

# 2017 | COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the years ended December 31, 2017 and 2016  
Denver, Colorado



Dillon Reservoir

# 2017 | COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the years ended December 31, 2017 and 2016  
Denver, Colorado

Prepared by  
Finance Division

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## TABLE OF CONTENTS

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### I - INTRODUCTORY SECTION

---

Letter of Transmittal	I - 1
Board of Water Commissioners	I - 7
Executive Leadership	I - 8
Organization Chart	I - 9
Certificate of Achievement	I - 10

---

### II - FINANCIAL SECTION

---

Section II Contents	II - 1
Independent Auditors' Report	II - 3
Management's Discussion and Analysis (Unaudited)	II - 5
Basic Financial Statements:	
Statements of Net Position	II - 16
Statements of Revenues, Expenses, and Changes in Net Position	II - 18
Statements of Cash Flows	II - 19
Notes to Basic Financial Statements	II - 21
Required Supplementary Information	
Exhibit I-A: Schedule of Changes in Net Pension Liability and Related Ratios	II - 52
Exhibit I-B: Schedule of Board Pension Contributions	II - 53
Exhibit I-C: Other Post-Employment Benefits Plan Schedule of Funding Progress	II - 54
Other Supplemental Information	
Exhibit II-A: Revenue Water Improvement and Refunding Bonds Outstanding	II - 56
Exhibit II-B: Summary of Revenue Bond Debt Service Requirements Outstanding	II - 57
Exhibit II-C: Schedule of Bond Retirements for Revenue Bonds Outstanding	II - 58
Exhibit II-D: Schedule of Bond Interest for Revenue Bonds Outstanding	II - 59

---

### III - STATISTICAL SECTION

---

Section III Contents and Explanations	III - 1
Statistical Summary, Last 10 Years	III - 3
<b>A - Financial Trends Information</b>	<b>III - 5</b>
Net Position by Component, Last 10 Years	III - 7
Statements of Revenues, Expenses and Changes in Net Position, Last 10 Years	III - 8
Revenue, Expenses and Changes in Net Position, 10 Year Graphs	III - 9

(continued)

## TABLE OF CONTENTS (continued)

---

### III - STATISTICAL SECTION

---

<b>B- Revenue Capacity Information</b>	<b>III - 11</b>
Denver Water Service Area	III - 13
Customer Service Data, Last 10 Years	III - 14
Water Sold In Dollars by Type of Customer, Last 10 Years	III - 15
Treated Water Sold in Gallons by Type of Customer, Last 10 Years	III - 18
Operating Revenue and Related Water Consumption	III - 21
Sale of Treated Water between Denver and Outside City	III - 23
Sale of Non-Potable Water between Denver and Outside City	III - 25
Customer Accounts for Treated Water	III - 26
Water Rate Schedules	III - 27
Summary of Water Rates, Last 10 Years	III - 31
Sales of Treated Water for Resale	III - 36
10 Largest Retail Customers - Water Consumption and Revenue	III - 37
System Development Charges and Participation Receipts, 1973 to Date	III - 38
<b>C- Debt Capacity Information</b>	<b>III - 39</b>
Ratios of Total Outstanding Debt by Type, Last 10 Years	III - 41
Pledged-Revenue Coverage, Last 10 Years	III - 42
Ratios of General Obligation Bonded Debt Outstanding, Last 10 Years	III - 43
Ratios of Water Revenue Bonded Debt Outstanding, Last 10 Years	III - 44
<b>D- Demographic and Economic Information</b>	<b>III - 45</b>
Demographic and Economic Overview of the Denver Metropolitan Area	III - 47
<b>E - Operating Information</b>	<b>III - 55</b>
Employees by Division, Last 10 Years	III - 57
Capital Assets by Function, Last 10 Years	III - 60
Receipts and Expenditures: Budget to Actual Comparison, Last Five Years	III - 61
Operating Indicators by Function:	
<b>Supply Facts</b>	<b>III - 63</b>
Water Collection System	III - 65
Source of Supply - Reservoirs and Collection Systems	III - 66
Source of Supply - Supply Mains and Wells	III - 67
Hydroelectric Power	III - 70
Water Supply, Use and Storage, Last 10 Years	III - 72

(continued)

**TABLE OF CONTENTS (continued)**

---

**III - STATISTICAL SECTION**

---

<b>Pumping Facts</b>	<b>III - 73</b>
Pumping Station Capacities	III - 75
Treated Water Pumped and Power Costs, Last 20 Years	III - 78
Distributing Reservoirs and Raw Water Pumping Stations	III - 79
<b>Treatment and Water Quality Facts</b>	<b>III - 81</b>
Consumption of Treated Water, 20 Year Graphs	III - 83
Consumption of Treated Water, Last 20 Years	III - 84
Water Treated Monthly	III - 85
Chemical Treatment and Analysis	III - 86
Treated Water Quality Summary	III - 87
Distribution System Average Trihalomethanes	III - 92
<b>Transmission &amp; Distribution Facts</b>	<b>III - 93</b>
Transmission and Distribution Mains	III - 95
Valves	III - 96
Fire Hydrants	III - 97
Recycled Water Mains and Valves	III - 98
Breaks in Mains, Water Control, and Leak Detection Services, Last 5 Years	III - 99

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April 30, 2018

To the Board of Water Commissioners and Our Customers:

We are pleased to transmit the “Comprehensive Annual Financial Report” (CAFR) of Denver Water for the year ended December 31, 2017.

Management assumes full responsibility for the completeness and reliability of the information contained in this report, based upon a comprehensive framework of internal control that it has established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements.

CliftonLarsonAllen LLP, Certified Public Accountants, has issued an unmodified opinion on Denver Water’s financial statements for the years ended December 31, 2017 and 2016. The independent auditor’s report is located at the front of the Financial Section of this report.

“Management’s discussion and analysis” (MD&A) immediately follows the independent auditors’ report and provides a narrative introduction, overview, and analysis of the basic financial statements. The MD&A complements this letter of transmittal and should be read in conjunction with it.

## **The Report**

This report is presented in three sections as follows:

- I. **Introductory Section**, which includes this letter of transmittal, principal officials, organization chart, and the Certificate of Achievement for Excellence in Financial Reporting for the previous year’s report.
- II. **Financial Section**, which includes the independent auditors’ report on the financial statements, Management’s Discussion and Analysis, the basic financial statements, and supplemental bond schedules.
- III. **Statistical Section**, which includes financial trends information, revenue capacity information, debt capacity information, demographic and economic information, and operating information generally presented on a multi-year basis.

## **Profile of Denver Water**

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

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



also uses water from the South Boulder Creek, Ralston Creek, and Bear Creek watersheds. A system of reservoirs networked by tunnels and canals provide water to more than a million people. Three major treatment plants – Marston, Moffat, and Foothills - maintain water quality under the watchful eye of the Denver Water Quality Control Laboratory.

The mission of Denver Water is as follows:

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

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

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

### **Factors Affecting Economic Condition**

The information displayed in the financial statements presents Denver Water’s current **financial position**, i.e., its *existing* resources and claims on those resources. The following information is provided to help assess Denver Water’s **economic condition**, i.e., both existing and *future* resources and claims on those resources. Stated differently, economic condition reflects not only today’s financial position, but also the prospects that today’s financial position will improve or decline.

## Local Economy

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

## Long-Term Financial Planning – Major Initiatives

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

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

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

## Relevant Financial Policies and Practices – Investment Balance

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

### Balanced Budget

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

### Cash Reserves

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

Denver Water began 2018 with an actual cash and investment balance of \$449 million, at cost. The 2018 budget projects this balance to increase by receipts of \$405 million and decrease by expenditures of \$443 million, resulting in a projected 2018 ending balance of \$411 million (see schedule of Receipts and Expenditures in the Statistical Section for details).

Note 2, *Deposits and Investments*, in the Financial Section provides more information on Denver Water’s investments. Investment balances in published financial statements are not directly comparable to the budgeted investment balance because different valuation methods are used.

## **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.

There are three guiding principles in the Strategic Plan which are used to evaluate all decisions and purposefully move the organization toward its vision to be the best water utility in the nation:

1. **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.
2. **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.
3. **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.

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.

### SEC Periodic Disclosure Requirements

Rule 15c2-12 requires Participating Underwriters to determine that the issuer of municipal securities has undertaken in a written agreement for the benefit of holders of such securities to provide annual financial information in a timely manner to the Municipal Securities Rulemaking Board’s Electronic Municipal Market Access (EMMA®) system. The Government Finance Officers’ Association of the United States and Canada (“GFOA”) recommends that the disclosure be contained in the CAFR. The disclosure that Denver Water has undertaken to provide in order that participating underwriters may comply with this rule can be found on the following pages:

Budgetary Controls	Page I-2
Audited Financial Statements	Section II - Financial Section
Total Outstanding Indebtedness	Section II - Notes 6, 7, 9, Exhibits II-A through II-D
The Service Area	Page III-13
Number of Customer Accounts	Page III-26
System Development Charges and Participation Receipts	Page III-38
Receipts and Expenditures	Page III-61
Total Treated Water Delivered/Consumption	Page III-84

Information for prior years and information related to the City and County of Denver is available on the Municipal Securities Rulemaking Board’s Electronic Municipal Market Access website at <http://www.emma.msrb.org>.

### Awards, Recognition and Acknowledgements

#### Awards

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



A Certificate of Achievement is valid for a period of one year only. We believe that our current CAFR continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

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

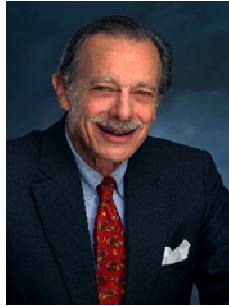
### Acknowledgments

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

Sincerely,

  
James S. Lochhead  
CEO/Manager  
Angela C. Bricmont  
Chief Finance Officer

**BOARD OF WATER COMMISSIONERS**



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

Paula Herzmark, President  
Executive Director, Denver Health Foundation

*Commissioner since April 2009;  
Term expires 2019.*

John Lucero, First Vice President  
Former Deputy Director, Mayor's Office of Economic Development  
Served as a Broker Associate at Lucero Real Estate, Inc.

*Commissioner since July 2007;  
Term expires 2021.*

Greg Austin, Vice President  
Former Partner, Holland & Hart LLP.

*Commissioner since July 2009;  
Term expires 2019.*

Gary Reiff, Vice President  
Managing Director, Chief Administrative and Legal Officer,  
Black Creek Group

*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.*

**LAST 20 COMMISSIONERS**

John A. Yelenick	Jul 1969 to Aug 1987	Andrew D. Wallach	Jul 2001 to Aug 2003
Marguerite S. Pugsley	May 1978 to Aug 1987	Daniel E. Muse	Feb 2000 to Nov 2003
Elizabeth A. Hennessey	Nov 1985 to Jul 1989	Richard A. Kirk	Jul 1993 to Oct 2005
Malcolm M. Murray	Aug 1987 to Jul 1993	William R. Roberts	Jul 1997 to Oct 2005
Donald L. Kortz	Aug 1987 to Jul 1993	Harris D. Sherman	Dec 2005 to Feb 2007
Monte Pascoe	Sep 1983 to Jul 1995	Denise S. Maes	Jul 1995 to Jul 2007
Romaine Pacheco	Jul 1989 to Jul 1995	Susan D. Daggett	Nov 2007 to Jan 2009
Hubert A. Farbes, Jr.	Jul 1985 to Jul 1997	George B. Beardsley	Feb 2004 to Mar 2009
Ronald L. Lehr	Jul 1993 to Apr 1999	Thomas A. Gougeon	Aug 2004 to July 2017
Joe Shoemaker	Jul 1995 to Jul 2001	Penfield W. Tate III	Oct 2005 to July 2017



## EXECUTIVE LEADERSHIP



**Top:** Jim Lochhead, CEO/Manager;

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

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

## DISCRETIONARY PERSONNEL

(Employees Serving in Executive Discretionary Positions Solely at the Pleasure of the Board)

### Executive Leadership

Jim Lochhead, CEO/Manager

Julie Anderson, Chief of Staff

Angela Bricmont, Chief Finance Officer

Christopher R. Dermody, Chief Information Officer

Gail Cagle, Chief Human Resources Officer

Brian Good, Chief Administrative Officer

Mike King, Chief External Affairs

Robert J. Mahoney, Chief Engineering Officer

Tom Roode, Chief Operations & Maintenance Officer

Patricia L. Wells, General Counsel

### Other Staff

Prescott B. Coleman, Chief Internal Auditor

Stephen Reum, Director of Engineering

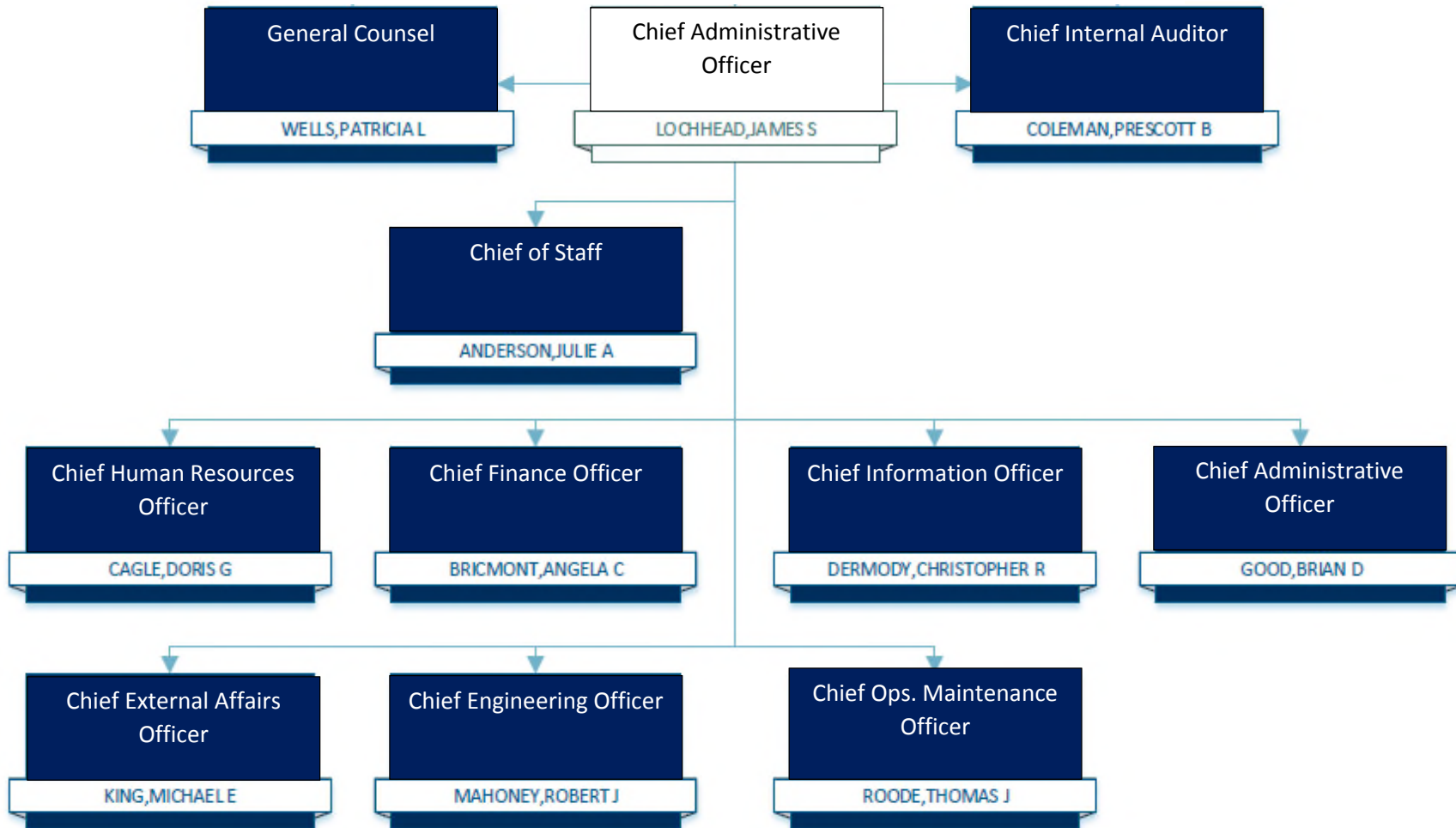
Usha Sharma, Treasurer

Stephanie M. Abram, Budget Manager

Fletcher Davis, Rates Manager

Christopher Piper, Government Relations Manager

**ORGANIZATIONAL CHART**







Government Finance Officers Association

**Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting**

Presented to

**Denver Water  
Colorado**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**December 31, 2016**

*Christopher P. Morill*

Executive Director/CEO

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

**Table of Contents**

Contents	II-1
Independent Auditors' Report	II-3
Management's Discussion and Analysis (Unaudited)	II-5
Basic Financial Statements:	
Statements of Net Position	II-16
Statements of Revenues, Expenses, and Changes in Net Position	II-18
Statements of Cash Flows	II-19
Notes to Basic Financial Statements	II-21
Required Supplementary Information:	
Exhibit I-A: Schedule of Changes in Net Pension Liability and Related Ratios	II-52
Exhibit I-B: Schedule of Board Pension Contributions	II-53
Exhibit I-C: Other Post-Employment Benefits Plan Schedule of Funding Progress	II-54
Other Supplemental Information:	
Exhibit II-A: Revenue Water Improvement and Refunding Bonds Outstanding	II-56
Exhibit II-B: Summary of Revenue Bond Debt Service Requirements Outstanding	II-57
Exhibit II-C: Schedule of Bond Retirements for Revenue Bonds Outstanding	II-58
Exhibit II-D: Schedule of Bond Interest for Revenue Bonds Outstanding	II-59

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## INDEPENDENT AUDITORS' REPORT

Board of Water Commissioners  
Denver Water  
Denver, Colorado

### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Board of Water Commissioners, City and County of Denver, Colorado (the Board), as of and for the years ended December 31, 2017 and 2016, and the related notes to the financial statements, which collectively comprise the Board's basic financial statements as listed in the table of contents.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditors' Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Board's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### ***Opinions***

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Board of Water Commissioners, City and County of Denver, Colorado as of December 31, 2017 and 2016, and the changes in its financial position and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

**Other Matters**

*Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, Schedule of Changes in Net Pension Liability and Related Ratios, Schedule of Board Pension Contributions, and Schedule of OPEB Funding Progress as listed in the table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

*Other Information*

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Board's basic financial statements. The Other Supplemental Information and the Introductory and the Statistical Sections, as listed in the table of contents are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Other Supplemental Information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Other Supplemental Information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The Introductory Section and Statistical Section have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.



**CliftonLarsonAllen LLP**

Greenwood Village, Colorado  
April 30, 2018

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

The following is management's discussion and analysis ("MD&A") of the financial activities of the Board of Water Commissioners (the "Board") for the years ended December 31, 2017 and 2016. This information should be read in conjunction with the basic financial statements which follow.

**FINANCIAL HIGHLIGHTS**

The Board's financial position, measured by the change in net position, improved 4% during 2017, compared to 5% during 2016.

- *Operating income* was \$42.5 million in 2017 compared to \$36.9 million in 2016, an increase of 15%.
- *Income before capital contributions* was \$25.8 million in 2017 and \$26.3 million in 2016, a decrease of 2%.
- *Capital contributions* were \$57.3 million in 2017 and \$61.1 million in 2016, a decrease of 6%.
- *Net position* increased \$83.1 million, or 4%, in 2017 compared to \$87.4 million, or 5%, in 2016.
- *Capital asset additions* were \$182.9 million in 2017 compared to \$152.5 million in 2016, an increase of 20%.

**OVERVIEW OF THE BASIC FINANCIAL STATEMENTS**

This MD&A is intended to serve as an introduction to the Board's basic financial statements, which are comprised of five components: 1) statements of net position, 2) statements of revenues, expenses, and changes in net position, 3) statements of cash flows, 4) notes to the basic financial statements, and 5) required supplementary information. The Board also provides certain supplemental information which is presented for additional analysis and is not a required part of the basic financial statements.

The **statements of net position** present information on all of the Board's (a) assets and deferred outflows of resources, and (b) liabilities and deferred inflows of resources, with the difference between the two reported as **net position**. "Deferred outflows of resources" is defined as consumption of net assets that is applicable to a future reporting period rather than the current reporting period. "Deferred inflows of resources" is defined as an acquisition of net assets that is applicable to a future reporting period rather than the current reporting period. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Board is improving or declining.

The **statements of revenues, expenses, and changes in net position** present information showing how the Board's net position changed during the years presented. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. This is known as the accrual basis of accounting. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in the future (e.g., unbilled water revenue and earned but unused paid time off) or that may have occurred in the past (e.g., amortization of debt premiums or discount and prepaid contributed capital). This statement measures the financial outcomes of the Board's activities and can be used to determine whether the Board has successfully recovered all its economic costs through its water rates, capital contributions, and other charges.

The **statements of cash flows** report cash receipts, cash payments, and net changes in cash resulting from operating activities, capital and related financing activities, and investing activities for the years presented.

The **notes to the basic financial statements** provide additional information that is essential to a full understanding of the data provided in the basic financial statements, such as the Board's accounting policies, significant account balances and activities, material risks, obligations, commitments, contingencies and subsequent events, if any.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

**Required supplementary information** provides the detail in support of the changes in the net pension liability and information pertaining to the Board's actuarially determined contributions to the pension plan and other post-employment benefits (OPEB).

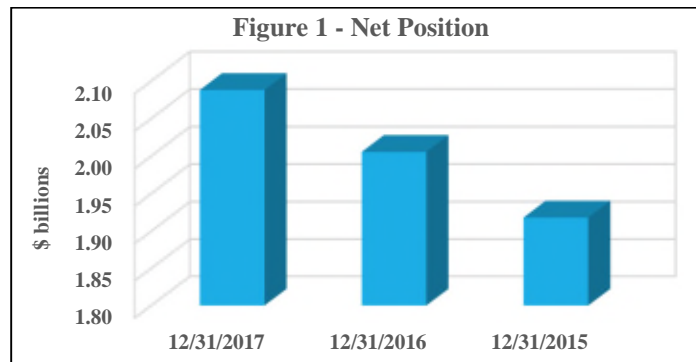
**Supplemental information** provides details of the Board's bonded debt.

**FINANCIAL ANALYSIS**

In 2016, the Board re-implemented the financial system and reconfigured the chart of accounts to align with business functions to improve financial reporting and management. The restructure of the accounts resulted in reclassifications within the financial statements and variations in certain comparative data.

**NET POSITION**

As discussed above, net position may serve over time as a useful indicator of the Board's financial position. The Board's net position was \$2.1 billion at December 31, 2017, an increase of \$83.1 million, or 4%, from December 31, 2016. The Board's net position was \$2.0 billion at December 31, 2016, an increase of \$87.4 million, or 5%, from December 31, 2015 (see Figures 1 and 2 and Table 1).



**Table 1 - Condensed Statements of Net Position**

(amounts expressed in thousands)

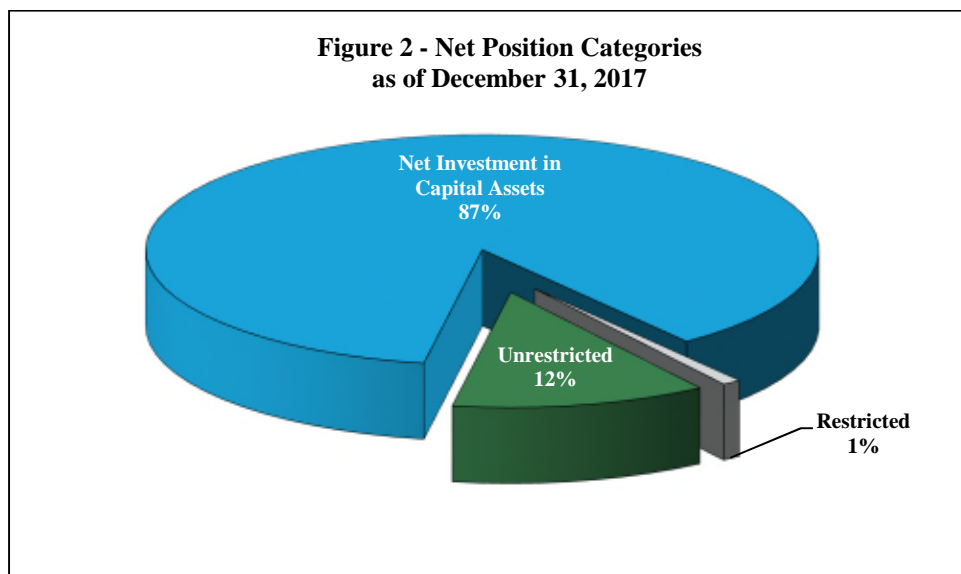
	As of December 31,			2017 - 2016		2016 - 2015	
	2017	2016	2015	Increase (Decrease)	%	Increase (Decrease)	%
Current and other assets	\$ 499,298	\$ 333,653	\$ 285,587	\$ 165,645	50%	\$ 48,066	17%
Capital assets, net	<b>2,347,894</b>	2,244,862	2,146,900	103,032	5	97,962	5
Total assets	<b>2,847,192</b>	2,578,515	2,432,487	268,677	10	146,028	6
Deferred outflows of resources	<b>41,877</b>	41,109	20,295	768	2	20,814	103
Total assets and deferred outflows	<b>2,889,069</b>	2,619,624	2,452,782	269,445	10	166,842	7
Current liabilities	<b>80,190</b>	76,467	57,181	3,723	5	19,286	34
Noncurrent liabilities	<b>717,491</b>	537,710	467,905	179,781	33	69,805	15
Total liabilities	<b>797,681</b>	614,177	525,086	183,504	30	89,091	17
Deferred inflows of resources	<b>2,833</b>	-	9,666	2,833	-	(9,666)	(100)
Total liabilities and deferred outflows	<b>800,514</b>	614,177	534,752	186,337	30	79,425	15
<u>Net position:</u>							
Net investment in capital assets	<b>1,814,177</b>	1,788,250	1,735,020	25,927	1	53,230	3
Restricted	<b>13,143</b>	14,505	12,047	(1,362)	(9)	2,458	20
Unrestricted	<b>261,235</b>	202,692	170,963	58,543	29	31,729	19
Total net position	<b>\$ 2,088,555</b>	\$ 2,005,447	\$ 1,918,030	\$ 83,108	4%	\$ 87,417	5%

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

The largest portion of the Board's net position reflects its investment in capital assets; less any related debt used to acquire those assets. The Board uses these capital assets to provide water; consequently, these assets are not available for future spending. Although the Board's investment in its capital assets is reported net of related debt, the resources to repay this debt must be provided from other sources, since the capital assets themselves are not intended to be liquidated to repay these liabilities.

A small portion of the Board's net position represents resources that are subject to external restrictions on how they may be used. The Board's 2017, 2016, and 2015 restricted net positions consisted of debt service reserve and debt reserve funds for revenue bonds. In 2017 and 2016, amounts were also restricted for grants supporting the Colorado River System Conservation Pilot Program.

The remaining balance of the Board's net position represents unrestricted net position and may be used to meet the Board's ongoing obligations to creditors.



The Board's increase in net position during 2017 of \$83.1 million, or 4%, indicates an improved financial position.

Other changes in the statements of net position were as follows:

- **CURRENT AND OTHER ASSETS** in 2017 increased \$165.6 million, or 50% from 2016. They increased \$48.1 million, or 17% between 2016 and 2015 (see Table 1). The increase in 2017 was primarily due to an increase in investments from 2017 bond issuance proceeds reimbursing a portion of 2016 and 2017 capital expenditures, and amounts restricted for capital projects from that issuance. The increase in 2016 was primarily due to an increase in investments from the 2016 bond issuance funds reimbursing 2015 capital project costs and the related increase in restricted investments from that issuance, and funds being held for the Walton Family Foundation grant.
- **CAPITAL ASSETS, NET** in 2017 increased \$103.0 million, or 5% from 2016. They increased \$98.0 million, or 5% between 2016 and 2015. The increase in both years was due to additions, offset by increased accumulated depreciation and asset retirements. See Table 8 for current year additions.
- **DEFERRED OUTFLOWS OF RESOURCES** increased \$0.8 million, or 2% in 2017 were a result of pension related economic/demographic losses, changes in the pension plan assumptions, net investment losses associated with pension plan investments, and contributions after the measurement date, and the amortization of the deferred loss on refunding into interest expense. They increased \$20.8 million, or 103% in 2016. \$2.6 million of the



**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

increase in 2016 was a result of the 2016B refunding and \$18.2 million was due to the change in calculation of the net pension liability and the amortization of the deferred amount on refunding as a component of interest expense.

- **CURRENT LIABILITIES** in 2017 increased \$3.7 million, or 5%. They increased \$19.3 million, or 34% between 2016 and 2015. The increase in 2017 was a result of various factors such as an increase in accruals for project work done during December and an increase in accrued interest due to the 2017 debt issuance. This increase was offset by a decrease in the payroll and other benefits accrual due to a higher accrual in 2016 for the paid time off (PTO) payout conversion. The increase in 2016 was primarily a result of an increase in construction contracts accrual, increased accounts payable accruals, and an increase in the payroll and other benefits accrual due to the paid time off (PTO) conversion payout scheduled for 2017.
- **NONCURRENT LIABILITIES** in 2017 increased \$179.8 million, or 33% from 2016. They increased \$69.8 million, or 15% between 2016 and 2015. The increase in 2017 was primarily the result of the issuance of Series 2017A and 2017B bond issuance and customer advances for construction, offset by the decrease in the pension liability due to changes in plan assumptions and investment experience. The increase in 2016 was primarily the result of the Series 2016A and 2016B bond issuance and the recalculation of the pension liability incorporating changes in plan assumptions and investment experience, offset by the Series 2007A refunding and payment of the line of credit.
- **DEFERRED INFLOWS OF RESOURCES** increased \$2.8 million in 2017 due to net investment gains associated with differences between the expected and actual earnings on pension plan investments used in the calculation of the net pension liability. They decreased \$9.7 million, or 100% in 2016 as a result of pension related investment losses from differences between actual and expected plan earnings and the amortization of pension investment gains or losses as a component of pension expense.

**CHANGE IN NET POSITION**

While the statements of net position display the Board's assets, liabilities and net position at year-end, the statements of revenues, expenses, and changes in net position provide information on the source of the change in net position during the year. Net position increased \$83.1 million in 2017 consisting of income before capital contributions of \$25.8 million and capital contributions of \$57.3 million. Net position increased \$87.4 million in 2016 consisting of income before capital contributions of \$26.3 million and capital contributions of \$61.1 million (see Table 2).

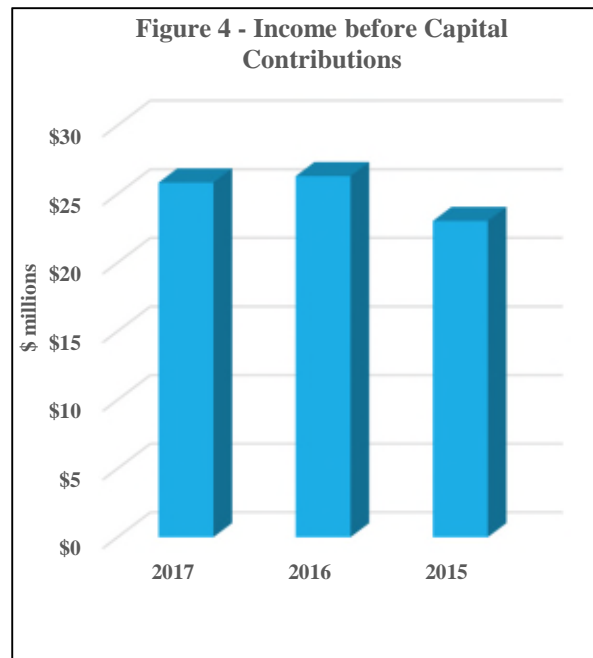
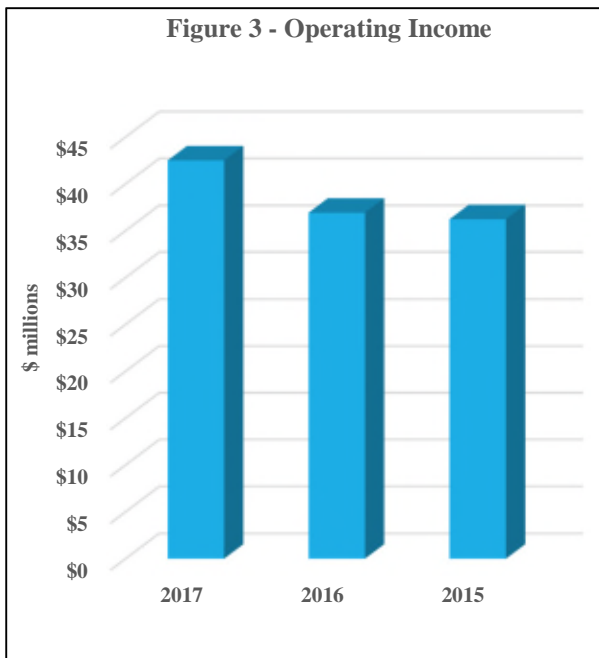
**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

**Table 2 - Condensed Statements of Revenues, Expenses, and Changes in Net Position**  
(amounts expressed in thousands)

	Years Ended December 31,			2017 - 2016		2016 - 2015	
	2017	2016	2015	Increase (Decrease)	%	Increase (Decrease)	%
				Change		Change	
Operating revenues	\$ 298,505	\$ 284,454	\$ 252,060	\$ 14,051	5%	\$ 32,394	13%
Nonoperating revenues	10,136	9,029	7,074	1,107	12	1,955	28
<b>Total revenues</b>	<b>308,641</b>	<b>293,483</b>	<b>259,134</b>	<b>15,158</b>	<b>5</b>	<b>34,349</b>	<b>13</b>
Operating expenses	255,989	247,520	215,825	8,469	3	31,695	15
Nonoperating expenses	26,811	19,655	20,268	7,156	36	(613)	(3)
<b>Total expenses</b>	<b>282,800</b>	<b>267,175</b>	<b>236,093</b>	<b>15,625</b>	<b>6</b>	<b>31,082</b>	<b>13</b>
Income before capital contributions	25,841	26,308	23,041	(467)	(2)	3,267	14
Capital contributions	57,267	61,109	69,365	(3,842)	(6)	(8,256)	(12)
Increase in net position	83,108	87,417	92,406	(4,309)	(5)	(4,989)	(5)
Beginning net position	2,005,447	1,918,030	1,825,624	87,417	5	92,406	5
Ending net position	<b>\$ 2,088,555</b>	<b>\$ 2,005,447</b>	<b>\$ 1,918,030</b>	<b>\$ 83,108</b>	<b>4%</b>	<b>\$ 87,417</b>	<b>5%</b>

There was *operating income* (operating revenues less operating expenses—not reflected in Table 2, see *Statements of Revenues, Expenses, and Changes in Net Position*) of \$42.5 million in 2017, compared to \$36.9 million in 2016 and \$36.2 million in 2015 (see Figure 3).

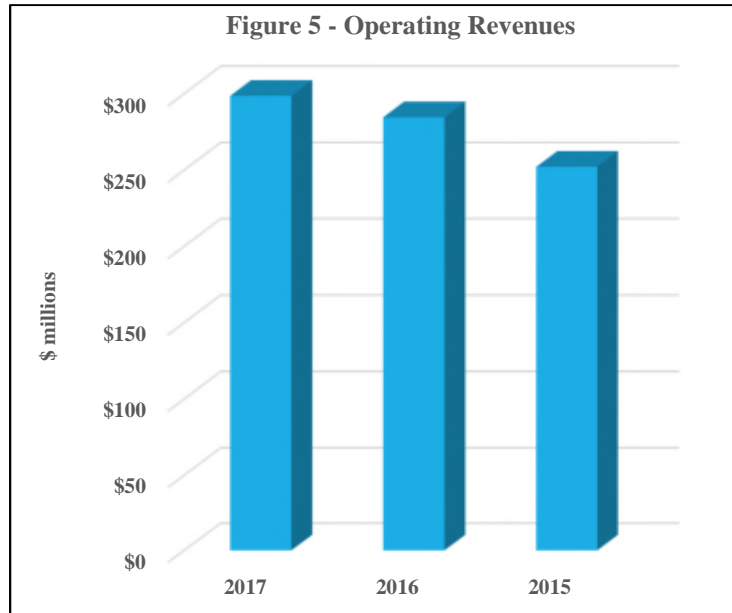
There was *income before capital contributions* of \$25.8 million in 2017 compared to \$26.3 million in 2016 and \$23.0 million in 2015 (see Figure 4).



