion, HYD - Hydropower, RAW - Raw Water Diversion, REC - Recreation
DIS - Distribution	CON - Conduits, MN - Mains, PS - Pump Stations, TWS - Treated Water Storage, VLT - Vaults
EXP - Expansion	DSR - Downstream Reservoirs, NSD - New Supply Development, RCD - Recycled
IT - Information Technology	ITS - Information Technology Systems, NS - Network Services, OAM - Operational Asset Management, PMO - Project Management Office
NA - Not Applicable	
OS - Operations Support	BF - Buildings and Facilities, FLT - Fleet, OCR - OCR, OS - Safety
OTH - Other	OTH - Other
TRT - Treatment	FH - Foothills, MAR - Marston, MOF - Moffat, NES - North End Solution, RCY - Recycling

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# CAPITAL PROJECT UPDATES

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## **Gross Reservoir Expansion Project**

Securing our future ability to provide safe, reliable water

The Gross Reservoir Expansion Project is a major component of Denver Water’s long-term, multi-pronged approach to deliver safe, reliable water to the more than 1.4 million residents in our service area today and many of the projected millions who will call Colorado home in the decades to come. The project will raise the height of the existing dam by 131 feet, which will allow the capacity of the reservoir to increase. Once permits are secured, we expect construction to take place in phases.





## North System Renewal

### Improving the safety and reliability of our aging system

Denver Water is upgrading and modernizing the northern portion of our water system. We are building a new water treatment plant, installing a new pipeline and redeveloping our Moffat Treatment Plant site. When finished, the system will be more resilient and adaptable to changing demands for water now and into the future.

Why it's important: Denver Water's North System was constructed in the 1930s, when the surrounding area was mostly farmland. Now, 80 years later, the North System is reaching the end of its lifespan.

The North System's pipelines and valves need to be replaced. The new treatment plant will feature updated technology, and the existing Moffat Treatment Plant will be repurposed into a distribution site.

Project components:

- Ralston Reservoir Connection
- Northwater Treatment Plant
- Northwater Pipeline
- Moffat Distribution Site

How it affects our customers: These improvements will help maintain reliable, safe drinking water and avoid service failures that could adversely impact neighbors.

## Denver Water's Operations Complex Redevelopment

### Building a more accessible, sustainable headquarters

Denver Water's Operations Complex is in the midst of a redevelopment project to provide a more efficient, publicly accessible and sustainable headquarters. The complex includes the Administration Building, equipment shops, fleet maintenance, warehouses, trade buildings and space for pipe and materials storage. Water utility operations have been located on this site since 1881.

Why it's important: The buildings on our Operations Complex site are outdated, inefficient and inadequate to support the future demands of providing water service to our community. The goal is to build a modern site that improves the efficiency, functionality, security and safety of all operations. In most cases, it is more cost-effective to rebuild than to renovate existing buildings. The new layout will improve traffic flow and take advantage of matching functions with building adjacencies.

As a prominent water resource manager in the West, Denver Water will lead the way to the future through environmental stewardship by creating an efficient, resilient Operations Complex. Sustainability is a key factor, as the complex has been designed to incorporate LEED certification, educational demonstrations of net zero energy and leading-edge concepts around the management of all water sources. The redeveloped complex will feature educational components about water and its efficient use.

The first phase of construction began in 2016 with a focus on the operational facilities. The second phase, scheduled for summer 2017 through late 2019, focuses on the Administration Building and parking garage.







# Water Rates and Usage



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# WATER RATES

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## 2018 Water Rates

In November 2017, the Denver Board of Water Commissioners adopted rate changes to fund essential repairs and upgrades to Denver Water’s system, beginning March 1, 2018.

There are 143 major projects identified in Denver Water’s capital plan. With rapidly changing technology, aging infrastructure, new regulations and a warming climate, we need to continue to invest in the water system.

These projects and the expenses associated with day-to-day operations and unplanned work, like water main breaks, are funded by water rates, bond sales, cash reserves, hydropower sales and fees for new service (called System Development Charges).

### The need to raise residential rates in 2018:



Denver Water is upgrading and modernizing the northern portion of our water system that was built in the 1930s. We are building a new water treatment plant, installing a new pipeline and redeveloping our Moffat Treatment Plant site (pictured).

To keep water affordable and to encourage efficiency, Denver Water’s rate structure includes three tiers based on how much water you use. Indoor water use — for bathing, cooking and flushing toilets — is essential for human life, and is charged at the lowest rate. Efficient outdoor water use is charged in the second tier (middle rate), followed by inefficient outdoor water use in the third tier (highest rate).

In addition to variable charges based on water use, the rate structure also includes a monthly fixed charge based on the size of the water meter.

## 2018 Water Rates at Work



After this water main break in Denver on Jan. 28, 2017, Denver Water engineers started design and coordination to replace the 24-inch-diameter pipe. The five-year capital plan invests more than \$100 million to repair and replace water mains.

In 2018, Denver Water will continue work on projects that are part of the five-year, \$1.25 billion capital improvement plan. Denver Water is staying on top of the upgrades and new projects needed to keep this system running. Some specific projects include:

## North System Renewal

Denver Water's North System was constructed in the 1930s, when the surrounding area was mostly farmland. Now, 80 years later, the North System is reaching the end of its lifespan. With a projected cost of more than \$650 million, the project includes upgrading pipes and valves inside Ralston Dam, building an 8.5-mile water pipeline, repurposing Moffat Treatment Plant and building the new Northwater Treatment Plant.

