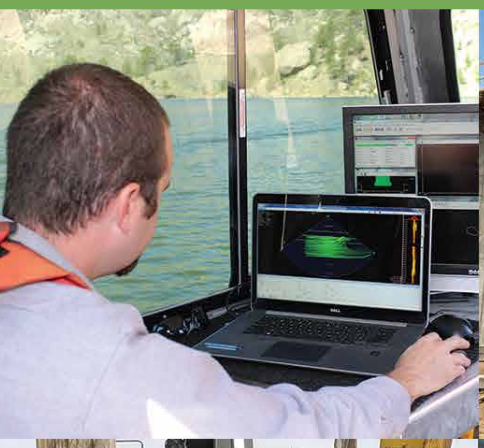
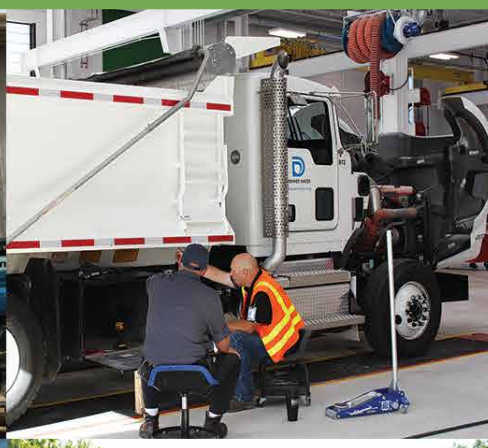
2019 | BUDGET









DENVER WATER

DENVER WATER

TABLE OF CONTENTS

Denver Water Overview

CEO LETTER

We are pleased to provide the 2019 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 2018 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 provides water to more than 1.4 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 2016, Colorado was the seventh-fastest growing state (2017 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:

Annual Business Plan and Strategic Plan Alignment - Prior to the commencement of the annual budget process, updates are made to the Annual Business Plan. A thorough review of ongoing and proposed organizational initiatives is completed to begin determining the organizational priorities for the upcoming year. 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 Projects and Programs that roll from year to year are flagged because they limit the number of new initiatives that can be added. Once completed, the Organizational Scorecard and Dashboard are reviewed and updated, as necessary, to align with the Annual Business Plan and the Strategic Plan. Finally, the Continuous Improvement activities are reviewed and modified to ensure alignment to the Annual Work Plan.

Long Range Planning - Updates to the multi-year financial plan are made annually to determine the level of revenue adjustments needed to meet annual revenue requirements and financial performance measures. The Capital Plan projects additions, improvements, and replacements to water system facilities and infrastructure, based on projected demand for water, federal and state regulations, and ongoing system requirements. The Operations 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 includes financial performance measures such as debt service coverage, debt to asset ratio, and targeted reserve levels.

Annual Budget Preparation - 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 Approved Budget is the main internal control document used to monitor and manage revenues and expenditures for Denver Water. The budget is presented to the Board in November at the annual Budget Workshop. Official approval by the Board occurs in December.

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 2019 with an actual cash and investment balance of $364 million, at market value. The 2019 budget projects this balance to increase by receipts of $433 million and decrease by expenditures of $508 million, resulting in a projected 2019 ending balance of $289 million.

Long-Term Financial Planning – Major Initiatives

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

- 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 1st quarter of 2020. The projected cost for this project has increased to add scope for slip-lining an adjacent water conduit, to deal with unforeseen soil conditions at the OCR site, and to add solar panels to the campus. A revised project budget of $204.5 million was approved by Denver Water's Board.

- Through 2026, approximately $1 billion is planned in capital costs for Denver Water's North System Renewal project. The project includes the Gross Dam Raise, Northwater Treatment Plant (NTP) and Conduit 16.

  Gross Dam Raise - Responsibly develop a new water supply and storage while clearly addressing project impacts through appropriate mitigation and enhancement measures. Provide an additional 18,000-acre feet per year of water into Denver Water's Moffat (North) Collection System. Raise Gross Dam by 131 feet to create 77,000-acre feet of new storage volume, of which, 5,000-acre feet is dedicated as an environmental pool to enhance flows in South Boulder

Creek. When complete, the project will be an example of 21st century water development accomplished through collaboration, stewardship, and environmental and social responsibility.

Northwater Treatment Plant - Create a high-performing Northwater Treatment Plant team with vision, effective leadership, appropriate resources and a culture focused on reducing costs while maintaining quality through design and construction. Deliver a project aligned with Denver Water's Strategic Plan, in the best interest of Denver Water's customers, with a zero-incident safety culture and socially and environmentally responsible decisions which establish best practices for Denver Water moving forward.

Conduit 16 - Complete design and construction of the Conduit No. 16 Replacement and delivery of treated water from the future Northwater Treatment Plant to Denver Water's Moffat facility and, in turn, to the distribution system. The Conduit No. 16 Replacement will replace existing Conduit Nos. 16 & 22 with 8.5 miles of 84 and 66-inch diameter steel pipeline through a series of 4 construction packages including: Tunnels & Open Cut Segment, West Segment, Central Segment, and the East Segment.

Revenue Adjustments

Revenue adjustments identified in the 2019 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 2019 was effective beginning February 1, 2019. This adjustment is expected to produce 3.0% of additional revenue over a 11-month period, assuming normal weather and consumption. In addition, annual revenue adjustments of 3.0% are projected in 2020 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, 2017. This was the 30th 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, 2018. This is the 27th 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.

The Leading Utilities of the World - Denver Water became one of the newest members of the Leading Utilities of the World (LUOW) network. Utilities must demonstrate outstanding innovation in various LUOW categories. Our categories included response to drought or scarcity with the From Forests to Faucets partnership with the U.S. and state forest services, energy efficiency with Denver Water's Sustainability Plan and hydroelectric operations and human resource development with our Continuous Improvement efforts.

Sustainable Water Utility Management Award - The Association of Metropolitan Water Agencies awarded Denver Water the Sustainable Water Utility Management Award. It goes to utilities that balance innovative and successful efforts in areas of economic, social, and environmental endeavors. That includes managing resources, protecting public health, meeting community responsibilities, and providing cost-effective services to ratepayers.

Climate Registry – Denver Water had its ninth greenhouse gas inventory verified, receiving official registration recognition from the Climate Registry. The Climate Registry helps organizations measure, report, and reduce their greenhouse gas emissions with integrity.

U.S. Forest Service – The U.S. Forest Service recognized Denver Water for ongoing dedication in stewarding critical watersheds that deliver clean, safe, reliable drinking water. This stems from the From Forests to Faucets program, a forest management partnership with Denver Water and the Rocky Mountain region of the Forest Services.

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,

James S. Lochhead
CEO/Manager

Angela C. Bricmont
Chief of Finance

ABOUT DENVER WATER

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.

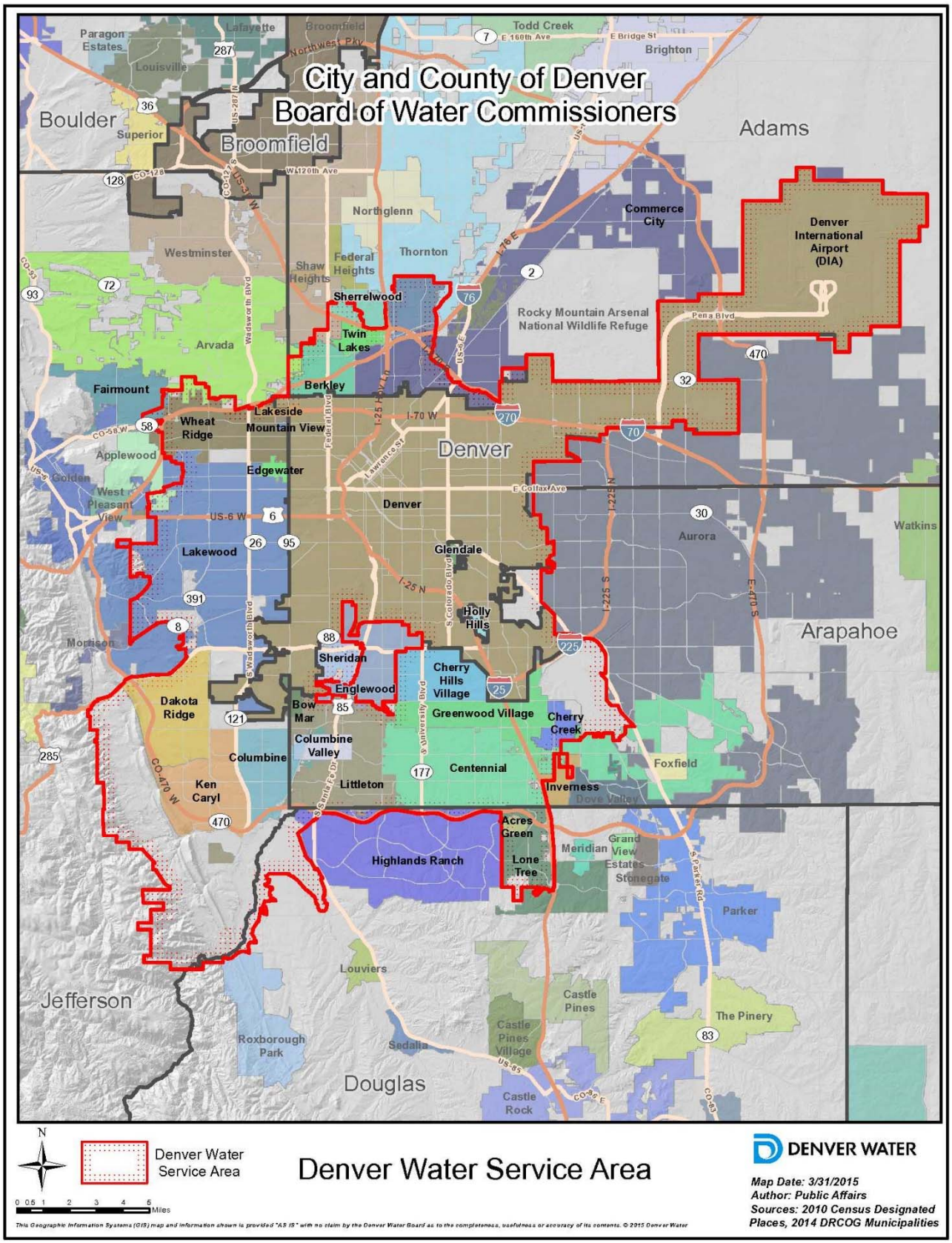
- Denver Water is Colorado's oldest and largest water utility.
- Denver Water was established in 1918 after Denver residents voted to buy the water system from a private company.
- Denver Water is a separate entity from the city of Denver and is funded by water rates and new tap fees, not taxes.
- Denver 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.

HISTORY

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.


City and County of Denver
Board of Water Commissioners
Denver Water Service Area
Denver Water Service Area
DENVER WATER
Map Date: 3/31/2015
Author: Public Affairs
Sources: 2010 Census Designated Places, 2014 DRCOG Municipalities
Boulder
Broomfield
Adams
Jefferson
Douglas
Arapahoe
Denver
Paragon Estates
Louisville
Lafayette
Superior
Northglenn
Thornton
Westminster
Arvada
Federal Heights
Shaw Heights
Sherrelwood
Twin Lakes
Berkley
Fairmount
Wheat Ridge
Lakeside
Mountain View
Applewood
Golden
West Pleasant View
Edgewater
Lakewood
Morrison
Glendale
Holly Hills
Sheridan
Englewood
Bow Mar
Dakota Ridge
Columbine
Columbine Valley
Littleton
Ken Caryl
Cherry Hills Village
Greenwood Village
Cherry Creek
Centennial
Foxfield
Inverness
Dove Valley
Acres Green
Meridian
Grand View Estates
Stonegate
Highlands Ranch
Lone Tree
Parker
Louviers
Castle Pines
Castle Pines Village
The Pinery
Roxborough Park
Sedalia
Castle Rock
Commerce City
Denver International Airport (DIA)
Rocky Mountain Arsenal National Wildlife Refuge
Aurora
Watkins
Todd Creek
Brighton
Denver Water Service Area
Miles
This Geographic Information Systems (GIS) map and information shown is provided "AS IS" with no claim by the Denver Water Board as to the completeness, usefulness or accuracy of its contents. © 2015 Denver 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 celebrated 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) in the world, the tallest dam (Cheesman Reservoir) in the world, even a project (the Moffat System) 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 (Integrated Resource Plan) 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.

MISSION, VISION, VALUES

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

CITY & COUNTY OF DENVER

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 13.2 percent population growth rate between 2010 and 2018 and is consistently ranked as one of the fastest-growing areas in the nation. (US Census Bureau)

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 ranks No. 1 for labor supply and No. 2 for economic climate (Forbes, 2018)
- Colorado has had an estimated 13.2% growth since 2010, ranking sixth in the nation (U.S. Census Bureau, 2018)
- Colorado is the nation's third-most highly educated state for residents (39.4 percent) with a bachelor's degree or higher (U.S. Census Bureau, 2018)
- In addition, Colorado has the nation's second lowest obesity rate and ranks second for physical activity involvement (Henry J. Kaiser Family Foundation, 2017)

Population

Metro Denver has a population of more than five 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 2025, Metro Denver's population is anticipated to increase to more than 8.7 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:

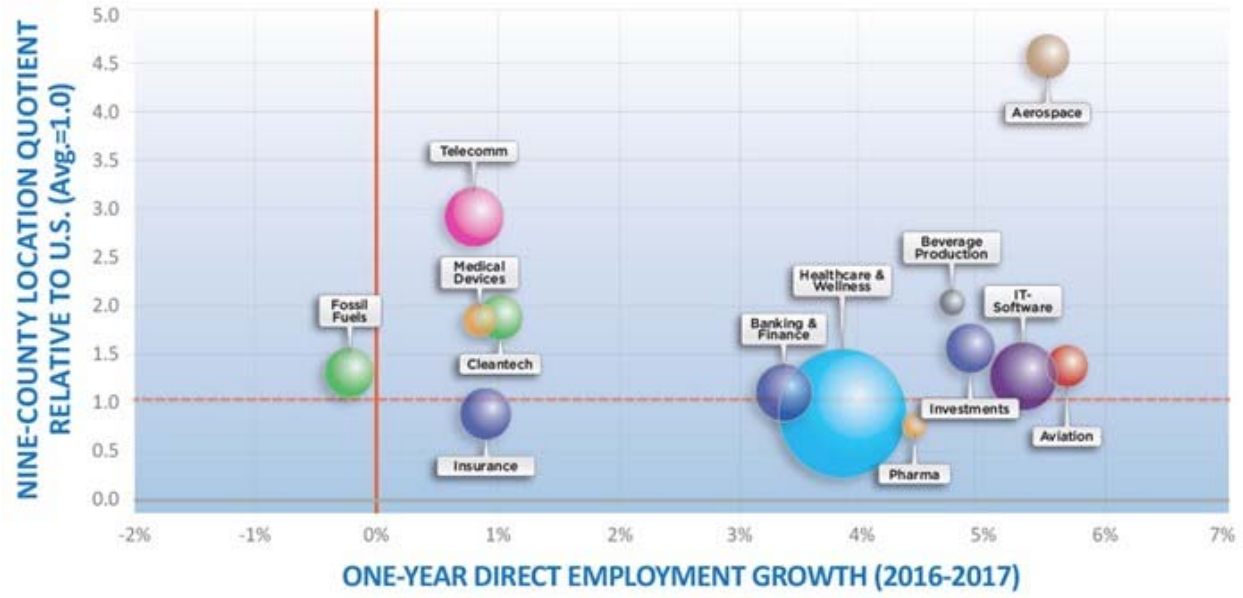
- Land use planning
- Development
- Transportation Metro Vision concentrates development in a defined 750-square-mile urban growth boundary, and identifies guidelines for nearly 70 high-density, mixed use developments in the region, many around transit centers.