**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016**

Specifically, major changes in the statements of revenues, expenses, and changes in net position were as follows:

- **OPERATING REVENUES** in 2017 increased \$14.1 million, or 5% from 2016. They increased \$32.4 million, or 13% between 2016 and 2015 (see Figure 5 and Table 3).



**Table 3 - Operating Revenues**  
(amounts expressed in thousands)

	Years Ended December 31,			2017 - 2016		2016 - 2015	
	2017	2016	2015	Increase (Decrease)	% Change	Increase (Decrease)	% Change
Water:							
Water sales	\$ 286,139	\$ 273,238	\$ 241,836	\$ 12,901	5%	\$ 31,402	13%
Power generation and other:							
Power sales	4,499	4,009	3,606	490	12	403	11
Special assessments	7,052	6,844	3,839	208	3	3,005	78
Other	815	363	2,779	452	125	(2,416)	(87)
	<u>12,366</u>	<u>11,216</u>	<u>10,224</u>	<u>1,150</u>	<u>10</u>	<u>992</u>	<u>10</u>
Total operating revenues	<u>\$ 298,505</u>	<u>\$ 284,454</u>	<u>\$ 252,060</u>	<u>\$ 14,051</u>	<u>5%</u>	<u>\$ 32,394</u>	<u>13%</u>

**Water sales** in 2017 increased due to a rate increase effective April 1, 2017, designed to increase overall system water rate revenue by 3.0% as well as an increase in water sold (72.1 billion gallons sold in 2017 compared to 71.7 billion gallons sold in 2016). Changes in water consumption from year to year are generally directly related to changes in temperature, and inversely related to changes in precipitation, except for mandatory drought restrictions. Longer term changes in consumption are the result of changes in conservation habits on the part of consumers and changes in the customer base.

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

Water sales in 2016 increased due to a rate increase effective April 1, 2016, designed to increase overall system water rate revenue by 3.8% as well as an increase in the volume of water sold (71.7 billion gallons sold in 2016 compared to 65.6 billion gallons sold in 2015).

**Power Sales** consist of sales of electricity to Xcel Energy and Tri-State Generation and Transmission Association from seven power generating facilities: Dillon, Foothills, Gross, Hillcrest, Roberts Tunnel, Strontia Springs, and Williams Fork. Because power is generated by use of water turbines, differences in power sales from year to year are caused primarily by increases or decreases in water flows due to weather conditions or interruptions of power generating operations for repairs and maintenance.

**Special assessments** consist primarily of delinquent bill charges, hydrant meter revenue, turn-off/turn-on charges, and charges for water violations and exemption permits. Differences from year to year are caused by increases or decreases in one or more of these components.

**Other** consists of refunds, project reimbursements, and miscellaneous fees.

- **NONOPERATING REVENUES** in 2017 increased \$1.1 million, or 12% from 2016. They increased \$2.0 million, or 28% between 2016 and 2015 (see Table 4).

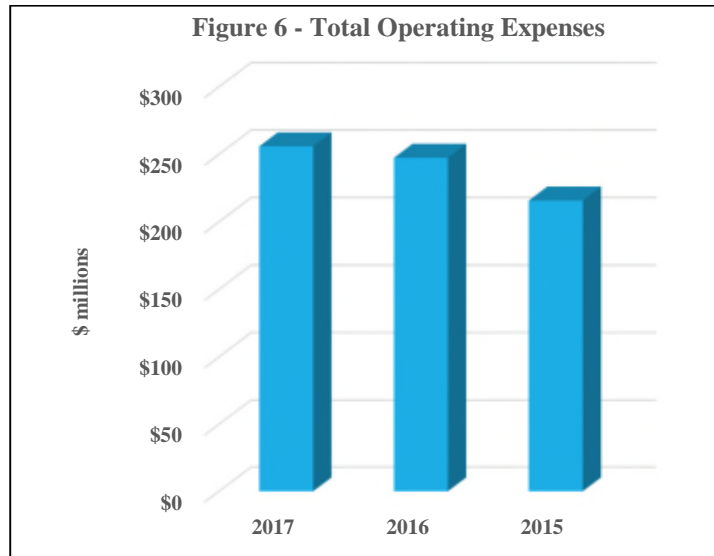
	Years Ended December 31,			2017 - 2016		2016 - 2015	
	2017	2016	2015	Increase (Decrease)	%	Increase (Decrease)	%
Investment income	\$ 2,140	\$ 1,603	\$ 1,479	\$ 537	33%	\$ 124	8%
Other nonoperating income	7,996	7,426	5,595	570	8	1,831	33
Total nonoperating revenues	<u>\$ 10,136</u>	<u>\$ 9,029</u>	<u>\$ 7,074</u>	<u>\$ 1,107</u>	<u>12%</u>	<u>\$ 1,955</u>	<u>28%</u>

**Investment income** changes from year to year are due to a combination of changes in interest rates earned on assets, changes in fair market values of financial assets, and changes in average investment balances.

**Other nonoperating income** varied from year to year primarily due to an increase in ditch billing and expense reimbursements in 2017, offset by a decrease in external grant funds due to higher Federal Emergency Management Agency (FEMA) grant income received in 2016.

- **OPERATING EXPENSES** in 2017 increased \$8.5 million, or 3% from 2016. They increased \$31.7 million, or 15% between 2016 and 2015 (see Figures 6 and Table 5).

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016



**Table 5 - Operating Expenses by Category**

(amounts expressed in thousands)

	Years Ended December 31,			2017 - 2016		2016 - 2015	
	2017	2016	2015	Increase (Decrease)	% Change	Increase (Decrease)	% Change
	SOS, Treatment, T&D	\$ 84,725	\$ 82,418	\$ 75,972	\$ 2,307	3%	\$ 6,446
General and administrative	97,917	103,380	81,994	(5,463)	(5)	21,386	26
Customer service	10,999	11,370	9,962	(371)	(3)	1,408	14
Depreciation and amortization	62,348	50,352	47,897	11,996	24	2,455	5
<b>Total operating expenses</b>	<b>\$ 255,989</b>	<b>\$ 247,520</b>	<b>\$ 215,825</b>	<b>\$ 8,469</b>	<b>3%</b>	<b>\$ 31,695</b>	<b>15%</b>

Major changes to operating expenses were as follows:

**2017**

During 2017 the Board's fixed assets system module was reimplemented. During this process, management evaluated the useful lives of assets and re-aligned them by classification. The result of this was additional depreciation expense in the current year. Operating expense increases also stemmed from operating projects such as the Denver Parks Irrigation project and the Cheesman Hydro Line Leak repair project, as well as an increase in main and service line maintenance and repair, including the lead service line program. Increases in operating expenses were offset by reductions in other operational expenses such as temporary employees, professional services, chemicals used, as well as payments made in 2016 associated with the 2016 compensation study and prepaid capacity under the WISE agreement.

**2016**

Operating expenses increased in 2016 as compared to 2015. The increase was primarily due to operating costs associated with several large projects including flood repairs from the 2013 flood, cathodic protection expenses, the Aquifer Storage and Recovery Pilot, the reimplemention of the financial system, the Integrated Resource Plan (IRP), and costs associated with pollution remediation identified in the Operations Complex Redevelopment project. Operating expenses were also higher than 2015 because of a higher pension expense and the compensation study.

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

- **NONOPERATING EXPENSES** in 2017 increased \$7.2 million, or 36% from 2016. They decreased \$0.6 million, or 3% between 2016 and 2015 (see Table 6).

<b>Table 6 - Nonoperating Expenses</b>								
(amounts expressed in thousands)								
	Years Ended December 31,			2017 - 2016		2016 - 2015		
	2017	2016	2015	Increase (Decrease)	%	Increase (Decrease)	%	
Interest expense	\$ 12,711	\$ 11,446	\$ 13,049	\$ 1,265	11%	\$ (1,603)	(12)%	
Loss on disposition of capital assets	11,443	6,348	4,720	5,095	80	1,628	34	
Other nonoperating expense	2,657	1,861	2,499	796	43	(638)	(26)	
Total nonoperating expenses	<u>\$ 26,811</u>	<u>\$ 19,655</u>	<u>\$ 20,268</u>	<u>\$ 7,156</u>	<u>36%</u>	<u>\$ (613)</u>	<u>(3)%</u>	

*Interest expense* changes from year to year are due to a combination of differences in the amount of debt, interest rates paid on the debt, and interest expense capitalized for construction projects. When interest is capitalized, the interest is added to the cost of the project and deducted from interest expense.

*Loss on disposition of capital assets* in 2017 was primarily due to assets disposed of as part of the Operations Complex Redevelopment (OCR) project, abandoned yard piping at Moffat treatment plant, and the data center impairment. The loss in 2016 was primarily due to fleet equipment sold, write-offs of assets associated with the OCR project, and assets previously recorded in construction work in progress deemed to be not capital.

*Other nonoperating expense* increased \$0.8 million, or 43% in 2017 primarily as a result of an increase in professional services related to the issuance of debt and expenses related to the Colorado River System Conservation Pilot Project. It decreased \$0.6 million, or 26% in 2016 primarily as a result of the reallocation of indirect costs between operating and nonoperating expenses offset by the write-off of a prepaid long-term disability asset maintained under a self-insured plan that was sold to Unum.

- **CAPITAL CONTRIBUTIONS** in 2017 decreased \$3.8 million, or 6% from 2016. They decreased \$8.3 million, or 12% between 2016 and 2015 (see Table 7).

<b>Table 7 - Capital Contributions</b>								
(amounts expressed in thousands)								
	Years Ended December 31,			2017 - 2016		2016 - 2015		
	2017	2016	2015	Increase (Decrease)	%	Increase (Decrease)	%	
Contributions in aid of construction	\$ 14,781	\$ 22,147	\$ 33,256	\$ (7,366)	(33)%	\$ (11,109)	(33)%	
System development charges	42,486	38,962	36,109	3,524	9	2,853	8	
Total capital contributions	<u>\$ 57,267</u>	<u>\$ 61,109</u>	<u>\$ 69,365</u>	<u>\$ (3,842)</u>	<u>(6)%</u>	<u>\$ (8,256)</u>	<u>(12)%</u>	

*Contributions in aid of construction* represent facilities, or cash payments for facilities, conveyed to the distribution system from property owners, governmental agencies, and customers who receive benefit from such facilities. Normally, differences from year to year are caused by the general level of construction activity in the Denver metropolitan area, and are considered 'earned' by the percentage of completion of the projects.

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT’S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

*System development charges* (“SDC”) represent fees charged to customers to connect to the water system. Normally, differences from year to year are also caused by the general level of construction activity in the Denver metropolitan area.

**CAPITAL ASSET ACTIVITY**

The Board’s capital assets at December 31, 2017 and 2016 amounted to \$2.3 billion and \$2.2 billion, net of accumulated depreciation and amortization, respectively. Capital asset additions in 2017 and 2016 were \$182.9 million and \$152.5 million, respectively, an increase of \$30.4 million, or 20%. Amounts shown below represent total additions including amounts associated with completed projects transferred from construction in progress (CIP). Major projects were as follows (see Table 8):

<b>Table 8 - Capital Additions</b>	
Year Ended December 31, 2017	
(amounts expressed in thousands)	
Operations Complex Redevelopment Project	\$ 40,752
Distribution Mains and Hydrants	33,028
Downstream Reservoirs	29,851
Hillcrest Pump Stations	28,149
Treated Water Conduits	14,599
Vehicles and Heavy Equipment	6,406
Ashland Pump Station	6,282
Antero Reservoir	3,621
Moffat Treatment Plant	3,087
Gross Reservoir	2,987
Highlands Pump Station	2,570
Radio Systems	1,771
South Boulder Diversion Dam	1,259
Foothills Treatment Plant	1,082
Information Technology Capital Projects	1,006
Ralston Dam	915
Dillon Hydro	875
Chatfield Pump Station	827
Marston Treatment Plant	775
Other	3,038
<b>Total</b>	<b>\$ 182,880</b>

Information on the Board’s capital assets can be found in Note 4 to the basic financial statements.

**LONG-TERM DEBT ACTIVITY**

The Board issued the Series 2017A Master Resolution Water Revenue Green Bonds and the 2017B Master Resolution Water Revenue Bonds on May 23, 2017, in an aggregate principal amount of \$142.7 and \$41.8 million, respectively. The proceeds from the sale of the Series 2017A are being used to finance the redevelopment of Denver Water’s main operating and administrative complex (OCR). The bonds were designated green because the project was designed with environmentally beneficial features including, but not all inclusive, constructing to LEED® (Leadership in Energy & Environmental Design) standards, incorporating “One Water” concepts, and recycling of construction and demolition debris. The Series 2017B Master Resolution Water Bond Proceeds were used to finance a portion of other additions and improvements to the water system operated by the Board.

In 2016, the Board issued the Master Resolution Water Revenue Bonds Series 2016A and Series 2016B with principal amounts of \$94.8 million and \$63.5 million, respectively. After the payoff of the line of credit, the remaining proceeds from the Series 2016A bonds were used to fund capital improvements to the water works system. Proceeds from the

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
December 31, 2017 and 2016

Series 2016B bonds were placed in escrow with U.S. Bank, N.A. to advance refund \$66.2 million in principal of the Master Resolution Water Revenue Bonds Series 2007A issue and to achieve a present value savings.

Information on the Board's long-term debt can be found in Notes 6, 7, and 9 to the basic financial statements and Exhibits II-A through II-D of the supplemental financial information.

**REQUESTS FOR INFORMATION**

This financial report is designed to provide a general overview of the Board's finances for all those with an interest in the Board's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to:

Chief Finance Officer  
Denver Water  
1600 W. 12<sup>th</sup> Ave.  
Denver, CO 80204-3412



**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Statements of Net Position  
December 31, 2017 and 2016  
(Amounts expressed in thousands)

<u>ASSETS</u>	<u>2017</u>	<u>2016</u>
<b>CURRENT ASSETS:</b>		
Cash	\$ 6,898	\$ 21,277
Short-term investments, at fair value, including		
accrued interest	171,139	232,590
Restricted investments - capital projects, debt service, & other	72,880	14,505
Accounts receivable	26,210	21,261
Materials and supplies inventory, at weighted average cost	5,099	5,668
Prepaid expenses	513	456
	<hr/>	<hr/>
Total current assets	282,739	295,757
<b>NONCURRENT ASSETS:</b>		
Capital assets:		
Capital depreciable	2,746,758	2,593,735
Capital non-depreciable	200,261	204,893
	<hr/>	<hr/>
	2,947,019	2,798,628
Less accumulated depreciation and amortization	(895,482)	(844,614)
	<hr/>	<hr/>
	2,051,537	1,954,014
Utility plant under capital lease, less accumulated		
amortization of \$12,380 and \$11,822, respectively	30,600	31,158
Construction in progress	265,757	259,690
Net capital assets	<hr/>	<hr/>
	2,347,894	2,244,862
Other noncurrent assets:		
Long-term investments (\$47,629 restricted for capital projects)	198,462	19,022
Prepaid expenses and other assets	5,600	4,684
Long-term receivable	12,497	14,190
Total other noncurrent assets	<hr/>	<hr/>
	216,559	37,896
Total noncurrent assets	<hr/>	<hr/>
	2,564,453	2,282,758
Total assets	<hr/>	<hr/>
	2,847,192	2,578,515
 <u>DEFERRED OUTFLOWS OF RESOURCES</u>		
Deferred amount on refunding	6,431	6,941
Pension-related deferred outflows of resources	35,446	34,168
Total deferred outflows of resources	<hr/>	<hr/>
	41,877	41,109
Total assets and deferred outflow of resources	<hr/>	<hr/>
	2,889,069	2,619,624

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Statements of Net Position

December 31, 2017 and 2016

(Amounts expressed in thousands)

<u>LIABILITIES</u>	<u>2017</u>	<u>2016</u>
<b>CURRENT LIABILITIES:</b>		
Accounts payable	\$ 30,299	\$ 20,313
Payroll and other employee benefits	11,796	17,344
Construction contracts (including retainages of \$8,300 and \$5,224 respectively)	10,493	13,951
Accrued interest on long-term debt	4,867	2,620
Unearned revenue	226	226
Current portion of revenue bonds payable	19,925	19,595
Current portion of obligation under capital lease	2,584	2,418
	<hr/>	<hr/>
Total current liabilities	80,190	76,467
	<hr/>	<hr/>
<b>NONCURRENT LIABILITIES:</b>		
Revenue bonds payable, net	616,155	434,743
Obligation under capital lease	4,213	6,797
Customer advances for construction	9,878	3,402
Compensated absences	4,310	3,463
Net pension liability	67,301	72,856
Other postemployment benefits	9,196	10,149
Waste disposal closure and postclosure care	6,438	6,300
	<hr/>	<hr/>
Total noncurrent liabilities	717,491	537,710
	<hr/>	<hr/>
Total liabilities	797,681	614,177
	<hr/>	<hr/>
<u>DEFERRED INFLOWS OF RESOURCES</u>		
Pension-related deferred inflows of resources	2,833	-
Total deferred inflows of resources	2,833	-
	<hr/>	<hr/>
Total liabilities and deferred inflows of resources	800,514	614,177
	<hr/>	<hr/>
<u>NET POSITION</u>		
Net investment in capital assets	1,814,177	1,788,250
Restricted for debt service	12,743	14,005
Other Restricted	400	500
Unrestricted	261,235	202,692
	<hr/>	<hr/>
Total net position	<u>\$ 2,088,555</u>	<u>\$ 2,005,447</u>

See accompanying notes to basic financial statements.

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
Statements of Revenues, Expenses, and Changes in Net Position  
Years Ended December 31, 2017 and 2016  
(Amounts expressed in thousands)

	2017	2016
<b>OPERATING REVENUES:</b>		
Water	\$ 286,139	\$ 273,238
Power generation and other	12,366	11,216
Total operating revenues	298,505	284,454
<b>OPERATING EXPENSES:</b>		
Source of supply, pumping, treatment and distribution	84,725	82,418
General and administrative	97,917	103,380
Customer service	10,999	11,370
Depreciation and amortization	62,348	50,352
Total operating expenses	255,989	247,520
<b>OPERATING INCOME</b>	42,516	36,934
<b>NONOPERATING REVENUES (EXPENSES):</b>		
Investment income	2,140	1,603
Interest expense, less capitalized interest of \$7,192 and \$4,193, respectively	(12,711)	(11,446)
Loss on disposition of capital assets	(11,443)	(6,348)
Other income	7,996	7,426
Other expense	(2,657)	(1,861)
Total nonoperating expenses, net	(16,675)	(10,626)
<b>INCOME BEFORE CAPITAL CONTRIBUTIONS</b>	25,841	26,308
<b>CAPITAL CONTRIBUTIONS:</b>		
Contributions in aid of construction	14,781	22,147
System development charges	42,486	38,962
Total capital contributions	57,267	61,109
<b>INCREASE IN NET POSITION</b>	83,108	87,417
<b>NET POSITION:</b>		
Beginning of year	2,005,447	1,918,030
End of year	\$ 2,088,555	\$ 2,005,447

See accompanying notes to basic financial statements.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Statements of Cash Flows

Years Ended December 31, 2017 and 2016

(Amounts expressed in thousands)

	2017	2016
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Receipts from customers	\$ 295,249	\$285,261
Payments to employees	(126,423)	(120,539)
Payments to suppliers	(67,333)	(68,298)
Other receipts	7,996	7,401
Other payments	(1,707)	(5,869)
Net cash provided by operating activities	107,782	97,956
<b>CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:</b>		
Proceeds from contributions in aid of construction ("CIAC") and prepaid CIAC	9,240	2,335
Proceeds from system development charges ("SDC") and prepaid SDC	42,486	38,752
Proceeds from sales of capital assets	5,524	2,143
Proceeds from long-term revenue bonds, plus premium, less issuance costs	205,447	70,363
Acquisition of capital assets	(166,948)	(124,842)
Principal payments for long-term bonds	(19,595)	(21,565)
Principal payments for capital lease obligations	(2,418)	(2,263)
Interest paid (includes capitalized interest of \$7,192 and \$4,193, respectively)	(21,673)	(16,248)
Net cash provided (used) by capital and related financing activities	52,063	(51,325)
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Proceeds from sales and maturities of investments	362,785	250,540
Interest received from investments	3,314	1,373
Purchases of investments	(540,323)	(298,757)
Net cash used for investing activities	(174,224)	(46,844)
<b>NET DECREASE IN CASH</b>	(14,379)	(213)
<b>CASH, AT BEGINNING OF YEAR</b>	21,277	21,490
<b>CASH, AT END OF YEAR</b>	\$ 6,898	\$ 21,277

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Statements of Cash Flows  
Years Ended December 31, 2017 and 2016  
(Amounts expressed in thousands)

	2017	2016
<b>RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES:</b>		
Operating income	\$ 42,516	\$ 36,934
Adjustments to reconcile operating income to net cash provided by operating activities-		
Other revenues	7,996	7,426
Other expenses	(1,707)	(5,869)
Depreciation and amortization of capital assets	62,348	50,352
Change in assets and liabilities-		
Accounts receivable and long-term receivable	(3,256)	556
Materials and supplies inventory	388	88
Prepaid expenses - current	(57)	87
Prepaid expenses and other assets - noncurrent	(916)	(600)
Deferred outflows of resources - pension related	(1,278)	(18,189)
Accounts payable	9,986	8,377
Payroll and other employee benefits	(4,701)	2,213
Unearned revenue	-	226
Net pension liability	(5,555)	26,601
Other postemployment benefits	(953)	(650)
Waste disposal closure and postclosure care	138	70
Deferred inflows of resources - pension related	2,833	(9,666)
Net cash provided by operating activities	\$ 107,782	\$ 97,956
<b>NONCASH CAPITAL AND RELATED FINANCING ACTIVITIES:</b>		
Assets acquired through contributions in aid of construction	\$ 12,655	\$ 19,812
Assets acquired through system development charges	-	210
Decrease in fair value of investments	(1,835)	(34)
Loss on disposition of capital assets	(11,443)	(6,348)
Amortization of deferred loss on refunding	(510)	2,625

See accompanying notes to basic financial statements.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Notes to Basic Financial Statements  
December 31, 2017 and 2016

Note

- 1 Summary of Significant Accounting Policies:
  - A. Reporting Entity
  - B. Measurement Focus and Basis of Accounting
  - C. Accounting Standards
  - D. Use of Estimates
  - E. Restricted Net Position and Flow Assumption for Restricted Net Position
  - F. Cash
  - G. Investments
  - H. Materials and Supplies Inventory
  - I. Capital Assets
  - J. Capital Contributions
  - K. Employee Compensated Absences
  - L. Pension Plan
  - M. Operating Revenues and Expenses
  - N. Rates and Fees
  - O. Financial System Reimplementation and Revised Chart of Accounts
  - P. Recently Issued Accounting Standards
  
- 2 Deposits and Investments
  
- 3 Accounts Receivable
  
- 4 Capital Assets
  
- 5 Risk Management
  
- 6 Notes and Bonds Payable
  
- 7 Leases
  
- 8 Waste Disposal Closure and Postclosure Care
  
- 9 Changes in Long-Term Liabilities
  
- 10 Pension Plan
  
- 11 Other Retirement Plans
  
- 12 Other Postemployment Benefits
  
- 13 Pollution Remediation Liability
  
- 14 Capital Contributions
  
- 15 Contingencies
  
- 16 Contract Commitments
  
- 17 Subsequent Events

(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Reporting Entity

The Board of Water Commissioners (the “Board”) was created under the Charter of the City and County of Denver, Colorado (the “City”) as an independent, nonpolitical board. The Board has complete charge and control of a water works system and plant, which supplies water to customers located within the City and to entities serving other customers located in certain outlying areas in the Denver metropolitan area. Also, as a byproduct of water operations, the Board operates seven hydropower plants which generate power for sale to Xcel Energy and Tri-State Generation and Transmission Association, for internal consumption, and for repayment to the U.S. Department of Energy for power interference.

The Board has a five-member governing body, which is appointed by the Mayor of the City for overlapping six-year terms. In accordance with Governmental Accounting Standards Board (“GASB”) Statements No. 14, *The Financial Reporting Entity*, No. 39, *Determining Whether Certain Organizations Are Component Units, an amendment of GASB Statement No. 14*, and No. 61, *The Financial Reporting Entity: Omnibus*, the Board is classified as a special-purpose “other stand-alone government.” A special-purpose other stand-alone government is defined as a legally separate governmental organization that (a) does not have a separately elected governing body and (b) does not meet the definition of a component unit because it does not have a financial benefit or burden relationship with a primary government.

The Board is a “related organization” in the City’s financial reporting entity. A related organization is defined as an organization for which a primary government is not financially accountable (because it does not impose its will or have a financial benefit or burden relationship) even though the primary government appoints a voting majority of the organization’s governing board.

The Board has no component units as defined in GASB Statements No. 14, 39, and 61.

B. 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. 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.

C. Accounting Standards

The Board applies all applicable pronouncements of the GASB.

D. Use of Estimates

The preparation of basic financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions. These estimates may affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the basic financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

E. Restricted Net Position and Flow Assumption for Restricted Net Position

Restricted net position consists of both the revenue bonds debt reserve fund, the revenue bonds debt service account, and amounts restricted under certain grant agreements included in cash and short-term investments. The revenue

bonds debt service account is used to pay principal and interest on the revenue bonds as they become due. The revenue bonds debt reserve fund is set aside to pay bondholders in the event that funds are not available at the time the debt payment is due. These restricted funds are used for their intended purpose before unrestricted funds.

F. Cash

The definition of cash, for purposes of the statements of cash flows, is cash on deposit in the Water Works Fund, cash in lock box, and cash on hand.

G. Investments

The Board's investments consist of money market investments (commercial paper and money market mutual funds), local government investment pools, U.S. Treasury, U.S. agency, commercial paper, and corporate notes and bonds. The money market investments and local government investment pools are measured at net asset value which is generally equivalent to fair value. U.S. Treasury, U.S. agency, commercial paper, and corporate notes and bonds investments are fair value based on quoted market prices (see Note 2, *Deposits and Investments*).

H. Materials and Supplies Inventory

Materials and supplies inventory is valued at weighted average cost, which approximates lower of cost or market.

I. 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.

Land and water rights are also 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 depreciable or amortizable asset classes as follows:

	<u>Years</u>
Building and building improvements	15-75
Fleet	7-15
Improvements (land)	25-80
Infrastructure	25-80
Machinery and equipment	5-75

Maintenance and repairs are charged to expense as incurred, whereas major betterments are capitalized and depreciated or amortized. At the time of retirement or disposition of depreciable property, the related cost and accumulated depreciation are removed from the accounts, and the resulting gain or loss is reflected in nonoperating revenues (expenses).

Interest during the construction period is capitalized on major construction projects.

J. Capital Contributions

Capital contributions consist of contributions in aid of construction ("CIAC") and system development charges ("SDC"). CIAC represent facilities, or cash payments for facilities, received from developers, property owners, governmental agencies, or customers who receive benefit from such facilities. SDC represent fees charged to



customers to connect to the water system. Contributions are recognized in the statements of revenues, expenses, and changes in net position, after nonoperating revenues (expenses), when earned. Assets acquired through CIAC are included in capital assets.

#### K. Employee Compensated Absences

The Board's policy is to accrue as an expense and liability employee compensated absences, including related payroll taxes. At the end of 2016, compensated absences were accrued at 100%, in preparation of the conversion to paid time off (PTO) in 2017.

#### L. Pension Plan

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Employees' Retirement Plan of the Denver Board of Water Commissioners (the "Plan") and additions to and/or deductions from the Plan's fiduciary net position have been determined on the same basis as they are reported by the Plan. For this purpose, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value. In 2016, the Board approved changes to the Plan that are effective January 1, 2018. These changes include two 'tiers' of benefit provisions, which depend on the employees' date of hire, as well as the inclusion of employee contributions to the Plan. As allowed by GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, the Board elected to report pension liability information based on a one-year lag. Because of this, the above referenced Plan changes will not impact the net pension liability depicted in the financial statements until 2019.

#### M. 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.

#### N. Rates and Fees

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

#### Consumption and Service Charges

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

On December 14, 2016, the Board approved a water rate increase, effective April 1, 2017. The rate increase is designed to increase overall total system water rate revenue by 3.0%.

On December 16, 2015, the Board approved a water rate increase and rate structure change, effective April 1, 2016. The rate increase is designed to increase overall total system water rate revenue by 3.8%. The rate structure change is designed to make water rate revenues more stable and better reflect modern demands.

#### System Development Charges ("SDC")

There was no SDC adjustment made in 2016 or 2017.

O. Financial System Reimplementation and Revised 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.

P. Recently Issued Accounting Standards

In 2015, the Board early implemented GASB Statement No. 72, *Fair Value Measurement and Application*, which was effective for the 2016 financial statements. Because the Board was already reporting investments at fair value, the primary effect of the implementation was additional note disclosures. See Note 2, Deposits and Investments.

GASB Statement No. 82, *Pension Issues, an amendment of GASB Statements No. 67, No. 68, and No.73*, was implemented in 2017 and is reflective in the Required Supplementary Information schedules relating to the Board’s pension.

(2) DEPOSITS AND INVESTMENTS

A. Cash Deposits with Financial Institutions

Custodial Credit Risk - Deposits

Custodial credit risk for deposits is the risk that in the event of a bank failure, the Board’s deposits may not be returned to it. All of the Board’s cash deposits are either insured by FDIC or covered by the Colorado Public Deposit Protection Act (“PDPA”) (C.R.S., 11-10.5-101). Under the PDPA, all deposits exceeding the amount insured by the FDIC are required to be fully collateralized at 102% of the deposits with specific approved securities identified in the act. Deposits collateralized under the PDPA are considered collateralized with securities held by the pledging financial institutions’ trust department or agent in the Board’s name. All of the deposits of the Board at December 31, 2017 and 2016 were either insured by FDIC or collateralized under the Colorado Public Depository Act and are therefore not exposed to custodial credit risk.

B. Investments

A reconciliation of cash and investments reported on the *Statements of Net Position* as of December 31, is as follows:

<b><u>Cash and Investments</u></b>		
(amounts expressed in thousands)		
	December 31,	
	2017	2016
Cash	\$ 6,898	\$ 21,277
Short-term investments, at fair value, including accrued interest	171,139	232,590
Restricted investments - debt service	17,380	14,005
Restricted investments - capital projects	55,100	-
Restricted investments - other	400	500
Long-term investments	150,833	19,022
Restricted investments - capital projects	47,629	-
Total investments	<u>442,481</u>	<u>266,117</u>
Total cash and investments	<u>\$ 449,379</u>	<u>\$ 287,394</u>

Colorado statutes and the City Charter authorize the Board to expend funds for the operation of the Board, including the purchase of investments. It is the policy of the Board to invest funds in priority order to preserve principal, provide

sufficient liquidity, and to obtain a market rate of return within the constraints of the Board's investment policy. Operational needs and prevailing market conditions affect the investment portfolio allocation at year-end. The following table identifies the investment types that are authorized by the Board's investment policy, as well as certain provisions of the investment policy that address interest rate risk, credit quality risk, and concentration of credit risk.

<b><u>Investments Authorized by the Board's Investment Policy</u></b>				
December 31, 2017 and 2016				
<u>Authorized Investment Type</u>	<u>Maximum Maturity</u>	<u>Minimum Issuer Credit Quality<sup>1</sup></u>	<u>Maximum in Portfolio<sup>2</sup></u>	<u>Maximum Investment One Issuer<sup>2</sup></u>
U.S. Treasury securities	5 years	Not applicable	No limit	No limit
U.S. agency securities	4 years	AA- / Aa3	50%	15%
Commercial paper	270 days	A-1 / P-1	25% <sup>3</sup>	5% <sup>4</sup>
Corporate fixed income securities	3 years	AA- / Aa3	25% <sup>3</sup>	5% <sup>4</sup>
Money market mutual funds	Not applicable	AAAm	25%	5%
Local government investment pools	Not applicable	AAAm	10%	5%
Certificates of deposit	180 days	AA- / Aa3	15%	10%
Bankers' acceptances	180 days	A-1 / P-1	25% <sup>3</sup>	5% <sup>4</sup>
Repurchase agreements	Overnight	AA- / Aa3	25%	25%
Municipal bonds	5 years	AA- / Aa3	15%	5%

<sup>1</sup> Investments must meet minimum credit quality at time of purchase. Investments that fall below minimum credit quality may be sold or held to maturity at the discretion of the Board. Ratings are S&P first and Moody's second.

<sup>2</sup> Calculated as a percentage of book value of the aggregate cash and investment portfolio at purchase.

<sup>3</sup> Maximum concentration in aggregate for commercial paper, corporate fixed income securities, and bankers' acceptances.

<sup>4</sup> Maximum concentration in a single issuer of commercial paper, corporate fixed income securities, and bankers' acceptances.

### Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Normally the longer the maturity of an investment the greater the sensitivity of its fair value to changes in market interest rates. The Board manages interest rate risk by purchasing investments with varying maturities, continuously investing a portion of the portfolio in readily available funds, limiting total investments maturing in more than 3 years to 25% of the portfolio and limiting the maximum maturity of investments by type of investment.

Investments with call features without make whole provisions increase the sensitivity of their fair values to increasing interest rates. The Board's portfolio may hold callable securities. At December 2017 and 2016, the Board owned callable securities with a fair value of \$0.0 million and \$3.0 million, respectively. The Board's callable securities are categorized in accordance with their final maturity dates in the following tables.

The Board's cash and investments, including accrued interest, at December 31, 2017 and 2016, and their maturities were as follows:

<b><u>Cash, Current and Long-Term Investments</u></b>					
December 31, 2017					
(amounts expressed in thousands)					
Investment Type	Percent of Investment Portfolio	Fair Value	Investment Maturities (in years)		
			1 or less	1 - 3	3 - 5
U.S. Treasury securities	41.6%	\$ 183,982	\$ 102,779	\$ 76,243	\$ 4,960
U.S. agency securities	20.1%	88,774	38,306	35,560	14,908
Commercial paper	1.4%	6,085	6,085	-	-
Corporate fixed income securities	17.2%	76,112	9,321	66,791	-
Money market funds	12.9%	57,262	57,262	-	-
Local government investment pools	6.8%	30,266	30,266	-	-
Total investments	<u>100.0%</u>	442,481	<u>\$ 244,019</u>	<u>\$ 178,594</u>	<u>\$ 19,868</u>
Cash		6,898			
Total cash and investments		<u>\$ 449,379</u>			

The Board's investment policy established maximum concentrations based on total cash, cash equivalents, and investments at the time of purchase. There is no requirement to sell investments if the concentration changes at a later date due to market factors.

<b><u>Cash, Current and Long-Term Investments</u></b>					
December 31, 2016					
(amounts expressed in thousands)					
Investment Type	Percent of Investment Portfolio	Fair Value	Investment Maturities (in years)		
			1 or less	1 - 3	3 - 5
U.S. Treasury securities	47.7%	\$ 126,946	\$ 122,921	\$ 4,025	\$ -
U.S. agency securities	28.0%	74,524	71,550	2,974 <sup>1</sup>	-
Commercial paper	3.8%	9,983	9,983	-	-
Corporate fixed income securities	7.0%	18,609	6,586	12,023	-
Money market funds	11.7%	31,051	31,051	-	-
Local government investment pools	1.9%	5,004	5,004	-	-
Total investments	<u>100.0%</u>	266,117	<u>\$ 247,095</u>	<u>\$ 19,022</u>	<u>\$ -</u>
Cash		21,277			
Total cash and investments		<u>\$ 287,394</u>			

<sup>1</sup> \$3.0 million in corporate fixed income securities are callable beginning in 2017.

The Board's investment policy established maximum concentrations based on total cash, cash equivalents, and investments at the time of purchase. There is no requirement to sell investments if the concentration changes at a later date due to market factors.

Credit Risk

Credit risk is the risk that the issuer of a debt security will not fulfill its obligations to the holder of the obligation. National rating agencies assess this risk and assign a credit quality rating for most investments. U.S. agency securities held in the portfolio are securities issued by government sponsored enterprises. These securities are not explicitly guaranteed by the federal government. Presented below are the lowest credit ratings at December 31, 2017 and 2016, for each investment type.