## Hillcrest Storage Tank Replacement project

The \$100 million project replaces two aging and outdated tanks that were built on the same site in the 1960s. Crews are constructing three brand new, 15-million-gallon treated water storage reservoirs and a pump station to send that water throughout our system.



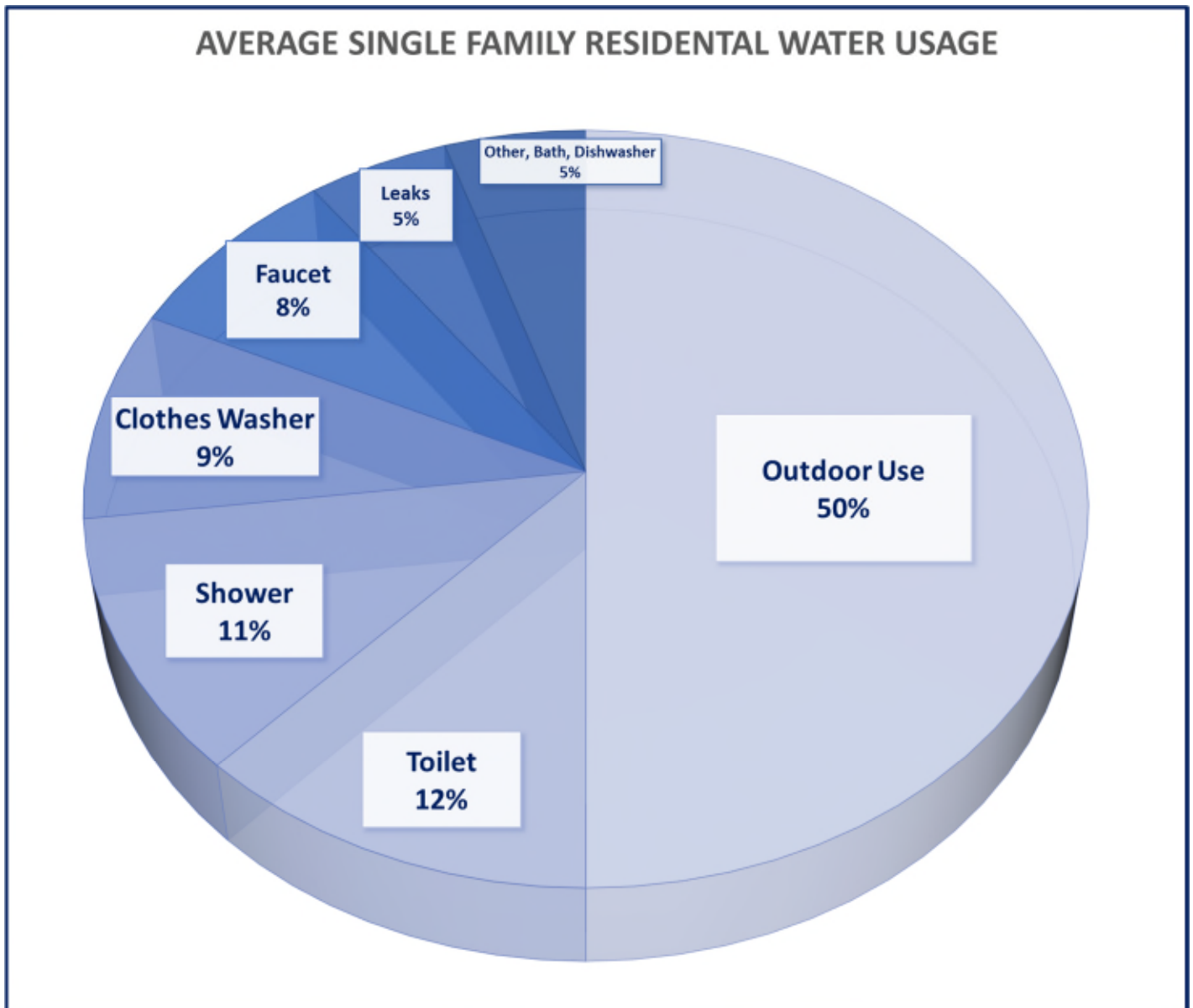
## Pipe Replacement

The five-year capital plan invests more than \$100 million to repair and replace old water mains. Some of the pipes in the system date back to the 1890s, and Denver Water has more than 3,000 miles of pipe in the ground.