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

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

DENVER WATER

CONTACT US

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1600 W. 12th Avenue
Denver, Colorado 80204-3412
www.denverwater.org

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Brian Good, Chief of Administrative Services	303.628.6503
Robert Mahoney, Chief of Engineering	303.628.6611
Mike King, Chief of External Affairs	303.628.6533
Angela Bricmont, Chief of Finance	303.628.6411
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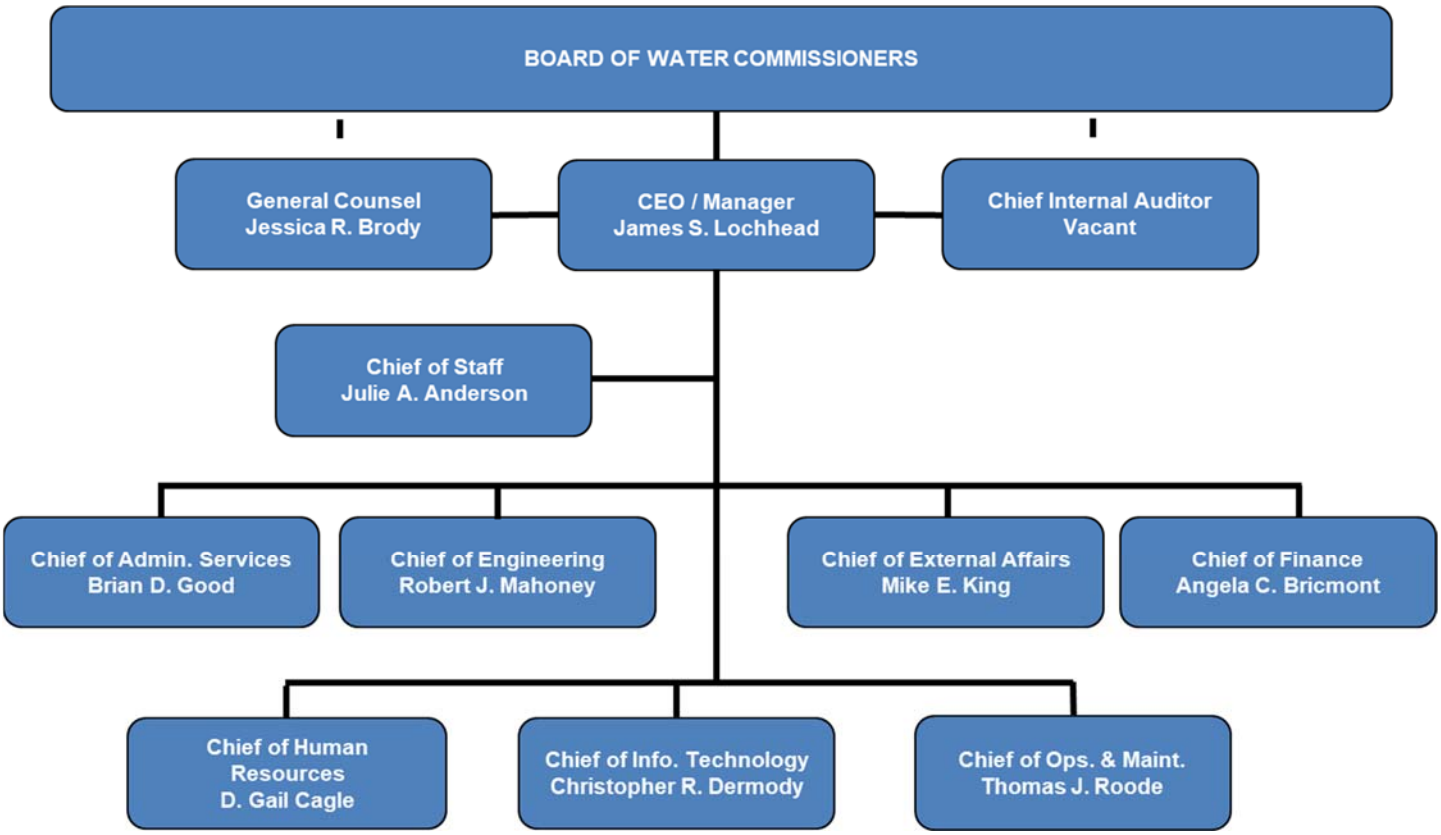
Jessica Brody, General Counsel	303.628.6026
Tom Roode, Chief of Operations and Maintenance	303.628.7033

With questions concerning the budget document please contact:

Stephanie Abram, Budget Manager 303.628.6149
stephanie.abram@denverwater.org

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

Paula Herzmark, President Former Executive Director, Denver Health Foundation	Commissioner since April 2009 Term expires July 2019
John Lucero, First Vice President CEO, Lucero Development Services	Commissioner since July 2007 Term expires July 2021
Greg Austin, Vice President Former Partner, Holland & Hart LLP	Commissioner since July 2009 Term expires July 2019
Gary Reiff, Vice President Chief Legal Officer, UCHealth	Commissioner since September 2017 Term expires 2023
Craig Jones, Vice President Managing Director, Colony Group's Rocky Mountain Region	Commissioner since October 2017 Term expires 2023

EXECUTIVE LEADERSHIP

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; Jessica Brody, 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.
- Serves as co-chair of the Retirement Planning Committee overseeing the Defined Benefit and Defined Contribution Plans.

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 administrating 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

Jessica Brody - General Counsel

- Joined Denver Water in 2018 as general counsel.
- Worked as lead environmental lawyer for the City and County of Denver until 2016 when she became an assistant director within the City Attorney's Office.
- Worked as an associate at Arnold & Porter, LLP, an international law firm, where she specialized in environmental law and complex litigation.
- Graduated from the Yale Law School in 2003.
- Earned a bachelor's degree from Claremont McKenna College.

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

STRATEGIC PLAN

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.
  - We play an integral role in building communities and advancing economic and social health.
  - We are the public's trusted source on water.
  - We go beyond what is expected operating with the highest ethics and integrity.

ANNUAL PROCESS

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

The Business Plan's foundation is Denver Water's Strategic Plan 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 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 Business Plan 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 Business Plan is comprised of organizational priorities, organizational programs, and continuous improvement activities (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 Programs and Continuous Improvement:** During the month of June, divisions develop 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, long-term capital plan, Denver Water's Capital Budgeting Philosophy, and a business-driven process directed by the systems and programs managers. The long-term project 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 Business 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 Business 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, 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.

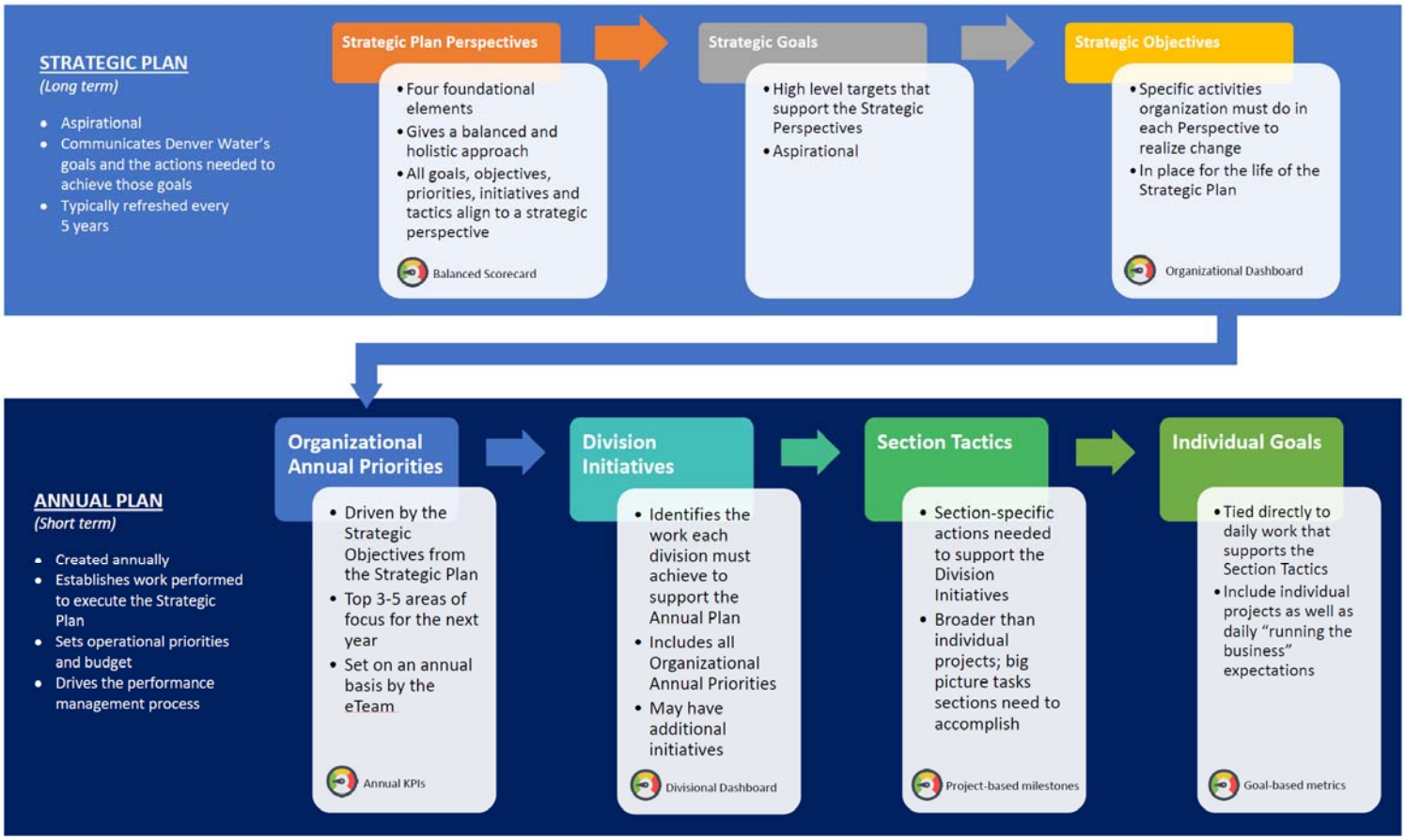
- **Monthly Budget Management:** Monthly, each division reviews its budget for accuracy and potential variances, and forecasts future expenditures. The Budget Office works with the divisions to review forecasts, identify exceptions to the forecast, and provide reporting on the forecast. Once this review 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:** Quarterly, 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, as well as a detailed review of our organizational dashboard and progress towards our annual business plan. The report also includes information on procurement and contracting, including performance toward SMWBE and SBE goals and targets. The Quarterly Performance Report is the primary document used to communicate progress towards our metrics (both financial and organizational) to the Board.

- **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.

DENVER WATER

Workflow for Strategic Plan and Annual Plan



DENVER WATER

Organizational Business Plan

DENVER WATER 2019 BUSINESS PLAN							
TYPE	**STRATEGIC PERSPECTIVE**	**DURATION**	**ANNUAL PRIORITY**	**CONTINUOUS IMPROVEMENT**	**ORGANIZATIONAL METRIC**	**2019 BUDGET**	**EST. TOTAL COST**
TOP PRIORITY	**Trusted Reputation**	**1918 – Present**	**Providing High-Quality Water and Outstanding Service to Our Customers** • Daily operations of core job functions; including **policy level programs** below:	Customer Experience VS Safety VS Water Distribution VS Trades VS Human Resources VS	Balanced Scorecard Performance	$187.3M (2019)	$187.3M (2019)
	Trusted Reputation	**2017-2019**	o Lead Reduction Program		Lead Sampling Program	$25.7M	$26.5M
	Excellent Operations	**2018-2022**	o Water Efficiency Plan		Water Efficiency Index	$6.8M	$7.0M
		2018-2020	o Watershed Health Plan		% Watershed Prioritization Complete	$700K	$494K
		2017-2022	o Sustainability Plan		Net Energy Usage	$337K	$334K
		2017-2023	o Highline Transformation		Surface Supply Index	$5.2M	$4.7M
ORGANIZATIONAL PRIORITIES	**Inspired People**	**2017-2019**	**Operations Complex Redevelopment** • Completion of Facilities • Administration Building Move	6S Activities	Systems & Programs Project Performance (Capital & Operating)	$195.8M (Orig.) $204.5M (Rev.)	$203.9M
	Excellent Operations	**2017-2025**	**North System Renewal** • Gross Dam Raise • Northwater Treatment Plant • Conduit 16	Choosing by Advantage	Systems & Programs Project Performance (Capital & Operating)	$1.1B (pending approval of Gross)	$1.0B
	Trusted Reputation	**2017-2020**	**National Western** • Water Quality Lab	Water Quality VS National Western VS	Systems & Programs Project Performance (Capital & Operating)	$26.8M	$24.5M
	Excellent Operations	**2018-2022**	**Business Technology Transformation** • Enterprise Resource Planning Phase I: Core HRIS, Benefits Admin, Payroll, Timekeeping Outsourcing • Physical and Cyber Security	Business Technology VS Payroll VS Physical & Cyber Security VS	IT Project Performance	$3.2M	$3.2M
	Excellent Operations	**2017-2019**	**Integrated Resource Plan** • Adaptive Plan: 3-Year Capital Plan Fully Vetted by IRP	Choosing by Advantage	Systems & Programs Project Performance (Capital & Operating)	$3.8M	$3.8M

Balanced Scorecard

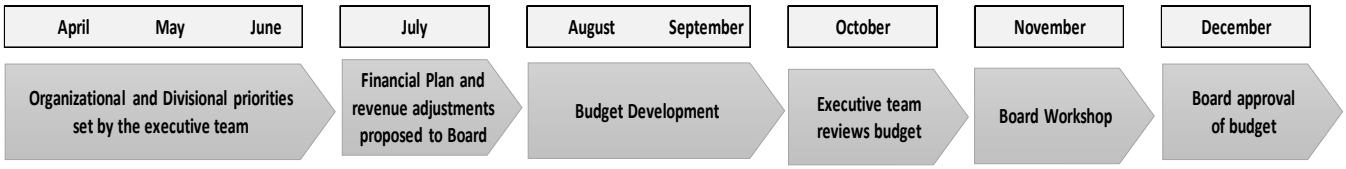
Financial

BUDGET SUMMARY

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.