<b>Investment Ratings</b>							
December 31, 2017							
(amounts expressed in thousands)							
S&P/Moody's Ratings <sup>1</sup>	U.S. Treasury Securities	U.S. Agency Securities	Commercial Paper	Corporate Fixed Income Securities	Money Market Mutual Funds	Local Government Investment Pools	Total
AAA/Aaa	\$ -	\$ 25,467	\$ -	\$ 18,198	\$ -	\$ -	\$ 43,665
AAAm	-	-	-	-	57,262	30,266	\$ 87,528
A-1/P-1	-	-	6,085	-	-	-	\$ 6,085
AA/Aa	183,982	63,307	-	57,914	-	-	\$ 305,203
	<u>\$ 183,982</u>	<u>\$ 88,774</u>	<u>\$ 6,085</u>	<u>\$ 76,112</u>	<u>\$ 57,262</u>	<u>\$ 30,266</u>	<u>\$ 442,481</u>

<sup>1</sup> Actual credit ratings as of the year end for each investment type. For securities with split ratings the lowest rating is shown. Securities that fall below the minimum credit quality may be sold or held at the discretion of the Board.

<b>Investment Ratings</b>							
December 31, 2016							
(amounts expressed in thousands)							
S&P/Moody's Ratings <sup>1</sup>	U.S. Treasury Securities	U.S. Agency Securities	Commercial Paper	Corporate Fixed Income Securities	Money Market Mutual Funds	Local Government Investment Pools	Total
AAA/Aaa	\$ -	\$ 8,985	\$ -	\$ 5,188	\$ -	\$ -	\$ 14,173
AAAm	-	-	-	-	31,051	5,004	\$ 36,055
A-1/P-1	-	38,427	9,983	-	-	-	\$ 48,410
AA/Aa	126,946	27,112	-	13,421	-	-	\$ 167,479
	<u>\$ 126,946</u>	<u>\$ 74,524</u>	<u>\$ 9,983</u>	<u>\$ 18,609</u>	<u>\$ 31,051</u>	<u>\$ 5,004</u>	<u>\$ 266,117</u>

<sup>1</sup> Actual credit ratings as of the year end for each investment type. For securities with split ratings the lowest rating is shown. Securities that fall below the minimum credit quality may be sold or held at the discretion of the Board.

Concentration of Credit Risk

The Board's investments comply with the requirements of the investment policy. Specific limitations within the investment policy are displayed in the schedule titled *Investments Authorized by the Board's Investment Policy*. Generally accepted accounting principles require disclosure of certain investments in any one issuer that exceed five percent concentration of total investments. The following investments represent five percent or more of the Board's total investments at December 31, 2017 and 2016:

<b><u>Concentration of Credit Risk</u></b>		
(amounts expressed in thousands)		
Issuer	December 31,	
	2017	2016
	<u>Fair Value</u>	<u>Fair Value</u>
International Bank for Reconstructions (IBRD)	\$ 25,467	\$ -
Federal Home Loan Bank - (FHLB)	-	17,988
Federal Home Loan Mortgage Corporation - (FHLMC)	28,928	16,504
Federal National Mortgage Association - (FNMA)	-	19,001

**Fair Value**

The Board categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are valued using a matrix pricing technique. Matrix pricing involves using a selection of data points, such as quoted prices, or yield curves to calculate prices for separate financial instruments that can share characteristics similar to the data points; Level 3 inputs are significant unobservable inputs.

The Board has the following recurring fair value measurements as of December 31, 2017 and 2016:

<b><u>Investments Measured at Fair Value</u></b>				
December 31, 2017				
(amounts expressed in thousands)				
	12/31/2017	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Investments by fair value level:				
U.S. Treasury securities	\$ 183,982	\$ 183,982	\$ -	\$ -
U.S. agency securities	88,774	-	88,774	-
Commercial paper	6,085	-	6,085	-
Corporate fixed income securities	76,112	-	76,112	-
Total investments by fair value level	354,953	\$ 183,982	\$ 170,971	\$ -
Investments measured at net asset value (NAV):				
Local government investment pools	30,266			
Money market funds	57,262			
Total investments by NAV	87,528			
Total investments	\$ 442,481			

<b>Investments Measured at Fair Value</b>				
December 31, 2016				
(amounts expressed in thousands)				
	12/31/2016	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Investments by fair value level:				
U.S. Treasury securities	\$ 126,946	\$ 126,946	\$ -	\$ -
U.S. agency securities	74,524	-	74,524	-
Commercial paper	9,983	-	9,983	-
Corporate fixed income securities	18,609	-	18,609	-
Total investments by fair value level	<u>230,062</u>	<u>\$ 126,946</u>	<u>\$ 103,116</u>	<u>\$ -</u>
Investments measured at net asset value (NAV):				
Local government investment pools	5,004			
Money market funds	<u>31,051</u>			
Total investments by NAV	<u>36,055</u>			
Total investments	<u>\$ 266,117</u>			

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the following table:

<b>Investments Measured at NAV</b>				
December 31, 2017				
(amounts expressed in thousands)				
	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Local government investment pools	\$ 30,266	\$ -	Daily	same day
Money market funds	<u>57,262</u>	-	Daily	same day
	<u>\$ 87,528</u>	<u>\$ -</u>		

<b>Investments Measured at NAV</b>				
December 31, 2016				
(amounts expressed in thousands)				
	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Local government investment pools	\$ 5,004	\$ -	Daily	same day
Money market funds	<u>31,051</u>	-	Daily	same day
	<u>\$ 36,055</u>	<u>\$ -</u>		

The Colorado Local Government Liquid Asset Trust (COLOTRUST) (the Trust), is an investment vehicle established for local government entities in Colorado to pool surplus funds. The State Securities Commissioner administers and enforces all State statutes governing the Trust. The Trust operates similarly to a money market fund and each share is equal in value to \$1.00. The Trust offers shares in two portfolios, COLOTRUST PRIME and COLOTRUST PLUS+. As of December 31, 2016 and 2017, the Board was only invested in the COLOTRUST PLUS+ portfolio. Both portfolios may invest in U.S. Treasury securities and repurchase agreements collateralized by U.S. Treasury securities. COLOTRUST PLUS+ may also invest in certain obligations of U.S. government agencies, highest rated commercial paper, and any security allowed under CRS 24-75-601. A designated custodial bank serves as custodian for the Trust's portfolios pursuant to a custodian agreement. The custodian acts as safekeeping agent for the Trust's investment portfolios and provides services as the depository in connection with direct investments and withdrawals. The custodian's internal records segregate investments owned by the Trust. COLOTRUST is rated AAAM by Standard &

Poor's. There are no unfunded commitments, the redemption frequency is daily, and there is no redemption notice period.

The money market funds include four money market funds that invest in U.S. Treasury securities, federal instrumentality securities, and agency securities. Unitized money market mutual funds are reported at fair value based upon the net asset value of shares/units held at year end, provided by fund administrators. All investments contained in the mutual funds are valued in accordance with the authoritative guidance on fair value measurements and disclosures. Funds are available for withdrawal daily.

(3) ACCOUNTS RECEIVABLE

Current and long-term accounts receivable at December 31, 2017 and 2016 were as described below. Other receivables include receivables for contributions in aid of construction, system development charges, non-potable and hydrant water sales, and power sales. Long-term receivables represent financing arrangements with various suburban water districts for the sale of water. The Board has no allowance for uncollectible accounts as it relates to water sales since non-payment of receivables may result in discontinuation of service that attaches to the property location. An allowance for uncollectible accounts was established in 2016 to recognize the potential of uncollectible amounts in non-water sales receivables. The amounts below include an allowance for uncollectible accounts for 2017 and 2016 of approximately \$17,000 and \$150,000, respectively.

<b><u>Accounts Receivable</u></b>				
(amounts expressed in thousands)				
	December 31,			
	2017		2016	
<u>Total Accounts Receivable</u>				
<u>Current</u>				
Water sales	\$ 21,115	81%	\$ 16,783	79%
Other	5,095	19	4,478	21
<u>Total Current</u>	<u>\$ 26,210</u>	<u>100%</u>	<u>\$ 21,261</u>	<u>100%</u>
<u>Long-term</u>	<u>\$ 12,497</u>		<u>\$ 14,190</u>	
<u>From the City and County of Denver (included above)</u>				
<u>Current</u>				
Water sales	\$ 278		\$ 195	
Other	-		-	
<u>Total Current</u>	<u>278</u>		<u>195</u>	
<u>Long-term</u>	<u>-</u>		<u>-</u>	
<u>Total from City and County of Denver</u>	<u>\$ 278</u>		<u>\$ 195</u>	



(4) CAPITAL ASSETS

Capital asset activity for the years ended December 31, 2017 and 2016 were as follows:

<b>Capital Assets</b>						
Year Ended December 31, 2017						
(amounts expressed in thousands)						
	December 31, 2016	Additions	Transfers	Retirements & Sales	Asset Reclassifications	December 31, 2017
<b>Capital assets not being depreciated:</b>						
Land and land rights	\$ 99,108	\$ -	\$ 3,453	\$ (864)	\$ 28,092	\$ 129,789
Water rights and other	105,785	-	652	-	(35,965)	70,472
Construction in progress	259,690	170,826	(158,564)	(6,195)	-	265,757
Total capital assets not being depreciated	<u>464,583</u>	<u>170,826</u>	<u>(154,459)</u>	<u>(7,059)</u>	<u>(7,873)</u>	<u>466,018</u>
<b>Capital assets being depreciated:</b>						
Buildings and improvements	199,329	-	49,547	(10,044)	166,543	405,375
Improvements other than buildings	2,044,423	12,054	80,951	(5,925)	(159,823)	1,971,680
Machinery and equipment	392,963	-	23,961	(5,394)	1,153	412,683
Total capital assets being depreciated	<u>2,636,715</u>	<u>12,054</u>	<u>154,459</u>	<u>(21,363)</u>	<u>7,873</u>	<u>2,789,738</u>
<b>Less accumulated depreciation:</b>						
Buildings and improvements	(48,453)	(6,015)	-	4,249	(67,201)	(117,420)
Improvements other than buildings	(596,587)	(30,244)	-	2,113	61,473	(563,245)
Machinery and equipment	(211,396)	(26,089)	-	4,560	5,728	(227,197)
Total accumulated depreciation	<u>(856,436)</u>	<u>(62,348)</u>	<u>-</u>	<u>10,922</u>	<u>-</u>	<u>(907,862)</u>
Total capital assets being depreciated, net	<u>1,780,279</u>	<u>(50,294)</u>	<u>154,459</u>	<u>(10,441)</u>	<u>7,873</u>	<u>1,881,876</u>
Total capital assets, net	<u>\$ 2,244,862</u>	<u>\$ 120,532</u>	<u>-</u>	<u>\$ (17,500)</u>	<u>\$ -</u>	<u>\$ 2,347,894</u>

<b>Capital Assets</b>				
Year Ended December 31, 2016				
(amounts expressed in thousands)				
	December 31, 2015	Additions & Transfers	Retirements Sales & Transfers	December 31, 2016
<b>Capital assets not being depreciated:</b>				
Land and land rights	\$ 99,098	\$ 10	\$ -	\$ 99,108
Water rights and other	105,785	-	-	105,785
Construction in progress	163,266	142,226	(45,802)	259,690
Total capital assets not being depreciated	<u>368,149</u>	<u>142,236</u>	<u>(45,802)</u>	<u>464,583</u>
<b>Capital assets being depreciated:</b>				
Buildings and improvements	201,538	2,733	(4,942)	199,329
Improvements other than buildings	2,002,297	42,961	(835)	2,044,423
Machinery and equipment	393,007	10,400	(10,444)	392,963
Total capital assets being depreciated	<u>2,596,842</u>	<u>56,094</u>	<u>(16,221)</u>	<u>2,636,715</u>
<b>Less accumulated depreciation:</b>				
Buildings and improvements	(47,372)	(3,959)	2,878	(48,453)
Improvements other than buildings	(570,105)	(27,209)	727	(596,587)
Machinery and equipment	(200,614)	(19,184)	8,402	(211,396)
Total accumulated depreciation	<u>(818,091)</u>	<u>(50,352)</u>	<u>12,007</u>	<u>(856,436)</u>
Total capital assets being depreciated, net	<u>1,778,751</u>	<u>5,742</u>	<u>(4,214)</u>	<u>1,780,279</u>
Total capital assets, net	<u>\$ 2,146,900</u>	<u>\$ 147,978</u>	<u>\$ (50,016)</u>	<u>\$ 2,244,862</u>

Depreciation and amortization for the years ended December 31, 2017 and 2016 were \$62.3 million and \$50.4 million, respectively.

Major retirements during 2017 were primarily the result of assets disposed of as part of the Operations Complex Redevelopment (OCR) project, abandoned yard piping at Moffat treatment plant, and the write-off of the data center assets due to an impairment resulting from damages. Major retirements during 2016 were primarily the result of assets disposed of as part of the Operations Complex Redevelopment (OCR) project and fleet equipment sold.

(5) RISK MANAGEMENT

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

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

Claims expenses and liabilities are reported when it is probable that a loss has occurred and the amount of that loss can be reasonably estimated. These losses include an estimate of claims that have been incurred but not reported (IBNR). IBNR is an estimate based off of actuarial analysis and are based off of historical experience. At December 31, 2017 and 2016, IBNR claims, consisting of workers' compensation, and medical and dental benefits, were \$2.4 million and \$1.3 million, respectively. At December 31, 2017 and 2016, legal claims were \$350,000 and \$0, respectively. Changes in the balances of these liabilities during 2017 and 2016 were as follows:

<b>Claims Liabilities</b>				
(amounts expressed in thousands)				
	Beginning- of-Year Liability	Current-Year Claims and Changes in Estimates	Claim Payments	Balance at Year-End
2017	\$ 1,343	\$ 15,061	\$ (13,623)	\$ 2,781
2016	\$ 1,041	\$ 12,938	\$ (12,636)	\$ 1,343

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

(6) NOTES AND BONDS PAYABLE

A. Notes Payable

On November 20, 2013, the Board executed a credit agreement with Bank of America, N.A., to provide a variable rate revolving note payable for a maximum initial principal amount of \$30.0 million as an interim source of financing for capital improvements to the water works system. It was the intention of the Board to periodically pay down the note payable by issuing revenue bonds. The revolving credit facility is payable solely from net revenue and is subordinate to the lien on the Board's outstanding revenue bonds. The credit facility was amended in 2016 extending the maturity to November 2018 and adjusting applicable margins. The credit facility contains an option to increase the credit amount to \$50.0 million. The funds drawn on the line of credit are classified as long-term liabilities because the debt provisions permit refinancing the note on a long-term basis. Notes payable activity for the years ended December 31, 2017 and 2016 was as follows:

	<b>Notes Payable</b>			
	(amounts expressed in thousands)			
	<u>Beginning Balance</u>	<u>Draws</u>	<u>Repayments</u>	<u>Ending Balance</u>
2017	\$ -	\$ -	\$ -	\$ -
2016	\$ 30,000	\$ -	\$ 30,000	\$ -

B. Revenue Bonds Payable

Revenue bonds payable consists of water revenue improvement and refunding bonds of the Board. The Board has pledged to repay the bonds and related interest from net revenues, and to maintain adequate rates to ensure its ability to do so. Coupon rates for the revenue bonds outstanding at December 31, 2017 and 2016 ranged from 0.75% to 6.15% each year. The weighted average yield to maturity at issue for outstanding bonds was 3.21% and 2.73% for the years ended December 31, 2017 and 2016, respectively. The weighted average yield is calculated net of Build America Bond subsidy of 35% for the Series 2009A and Series 2010B revenue bonds adjusted in 2017 by 6.4% and in 2016 by 6.9% for the congressional sequestration. In accordance with the issuing bond resolutions, the Board has established a reserve fund for the revenue bonds totaling \$17.4 and \$14.0 million at December 31, 2017 and 2016, respectively. The Board issued the Series 2017A Master Resolution Water Revenue Green Bonds and the 2017B Master Resolution Water Revenue Bonds on May 23, 2017, in an aggregate principal amount of \$142.7 and \$41.8 million, respectively. The true interest cost at sale was 3.67% for the Series 2017A and 3.40% for the Series 2017B bonds. The proceeds from the sale of the Series 2017A bonds are being used to finance the redevelopment of Denver Water's main operating and administrative complex. The bonds were designated green because the project was designed with environmentally beneficial features including, but not inclusive, constructing to LEED® (Leadership in Energy & Environmental Design) standards, incorporating "One Water" concepts, and recycling of construction and demolition debris. The Series 2017B Master Resolution Water Revenue Bond proceeds were used to finance other additions and improvements to the water system operated by the Board. Both series of bonds were issued pursuant to the amended and restated Master Bond Resolution (3/22/17) and the Series 2017A-B Supplemental Bond Resolution.

The Board issued the Series 2016A and 2016B Master Resolution Water Revenue Bonds on May 10, 2016 in an aggregate principal amount of \$94.8 and \$63.5 million, respectively. The true interest cost at sale was 2.7% for the Series 2016A and 2.3% for Series 2016B. The proceeds from the sale of the Series 2016A were used to finance additions and improvements to the water system operated by the Board and to pay down \$30 million of the Bank of America credit facility. The Series 2016B Master Resolution Water Revenue Bonds were used to advance refund a portion of the Series 2007A Master Resolution Water Revenue Bonds. The proportionate share of proceeds for the advance refunding, together with cash funds of \$1.0 million from the Series 2007A debt service reserve fund, were placed in an irrevocable trust with an escrow agent to defease \$66.2 million in aggregate principal of the revenue bonds.

The advance refunding resulted in a difference between the reacquisition price and the net carrying amount of the old debt (“deferred amount on refunding”) of \$3.1 million. This difference, reported in the accompanying basic financial statements as a *Deferred Outflow of Resources*, is being amortized using the straight-line method as a component of interest expense through 2037. The remaining unamortized amount of refunding of all bonds considered defeased is \$6.4 million and \$6.9 million at December 31, 2017 and 2016, respectively.

The Board completed the advance refunding to reduce its total debt service payments and to obtain an economic gain (difference between the present values of the old and new debt service payments). The reduction in total debt service requirements over the next 22 years is \$17.3 million, with an economic gain of \$12.5 million.

A summary of debt maturity for the revenue bonds as of December 31, 2017 is as follows:

<b>Revenue Bonds</b>			
December 31, 2017			
(amounts expressed in thousands)			
<u>Year of Maturity:</u>	<u>Principal</u>	<u>Interest<sup>1</sup></u>	<u>Total</u>
Current:	\$ 19,925	\$ 25,784	\$ 45,709
Long-term:			
2019	19,390	24,852	44,242
2020	18,475	23,962	42,437
2021	19,305	23,086	42,391
2022	19,075	22,219	41,294
2023-2027	84,435	99,080	183,515
2028-2032	93,080	81,306	174,386
2033-2037	111,455	60,827	172,282
2038-2042	119,465	36,910	156,375
2043-2047	98,810	12,412	111,222
	583,490	384,654	968,144
Plus premium	32,665	-	32,665
Total long-term	616,155	384,654	1,000,809
	<u>\$ 636,080</u>	<u>\$ 410,438</u>	<u>\$ 1,046,518</u>

<sup>1</sup> Excludes Build America Bonds interest subsidy. Amounts received during 2017 and 2016 were \$2,190,000 and \$2,184,000, respectively. The Board is eligible to receive approximately \$31.2 million over the remaining life of the bonds, subject to appropriations by Congress.

(7) LEASES

A. Capital Lease

On July 21, 1992, the Board entered into an agreement amending the lease agreement of March 3, 1987 with the Colorado River Water Conservation District ("District") whereby the District was required to construct Ritschard Dam and Wolford Mountain Reservoir ("Wolford") on Muddy Creek, a tributary of the Colorado River north of Kremmling, Colorado. In consideration of quarterly and semiannual lease payments for 27 years beginning after issuance of a notice of award for construction and payments of 40% of the annual operating costs of Wolford beginning after the end of the lease term, the District will convey to the Board at the end of the lease term ownership, use and control of 40% of the storage capacity of Wolford, and 40% of the water rights. The present value of the minimum lease payments at the beginning of the lease term, including a \$2.4 million nonrefundable deposit, was \$43.0 million, and the Board recorded an asset and obligation under capital lease of that amount in 1992. The project was completed in the fall of 1995. The assets under the Wolford capital lease by major asset class, recorded in Utility Plant under Capital Lease, are as follows:

<b><u>Assets Under Capital Lease - Wolford Mountain</u></b>		
(amounts expressed in thousands)		
	December 31,	
	2017	2016
Improvements other than buildings	\$ 42,980	\$ 42,980
Less: accumulated amortization	(12,380)	(11,822)
	<u>\$ 30,600</u>	<u>\$ 31,158</u>

Minimum capital lease payments were \$3.0 million during both 2017 and 2016. The following is a schedule by year of future minimum lease payments, together with the present value of the minimum lease payments as of December 31, 2017:

<b><u>Obligation Under Capital Lease - Wolford Mountain</u></b>		
As of December 31, 2017		
(amounts expressed in thousands)		
<u>Year Ending December 31:</u>		
2018	\$	3,000
2019		3,000
2020		<u>1,500</u>
Total minimum lease payments		7,500
Less interest at 6.75%		<u>(703)</u>
Present value of minimum lease payments (obligation under capital lease)		6,797
Less current portion		<u>(2,584)</u>
Total long-term	\$	<u>4,213</u>

#### B. Operating Leases

The Board is committed under various cancellable operating leases for property and equipment. Lease expenses for the years ended December 31, 2017 and 2016 were \$1.0 million and \$1.2 million, respectively. The Board expects these leases to be replaced in the ordinary course of business with similar leases. Future lease payments should approximate the amount expensed in 2017.

#### (8) WASTE DISPOSAL CLOSURE AND POSTCLOSURE CARE

The Board operates a landfill and residuals drying beds at the Foothills Water Treatment Plant for disposal of aluminum sulfate solids/residuals generated as a by-product of the potable water treatment process at the Foothills and Marston Water Treatment Plants. It also operates residuals drying beds near the Ralston Reservoir and at West 41<sup>st</sup> Avenue and Independence Court for dewatering of aluminum sulfate solids/residuals generated as a by-product of the potable water treatment process at the Moffat Water Treatment Plant. These sites have been in operation since 1995. State and federal laws and regulations require the Board to perform certain closing functions on these disposal sites when they stop accepting residuals, including placing a final cover on the Foothills landfill and performing certain maintenance and monitoring functions at the Foothills landfill for thirty years after closure.

Although these sites are not municipal solid waste landfills, and are outside the scope of GASB Statement No. 18, *Accounting for Municipal Solid Waste Landfill Closure and Postclosure Care Costs*, ("GASB No. 18"), the Board voluntarily implemented the provisions of that statement in 2000 to meet State of Colorado and federal financial assurance requirements discussed below.

During 2013, Colorado revised its Solid Waste regulations to require reporting for the Foothills and 41<sup>st</sup> and Independence drying beds, which were previously not required to be reported. Also, the change in regulations no longer requires recording a liability for postclosure care costs for drying beds if they are “clean closed,” which means that all residuals are removed upon closure. Despite this, the postclosure care liability for Ralston drying beds of \$777,000 and \$767,000, respectively, has been included in 2017 and 2016 pending receipt of a revised Certificate of Designation from Jefferson County.

As required by GASB No. 18, although closure and postclosure care costs will be paid only near or after the date that the disposal sites stop accepting waste, the Board reports a portion of the Foothills closure and postclosure care costs as an operating expense and liability in each year based on landfill capacity used as of each *Statements of Net Position* date. The Board reports the entire liability for closure costs for the Foothills, Ralston, and 41<sup>st</sup> and Independence residual drying beds since they are not “filled” like a landfill, but are reusable.

Approximately \$6.4 million and \$6.3 million was reported as *Waste Disposal Closure and Postclosure Care* liability in the *Statements of Net Position*, at December 31, 2017 and 2016, respectively, for the sites as follows:

<b><u>Waste Disposal Closure and Postclosure Care Liability</u></b>				
(amounts expressed in thousands)				
	<u>Foothills</u>	<u>Ralston</u>	<u>41st &amp; Independence</u>	<u>Total</u>
<u>2017</u>				
Closure costs	\$ 2,394	\$ 2,267	\$ 710	\$ 5,371
Postclosure care costs	290	777	-	1,067
	<u>\$ 2,684</u>	<u>\$ 3,044</u>	<u>\$ 710</u>	<u>\$ 6,438</u>
<u>2016</u>				
Closure costs	\$ 2,470	\$ 2,142	\$ 634	\$ 5,246
Postclosure care costs	287	767	-	1,054
	<u>\$ 2,757</u>	<u>\$ 2,909</u>	<u>\$ 634</u>	<u>\$ 6,300</u>

These costs are based on the use of 24.8% of the active portion of the Foothills landfill at December 31, 2017 and 2016, and 100% of the Foothills, Ralston, and 41<sup>st</sup> and Independence drying beds. The Board will recognize the remaining estimated cost of the Foothills postclosure care of \$879,000 as the remaining capacity is filled. These amounts are based on what it would cost to perform all closure and postclosure care in 2017. Actual cost may be higher due to inflation, changes in technology, or changes in regulations. The remaining life of the Foothills landfill is estimated to be approximately 72.5 years for the active disposal area of 61.7 acres. In addition, there is expansion capability of 62 acres with an indefinite life. The Foothills, Ralston, and 41<sup>st</sup> and Independence drying beds have an indefinite life.

The Board is required by state and federal laws and regulations to establish financial assurance sufficient to ensure full payment of closure and postclosure care of its disposal sites by selecting one of a variety of financial mechanisms. The Board chose the “Local Government Financial Test” which includes profitability requirements, minimum general obligation bond ratings, unmodified audit opinions, and the implementation of GASB No. 18.

(9) CHANGES IN LONG-TERM LIABILITIES

Long-term liability activity for the years ended December 31, 2017 and 2016 were as follows:

<b>Long-Term Liabilities</b>					
Year Ended December 31, 2017					
(amounts expressed in thousands)					
	December 31, 2016 (Current and Long-Term)	2017		December 31, 2017 (Current and Long-Term)	Due Within One Year
		Additions	Reductions		
Revenue bonds payable, net	454,338	205,864	(24,122)	636,080	19,925
Obligation under capital lease	9,215	-	(2,418)	6,797	2,584
Customer advances for construction	3,402	11,993	(5,517)	9,878	-
Compensated absences	15,974	3,903	(9,707)	10,170	5,860 <sup>1</sup>
Net pension liability	72,856	33,619	(39,174)	67,301	-
Other postemployment benefits	10,149	1,373	(2,326)	9,196	-
Waste disposal closure	6,300	245	(107)	6,438	-
	<u>572,234</u>	<u>\$ 256,997</u>	<u>\$ (83,371)</u>	<u>745,860</u>	<u>\$ 28,369</u>
Less current portion	(34,524)			(28,369)	
Total long-term liabilities	<u>\$ 537,710</u>			<u>\$ 717,491</u>	

<sup>1</sup> Included in Payroll and Other Employee Benefits in the Statements of Net Position.

<b>Long-Term Liabilities</b>					
Year Ended December 31, 2016					
(amounts expressed in thousands)					
	December 31, 2015 (Current and Long-Term)	2016		December 31, 2016 (Current and Long-Term)	Due Within One Year
		Additions	Reductions		
Notes payable	\$ 30,000	\$ -	\$ (30,000)	\$ -	\$ -
Revenue bonds payable, net	374,718	172,365	(92,745)	454,338	19,595
Obligation under capital lease	11,478	-	(2,263)	9,215	2,418
Customer advances for construction	7,676	21,883	(26,157)	3,402	-
Compensated absences	7,421	13,412	(4,859)	15,974	12,511 <sup>1</sup>
Net pension liability	46,255	26,601	-	72,856	-
Other postemployment benefits	10,799	1,605	(2,255)	10,149	-
Waste disposal closure	6,230	70	-	6,300	-
	<u>494,577</u>	<u>\$ 235,936</u>	<u>\$ (158,279)</u>	<u>572,234</u>	<u>\$ 34,524</u>
Less current portion	(26,672)			(34,524)	
Total long-term liabilities	<u>\$ 467,905</u>			<u>\$ 537,710</u>	

<sup>1</sup> Included in Payroll and Other Employee Benefits in the Statements of Net Position.

(10) PENSION PLAN

General Information about the Pension Plan

Plan Description

The Board sponsors and administers a trustee, single-employer defined benefit pension plan, (the "Plan"). The Plan provides retirement benefits with limited annual cost-of-living adjustments to retired members and, if elected by the member, to his or her surviving spouse. Members of the Plan include substantially all regular and discretionary full-time and part-time employees of the Board. Article X, Section 10.1.6 of the Charter of the City assigns the authority to establish and amend benefit provisions to the Board. The Plan contains provisions regarding amendments, including a provision for employee voting on amendments in specifically described situations. The Plan issues a publicly available financial report that includes financial statements and required supplementary information for the Plan. That report may be obtained by writing to: Treasurer, MC 210, Denver Water, 1600 West 12th Avenue, Denver, CO 80204-3412. It can also be obtained from the Denver Water website.

Benefits Provided

The Plan provides retirement benefits with limited annual cost-of-living adjustments to retired members and, if elected by the member, to his or her surviving spouse. It also provides retirement service in the event of disability, and a \$5,000 death benefit to retirees receiving monthly payments from the plan. Retirement benefits are calculated based on the employee's (a) average final compensation during the 36 consecutive months out of the last 120 completed calendar months of employment with the Board that produce the highest average; (b) the "Covered Compensation" for Social Security tax purposes; (c) years of credited service; (d) age when pension benefit begins; and (e) the form chosen to receive pension benefits. The basic monthly benefit from the Plan for the normal retirement age of 65 will equal the sum of the following amounts: (1) .015 times the average final compensation times the number of years of credited service, and (2) .0045 times the amount by which the average final compensation exceeds the covered compensation times the number of years of credited service. There are also early retirement options beginning at age 55. Monthly pension benefits are automatically adjusted at the beginning of each year to reflect the annual rate of change in the Consumer Price Index from the previous year, limited to no more than 4.4%.

Employees Covered by Benefit Terms

At January 1, 2016 and 2015, the valuation date, the following employees were covered by the benefit terms:

<b><u>Employees Covered by Pension Plan Benefit Terms</u></b>		
	<u>2016</u>	<u>2015</u>
Inactive employees or beneficiaries currently receiving benefits	616	587
Inactive employees entitled to but not yet receiving benefits	100	90
Active employees	1,004	1,034
	<u>1,720</u>	<u>1,711</u>

Contributions

Article X, Section 10.1.6 of the Charter of the City assigns the authority to establish and amend the contribution requirements to the Board. The Board's funding policy is established and may be amended by the Board, which acts as trustee of the Plan. The Board reserves the right to suspend, reduce, or permanently discontinue all contributions at any time, pursuant to the termination provisions of the Plan.

On August 28, 2013, the Board adopted the Employees' Retirement Plan Funding Policy effective for 2014 and future years. The Policy defines the objectives of the Board in funding the Plan. In accordance with the Policy, the Board



will base its contributions to the Plan on Actuarially Determined Contributions (“ADC”) calculated annually by an independent actuary using agreed upon methods and assumptions developed by the Actuarial Standards Board and specified in the funding policy. The primary objective of the Policy is to provide sufficient assets to pay all benefits promised under the Plan and to minimize the volatility of contribution payments from year to year. Plan members are not allowed to make contributions. For the years ended December 31, 2017 and 2016, the Board contributed \$18.0 million and \$14.5 million, respectively, to the Plan.

#### Net Pension Liability

The Board has elected a measurement date for the current year-end as of the prior year-end. Therefore, the net pension liability reported as of December 31, 2017 was measured as of December 31, 2016, and the net pension liability reported as of December 31, 2016 was measured as of December 31, 2015. The total pension liability used to calculate the net pension liability for 2017 and 2016 was determined by an actuarial valuation performed as of January 1, 2016 and January 1, 2015.

#### Actuarial Assumptions

The Entry Age Normal actuarial cost method was used to measure the total pension liability. The actuarial assumptions for both 2017 and 2016 included (a) 7.25% investment rate of return, (b) age based salary increases ranging from 6.25% to 3.35% per year for funding, and (c) 2.75% inflation factor. The actuarial value of Plan assets was determined using techniques that smooth the effects of short-term volatility in the market value of investments over a three-year period. Effective January 1, 2014, the Plan’s unfunded actuarial accrued liability will be amortized in level dollar amounts over 15 years on a layered basis, which more closely reflects the average period of active service of Plan members.

Mortality rates used for 2017 and 2016 were based on the RP-2000 Combined Healthy Mortality Table, projected to 2020 using Scale BB.

The actuarial assumptions that determined the total pension liability as of January 1, 2016 and January 1 2015, were based on the results of an actuarial experience study for the period 2010 through 2014.

#### Discount Rate

The discount rate used to measure the total pension liability was 7.25% for both 2017 and 2016. The projection of cash flows used to determine the discount rate assumed that Board contributions will be made at approximately the current actuarially determined contribution rate. Based on this assumption, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimate of the 30-year geometric mean return for each major asset class are summarized in the following table:

**Target Asset Allocation and Long-Term Expected Return**

As of January 1, 2016

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	37.5%	5.1%
International equity	20.0%	5.3%
Domestic fixed income	15.0%	0.8%
Hedge funds	10.0%	3.0%
Real estate	17.5%	3.8%
	<u>100.0%</u>	

*Sensitivity of the Net Pension Liability to Changes in Discount Rate*

The following presents the net pension liability of the Board, calculated using the discount rate of 7.25% for both 2017 and 2016, as well as what the Board's net pension liability would be if it were calculated using the discount rate that is one percentage point lower or one percentage point higher than the current rate:

**Sensitivity of the Net Pension Liability to Changes in Discount Rate**

As of December 31, 2017

(amounts expressed in thousands)

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net pension liability	\$ 109,420	\$ 67,301	\$ 31,428

**Sensitivity of the Net Pension Liability to Changes in Discount Rate**

As of December 31, 2016

(amounts expressed in thousands)

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net pension liability	\$ 114,468	\$ 72,856	\$ 37,689

*Pension Plan Fiduciary Net Position*

Detailed information about the Plan's fiduciary net position is available in the separately issued Plan financial report discussed above.

Changes in the Net Pension Liability

<b>Changes in Net Pension Liability</b>			
As of December 31, 2017			
(amounts expressed in thousands)			
	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a) - (b)
Balances at 12/31/16	\$ 371,431	\$ 298,575	\$ 72,856
Changes for the year:			
Service cost	7,330	-	7,330
Interest on total pension liability	26,237	-	26,237
Effect of plan changes	-	-	-
Effect of economic/demographic gains or losses	(3,348)	-	(3,348)
Effect of assumption changes or inputs	-	-	-
Benefit payments	(19,932)	(19,932)	-
Employer contributions	-	14,500	(14,500)
Member contributions	-	-	-
Net investment income	-	21,326	(21,326)
Administrative expenses	-	(52)	52
Net changes	10,287	15,842	(5,555)
Balances at 12/31/17	\$ 381,718	\$ 314,417	\$ 67,301

<b>Changes in Net Pension Liability</b>			
As of December 31, 2016			
(amounts expressed in thousands)			
	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a) - (b)
Balances at 12/31/15	\$ 348,594	\$ 302,339	\$ 46,255
Changes for the year:			
Service cost	6,757	-	6,757
Interest on total pension liability	25,820	-	25,820
Effect of plan changes	-	-	-
Effect of economic/demographic gains or losses	801	-	801
Effect of assumption changes or inputs	10,152	-	10,152
Benefit payments	(20,693)	(20,693)	-
Employer contributions	-	14,500	(14,500)
Member contributions	-	-	-
Net investment income	-	2,473	(2,473)
Administrative expenses	-	(44)	44
Net changes	22,837	(3,764)	26,601
Balances at 12/31/16	\$ 371,431	\$ 298,575	\$ 72,856

For the years ended December 31, 2017 and 2016, the Board recognized pension expense of \$14.0 million and \$13.2 million, respectively. At December 31, 2017 and 2016, the Board reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

**Deferred Outflows and Inflows of Resources Related to Pensions**

As of December 31, 2017  
(amounts expressed in thousands)

	Deferred Inflows of Resources	Deferred Outflows of Resources
Economic/demographic gains or losses	\$ 2,833	\$ 1,486
Net difference between projected and actual earnings	-	8,806
Assumption changes	-	7,154
Contributions made subsequent to measurement date	-	18,000
Total	<u>\$ 2,833</u>	<u>\$ 35,446</u>

**Deferred Outflows and Inflows of Resources Related to Pensions**

As of December 31, 2016  
(amounts expressed in thousands)

	Deferred Inflows of Resources	Deferred Outflows of Resources
Economic/demographic gains or losses	\$ -	\$ 1,883
Net difference between projected and actual earnings	-	9,132
Assumption changes	-	8,653
Contributions made subsequent to measurement date	-	14,500
Total	<u>\$ -</u>	<u>\$ 34,168</u>

The \$14.5 million reported as deferred outflows of resources related to pensions, resulting from contributions subsequent to the measurement date, as of December 31, 2016, was recognized as a reduction of the net pension liability in the year ended December 31, 2017. The \$18.0 million reported as deferred outflows of resources related to pensions, resulting from contributions subsequent to the measurement date, as of December 31, 2017, will be recognized as a reduction of the net pension liability in the year ended December 31, 2018.