# WATER USAGE

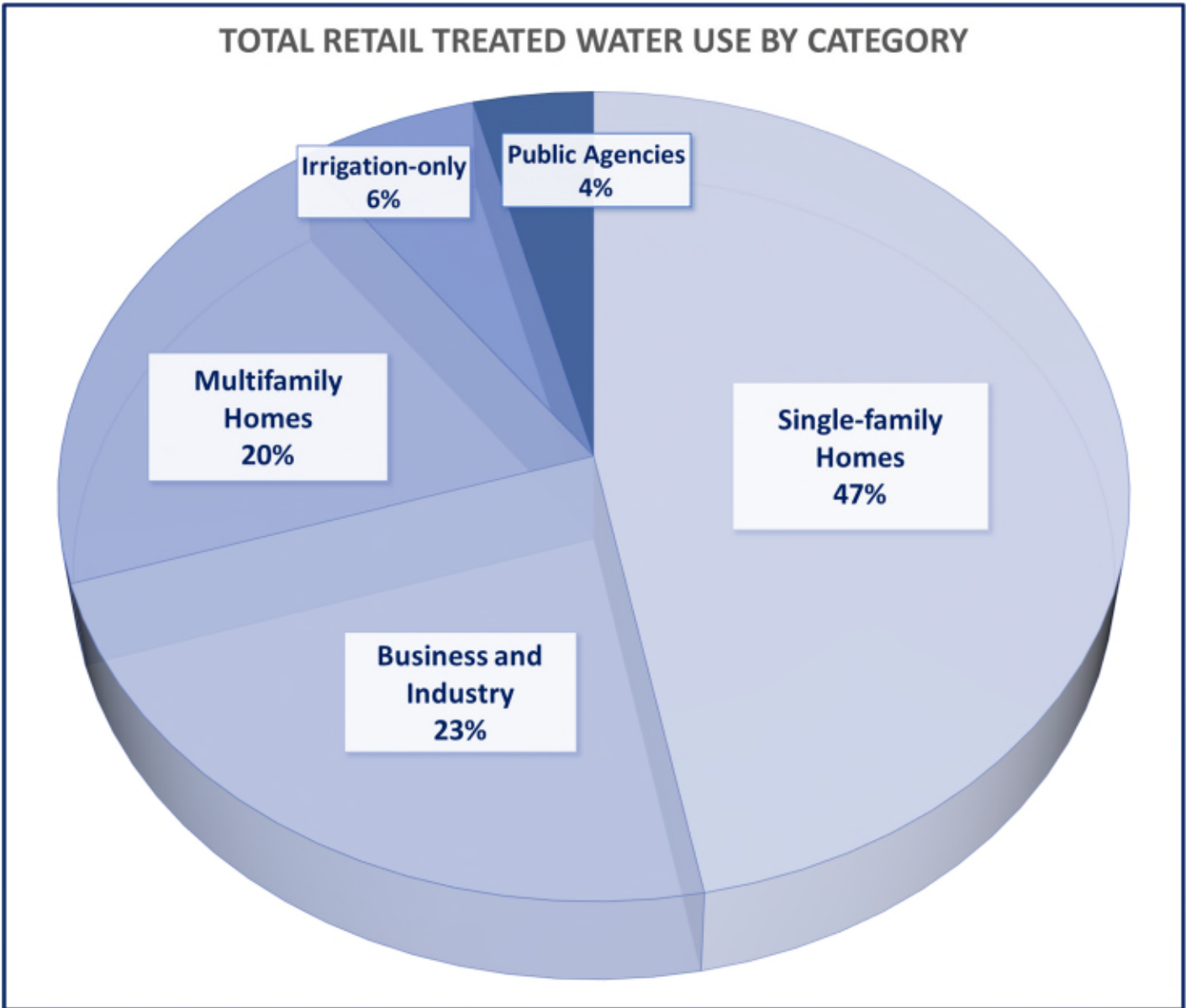
## Residential Usage

Denver Water analyzes how customers use water now and how that use may change in the future. By researching customer water-use patterns, we are able to better plan for an adequate supply of clean, reliable water well into the future.