ORGANIZATIONAL BUSINESS PLAN

Top Priority

In advance of the annual budget development process, the executive team met to review the status of the current strategic priorities and overall progress towards our Strategic Plan. After careful review of the large number of 2018 priorities carrying over into 2019, and in consideration of the move to the new Administration Building, we decided to delay implementing any new organizational initiatives in 2019.

The executive team talked about the role each person at Denver Water plays in providing high quality water and outstanding service to our customers and determined that we need to refocus our efforts to reflect this as our top organizational priority. We also need to ensure we have capacity to focus on our current organizational priorities before we add any new priorities on top of our current workload - essentially, we want to take time in 2019 to finish what we have already started.

Each division has described below how it will contribute to the top organizational priority of "Providing High-Quality Water and Outstanding Service to Our Customers" in 2019:

Administrative Services

The Safety Team is beginning a shift toward behavioral attributes, safety culture and tracking progress with leading indicators (as opposed to lagging indicators). A new Safety Maturity Index will be rolled out to measure this new way of thinking, which will be a paradigm shift for the organization. Reallocating time away from claims management and water damage restoration will allow our Safety Specialists to spend more time in the field where the work of delivering water is happening.

Work will continue with the Security Value Stream as team members implement an integrated security strategy (physical and cyber), address findings of a 2017 test of our security, and improve our defense maturity score. All of this effort is intended to protect our employees, our assets and, ultimately, the ability to deliver water to our customers. A reassessment of organizational security will be conducted, and we will discuss the results and next steps with the Board.

The Sustainability Team will implement a new energy management system for the organization which will allow faster, more accurate and transparent reporting of energy use by facility, ultimately helping save energy and money. Water budgets for Denver Water facilities will be finalized and water use reporting initiated for facility managers. Engineering's Capital Project Construction Standards are being updated in 2019 and sustainability language and standards for relevant sections will be included. We will look for ways to expand our renewable energy portfolio (hydro, solar) and continue with energy efficiency projects, gradually shifting from lighting projects to process loads such as pumps.

Engineering

The Engineering Division will continue to focus on delivering Denver Water's largest capital plan in history. Ongoing maintenance programs include upgrades to corrosion control systems, rehabilitation of distribution system vaults, modifications to aerial pipelines, and refurbishment of hydropower systems. Unique projects are also planned, including reconstruction of both the Ralston Dam spillway and North System siphons and canals.

In addition to capital plan delivery, Engineering will also work on important business drivers in 2019 such as succession planning for key Engineering positions, updating the on-line Capital Projects Procedures Manual which details standard work for cradle-to-grave capital project delivery and analyzing and reworking all process workflows that impact the Design Drafting section to increase productivity and efficiency. We will also be working to expand our 3D surveying technology, refresh alternative delivery contract documents to leverage updates from large capital projects, use a Choosing by Advantages approach to develop a strategy for Strontia Springs Reservoir sediment issues and manage large property projects including High Line Canal, Bow Mar/Wynetka, Winter Park and Fehringer Ranch

External Affairs

As part of our continued efforts to understand and improve the customer experience, Denver Water will conduct another comprehensive survey of our customer base in the spring of 2019. The Customer Experience Value Stream will continue to focus on the feedback received and look for better ways to communicate with customers and partner with developers to upgrade infrastructure. We will use customer feedback to design a flexible, robust action plan for continuous improvement.

A new call center platform will be implemented in early 2019 and will enable more flexibility within the Contact Center, including adding more efficient email routing and chat capabilities for customers to communicate with Denver Water. The technology will also allow for agents to work from home. Customer Service Field will install several AMI endpoints in 2019.

In 2019, Public Affairs will leverage our communication tools, including traditional media, email marketing, social media, content journalism, video, direct mail, community outreach, partnerships and internal communications to engage our internal and external audiences while sharing information about Denver Water's key projects and initiatives. We will highlight the behind-the-scenes work Denver Water does to deliver high-quality water and outstanding service to the people and communities we serve and focus on incorporating our commitment to fiscal responsibility wherever possible.

The Watershed group will implement a watershed assessment and monitoring plan that will strategically guide investments and partnerships to protect our customers water supply, water quality and collection system infrastructure, and support and foster environmental stewardship. Through our Forest to Faucet program, Denver Water continues to show innovative leadership in the water community at a national level.

In fall of 2018, a high-level CBA was conducted on the recycled water system to determine attractive options. In 2019, we will evaluate using reusable supplies in the form of raw water and delivering this through existing 'purple pipe' infrastructure. This would allow long-term rental of the recycling plant's full capacity to Metro Wastewater. Additionally, water quality needs of 'attractive' customers will be evaluated to determine treatment levels.

Finance

The Finance Division is focused on providing oversight, guidance and recommendations to ensure planned spending is fiscally responsible, aligned strategically and reported accurately. In 2019, Finance will continue to work on our policies and procedures, making sure they are up-to-date

and reflective of the process and system improvements we have implemented over the past 2 years. This includes updating accounting procedures, budget and variance guidelines and an ongoing review of financial and investment policies. Improvements to financial reporting and business processes require ongoing training and support for the business, so we will review the training materials and job aides to be sure they are still relevant for the business.

Continuous improvement work will ramp up on current pay and benefit processes as part of preparing for outsourced payroll and benefits administration in 2020. This work involves reviewing our current processes against standard practices, identifying where our policies and processes need to be updated, and working with the business to understand operational impacts of any change. We will also be receiving the results of a review of our compliance with IRS payroll tax withholdings early in the year to ensure we identify any issues before outsourcing.

We will continue to work on improving multi-year forecasting to allow more visibility on total project costs versus approved project budget. Ongoing analysis will be needed to evaluate the best funding strategy for the large capital spend over the next 5 years while preparing for both weather-related revenue variability and economic volatility. Finally, we continue to evaluate our rate structure to ensure it balances revenue stability, conservation goals, and customer affordability.

Human Resources

To achieve our goal of attracting and retaining top talent, over the next five years, Human Resources will design, develop and implement a "Leaders at all Levels" employee development plan to build competency, leadership and a ready bench to meet Denver Water's current and future needs and provide career satisfaction for our employees. In 2019 Human Resources will begin this development with the redesign of New Employee and New Supervisor On Boarding. These new programs will expand from the current one-day program to a longer program covering our culture, values and strategic plan, as well as division and job knowledge. The goal will be to accelerate the new hire's ability to contribute in their new roles, increase their comfort level with their new leader and team, reinforce their decision to join Denver Water, enhance productivity and increase employee engagement.

In support of career development for employees beyond new hires, Human Resources and the Executive Team will implement bench strength reviews and employee development plans to build a ready bench for current and future organizational needs.

Human Resources will continue to seek more effective and efficient ways of conducting business and serving our employees. HR will continue efforts with Human Resource Value Stream initiatives into 2019. Processes under review include Recruiting, Compensation and Leave Management.

Information Technology

The IT team continues to focus on high availability of all our IT systems and networks to avoid disruptions in service that would affect our operations and customers. In 2019 the team will focus on making our infrastructure more resilient by upgrading many core components and completing the transition to the new OCR modular datacenter. We will also build upon the successful deployment of Windows10 and Office365 across the organization. We'll begin by

rolling out the new Microsoft Teams platform - a chat and collaboration tool for Office365 customers designed to simplify group work. This has great potential for collaboration with employees who are distributed across our distribution and collection system areas.

IT will play a key role in supporting the move into the new OCR Phase 2 facilities. In addition to moving and setting-up printers, computers and telephones for 550+ employees, we will be setting-up new wired and wireless networks, new audio/visual systems for conference rooms and collaboration spaces, supporting the new building automation systems to control HVAC, lighting, fire and smoke detection/alarms, video surveillance, security access control systems, and integrating the new onsite OCR water treatment facility's SCADA system with the Recycling Plant's SCADA system to support remote operations and management.

The Helpdesk will continue to deliver great client support services by providing courteous, timely and skilled assistance to employees, which is measured through online client surveys on every Helpdesk request. The Helpdesk team has been able to achieve its performance objective of 90% top-box customer satisfaction even with the incremental reduction in staffing over the past couple of years.

Manager and Staff

The Business Technology Management Office (BTMO) plans to expand its governance footprint in 2019 from solely advancement projects to the addition of three new systems: Security, Operational Technology, and IT Infrastructure. Standard work will be revised to accommodate the evaluation of advancement and upgrade projects in all four systems. The BTMO also plans a partnership with Procurement in 2019 to improve budget accuracy and stage projects for a successful competitive selection cycle. To accomplish this, Procurement will assist with external research to identify potential market-based solutions during business case development. In addition, BTMO will capture more detailed requirements describing the desired technology solution. The requirements are intended to serve as a foundation for the RFP's scope of work, as well as inform Procurement's market research.

Continuous Improvement (CI) is embedded in the way we do business at Denver Water. We utilize LEAN tools, techniques and methodologies to ensure we successfully deliver on our mission of Providing High-Quality Water and Outstanding Service to Our Customers in an effective and efficient manner. In 2019, we will continue to use value-stream level improvement activities in the areas of customer experience, safety, water distribution, trades and human resources. The CI Section will also continue to support positive culture change within Denver Water through the CI Leadership Workshop sessions and the associated Coaching Kata sessions. CI will be partnering with the Learning and Organizational Development to ensure that all leaders at Denver Water develop into effective coaches and mentors who enable their team members to achieve excellence.

The Office of General Counsel (OGC) is planning for a busy year in 2019 due to an anticipated increase in litigation coupled with a steady base workload to support procurement and contracting, human resources needs, water resources, regulatory compliance, and other key business functions. In addition to litigation, OGC will continue to provide legal advice and strategic guidance to support a broad range of business functions.

Operations and Maintenance

Water Distribution will begin to implement our asset management strategy by increasing main replacement from 0.6% to 1.0% of the system over the next five years. The effort will shift some of our workload from reactive to proactive leading to improved water delivery to our customers by avoiding future main breaks, reducing customer outage hours and improving customer satisfaction.

Trades and Water Distribution will utilize continuous improvement through the Trades value stream to greatly improve our restoration processes in the street and on customers property. The work will focus on reducing the total time from start to complete and improve the quality of paving and landscaping. This should greatly improve our customer satisfaction with work in the street which is surveyed quarterly.

Water Quality and Treatment will continue to evaluate alternative approaches to executing the CDPHE order regarding the lead and copper rule. The section has taken on this difficult challenge as an opportunity to improve water delivery to our customers with the greatest public health benefit and minimal environmental impact. The section is also reorganizing staffing to break down the barriers of historical individual plant operations and look for improvement opportunities across system operations. This includes cross training of employees across the plants that will translate to career development opportunities and lead to more flexibility in managing resources across the section. Organizational capacity will be created through this effort that will be re-invested in finding additional improvements.

Organizational Priorities

Below are the Organizational Priorities for 2019 and a description of the project. We created project worksheets to track performance of each priority and they will be updated on a quarterly basis and provided to the Board for oversight.

Operations Complex Redevelopment

Complete construction of the Parking Garage, Wellness Building and Administration Building as well as renovation of the Three Stone Buildings. Finalize furniture orders and conduct all 6S and pre-move events necessary for a smooth and safe move. Provide education and orientation materials to employees and successfully implement the change-management strategy. Begin demolition of the existing Administration Building and final landscaping. Celebrate a successful end to four years of construction.

North System Renewal

- Gross Dam Raise

  Responsibly develop a new water supply and storage while clearly addressing project impacts through appropriate mitigation and enhancement measures. Provide an additional 18,000-acre feet per year of water into Denver Water's Moffat (North) Collection System. Raise Gross Dam by 131 feet to create 77,000 ac ft of new storage volume, of which, 5,000 ac ft is dedicated as an environmental pool to enhance flows in South Boulder Creek. When complete, the project will

be an example of 21st century water development accomplished through collaboration, stewardship, and environmental and social responsibility.

- Northwater Treatment Plant
  Create a high-performing Northwater Treatment Plant team with vision, effective leadership, appropriate resources and a culture focused on reducing costs while maintaining quality through design and construction. Deliver a project aligned with Denver Water's Strategic Plan, in the best interest of Denver Water's customers, with a zero-incident safety culture and socially and environmentally responsible decisions which establish best practices for Denver Water moving forward.

- Conduit 16
  Complete design and construction of the Conduit No. 16 Replacement and delivery of treated water from the future Northwater Treatment Plant to Denver Water's Moffat facility and, in turn, to the distribution system. The Conduit No. 16 Replacement will replace existing Conduit Nos. 16 & 22 with 8.5 miles of 84 and 66-inch diameter steel pipeline through a series of 4 construction packages including: Tunnels & Open Cut Segment, West Segment, Central Segment, and the East Segment.

National Western Water Resources Center

Denver Water's current water quality lab is reaching the end of useful life and the objective of this priority is to construct a new water quality lab in partnership with Colorado State University at the National Western Center. The project should capitalize on opportunities to create a unique research, innovation, education and policy center focused on water, agriculture and energy issues.

Business Technology Transformation

- Enterprise Resource Planning Phase I
  Denver Water is seeking to outsource two key Human Capital Management (HCM) business processes (i.e. Benefits Administration and Payroll) and transition to a service-oriented technology solution for all other HCM software systems, to: reduce errors through following best practices and industry standards, increase customer satisfaction, deliver a compelling value ratio and align HCM systems and processes with Denver Water's strategy

- Physical and Cyber Security
  Increase Denver Water's Defense Maturity Score by mid-2019, reassess with the Board, conduct another physical/cyber red or white team assessment, and continue the Security Value Stream.

Integrated Resource Plan

The IRP is transitioning into implementation and a continuous planning framework. The process is designed to inform capital and facility planning on a continuous basis. It is also meant to identify and evaluate emerging opportunities, threats, and risks. We will have two main efforts in 2019: 1) development of a portfolio of options to reduce water supply risk associated with potential Colorado River curtailment under a scenario planning effort; and 2) implementation of an annual continuous planning process.

BALANCED SCORECARD AND ORGANIZATIONAL DASHBOARD

Denver Water uses an organizational dashboard to assess performance against our Strategic Plan. This dashboard operationalizes metrics chosen by the business that align up to each objective, goal and perspective under our plan. The executive team reviews this dashboard monthly to understand opportunities for improvement and take corrective action. We have also chosen two metrics under each Strategic Plan Perspective that best represent achievement toward the perspective's goals. These metrics make up our Balanced Scorecard and represent our performance at the highest level.