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

**Amortization of Deferred Outflows and Inflows of Resources Related to Pensions**

As of December 31, 2017  
(amounts expressed in thousands)

Year ended December 31,		
2018	\$	1,829
2019		5,849
2020		5,250
2021		1,211
2022		734
Thereafter		(260)

**Amortization of Deferred Outflows and Inflows of  
Resources Related to Pensions**

As of December 31, 2016  
(amounts expressed in thousands)

Year ended December 31,		
2017	\$	2,319
2018		2,319
2019		6,339
2020		5,741
2021		1,702
Thereafter		1,248

(11) OTHER RETIREMENT PLANS

The Board sponsors and administers the Denver Water Supplemental Retirement Savings Plan (“SRSP”). The SRSP is a 401(k) defined contribution plan. Article X, Section 10.1.6 of the Charter of the City assigns the authority to establish and amend benefit provisions to the Board. All regular and discretionary employees are eligible to participate in the plan. Under the terms of the plan, the Board will make a matching contribution to the SRSP’s trust fund each year in an amount equal to 100% of each participant’s elective contributions, limited to 3% of the participant’s base salary for the year. During 2017 and 2016, the Board made contributions totaling approximately \$6.8 million (inclusive of \$4.8 million paid by the Board into the 401K for a compensated absences conversion and buy down) and \$2.0 million, respectively and members contributed approximately \$4.3 million and \$4.5 million, respectively, to the SRSP. Employee rollovers from other plans to the SRSP were \$1.0 million in 2017 and \$1.2 million in 2016.

The Board sponsors and administers a deferred compensation plan that is available for its employees, created in accordance with Internal Revenue Code Section 457. The plan, available to all regular and discretionary employees, permits them to defer a portion of their salary until future years. The deferred compensation is not available to employees until termination, retirement, death, or qualifying unforeseeable emergency. Participation in the plan is voluntary. The Board may make discretionary employer contributions to a qualified participant. Discretionary employer contributions are limited by Treasury Regulations under I.R.S. Code §415, 401(a)(17).

(12) OTHER POSTEMPLOYMENT BENEFITS

Plan Description

The Board provides two types of other postemployment benefits (“OPEB”) as follows:

*a. Postemployment Healthcare Benefits*

For employees hired before January 16, 2012, the Board provides a single employer postemployment healthcare benefit. The benefit is in the form of partially subsidized health care costs, until the retiree attains age 65. The benefit is provided through the Board’s self-insured health plan to employees and dependents who meet eligibility requirements of the postemployment healthcare benefit plan. The eligibility requirements include retiring under the Special Early Retirement (Rule of 75) provision of the Board’s defined benefit pension plan, taking an immediate distribution of pension benefits, and being covered as an employee or dependent under the employee healthcare plan, excluding COBRA coverage, at the time of retirement. The subsidy is separate from the Board’s defined benefit retirement plan and is not paid out of retirement plan funds. Currently, 156 retirees are receiving this benefit. The Board provides this benefit under authority of Article X, Section 10.1.6 of the City Charter, which assigns the authority to establish and amend benefit provisions to the Board. In January 2012, the Board discontinued its subsidy for this benefit for employees hired on or after January 16, 2012. However, employees can still access this program upon

reaching age 60, at full cost. In January 2014, the Board changed the benefit by increasing the minimum retirement age from 55 to 60 for all employees, unless they had 25 years of service or met the rule of 75 on January 1, 2014.

*b. Long-Term Disability*

A long-term disability (“LTD”) insured plan is provided for each employee who attains regular status. Prior to 2007, this benefit was self-insured. Beginning in 2007, the Board moved to an insured plan for long-term disability but was still obligated for disability payments to a few employees that were covered under the self-insured plan. Any employee who becomes disabled on or after January 1, 2007, is covered under the terms of an insured plan. Beginning January 2016, Unum took over the remainder of the self-insured plan, and as such, any remaining payments associated with the self-insured plan was assumed by them. The Board’s insured plan provides for an 84-day elimination period for LTD benefits with a benefit of 60% of pay to a maximum of \$10,000 per month. Benefits are payable during the first two years if the disabled employee is incapable of employment at his or her own occupation with a 20% or more loss in indexed monthly earnings. Thereafter, benefits are payable provided the disabled employee continues to experience 20% or more reduction in indexed monthly earnings while working in any occupation or is incapable of employment at any occupation. Benefit duration depends on age at disability. Benefits are payable to age 65 for disabilities that occur before age 60. If the disability occurs after age 60, benefit duration depends on a benefit payment schedule. Under the insured plan, the obligation for the payment of benefits has been effectively transferred to the insurance company. The Board has guaranteed benefits in the event of the insurance company’s insolvency.

Neither OPEB plan issues a separate report.

Funding Policy

The Board’s funding policy is established and may be amended by the Board. The Board is not required to establish an irrevocable trust fund to accumulate assets for payment of future OPEB benefits, and has elected not to do so. Payments of OPEB benefits are made on a pay-as-you-go basis in amounts necessary to provide current benefits to recipients. For the year ended December 31, 2017, the Board contributed \$2.3 million to the postemployment healthcare benefits plan (approximately 72% of estimated premium equivalent costs). Retirees receiving benefits contributed \$893,000, or approximately 28% of the estimated premium equivalent costs. The Board paid \$0 in LTD benefits in 2017 and \$234,000 in LTD insurance premiums. For the year ended December 31, 2016, the Board contributed \$2.3 million to the postemployment healthcare benefits plan (approximately 74% of estimated premium equivalent costs). Retirees receiving benefits contributed \$800,000, or approximately 26% of the estimated premium equivalent costs. The Board paid \$1,000 in LTD benefits in 2016 and \$240,000 in LTD insurance premiums.

Annual OPEB Cost and Net OPEB Obligation

The Board’s annual OPEB cost (expense) is calculated based on the annual required contribution of the employer (“ARC”), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities over a period not to exceed thirty years. As of January 2016, all long-term disability benefits are maintained in an insured plan. As such, long-term disability benefits are no longer considered when calculating the annual OPEB cost and net OPEB obligation. The following tables show the components of the Board’s annual OPEB costs, the amount actually contributed to the OPEB plan, and changes in the Board’s net OPEB obligation for the years ended December 31, 2017 and 2016:

**Annual OPEB Cost and Net OPEB Obligation**

Year Ended December 31, 2017

(amounts expressed in thousands)

	Healthcare
Annual required contribution (ARC)	\$ 1,531
Interest on net OPEB obligation (asset)	406
Adjustment to ARC	<u>(564)</u>
Annual OPEB cost	1,373
Contributions made	<u>(2,326)</u>
Increase in net OPEB obligation (asset)	(953)
Net OPEB obligation (asset) - beginning of year	10,149
Net OPEB obligation (asset) - end of year	<u>\$ 9,196</u>

**Annual OPEB Cost and Net OPEB Obligation**

Year Ended December 31, 2016

(amounts expressed in thousands)

	Healthcare	LTD <sup>1</sup>	Total
Annual required contribution (ARC)	\$ 1,773	\$ -	\$ 1,773
Interest on net OPEB obligation (asset)	432	-	432
Adjustment to ARC	<u>(600)</u>	-	<u>(600)</u>
Annual OPEB cost	1,605	-	1,605
Contributions made	<u>(2,255)</u>	<u>(1)</u>	<u>(2,256)</u>
Increase in net OPEB obligation (asset)	(650)	(1)	(651)
Net OPEB obligation (asset) - beginning of year	10,799	(568)	10,231
Write-off of LTD prepaid asset	-	569	569
Net OPEB obligation (asset) - end of year	<u>\$ 10,149</u>	<u>\$ -</u>	<u>\$ 10,149</u>

<sup>1</sup> Denver Water no longer has a self-insured long-term disability plan.

The Board's annual OPEB cost, the percentage of annual OPEB cost contributed to the OPEB plan, and the net OPEB obligation for 2017 and the two preceding years were as follows:

**Annual OPEB Cost and Percentage of Required Contribution**

(amounts expressed in thousands)

Year Ended December 31,	Annual OPEB Cost	Contributions Made	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
2017	\$ 1,373	\$ 2,326	169.4%	\$ 9,196
2016	1,605	2,256	140.6	10,149
2015	1,824	2,021	110.8	10,231

**Funded Status and Funding Progress**

As of January 1, 2017, the most recent actuarial valuation date, the plan was 0% funded. The actuarial accrued liability for benefits was \$16.7 million, and the actuarial value of assets was \$0, resulting in an unfunded actuarial accrued liability (UAAL) of \$16.7 million. The covered payroll (annual payroll of active employees covered by the OPEB plan) was \$78.4 million, and the ratio of the UAAL to the covered payroll was 21.4%. As of the January 1, 2016 actuarial valuation date, the plan was 0% funded. The actuarial accrued liability for benefits was \$19.2 million, and the actuarial value of assets was \$0, resulting in an unfunded actuarial accrued liability (UAAL) of \$19.2 million. The

covered payroll (annual payroll of active employees covered by the OPEB plan) was \$75.7 million, and the ratio of the UAAL to the covered payroll was 25.4%

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. A schedule of funding progress, presented as required supplementary information, presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits. See Exhibit I-C *OPEB Plan Schedule of Funding Progress*.

#### Actuarial Methods and Assumptions

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the January 1, 2016 actuarial valuation, the projected unit credit with 30-year open, level dollar amortization, actuarial cost method was used. The actuarial assumptions included a 4.00% investment rate of return (net of administrative expenses and including an inflation component of 2.75%). The annual healthcare cost trend rate based on the Getzen Trend Model smoothed each year out to 2032 is 4.25%. The actuarial value of assets was not determined as the Board has not advanced funded the obligation. The amortization period of the UAAL is a level dollar amount over 30 years on an open basis.

#### (13) POLLUTION REMEDIATION LIABILITY

In 2016, as part of the Operations Complex Redevelopment project, a site assessment determined that a portion of the soil around the Operations Complex was contaminated with Polycyclic Aromatic Hydrocarbons, or ash. The source of the ash is unknown. Approximately \$896,000 was expended in 2017 for the disposal of the contaminated soils and an additional \$125,000 in remediation costs were incurred for the removal and disposal of four underground fuel tanks. At the end of 2017, a liability was accrued for \$105,000 to cover the estimated costs for removal of underground fuel tanks and \$400,000 to dispose of the remaining identified contaminated soil during 2018. This liability is shown in *Accounts Payable* on the *Statements of Net Position*. The assumptions used to estimate the remaining liability were based on 1) the rough order of magnitude area of soil to be removed of 6,000 cubic yards and 2) the average cost of the previous remediation work was \$66.67 per cubic yard. The assumptions used to estimate the remaining fuel tank liability were based on expenses incurred in 2017, but not due to be paid until Spring 2018, for excavation work and for contaminated fluid removal. The actual cost could vary depending on the full reconciliation of these expenditures.

#### (14) CAPITAL CONTRIBUTIONS

Inception-to-date and current year proceeds from contributions in aid of construction (“CIAC”) and system development charges (“SDC”) were as follows:



<b>Capital Contributions</b>		
Years Ended December 31, 2017 and 2016		
(amounts expressed in thousands)		
	<u>CIAC</u>	<u>SDC</u>
Inception through December 31, 2015	\$ 521,878	\$ 744,911
2016 Additions	<u>22,147</u>	<u>38,962</u>
Inception through December 31, 2016	544,025	783,873
2017 Additions	<u>14,781</u>	<u>42,486</u>
Inception through December 31, 2017	<u>\$ 558,806</u>	<u>\$ 826,359</u>

(15) CONTINGENCIES

In the normal course of business, there are various outstanding legal proceedings, claims, commitments, and contingent liabilities. In the opinion of management, the ultimate disposition of these matters will not have a materially adverse effect on the Board's financial statements.

(16) CONTRACT COMMITMENTS

Contractual commitments as of December 31, 2017 for construction and other purposes are estimated at \$423.7 million.

Operations Complex Redevelopment Project

The Operations Complex Redevelopment project was approved by the Board in 2013. Design started in 2014, with construction expected to be complete by Spring, 2020. The plan includes two phases of construction. Phase 1 includes four operations buildings and site work. Phase 2 includes the administration and wellness building, parking structure, renovation of two existing buildings, and the balance of the site work. Construction commenced at the end of 2015 and Phase 1 was substantially complete as of September 2017. Construction is underway on Phase 2 with foundations complete for the parking garage and administration building. Construction has begun on the renovation of the Water Distribution Building. Design is complete on the Three Stone Building renovation and has been submitted to the City for the building permit. The goal is to build a modern site that improves the efficiency, functionality, security and safety of the Board's operations. Many of the current buildings are more than 50 years old and are no longer adequate for today's demands. The new layout will improve traffic and work flow, while taking advantage of matching functions with building adjacencies. Sustainability is a key factor, as the complex is being designed to incorporate LEED® certification, educational demonstrations of net zero energy, and leading-edge concepts around the management of all water sources. The projected budget for this project has been set at \$195.8 million.

North System Renewal Project

The North System Renewal project is one of the largest construction projects in Denver Water history. With a projected cost of nearly \$600 million, the project includes building an 8.5-mile water pipeline, making modifications to the Moffat Treatment Plant, and building the new Northwater Treatment Plant. The centerpiece of the \$600 million project will be a state-of-the-art treatment plant and pipeline in Jefferson County, north of Golden. The plant will be capable of treating up to 75 million gallons of water a day (expandable to 150 MGD), and will incorporate sustainability practices throughout its operations, including making use of alternative energy sources like hydropower.

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 requiring replacement of pipelines and valves, and updating water treatment technology.

Design of the new treatment plant is underway, and the first phase of construction for the new pipeline began in the fall of 2017. The entire project is scheduled to be completed in 2024.

#### Gross Reservoir Expansion Project

After more than a dozen years of study, the Army Corps of Engineers approved the expansion of Gross Dam and Reservoir on July 6, 2017. The project earned key endorsements from state and federal lawmakers, major environmental groups, local governments and county officials, and water interests on both sides of the Continental Divide. The additional storage capacity in Gross Reservoir will help prevent future shortfalls during droughts and help offset an imbalance in Denver Water's collection system.

The project will raise the dam height by 131 feet from the current 340 feet to 471 feet. The storage capacity of the Reservoir will be increased from its current capacity of 41,811 acre-feet to approximately 118,811 acre-feet, an increase of approximately 77,000 acre-feet. Most of the additional capacity will be used for future challenges such as drought, fires, and growth on the north side of the collection system. It will also allow for 5,000 acre-feet to be set aside to be used as an environmental pool, providing additional water for South Boulder Creek during low-flow periods.

After completion of two major engineering studies, finishing the 404 permit process, and finalizing procurement of the Owner's Representative and Design Engineer, the project budget has been revised from previous projections of \$380 million to \$420 million in 2017 dollars, and escalating to \$464 million in 2026 dollars.

The City of Arvada will participate in the project by paying a percentage of the total costs of the enlargement based on its portion of yield created by the expansion, and by paying a system development charge (SDC). Assuming the enlargement will produce a yield of 18,000 acre-feet of water and Arvada contracts for its maximum allowable amount of 3,000 acre-feet of the new supply, Arvada's share of the capital costs will be 16.67% and Arvada will pay an SDC of \$33.8M.

#### (17) SUBSEQUENT EVENTS

The Board has evaluated subsequent events through April 30, 2018 which is the date the basic financial statements were available to be issued and has identified the following subsequent event:

In December 2016, the Board approved changes to the Denver Water trustee, single-employer defined benefit pension plan, (the "Plan") with an effective date of January 1, 2018. Employees hired prior to January 1, 2018 will be under Tier I of the Plan and will contribute 3% of their compensation, phased in at 1% each year, over three years beginning in 2018. There are no other substantive changes to the Tier 1 portion of the Plan. Employees hired after January 1, 2018 will be under Tier II of the Plan and will contribute 3% of their compensation beginning immediately upon hire. The Tier II Plan differs from the Tier I Plan in that the benefit multiplier is 1.75%, special early retirement benefits are under the rule of 85 at a minimum age of 60, and there is no cost of living adjustment. Vested employees under either Tier, who leave employment and choose not to receive a pension benefit, will be refunded their contributions with an established rate of interest. Under GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, the Board elected to report pension liability information based on a one-year lag. Because of this, the above referenced Plan changes will not impact the net pension liability depicted in the financial statements until 2019.

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REQUIRED SUPPLEMENTARY INFORMATION

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

REQUIRED SUPPLEMENTARY INFORMATION  
Schedule of Changes in the Net Pension Liability and Related Ratios  
2008 - 2017  
(amounts expressed in thousands)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Total pension liability</b>										
Service cost	\$ 7,330	\$ 6,757	\$ 6,071	\$ 6,046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interest	26,237	25,820	25,044	24,051	-	-	-	-	-	-
Effect of plan changes	-	-	-	-	-	-	-	-	-	-
Effect of economic/demographic (gains) or losses	(3,348)	801	-	2,037	-	-	-	-	-	-
Effect of changes of assumptions	-	10,152	-	-	-	-	-	-	-	-
Benefit payments	(19,932)	(20,693)	(20,365)	(17,850)	-	-	-	-	-	-
<b>Net change in pension liability</b>	<u>10,287</u>	<u>22,837</u>	<u>10,750</u>	<u>14,284</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Total pension liability-beginning</b>	<u>371,431</u>	<u>348,594</u>	<u>337,844</u>	<u>323,560</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Total pension liability-ending (a)</b>	<u><u>381,718</u></u>	<u><u>371,431</u></u>	<u><u>348,594</u></u>	<u><u>337,844</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>
<b>Plan fiduciary net position</b>										
Employer contributions	14,500	14,500	14,500	15,000	-	-	-	-	-	-
Member contributions	-	-	-	-	-	-	-	-	-	-
Net investment income	21,326	2,473	18,523	39,023	-	-	-	-	-	-
Benefit payments	(19,932)	(20,693)	(20,365)	(17,850)	-	-	-	-	-	-
Administrative expense	(52)	(44)	(144)	(116)	-	-	-	-	-	-
<b>Net change in plan fiduciary net position</b>	<u>15,842</u>	<u>(3,764)</u>	<u>12,514</u>	<u>36,057</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Plan fiduciary net position-beginning</b>	<u>298,575</u>	<u>302,339</u>	<u>289,825</u>	<u>253,768</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Plan fiduciary net position-ending (b)</b>	<u><u>314,417</u></u>	<u><u>298,575</u></u>	<u><u>302,339</u></u>	<u><u>289,825</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>-</u></u>
<b>Net pension liability-ending (a)-(b)</b>	<u><u>\$ 67,301</u></u>	<u><u>\$ 72,856</u></u>	<u><u>\$ 46,255</u></u>	<u><u>\$ 48,019</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>
<b>Plan fiduciary net position as a percentage of the total pension liability</b>	82.37%	80.39%	86.73%	85.79%	-	-	-	-	-	-
<b>Covered-employee payroll</b>	\$ 75,740	\$ 75,990	\$ 71,847	\$ 71,940	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Net position liability as a percentage of covered-employee payroll</b>	88.86%	95.88%	64.38%	66.75%	-	-	-	-	-	-

**Notes to schedule:**

Information prior to 2014 was not available.

Because the measurement date is December 31 of the previous year, these amounts will differ by one fiscal year when comparing to information displayed on the *Schedule of Board Pension Contributions*.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

REQUIRED SUPPLEMENTARY INFORMATION  
Schedule of Board Pension Contributions  
2008 - 2017  
(amounts expressed in thousands)

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Actuarially determined contribution	\$ 18,089	\$ 14,017	\$ 14,068	\$ 13,532	\$ 11,958	\$ 12,256	\$ 12,414	\$ 12,639	\$ 11,872	\$ 7,233
Contributions in relation to the actuarially determined contribution	<u>18,000</u>	<u>14,500</u>	<u>14,500</u>	<u>14,500</u>	<u>15,000</u>	<u>14,300</u>	<u>15,400</u>	<u>12,639</u>	<u>14,500</u>	<u>7,590</u>
Contribution deficiency (excess)	<u>\$ 89</u>	<u>\$ (483)</u>	<u>\$ (432)</u>	<u>\$ (968)</u>	<u>\$ (3,042)</u>	<u>\$ (2,044)</u>	<u>\$ (2,986)</u>	<u>\$ -</u>	<u>\$ (2,628)</u>	<u>\$ (357)</u>
Covered-employee payroll	\$ 77,159	\$ 75,740	\$ 75,990	\$ 71,847	\$ 71,940	\$ 71,172	\$ 69,927	\$ 70,372	\$ 65,721	\$ 60,347
Contributions as a percentage of covered-employee payroll	23.33%	19.14%	19.08%	20.18%	20.85%	20.09%	22.02%	17.96%	22.06%	12.58%

**Notes to schedule:**

Valuation date:

Actuarially determined contribution rates are calculated as of January 1, the beginning of each fiscal year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age normal
Amortization method	Level dollar amount, layered
Remaining amortization period	15 years
Asset valuation method	3-year smoothed market
Inflation	2.75%
Salary increases	Aged-based rates from 6.25% to 3.35%
Investment rate of return	7.25% investment rate of return (net of administrative expenses and including an inflation component of 3.0%)
Retirement age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	Mortality rates were based on the RP-2000 Combined Healthy Mortality Table projected to 2020 using Scale BB.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

REQUIRED SUPPLEMENTARY INFORMATION  
Other Post-Employment Benefits Plan Schedule of Funding Progress  
(amounts expressed in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/c]
1/1/17	\$ -	\$ 16,735	\$ 16,735	-	\$ 78,369	21.4%
1/1/16	\$ -	\$ 19,208	\$ 19,208	-	\$ 78,510	24.5%
1/1/15	\$ -	\$ 22,188	\$ 22,188	-	\$ 75,990	29.2%

OTHER SUPPLEMENTAL INFORMATION



**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Revenue Water Improvement and Refunding Bonds Outstanding

December 31, 2017

(amounts expressed in thousands)

Date of Issue	Interest Rates on Bonds Outstanding as of December 31, 2017	Amount			Bonds Which Are Callable	
		Issued	Retired	Outstanding	Callable Amount	Initial Date Callable
Mar 22, 2007A	3.00%	\$ 100,000	\$ (79,890)	\$ 20,110	\$ 20,110	Dec 15, 2017
Jun 23, 2008A	0.75%	1,800	(1,200)	600	-	Not callable
June 2, 2009A	4.85-6.15%	44,000	(1,215)	42,785	40,255	Dec 15, 2019
Sep 28, 2010B	2.875-5.17%	90,000	(2,670)	87,330	78,990	Dec 15, 2020
May 22, 2012A	3.50-5.00%	36,555	(815)	35,740	32,040	Dec 15, 2021
Jun 26, 2012B	3.00-5.00%	108,545	(74,570)	33,975	16,315	Dec 15, 2021
Sep 16, 2014A	3.00-5.00%	48,670	(4,645)	44,025	43,730	Dec 15, 2023
May 24, 2016A	2.50-5.00%	94,755	(3,805)	90,950	59,530	Sep 15, 2026
May 24, 2016B	2.00-5.00%	63,470	-	63,470	33,455	Sep 15, 2026
May 24, 2017A	3.00-5.00%	142,665	-	142,665	121,010	Sep 15, 2027
May 24, 2017B	3.00-5.00%	41,765	-	41,765	41,765	Sep 15, 2027
		<u>\$ 772,225</u>	<u>\$ (168,810)</u>	603,415	<u>\$ 487,200</u>	
Plus premium				32,665		
Total Revenue Bonds				<u>\$ 636,080</u>		

See accompanying independent auditors' report.

**BOARD OF WATER COMMISSIONERS**  
**CITY AND COUNTY OF DENVER, COLORADO**  
 Summary of Revenue Bond Debt Service Requirements Outstanding  
 December 31, 2017  
 Years 2018 to 2047, inclusive  
 (amounts expressed in thousands)

Year	Rev. Bond Retirements (Exhibit II-C)	Rev. Bond Interest <sup>1</sup> (Exhibit II-D)	Total Debt Service	Build America Bonds Interest Subsidy <sup>2</sup>
2018	\$ 19,925	\$ 25,784	\$ 45,709	\$ 2,154
2019	19,390	24,852	44,242	2,116
2020	18,475	23,962	42,437	2,070
2021	19,305	23,086	42,391	2,019
2022	19,075	22,219	41,294	1,960
2023	19,900	21,383	41,283	1,897
2024	15,335	20,480	35,815	1,828
2025	15,715	19,809	35,524	1,781
2026	16,390	19,083	35,473	1,776
2027	17,095	18,325	35,420	1,690
2028	17,625	17,674	35,299	1,651
2029	17,365	17,018	34,383	1,503
2030	18,545	16,326	34,871	1,403
2031	19,355	15,553	34,908	1,298
2032	20,190	14,735	34,925	1,186
2033	20,995	13,957	34,952	1,069
2034	21,355	13,068	34,423	949
2035	22,215	12,154	34,369	822
2036	23,010	11,289	34,299	689
2037	23,880	10,359	34,239	550
2038	24,090	9,386	33,476	406
2039	23,895	8,368	32,263	254
2040	23,255	7,325	30,580	97
2041	23,710	6,372	30,082	-
2042	24,515	5,459	29,974	-
2043	25,350	4,516	29,866	-
2044	26,530	3,418	29,948	-
2045	17,645	2,265	19,910	-
2046	14,285	1,463	15,748	-
2047	15,000	750	15,750	-
	<u>\$ 603,415</u>	<u>\$ 410,438</u>	<u>\$ 1,013,853</u>	<u>\$ 31,168</u>
Plus premium	32,665	-	32,665	-
	<u><u>\$ 636,080</u></u>	<u><u>\$ 410,438</u></u>	<u><u>\$ 1,046,518</u></u>	<u><u>\$ 31,168</u></u>

<sup>1</sup> Excludes Build America Bonds interest subsidy.

<sup>2</sup> Receipt of Build America Bonds interest subsidy is subject to appropriations by Congress.

See accompanying independent auditors' report.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Schedule of Bond Retirements for Revenue Bonds Outstanding

December 31, 2017

Years 2018 to 2047, inclusive

(amounts expressed in thousands)

Year	Series 2007A Improvement	Series 2008A Improvement	Series 2009A Improvement	Series 2010B Improvement	Series 2012A Improvement	Series 2012B Refunding	Series 2014A Improv/Ref	Series 2016A Improv/Ref	Series 2016B Refunding	Series 2017A Improvement	Series 2017B Improvement	Total
2018	\$ -	\$ 120	\$ 1,245	\$ 2,720	\$ 860	\$ 5,195	\$ -	\$ 6,515	\$ 3,270	\$ -	\$ -	\$ 19,925
2019	-	120	1,285	2,780	900	3,025	-	7,845	3,435	-	-	19,390
2020	-	120	1,325	2,840	945	3,635	-	3,735	3,590	2,285	-	18,475
2021	-	120	1,370	2,910	995	5,805	-	2,770	2,940	2,395	-	19,305
2022	-	120	1,420	2,980	1,045	5,950	-	1,975	3,070	2,515	-	19,075
2023	-	-	1,475	3,055	1,095	6,200	295	1,965	3,200	2,615	-	19,900
2024	-	-	1,530	3,140	1,140	995	330	2,105	3,345	2,750	-	15,335
2025	-	-	1,595	3,230	1,185	755	360	2,210	3,495	2,885	-	15,715
2026	-	-	1,660	3,330	1,230	780	390	2,300	3,670	3,030	-	16,390
2027	-	-	1,730	3,430	1,280	805	420	2,395	3,855	3,180	-	17,095
2028	-	-	1,805	3,540	1,340	830	450	2,455	3,930	3,275	-	17,625
2029	-	-	1,885	3,660	1,400	-	475	2,515	4,020	970	2,440	17,365
2030	4,665	-	1,970	3,780	1,460	-	505	2,585	-	-	3,580	18,545
2031	4,900	-	2,065	3,910	1,530	-	530	2,660	-	-	3,760	19,355
2032	5,145	-	2,160	4,050	1,595	-	560	2,735	-	-	3,945	20,190
2033	5,400	-	2,265	4,190	1,670	-	585	2,820	-	-	4,065	20,995
2034	-	-	2,370	4,340	1,745	-	610	2,905	5,120	-	4,265	21,355
2035	-	-	2,480	4,495	1,820	-	640	2,990	5,310	-	4,480	22,215
2036	-	-	2,600	4,650	1,885	-	665	3,080	5,500	-	4,630	23,010
2037	-	-	2,720	4,815	1,960	-	695	3,180	5,720	-	4,790	23,880
2038	-	-	2,850	4,985	2,040	-	720	3,285	-	4,400	5,810	24,090
2039	-	-	2,980	5,160	2,120	-	750	3,385	-	9,500	-	23,895
2040	-	-	-	5,340	2,205	-	960	3,485	-	11,265	-	23,255
2041	-	-	-	-	2,295	-	6,350	3,590	-	11,475	-	23,710
2042	-	-	-	-	-	-	8,885	3,695	-	11,935	-	24,515
2043	-	-	-	-	-	-	9,240	3,810	-	12,300	-	25,350
2044	-	-	-	-	-	-	9,610	3,920	-	13,000	-	26,530
2045	-	-	-	-	-	-	-	4,040	-	13,605	-	17,645
2046	-	-	-	-	-	-	-	-	-	14,285	-	14,285
2047	-	-	-	-	-	-	-	-	-	15,000	-	15,000
	<u>\$ 20,110</u>	<u>\$ 600</u>	<u>\$ 42,785</u>	<u>\$ 87,330</u>	<u>\$ 35,740</u>	<u>\$ 33,975</u>	<u>\$ 44,025</u>	<u>\$ 90,950</u>	<u>\$ 63,470</u>	<u>\$ 142,665</u>	<u>\$ 41,765</u>	<u>603,415</u>

Plus premium

\$ 636,080

See accompanying independent auditors' report.

**BOARD OF WATER COMMISSIONERS  
CITY AND COUNTY OF DENVER, COLORADO**

Schedule of Bond Interest for Revenue Bonds Outstanding<sup>1</sup>

December 31, 2017

Years 2018 to 2047, inclusive

(amounts expressed in thousands)

Year	Series 2007A Improvement	Series 2008A Improvement	Series 2009A Improvement	Series 2010B Improvement	Series 2012A Improvement	Series 2012B Refunding	Series 2014A Improv/Ref	Series 2016A Improv/Ref	Series 2016B Refunding	Series 2017A Improvement	Series 2017B Improvement	Total
2018	\$ 604	\$ 5	\$ 2,532	\$ 4,039	\$ 1,528	\$ 1,411	\$ 1,700	\$ 3,294	\$ 2,433	\$ 6,535	\$ 1,703	\$ 25,784
2019	604	4	2,471	3,961	1,485	1,151	1,700	2,968	2,271	6,535	1,702	24,852
2020	604	3	2,407	3,867	1,440	1,030	1,699	2,576	2,099	6,535	1,702	23,962
2021	604	2	2,337	3,768	1,393	853	1,699	2,388	1,920	6,420	1,702	23,086
2022	603	1	2,262	3,664	1,343	622	1,699	2,250	1,772	6,301	1,702	22,219
2023	603	-	2,182	3,553	1,291	383	1,698	2,152	1,619	6,200	1,702	21,383
2024	603	-	2,097	3,431	1,247	134	1,685	2,053	1,459	6,069	1,702	20,480
2025	603	-	2,009	3,300	1,201	96	1,671	1,948	1,292	5,987	1,702	19,809
2026	603	-	1,913	3,161	1,154	73	1,657	1,860	1,117	5,843	1,702	19,083
2027	603	-	1,813	3,015	1,105	49	1,645	1,768	934	5,691	1,702	18,325
2028	603	-	1,709	2,859	1,047	25	1,633	1,708	856	5,532	1,702	17,674
2029	603	-	1,601	2,694	987	-	1,619	1,643	768	5,401	1,702	17,018
2030	603	-	1,488	2,520	924	-	1,605	1,574	678	5,353	1,581	16,326
2031	463	-	1,370	2,337	858	-	1,589	1,503	678	5,353	1,402	15,553
2032	317	-	1,246	2,141	789	-	1,574	1,423	678	5,353	1,214	14,735
2033	161	-	1,116	1,939	718	-	1,556	1,341	678	5,353	1,095	13,957
2034	-	-	980	1,730	642	-	1,537	1,257	677	5,353	892	13,068
2035	-	-	838	1,510	564	-	1,517	1,169	524	5,353	679	12,154
2036	-	-	686	1,283	500	-	1,495	1,080	365	5,353	527	11,289
2037	-	-	526	1,047	425	-	1,473	979	185	5,353	371	10,359
2038	-	-	360	800	346	-	1,448	876	-	5,353	203	9,386
2039	-	-	183	543	265	-	1,423	778	-	5,176	-	8,368
2040	-	-	-	276	180	-	1,397	676	-	4,796	-	7,325
2041	-	-	-	-	92	-	1,363	572	-	4,345	-	6,372
2042	-	-	-	-	-	-	1,109	464	-	3,886	-	5,459
2043	-	-	-	-	-	-	754	353	-	3,409	-	4,516
2044	-	-	-	-	-	-	385	239	-	2,794	-	3,418
2045	-	-	-	-	-	-	-	121	-	2,144	-	2,265
2046	-	-	-	-	-	-	-	-	-	1,463	-	1,463
2047	-	-	-	-	-	-	-	-	-	750	-	750
	<u>\$ 8,784</u>	<u>\$ 15</u>	<u>\$ 34,126</u>	<u>\$ 57,438</u>	<u>\$ 21,524</u>	<u>\$ 5,827</u>	<u>\$ 40,330</u>	<u>\$ 41,013</u>	<u>\$ 23,003</u>	<u>\$ 149,989</u>	<u>\$ 28,389</u>	<u>\$ 410,438</u>

<sup>1</sup> Excludes Build America Bonds interest subsidy. See Exhibit II-B.  
See accompanying independent auditors' report.