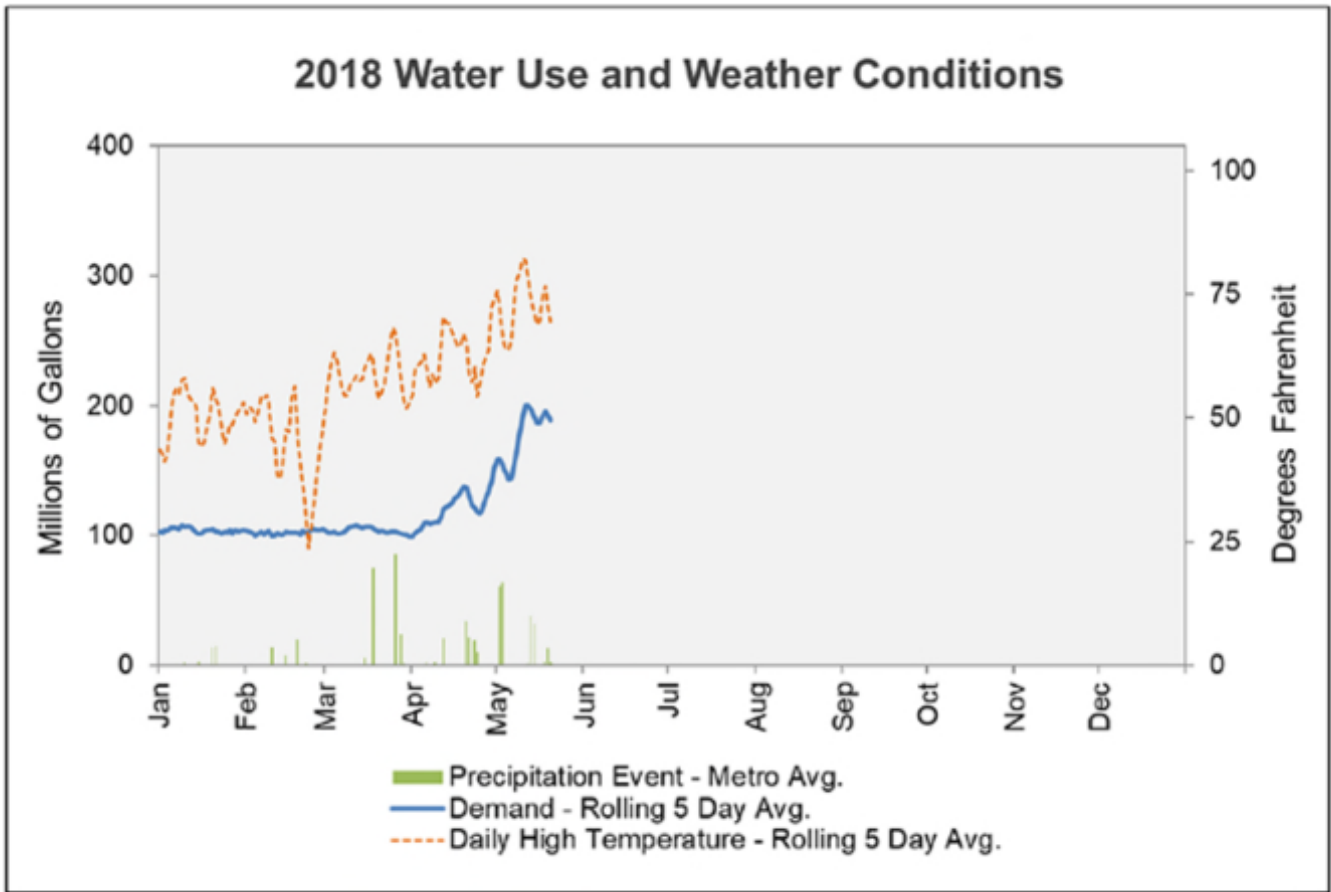
### Usage by Category

Predicting the future needs for Denver Water's service area depends on growth in population and employment, improvements in water fixture technology, and changes to land use, among other variables.



**Weather Impact**

Water use from year to year is heavily influenced by the weather. About half of single-family residential water use is outdoors, and a hot, dry year can mean customers use more water than usual. Denver Water serves about a quarter of the state's population but uses less than two percent of all water, treated and untreated, in Colorado.



# DROUGHT

The weather in this area constantly fluctuates, but it's typically very dry.

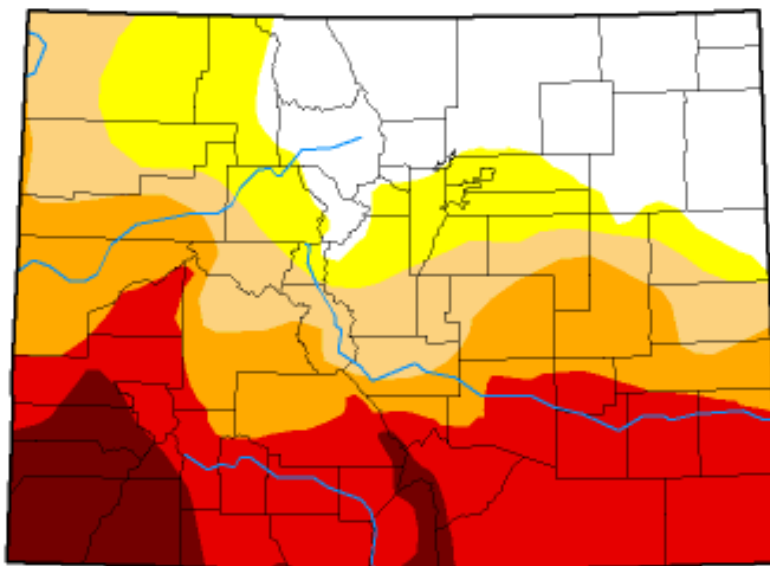
Denver receives an average of 15 inches of precipitation each year, which is about a fourth of the precipitation a tropical city such as Miami receives.

We've also experienced several severe droughts in the past that have challenged our water system and depleted our supply.

With such a dry climate, it's always important to use water wisely. Keep updated on statewide drought conditions with the U.S. Drought Monitor.

## U.S. Drought Monitor Colorado

**May 22, 2018**  
(Released Thursday, May 24, 2018)  
Valid 8 a.m. EDT



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Eric Luebbehusen  
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>



*Cheesman Reservoir during the 2002 drought*

## Stages of Drought Response

Denver Water’s Drought Response Plan details drought severity indicators, response actions and program elements. Denver Water’s primary response to drought is to restrict customers’ water use so supplies will last as long as possible and be available for the most essential uses. Four different stages of drought response are outlined:

- **Drought Watch:** A Drought Watch will increase communication to customers that water supplies are below average, conditions are dry and continued dry weather could lead to mandatory watering restrictions.
- **Stage 1 Drought:** A Stage 1 drought response imposes mandatory watering restrictions and requires effort on the part of customers.
- **Stage 2 Drought:** A Stage 2 drought response imposes a ban on lawn watering for Denver Water’s customers. Stage 2 drought restrictions are severe and will likely result in damage to or loss of landscapes.
- **Stage 3 Drought:** If conditions warrant, Denver Water may implement a rationing program for an indefinite period of time to ensure, to the extent possible, that there is adequate water for essential uses.





# Other Information





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# 2017 YEAR IN REVIEW

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## 2017 Year in Review highlights

- Strategic Plan refresh — Denver Water’s Strategic Plan was more than five years old, and we had accomplished most of our objectives. We revised and refreshed the plan to ensure it was relevant for the next five years and that it resonated with our customers and employees. The Board adopted the refreshed plan in February, and we socialized it into the organization through multiple communication channels and training.
- End-user customer survey — Our most recent comprehensive survey of our customer base shows that 92 percent of customers surveyed told us they are very or somewhat satisfied with Denver Water. This is part of our continued efforts to understand and improve the customer experience. By regularly communicating with our customers, we are able to understand how they feel about our people, policies and processes.
- Distributor relations — We regularly survey our distributors to better identify what we are doing well and where we can improve. Our latest survey showed 60 percent top-box satisfaction (very satisfied with Denver Water), beating our goal of 50 percent. We also set a goal of no more than 29 complaints. We ended with 17.
- Gross Reservoir expansion — The Gross Reservoir Expansion Project is a major component of Denver Water’s long-term, multi-pronged, water supply approach. The project reached a major milestone in 2017 as the Army Corps of Engineers approved Denver Water’s request to raise the dam by issuing a Record of Decision and 404 Permit — two documents required by the federal government as part of the Clean Water Act. We expect a decision from the Federal Energy Regulatory Commission (FERC) regarding our license amendment application in 2018.