It is important to note that although our Organizational Dashboard is intended to remain static over the life of the Strategic Plan that is represents, at times we adjust metrics where we have seen an opportunity for better measurement or assessment. In the case of looking forward to 2019, our Organizational Dashboard has remained unchanged.

2019 BUDGET

Prior to setting the budget amounts for 2019, the 5-year Financial Plan was updated. The financial plan assumes 5-year average consumption, which has proven to be close over the long-term, but will vary depending on the weather in a given year. To stress test this assumption for 2019, we ran alterative financial plan scenarios reflecting lower revenues, which could occur due to drought, excessive rain, or economic downturn.

The total budget proposed for 2019 is $433.2M for Revenue (Sources of Funds) and $508.8M for Operating, Capital, and Debt (Uses of Funds). The Revenue budget is increasing by $28.2M, or 7%. While the Operating, Capital, and Debt budget is increasing by $65.6M, or 14.8%.

2019 Budget Highlights

Below are summaries of the major changes for the 2019 budget.

Revenue/Sources of Funds – $433.2M (increase of $28.2M / 7.0% from 2018)

The increase to Revenue/Sources of Funds reflects the 3% rate revenue increase that was approved by the Board, as well as changes to demand projections to reflect the current 5-year average.

Salaries and Benefits – $123.5M (increase of $4.1M / 3.4% from 2018)

The change to the salary and benefits budget is primarily due to the approved merit increase percentage and the addition of 24.0 new FTE to support the Asset Management strategy in O&M/Water Distribution.

FTE – 1,102.0 FTE and 7.0 LTE (increase of 20.6 FTE/LTE from 2018)

As in prior years, we performed a thorough review of FTE/LTE for each division. All new FTE/LTE requests had to be approved by either the CEO or Chief of Staff. The largest change to the 2019 budget is the addition of 24.0 FTE to support the Asset Management strategy in O&M/Distribution. New FTE/LTE were also approved for Administrative Services, Engineering, External Affairs, and M&S/BTMO.

IT has reduced 8.5 FTE from its 2018 budget due to the Reduction in Force and elimination of roles through attrition.

Professional and Purchased Services – $42.7M (increase of $928K / 2.2% from 2018)

The change to the 2019 budget includes additional budget for outside legal counsel and reduced budget for contingent staffing. Additionally, the costs in O&M/Distribution for Construction and Field Services (i.e. barricades, signage, street cleaning, paving, potholing, etc.) have been increased to reflect the current spending rates and to accommodate increased pricing.

Materials, Supplies, and Chemicals – $17.8M (increase of $1.4M / 8.5% from 2018)

O&M/Distribution has increased its budget for Materials and Supplies to support the current rate of spend and to support the Distribution crew adds related to the Asset Management strategy. Reductions to Materials and Supplies were made in other areas of O&M to help offset the additional costs for Distribution.

O&M/Water Quality & Treatment has increased its Chemicals budget in 2019. This is primarily related to higher chemical pricing, corrosion control, and changing pH.

Travel, Training, and Conferences – $1.6M (increase of $14K / 0.9% from 2018)

The Travel, Training, and Conferences budget is essentially flat for 2019. There are no significant changes or variances.

Other Expense – $1.8M (decrease of $361K / -16.8% from 2018)

There are no significant changes or variances for 2019.

Operating Projects – $20.3M (increase of $4.0M / 24.7% from 2018)

The most significant change to Operating projects is found within the IT Projects. In 2018, BTMO provided governance on just Business Technology advancement projects. In 2019, we have expanded to three additional systems for governance: Operational Technology, IT Infrastructure, and Security, and have included both advancement and upgrade projects.

The IT and BTMO teams spent considerable time analyzing the IT operating budget to identify workstreams for 2019 that should be categorized as a project in one of the 4 IT systems. As a result, a total of 48 IT projects have been established for 2019, with a total budget of $4.6M.

Capital Projects – $253.6M (increase of $57.0M / 29.0% from 2018)

Between 2019 and 2023, we are planning to fund $1.3B in capital projects. The increase to the 2019 budget reflects the ramp up on two of our major capital projects: Northwater Treatment Plant and Gross Reservoir Expansion.

2019 will be the final year of major construction on the Operations Complex Redevelopment (OCR). The scheduled move in date for the Administration building is September 2019. We anticipate budgeting a small amount in 2020 to wrap up the final costs associated with this project.

Additional costs related to the O&M/Distribution Asset Management strategy have been reflected in the Main Replacements and Lead Service Lines budgets in 2019.

SOURCES AND USES

COMPARISON OF SOURCES AND USES OF FUNDS							
	2016 Budget	2016 Actuals	2017 Budget	2017 Actuals	2018 Budget	2018 Actuals	2019 Budget
SOURCES OF FUNDS							
Water sales	273,111,853	274,298,744	269,481,322	284,303,773	282,658,399	306,940,783	296,208,122
Hydropower	4,528,000	4,009,125	4,607,001	4,499,265	4,607,000	3,943,767	4,196,000
Special assessments and fees	1,440,000	10,242,775	7,230,017	12,713,143	8,130,000	8,851,357	7,639,000
Interest income	2,260,000	1,638,158	847,639	3,974,000	2,912,000	6,585,465	6,447,000
Other revenue	11,254,000	4,214,711	7,619,598	8,669,826	7,874,751	8,348,628	8,033,224
System Development Charges	20,294,000	38,751,565	34,035,416	42,486,012	34,000,000	41,044,680	40,058,000
Contributions	8,129,000	2,334,688	-	9,239,962	4,800,000	5,755,712	10,616,000
TOTAL REVENUE	**$ 321,016,853**	**$ 335,489,766**	**$ 323,820,993**	**$ 365,885,981**	**$ 344,982,150**	**$ 381,470,391**	**$ 373,197,346**
Proceeds from debt	56,923,000	71,238,348	205,000,000	205,864,368	60,000,000	-	60,000,000
TOTAL SOURCES OF FUNDS	**$ 377,939,853**	**$ 406,728,114**	**$ 528,820,993**	**$ 571,750,350**	**$ 404,982,150**	**$ 381,470,391**	**$ 433,197,346**
USES OF FUNDS							
Regular Wages and Other Pay	83,516,809	84,734,630	87,949,667	84,515,169	86,218,409	85,093,160	89,641,533
Applied Labor[1]	(3,647,169)	(7,199,461)	(12,390,822)	(7,533,403)	(10,833,017)	(8,363,527)	(9,129,084)
Benefits	39,713,297	37,308,295	45,414,575	42,153,201	44,006,320	43,379,871	42,994,174
Salaries and Benefits	**119,582,937**	**114,843,465**	**120,973,420**	**119,134,967**	**119,391,712**	**120,109,504**	**123,506,623**
Materials and supplies	18,567,841	18,595,796	17,746,163	16,489,554	16,366,967	20,438,751	17,754,274
Utilities	10,409,575	9,218,208	9,258,239	9,282,238	7,811,777	8,946,381	7,927,643
Professional and Other Services	37,209,071	37,012,591	35,979,931	29,946,009	33,955,799	31,800,904	34,768,366
Other Expense	4,757,809	3,484,507	5,737,227	4,669,713	3,715,841	8,829,630	3,369,740
Subtotal Operating w/o Projects	**$ 190,527,234**	**$ 183,154,565**	**$ 189,694,980**	**$ 179,522,481**	**$ 181,242,096**	**$ 190,125,171**	**$ 187,326,645**
Collection	1,450,000	1,959,643	1,986,689	3,047,811	558,612	332,141	1,125,162
Distribution	805,500	357,805	1,975,520	6,387,270	4,337,491	5,630,507	4,903,207
Expansion	3,897,000	2,794,084	4,509,740	6,464,257	7,432,377	8,005,525	5,255,124
Information Technology	-	9,359	1,877,942	462,336	2,479,457	1,538,368	4,553,115
Operations Support/Other	650,000	1,669,698	630,442	1,118,842	666,150	1,705,072	2,855,891
Treatment	750,000	1,115,112	1,594,229	830,036	798,904	430,887	1,597,597
Operating Projects	**7,552,500**	**7,905,701**	**12,574,562**	**18,310,552**	**16,272,991**	**17,642,500**	**20,290,096**
TOTAL OPERATING COSTS	**$ 198,079,734**	**$ 191,060,267**	**$ 202,269,542**	**$ 197,833,033**	**$ 197,515,087**	**$ 207,767,671**	**$ 207,616,741**
Collection	20,045,002	20,414,925	16,068,447	10,910,543	17,566,078	22,378,201	30,053,575
Distribution	50,536,828	45,152,605	76,758,551	70,405,590	79,408,200	86,060,378	89,536,506
Expansion	19,751,500	12,224,831	15,293,017	13,169,802	7,769,178	9,717,491	7,384,515
Information Technology	5,634,307	3,847,220	6,445,949	4,899,202	1,285,703	1,037,162	814,927
Operations Support/Other	38,093,002	55,506,154	52,884,265	47,669,057	57,037,983	59,544,493	61,723,645
Treatment	6,221,500	9,574,662	17,375,496	21,331,664	33,458,781	33,621,202	64,054,249
Applied Labor	3,647,169	-	-	-	-	-	-
TOTAL CAPITAL (incl. applied labor)	**$ 143,929,308**	**$ 146,720,397**	**$ 184,825,725**	**$ 168,385,858**	**$ 196,525,923**	**$ 212,358,926**	**$ 253,567,417**
Debt Service	43,835,247	41,120,947	45,455,772	43,686,138	49,149,270	48,765,388	47,649,126
TOTAL USES OF FUNDS	**$ 385,844,289**	**$ 378,901,610**	**$ 432,551,039**	**$ 409,905,029**	**$ 443,190,280**	**$ 468,891,985**	**$ 508,833,283**

Notes:

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

2) Actuals in the above chart are being reported on a budgetary basis

DENVER WATER

DIVISION BUDGETS

DENVER WATER BY DIVISION - OPERATING EXPENSE SUMMARY							
	SALARIES AND BENEFITS		OTHER OPERATING COSTS		TOTAL OPERATING COSTS		
Division Name	2018 Budget	2019 Budget	2018 Budget	2019 Budget	2018 Budget	2019 Budget	% Budget Change
Administrative Services	6,745,302	7,028,465	5,363,847	5,183,571	12,109,149	12,212,037	0.8%
Engineering	17,068,250	17,852,334	1,590,667	1,413,704	18,658,917	19,266,038	3.3%
External Affairs	17,939,808	18,296,844	9,967,339	11,271,178	27,907,147	29,568,022	6.0%
Finance	4,454,947	4,507,019	1,651,287	1,580,040	6,106,234	6,087,059	-0.3%
Human Resources	5,099,830	5,412,440	2,536,737	2,564,712	7,636,567	7,977,152	4.5%
Information Technology	13,973,667	13,738,181	12,927,944	11,264,206	26,901,611	25,002,387	-7.1%
Manager & Staff	7,159,253	7,556,653	2,025,846	3,053,434	9,185,099	10,610,087	15.5%
O&M	44,016,046	46,328,537	24,802,857	26,813,733	68,818,903	73,142,270	6.3%
Non-Divisional	2,934,609	2,786,148	983,860	675,445	3,918,469	3,461,593	-11.7%
TOTAL DIVISION OPERATING	**$ 119,391,712**	**$ 123,506,623**	**$ 61,850,384**	**$ 63,820,023**	**$ 181,242,096**	**$ 187,326,645**	**3.4%**

REGULAR EMPLOYEES

DENVER WATER - REGULAR EMPLOYEE COUNT						
Division	2015 Budget	2016 Budget	2017 Budget	2018 Budget	2019 Budget	
	FTE	FTE	FTE	FTE	FTE	LTE
Administrative Services	-	-	61.0	60.0	59.5	1.0
Engineering	169.8	167.8	171.8	171.8	172.8	1.0
External Affairs	-	-	185.8	184.6	184.7	-
Finance	59.8	60.1	35.0	37.0	37.0	-
Human Resources	34.0	33.8	30.0	29.0	27.0	-
Information Technology	113.3	115.4	112.8	103.8	104.3	-
Manager & Staff	29.0	29.2	36.1	36.4	37.8	-
Operations & Maintenance	515.5	516.0	487.0	466.0	479.0	5.0
Planning	52.6	52.5	-	-	-	-
Public Affairs	147.5	148.8	-	-	-	-
Total	**1,121.5**	**1,123.6**	**1,119.4**	**1,088.4**	**1,102.0**	**7.0**

Notes:

1) Administrative Services was new division in 2017

2) Planning and Public Affairs merged in 2017 to become External Affairs.

3) Added LTE (Limited Term Employees) in 2019.

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.

PROJECTED CASH BALANCES - 5 YEARS					
$ in thousands	2019	2020	2021	2022	2023
Beginning Cash Balance	**$ 364,170**	**$ 288,534**	**$ 235,583**	**$ 221,357**	**$ 228,835**
Revenue	373,197	369,938	376,662	396,326	408,745
Bond/Line of Credit Proceeds	60,000	100,000	172,000	172,000	99,000
Total Sources of Funds	**$ 433,197**	**$ 469,938**	**$ 548,662**	**$ 568,326**	**$ 507,745**
Operating Expense	207,617	205,947	208,921	212,076	212,178
Capital Expense	253,567	269,589	299,023	285,950	226,292
Debt Service	47,649	47,353	54,945	62,822	71,173
Total Uses of Funds	**$ 508,833**	**$ 522,889**	**$ 562,888**	**$ 560,848**	**$ 509,643**
Projected Ending Balance	**$ 288,534**	**$ 235,583**	**$ 221,357**	**$ 228,835**	**$ 226,937**
Minimum Target Reserve	**$ 166,500**	**$ 172,538**	**$ 183,003**	**$ 192,900**	**$ 203,600**

2019 Projected Cash Balance

- $75M draw-down of cash

DEBT INFORMATION

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.

Debt Principal and Interest Obligations (in millions of dollars)

Year	Principal	Interest	Total
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
2024	15.3	20.5	35.8

FINANCIAL POLICIES

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 Assets

Purchased and constructed capital assets are recorded at cost. Donated capital assets are recorded at their estimated acquisition value on the date received. Assets are capitalized if they have a cost of $50,000 or more and have a useful life of more than one year. Costs not meeting these criteria are expensed. Land

and water rights are recorded at cost. Land is not depreciated, and water rights are granted in perpetuity and not amortized. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the respective asset classes.

Risk Management

Denver Water is exposed to various risks of loss 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. Beginning in 2019, these limits are adjusted every three years for inflation. Denver Water has a risk management program that includes self-insurance for liability, employee medical (including stop-loss coverage), dental, and vision. Denver Water 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. Denver Water also carries commercial insurance for life, accident, short-term and long-term disability, employee dishonesty, and fiduciary exposure.