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### III - STATISTICAL SECTION - CONTENTS AND EXPLANATIONS

*This part of Denver Water's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information say about Denver Water's overall financial health.*

Contents and Explanations	III-1
Statistical Summary, Last 10 Years	III-3

---

<b>A - Financial Trends Information</b>	<b>III-5</b>
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*These schedules contain trend information to help the reader understand how Denver Water's financial performance and well-being have changed over time.*

Net Position by Component, Last 10 Years	III-7
Statements of Revenues, Expenses and Changes in Net Position, Last 10 Years	III-8
Revenue, Expenses and Changes in Net Position, 10 Year Graphs	III-9

---

<b>B- Revenue Capacity Information</b>	<b>III-11</b>
--	---------------

*These schedules contain trend information to help the reader assess Denver Water's operational revenue sources.*

Denver Water Service Area	III-13
Customer Service Data, Last 10 Years	III-14
Water Sold In Dollars by Type of Customer, Last 10 Years	III-15
Treated Water Sold in Gallons by Type of Customer, Last 10 Years	III-18
Operating Revenue and Related Water Consumption	III-21
Sales of Treated Water between Denver and Outside City	III-23
Sales of Non-Potable Water between Denver and Outside City	III-25
Analysis of Customer Accounts for Treated Water	III-26
Water Rate Schedules	III-27
Summary of Water Rates, Last 10 Years	III-31
Sales of Treated Water for Resale	III-36
10 Largest Retail Customers - Water Consumption and Revenue	III-37
System Development Charges and Participation Receipts, 1973 to Date	III-38

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<b>C- Debt Capacity Information</b>	<b>III-39</b>
-------------------------------------	---------------

*These schedules present information to help the reader assess the affordability of Denver Water's current levels of outstanding debt and its ability to issue additional debt in the future.*

Ratios of Total Outstanding Debt by Type, Last 10 Years	III-41
Pledged-Revenue Coverage, Last 10 Years	III-42
Ratios of General Obligation Bonded Debt Outstanding, Last 10 Years	III-43
Ratios of Water Revenue Bonded Debt Outstanding, Last 10 Years	III-44

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<b>D- Demographic and Economic Information</b>	<b>III-45</b>
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*These schedules offer demographic and economic indicators to help the reader understand the environment within which Denver Water's financial activities take place.*

Demographic and Economic Overview of the Denver Metropolitan Area	III-47
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(continued)

III- STATISTICAL SECTION - CONTENTS AND EXPLANATIONS (continued)

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**E - Operating Information** **III-55**

*These schedules contain information about Denver Water's operations and resources to help the reader understand how Denver water's financial information relates to the services Denver Water provides and the activities it performs.*

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Employees by Division, Last 10 Years	III-57
Capital Assets by Function, Last 10 Years	III-60
Receipts and Expenditures: Budget to Actual Comparison, Last Five Years	III-61

Operating Indicators by Function:

**Supply Facts** **III-63**

Water Collection System	III-65
Source of Supply - Reservoirs and Collection Systems	III-66
Source of Supply - Supply Mains and Wells	III-67
Hydroelectric Power	III-70
Water Supply, Use and Storage, Last 10 Years	III-72

**Pumping Facts** **III-73**

Pumping Station Capacities	III-75
Treated Water Pumped and Power Costs, Last 20 Years	III-78
Distributing Reservoirs and Raw Water Pumping Stations	III-79

**Treatment and Water Quality Facts** **III-81**

Consumption of Treated Water, 20 Year Graphs	III-83
Consumption of Treated Water, Last 20 Years	III-84
Water Treated Monthly	III-85
Chemical Treatment and Analysis	III-86
Treated Water Quality Summary	III-87
Distribution System Average Trihalomethanes	III-92

**Transmission & Distribution Facts** **III-93**

Transmission and Distribution Mains	III-95
Valves	III-96
Fire Hydrants	III-97
Recycled Water Mains and Valves	III-98
Breaks in Mains, Water Control, and Leak Detection Services, Last 5 Years	III-99

**Sources:** *Unless otherwise noted, the information in these schedules is derived from the comprehensive annual financial reports for the relevant year or internal Denver Water operating groups.*

**Rounding:** *Some columns in the statistical section are totaled according to the percesion of the numbers entered rather than the way they are displayed, and may not appear to total correctly.*

**STATISTICAL SUMMARY: 2008 - 2017**

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Population served <sup>1</sup>	<b>1,275,000</b>	1,249,000	1,210,000	1,172,000	1,161,000	1,147,000	1,135,000	1,125,000	1,111,000	1,093,000
Total treated water consumption (million gallons) <sup>2</sup>	<b>63,808.64</b>	65,003.83	60,115.97	61,185.27	60,212.44	71,968.70	68,260.80	69,695.40	62,106.90	71,975.87
Average daily consumption (million gallons)	<b>174.82</b>	178.09	164.70	167.63	165.00	196.64	187.02	190.95	170.16	196.66
Average daily consumption per capita (gallons) <sup>1</sup>	<b>137</b>	142	136	143	142	171	165	170	153	180
Maximum daily consumption (million gallons)	<b>364.92</b>	355.88	344.26	335.20	355.00	398.20	366.40	365.81	341.80	426.16
Maximum hour treated water use rate (million gallons per day)	<b>628.50</b>	592.00	499.30	603.60	591.00	628.00	546.80	577.75	516.90	670.00
Treated water pumped (million gallons)	<b>29,446.76</b>	26,767.23	27,677.64	36,088.94	34,895.00	39,484.10	36,443.50	41,611.30	38,198.90	50,283.70
Raw water storage capacity (acre-feet) <sup>3</sup>	<b>569,648</b>	568,642	569,534	569,534	569,534	569,534	569,534	561,883	561,883	561,883
Replacement reservoir storage capacity (acre-feet)	<b>125,993</b>	122,432	122,432	122,432	122,432	122,432	122,432	122,432	122,432	122,432
Supply from South Platte River (acre-feet) <sup>4</sup>	<b>132,115</b>	158,324	166,561	148,680	142,915	85,765	117,559	151,891	138,791	122,255
Supply from Blue River/Roberts Tunnel system (acre-feet)	<b>86,124</b>	40,795	39,801	77,765	111,564	54,394	148,643	74,674	58,468	80,056
Supply from Moffat system (acre-feet)	<b>79,639</b>	75,551	73,016	73,585	141,159	54,523	93,763	76,318	79,636	88,842
Treated water pumping capacity (mgd)	<b>1,048.4</b>	1,048.4	1,048.4	1,007.9	1,007.9	1,003.3	1,003.3	1,095.9	1,095.9	1,097.4
Raw water pumping capacity (mgd)	<b>112.2</b>	112.2	112.2	112.2	112.2	112.2	112.2	112.2	112.2	112.2
Treatment plant capacity (mgd)	<b>715.0</b>	715.0	715.0	715.0	715.0	715.0	715.0	715.0	715.0	715.0
Treated water reservoir capacity (million gallons)	<b>351.4</b>	351.4	351.4	353.3	353.3	381.7	371.7	371.7	371.7	368.7
Raw water supply mains in miles (mountain collection system)	<b>74.7</b>	77.3	77.4	77.4	77.4	77.5	77.5	76.9	77.5	77.5
Raw water supply mains in miles (metropolitan Denver area)	<b>57.1</b>	54.3	54.2	54.0	52.3	47.7	47.7	47.1	46.0	40.7
Transmission & distribution mains (miles) - Inside City and Outside City Total Service Contract distributors	<b>3,142.6</b>	3,109.3	3,091.7	3,074.2	3,058.2	3,050.1	3,041.0	3,037.0	2,954.0	2,681.0
Recycled water transmission & distribution mains (miles)	<b>70.4</b>	73.5	67.2	67.0	63.1	49.0	45.0	44.2	35.3	36.5
Total active taps - end of year	<b>312,746</b>	312,876	312,653	312,908	312,228	310,463	309,269	309,562	310,068	309,373
Fire hydrants operated & maintained	<b>20,967</b>	20,556	20,269	20,030	19,818	19,670	19,553	19,439	19,159	19,185
Fire hydrants tested and repaired	<b>25,990</b>	23,909	18,093	29,506	25,177	25,112	26,760	21,103	18,472	25,577
Breaks in mains - Denver	<b>275</b>	225	262	191	222	232	313	261	220	274
Service leaks	<b>508</b>	503	542	337	719	402	385	287	329	318
Total employees (actual)	<b>1,033.3</b>	1,058.0	1,057.3	1,064.6	1,064.9	1,082.5	1,069.8	1,089.1	1,095.1	1,055.0
Additions to capital assets (thousands)	<b>\$ 182,880</b>	\$ 152,528	\$ 131,054	\$ 125,374	\$ 93,421	\$ 128,277	\$ 113,071	\$ 125,816	\$ 103,146	\$ 101,328
Total long-term debt <sup>5</sup> (thousands)	<b>\$ 642,877</b>	\$ 463,553	\$ 416,196	\$ 418,200	\$ 414,013	\$ 434,945	\$ 415,644	\$ 449,828	\$ 392,659	\$ 381,285

<sup>1</sup> Population estimated based on treated water customers only. Revised population from 2008 to 2010 is based on 2010 Census information.

<sup>2</sup> Denver Water has three water treatment facilities. See "Water Treated Monthly." Total treated water consumption includes both sales of treated water as well as non-revenue water. See "Sales of Treated Water Between Denver and Outside City."

<sup>3</sup> Denver Water has 13 raw water reservoirs. See "Source of Supply - Reservoirs and Collection Systems."

<sup>4</sup> Supply includes effluent exchanges.

<sup>5</sup> Long-term debt consists of current and long-term portions of bonds payable and obligations under capital lease, net of discounts and premiums, plus notes payable. Effective in 2012, deferred amounts on refunding are no longer included.



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## A - FINANCIAL TRENDS INFORMATION

*These schedules contain trend information to help the reader understand how Denver Water's financial performance and well-being have changed over time.*

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**NET POSITION BY COMPONENT<sup>1,2</sup>: 2008 - 2017**

	(amounts expressed in thousands)									
	2017	2016	2015	Restated 2014 <sup>3</sup>	2013	2012	2011	2010	2009	2008
<b>NET POSITION:</b>										
Net investment in capital assets	\$ 1,814,177	\$ 1,788,250	\$ 1,735,020	\$ 1,641,601	\$ 1,579,642	\$ 1,513,582	\$ 1,454,710	\$ 1,401,820	\$ 1,363,848	\$ 1,319,268
Restricted for debt service reserve funds	12,743	14,005	12,047	12,375	12,327	12,274	13,746	18,912	13,233	9,005
Other restricted	400	500	-	-	-	-	-	-	-	-
Unrestricted	261,235	202,692	170,963	171,648	230,159	217,297	169,602	162,077	174,279	178,243
Total net position	\$ 2,088,555	\$ 2,005,447	\$ 1,918,030	\$ 1,825,624	\$ 1,822,128	\$ 1,743,153	\$ 1,638,058	\$ 1,582,809	\$ 1,551,360	\$ 1,506,516

<sup>1</sup> Accounting standards require that net position be reported in three components in the financial statements: net investment in capital assets, restricted, and unrestricted. Net position is considered restricted when constraints placed on net position use are either: (a) externally imposed by creditors (such as through debt covenants), grantors, contributors, or laws or regulations of other governments, or (b) imposed by law through constitutional provisions or enabling legislation.

<sup>2</sup> The above data was extracted from the audited financial statements of the Board of Water Commissioners.

<sup>3</sup> The 2014 financial statements were restated as part of the implementation of GASB Statement No.68 *Accounting and Financial Reporting for Pensions*.

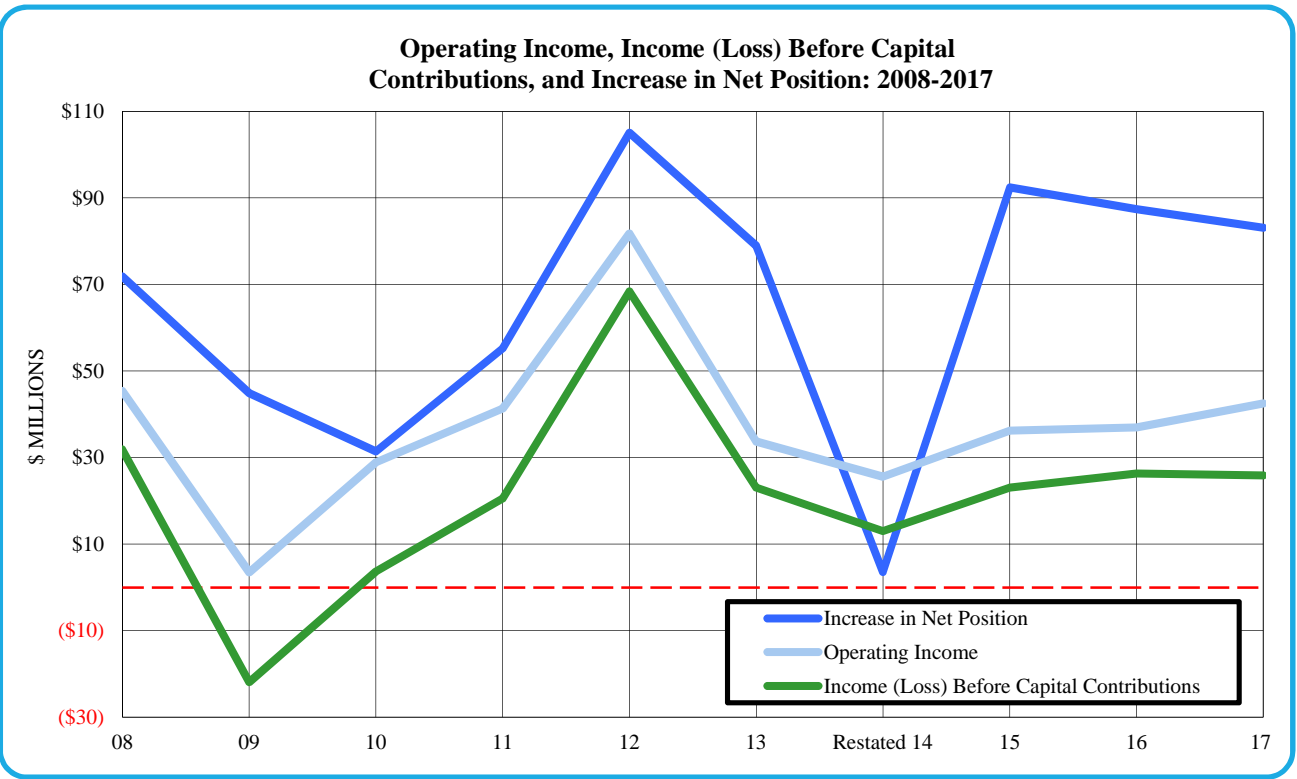
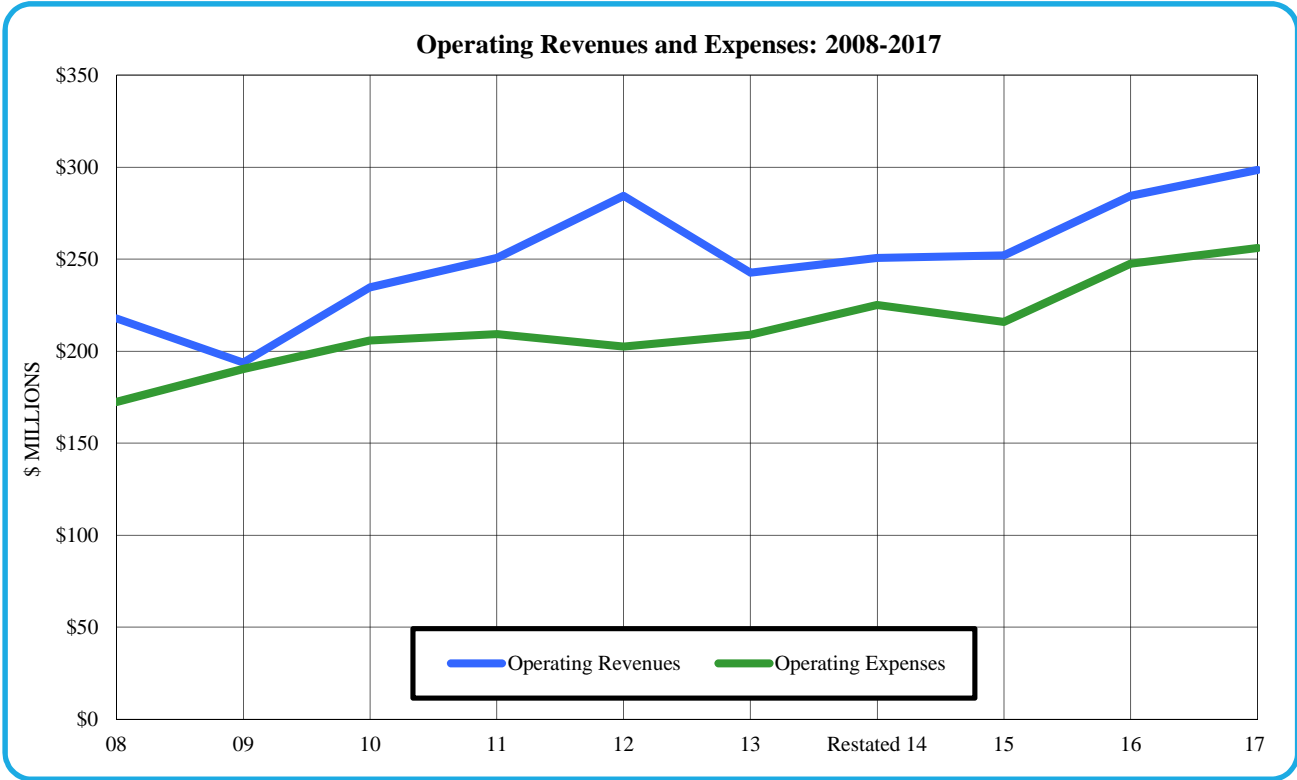
## STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION<sup>1,2</sup>: 2008 - 2017

	(amounts expressed in thousands)									
	2017	2016	2015	Restated 2014 <sup>3</sup>	2013	2012	2011	2010	2009	2008
<b>OPERATING REVENUES:</b>										
Water	\$ 286,139	\$ 273,238	\$ 241,836	\$ 239,288	\$ 230,482	\$ 271,575	\$ 239,186	\$ 224,489	\$ 184,396	\$ 205,941
Power generation and other	12,366	11,216	10,224	11,380	12,141	12,764	11,481	10,187	9,432	11,791
Total operating revenues	<b>298,505</b>	284,454	252,060	250,668	242,623	284,339	250,667	234,676	193,828	217,732
<b>OPERATING EXPENSES:</b>										
Source of supply, pumping, treatment and distribution	84,725	82,418	75,972	83,091	68,722	75,846	79,881	79,400	68,275	66,629
General and administrative	97,917	103,380	81,994	85,347	81,494	66,433	66,077	73,926	72,487	60,955
Customer service	10,999	11,370	9,962	10,851	12,894	13,929	14,394	14,150	13,022	9,407
Depreciation and amortization	62,348	50,352	47,897	45,772	45,805	46,363	48,961	38,322	36,582	35,382
Total operating expenses	<b>255,989</b>	247,520	215,825	225,061	208,915	202,571	209,313	205,798	190,366	172,373
<b>OPERATING INCOME</b>	<b>42,516</b>	36,934	36,235	25,607	33,708	81,768	41,354	28,878	3,462	45,359
<b>NONOPERATING REVENUES (EXPENSES):</b>										
Investment income	2,140	1,603	1,479	1,552	1,488	1,451	1,201	1,336	948	9,141
Interest expense, less capitalized interest	(12,711)	(11,446)	(13,049)	(12,664)	(13,602)	(14,217)	(17,719)	(16,630)	(17,547)	(17,699)
Gain (loss) on disposition of capital assets	(11,443)	(6,348)	(4,720)	(5,394)	(2,171)	(4,331)	(6,011)	(15,533)	(8,168)	(4,426)
Other income	7,996	7,426	5,595	6,143	6,606	5,882	6,147	7,931	1,881	1,956
Other expense	(2,657)	(1,861)	(2,499)	(2,252)	(2,939)	(2,164)	(4,408)	(2,336)	(2,483)	(2,459)
Total nonoperating expenses, net	<b>(16,675)</b>	(10,626)	(13,194)	(12,615)	(10,618)	(13,379)	(20,790)	(25,232)	(25,369)	(13,487)
<b>INCOME (LOSS) BEFORE CAPITAL CONTRIBUTIONS</b>	<b>25,841</b>	26,308	23,041	12,992	23,090	68,389	20,564	3,646	(21,907)	31,872
<b>CAPITAL CONTRIBUTIONS:</b>										
Contributions in aid of construction	14,781	22,147	33,256	23,190	21,424	17,163	17,239	10,861	41,443	21,492
System development charges	42,486	38,962	36,109	32,736	34,461	19,543	17,446	16,942	25,308	18,499
Total capital contributions	<b>57,267</b>	61,109	69,365	55,926	55,885	36,706	34,685	27,803	66,751	39,991
<b>INCREASE IN NET POSITION</b>	<b>83,108</b>	87,417	92,406	68,918	78,975	105,095	55,249	31,449	44,844	71,863
<b>NET POSITION:</b>										
Beginning of year	2,005,447	1,918,030	1,825,624	1,822,128	1,743,153	1,638,058	1,582,809	1,551,360	1,506,516	1,434,653
Cumulative effect of GASB 68 implementation				(65,422)						
Restated beginning net position				<u>1,756,706</u>						
End of year	<b>\$ 2,088,555</b>	\$ 2,005,447	\$ 1,918,030	\$ 1,825,624	\$ 1,822,128	\$ 1,743,153	\$ 1,638,058	\$ 1,582,809	\$ 1,551,360	\$ 1,506,516

<sup>1</sup> The above data was extracted from the audited financial statements of the Board of Water Commissioners.

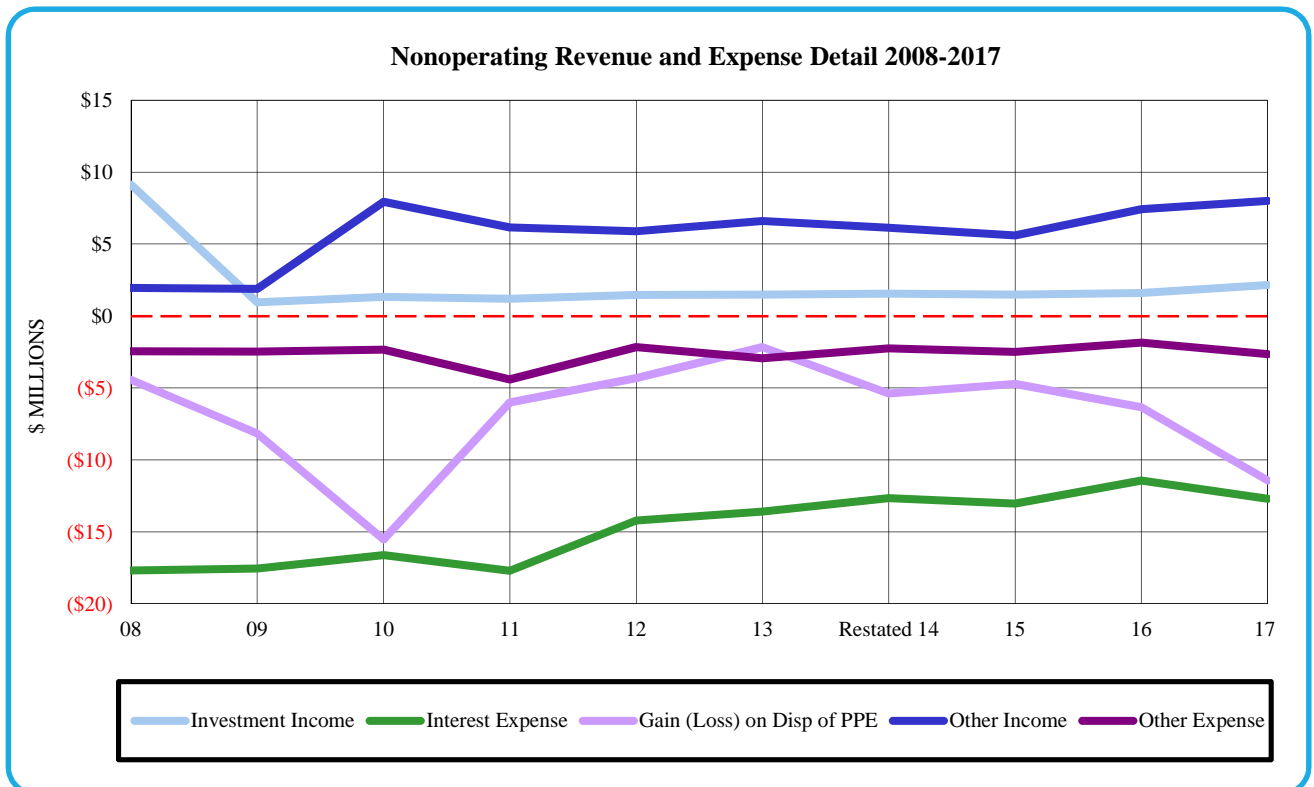
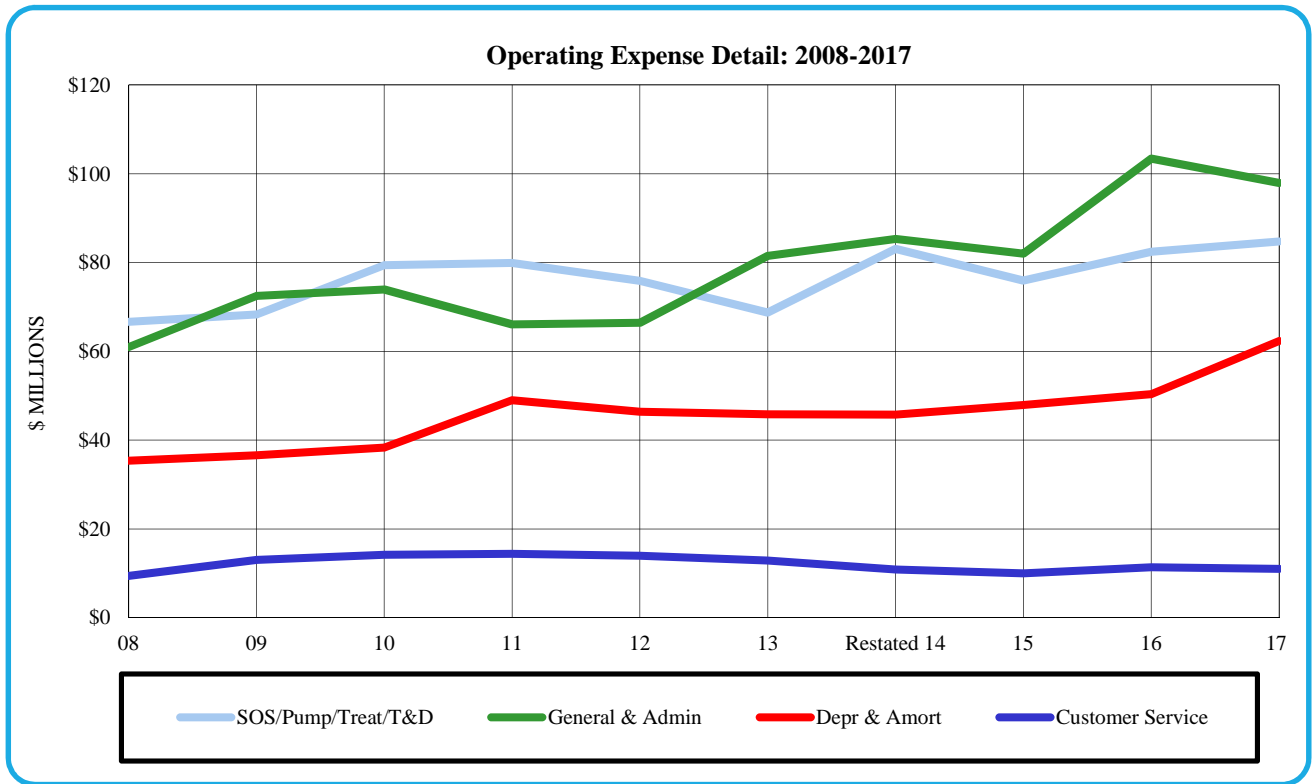
<sup>2</sup> Certain reclassifications have been made to prior years' information to conform to the current year presentation.

<sup>3</sup> The 2014 financial statements were restated as part of the implementation of GASB Statement No.68 *Accounting and Financial Reporting for Pensions*.



<sup>1</sup> Operating expenses, operating income, income before contributions and net position were restated for 2014 as part of the implementation of GASB Statement No. 68 Accounting and Financial Reporting for Pensions.

(continued)



<sup>1</sup> Operating expenses, operating income, income before contributions and net position were restated for 2014 as part of the implementation of GASB Statement No.68 Accounting and Financial Reporting for Pensions .

## B - REVENUE CAPACITY INFORMATION

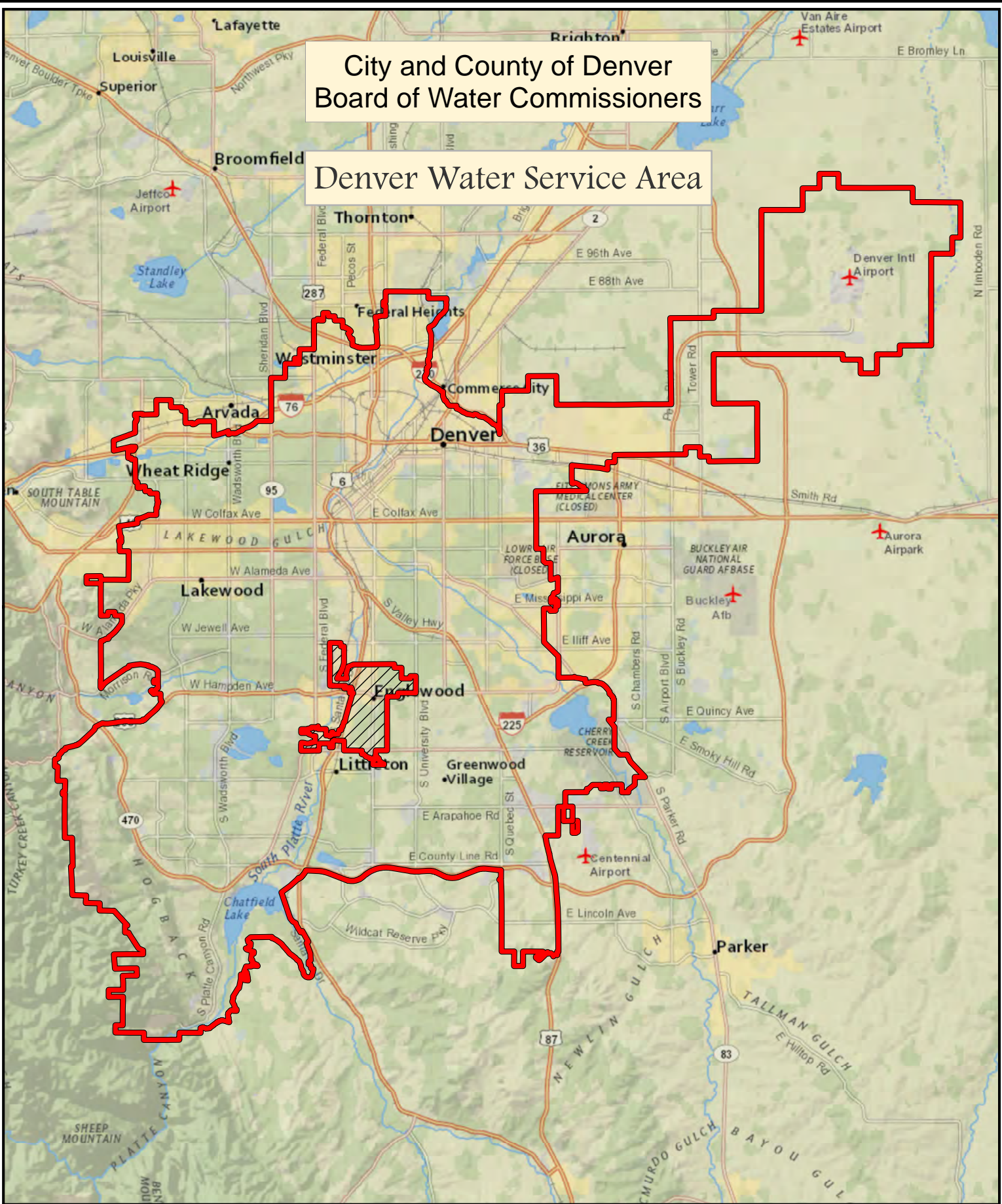
*These schedules contain information to help the reader assess  
Denver Water's primary revenue sources.*



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# City and County of Denver Board of Water Commissioners

## Denver Water Service Area

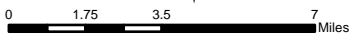


### Legend

-  Denver Water Service Area
-  Not served by Denver Water



Map Date: 4/3/2018  
Author: ARG-MLF  
Source(s):



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## CUSTOMER SERVICE DATA: 2008 - 2017

	2017	2016	2015	2014	2013	2012	2011 <sup>5</sup>	2010	2009 <sup>6</sup>	2008
<b>Active Taps:<sup>1</sup></b>										
Beginning of Year	312,876	312,653	312,908	312,228	310,463	309,272	309,562	310,068	309,373	308,079
Activated During Year	992	1,139	1,105	1,250	2,377	1,539	23	886	979	1,919
Discontinued During Year	(1,122)	(916)	(1,360)	(570)	(612)	(348)	(313)	(1,392)	(284)	(625)
Net Increase During Year	(130)	223	(255)	680	1,765	1,191	(290)	(506)	695	1,294
Total Active Taps - End of Year	312,746	312,876	312,653	312,908	312,228	310,463	309,272	309,562	310,068	309,373
<b>Active Taps:<sup>1</sup></b>										
Inside City	161,746	161,816	161,611	161,997	161,668	160,205	159,302	159,592	161,611	158,448
City and County	1,215	1,225	1,229	1,236	1,334	1,218	1,204	1,277	1,272	1,226
Outside City - Read and Bill	37,050	37,051	37,020	36,911	36,795	36,637	36,542	36,477	35,760	36,420
Outside City - Total Service	36,466	36,462	36,452	36,408	36,473	36,318	36,270	36,376	36,140	36,230
Outside City - Master Meter	76,269	76,322	76,341	76,356	75,958	76,085	75,954	75,840	75,285	77,049
Total Active Taps - End of Year	312,746	312,876	312,653	312,908	312,228	310,463	309,272	309,562	310,068	309,373
Stub-Ins on System <sup>2</sup>	2,203	1,179	766	1,146	811	514	651	367	275	801
Fire Hydrant Use Permits	708	730	673	631	550	518	527	439	485	518
AMR (Automatic Meter Reading) Installations <sup>3</sup>	-	-	-	-	-	-	895	886	742	137
Turn-Offs Due to Delinquent Accounts	7,287	6,275	4,996	5,630	4,746	5,463	6,125	6,687	8,913	13,284
In-Home Water Audits	1,170	1,172	1,005	1,162	976	609	480	409	349	383
Call Center Calls <sup>4</sup>	218,411	230,002	231,620	214,867	227,736	231,533	221,291	213,065	229,979	237,047
Water Quality Calls:										
Taste and Odor	176	214	213	180	219	212	169	221	194	161
Dirty Water	359	296	335	300	326	289	333	309	356	205
Illness Concerns	57	49	56	47	50	48	46	51	56	48
Other <sup>7</sup>	1,279	654	94	89	192	99	89	128	63	50
New Taps Made	2,806	2,710	2,165	2,289	1,941	950	906	583	679	1,743

<sup>1</sup> An active tap is defined as a metered connection to the distribution main that has had all fees paid, and is either currently using water, or has used water at any time during the last five consecutive years. Does not include taps sold to raw water customers.

<sup>2</sup> A stub-in is a connection made solely to extend the service line from the main to the valve at the property line prior to the paving of the street and is not considered a tap.

<sup>3</sup> AMR represents large capital investments to replace old batteries in the AMRs not day to day replacements of meters.

<sup>4</sup> Call Center Calls include calls offered, plus calls handled through the Interactive Voice Response (IVR).

<sup>5</sup> In 2011, there were 895 taps activated during the year. 875 change over taps were double counted in prior years which were corrected in 2011.

<sup>6</sup> In 2009, a new customer information system was implemented and data produced from that system may not be strictly comparable to prior years.

<sup>7</sup> Starting in 2016, customers were given the opportunity to request lead test kits to test lead levels in the water in their homes. These calls are tracked in the "other" category.

**WATER SOLD IN DOLLARS BY TYPE OF CUSTOMER: 2008 - 2017**

		(non-accrual basis) <sup>1</sup> (amounts expressed in thousands)									
		2017	2016 <sup>4</sup>	2015	2014	2013	2012	2011	2010	2009	2008
<b>SALES OF TREATED WATER</b>											
<b>A. METERED GENERAL CUSTOMERS 2016 - 2017</b>											
Residential -	Inside City	\$ 61,877	\$ 58,477	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	20,948	21,461	-	-	-	-	-	-	-	-
	Outside City-Total Service	27,509	27,095	-	-	-	-	-	-	-	-
Irrigation -	Inside City	4,681	4,430	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	2,830	3,056	-	-	-	-	-	-	-	-
	Outside City-Total Service	3,873	4,129	-	-	-	-	-	-	-	-
Non-Residential -	Inside City	53,396	47,711	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	12,583	12,214	-	-	-	-	-	-	-	-
	Outside City-Total Service	12,595	11,750	-	-	-	-	-	-	-	-
		<b>200,292</b>	<b>190,323</b>	-	-	-	-	-	-	-	-
<b>A. METERED GENERAL CUSTOMERS 2008-2015</b>											
Residential -	Inside City	-	-	49,842	49,114	48,057	57,504	49,853	46,658	34,776	39,376
	Outside City-Read and Bill	-	-	17,623	16,938	16,893	20,726	17,739	17,547	13,016	15,970
	Outside City-Total Service	-	-	21,943	22,113	22,168	28,464	23,923	24,172	17,921	22,069
Residential Irrigation -	Inside City	-	-	1,044	1,028	995	1,363	1,128	1,044	707	860
	Outside City-Read and Bill	-	-	770	753	725	1,002	819	798	609	696
	Outside City-Total Service	-	-	682	661	602	766	632	617	468	459
Small multi-family -	Inside City	-	-	4,974	4,932	4,780	5,281	4,735	4,285	3,657	3,735
	Outside City-Read and Bill	-	-	477	484	476	505	437	370	331	291
	Outside City-Total Service	-	-	785	781	748	813	714	606	552	528
Commercial -	Inside City	-	-	36,651	35,883	33,834	37,074	33,705	31,454	29,121	29,548
	Outside City-Read and Bill	-	-	8,940	9,010	8,501	9,585	8,557	8,069	8,163	7,164
	Outside City-Total Service	-	-	9,284	9,434	8,744	9,691	8,821	8,285	8,040	7,575
Industrial -	Inside City	-	-	3,033	3,090	3,139	3,212	2,995	2,820	2,896	3,020
	Outside City-Read and Bill	-	-	1,102	1,121	1,028	1,624	2,239	2,101	2,016	2,384
	Read and Bill Winter/Summer Ac	-	-	-	-	-	(1,644)	-	-	-	-
Other Irrigation <sup>2</sup> -	Outside City-Total Service	-	-	154	143	148	164	167	184	120	201
	Inside City	-	-	2,567	2,629	2,494	3,709	3,190	2,889	1,815	2,017
	Outside City-Read and Bill	-	-	1,674	1,584	1,535	2,095	1,736	1,757	1,182	1,246
	Outside City-Total Service	-	-	2,510	2,426	2,300	3,077	2,688	2,567	1,697	1,920
		-	-	164,055	162,124	157,167	185,011	164,078	156,223	127,087	139,059

See accompanying footnotes on final page of report.