- Operations Complex Redevelopment (OCR) — Our Operations Complex is in the midst of a redevelopment project to provide a more efficient, publicly accessible and sustainable headquarters. We finished Phase One, with the completion of the new Fleet Services, Meter Shop, Trades and Warehouse buildings. Employees in all four buildings successfully moved and are capturing the intended efficiencies in their operations. They made this move with minimal impact to customers, showing their adaptability and willingness to embrace change.
- North System Renewal — We are upgrading and modernizing the northern portion of our water system. The North System Renewal projects include new pipes and valves inside Ralston Dam, replacing a pipeline from Ralston Reservoir, repurposing the Moffat Treatment Plant into a water distribution hub and building the new Northwater Treatment Plant. It is one of the biggest renovation projects in Denver Water history.
- A significant development in 2017 centered on the treatment plant. We took a six-month delay to right-size the plant’s future energy loads. We even explored the possibility of taking the plant off the grid; but, we were able to lower the expected energy costs associated with the new plant, so it is more cost-effective for the plant to remain on the grid (with a much smaller energy demand). This also allows us to better manage the energy created on site by our hydroelectric facilities with a goal for the plant to create more energy than it consumes.
- High Line Canal — The High Line Canal corridor has been an important part of Denver Water and the metro area for more than 100 years. Although the canal’s original purpose of irrigation no longer fits in our water-efficient world, Denver Water is committed to the long term preservation of the canal corridor as a key recreational and environmental amenity. We are working with the High Line Canal Conservancy’s citizen-based planning efforts for the corridor including the development of a visioning plan and piloting stormwater management strategies for the canal.
- Quarterly performance reporting — We implemented quarterly performance reporting to the Board as part of our Fiscal Responsibility initiative. The report contains an organizational balanced scorecard, the 2017 Annual Work Plan, status of Continuous Improvement Value Streams and the Audit Plan, updates on divisional initiatives, financial performance and exception reports, contract-status reports, MWBE reporting and more.
- \$160 Million in Green Bonds — Denver Water issued its first “Green Bonds” to finance the OCR project, attracting new investors and resulting in oversubscription of the bonds. The Green Bond designation is a result of incorporating LEED certification and other sustainability goals, such as “One Water” and energy efficiency, into building design.
- Capital budgeting philosophy — We developed a budgeting philosophy aligned with our Strategic Plan and IRP. The identified future scenarios in the IRP and underlying service level assumptions inform capital and operational decisions toward the goal of building the right project, at the right time, for the right cost, to best serve our customers. This iterative planning approach drives our capital budgeting program. These plans are updated through our system and program manager

process, using a variety of criteria, including risk management principles, sustainable solutions and solutions that minimize rate fluctuation.

- IT Master Plan — We assessed our overall IT strategies to ensure our IT investments are driven by and aligned with Denver Water’s Strategic Plan. We implemented processes to improve our governance, prioritization and delivery of IT projects and services while ensuring our IT solutions are aligned with evolving trends and best practices.
- Injury reduction – We achieved significant reductions in injuries and lost work days across the organization as we continue our focus on safety. In 2012 when we first started tracking efforts through Lean to reduce injuries, we had 184. In 2017, we had 74 injuries against a goal of 84. In 2015 we experienced 17 lost work days due to injuries, but in 2017 we had only four. Denver Water continues towards our ultimate goal of zero injuries to employees.
- Sustainability Guide — We completed Denver Water’s first Sustainability Guide with significant internal stakeholder input. It includes specific goals in areas such as energy use, water consumption and waste reduction.
- External Affairs created — Planning and Public Affairs merged into one division called “External Affairs.” This better leverages existing synergies between the two groups.

## Awards

- Gold leader status — The Colorado Department of Health and Environment recognized Denver Water’s treatment plants with a “Gold Leader Award.” This recognizes outstanding environmental achievements by organizations that voluntarily go beyond compliance with state and federal regulations and show a commitment to continual environmental improvement.
- Directors Award — The Marston Treatment Plant staff received the “Directors Award” from the AWWA’s Partnership for Safe Water Program. This achievement demonstrates the commitment to evaluating performance, benchmarking ourselves against industry standards, and empowering employees to make continuous improvements.
- Antero award — The American Public Works Association recognized Phase III of the Antero Dam Rehabilitation project with its “Environment — Large Community Award,” honoring outstanding achievement in the environmental field.
- Wellness Program awards — Denver Water received several recognitions for its wellness programs, including Cigna’s “Well-Being Award,” American Heart Association’s “Silver Level Workplace Health Achievement Award” and Health Links’ “Healthy Business Leader Award.”

- Parks and Wildlife award — Denver Water received the “Statewide Partner Collaboration of the Year Award” from Colorado Parks and Wildlife. The award recognizes collaborative partnerships to get more people outdoors.

## 2017 organization-wide initiatives update

Fiscal Responsibility — In 2011, we identified a need to develop an improved budgeting and financial management process. At that time, the organization had two distinct financial systems for reporting budget and actuals, making it difficult for the organization to demonstrate accountability to the budget, transparency in spending and budget alignment to the Strategic Plan. The Board was unable to focus on policy and strategy because the organization couldn’t report on key financial outcomes in a meaningful way.