Denver Water is also self-insured for workers' compensation and carries an excess liability (stop-loss) policy for individual claims exceeding $500,000. Prior to February 1, 2016, Denver Water was insured for workers' compensation insurance by a large deductible policy whereby Denver Water was responsible for the first $250,000 per claim with a maximum aggregate cost of $2.6 million. Several claims remain open under this policy. In addition, Denver Water 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.

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 Finance Officer. 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 14, 2018, the Board approved a water rate increase, effective February 1, 2019. The rate increase is designed to increase overall total system water rate revenue by 3.0% over an 11-month period, assuming normal weather and consumption.

Projects

PROJECT PRIORITIZATION

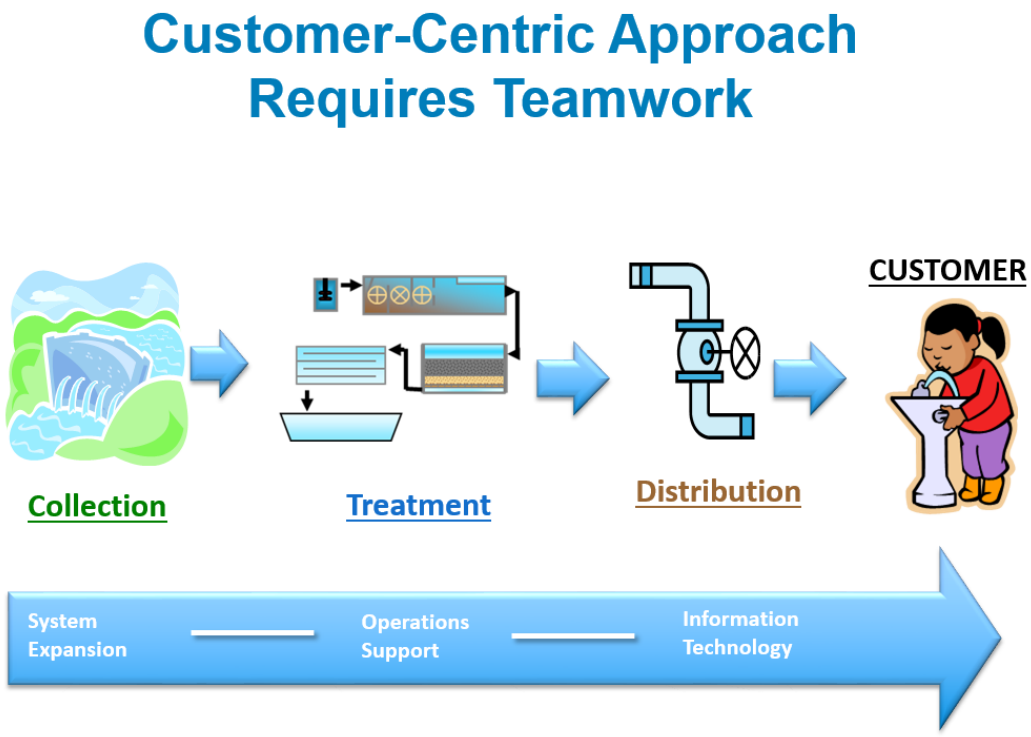
Project budgets, which consist of both capital and operating expenditures, follow the standard work of the Systems and Program Managers. Collection, Distribution, Expansion, Operations Support, and Treatment are prioritized together. Information Technology is prioritized separately through the Business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

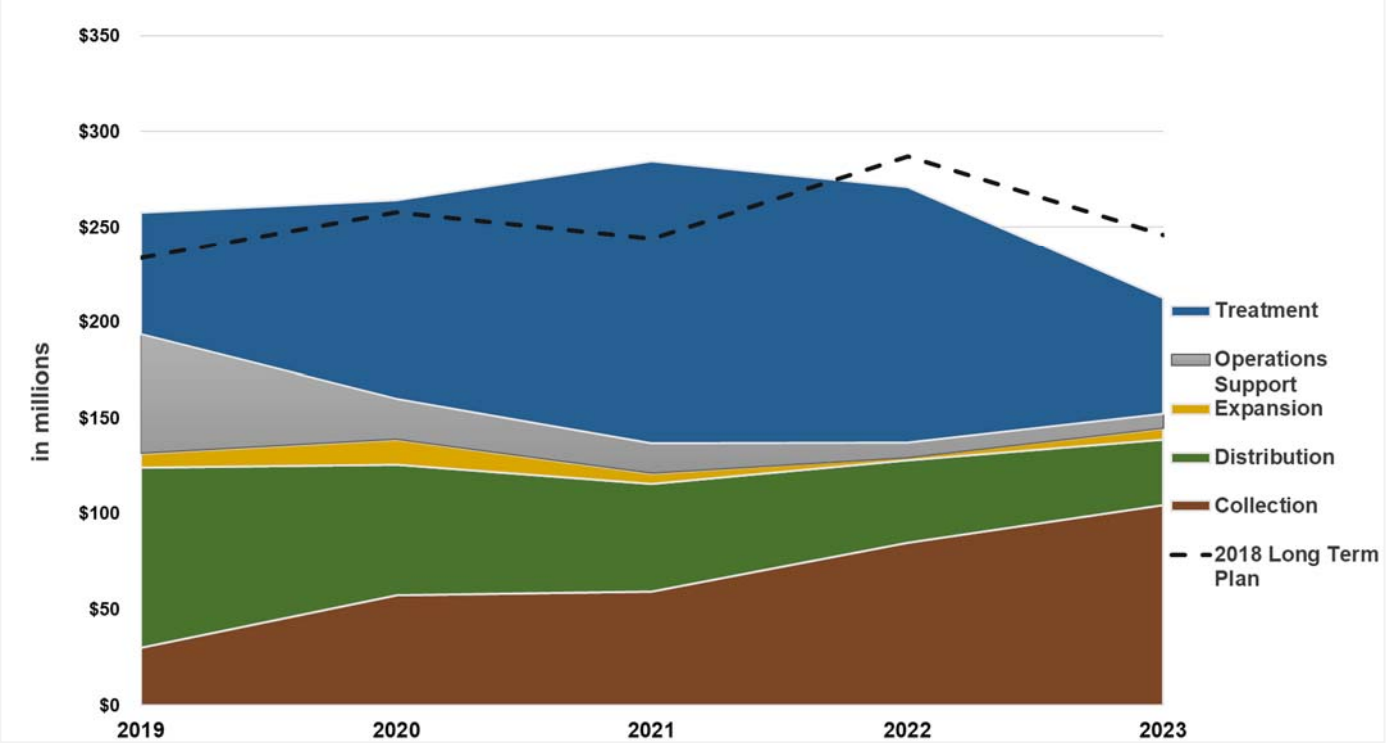
To be considered for prioritization, the project managers first develop background information on potential projects, including associated scope, schedule, and budget. That information is submitted on a business case form and is approved by the appropriate system manager.

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.



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

$ in Thousands	System	2019 Budget	5 Year Total
Northwater TP	Treatment	50,000	471,000
Gross Reservoir Expansion	Collection	14,186	292,186
Operations Complex Redev	Operational Support	55,028	57,528
Hillcrest PS Modifications	Distribution	18,443	34,046
Replace Hillcrest Tanks	Distribution	15,896	15,896
Conduit 16&22 Replacement	Distribution	18,250	47,150
Water Resources Center	Operational Support	948	23,948
Marston PS Elec.& Mech. Upgrds	Distribution	2,906	13,926
Multi-Year Projects		**$ 175,657**	**$ 955,679**

$ in Thousands	System	2019 Budget	5 Year Total
Main Replacements / Improvements (includes Lead Service Lines)	Distribution	15,504	93,910
Vehicle Replacements	Operational Support	4,302	24,302
Ongoing / Specific Term Projects		**$ 19,806**	**$ 118,212**

Top 10 Projects	**$ 195,463**	**$ 1,073,892**
% Of Plan	**73%**	**80%**

Hillcrest Storage Tank Replacement

PROJECT SUMMARY

SYSTEMS & PROGRAMS PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Operations Complex Redev	OS	OCR	ENG	Capital	$ 55,028
Northwater TP	TRT	NES	ENG	Capital	50,000
Hillcrest PS Modifications	DIS	PS	ENG	Capital	18,443
Conduit 16&22 Replacement	DIS	CON	ENG	Capital	18,250
Replace Hillcrest Tanks	DIS	TWS	ENG	Capital	15,896
Gross Reservoir Expansion	COL	GRO	ENG	Capital	14,186
Main Replacements	DIS	MN	OM	Capital	8,854
Moffat - Siphon No. 1	COL	RAW	ENG	Capital	6,295
2019 Repl Contract Wk	DIS	MN	ENG	Capital	4,867
Vehicle Replacements	OS	FLT	OM	Capital	4,302
FH Sub Station 1 2 3 Replace	TRT	FH	ENG	Capital	4,168
Lead Line Svcs Program	DIS	MN	OM	Operating	4,150
64th Ave. PS Modifications	DIS	PS	ENG	Capital	3,600
Roberts Tun EI&C & 2nd Hydro	COL	HYD	ENG	Capital	3,097
Water Rights	EXP	NSD	EA	Capital	3,070
Marston PS Elec.& Mech. Upgrds	DIS	PS	ENG	Capital	2,906
Ralston Spilwy Under Drn Rpr	COL	DAM	ENG	Capital	2,882
Main Improvements	DIS	MN	OM	Capital	2,500
Forest to Faucets	EXP	NSD	EA	Operating	2,500
FH TP Flocc. Basin Valves	TRT	FH	ENG	Capital	2,395

SYSTEMS & PROGRAMS PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Marston WTP Chemical Feed Syst	TRT	MAR	ENG	Capital	$ 2,336
FHWTP Chemical Feed Systems	TRT	FH	ENG	Capital	2,074
C-12 Internal Joint Seals	DIS	CON	ENG	Capital	2,039
WISE Project with Aurora	EXP	NSD	EA	Capital	2,000
2018/19 Vault Modifications	DIS	VLT	ENG	Capital	1,511
Aerial Crossing Replacements	DIS	CON	ENG	Capital	1,500
OCR non-project cost	OS	OCR	AS	Operating	1,369
Belleview PS Modifications	DIS	PS	ENG	Capital	1,019
Sensus Master Meter Replacemen	EXP	OTH	EA	Capital	1,000
DIA Vault Program	DIS	VLT	ENG	Capital	999
2019/20 Vault Modifications	DIS	VLT	ENG	Capital	982
Water Resources Center	OS	BF	OM	Capital	948
Moffat WTP Chemical Feed Syst	TRT	MOF	ENG	Capital	930
WEP-Direct Install Prog	EXP	OTH	EA	Operating	911
Stapleton Dist. 16 & 20 in Mns	DIS	MN	ENG	Capital	881
Marston Solids Handling Imp.	TRT	MAR	ENG	Operating	861
Williams Fork Penstock Slide	COL	HYD	ENG	Capital	848
Williams Fork Caretaker House	OS	BF	OM	Capital	810
Replace strge res. at Ash	DIS	TWS	ENG	Capital	800
Main Relocations	DIS	MN	ENG	Capital	740

SYSTEMS & PROGRAMS PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Conduit Improvement Program	DIS	CON	ENG	Capital	$ 734
FH TP Flter Media&Underdrn Rpl	TRT	FH	ENG	Capital	702
Conduit 26 Fiber Optic Line	COL	RAW	ENG	Capital	695
Specialized Main Improvements	DIS	MN	ENG	Capital	683
Rcyclng TP Upgrade PON & POA	TRT	RCY	ENG	Capital	606
WEP-Rebates	EXP	OTH	EA	Operating	590
Foothills Hydro 10yr Mntnc	COL	HYD	ENG	Capital	571
Pump Station Portable Generato	DIS	PS	ENG	Capital	554
Aquifer Store and Recovy Pilot	EXP	NSD	EA	Operating	550
Lupton Lakes Development	EXP	DSR	ENG	Capital	504
Unplanned Expense Work	OTH	OTH	ENG	Operating	500
Emerg Capital Unplanned Proj	OTH	OTH	ENG	Capital	500
Fire Hydrant Replacement	DIS	MN	OM	Capital	500
Chatfield Reservoir PS Mods	COL	DAM	ENG	Capital	493
Ranch Crk Diversion Canal Imp	COL	RAW	ENG	Capital	472
Strontia Springs Rock Fall Haz	COL	DAM	ENG	Operating	445
FH TP Backwash Hdrs Lining Rpr	TRT	FH	ENG	Operating	438
Roof Maint. Repair & Replaceme	OS	BF	ENG	Operating	385
Roberts Tunnel Lining Repair	COL	DAM	ENG	Operating	375
PS Cathodic Protctn Imprvmt	DIS	PS	ENG	Capital	356

SYSTEMS & PROGRAMS PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Special Equip lab	TRT	MAR	OM	Capital	$ 324
Cheesman Intake Gates Cyl Repl	OTH	OTH	ENG	Operating	312
Denver Parks Irrig. Effic.	DIS	MN	EA	Operating	304
Co Rvr Sys Cons Pilot (CRSCPP)	EXP	NSD	EA	Operating	286
Strontia Replc Seats Gate #3	COL	DAM	ENG	Capital	273
S. Platte River to Lupton Lake	EXP	DSR	ENG	Capital	250
WEP-Denver Parks & Irrigation	EXP	OTH	EA	Operating	207
Misc Small Pmpg & Storage Proj	DIS	PS	OM	Capital	200
Moffat Centrifuge	TRT	MOF	ENG	Capital	200
C-10 Exposure at Massey Creek	DIS	CON	ENG	Capital	193
Natl Western Complex Plan	OS	BF	EA	Operating	190
Highlands #3 Crack Repairs	DIS	TWS	ENG	Operating	189
FH TP Sedimnt Cross Collectors	TRT	FH	ENG	Capital	180
Rcycl Plnt conct to Mtro Waste	EXP	RCY	EA	Capital	151
Rockfall Hazard Assessment	COL	RAW	ENG	Operating	150
DIA Electrically Shorted Pipin	DIS	MN	ENG	Operating	149
Strontia-Elec & Cntrl Upgrade	COL	HYD	ENG	Capital	123
C94 Assessment and Repairs	DIS	CON	ENG	Capital	121
Marston Forebay Treatment due	TRT	MAR	ENG	Operating	110
Mrstn FP 1 & 2 Hydnic Systm Rp	TRT	MAR	ENG	Capital	104