(continued)

**WATER SOLD IN DOLLARS BY TYPE OF CUSTOMER: 2008 - 2017, (continued)**

		(non-accrual basis) <sup>1</sup> (amounts expressed in thousands)									
		2017	2016 <sup>4</sup>	2015	2014	2013	2012	2011	2010	2009	2008
B.	PRIVATE FIRE PROTECTION SERVICE 2016-2017										
	Sprinklers -										
	Inside City	928	895	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	93	88	-	-	-	-	-	-	-	-
	Outside City-Total Service	153	146	-	-	-	-	-	-	-	-
		1,174	1,129	-	-	-	-	-	-	-	-
B.	PRIVATE FIRE PROTECTION SERVICE 2008-2015										
	Sprinklers -										
	Inside City	-	-	868	840	827	1,015	985	928	925	896
	Outside City-Read and Bill	-	-	86	84	71	65	51	49	52	45
	Outside City-Total Service	-	-	142	139	133	122	73	70	71	64
		-	-	1,096	1,063	1,031	1,202	1,109	1,047	1,048	1,005
C.	OTHER SALES TO PUBLIC AUTHORITIES 2016-2017										
	City & County of Denver <sup>3</sup> -										
	Irrigation	3,336	3,452	-	-	-	-	-	-	-	-
	Non-Irrigation	2,349	2,298	-	-	-	-	-	-	-	-
		5,685	5,750	-	-	-	-	-	-	-	-
C.	OTHER SALES TO PUBLIC AUTHORITIES 2008-2015										
	City & County of Denver <sup>3</sup> -										
	Irrigation	-	-	2,626	2,707	2,686	4,087	3,148	3,616	2,441	3,394
	Non-Irrigation	-	-	2,078	1,927	1,717	1,880	1,583	1,584	1,772	1,491
	Other County Agencies -										
	Inside City	-	-	1,016	971	1,003	1,476	1,136	1,040	950	1,153
	Outside City-Read and Bill	-	-	608	768	625	743	757	891	458	600
	Outside City-Total Service	-	-	750	736	708	964	852	839	674	758
	State Agencies -										
	Inside City	-	-	361	361	354	393	375	362	352	469
	Outside City-Read and Bill	-	-	51	46	38	42	39	37	35	29
	Outside City-Total Service	-	-	5	6	7	6	4	5	4	7
	Federal Agencies -										
	Inside City	-	-	54	127	133	168	198	92	357	288
	Outside City-R&B at Denver Rates	-	-	31	9	26	26	67	31	35	61
	Outside City-Read and Bill	-	-	44	49	37	48	62	530	118	427
	Total Service	-	-	1	2	2	2	2	1	2	2
		-	-	7,625	7,709	7,336	9,835	8,223	9,028	7,198	8,679

See accompanying footnotes on final page of report.

(continued)



**WATER SOLD IN DOLLARS BY TYPE OF CUSTOMER: 2008 - 2017, (continued)**

	(non-accrual basis) <sup>1</sup> (amounts expressed in thousands)									
	2017	2016 <sup>4</sup>	2015	2014	2013	2012	2011	2010	2009	2008
D. SALES OF TREATED WATER FOR RESALE 2016-2017										
Outside City - Master Meter	64,604	65,479	-	-	-	-	-	-	-	-
Outside the Combined Service Area	4,545	3,704	-	-	-	-	-	-	-	-
	<b>69,149</b>	69,183	-	-	-	-	-	-	-	-
D. SALES OF TREATED WATER FOR RESALE 2008-2015										
Outside City - Master Meter	-	-	48,906	48,371	47,550	62,968	47,483	43,196	38,192	40,909
Outside the Combined Service Area	-	-	13,034	13,598	10,729	4,064	9,886	9,552	8,954	8,686
	-	-	61,940	61,969	58,279	67,032	57,369	52,748	47,146	49,595
TOTAL SALES OF TREATED WATER	<b>276,300</b>	266,385	234,716	232,865	223,813	263,080	230,780	219,046	182,479	198,338
<u>SALES OF NONPOTABLE WATER</u>	<b>8,735</b>	8,133	7,509	5,912	7,043	8,271	7,039	6,189	5,587	7,204
TOTAL SALES OF WATER	<b>\$ 285,035</b>	\$ 274,518	\$ 242,225	\$ 238,777	\$ 230,856	\$ 271,351	\$ 237,819	\$ 225,235	\$ 188,066	\$ 205,542

<sup>1</sup> This schedule represents actual billings made for water during the year. No accruals were made for revenue earned on unbilled metered accounts. Therefore, amounts on this schedule do not agree with amounts on the Statement of Revenues, Expenses and Changes in Net Position. The difference from amounts on an accrual basis is immaterial.

<sup>2</sup> In 2008, a separate rate classification was created for commercial, industrial and governmental irrigation-only customers ("Other Irrigation"). For years prior to 2008, the revenue earned from the sale of water and the related gallons sold to these customers are included in the amounts shown for regular commercial, industrial and local government agency service.

<sup>3</sup> In 2008, a separate rate classification was created for City and County of Denver irrigation-only customers ("City & County of Denver - Irrigation"). Prior to 2008, the revenue earned from the sale of water and the related gallons sold to these customers are included in "City & County of Denver - Non-Irrigation."

<sup>4</sup> During 2016, the Board of Directors at Denver Water approved modifications to its rate structures, changes to how Denver Water classifies selected revenues and expenses for financial statement presentation, and the presentation of certain information included in its statistical schedules. The 2016 financial statements reflect these changes.

**TREATED WATER SOLD IN GALLONS BY TYPE OF CUSTOMER: 2008 - 2017**

SALES OF TREATED WATER		(non-accrual basis) <sup>1</sup>									
		(amounts expressed in thousands of gallons)									
		2017	2016 <sup>4</sup>	2015	2014	2013	2012	2011	2010	2009	2008
A. METERED GENERAL CUSTOMERS 2016-2017											
Residential -	Inside City	12,330,988	12,435,755	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	4,056,528	4,231,865	-	-	-	-	-	-	-	-
	Outside City-Total Service	4,390,838	4,533,837	-	-	-	-	-	-	-	-
Irrigation -	Inside City	895,806	911,999	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	509,332	554,832	-	-	-	-	-	-	-	-
	Outside City-Total Service	559,663	624,619	-	-	-	-	-	-	-	-
Non-Residential -	Inside City	15,520,778	15,543,153	-	-	-	-	-	-	-	-
	Outside City-Read and Bill	3,030,397	3,073,586	-	-	-	-	-	-	-	-
	Outside City-Total Service	2,568,339	2,570,546	-	-	-	-	-	-	-	-
		<b>43,862,669</b>	44,480,192	-	-	-	-	-	-	-	-
A. METERED GENERAL CUSTOMERS 2008-2015											
Residential -	Inside City	-	-	11,359,464	11,603,885	11,629,361	14,052,609	13,098,298	13,601,820	12,075,102	14,190,479
	Outside City-Read and Bill	-	-	3,714,016	3,722,505	3,839,625	4,750,696	4,399,807	4,593,122	4,114,005	4,913,295
	Outside City-Total Service	-	-	3,957,317	4,051,615	4,150,654	5,225,688	4,794,193	4,959,464	4,388,923	5,297,529
Residential Irrigation -	Inside City	-	-	215,336	209,084	202,587	283,485	248,861	261,019	190,264	247,163
	Outside City-Read and Bill	-	-	144,812	145,195	139,779	198,236	173,346	186,694	139,916	200,591
	Outside City-Total Service	-	-	105,991	107,181	101,655	140,407	121,065	124,574	94,358	125,168
Small multi-family -	Inside City	-	-	1,355,336	1,386,032	1,370,868	1,560,394	1,495,266	1,525,150	1,437,136	1,556,375
	Outside City-Read and Bill	-	-	120,007	123,537	125,029	135,850	125,757	118,190	114,740	113,627
	Outside City-Total Service	-	-	160,073	162,590	163,553	184,925	172,393	156,313	149,255	158,912
Commercial -	Inside City	-	-	11,877,715	11,865,891	11,407,418	12,522,805	12,157,287	12,398,800	12,069,634	12,643,141
	Outside City-Read and Bill	-	-	2,232,004	2,257,606	2,208,047	2,524,765	2,384,164	2,370,656	2,390,356	2,519,213
	Outside City-Total Service	-	-	2,032,945	2,071,909	2,033,840	2,323,899	2,223,111	2,248,376	2,160,037	2,235,147
Industrial -	Inside City	-	-	1,061,877	1,116,290	1,145,795	1,188,635	1,185,642	1,220,187	1,286,307	1,328,867
	Outside City-Read and Bill	-	-	300,802	306,221	297,504	521,752	690,755	685,581	696,547	884,226
	Read and Bill Winter/Summer A	-	-	-	-	-	(519,142)	-	-	-	-
	Outside City-Total Service	-	-	33,596	31,138	33,138	38,090	40,772	49,246	33,022	59,666
Other Irrigation <sup>2</sup> -	Inside City	-	-	543,870	550,833	514,946	786,154	719,221	747,524	574,776	806,722
	Outside City-Read and Bill	-	-	318,000	307,594	296,929	417,375	370,134	416,362	300,627	421,140
	Outside City-Total Service	-	-	398,268	396,232	391,745	567,216	520,659	525,479	391,178	546,971
		-	-	39,931,429	40,415,338	40,052,473	46,903,839	44,920,731	46,188,557	42,606,183	48,248,232

See accompanying footnotes on final page of report.

(continued)

**TREATED WATER SOLD IN GALLONS BY TYPE OF CUSTOMER: 2008 - 2017, (continued)**

	(non-accrual basis) <sup>1</sup>									
	(amounts expressed in thousands of gallons)									
<u>SALES OF TREATED WATER</u>	2017	2016 <sup>4</sup>	2015	2014	2013	2012	2011	2010	2009	2008
<b>B. OTHER SALES TO PUBLIC AUTHORITIES 2016-2017</b>										
City & County of Denver <sup>3</sup> - Irrigation	1,166,206	1,266,661	-	-	-	-	-	-	-	-
Non-Irrigation	909,091	914,444	-	-	-	-	-	-	-	-
	<b>2,075,297</b>	2,181,105	-	-	-	-	-	-	-	-
<b>B. OTHER SALES TO PUBLIC AUTHORITIES 2008-2015</b>										
City & County of Denver <sup>3</sup> - Irrigation	-	-	978,144	1,026,040	1,008,417	1,565,859	1,230,115	1,594,390	1,036,056	1,951,435
Non-Irrigation	-	-	843,730	802,951	763,591	829,144	763,595	790,149	888,372	824,476
Other County Agencies - Inside City	-	-	302,066	291,796	309,260	445,947	368,139	363,214	358,456	478,945
Outside City-Read and Bill	-	-	160,303	190,837	160,096	191,100	213,673	261,631	135,817	212,370
Outside City-Total Service	-	-	149,410	146,595	148,160	210,913	195,617	208,405	166,629	219,046
State Agencies - Inside City	-	-	116,022	117,316	118,520	130,365	130,345	140,865	147,880	200,936
Outside City-Read and Bill	-	-	11,139	10,783	9,299	10,205	9,724	10,112	9,857	9,927
Outside City-Total Service	-	-	1,088	1,225	1,622	1,557	1,081	1,370	1,177	1,931
Federal Agencies - Inside City	-	-	20,840	40,390	48,534	60,751	83,863	38,759	55,456	84,686
Outside City-R&B at Denver Rates	-	-	6,991	5,341	6,238	6,245	8,244	12,116	195,924	121,545
Outside City-Read and Bill	-	-	10,166	11,486	8,493	11,156	22,629	152,973	38,949	149,333
Total Service	-	-	296	451	457	367	375	384	443	488
	-	-	2,600,195	2,645,211	2,582,687	3,463,609	3,027,400	3,574,368	3,035,016	4,255,118
<b>C. SALES OF TREATED WATER FOR RESALE 2016-2017</b>										
Outside City - Master Meter	15,481,203	15,767,447	-	-	-	-	-	-	-	-
Outside the Combined Service Area	995,827	828,540	-	-	-	-	-	-	-	-
	<b>16,477,030</b>	16,595,987	-	-	-	-	-	-	-	-
<b>C. SALES OF TREATED WATER FOR RESALE 2008-2015</b>										
Outside City - Master Meter	-	-	12,130,614	12,264,584	12,574,045	15,050,805	14,109,526	14,352,778	12,824,666	15,294,977
Outside the Combined Service Area	-	-	3,147,757	3,326,368	2,743,233	3,558,092	2,767,464	3,021,344	2,902,470	3,008,039
	-	-	15,278,371	15,590,952	15,317,278	18,608,897	16,876,990	17,374,122	15,727,136	18,303,016
<b>TOTAL SALES OF TREATED WATER</b>	<b>62,414,996</b>	63,257,284	57,809,995	58,651,501	57,952,438	68,976,345	64,825,121	67,137,047	61,368,335	70,806,366

See accompanying footnotes on final page of report.

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**TREATED WATER SOLD IN GALLONS BY TYPE OF CUSTOMER: 2008 - 2017, (continued)**

SALES OF TREATED WATER	(non-accrual basis) <sup>1</sup>									
	(amounts expressed in thousands of gallons)									
	2017	2016 <sup>4</sup>	2015	2014	2013	2012	2011	2010	2009	2008
<u>Reconciliation of Water Treated, Delivered, Consumption, Sales and Non-revenue Water:</u>										
Total Water Treated (Production)	<b>63,837,010</b>	64,963,810	60,140,870	61,177,090	60,195,400	71,960,650	68,257,000	69,713,070	62,089,800	71,983,540
(Increase) Decrease in Clear Water Storage	<b>(28,370)</b>	40,020	(24,900)	8,180	17,040	8,050	3,800	(17,670)	17,100	(7,670)
Treated Water Delivered	<b>63,808,640</b>	65,003,830	60,115,970	61,185,270	60,212,440	71,968,700	68,260,800	69,695,400	62,106,900	71,975,870
Water Purchased	-	-	-	-	-	-	-	-	-	-
Treated Water Available (Consumption)	<b>63,808,640</b>	65,003,830	60,115,970	61,185,270	60,212,440	71,968,700	68,260,800	69,695,400	62,106,900	71,975,870
Less Sales of Treated Water	<b>(62,414,996)</b>	(63,257,284)	(57,809,995)	(58,651,501)	(57,952,438)	(68,976,345)	(64,825,121)	(67,137,047)	(61,368,335)	(70,806,366)
Less Load Shifted Treated Water	-	-	-	-	-	-	-	-	-	-
Non-revenue Water	<b>1,393,644</b>	1,746,546	2,305,975	2,533,769	2,260,002	2,992,355	3,435,679	2,558,353	738,565	1,169,504
% Non-revenue Water	<b>2.18%</b>	2.69%	3.84%	4.14%	3.75%	4.16%	5.03%	3.67%	1.19%	1.62%

<sup>1</sup> This schedule represents actual billings made for water during the year. No accruals were made for revenue earned on unbilled metered accounts.

<sup>2</sup> In 2008, a separate rate classification was created for commercial, industrial and governmental irrigation-only customers ("Other Irrigation"). For years prior to 2008, the revenue earned from the sale of water and the related gallons sold to these customers are included in the amounts shown for regular commercial, industrial and local government agency service.

<sup>3</sup> In 2008, a separate rate classification was created for City and County of Denver irrigation-only customers ("City & County of Denver - Irrigation"). Prior to 2008, the revenue earned from the sale of water and the related gallons sold to these customers are included in "City & County of Denver - Non-Irrigation."

<sup>4</sup> During 2016, the Board of Directors at Denver Water approved modifications to its rate structures, changes to how Denver Water classifies selected revenues and expenses for financial statement presentation, and the presentation of certain information included in its statistical schedules. The 2016 financial statements reflect these changes.

## OPERATING REVENUE AND RELATED WATER CONSUMPTION - 2017

		(non-accrual basis) <sup>1</sup> (amounts expressed in thousands)			
		Revenue	Gallons Sold (000)	Number of Customers <sup>2</sup>	Per 1,000 Gallons
<b>I. SALES OF TREATED WATER</b>					
<b>A. METERED GENERAL CUSTOMERS<sup>3</sup></b>					
Residential	Inside City	\$ 61,877	12,330,988	137,627	\$ 5.0180
	Outside City-Read and Bill	20,948	4,056,528	32,390	5.1640
	Outside City-Total Service	27,509	4,390,838	33,579	6.2651
Irrigation	Inside City	4,681	895,806	1,434	5.2255
	Outside City-Read and Bill	2,830	509,332	447	5.5563
	Outside City-Total Service	3,873	559,663	616	6.9202
Non-Residential	Inside City	53,396	15,520,778	25,083	3.4403
	Outside City-Read and Bill	12,583	3,030,397	3,058	4.1523
	Outside City-Total Service	12,595	2,568,339	3,849	4.9039
		200,292	43,862,669	238,083	4.5663
<b>B. PRIVATE FIRE PROTECTION SERVICE<sup>4</sup></b>					
Sprinklers -	Inside City	928	-		
	Outside City-Read and Bill	93	-		
	Outside City-Total Service	153	-		
		1,174	-		
<b>C. OTHER SALES TO PUBLIC AUTHORITIES</b>					
City & County of Denver	Irrigation	3,336	1,166,206	707	2.8606
	Non-Irrigation	2,349	909,091	421	2.5839
		5,685	2,075,297	1,128	2.7394
<b>D. SALES OF TREATED WATER FOR RESALE<sup>5</sup></b>					
Outside City - Master Meter		64,604	15,481,203	76,269	4.1731
Outside the Combined Service Area		4,545	995,827	-	4.5640
		69,149	16,477,030	76,269	4.1967
<b>TOTAL SALES OF TREATED WATER<sup>6</sup></b>		276,300	62,414,996	315,480	4.4268
<b>II. SALES OF NON-POTABLE WATER<sup>7</sup></b>					
Inside City		837	1,276,051	97	0.6559
Outside City		6,217	6,725,771	22	0.9244
Outside the Combined Service Area		1,681	1,686,761	12	0.9963
		8,735	9,688,583	131	0.9016
<b>TOTAL SALES OF WATER</b>		\$ 285,035	72,103,579	315,611	\$ 3.9531
<b>III. OTHER NON-POTABLE WATER DELIVERIES<sup>7</sup></b>			1,501,364		
<b>TOTAL GALLONS SOLD</b>			73,604,943		

See accompanying footnotes on final page of report.

(continued)

**OPERATING REVENUE AND RELATED WATER CONSUMPTION - 2017, (continued)**

	(non-accrual basis) <sup>1</sup> (amounts expressed in thousands)			
	Revenue	Gallons Sold (000)	Number of Customers	Per 1,000 Gallons
<b>IV. OTHER OPERATING REVENUE</b>				
<b>A. POWER SALES REVENUE<sup>8</sup></b>				
Foothills Treatment Plant	\$ 422			
Strontia Springs	272			
Dillon Dam	530			
Roberts Tunnel	1,174			
Hillcrest	405			
Williams Fork	442			
Gross Reservoir	1,255			
	<u>4,500</u>			
<b>B. SPECIAL ASSESSMENTS</b>				
Administrative Fees	3,572			
Penalty Fees	38			
Stub-in, Taps and Meter Fees	2,001			
Hydrant Fees	1,705			
Plan Review, Easement, Distribution Inspection	850			
Other Assessments	(1,109)			
	<u>7,057</u>			
<b>TOTAL OTHER OPERATING REVENUE</b>	<u>11,557</u>			
<b>TOTAL OPERATING REVENUE</b>	<u>\$ 296,592</u>			

<sup>1</sup> This schedule represents actual billings made for water during the year. No accruals were made for revenue earned on unbilled accounts. Therefore, amounts on this schedule do not agree with amounts on the Statement of Revenues, Expenses and Changes in Net Position. The difference from amounts on an accrual basis is immaterial.

<sup>2</sup> Represents the number of active metered services at year-end.

<sup>3</sup> In 2016, Denver Water underwent a significant change in rate structures. As part of this change Denver Water also consolidated various revenue accounts to simplify and streamline financial reporting. The classification of 'Metered General Customers' was modified to reflect this change.

<sup>4</sup> Private fire protection consumption is unmetered and is considered part of non-revenue water. See "Sales of Treated Water between Denver and Outside City" for this estimate.

<sup>5</sup> See "Sales of Treated Water for Resale".

<sup>6</sup> See "Sales of Treated Water Between Denver and Outside City".

<sup>7</sup> See "Sales of Non-Potable Water Between Denver and Outside City".

<sup>8</sup> Power Sales Revenue represents actual billings made for power during the year. No accruals were made for unbilled revenue. Therefore, amounts on this schedule do not agree with amounts on other schedules which report the value of power produced.

## SALES OF TREATED WATER BETWEEN DENVER AND OUTSIDE CITY - 2017

(non-accrual basis)<sup>1</sup>  
(amounts expressed in thousands)

	Revenue		Gallons Sold		# of Customers
	Amount	% of Total	Amount	% of Total	
<b>I. <u>INSIDE CITY</u></b>					
<b>A. METERED GENERAL CUSTOMERS<sup>2</sup></b>					
Residential	\$ 61,877	22.39%	12,330,988	19.76%	137,627
Irrigation	4,681	1.69%	895,806	1.44%	1,434
Non-Residential	53,396	19.33%	15,520,778	24.87%	25,083
	<u>119,954</u>	<u>43.41%</u>	<u>28,747,572</u>	<u>46.07%</u>	<u>164,144</u>
<b>B. PRIVATE FIRE PROTECTION SERVICE<sup>3</sup></b>					
Sprinklers	928	0.34%	-		
<b>C. OTHER SALES TO PUBLIC AUTHORITIES</b>					
City And County of Denver-Irrigation	3,336	1.21%	1,166,206	1.87%	707
City and County of Denver-Non-Irrigation	2,349	0.85%	909,091	1.46%	421
	<u>5,685</u>	<u>2.06%</u>	<u>2,075,297</u>	<u>3.33%</u>	<u>1,128</u>
<b>TOTAL SALES OF TREATED WATER - DENVER</b>					
	<u>126,567</u>	<u>45.81%</u>	<u>30,822,869</u>	<u>49.40%</u>	<u>165,272</u>
Revenue per 1,000 Gallons - Denver			<u>\$ 4.1063</u>		
<b>II. <u>OUTSIDE CITY</u></b>					
<b>A. METERED GENERAL CUSTOMERS</b>					
Residential - Read & Bill	20,948	7.58%	4,056,528	6.50%	32,390
Irrigation - Read & Bill	2,830	1.02%	509,332	0.82%	447
Non-Residential - Read & Bill	12,583	4.55%	3,030,397	4.86%	3,058
Residential - Total Service	27,509	9.96%	4,390,838	7.03%	33,579
Irrigation - Total Service	3,873	1.40%	559,663	0.90%	616
Non-Residential - Total Service	12,595	4.56%	2,568,339	4.11%	3,849
	<u>80,338</u>	<u>29.07%</u>	<u>15,115,097</u>	<u>24.22%</u>	<u>73,939</u>

See accompanying footnotes on final page of report.

(Continued)

**SALES OF TREATED WATER BETWEEN DENVER AND OUTSIDE CITY - 2017, (continued)**

(non-accrual basis)<sup>1</sup>  
(amounts expressed in thousands)

	Revenue		Gallons Sold		# of Customers
	Amount	% of Total	Amount	% of Total	
II. OUTSIDE CITY (Continued)					
B. PRIVATE FIRE PROTECTION SERVICE <sup>2</sup>					
Sprinklers	\$ 93	0.03%	-		
Sprinklers - Total Service	153	0.06%	-		
	<u>246</u>	<u>0.09%</u>			
C. SALES OF TREATED WATER FOR RESALE <sup>3,4</sup>					
Master Meter Distributors	64,604	23.38%	15,481,203	24.80%	76,269
Outside CSA-Fixed Limit Contracts	4,545	1.64%	995,827	1.60%	-
	<u>69,149</u>	<u>25.02%</u>	<u>16,477,030</u>	<u>26.40%</u>	<u>76,269</u>
TOTAL SALES OF TREATED WATER - OUTSIDE CITY	<u>149,733</u>	<u>54.19%</u>	<u>31,592,127</u>	<u>50.62%</u>	<u>150,208</u>
Revenue per 1,000 Gallons - Outside City			<u>\$ 4.7396</u>		
TOTAL SALES OF TREATED WATER	<u>\$ 276,300</u>	<u>100.00%</u>	<u>62,414,996</u>	<u>100.00%</u>	<u>315,480</u>
Revenue per 1,000 Gallons - Total			<u>\$ 4.4268</u>		
RECONCILIATION/CALCULATION OF NON-REVENUE WATER					
Total Water Treated (Production) - Water Treated Monthly			63,837,010		
(Increase) Decrease in Clear Water Storage - Water Treated Monthly			<u>(28,370)</u>		
Total Treated Water Delivered - Water Treated Monthly			63,808,640		
Water Purchased			<u>-</u>		
Total Treated Water Available (Consumption) - Water Treated Monthly			63,808,640	100.00%	
Less Sale of Treated Water			(62,414,996)	(97.82%)	
Less Load Shifted Treated Water			-	0.00%	
Non-revenue Water <sup>3</sup>			<u>1,393,644</u>	<u>2.18%</u>	

<sup>1</sup> This schedule represents actual billings made for water during the year. No accruals were made for revenue earned on unbilled accounts.

<sup>2</sup> Private fire protection consumption is unmetered and is considered part of non-revenue water.

<sup>3</sup> See "Sales of Treated Water For Resale".

<sup>4</sup> During 2016, the Board of Directors at Denver Water approved modifications to its rate structures, changes to how Denver Water classifies selected revenues and expenses for financial statement presentation, and the presentation of certain information included in its statistical schedules. The 2016 financial statements reflect these changes.

**SALES OF NON-POTABLE WATER BETWEEN DENVER AND OUTSIDE CITY - 2017**

(non-accrual basis)<sup>1</sup>  
(amounts expressed in thousands)

	Revenue		Gallons Sold		Number of Customers <sup>2</sup>	Revenue
	Amount	Percent of Total	Amount (000)	Percent of Total		Per 1,000 Gallons
<b>I. <u>INSIDE CITY</u></b>						
Raw Water Sales						
City & County of Denver	\$ 76	0.87%	238,310	2.46%	1	\$ 0.3189
All Other	49	0.56%	61,016	0.63%	6	0.8031
	<u>125</u>	<u>1.43%</u>	<u>299,326</u>	<u>3.09%</u>	<u>7</u>	<u>0.4176</u>
Effluent Sales						
City & County of Denver	23	0.26%	72,685	0.75%	1	0.3164
All Other	11	0.13%	16,739	0.17%	2	0.6571
	<u>34</u>	<u>0.39%</u>	<u>89,424</u>	<u>0.92%</u>	<u>3</u>	<u>0.3802</u>
Recycle Sales						
City & County of Denver	103	1.18%	467,738	4.83%	11	0.2202
All Other	575	6.58%	419,563	4.33%	76	1.3705
	<u>678</u>	<u>7.76%</u>	<u>887,301</u>	<u>9.16%</u>	<u>87</u>	<u>0.7641</u>
Total Denver	<u>837</u>	<u>9.58%</u>	<u>1,276,051</u>	<u>13.17%</u>	<u>97</u>	<u>0.6559</u>
<b>II. <u>OUTSIDE CITY, WITHIN COMBINED SERVICE AREA</u></b>						
Raw Water Sales-All Others	6,202	71.00%	6,710,634	69.26%	15	0.9242
Effluent Sales-All Others	15	0.17%	15,137	0.16%	7	0.9909
Total Outside City, Within Combined Service Area	<u>6,217</u>	<u>71.17%</u>	<u>6,725,771</u>	<u>69.42%</u>	<u>22</u>	<u>0.9244</u>
<b>III. <u>OUTSIDE COMBINED SERVICE AREA</u></b>						
Raw Water Sales						
Centennial Water & Sanitation District	331	3.79%	315,193	3.25%	1	1.0500
Consolidated Mutual Water	152	1.74%	144,352	1.49%	1	1.0500
All Other	443	5.08%	557,852	5.76%	9	0.7941
	<u>926</u>	<u>10.61%</u>	<u>1,017,397</u>	<u>10.50%</u>	<u>11</u>	<u>0.9097</u>
Recycle Sales						
Total Outside Combined Service Area	<u>1,681</u>	<u>19.25%</u>	<u>1,686,761</u>	<u>17.41%</u>	<u>12</u>	<u>0.9963</u>
TOTAL SALES OF NON-POTABLE WATER	<u>\$ 8,735</u>	<u>100.00%</u>	<u>9,688,583</u>	<u>100.00%</u>	<u>131</u>	<u>\$ 0.9016</u>
<b>IV. <u>OTHER NON-POTABLE WATER DELIVERIES</u></b>						
City Ditch at Washington Park			763,696			
City of Englewood (Cabin-Meadow Exchange)			<u>737,668</u>			
Total Other Non-Potable Water Deliveries			<u>1,501,364</u>			
TOTAL NON-POTABLE WATER DELIVERIES			<u>11,189,947</u>			

<sup>1</sup> This schedule represents actual billings made for water during the year. No accruals were made for revenue earned on unbilled accounts. The difference from amounts on an accrual basis is immaterial.

<sup>2</sup> If the customer is reflected in the count of raw water customers, it is excluded from the count of effluent and minimum contract payment customers.

## ANALYSIS OF CUSTOMER ACCOUNTS FOR TREATED WATER - 2017

		Number of Customers <sup>1,2,3</sup>		
		12/31/2017	12/31/2016	Increase (Decrease)
<b>METERED GENERAL CUSTOMERS</b>				
Residential	Denver	137,627	135,398	2,229
	Outside City	32,390	33,261	(871)
	Total Service	33,579	32,150	1,429
Non-Residential	Denver	25,083	24,961	122
	Outside City	3,058	3,193	(135)
	Total Service	3,849	3,590	259
Irrigation	Denver	1,434	1,390	44
	Outside City	447	443	4
	Total Service	616	599	17
<b>TOTAL METERED GENERAL CUSTOMERS</b>		<b>238,083</b>	234,985	3,098
<b>PUBLIC AUTHORITIES</b>				
City & County of Denver	Irrigation	707	696	11
	Non-Irrigation	421	409	12
<b>TOTAL PUBLIC AUTHORITIES</b>		<b>1,128</b>	1,105	23
<b>RESALE ACCOUNTS (MASTER METER)<sup>4</sup></b>		<b>76,269</b>	76,322	(53)
<b>TOTAL TREATED WATER CUSTOMERS</b>		<b>315,480</b>	312,412	3,068

<sup>1</sup> A customer account is defined as a person or legal entity to which Denver Water currently provides service or has provided service at any time during the last five consecutive years. A customer may have more than one license, tap and/or premise.

<sup>2</sup> Represents the number of active metered services at year-end.

<sup>3</sup> In 2016, Denver Water underwent a significant change in rate structures. As part of this change Denver Water also consolidated various revenue accounts to simplify and streamline financial reporting. The classification of 'Number of Customers' was modified to reflect this change. Information as of December 31, 2015 was also modified for comparability purposes.

<sup>4</sup> See "Sales of Treated Water for Resale".

## WATER RATE SCHEDULES - 2017

### Rate Schedule 1

#### Treated Water Rates

For Meters Read On or After April 1, 2017

#### A. Monthly Fixed Charges, \$ per Bill

Meter Size inches	Inside City of Denver	Outside City		
		Read & Bill	Total Service	Wholesale
5/8" & 3/4"	\$11.86	\$11.86	\$11.86	\$11.86
1"	15.13	15.13	15.13	15.13
1 1/2"	25.28	25.28	25.28	25.28
2"	39.35	39.35	39.35	39.35
3"	79.29	79.29	79.29	79.29
4"	135.26	135.26	135.26	135.26
6"	295.65	295.65	295.65	295.65
8"	519.87	519.87	519.87	519.87
10"	808.25	808.25	808.25	808.25
12"	1,161.14	1,161.14	1,161.14	1,161.14

#### B. Treated Water Volume Rates, \$ per 1,000 gallons

Customer Class	Tier Threshold 1,000 gallons	Inside City of Denver	Outside City		
			Read & Bill	Total Service	Wholesale
<b>Single Family Residential</b>					
Tier 1	0 to AWC (note D. <sup>3</sup> )	\$2.55	\$2.68	\$3.30	N/A
Tier 2	AWC + 15	4.59	4.82	5.94	
Tier 3	Greater than AWC + 15	6.12	6.43	7.92	
<b>Nonresidential (note D.<sup>4</sup>, D.<sup>5</sup>)</b>					
Tier 1	0 to AWC	\$2.71	\$3.25	\$3.77	N/A
Tier 2	AWC to 4 x AWC	3.79	4.55	5.28	
Tier 3	Greater than 4 x AWC	4.34	5.20	6.03	
<b>Irrigation</b>					
Winter (Nov. 1 through April 30)		\$1.27	\$1.38	\$1.74	N/A
Summer (May 1 through October 31)		5.08	5.52	6.96	
<b>Wholesale</b>					
Master Meter					\$4.10
Outside the Combined Service Area					4.48

#### C. Private Fireline

Fireline Size inches	Inside City of Denver	Outside City		
		Read & Bill	Total Service	Wholesale
1"	\$3.78	\$2.46	\$3.79	
2"	6.31	4.11	6.32	
4"	9.74	6.35	9.77	
6"	13.92	9.08	13.96	
8"	24.36	15.88	24.43	N/A
10"	34.80	22.69	34.90	
12"	55.68	36.31	55.85	
16"	139.20	90.77	139.62	
Fire Hydrants	\$13.92	\$9.08	\$13.96	

#### D. Notes

1. **Applicability:** See Chapter 2 of [Denver Water's Operating Rules](#)

2. **Payment:** Bills are due and payable to Denver Water upon issuance. Monthly bills are delinquent 20 days after the billing date. Late charges will be assessed per Denver Water policy.

#### Footnotes

<sup>3</sup> **Single Family AWC:** A customer's average winter consumption (AWC) is used to determine the tier 1 threshold. The AWC is calculated by averaging each customer's billed monthly water use from January through March, which is a way of determining essential indoor water use. Denver Water has set the tier 1 minimum threshold at 5,000 gallons and a maximum of 15,000 gallons. For example, if the customer's AWC is less than 5,000 gallons, tier 1 is 0 to 5,000 gallons. If the AWC is over 15,000 gallons, tier 1 is 0 to 15,000 gallons. Volume rates are applied to billed monthly usage.

<sup>4</sup> **Nonresidential AWC:** The tier 1 threshold is based on each customer's average winter consumption (AWC). This represents demands during the system off-peak period. The AWC is the average of a customer's billed water use for the months of January, February, and March. Volume rates are applied to billed monthly usage. Tier 2 is equal to 4 times the customer's AWC. Tier 3 is for usage in excess of 4 times the AWC.

<sup>5</sup> **Small Multifamily:** For 2016, the small multifamily class (duplex through 5-plex) is now included in the nonresidential class.

**Schedule 4 Applicability:** Charges for treated water service under this schedule are applicable to entities (i.e. municipalities, quasi-municipal districts and water companies) outside the limits of the City and County of Denver served under distributor agreements whereby the entity operates and maintains water systems to supply individual licensees. Denver Water bills distributors for water delivered through "master meters." Each distributor establishes charges for its individual licenses for water service.