After consolidating the financial reporting into one system (ORCA), we created the Fiscal Responsibility initiative with the following objectives: Adopt a strategically-aligned financial management philosophy with the customer in mind; utilize the financial system to develop, track and measure performance; and use an organizational dashboard to continuously improve. We gathered input from the Board, the Executive Team and division stakeholders to develop and implement standard work for fiscal responsibility across the organization.

In 2017, we began providing quarterly performance reports for the Board to communicate key organizational and financial activities for that quarter, including updates on the Strategic Plan, organizational metrics, divisional initiatives and significant exceptions/changes to the approved budget. That information supports the organization’s focus of improved reporting and accountability and allows the Board to focus their efforts on strategy and policy.

We also spent significant time developing standard work and procedures for budgeting and financial management. The goal is to make sure the entire organization understands what it means to be accountable and transparent in budgeting and spending. As part of this, we implemented a standard, monthly forecasting process. Having a robust and consistent forecasting process allows the organization to be proactive in spending and planning. This approach supports day-to-day decision making and our long-term strategy.

Collaboration from the Executive Team, managers, supervisors, budget coordinators and systems and programs managers has ensured widespread engagement in the new financial processes and procedures. With ORCA, we have increased reporting capacities to ensure accurate, real-time financial information and reporting. Leaders are able to make informed decisions for their business and demonstrate accountability to the annual budget. The outcomes from the Fiscal Responsibility initiative support the Strategic Plan goal of making financial decisions in the best, long-term interests of our customers.

Two key components of the Fiscal Responsibility initiative included the Procurement Value Stream and the ORCA Increment II implementation.

- Procurement Value Stream — Value stream members streamlined procurement processes and established and tracked metrics that provided better customer service to the organization.

- Three rapid improvement events evaluated the contract development process and training for contract administrators. These events decreased the average cycle time for contract development from 107 days to a median of 74 days. Our goal is 58 days.
  - We developed a better tracking system for SMWBE participation. Through November, we awarded 56 percent of contracts to SMWBE firms and 53 percent of contracts to companies that are first-time Denver Water vendors.
  - We also centralized all non-engineering procurement through the Procurement Team. Engineering has excellent standard work for design and construction services, and we standardized some of the documents they use with what Procurement uses.
- ORCA Increment II — We successfully deployed ORCA Increment II in October. We now have a single integrated financial system for budgeting, accounting, contracting, procurement, requisitions, expense management and vendor payments, as well as the associated reporting needs for project managers, section managers, Executive Team and Board members. We deployed training materials, with project-team members assisting employees as needed.

Integrated Resource Plan — The Integrated Resource Plan (IRP) is a collaborative, long-range planning tool that integrates planning across all facilities in our system and informs the Capital Plan. We completed a number of key tasks for IRP 2065, including defining service level assumptions, assessing our current system and planning futures. Additionally, we completed a gaps-and-opportunities assessment using internal planning models. We also developed a toolbox of options to plan for gaps in the planning futures. The project is on schedule and on budget.

IT Master Planning — We delivered the IT Strategy Review and Recommendations to the Board, Executive Team, IT staff and section leaders. Using those recommendations, we created a five-year Business Technology Transformation (BTT) roadmap, as well as a more detailed BTT roadmap for 2018. The roadmap lays out a five-year plan to implement the recommendations. 2018 will focus on governance and organizational recommendations. 2019 through 2022 will focus on the technology recommendations. Value Stream team members also produced a 2018 roadmap to improve our security posture and a comprehensive Business Technology balanced scorecard.

The IT Executive Oversight Committee (EOC) followed the recommended governance process for vetting business cases and prioritizing 2018 IT projects. We made good progress in establishing the recommended Business Technology Management Office (BTMO), which will manage demand governance for Information Technology investments in conjunction with the EOC going forward.

## Continuous Improvement update

- 602 people (including 313 different employees) participated in Continuous Improvement events. There were 17 rapid improvement events, nine team-leader workshops, five current-state mapping events, five managing-for-daily-improvement events, five writing cell events, three 2P events and 73 individual A3 improvement projects to come out of the workshops.

- Continuous Improvement also refreshed value streams focused on safety, water distribution, procurement and water quality. We built on the foundation of Lean Design relative to the Northwater Treatment Plant (NTP) and the OCR project. Using Lean Design principles, the NTP project team achieved significant project savings and fundamentally advanced a strategic commitment to sustainability.
- Finally, the Continuous Improvement office partnered with Internal Audit to establish a more collaborative and transparent process for completing audit work resulting in significant reductions in cycle time, rework and waiting.
- Other Continuous Improvement highlights include:
  - We facilitated team leader workshops to teach Continuous Improvement principles to leaders throughout the organization. In all, we held nine workshops with 73 people.
  - We helped T&D and Engineering develop a plan to perform preventive maintenance on vaults at DIA, eliminating significant safety risks and increasing throughput by more than 600 percent (400 Vaults in 2017 vs 58 in 2016).
  - A rapid improvement event cut vehicle backing accidents by 55 percent, from 47 in 2016 to 21 in 2017.
  - We refreshed the water quality and procurement value streams with an emphasis on the voices of each value stream's customers.
  - We made a series of safety improvements to T&D's standard work by enhancing lockout/tag out procedures and upgrading personal protective equipment for crews.
  - We standardized T&D's hydrant replacement process to be safer and more efficient.
  - We developed processes for T&D to plan work as opposed to reacting to work.
  - We created standard work for T&D's water main break processes, significantly improving safety, productivity and reducing customer outage hours. We reduced average customer outage hours from 7 to 3.8 and average hours to complete the work from 47.87 to 42.3.
  - We made Procurement's competitive selection process more efficient by reducing hand-offs nearly in half, for 74 to 39.
  - We expanded the footprint of our Lean Design/Lean Project Management portfolio beyond the Northwater Treatment Plant. These projects included Business Technology Transformation, Security Posture, and the National Western Center project.