SYSTEMS & PROGRAMS PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Strontia Sedimentation Study	COL	DAM	ENG	Operating	$ 102
IRP- Strontia Fish Flow Recov	EXP	NSD	EA	Capital	100
Rcycld Gateway Prk & Bluff Lak	EXP	RCD	EA	Capital	100
Replace PRV - misc	DIS	MN	OM	Capital	100
Facility Repairs & Replacement	OS	BF	OM	Operating	100
Lupton Lakes Offsite Dewater	EXP	DSR	EA	Capital	100
WISE Water Quality Study	TRT	TWS	ENG	Operating	100
2020/21 Vault Modifications	DIS	VLT	ENG	Capital	97
Corrosion Control Remote Mntr	DIS	MN	ENG	Capital	81
Quivas Facility Design Concept	OS	BF	ENG	Capital	80
Marston and Moffat OCCT Pilot	TRT	MAR	ENG	Operating	76
Chatfield PS Impeller Replacem	DIS	PS	ENG	Operating	75
WEP-SFR Outdoor Lndscp chng	EXP	OTH	EA	Operating	74
Elevenmile Reservoir Outflow F	COL	DAM	ENG	Capital	70
WEP-Communicate Efficiency	EXP	OTH	EA	Operating	61
S. Quebec Way Property Restora	OS	BF	ENG	Capital	56
Recycled Distribution Program	EXP	RCD	EA	Capital	50
2020 Repl Contract Wk	DIS	MN	ENG	Capital	50
Sasaki Well	EXP	DSR	EA	Capital	50
Moffat Tunnel East Portal Stil	COL	RAW	ENG	Capital	50

SYSTEMS & PROGRAMS PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
DIA Conduits & Mains	DIS	CON	ENG	Capital	$ 39
WEP-SFR Audit	EXP	OTH	EA	Operating	39
Kendrick PS Backflow Preventer	DIS	PS	ENG	Operating	36
Corrosion prevention	DIS	MN	ENG	Capital	27
FH TP Wtr Pmp Cntrl Upgrd	TRT	FH	ENG	Capital	27
Platte Canyon Spillway Caulk R	COL	RAW	ENG	Operating	26
WEP-SDC Efficiency Credits	EXP	OTH	EA	Operating	20
WEP- Rate Chng Irrgi Cust	EXP	OTH	EA	Operating	17
Meadow Creek System Improvemen	COL	RAW	ENG	Operating	17
Total Service Conversions	DIS	MN	OM	Capital	14
Marston Setteled Water 60in BF	TRT	MAR	ENG	Operating	13
Stainless Steel Corrosion Stdy	COL	DAM	ENG	Operating	11
Rcycl TP- BAF Aeration Imprvmt	TRT	RCY	ENG	Capital	10
Gravel Pit Bambei Walker Res	EXP	DSR	ENG	Capital	10

INFORMATION TECHNOLOGY PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
ERP - Phase I	BT	ADV	IT	Operating	$ 1,700
SCADA Network Design & Config	OPT	ADV	IT	Operating	628
Radio Sys Phase 3 SOS	OPT	UPG	IT	Capital	527
Water Data & Raw Water Reporti	BT	ADV	IT	Capital	288
ERP - Phase II	BT	ADV	IT	Operating	200
Digital Repository Preservatio	BT	ADV	IT	Operating	135
Lares-09 V&C Mgmt System	SEC	ADV	ADV	Operating	127
EMap Migrate from Silverlight	BT	UPG	IT	Operating	122
Lares-12 NIDS implementation	SEC	ADV	ADV	Operating	114
Sustainable Energy Management	BT	ADV	IT	Operating	99
Engineering Drawings & Workflo	BT	ADV	IT	Operating	98
Imagery Data Update for GIS Sy	BT	ADV	IT	Operating	95
OCR - Move to new Data Center	INF	ADV	IT	Operating	82
Project Delivery & Doc Mgt	BT	ADV	IT	Operating	74
OCR-Distributed Antenna System	OPT	ADV	IT	Operating	73
OCR - NICS Installation	OPT	ADV	IT	Operating	66
Real-time Modeling	BT	ADV	IT	Operating	62
2019 Access and camera replace	SEC	UPG	UPG	Operating	55
OCR - Admin Bldg move Phase II	INF	ADV	IT	Operating	55

INFORMATION TECHNOLOGY PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Integrated Property Management	BT	ADV	IT	Operating	$ 55
OCR - Admin Bldg Conf AV&Print	INF	ADV	IT	Operating	54
SQL Server 2017 upgrades	INF	UPG	IT	Operating	53
Tibco BW6 Implementation	BT	UPG	IT	Operating	50
Lares-13 NAC sys implementatio	SEC	ADV	IT	Operating	45
External Identity Access/SSO	SEC	ADV	IT	Operating	42
Oracle RDBMS upgrades	INF	UPG	IT	Operating	37
Lares-10 admin privileges	SEC	ADV	IT	Operating	36
OHM Upgrade to Pure OHS	BT	UPG	IT	Operating	36
Lares-26 PDR to SCADA attacks	SEC	ADV	IT	Operating	35
Emergency Communication Solut	BT	ADV	IT	Operating	30
Lares-25 2019 Security A&T Pro	SEC	ADV	IT	Operating	29
Backup Strategy and Implementa	INF	UPG	IT	Operating	26
2019 Disaster Recovery Test	INF	UPG	IT	Operating	26
Lares-07 Segment security zone	SEC	ADV	IT	Operating	24
PROD Hyper-V Host upgrade	INF	UPG	IT	Operating	23
Lares-28 Incident Response Tes	SEC	ADV	IT	Operating	19
Marston upgrade Diff Press Tra	OPT	UPG	IT	Operating	19
TFS (Source Code) Replacement	BT	UPG	IT	Operating	19
Lares-30 Audit Log MM&A	SEC	ADV	IT	Operating	16

INFORMATION TECHNOLOGY PROJECTS 2019 BUDGET (in thousands of dollars)					
Includes applied labor	**System**	**Program**	**Division**	**Type**	**2019 Budget**
Lync/Skype cloud upgrade/migra	INF	UPG	IT	Operating	$ 16
SharePoint - Eliminate EF/DMZ	BT	UPG	IT	Operating	15
MDM Replacement - Airwatch	INF	UPG	IT	Operating	13
Lares-29 Sensitive data protec	SEC	ADV	IT	Operating	13
WTP - upgrade WQL Analyzers	OPT	UPG	IT	Operating	12
AMI Integration w CC&B	BT	ADV	IT	Operating	11
Install ILO for physical serve	INF	ADV	IT	Operating	7
NVIS Radio System (Pilot)	OPT	ADV	IT	Operating	6

CAPITAL PROJECT UPDATES

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's North System brings snowmelt from the mountains through reservoirs, pipelines and a treatment plant to produce clean, great-tasting drinking water. 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:

- Northwater Treatment Plant – The Northwater Treatment Plant will be capable of treating up to 75 million gallons of water a day and will be equipped with disinfection technology that will provide more flexibility to react to changes in water quality.
- Northwater Pipeline – A 66-inch diameter pipeline is being installed, replacing one of the two existing pipelines, running 8.5 miles between Ralston Reservoir and the Moffat Treatment Plant. The new pipeline will transport treated water from the new Northwater Treatment Plant to the Moffat Facility for distribution.
- Moffat Distribution Site – The Moffat Treatment Plant will continue to treat water although at a reduced capacity. Water treated at the Northwater Treatment Plant will be sent to the Moffat facility, via the Northwater Pipeline, where it will be stored and distributed to customers.

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

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

WATER RATES

Water Rates

In November 2018, the Denver Board of Water Commissioners adopted rate changes to fund essential repairs and upgrades to Denver Water's system, beginning February 1, 2019. Typically, rate revenue accounts for about 95% of the operating income.

There are more than 100 major projects identified in Denver Water's five-year capital plan, ranging from replacing pipes and underground storage tanks to upgrading water treatment facilities and water pipe improvements. With rapidly changing technology, aging infrastructure, new regulations and a warming climate, the cost of running a complex water system continues to rise.

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).

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 additional 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.

DENVER WATER

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 2019, Denver Water will continue work on projects that are part of the five-year, $1.3 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. The renewal 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.

Gross Reservoir Expansion project

This major component of Denver Water's long-term, multi-pronged approach (including promoting water efficiency, recycled water and responsible sourcing of new supply) will deliver safe, reliable water to the more than 1.4 million residents in our service area today and many of the projected 7.7 million who will call Colorado home by 2040. Additional water storage from the project will help prevent future shortfalls during droughts and helps offset an imbalance in our north-south collection system.

The Gross Reservoir Expansion Project will raise the height of the existing dam by 131 feet, which will allow the capacity of the reservoir, pictured, to increase by 77,000-acre feet.

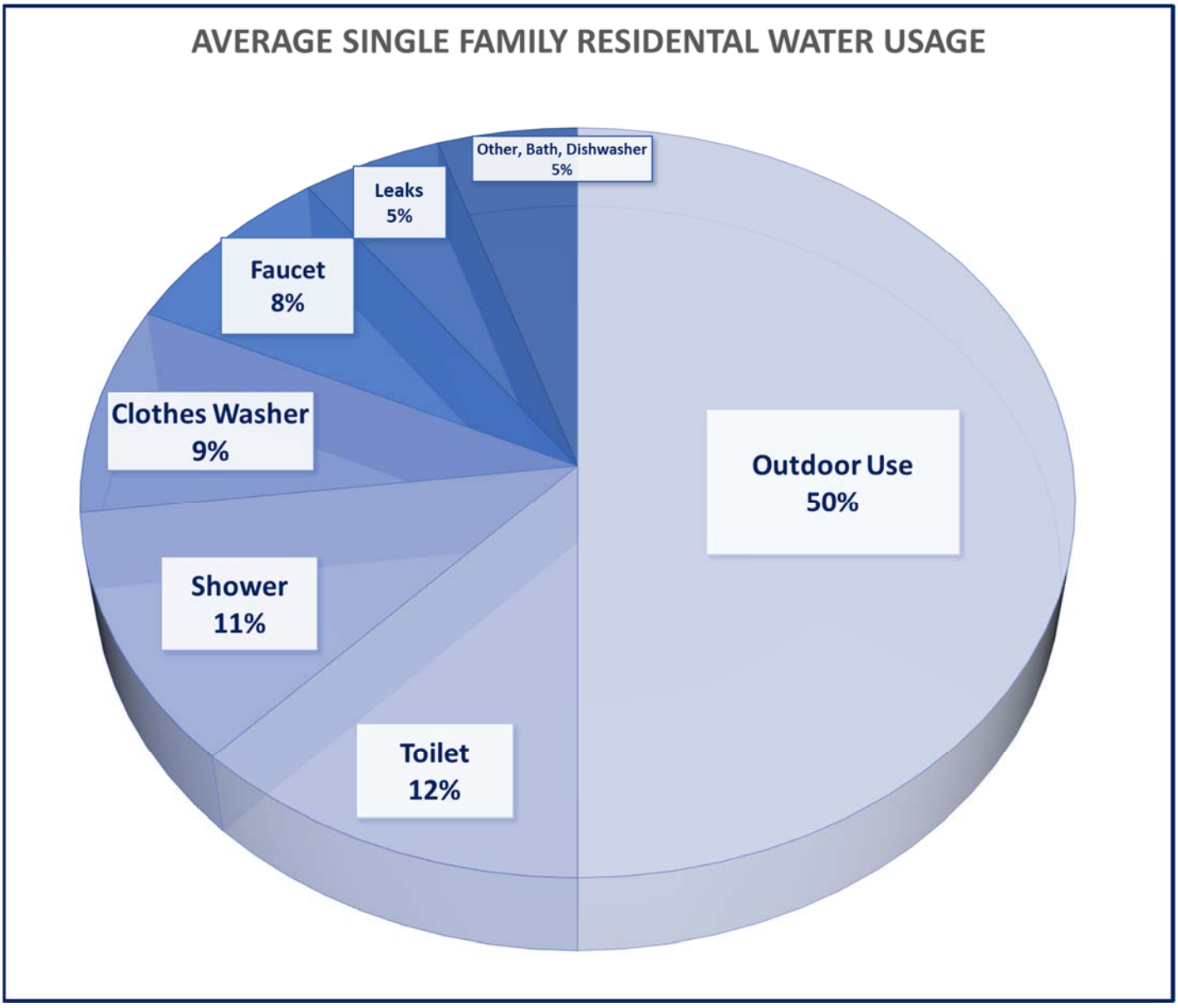
Pipe Replacement

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

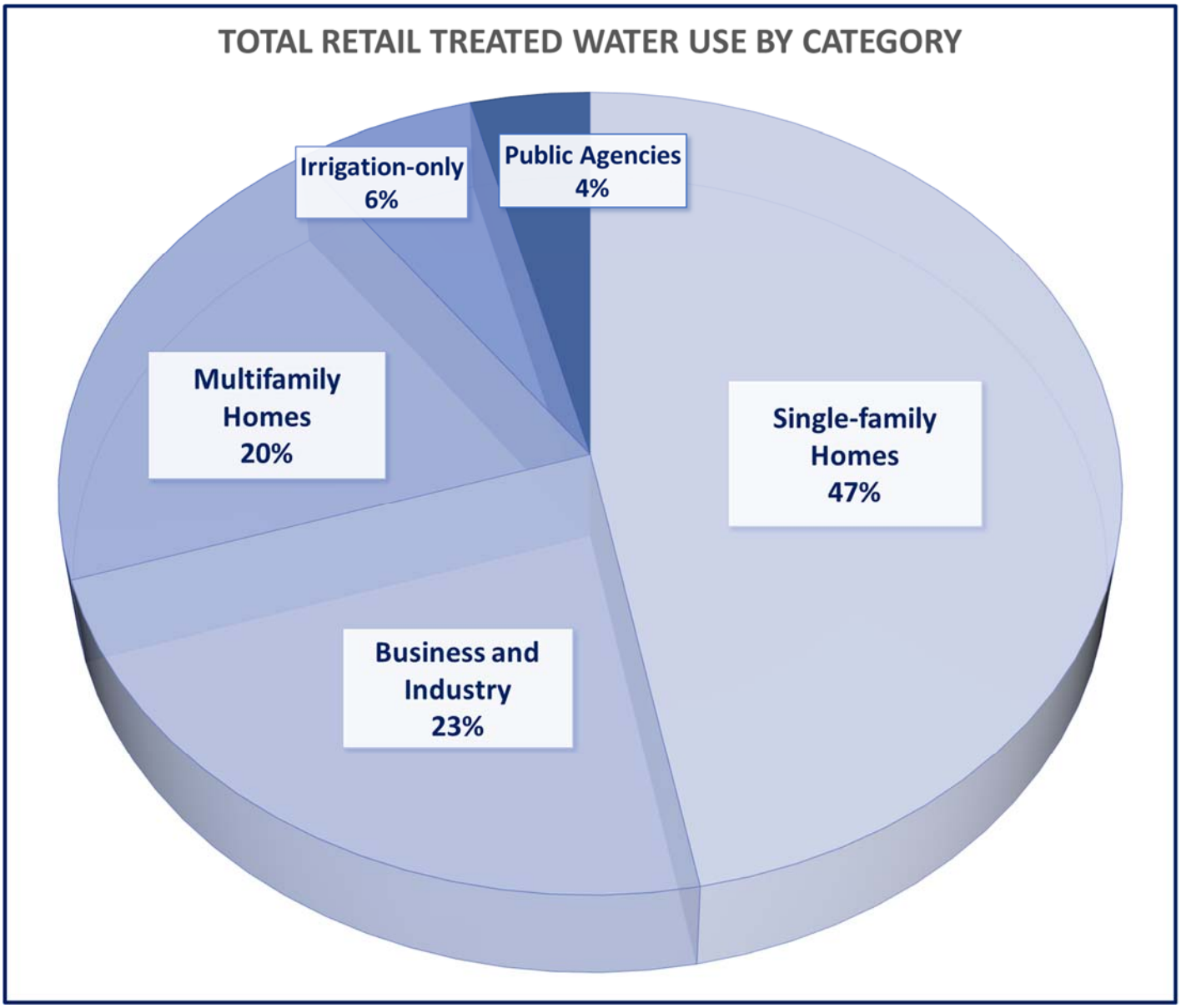
Residential Usage

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.