(continued)



**WATER RATE SCHEDULES - 2017, (continued)**

Rate Schedule No. 2

Nonpotable Water Rates

For Meters Read On or After April 1, 2017

**A. Monthly Fixed Charges, \$ per Bill**

Meter Size inches	Inside City of Denver	Outside City	Outside Combined Service Area
5/8" & 3/4"	\$11.86	\$11.86	\$11.86
1"	15.13	15.13	15.13
1 1/2"	25.28	25.28	25.28
2"	39.35	39.35	39.35
3"	79.29	79.29	79.29
4"	135.26	135.26	135.26
6"	295.65	295.65	295.65
8"	519.87	519.87	519.87
10"	808.25	808.25	808.25
12"	1,161.14	1,161.14	1,161.14

**B. Nonpotable Water Volume Rates, \$ per 1,000 gallons**

Customer Class	Inside City of Denver	Outside City	Outside Combined Service Area
<b>Recycled</b>			
\$ per 1,000 gallons	\$0.99	N/A	\$1.11
\$ per Acre-Foot	322.59		361.69
<b>Raw Water (Monthly Fixed Charges Not Applicable)</b>			
\$ per 1,000 gallons	\$0.63	\$0.98	\$1.05
\$ per Acre-Foot	205.29	319.33	342.14

**C. Notes**

- 1. Applicability:** See Chapter 2 of Denver Water's Operating Rules.
- 2. Payment:** Bills are due and payable to Denver Water upon issuance. Monthly bills are delinquent 20 days after the billing date. Late charges will be assessed per Denver Water policy.

(continued)

**WATER RATE SCHEDULES - 2017, (continued)**

Rate Schedule 3  
 City and County of Denver Governmental Rates  
 For Meters Read On or After April 1, 2017

**A. Monthly Fixed Charges, \$ per Bill**

Meter Size inches	Fixed Charge
5/8" & 3/4"	\$11.86
1"	15.13
1 1/2"	25.28
2"	39.35
3"	79.29
4"	135.26
6"	295.65
8"	519.87
10"	808.25
12"	1,161.14

**B. Treated Water Volume Rates, \$ per 1,000 gallons**

<b>Domestic</b>	
Year-Round	\$2.31
<b>Irrigation</b>	
Winter (Nov. 1 through April 30)	\$1.06
Summer (May 1 through October 31)	\$2.65

**C. Nonpotable Water Volume Rates, \$ per 1,000 gallons**

Raw	\$0.32
Recycled	\$0.24

**D. Private Fireline**

Fireline Size inches	Fixed Charge
1"	\$3.78
2"	6.31
4"	9.74
6"	13.92
8"	24.36
10"	34.80
12"	55.68
16"	139.20
Fire Hydrants	\$13.92

**E. Notes**

1. **Applicability:** See Chapter 2 of Denver Water's Operating Rules.
2. **Payment:** Bills are due and payable to Denver Water upon issuance. Monthly bills are delinquent 20 days after the billing date. Late charges will be assessed per Denver Water policy.

(continued)

## WATER RATE SCHEDULES - 2017, (continued)

(Effective for bills dated on or after April 28, 2013)

		<b>Schedule 4</b>			
		<b>System Development Charges</b>			
		Treated Water			
		Inside City	Outside City		
<b>I. SINGLE FAMILY RESIDENTIAL</b>					
Base Charge		\$ 3,030		\$ 4,240	
First 22,000 sq. ft., \$ per sq. ft.		0.70		0.98	
Over 22,000 sq. ft., \$ per sq. ft.		0.35		0.49	
Auxiliary Dwelling Unit <sup>1</sup>		\$ 1,940		\$ 2,710	
<b>II. RESIDENTIAL MULTIPLEX</b>					
Base Charge, \$ per unit		\$ 3,030			n/a
Lot size charge, \$ per sq. ft.		0.70			n/a
<b>III. MULTIFAMILY RESIDENTIAL</b>					
Base charge for the first two dwelling units that are on same parcel		\$ 10,040		\$ 14,060	
Charge for next 6 dwelling units that are on the same parcel		2,420		3,390	
Charge for each additional dwelling units above 8 that are on the same parcel		1,940		2,710	
<b>IV. IRRIGATION-ONLY</b>					
Minimum charge: first 5,000 sq. ft.		\$ 5,820		\$ 8,150	
Over 5,000 sq. ft., \$ per sq. ft.		0.87		1.22	
<b>V. NON-RESIDENTIAL<sup>2,3,4</sup></b>					
<u>Tap Size</u>		Treated Water		Non-Potable Water	
		Inside City	Outside City	Inside City	Outside City
3/4"		\$ 10,730	\$ 15,030	\$ 9,370	\$ 13,120
1"		19,170	26,840	16,730	23,420
1 1/2"		42,180	59,050	36,810	51,540
2"		76,690	107,360	66,930	93,710
Treated Water					
-----					
<b>VI. MIXED USE<sup>5</sup> (sum of the following SDC)</b>					
Multifamily component				Inside City	Outside City
As set forth in Section III of this schedule					
Nonresidential component				\$ 2.91	\$ 4.08
\$ per sq. ft. of nonresidential gross floor area irrigation, if applicable				As set forth in Section IV of this schedule	
<b>VII. SPECIAL CONTRACTS, FIXED VOLUME CONTRACTS, &amp; LARGE VOLUME CUSTOMERS</b>					
<u>Description</u>		Treated Water		Non-Potable Water	
		Inside City	Outside City	Inside City	Outside City
Inside the Combined Service Area					
Acre Foot Conversion (\$/AF)		\$ 18,980	\$ 26,570	\$ 16,570	\$ 23,190
1,000 Gallons Conversion (\$/1,000 gallons)		58.26	81.57	50.85	71.19
Outside the Combined Service Area					
Acre Foot Conversion (\$/AF)		n/a	37,210	n/a	32,470
1,000 Gallons Conversion (\$/1,000 gallons)		n/a	114.10	n/a	99.60

**System Development Charge Applicability:** Licenses for treated and non-potable water taps within the City and County of Denver and Denver Water service areas, including special contracts. System Development Charges are due and payable prior to issuance of a license to the customer.

**Note:** Several distributor contracts and water service agreements contain negotiated tap ratio conversions per acre foot and some agreements contain negotiated and/or prepaid system development charges. These contracts will continue to be administered utilizing the system development charge calculations and/or tap ratio conversions specified in each of the contracts. Tap credit pools are administered consistent with the applicable water service agreement and Denver Water Operating Rules.

### Footnotes

- <sup>1</sup> Units such as a guest house or carriage house that are detached from the primary residence and contain provisions for sleeping, cooking, and sanitation.
- <sup>2</sup> Includes commercial, industrial and institutional development.
- <sup>3</sup> SDC for nonpotable by tap size apply only to recycled water taps.
- <sup>4</sup> Tap sizes greater than 2 inches are determined on an individual basis using peak demand requirements.
- <sup>5</sup> Development containing two or more different principal or primary uses such as residential, office, manufacturing, retail, public or entertainment uses.

**SUMMARY OF WATER RATES: 2008 - 2017**

<b>City of Denver - Schedule 1</b>	<b>2017</b>	2016	2015	2014	2013	2012	2011	2010	2009 <sup>1</sup>	2008
<u>Residential - Consumption Charge per 1,000 Gallons</u>										
0 to AWC <sup>2</sup>	\$ 2.55	\$ 2.60	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AWC + 15	4.59	4.68	-	-	-	-	-	-	-	-
Greater than AWC + 15	6.12	6.24	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
First 11,000 Gallons	-	-	2.75	2.68	2.59	2.54	2.41	2.11	1.91	-
12,000 - 30,000 Gallons	-	-	5.50	5.36	5.18	5.09	4.82	4.22	3.82	-
31,000 - 40,000 Gallons	-	-	8.25	8.04	7.77	7.63	7.23	6.33	5.73	-
Over 40,000 Gallons	-	-	11.00	10.72	10.36	10.17	9.64	8.44	7.64	-
<u>Prior to July 6, 2009</u>										
First 22,000 Gallons	-	-	-	-	-	-	-	-	-	1.81
22,000 - 60,000 Gallons	-	-	-	-	-	-	-	-	-	3.62
Over 60,000 Gallons	-	-	-	-	-	-	-	-	-	-
60,000 - 80,000 Gallons	-	-	-	-	-	-	-	-	-	5.43
Over 80,000 Gallons	-	-	-	-	-	-	-	-	-	7.24
<u>Residential Irrigation - Consumption Charge per 1,000 Gallons</u>										
Winter - All Consumption	-	-	-	-	-	-	-	1.00	0.92	0.89
Summer - All Consumption	-	-	-	-	-	-	-	4.00	3.68	3.56
<u>Small Multi-Family - Consumption Charge per 1,000 Gallons</u> (Duplexes through Five-Plexes with a Single Meter)										
0 to AWC <sup>3,4</sup>	2.71	2.68	-	-	-	-	-	-	-	-
AWC to 4 x AWC	3.79	3.75	-	-	-	-	-	-	-	-
Greater than 4 x AWC	4.34	4.29	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
First 15,000 Gallons <sup>5</sup>	-	-	3.02	2.93	2.83	2.82	2.67	2.33	2.17	-
Over 15,000 Gallons	-	-	3.62	3.52	3.40	3.38	3.20	2.80	2.60	-
<u>Prior to July 6, 2009</u>										
First 30,000 Gallons <sup>6</sup>	-	-	-	-	-	-	-	-	-	2.10
Over 30,000 Gallons	-	-	-	-	-	-	-	-	-	2.52
<u>All Other Retail - Consumption Charge per 1,000 Gallons</u>										
0 to AWC <sup>3</sup>	2.71	2.68	-	-	-	-	-	-	-	-
AWC to 4 x AWC	3.79	3.75	-	-	-	-	-	-	-	-
Greater than 4 x AWC	4.34	4.29	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Winter - All Consumption	-	-	1.88	1.84	1.78	1.78	1.69	1.54	1.48	2.06
Summer - All Consumption	-	-	3.76	3.68	3.57	3.57	3.38	3.08	2.96	2.47
<u>Irrigation Only- Consumption Charge per 1,000 Gallons</u>										
Winter - All Consumption	1.27	1.22	1.20	1.20	1.20	1.20	1.14	1.00	1.49	2.02
Summer - All Consumption	5.08	4.88	4.81	4.81	4.81	4.81	4.56	4.00	3.17	2.50
<u>Service Charge/Meter Charge</u>										
Monthly 5/8" & 3/4"	11.86	8.79	-	-	-	-	-	-	-	-
Monthly 1"	15.13	10.13	-	-	-	-	-	-	-	-
Monthly 1 1/2"	25.28	14.27	-	-	-	-	-	-	-	-
Monthly 2"	39.35	20.02	-	-	-	-	-	-	-	-
Monthly 3"	79.29	36.33	-	-	-	-	-	-	-	-
Monthly 4"	135.26	59.20	-	-	-	-	-	-	-	-
Monthly 6"	295.65	124.71	-	-	-	-	-	-	-	-
Monthly 8"	519.87	216.30	-	-	-	-	-	-	-	-
Monthly 10"	808.25	334.09	-	-	-	-	-	-	-	-
Monthly 12"	1,161.14	478.22	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Monthly Service Charge	-	-	6.74	6.58	6.33	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07

See accompanying footnotes on final page of report.

(continued)

**SUMMARY OF WATER RATES: 2008 - 2017, (continued)**

<b>Outside City Read and Bill - Schedule 1 Cont'd.</b>	<b>2017</b>	2016	2015	2014	2013	2012	2011	2010	2009 <sup>1</sup>	2008
<u>Residential - Consumption Charge per 1000 Gallons</u>										
0 to AWC <sup>2</sup>	\$ 2.68	\$ 2.80	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AWC + 15	4.82	5.04	-	-	-	-	-	-	-	-
Greater than AWC + 15	6.43	6.72	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
First 11,000 Gallons	-	-	2.82	2.73	2.61	2.49	2.36	2.20	2.00	-
12,000 - 30,000 Gallons	-	-	5.64	5.46	5.22	4.98	4.72	4.40	4.00	-
31,000 - 40,000 Gallons	-	-	8.46	8.19	7.83	7.47	7.08	6.60	6.00	-
Over 40,000 Gallons	-	-	11.28	10.92	10.44	9.96	9.44	8.80	8.00	-
<u>Prior to July 6, 2009</u>										
First 22,000 Gallons	-	-	-	-	-	-	-	-	-	1.90
22,000 - 60,000 Gallons	-	-	-	-	-	-	-	-	-	3.80
Over 60,000 Gallons	-	-	-	-	-	-	-	-	-	-
60,000 - 80,000 Gallons	-	-	-	-	-	-	-	-	-	5.70
Over 80,000 Gallons	-	-	-	-	-	-	-	-	-	7.60
<u>Residential Irrigation - Consumption Charge per 1,000 Gallons</u>										
Winter - All Consumption	-	-	-	-	-	-	-	1.09	1.08	0.98
Summer - All Consumption	-	-	-	-	-	-	-	4.36	4.32	3.92
<u>Small Multi-Family - Consumption Charge per 1000 Gallons</u>										
0 to AWC <sup>3,4</sup>	3.25	3.32	-	-	-	-	-	-	-	-
AWC to 4 x AWC	4.55	4.65	-	-	-	-	-	-	-	-
Greater than 4 x AWC	5.20	5.31	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
(Duplexes through Five-Plexes with a Single Meter)										
First 15,000 Gallons <sup>5</sup>	-	-	3.43	3.39	3.30	3.21	3.04	2.71	2.57	-
Over 15,000 Gallons	-	-	4.12	4.07	3.96	3.85	3.65	3.25	3.08	-
<u>Prior to July 6, 2009</u>										
First 30,000 Gallons <sup>6</sup>	-	-	-	-	-	-	-	-	-	2.27
Over 30,000 Gallons	-	-	-	-	-	-	-	-	-	2.72
<u>All Other Retail - Consumption Charge per 1000 Gallons</u>										
0 to AWC <sup>3</sup>	3.25	3.32	-	-	-	-	-	-	-	-
AWC to 4 x AWC	4.55	4.65	-	-	-	-	-	-	-	-
Greater than 4 x AWC	5.20	5.31	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Winter - All Consumption	-	-	2.36	2.35	2.26	2.20	2.09	1.99	1.99	2.50
Summer - All Consumption	-	-	4.72	4.70	4.52	4.41	4.18	3.98	3.98	3.00
<u>Irrigation Only - Consumption Charge per 1000 Gallons</u>										
Winter - All Consumption	1.38	1.40	1.35	1.31	1.29	1.29	1.22	1.09	1.78	2.35
Summer - All Consumption	5.52	5.60	5.40	5.24	5.15	5.15	4.88	4.36	3.94	3.08
<u>Service Charge/Meter Charge</u>										
Monthly 5/8" & 3/4"	11.86	8.79	-	-	-	-	-	-	-	-
Monthly 1"	15.13	10.13	-	-	-	-	-	-	-	-
Monthly 1 1/2"	25.28	14.27	-	-	-	-	-	-	-	-
Monthly 2"	39.35	20.02	-	-	-	-	-	-	-	-
Monthly 3"	79.29	36.33	-	-	-	-	-	-	-	-
Monthly 4"	135.26	59.20	-	-	-	-	-	-	-	-
Monthly 6"	295.65	124.71	-	-	-	-	-	-	-	-
Monthly 8"	519.87	216.30	-	-	-	-	-	-	-	-
Monthly 10"	808.25	334.09	-	-	-	-	-	-	-	-
Monthly 12"	1,161.14	478.22	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Monthly Service Charge	-	-	6.74	6.58	6.33	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07

See accompanying footnotes on final page of report.

(continued)

**SUMMARY OF WATER RATES: 2008 - 2017, (continued)**

<b>Outside City Total Service - Schedule 1 Cont'd.</b>	<b>2017</b>	2016	2015	2014	2013	2012	2011	2010	2009 <sup>1</sup>	2008
<u>Residential - Consumption Charge per 1000 Gallons</u>										
0 to AWC <sup>2</sup>	\$ 3.30	\$ 3.28	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AWC + 15	5.94	5.90	-	-	-	-	-	-	-	-
Greater than AWC + 15	7.92	7.87	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
First 11,000 Gallons	-	3.04	3.04	3.02	2.93	2.85	2.70	2.59	2.43	-
12,000 - 30,000 Gallons	-	6.08	6.08	6.04	5.86	5.70	5.40	5.18	4.86	-
31,000 - 40,000 Gallons	-	9.12	9.12	9.06	8.79	8.55	8.10	7.77	7.29	-
Over 40,000 Gallons	-	12.16	12.16	12.08	11.72	11.39	10.80	10.36	9.72	-
<u>Prior to July 6, 2009</u>										
First 22,000 Gallons	-	-	-	-	-	-	-	-	-	2.27
22,000 - 60,000 Gallons	-	-	-	-	-	-	-	-	-	4.54
Over 60,000 Gallons	-	-	-	-	-	-	-	-	-	-
60,000 - 80,000 Gallons	-	-	-	-	-	-	-	-	-	6.81
Over 80,000 Gallons	-	-	-	-	-	-	-	-	-	9.08
<u>Residential Irrigation - Consumption Charge per 1,000 Gallons</u>										
Winter - All Consumption	-	-	-	-	-	-	-	1.26	1.24	1.09
Summer - All Consumption	-	-	-	-	-	-	-	5.04	4.96	4.36
<u>Small Multi-Family - Consumption Charge per 1,000 Gallons</u> (Duplexes through Five-Plexes with a Single Meter)										
0 to AWC <sup>3,4</sup>	3.77	3.76	-	-	-	-	-	-	-	-
AWC to 4 x AWC	5.28	5.26	-	-	-	-	-	-	-	-
Greater than 4 x AWC	6.03	6.02	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
First 15,000 Gallons <sup>5</sup>	-	-	4.29	4.21	3.99	3.84	3.64	3.39	3.31	-
Over 15,000 Gallons	-	-	5.15	5.05	4.79	4.61	4.37	4.07	3.97	-
<u>Prior to July 6, 2009</u>										
First 30,000 Gallons <sup>6</sup>	-	-	-	-	-	-	-	-	-	2.97
Over 30,000 Gallons	-	-	-	-	-	-	-	-	-	3.56
<u>All Other Retail - Consumption Charge per 1,000 Gallons</u>										
0 to AWC <sup>3</sup>	3.77	3.76	-	-	-	-	-	-	-	-
AWC to 4 x AWC	5.28	5.26	-	-	-	-	-	-	-	-
Greater than 4 x AWC	6.03	6.02	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Winter - All Consumption	-	-	2.72	2.70	2.54	2.44	2.31	2.16	2.16	2.98
Summer - All Consumption	-	-	5.44	5.40	5.08	4.87	4.62	4.32	4.32	3.58
<u>Irrigation Only - Consumption Charge per 1000 Gallons</u>										
Winter - All Consumption	1.74	1.69	1.64	1.56	1.47	1.39	1.32	1.26	2.02	2.78
Summer - All Consumption	6.96	6.76	6.56	6.24	5.88	5.57	5.28	5.04	4.33	3.61
<u>Service Charge/Meter Charge</u>										
Monthly 5/8" & 3/4"	11.86	8.79	-	-	-	-	-	-	-	-
Monthly 1"	15.13	10.13	-	-	-	-	-	-	-	-
Monthly 1 1/2"	25.28	14.27	-	-	-	-	-	-	-	-
Monthly 2"	39.35	20.02	-	-	-	-	-	-	-	-
Monthly 3"	79.29	36.33	-	-	-	-	-	-	-	-
Monthly 4"	135.26	59.20	-	-	-	-	-	-	-	-
Monthly 6"	295.65	124.71	-	-	-	-	-	-	-	-
Monthly 8"	519.87	216.30	-	-	-	-	-	-	-	-
Monthly 10"	808.25	334.09	-	-	-	-	-	-	-	-
Monthly 12"	1,161.14	478.22	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Monthly Service Charge	-	-	6.74	6.58	6.33	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07

See accompanying footnotes on final page of report.

(continued)

**SUMMARY OF WATER RATES: 2008 - 2017, (continued)**

<b>Outside City Master Meter - Schedule 1</b>	<b>2017</b>	2016	2015	2014	2013	2012	2011	2010	2009 <sup>1</sup>	2008
Consumption Charge per 1000 Gallons - All Consumption	<b>\$ 4.10</b>	\$ 4.15	\$ 4.04	\$ 3.95	\$ 3.81	\$ 3.64	\$ 3.45	\$ 3.01	\$ 3.01	\$ 2.67
<u>Service Charge/Meter Charge</u>										
Monthly 5/8" & 3/4"	<b>11.86</b>	8.79	-	-	-	-	-	-	-	-
Monthly 1"	<b>15.13</b>	10.13	-	-	-	-	-	-	-	-
Monthly 1 1/2"	<b>25.28</b>	14.27	-	-	-	-	-	-	-	-
Monthly 2"	<b>39.35</b>	20.02	-	-	-	-	-	-	-	-
Monthly 3"	<b>79.29</b>	36.33	-	-	-	-	-	-	-	-
Monthly 4"	<b>135.26</b>	59.20	-	-	-	-	-	-	-	-
Monthly 6"	<b>295.65</b>	124.71	-	-	-	-	-	-	-	-
Monthly 8"	<b>519.87</b>	216.30	-	-	-	-	-	-	-	-
Monthly 10"	<b>808.25</b>	334.09	-	-	-	-	-	-	-	-
Monthly 12"	<b>1,161.14</b>	478.22	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Monthly Service Charge	-	-	6.74	6.58	6.33	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07
<b>Outside City Master Meter Maintenance - Schedule 1 Cont'd.</b>										
Consumption Charge per 1000 Gallons - All Consumption	-	-	-	-	-	4.96	4.70	4.45	4.31	3.93
<u>Service Charge/Meter Charge</u>										
Monthly Service Charge	-	-	-	-	-	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07
<b>Outside Combined Service Area - Schedule 1 Cont'd.</b>										
Treated Water - Consumption Charge per 1000 Gallons	<b>4.48</b>	4.44	4.44	4.44	4.25	4.05	3.83	3.36	3.19	3.13
<u>Service Charge/Meter Charge</u>										
Monthly 5/8" & 3/4"	<b>11.86</b>	8.79	-	-	-	-	-	-	-	-
Monthly 1"	<b>15.13</b>	10.13	-	-	-	-	-	-	-	-
Monthly 1 1/2"	<b>25.28</b>	14.27	-	-	-	-	-	-	-	-
Monthly 2"	<b>39.35</b>	20.02	-	-	-	-	-	-	-	-
Monthly 3"	<b>79.29</b>	36.33	-	-	-	-	-	-	-	-
Monthly 4"	<b>135.26</b>	59.20	-	-	-	-	-	-	-	-
Monthly 6"	<b>295.65</b>	124.71	-	-	-	-	-	-	-	-
Monthly 8"	<b>519.87</b>	216.30	-	-	-	-	-	-	-	-
Monthly 10"	<b>808.25</b>	334.09	-	-	-	-	-	-	-	-
Monthly 12"	<b>1,161.14</b>	478.22	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Monthly Service Charge	-	-	6.74	6.58	6.33	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07

See accompanying footnotes on final page of report.

(continued)

**SUMMARY OF WATER RATES: 2008 - 2017, (continued)**

<b>Raw and Recycled - Schedule 2 Cont'd.</b>	<b>2017</b>	2016	2015	2014	2013	2012	2011	2010	2009	2008
<u>Raw - Consumption Charge per 1000 Gallons</u>										
Inside City - All Consumption	<b>\$0.63</b>	\$0.50	\$0.52	\$0.52	\$0.50	\$0.50	\$0.47	\$0.47	\$0.47	\$0.47
Outside City - All Consumption	<b>0.98</b>	1.00	0.96	0.91	0.91	0.86	0.81	0.77	0.73	0.67
Outside Combined Service Area - All Consumption	<b>1.05</b>	1.10	1.04	1.04	1.04	1.01	0.95	0.90	0.85	0.76
<u>Recycled - Consumption Charge per 1000 Gallons</u>										
Inside City Recycled - All Consumption	<b>0.99</b>	0.99	0.99	0.99	0.99	0.99	0.93	0.89	0.89	0.88
Outside City Recycled - All Consumption	-	-	-	-	-	-	-	-	-	-
Outside Combined Service Area - All Consumption	<b>1.11</b>	1.11	1.11	1.11	1.11	1.11	1.05	0.91	0.90	0.76
<u>Recycled Service Meter Charge</u>										
Monthly 5/8" & 3/4"	<b>11.86</b>	8.79	-	-	-	-	-	-	-	-
Monthly 1"	<b>15.13</b>	10.13	-	-	-	-	-	-	-	-
Monthly 1 1/2"	<b>25.28</b>	14.27	-	-	-	-	-	-	-	-
Monthly 2"	<b>39.35</b>	20.02	-	-	-	-	-	-	-	-
Monthly 3"	<b>79.29</b>	36.33	-	-	-	-	-	-	-	-
Monthly 4"	<b>135.26</b>	59.20	-	-	-	-	-	-	-	-
Monthly 6"	<b>295.65</b>	124.71	-	-	-	-	-	-	-	-
Monthly 8"	<b>519.87</b>	216.30	-	-	-	-	-	-	-	-
Monthly 10"	<b>808.25</b>	334.09	-	-	-	-	-	-	-	-
Monthly 12"	<b>1,161.14</b>	478.22	-	-	-	-	-	-	-	-
<u>Prior to April 1, 2016</u>										
Monthly Service Charge	-	-	6.74	6.58	6.33	6.33	6.00	5.58	4.41	3.82
Bimonthly Service Charge	-	-	-	-	-	-	-	-	-	6.07

<sup>1</sup> Effective July 6, 2009 Denver Water customers are billed monthly.

<sup>2</sup> Single Family AWC: A customer's average winter consumption (AWC) is used to determine the tier 1 threshold.

The AWC is calculated by averaging each customer's billed monthly water use from January through March, which is a way of determining essential indoor water use. Denver Water has set the tier 1 minimum threshold at 5,000 gallons and a maximum of 15,000 gallons. For example, if the customer's AWC is less than 5,000 gallons tier 1 is 0 to 5,000 gallons. If the AWC is over 15,000 gallons, tier 1 is 0 to 15,000 gallons. Volume rates are applied to billed monthly usage.

<sup>3</sup> Small Multifamily: For 2016, the small multifamily class (duplex through 5-plex) is now included in the nonresidential class.

<sup>4</sup> Nonresidential AWC: The tier 1 threshold is based on each customer's average winter consumption (AWC). This represents demands during the system off-peak period. The AWC is the average of a customer's billed water use for the months of January, February, and March. Volume rates are applied to billed monthly usage. Tier 2 is equal to 4 times the customer's AWC. Tier 3 is for usage in excess of 4 times the AWC.

<sup>5</sup> Monthly usage amounts increase by 6,000 gallons per additional dwelling unit up to 5 dwelling units.

<sup>6</sup> Bimonthly usage amounts increased by 12,000 gallons per additional dwelling unit up to 5 dwelling units.



## SALES OF TREATED WATER FOR RESALE - 2017

### Treated Water Sold Outside Denver to Municipalities and Distributors through Master Meters<sup>2,3</sup>

	(non-accrual basis) <sup>1</sup> (amounts expressed in thousands)		
	Revenue	Gallons Sold (000)	Number of Customers
<u>MASTER METER DISTRIBUTORS</u>			
Alameda Water & Sanitation District	\$ 312	71,920	335
Bancroft-Clover Water & Sanitation District	6,109	1,466,574	8,817
Bonvue Water & Sanitation District	60	14,381	169
Bow-Mar Water & Sanitation District	441	103,742	290
Cherry Creek Valley Water & Sanitation District	3,881	925,442	1,972
Cherry Creek Village Water & Sanitation District	562	133,740	476
City of Edgewater	784	184,562	1,482
City of Glendale	1,091	261,492	237
City of Lakewood	792	188,635	729
Consolidated Mutual Water Company	9,115	2,186,674	15,702
Crestview Water & Sanitation District	2,357	568,721	4,489
Green Mountain Water & Sanitation District	6,563	1,585,460	10,111
High View Water District	603	144,750	891
Ken-Caryl Water & Sanitation District	3,180	765,283	3,742
Lakehurst Water & Sanitation District	3,650	867,333	5,519
Meadowbrook Water & Sanitation District	659	154,194	1,321
North Pecos Water & Sanitation District	695	162,820	402
North Washington Street Water & Sanitation District	3,198	765,167	3,637
Northgate Water District	20	4,169	4
South Adams County Water & Sanitation District	2,401	531,000	166
Valley Water District	2,107	505,053	1,781
Wheat Ridge Water District	3,150	752,465	5,845
Willowbrook Water & Sanitation District	1,924	457,995	3,415
Willows Water District	3,005	720,423	4,737
Chatfield South Water District	35	7,262	-
City and County of Broomfield	6,312	1,524,329	-
East Cherry Creek Valley Water District	1,089	238,619	-
General Services Administration	200	46,719	-
Inverness Water District	572	137,504	-
Rocky Mountain Arsenal	69	11,916	-
South Adams County Special Contract Area	1,428	319,659	-
Suncor Energy USA	2,785	669,027	-
Total Sales of Treated Water for Resale	\$ 69,149	16,477,030	76,269

<sup>1</sup> This schedule represents actual billings made for water during the year. No accruals were made for revenue earned on unbilled accounts. Therefore, amounts on this schedule do not agree with amounts on the Statement of Revenues, Expenses, and Changes in Net Position. The difference from amounts on an accrual basis is immaterial.

<sup>2</sup> Sales on Total Service or Read and Bill Contracts are not included.

<sup>3</sup> During 2016, the Board of Directors at Denver Water approved modifications to its rate structures, changes to how Denver Water classifies selected revenues and expenses for financial statement presentation, and the presentation of certain information included in its statistical schedules. The 2016 financial statements reflect these changes.

**10 LARGEST RETAIL CUSTOMERS - WATER CONSUMPTION AND REVENUE - 2017**

(non-accrual basis)  
(amounts expressed in thousands)

Account Type	Consumption		Revenue	
	Gallons Sold (000)	Percent of	Water Revenue <sup>1</sup>	Percent of
		Total Gallons Sold		Total Water Revenue
Oil and Gas Company	657,254	1.05%	\$ 2,840	1.03%
Public School System	487,439	0.78%	1,844	0.67%
Public Utility	485,690	0.78%	1,904	0.69%
Housing Authority	360,808	0.58%	1,384	0.50%
Parks System	188,051	0.30%	1,178	0.43%
Retail Grocer - 1	165,822	0.27%	505	0.18%
State Government	147,471	0.24%	430	0.16%
Beverage Company	136,973	0.22%	383	0.14%
Retail Grocer - 2	126,702	0.20%	550	0.20%
Hospitals	109,598	0.18%	313	0.11%
Total of the 10 largest customers	<u>2,865,808</u>	4.60%	\$ 11,331	4.11%
Total sales of treated water	<u>62,414,996</u>		<u>\$ 276,300</u>	

<sup>1</sup> This column represents actual billings made for treated water and private fire protection service during the year. The difference from amounts on an accrual basis is immaterial. In addition to the 10 largest retail accounts listed, Denver Water provided 2,075 million gallons of treated water to the City and County of Denver. Revenues from these sales were \$5.7 million.

**SYSTEM DEVELOPMENT CHARGES AND PARTICIPATION RECEIPTS: 1973-2017**

(cash basis - net of refunds)  
 (amounts expressed in thousands)

	System Development Charges ("SDC")		Participation Receipts (Contributions in Aid of	
<b>2017</b>	<b>\$</b>	<b>42,486</b>	<b>\$</b>	<b>9,240</b>
2016		38,752		2,335
2015		36,109		8,713
2014		32,736		6,384
2013		34,461		4,834
2012		19,543		1,297
2011		14,233		7,023
2010		14,441		1,093
2009		8,118		10,908
2008		18,498		2,424
2007		26,028		3,300
2006		22,305		2,730
2005		26,257		1,850
2004		24,834		2,229
2003		19,615		2,831
2002		36,591		5,567
2001		22,186		7,027
2000		25,525		6,392
1999		24,224		11,964
1998		33,156		8,412
1997		45,058		3,733
1996		15,137		2,913
1995		15,528		3,927
1994		13,536		2,882
1993		12,182		1,344
1992		10,920		1,199
1991		7,530		2,331
1990		6,615		1,839
1989		6,251		4,965
1988		6,085		3,068
1973-86		158,019		48,207
	<b>\$</b>	<b>816,959</b>	<b>\$</b>	<b>182,961</b>

## C - DEBT CAPACITY INFORMATION

*These schedules present information to help the reader assess the affordability of Denver Water's current levels of outstanding debt and its ability to issue additional debt in the future.*

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## RATIOS OF TOTAL OUTSTANDING DEBT BY TYPE: 2008 - 2017

(amounts expressed in thousands, except debt per capita)

Total Principal Balance Outstanding Debt by Type <sup>1</sup>												
Year	General Obligation Bonds	Water Revenue Bonds	Revenue Bond Unamortized Premium or (Discount)	Total Water Revenue Bonds	Capital Leases			Total	Gross Revenues <sup>2,4</sup>	Ratio of Total Debt to Gross Revenue <sup>1</sup>	Estimated Population Served <sup>3</sup>	Debt Per Capita
					Certificates of Participation	Other	Notes Payable <sup>5</sup>					
2008	\$ 42,725	\$ 277,490	\$ -	\$ 277,490	\$ 33,805	\$ 23,731	\$ -	\$ 377,751	\$ 248,074	1.52	1,093,000	\$ 346
2009	31,170	309,025	-	309,025	27,835	22,308	-	390,338	216,557	1.80	1,111,000	351
2010	28,090	377,665	-	377,665	21,630	20,790	-	448,175	259,730	1.73	1,125,000	398
2011	23,825	371,560	-	371,560	-	19,166	-	414,551	279,682	1.48	1,135,000	365
2012	500	401,420	15,594	417,014	-	17,431	-	434,945	313,093	1.34	1,147,000	379
2013	-	376,965	11,472	388,437	-	15,576	10,000	414,013	290,349	1.39	1,161,000	357
2014	-	395,125	9,480	404,605	-	13,595	-	418,200	297,768	1.37	1,172,000	357
2015	-	368,125	6,593	374,718	-	11,478	30,000	416,196	305,073	1.34	1,210,000	344
2016	-	438,580	15,758	454,338	-	9,215	-	463,553	336,713	1.33	1,249,000	371
<b>2017</b>	<b>-</b>	<b>603,415</b>	<b>32,665</b>	<b>636,080</b>	<b>-</b>	<b>6,797</b>	<b>-</b>	<b>642,877</b>	<b>365,891</b>	<b>1.67</b>	<b>1,275,000</b>	<b>504</b>

<sup>1</sup> Details regarding outstanding debt can be found in the notes to the financial statements. For presentation purposes, capital leases have been treated as debt. Prior to 2012 the outstanding debt included principal balances only and excluded discounts, premiums, and deferred amounts on advance refundings; therefore, they do not agree with numbers presented in the basic financial statements, exhibits, or the statistical summary. Beginning in 2012 the outstanding debt is net of premiums and discounts. Outstanding debt excluding premiums and discounts is used to calculate the ratio of total debt to gross revenue. All bonded debt is secured by revenues.

<sup>2</sup> Gross Revenues are defined as operating revenues plus investment income plus proceeds from sales of capital assets plus other income plus cash proceeds from contributions in aid of construction (CIAC) and prepaid CIAC, and cash proceeds from system development charges (SDC) and prepaid SDC.

<sup>3</sup> Population estimates are treated water customers only. See schedule entitled "Consumption of Treated Water".

<sup>4</sup> Certain reclassifications have been made to prior years' information to conform to the current year presentation.

<sup>5</sup> The lien on notes payable is subordinate and junior to the lien on the revenue bonds outstanding and on future revenue bond issues.

## PLEDGED-REVENUE COVERAGE: 2008 - 2017

General Obligation Bonds, Water Revenue Bonds, Notes Payable and Obligations under Capital Lease<sup>1</sup>

(amounts expressed in thousands)

Year	Gross Revenues <sup>2,4,5</sup>	Less Operating Expenses <sup>3,4,5</sup>	Net Available Revenue	Total Debt Service <sup>1</sup>			Coverage including Notes Payable Debt <sup>6</sup>	Coverage not including Notes Payable Debt
				Principal	Interest	Total		
2008	\$ 248,074	\$ 138,402	\$ 109,672	\$ 30,250	\$ 19,324	\$ 49,574	2.21	2.21
2009	216,557	155,127	61,430	31,413	19,204	50,617	1.21	1.21
2010	259,730	168,501	91,229	32,164	19,065	51,229	1.78	1.78
2011	279,682	164,760	114,922	33,624	22,335	55,959	2.08	2.08
2012	313,093	158,372	154,721	24,715	19,740	44,455	3.48	3.48
2013	290,349	166,049	124,300	26,810	19,410	46,220	2.69	2.69
2014	297,768	181,541	116,227	28,071	18,673	46,744	2.49	2.49
2015	305,073	170,427	134,646	29,117	18,802	47,919	2.81	2.81
2016	336,713	199,029	137,684	23,828	16,248	40,076	3.44	3.45
<b>2017</b>	<b>365,891</b>	<b>196,298</b>	<b>169,593</b>	<b>22,013</b>	<b>21,673</b>	<b>43,686</b>	<b>3.88</b>	<b>3.89</b>

<sup>1</sup> Details regarding outstanding debt can be found in the notes to the financial statements. For presentation purposes, capital leases have been treated as debt. All bonded debt is secured by revenue.