# Glossary and Definitions





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# GLOSSARY AND DEFINITIONS

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## **accounting standards**

The Board's financial statements are prepared in accordance with principles generally accepted in the United States of America (GAAP). Additionally, the Board applies all applicable pronouncements of the Governmental Accounting Standards Board.

## **acre-foot**

Volume of water equal to one foot in depth covering an area of one acre, or 43,560 cubic feet; approximately 325,851 gallons. One acre-foot is roughly the amount needed to serve 2.5 families each year.

## **annual yield**

Maximum basic demand the water supply could meet throughout a period of historical or synthesized hydrological conditions.

## **average winter consumption**

The amount of water used on average by a customer during the winter; provides a good indication of indoor water use.

## **balanced budget**

The Denver Board of Water Commissioners has not adopted an official policy on a balanced budget. Our practice is to balance the budget by the planned use of contribution to investment balances.

## **basis of accounting**

The Board's financial statements are accounted for on the flow of economic resources measurement focus, using the accrual basis of accounting. Under this method, all assets and liabilities associated with operations are included on the statement of net assets, revenues are recorded when earned, and expenses are recorded at the time liabilities are incurred. This is different from the basis of budgeting. Denver Water's budget is prepared using the budget basis in which revenues are recorded when they become available and expenditures are recorded at the time liabilities are incurred.

## **block**

A volume of water used in setting water rates; a quantity or volume of water sold at a particular rate.

## **bonds**

Debt instruments. According to Denver Water's charter, the Board may issue revenue bonds that are secured solely by their revenue.

**budget**

A financial plan for a specified period of time (fiscal year) that assigns resources to each activity in sufficient amounts so as to reasonably expect accomplishment of the objectives in the most cost-effective manner.

**capital expenditure**

Expenditures having a depreciable life of over one year and a cost of over \$50,000.

**capital improvement plan**

Details projects and equipment purchases and provides prioritization, scheduling and financing options.

**capital leases**

A lease having essentially the same economic consequences as if the lessee had secured a loan and purchased the leased asset.

**capital policy**

Initial acquisition costs of assets are capitalized if they have a service life of more than one year and a cost of \$50,000 or more. Costs not meeting these criteria are expensed. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the respective asset classes.

**cash flow adjustment**

The cash flow adjustment is the difference between expenditures as booked and disbursed. Expenditures are budgeted and reported on a modified accrual basis (as booked). Total expenditures are then converted to a cash basis (disbursed) for purposes of determining year-end designated balances.

**cash reserves**

The Charter of the City and County of Denver specifically allows the accumulation of reserves “sufficient to pay for operation, maintenance, reserves, debt service, additions, extensions, and betterments, including those reasonably required for anticipated growth of the Denver Metropolitan area and to provide for Denver’s general welfare.” The Board’s practice is to maintain reserves that are sufficient to provide: 25% of the next year’s operating costs; the greater of average annual amortization cost; 2% of current total capital assets (before depreciation) for replacement capital and equipment purchases; 50% of expected annual debt service for next year; \$10 million in exposure reserve.

**certificate of participation**

Evidence of assignment of proportionate interests in rights to receive certain revenues pursuant to a lease purchase agreement.

**chart of accounts**

The chart of accounts used by Denver Water generally follows the structure presented by the National Association of Regulatory Utility Commissioners for Class A Water Utilities.

**Clean Water Act**

The federal law that establishes how the United States will restore and maintain the chemical, physical and biological integrity of the country's waters (oceans, lakes, streams and rivers, ground water and wetlands). The law provides protection for the country's waters from both point and nonpoint sources of pollution.

**conduit**

A 24-inch- (or larger) diameter pipe carrying raw or potable water from or to treatment facilities, reservoirs and delivery points feeding a distribution system.

**contract payments**

Consists of contract payments for construction, materials purchased for contractor installation, acquisition of land and land rights and water rights.

**customer taps**

A physical connection to a distribution main that, together with appropriate license affects water service to a licensed premise.

**debt guidelines**

Denver Water has no legal debt limits. However, the Board has adopted debt guidelines to guide the timing and use of debt in the future. The guidelines set forth a policy that prevents debt proceeds from being used to pay operating and maintenance expenditures. The guidelines instruct that debt proceeds will be used only for current refunding, advanced refunding and payment for non-recurring capital projects that expand the system or are otherwise unusual in nature or amount.

**debt service**

Principal and interest on debt and payments under capital leases.

**direct materials**

Includes materials and supplies purchased for direct use and fuel and oil for vehicles and equipment (non-stores issues only).

**disbursements**

Money paid out for expenses, liabilities or assets.

**discretionary employee**

The charter of the City and County of Denver allows the Board to establish a classification of employees who have "executive discretion," who shall number no more than 2 percent of all people employed, and shall serve solely at the pleasure of the Board.

**division**

Largest organizational unit reporting to the CEO/Manager.

**employee benefits**

Employee benefits are expenditures paid by Denver Water for workers' compensation, social security, retirement, employee assistance program, health and other insurances. It does not include employee withholdings or unemployment insurance.

**Endangered Species Act**

The federal law that sets forth how the United States will protect and recover animal and plant species whose populations are in dangerous decline or close to extinction. The law protects not only threatened and endangered species but also the habitat upon which species depend.

**enterprise fund**

A type of propriety fund or a governmental unit that carries on activities in a manner similar to a private business.