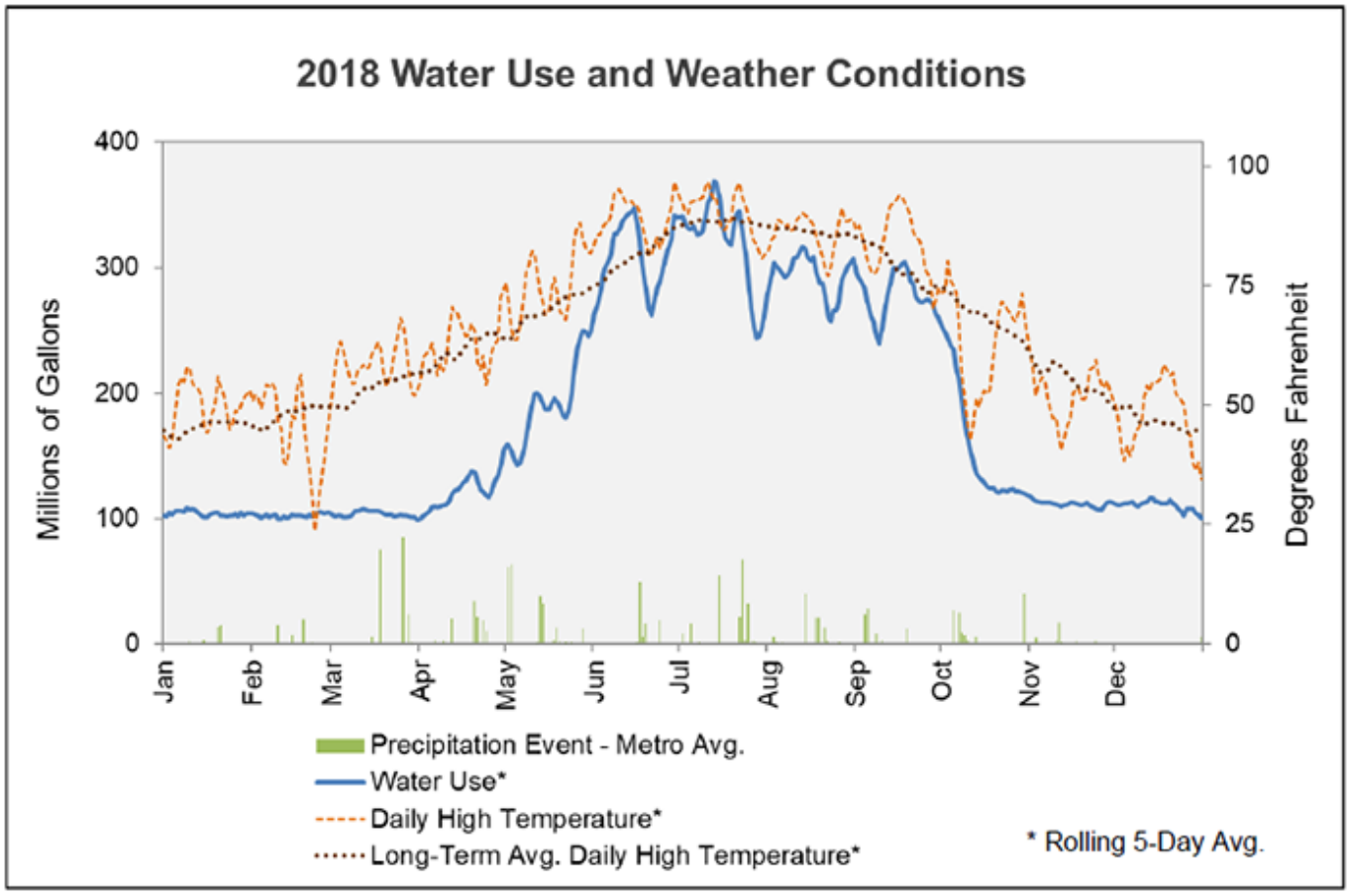
Usage by Category

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

Cheesman Reservoir - 2002 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.

Stages of Drought Response

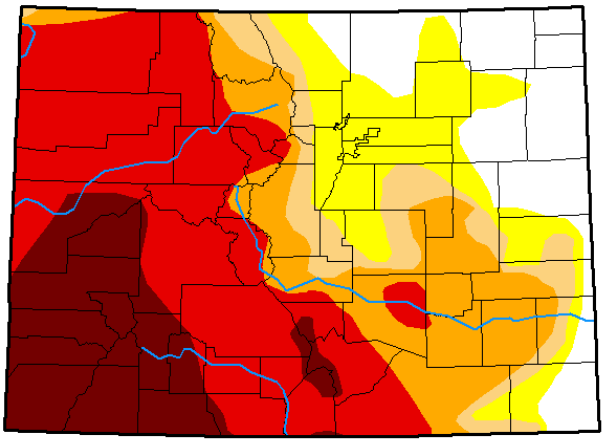
Denver Water's Drought Response Plan details drought severity indicators, response actions and program elements. Denver Water's primary response to drought is to restrict customers' water use so supplies will last as long as possible and be available for the most essential uses. Four different stages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

The following images show the Colorado drought monitor from October 2018 compared to March 2019:

U.S. Drought Monitor

Colorado



October 2, 2018

(Released Thursday, Oct. 4, 2018)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	14.19	85.81	72.30	64.41	48.47	16.21
Last Week 09-25-2018	14.19	85.81	72.30	64.41	48.47	16.21
3 Months Ago 07-03-2018	20.46	79.54	67.30	52.31	36.46	8.81
Start of Calendar Year 01-02-2018	6.57	93.43	33.53	7.27	0.00	0.00
Start of Water Year 09-25-2018	14.19	85.81	72.30	64.41	48.47	16.21
One Year Ago 10-03-2017	70.54	29.46	3.70	0.00	0.00	0.00

Intensity:

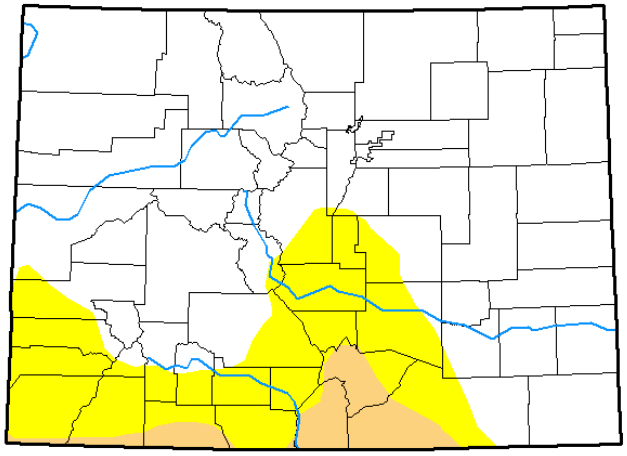
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:
David Miskus
NOAA/NWS/NCEP/CPC

U.S. Drought Monitor

Colorado



March 26, 2019

(Released Thursday, Mar. 28, 2019)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	74.78	25.22	4.74	0.00	0.00	0.00
Last Week 03-19-2019	53.87	46.13	6.39	0.63	0.00	0.00
3 Months Ago 12-25-2018	15.88	84.12	66.26	54.91	27.11	11.22
Start of Calendar Year 01-01-2019	17.94	82.06	66.26	54.91	27.11	11.22
Start of Water Year 09-25-2018	14.19	85.81	72.30	64.41	48.47	16.21
One Year Ago 03-27-2018	9.65	90.35	73.50	48.55	20.61	0.00

Intensity:

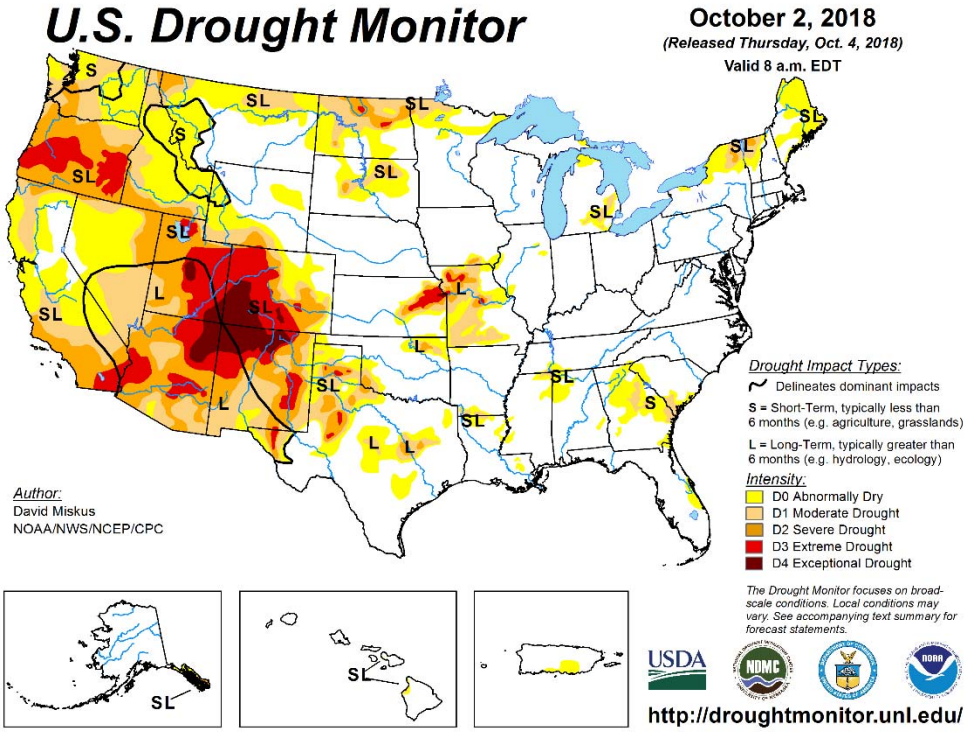
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

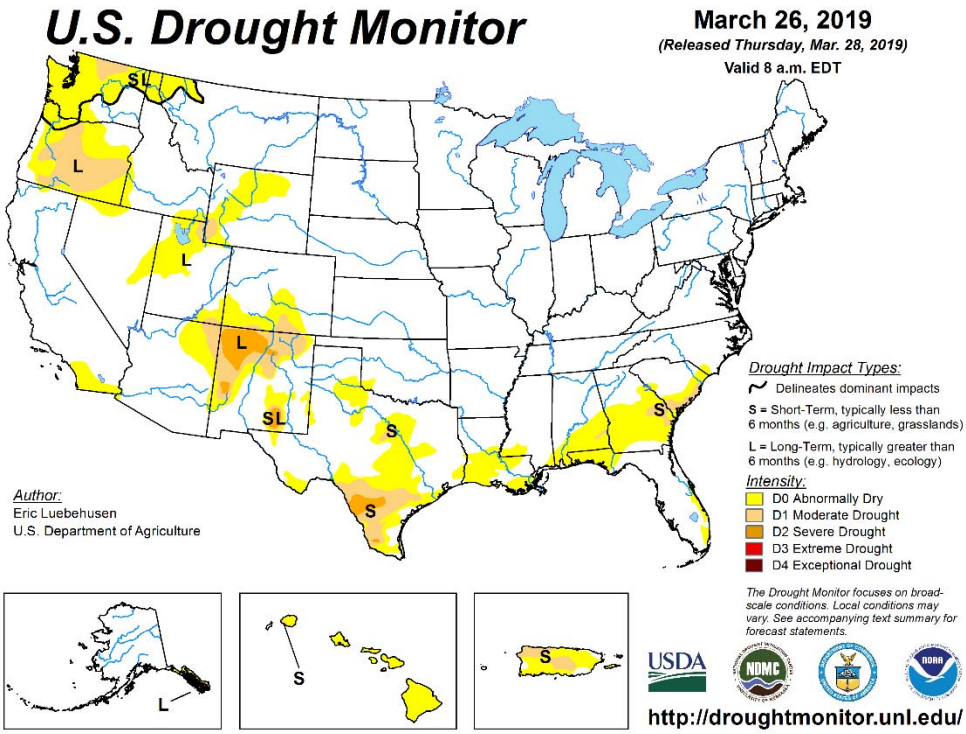
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

The following images show the National drought monitor from October 2018 compared to March 2019:





Other Information

2018 YEAR IN REVIEW

2018 Year in Review: Priorities and Highlights

The Board was provided a comprehensive 2018 Year in Review document at the February 27th Board meeting which provided details around the 2018 accomplishments for Denver Water. A portion of this document has been summarized below. You will find the full version of the Year in Review in the Appendix of the Q4 2018 Performance Report.

Business Technology Transformation

We are on track with deliverables under our five-year Business Technology Transformation road map. A few highlights include:

- Business Technology Management Office: The Business Technology Management Office improved the vetting and prioritization process to include revised business case templates, value verification plans and a prioritization process for advancement projects.
- Enterprise Resource reporting: We used a Choosing by Advantages process to confirm a two-phase implementation strategy. Phase one will deliver a unified human capital management platform, supporting the outsourcing of Payroll and Benefits Administration and the needed service-oriented HCM software, all provided by a single vendor. Phase two will deliver a unified platform supporting Finance, Procurement and Inventory Management.
- IT spending: We continued IT spending reductions this year in the areas of hardware, software and staffing to remain consistent with the Grant Thornton Report recommendation to reduce IT spend over a five-year period. Consistent with those recommendations and our Business Technology Transformation road map, we reduced 19 FTEs through attrition, an involuntary reduction in force in IT Client Support capacity and in baseline capacity for advancement projects. In conjunction with the reduction in force, we consolidated existing IT application development and support teams into three teams with these focus areas:

- Enterprise Resource Planning systems
- Enterprise Asset Management systems
- Customer Information Systems and Data Services

We will monitor the operational impact of these changes using the IT project-performance metrics included in the quarterly performance report to the Board.