**fund**

An accounting entity with a set of self-balancing accounts that is used to account for financial transactions for specific activities or government functions. By charter, Denver Water is reflected in the city's financial statement in a single fund known as the water works fund.

**fund balance**

The balance in the water works fund. Fund balance is calculated each year by adding total sources of funds to the balance at the beginning of the year and then subtracting total expenditures.

**general equipment**

Computer equipment; office furniture and equipment; transportation equipment; storehouse equipment; construction and maintenance tools and equipment; chemical laboratory equipment; power-operated equipment; communication equipment; garage and shops equipment; and miscellaneous equipment.

**Governmental Accounting Standards Board (GASB)**

A board that establishes the generally accepted accounting principles for state and local governmental units.

**gross revenue**

All income and revenues, from whatever source, including system development charges and participation payments, excluding only money borrowed and used for providing capital improvements or other revenues legally restricted to capital expenditures.

**historical timing adjustment**

Estimate of budget variances primarily due to changes in capital construction schedules and the timing of obtaining permits and acquiring rights-of-way.

**hydropower**

Hydroelectric power of/or relating to production of electricity by water power.

**integrated resource planning (IRP)**

A method for looking ahead using environmental, engineering, social, financial and economic considerations. Includes using the same criteria to evaluate both supply and demand options while involving customers and other stakeholders in the process.

**interest requirements**

As used in the debt guidelines, scheduled interest payments during the 12-month period following the date of calculation.

**investment balance**

The total sum held in cash and investments net of uncleared warrants.

**investments**

The Board has protection of principal as its primary investment policy objective. The Board designates its authority to invest money deposited in the water works fund to the CEO/manager and the director of Finance. According to the current investment policy, U.S. government obligations, government-sponsored federal agency securities, commercial paper, corporate fixed income securities, money market funds and repurchase agreements are permissible investments. The official policy outlines allowable credit risk and maximum maturities for each investment type.

**long-term debt**

Debt with a maturity of more than one year from date reported.

**modified accrual basis**

Accounting method in which revenues are budgeted and recorded when received and expenditures are recorded when incurred, regardless of when payment is made.

**net revenues**

Gross revenue less operating and maintenance expenses.

**operating reserves and restricted funds**

The amount of cash and invested funds available at any point in time. The balance is the water works fund as defined in this glossary.

**operating revenue**

Revenue obtained from the sale of water.

**participation agreement**

An agreement in which a distributor or developer pays for the cost of the distribution facilities such as conduits, treated water reservoirs or pump stations required to provide service within that district from the nearest existing available source.

**principal and interest requirements**

As used in the debt guidelines, interest requirements plus the current portion of long-term debt. (Includes general obligation bonds, certificates of participation, and capital leases).

**professional services**

Consists of consultant payments for consultants to provide services such as facility design, legal work and auditors.

**program**

An organized group of activities and the resources to carry them out, aimed at achieving related goals.

**program budget**

A method of budgeting in which the focus is on the project and activities that are required to accomplish Denver Water's mission, goals and objectives. It provides for consideration of alternative means to accomplish these criteria. It also provides a control device for higher level management and cuts across organizational lines. Resources are allocated along program lines and across organizational lines.

**program element**

Series of smaller categories of activities contained in the program such as raw water, water treatment, etc.

**raw water**

Untreated water.

**recycled water**

Application of appropriately treated effluent to a constructive purpose. In Colorado, the source of recycled water must be another basin. Also, to intercept – either directly or by exchange – water that would otherwise return to the stream system for subsequent beneficial use. Sometimes recycled water is called reclaimed, gray or reuse water.

**refunds**

Includes system development charge refunds and customer refunds.

**reservoir**

An impoundment to collect and store water. Raw water reservoirs impound water in a watershed; terminal reservoirs collect water where it leaves a watershed to enter the treatment process; and treated-water reservoirs are tanks or cisterns used to store potable water.

**revenues**

Denver Water's system is completely funded through rates, fees and charges for services provided by Denver Water. There are no transfers to or from the city's general fund. Water rates pay for operation and maintenance expenses, repair, capital replacements and modifications to existing facilities, debt service and a portion of the costs of new facilities and water supply.

**risk management**

The Board is exposed to various risks of losses, including general liability (limited under the Colorado Governmental Immunity Act to \$150,000 per person and \$600,000 per occurrence); property damage; and employee life, medical, dental and accident benefits. The Board has a risk-management program that includes self-insurance for liability, employee medical, dental and vision. The Board carries commercial property insurance for catastrophic losses including floods, fires, earthquakes and terrorism for scheduled major facilities.

**Safe Drinking Water Act (SDWA)**

Federal legislation passed in 1974 that regulates the treatment of water for human consumption and requires testing for and elimination of contaminants that might be present in the water.

**strategic plan**

Process that is a practical method used by organizations to identify goals and resources that are important to the long-term wellbeing of its future.

**system development charges**

A one-time connection charge that provides a means for financing a portion of the source of supply, raw water transmission facilities, treatment plants and backbone treated water transmission facilities required to provide service to a new customer. Sometimes called a tap fee.

**tap**

A physical connection made to a public water distribution system that provides service to an individual customer.

**temporary employee**

An employee hired as an interim replacement or temporary supplement of the workforce. Assignments in this category can be of limited duration or indefinite duration, but generally do not exceed one year.

**type of expenditure**

A classification of resources or commodities that will be budgeted and charged to projects and activities by cost control centers.

**utilities and pumping**

Consists of gas, electric and telephone, electricity wheeling charges, replacement power purchased and power purchased for pumping.

**water revenues**

Revenues generated through billing process from the sale of water.