Operations Complex Redevelopment

We closed out the work packages for the four operations buildings and completed the renovation of the Water Distribution building. We also finished concrete work on the parking garage, and crews are working on exterior finishes, stairwells, plumbing and electrical. The Wellness Building has been erected with a water-tight roof in place, interior walls framed and insulation on the exterior. We celebrated the topping out of the Administration Building in November. We issued an RFP for photovoltaic panels to offset energy use in the new Administration Building, and we are in contract negotiations with the vendor we selected. We also surpassed 20 percent MWBE construction participation (our goal was 18 percent). And we began the process to select an artist for the public art component of the project.

In addition to construction, the OCR Core Team facilitated employee selection of office workspace furnishing and seating charts for the new Administration and Wellness buildings so that the we can finalize our furniture order. We held 10 6S events with teams cleaning out files and offices. A change-management strategy is in place to help employees' transition to their new workspaces, with efforts scheduled to ramp up in early 2019. We also conducted 10 tours of the new operations buildings including for the CAC, Aurora Water, Northern Water, U.S. Green Building Council and the Colorado Renewable Energy Society.

Integrated Resource Plan: The IRP is complete, and we have entered the Continuous Planning Process. The process is designed to inform capital and facility planning on a continuous basis. It will also identify and evaluate emerging opportunities, threats and risks. In 2019, we will develop a portfolio of options to reduce water supply risk on the Colorado River and implement an annual continuous improvement plan.

North System Renewal

Work continues in rebuilding the northern part of Denver Water's system, much of which was originally constructed in the 1930s and 1950s. Highlights include:

- Northwater Treatment Plant: Through a Choosing by Advantages process, we determined an entirely new approach for this project, reducing the size of the plant to 75 MGD and extending the life of the Moffat Treatment Plant. However, the new plant can still be expanded to 150 MGD capacity. This process saved the project $80 million from the original design and implemented our new capital design philosophy. The goal of the project is to be one of the most sustainable treatment plants ever built and will be a net producer of energy. The Board approved contracts for final design consultants, owner's support, design services and early construction activities. We reached 60 percent completion on final design of the treatment plant by the end of the year. We also completed early site grading and pipe construction to allow future plant construction without significant system outages.

- Conduit 16: Four construction packages comprise the replacement of Conduit 16 including tunnels, the west-pipeline segment, the central-pipeline segment and the east-pipeline segment. We've nearly completed the tunnels package. We started construction on the west-pipeline segment. We completed the bid process for the central-pipeline segment, and the contractor is ready for construction. We will bid the east-pipeline segment in mid-2020.
- Gross Reservoir Expansion: We continued work on the GRE project with a safe work year and no incidents or lost time. We completed a rigorous, subsurface geotechnical investigation of the foundation and dam and 30 percent design of the new dam.

  We started work on two of our compensatory mitigation projects required by the Army Corps of Engineers' 404 Permit, the South Boulder Creek restoration project and the Williams Fork River restoration project. We evaluated and selected the construction manager and general contractor program delivery approach and pre-qualified three contractors.

  Finally, we personally contacted more than 1,800 stakeholders through the public information office, presentations, tours and events. We conducted research survey, reaching more than 2,000 local residences with a 25 percent response rate. The community feedback continues to be useful in developing plans for the traffic, construction and tree removal.

  We ended the year still awaiting an order from the Fish and Wildlife Service ESA Biological Opinion and the Federal Energy Regulatory Commission for the amendment to our license. The Army Corps of Engineers' 404 Permit and Record of Decision has been challenged in federal and district court by some environmental organizations. We are working through Boulder County processes to determine the scope of the county review of the project.

National Western

- Water Quality Lab and site development: Denver Water executed an IGA with CSU to proceed with the project management and design services for the Water Resources Center, with plans to include our Water Quality Lab. This IGA set the target scope, budget and schedule of the project. We identified efficiencies and synergies for co-locating and completing the conceptual design. We are developing an agreement to complete the construction of the facility utilizing a construction manager/general contractor approach. We are coordinating with the city of Denver on water services to the overall National Western Site, including the delivery of recycled water.
- Four pillar programs (policy, research, innovation and education): We conducted Voice of the Customer activities and current state mapping with various divisions to better understand how these programs can support our needs. We began discussions with CSU on how to utilize a new facility to accomplish this programming.

Organizational Health

We continued our work related to organizational health and creating an inspiring work environment.

- Employee Net Promoter: We implemented a semiannual employee net promoter survey to help us listen to our employees and take action on the things that matter most to them. While the results were not as good as we hoped, employees identified many positive aspects of working here. Employees are passionate about our work and are committed to Denver Water's mission. They also

like the benefits, such as the 401K/457 and pension plans, as well as our health benefits. They don't want them to change. They are also happy with the new benefits we've added, like PTO and alternative-work schedules.

Several themes emerged from the survey regarding dissatisfaction, including pay, lack of trust and a feeling that employees are not heard and do not feel valued. We are taking action on several areas including working with a third party to better understand opportunities for improvement with our pay practices, structure and market ranges. We are also slowing the pace and amount of change by prioritizing work to maintain a volume and amount of change that is manageable for everyone. We are also committing to leadership development with systems and programs to ensure success in this area including a new quarterly forum for leadership at Denver Water. The forum includes all 250 of Denver Water's leaders with the intent of creating messaging clarity for the organization and increasing leadership acumen.

Sustainability Implementation

The first full year of Denver Water's Sustainability Guide implementation achieved good results. We now report monthly waste and energy data with enough information to compare 2018 to 2017. We updated Engineering Standards with sustainable design criteria and completed six, energy-efficiency projects with several more in progress. Despite several hydropower generators being out of service for maintenance in 2018, we are still well on our way to achieving net-energy neutrality.

We collaborated with Procurement about material end-of-life for specific vendors and products, closing the loop, and sourcing recycled or recyclable products. We will conduct additional work in 2019 and 2020 to finalize sustainable procurement standards. We also extended the Environmental Management System to the Meter Shop, Transmission and Distribution and Source of Supply. We noted several environmental impacts including vehicle idling, universal waste disposal and waste minimization opportunities. To end the year, we presented our first annual sustainability report to the Board in December.

100th Anniversary Activities

Denver Water engaged in a yearlong celebration of our 100th anniversary. This milestone created an opportunity with employees and the community to commemorate our history, honor our present and celebrate our future.

Fiscal Responsibility Audit

We documented and clarified the new CEO Expenditure Authority, including developing new contract reports for the CEO on items no longer approved by the Board, documenting the new procedures and training for the organization to assist in understanding the new guidelines regarding CEO Expenditure Authority.

Regulation 84

In order to achieve regulatory approval for the innovative wastewater treatment system in the new Administration Building, Denver Water led an initiative to expand water reuse regulations in Colorado. The Colorado Department of Public Health and Environment expanded Regulation 84 to now permit

toilet/urinal flushing with reclaimed water, as well as the implementation of localized systems. This change was critical for Denver Water, as our OCR project will showcase these changes and include on-site wastewater treatment for toilet flushing and rain water harvesting as another alternative water source.

Colorado River

We are having earnest discussions among the Colorado River basin states and the Department of the Interior toward finalizing lower and upper basin drought contingency plans. The Commissioner of Reclamation gave Arizona a deadline of Jan. 31, 2019, to adopt the lower basin drought contingency plan, which was accomplished. As the drought contingency plans are finalized, and especially if the drought continues, a demand management program will need to be created in all four upper basin states and implemented through the Upper Colorado River Commission.

The Front Range Water Council and the western slope water districts sent letters to the Colorado Water Conservation Board expressing our positions regarding a demand management program to protect reservoir elevations in Lake Powell. The CWCB adopted a policy statement on demand management that reflects the input of our agencies.

2018 Awards and Recognitions

- The Leading Utilities of the World: Denver Water became one of the newest members of the Leading Utilities of the World network. Utilities must demonstrate outstanding innovation in various LUOW categories. Our categories included response to drought or scarcity with the From Forests to Faucets partnership with the U.S. and state forest services, energy efficiency with Denver Water's Sustainability Plan and hydroelectric operations and human resource development with our Continuous Improvement efforts.
- Sustainable Water Utility Management Award: The Association of Metropolitan Water Agencies awarded Denver Water the Sustainable Water Utility Management Award. It goes to utilities that balance innovative and successful efforts in areas of economic, social and environmental endeavors. That includes managing resources, protecting public health, meeting community responsibilities and providing cost-effective services to ratepayers.
- Love This Place Award: Denver Water won the city of Denver’s Office of Sustainability’s Love This Place Award for being an implementer. The award recognizes sustainability leaders who are helping the city of Denver achieve its 2020 Sustainability Goals.
- American Heart Association gold level: Denver Water’s wellness program achieved gold level recognition from the American Heart Association for taking significant steps to build a culture of health in the workplace.
- AWWA Partnership for Safe Water Directors Award: The Marston Treatment Plant earned the American Water Works Association’s Partnership for Safe Water Directors Award. The team completed a Phase-Three Self-Assessment, which involved openly examining the plant and its operations and administrative processes.
- Design Build Institute of America: Denver Water’s DRWSP North and South Water Quality Improvements Project won the Design Build Institute of America’s (Rocky Mountain Section) Best Water/Wastewater Project for 2018. The team consisted of Denver Water Engineering staff, Brown and Caldwell Consultants and Filanc Construction.

- High Line Hero Award: The High Line Canal Conservancy honored Denver Water with the first High Line Hero Award for leadership, stewardship and commitment to ensuring the High Line Canal has a bright future as a community resource and green infrastructure asset.
- US Forest Service: The US Forest Service recognized Denver Water for ongoing dedication in stewarding critical watersheds that deliver clean, safe, reliable drinking water. This stems from the From Forests to Faucets program, a forest management partnership with Denver Water and the Rocky Mountain region of the Forest Service.
- Friend of Conservation Award: Denver Water received honorable mention in the 2018 Friend of Conservation Award from the National Association of Conservation Districts. The Jefferson Conservation District is one of our partners in the From Forests to Faucets Program. The award highlighted Denver Water as a leading partner in water and land conservation and for our engagement with program partners.
- Climate Registry: Denver Water had its ninth greenhouse gas inventory verified, receiving official registration recognition from the Climate Registry. The Climate Registry helps organizations measure, report and reduce their greenhouse gas emissions with integrity.
- Excellence in Financial Reporting: For the 30th consecutive year, Finance received the Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association.

2018 Programs Update

- Lead reduction program: We executed our main-replacement program and service-line repair program in conjunction with the Denver Urban Renewal Authority to remove more than 839 lead service lines from the system. We also made significant progress in optimizing corrosion control in the system, working with EPA and CDPHE to reduce and potentially mitigate the effects of orthophosphates to the environment. We are also beginning design and construction of the optimal corrosion control methodology at Foothills as ordered by CDPHE. We started stakeholder meetings with impacted water and wastewater system representatives attending.

- Water efficiency plan: All programs combined for 614-acre feet of savings, exceeding the first-year target of 600 AF. We made significant progress communicating with single-family residential customers with both outdoor and indoor efficiency messages delivered via email.

- Watershed plan: We kicked off Upper South Platte and Upper Blue River watershed planning in June. We created an adaptive management framework to guide the multiyear effort. We completed the watershed inventory in December, which was the first step in the process. It included a geospatial inventory of watershed management projects, potential pollutant sources, and water quality data collected internally and by our partners. It also included a document inventory in SharePoint containing internal and external assessment, reference and monitoring documents that are easily filtered and accessible across the organization. We also created a data inventory of water quality results to be used in the next phase, the watershed assessment.

- High Line transformation: We made progress on the High Line Canal transformation by completing the stormwater master planning process with Urban Drainage. That led to executing two critical IGAs detailing the partnerships with the city of Denver and Greenwood Village. We

also transitioned several customer contracts off the canal, moved Fairmount Cemetery to a temporary, alternative water supply and evaluated conversion of other Antero contracts through conservation and potential augmentations.

2018 Continuous Improvement Update

Customer Experience Value Stream

The Customer Relations group is engaged in the Customer Experience Value stream with a core team representing External Affairs, Engineering and O&M. We held multiple "just do it" events and four RIE's focused on streamlining processes and improving communications with customers to increase customer satisfaction.

- Water audit RIE: We learned the water audit process could be much more effective and efficient by training the Field Service staff to perform water audits like the Conservation Field staff used to perform. We identified the "first stop resolution" as improving the customer experience while still delivering excellent service to our customers.
- Bill discrepancy communication RIE: This event focused on communication methods for billing discrepancies and account adjustments. We modified the bill to be more transparent and easier to understand. We revised the high/low consumption letters to send prior to direct customer contact when their consumption was out of line with their typical use. We developed a self-audit flyer that we send in customer letters as an educational tool for ownership and ways to proactively identify leaks. The Contact Center developed information on high bills to share with customers to identify reasons why their bill may be higher than normal.
- Conditions of the work area RIE: The team observed that current pipe-replacement communications to customers are inadequate because the communications don't relay enough information. The team implemented a new process for residential notification of pipe-replacement projects and updated the external facing website. Six months after the RIE, we have seen a 12 percent increase in customers who are very satisfied with work area conditions. Complaints are down by 17 percent.
- Lead service line replacement workflow RIE: This event identified processes and workflows, including training the organization to ensure everyone is on the same page. After many changes to policy and process over the recent years, we identified that internal processes need to be documented and communicated to the organization.

Water Quality and Water Distribution Value Streams

The Water Quality team was able to cut excessive compliance sampling from 2500 to 878 extra samples, a 65 percent reduction. The Water Distribution team successfully cut outage hours per main break in half, increasing overall productivity by 20 percent, reducing maintenance backlogs by 40 percent and increasing the rate of corrective maintenance by more than 300 percent.

The Safety Value Stream

This team made progress toward existing metrics, including a 21.8 percent reduction in preventable vehicle collisions. 182 people participated in defensive-driver training, both online and behind the

wheel. Denver Water employees also reduced total injuries by 27 percent. There was a small uptick in lost-time injuries with a total of six. We are committed to zero injuries, and our healthy reporting culture provides opportunities to learn from these incidents and craft holistic solutions.

One specific highlight was the Safety team engaging in 317 unique outreach opportunities across all sections. These sessions are helping to build a safety culture that proactively manages operational risk, rather than reactively responding to incidents. The Safety Value Stream team met and evaluated progress throughout the year, constantly asking what could be done to improve safety and the safety culture throughout the organization. They also developed a safety maturity index that includes four leading indicators and two lagging indicators. It will be implemented in 2019.

Glossary and Definitions

GLOSSARY AND DEFINITIONS

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.

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

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.

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 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.

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

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.

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.

enterprise fund
A type of propriety fund or a governmental unit that caries 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.

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.

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

integrated resource planning
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 Chief 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.

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).

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.

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.

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.