<sup>2</sup> Gross Revenues are defined as operating revenues, plus investment income, plus proceeds from sales of capital assets, plus other income, plus cash proceeds from contributions in aid of construction (CIAC) and prepaid CIAC, and cash proceeds from system development charges (SDC) and prepaid SDC.

<sup>3</sup> Operating Expenses are defined as operating expenses plus other expenses minus total depreciation and amortization (as disclosed in Statement of Revenues, Expenses, and Changes in Net Position in the financial statements).

<sup>4</sup> All items computed as defined in bond covenants. Rate maintenance covenant is 1.10; additional bonds test is 1.2 times average annual debt service. Notes payable debt service and the Capital Lease are not subject to this covenant.

<sup>5</sup> Certain reclassifications have been made to prior years' information to conform to the current year presentation.

<sup>6</sup> Notes payable debt has a subordinate lien to the lien on outstanding revenue bonds and future revenue bond issues. Total debt service for notes payable in 2016 was \$0 in principal and \$132 thousand in interest. In 2017 total debt service for notes payable was \$0 in principal and \$60 thousand in interest.

## RATIOS OF GENERAL OBLIGATION BONDED DEBT OUTSTANDING: 2008 - 2017

(amounts expressed in thousands, except debt per capita)

Year	General Obligation Bonds <sup>1</sup>	Gross Revenues <sup>2,4</sup>	Ratio of General Obligation Debt to Gross Revenue	Estimated Population Served <sup>3</sup>	General Obligation Debt per Capita
2008	\$ 42,725	\$ 248,074	0.17	1,093,000	\$ 39
2009	31,170	216,557	0.14	1,111,000	28
2010	28,090	259,730	0.11	1,125,000	25
2011	23,825	279,682	0.09	1,135,000	21
2012	500	313,093	-	1,147,000	-
2013	-	290,349	-	1,161,000	-
2014	-	297,768	-	1,172,000	-
2015	-	305,073	-	1,210,000	-
2016	-	336,713	-	1,249,000	-
<b>2017</b>	<b>-</b>	<b>365,891</b>	<b>-</b>	<b>1,275,000</b>	<b>-</b>

<sup>1</sup> Details regarding outstanding debt can be found in the notes to the financial statements. The Board no longer has authority to issue general obligation bonds of the City.

<sup>2</sup> Gross Revenues are defined as operating revenues, plus investment income, plus proceeds from sales of capital assets, plus other income, plus cash proceeds from contributions in aid of construction (CIAC) and prepaid CIAC, and cash proceeds from system development charges (SDC) and prepaid SDC.

<sup>3</sup> Population estimates are treated water customers only. See schedule entitled "Consumption of Treated Water".

<sup>4</sup> Certain reclassifications have been made to prior years' information to conform to the current year presentation.



## RATIOS OF WATER REVENUE BONDED DEBT OUTSTANDING: 2008 - 2017

(amounts expressed in thousands, except debt per capita)

Year	Water Revenue Bonds <sup>1</sup>	Gross Revenues <sup>2,4</sup>	Ratio of Water Revenue Debt to Gross Revenue	Estimated Population Served <sup>3</sup>	Water Revenue Debt per Capita
2008	\$ 277,490	\$ 248,074	1.12	1,093,000	\$ 254
2009	309,025	216,557	1.43	1,111,000	278
2010	377,665	259,730	1.45	1,125,000	336
2011	371,560	279,682	1.33	1,135,000	327
2012	401,420	313,093	1.28	1,147,000	350
2013	376,965	290,349	1.30	1,161,000	325
2014	395,125	297,768	1.33	1,172,000	337
2015	368,125	305,073	1.21	1,210,000	304
2016	438,580	336,713	1.30	1,249,000	351
<b>2017</b>	<b>603,415</b>	<b>365,891</b>	<b>1.65</b>	<b>1,275,000</b>	<b>473</b>

<sup>1</sup> Details regarding outstanding debt can be found in the notes to the financial statements. The numbers above are principal balances only and exclude discounts, premiums, and deferred amounts on advance refundings; therefore, they do not agree with numbers presented in the basic financial statements, exhibits, or the statistical summary.

<sup>2</sup> Gross Revenues are defined as operating revenues plus investment income plus proceeds from sales of capital assets plus other income plus cash proceeds from contributions in aid of construction (CIAC) and prepaid CIAC, and cash proceeds from system development charges (SDC) and prepaid SDC.

<sup>3</sup> Population estimates are treated water customers only. See schedule entitled "Consumption of Treated Water". Population estimates for 2008 through 2010 were revised based on 2010 census.

<sup>4</sup> Certain reclassifications have been made to prior years' information to conform to the current year presentation.

## D - DEMOGRAPHIC AND ECONOMIC INFORMATION

*These schedules offer demographic and economic indicators to help the reader understand the environment within which Denver Water's financial activities take place.*

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## DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017

The following is general information concerning the economic and demographic conditions in the City and County of Denver (“Denver” or the “City”) and the immediate vicinity. The statistics presented below have been obtained from the sources indicated and represent the most current information available from such sources. However, certain of the information is released only after a significant amount of time has passed since the most recent date of the reported data and therefore such information may not be indicative of economic and demographic conditions as they currently exist or conditions which may be experienced in the near future. Further, the reported data has not been adjusted to reflect economic trends, notably inflation.

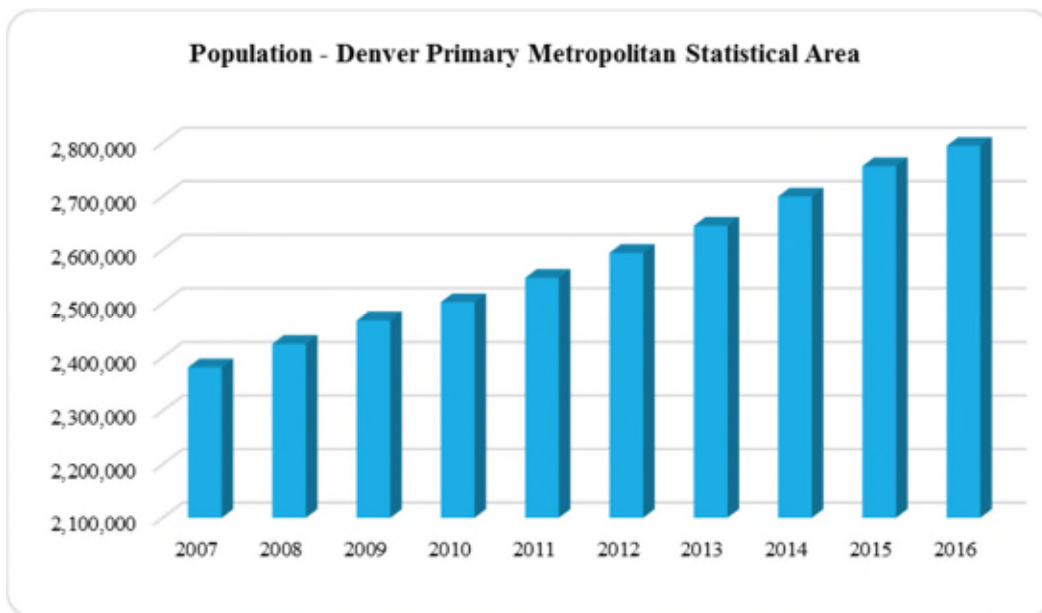
### Population

The following table sets forth population statistics for Denver, the Denver Primary Metropolitan Statistical Area (“PMSA”) and the State of Colorado. The Denver PMSA includes the counties of Adams, Arapahoe, Denver, Douglas, and Jefferson.

Population Estimates			
Year	Denver	Denver PMSA	State of Colorado
2007	570,437	2,381,281	4,821,784
2008	581,903	2,424,992	4,901,938
2009	595,573	2,468,523	4,976,853
2010	604,879	2,502,291	5,050,332
2011	620,684	2,547,350	5,119,538
2012	634,471	2,593,544	5,191,086
2013	648,162	2,642,797	5,268,413
2014	662,855	2,695,536	5,350,118
2015	680,658	2,751,120	5,448,055
2016	693,292	2,794,512	5,538,180
2017	n/a	n/a	n/a

(n/a = not available)

Source: Colorado Department of Local Affairs, Division of Local Government, State Demography Office.



DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017  
(Continued)

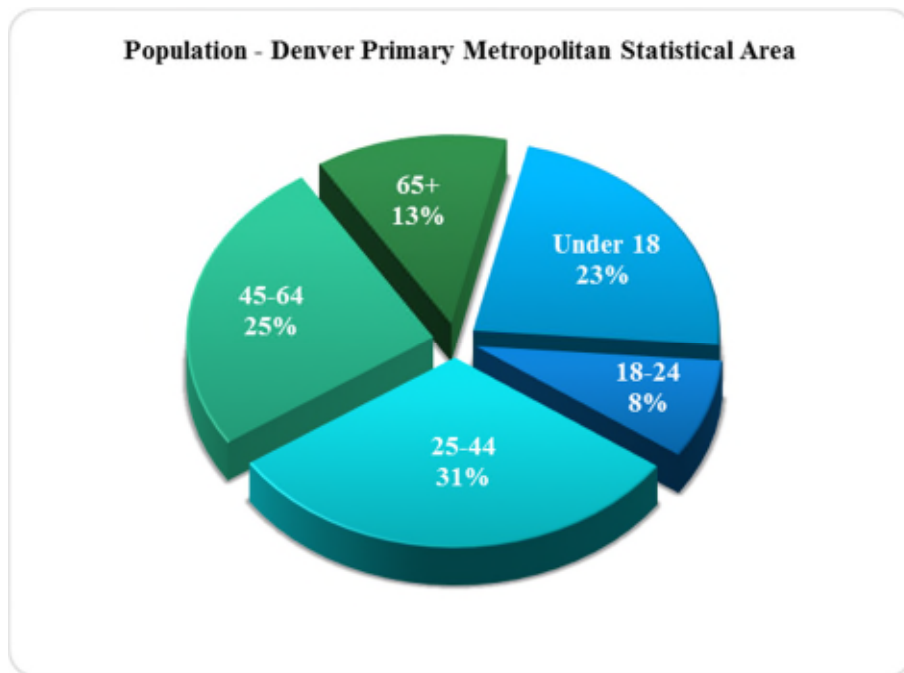
**Age Distribution**

The following table sets forth a forecasted age distribution profile for Denver, the Denver PMSA, and the State of Colorado for 2017.

<b>Forecasted Age Distribution for 2017</b>			
<b>Age Groups</b>	<b>Percent of Population</b>		
	<b>Denver</b>	<b>Denver PMSA</b>	<b>State of Colorado</b>
Under 18	19.6%	22.6%	22.5%
18-24	7.8%	8.5%	9.8%
25-44	38.1%	30.9%	28.5%
45-64	22.9%	25.4%	25.4%
65+	11.5%	12.6%	13.8%

(Columns may not add to 100% due to rounding)

Sources: Colorado Department of Local Affairs, Division of Local Government, State Demography Office.



**DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017**  
**(Continued)**

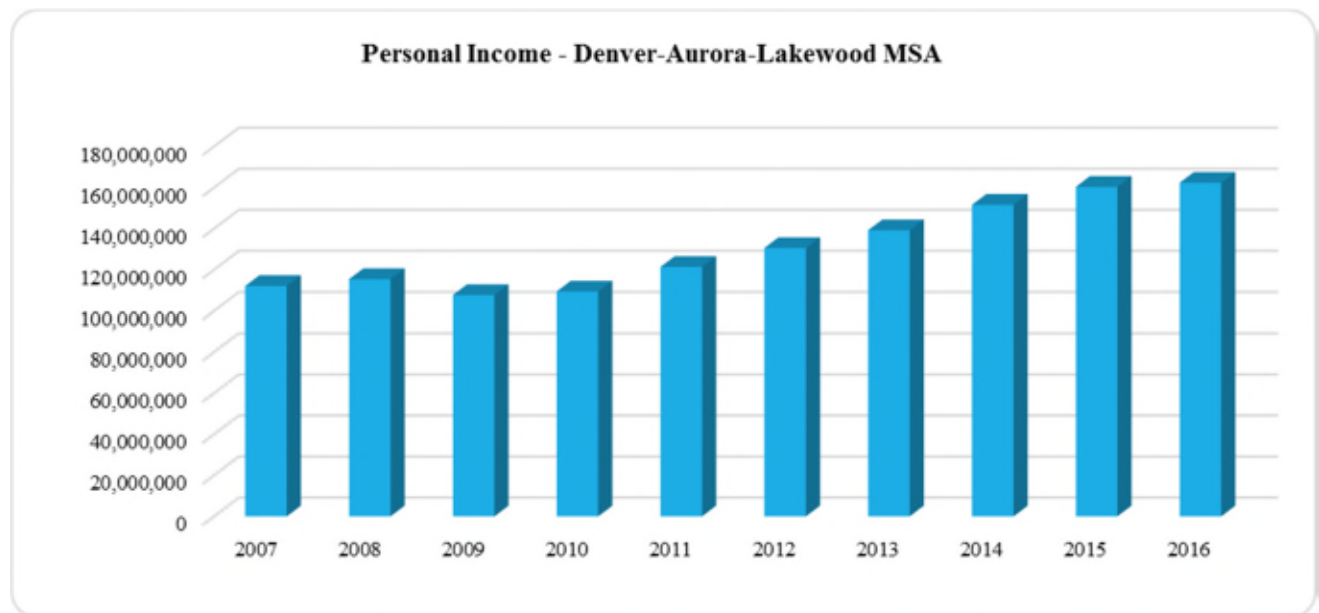
**Income**

The following tables set forth recent annual personal income and per capita personal income levels for Denver, the Denver-Aurora-Lakewood Metropolitan Statistical Area (“MSA”), the State of Colorado and the United States from 2010 through 2015 as reported by the U.S. Department of Commerce, Bureau of Economic Analysis. The Denver-Aurora-Lakewood MSA includes the counties of Adams, Arapahoe, Broomfield, Clear Creek, Denver, Douglas, Elbert, Gilpin, Jefferson and Park.

<b>Personal Income</b>				
<b>Year</b>	<b>Denver</b>	<b>Denver-Aurora-Lakewood MSA</b>	<b>State of Colorado</b>	<b>United States</b>
2007	\$ 29,907,155	\$ 112,087,470	\$ 201,743,269	\$ 11,995,419,000
2008	31,995,450	115,393,714	208,608,111	12,492,705,000
2009	27,446,777	107,655,385	198,082,468	12,079,444,000
2010	28,829,542	109,386,712	201,569,924	12,459,613,000
2011	32,836,870	121,383,631	219,860,916	13,233,436,000
2012	36,287,725	130,544,627	234,005,901	13,904,485,000
2013	40,408,827	139,212,185	246,648,165	14,068,960,000
2014	45,032,564	151,608,447	267,225,467	14,811,388,000
2015	47,707,288	160,329,809	282,665,204	15,547,661,000
2016	46,612,315	162,316,535	288,103,337	15,912,777,000
2017	n/a	n/a	n/a	n/a

(n/a = not available. All dollar estimates are in current dollars not adjusted for inflation.  
 Last updated: November 16, 2017 -- new estimates for 2010-2015.)

Source: U.S. Department of Commerce, Bureau of Economic Analysis.



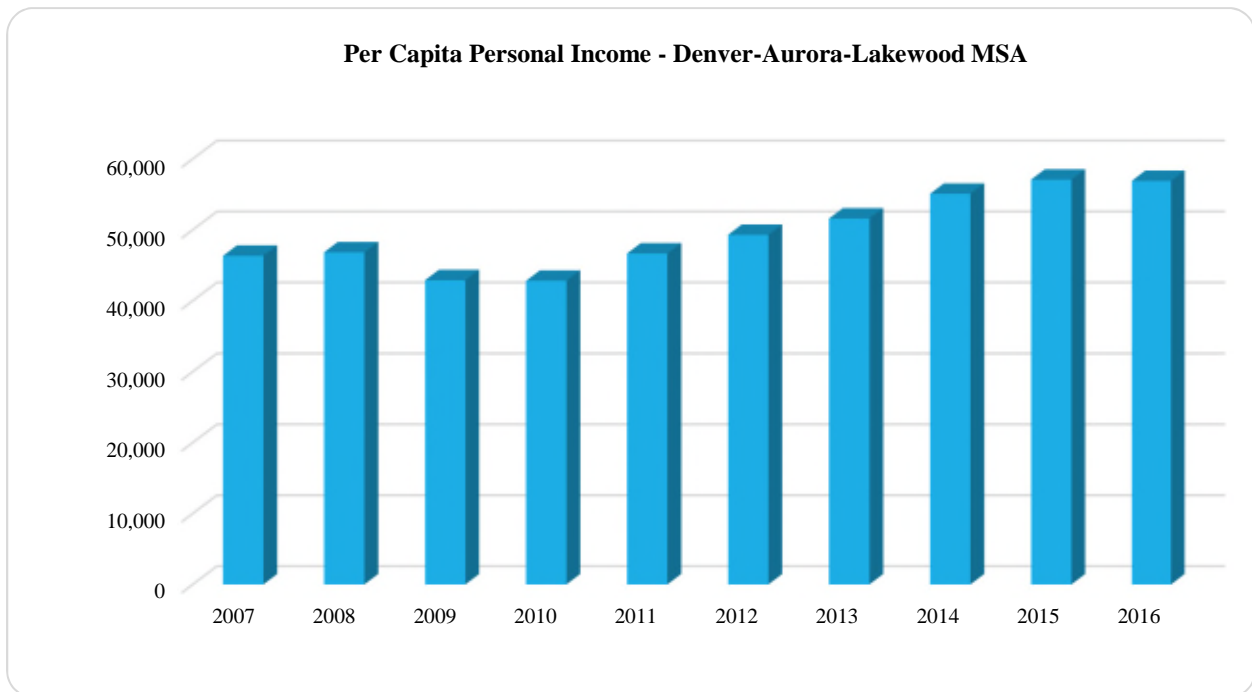
**DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017**  
**(Continued)**

**Per Capita Personal Income**

Year	Denver-Aurora-Lakewood MSA		State of Colorado	United States
	Denver	MSA		
2007	\$ 52,990	\$ 46,342	\$ 41,996	\$ 39,821
2008	55,575	46,832	42,663	41,082
2009	46,598	42,901	39,838	39,376
2010	47,784	42,815	39,926	40,277
2011	53,024	46,670	42,995	42,461
2012	57,276	49,302	45,089	44,282
2013	62,414	51,596	46,824	44,493
2014	67,981	55,082	49,952	46,494
2015	70,154	57,081	51,876	48,451
2016	67,256	56,892	51,999	49,246
2017	n/a	n/a	n/a	n/a

(n/a = not available. Per capita personal income was computed using Census Bureau midyear population estimates. Estimates for 2010-2016 reflect county population estimates available as of March 2017. All dollar estimates are in current dollars not adjusted for inflation. Last updated: November 16, 2017 -- new estimates for 2010-2015.)

Source: U.S. Department of Commerce, Bureau of Economic Analysis.



DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017  
(Continued)

**Employment**

The following table sets forth recent total labor force, employment and unemployment statistics for Denver, the Denver-Aurora MSA and the State of Colorado. The national unemployment rate is estimated to be approximately 4.1% as of December, 2017.



Source: Colorado Department of Labor and Employment.



**DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017**  
**(Continued)**

**Local Area Employment Statistics**  
(Not seasonally adjusted.)

**Denver**

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<b>Year</b>	<b>Labor Force (Thousands)</b>	<b>% Change</b>	<b>Unemployed (Thousands)</b>	<b>% Unemployment Rate</b>
2007	314.8	2.9	13.0	4.1
2008	323.3	2.7	17.4	5.4
2009	324.3	0.3	26.3	8.1
2010	347.6	7.2	31.7	9.1
2011	352.2	1.3	30.3	8.6
2012	357.7	1.6	28.1	7.9
2013	363.9	1.7	24.1	6.6
2014	369.9	1.7	17.8	4.8
2015	376.6	1.8	14.0	3.7
2016	384.3	2.0	12.1	3.1
2017	n/a	n/a	n/a	n/a

**Denver-Aurora MSA**

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<b>Year</b>	<b>Labor Force (Thousands)</b>	<b>% Change</b>	<b>Unemployed (Thousands)</b>	<b>% Unemployment Rate</b>
2007	1,359.0	1.5	51.8	3.8
2008	1,393.4	2.5	68.9	4.9
2009	1,392.7	(0.1)	104.2	7.5
2010	1,423.4	2.2	123.6	8.7
2011	1,431.2	0.5	118.8	8.3
2012	1,448.2	1.2	112.0	7.7
2013	1,468.5	1.4	96.9	6.6
2014	1,492.0	1.6	71.7	4.8
2015	1,510.0	1.2	55.9	3.7
2016	1,541.2	2.1	48.2	3.1
2017	n/a	n/a	n/a	n/a

**State of Colorado**

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<b>Year</b>	<b>Labor Force (Thousands)</b>	<b>% Change</b>	<b>Unemployed (Thousands)</b>	<b>% Unemployment Rate</b>
2007	2,664.7	1.6	99.5	3.7
2008	2,716.6	1.9	131.4	4.8
2009	2,723.0	0.2	198.5	7.3
2010	2,724.4	0.1	238.0	8.7
2011	2,736.1	0.4	228.8	8.4
2012	2,757.2	0.8	217.3	7.9
2013	2,775.7	0.7	189.7	6.8
2014	2,810.4	1.3	140.5	5.0
2015	2,833.5	0.8	110.5	3.9
2016	2,891.0	2.0	95.8	3.3
2017	n/a	n/a	n/a	n/a

Source: Colorado Department of Labor and Employment

**DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017**  
**(Continued)**

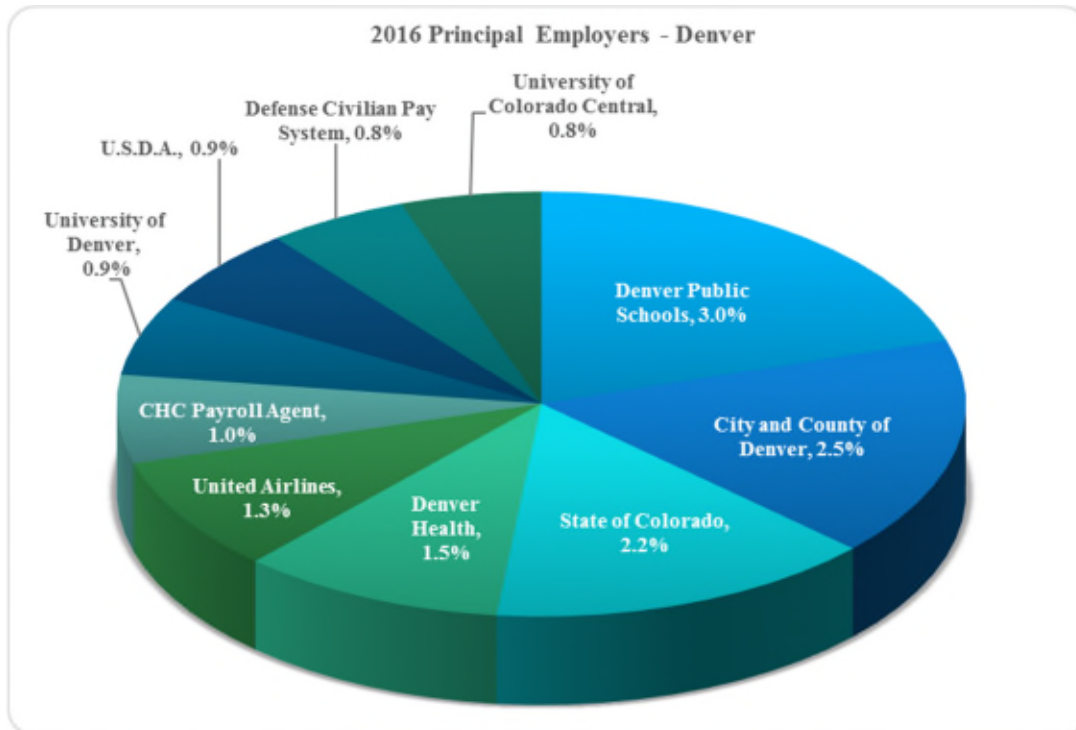
**Principal Employers**

Set forth in the following table are the ten largest employers in Denver for the current year and the period nine years prior, the number of persons each employs, and the percentage of total employment that each represents.

	2016			2007		
	<u>Employees</u>	<u>Rank</u>	<u>% of</u>	<u>Employees</u>	<u>Rank</u>	<u>% of</u>
			<u>Total City</u>			<u>Total City</u>
Denver Public School District #1	12,924	1	3.0%	9,298	2	2.6%
City and County of Denver	10,781	2	2.5%	11,602	1	3.3%
State of Colorado Central Payroll	9,588	3	2.2%	9,183	3	2.6%
Denver Health & Hospital Authority	6,541	4	1.5%	3,982	8	1.1%
United Airlines, Inc.	5,777	5	1.3%	5,455	6	1.5%
CHC Payroll Agent, Inc. (HCA Health One)	4,196	6	1.0%	3,199	9	0.9%
University of Denver	3,866	7	0.9%			
U.S.D.A. National Finance Center	3,852	8	0.9%	8,833	4	2.5%
Defense Civilian Pay System	3,323	9	0.8%			
University of Colorado Central	3,317	10	0.8%	6,060	5	1.7%
Frontier Airlines Inc.				4,171	7	1.2%
King Soopers				2,509	10	0.1%
<b>Total</b>	<b>64,165</b>		<b>14.9%</b>	<b>64,292</b>		<b>17.5%</b>

(2017 data not available at time of publication.)

Source: City and County of Denver annual report. Based on 2016 and 2007 Occupational Privilege Tax Remitters.



**DEMOGRAPHIC AND ECONOMIC OVERVIEW OF THE DENVER METROPOLITAN AREA – 2017**  
**(Continued)**

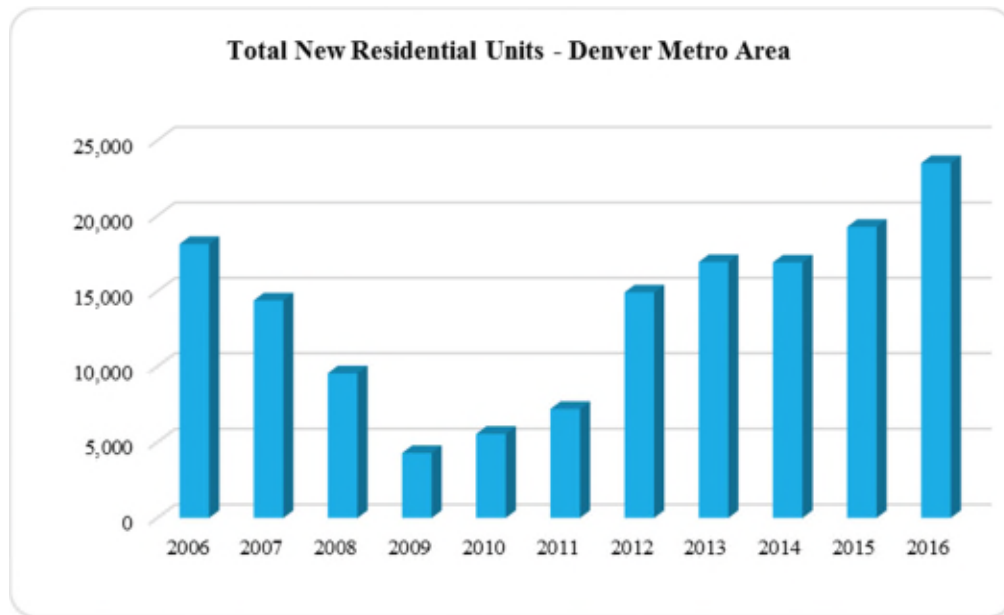
**New Residential Building Construction**

Set forth in the following table are recent historical residential building permit statistics for Denver and the Denver metropolitan area (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties).

New Residential Units in Denver and the Denver Metropolitan Area								
Year	Denver			Denver Metropolitan Area				
	Single-Family Detached	Single-Family Attached	Multi-Family <sup>2</sup>	Total	Single-Family Detached	Single-Family Attached	Multi-Family	Total
2007	1,215	201	2,266	3,682	7,799	398	6,195	14,392
2008	837	148	2,195	3,180	4,037	224	5,296	9,557
2009	485	74	329	888	2,690	133	1,465	4,288
2010	632	130	470	1,232	3,791	285	1,478	5,554
2011	703	147	1,835	2,685	3,885	309	3,005	7,199
2012	1,056	166	4,356	5,578	5,947	299	8,679	14,925
2013	1,284	256	4,330	5,870	7,396	399	9,145	16,940
2014	1,710	287	3,961	5,958	8,396	440	8,074	16,910
2015	1,847	134	5,920	7,901	9,786	422	9,061	19,269
2016	1,887	374	5,581	7,842	10,663	532	12,301	23,496
2017	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(n/a = not available. Single-family attached permits consists of structures with 2-4 units.)

Source: Metro Denver Economic Development Corporation based on U.S. Census Bureau.



## E - OPERATING INFORMATION

*These schedules contain information about Denver Water's operations and resources to help the reader understand how Denver Water's financial information relates to the services Denver Water provides and the activities it performs.*

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**EMPLOYEES BY DIVISION<sup>1</sup>: 2008 - 2017**

<b>Division/Section<sup>2</sup></b>	<b>2017<sup>6</sup></b>	<b>2016<sup>3</sup></b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011<sup>4</sup></b>	<b>2010</b>	<b>2009<sup>5</sup></b>	<b>2008</b>
<b>Manager &amp; Staff Division</b>	<b>28.4</b>	25.0	10.0	15.0	11.0	10.0	7.0	7.0	7.0	15.0
<b>Human Resources Division</b>	<b>29.0</b>	31.0	29.0	32.0	25.0	24.8	23.8	23.8	22.8	20.0
<b>Information Technology Division</b>	<b>101.3</b>	104.0	110.4	92.5	80.8	74.5	68.5	68.5	69.0	61.0
<b>Public Affairs Division</b>										
Chief Public Affairs Officer	-	3.0	3.0	3.0	3.0	2.0	6.0	4.0	4.0	8.0
Conservation & Comm. Outreach	-	29.0	-	11.0	-	-	8.6	9.6	9.6	6.0
Communications and Marketing	-	14.0	12.0	-	11.6	10.4	-	-	-	-
Conservation	-	-	17.0	16.0	17.0	15.0	15.0	17.0	17.0	15.0
Customer Relations	-	-	9.0	7.0	7.0	6.8	-	-	-	-
Central Services	-	-	-	-	-	-	-	3.0	3.0	3.0
Customer Care	-	31.0	-	-	-	-	-	39.2	41.2	43.0
CIS Business Support	-	-	-	-	-	-	-	2.0	5.0	-
Customer Services - Field	-	52.0	-	-	-	-	-	70.0	75.0	66.0
Meter Inspection Shop	-	-	-	-	-	-	-	7.0	5.0	8.0
Sales & Support	-	16.0	-	-	-	-	-	20.8	16.8	12.0
	-	145.0	41.0	37.0	38.6	34.2	29.6	172.6	176.6	161.0
<b>Customer Relations</b>										
Chief Customer Relations Officer	-	-	3.0	2.0	2.0	2.0	2.0	-	-	-
Central Services	-	-	-	2.6	2.6	1.0	3.0	-	-	-
Customer Care	-	-	29.3	30.3	31.3	42.8	42.2	-	-	-
Quality Assurance & Reporting	-	-	8.0	7.0	8.0	-	-	-	-	-
Customer Services - Field	-	-	48.0	49.0	51.0	64.0	66.0	-	-	-
Meter Inspection Shop	-	-	-	-	-	-	7.0	-	-	-
Sales Administration	-	-	9.0	9.0	9.0	13.0	12.8	-	-	-
	-	-	97.3	99.9	103.9	122.8	133.0	-	-	-
<b>External Affairs</b>										
Chief External Affairs Officer	<b>7.0</b>	-	-	-	-	-	-	-	-	-
Conservation & Comm. Outreach	<b>17.0</b>	-	-	-	-	-	-	-	-	-
Communications and Marketing	<b>13.0</b>	-	-	-	-	-	-	-	-	-
Customer Relations	<b>1.0</b>	-	-	-	-	-	-	-	-	-
Customer Care	<b>37.8</b>	-	-	-	-	-	-	-	-	-
Customer Services - Field	<b>52.0</b>	-	-	-	-	-	-	-	-	-
Sales & Support	<b>17.0</b>	-	-	-	-	-	-	-	-	-
Environmental Planning	<b>8.0</b>	-	-	-	-	-	-	-	-	-
Raw Water Supply	<b>4.0</b>	-	-	-	-	-	-	-	-	-
Water Resources Analysis	<b>6.0</b>	-	-	-	-	-	-	-	-	-
Water Resource Planning	<b>8.0</b>	-	-	-	-	-	-	-	-	-
Water Rights	<b>7.0</b>	-	-	-	-	-	-	-	-	-
	<b>177.8</b>	-	-	-	-	-	-	-	-	-

See accompanying footnotes on final page of report.

(continued)

**EMPLOYEES BY DIVISION<sup>1</sup>: 2008 - 2017, (continued)**

	2017 <sup>6</sup>	2016 <sup>3</sup>	2015	2014	2013	2012	2011 <sup>4</sup>	2010	2009 <sup>5</sup>	2008
<b>Legal Division</b>	-	-	13.0	14.0	14.4	14.6	13.6	13.6	14.6	12.0
<b>Finance Division</b>										
Chief Financial Officer	1.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	2.0	9.0
Purchasing & Contracting	-	-	12.0	11.0	11.0	11.0	9.0	5.0	9.0	8.0
Records & Document Administration	-	-	8.8	7.8	8.8	9.0	9.0	9.0	9.0	6.0
Treasury	8.0	8.0	8.0	9.0	9.0	9.0	8.0	7.0	8.0	7.0
Controller	3.0	2.0	1.0	1.0	1.0	-	-	-	-	-
Finance Computer Support	-	-	-	-	1.0	2.0	2.0	2.0	2.0	-
Budget	3.0	2.0	4.0	3.0	3.0	3.0	4.0	4.0	5.0	4.0
Accounting, Payroll, AP	18.0	17.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0
Rate Administration	2.0	-	1.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0
	<b>35.0</b>	31.0	56.8	56.8	57.8	58.0	56.0	50.0	58.0	56.0
<b>Engineering Division</b>										
Chief Engineering Officer	13.8	13.0	7.8	7.8	7.8	7.8	7.8	6.0	6.0	3.0
Asset Recording	8.0	7.0	7.0	8.0	10.0	7.0	7.0	7.0	7.0	7.0
Programs & Projects	56.0	53.0	55.0	58.0	58.0	57.9	53.9	57.0	57.0	49.0
Survey	24.0	26.0	23.0	25.0	25.0	25.0	26.0	26.0	26.0	26.0
Hydraulics	7.0	-	-	-	-	-	-	-	-	-
Construction Management	28.0	28.0	27.0	28.0	24.0	25.0	24.0	24.0	23.0	21.0
Distribution & Property Mgmt Admin	29.0	31.0	38.0	37.0	41.0	39.0	40.0	41.0	40.0	41.0
	<b>165.8</b>	158.0	157.8	163.8	165.8	161.7	158.7	161.0	159.0	147.0
<b>Planning Division</b>										
Chief Planning Officer	-	4.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
Environmental Planning	-	7.0	6.0	5.6	5.6	5.6	5.6	5.6	5.6	5.0
Raw Water Supply	-	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Water Resources Analysis	-	9.0	10.0	10.0	11.0	11.0	9.0	11.0	11.0	11.0
Water Resource Planning	-	4.0	4.0	4.0	3.0	3.0	3.0	2.0	2.0	2.0
Demand Planning	-	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Treated Water Planning	-	9.0	-	-	-	-	-	-	-	-
Water Rights	-	6.0	7.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
Hydraulics	-	-	10.0	10.0	10.0	10.0	8.0	8.0	8.0	8.0
	-	48.0	48.0	48.6	49.6	49.6	45.6	46.6	46.6	45.0
<b>Administrative Services Division</b>										
Chief Administrative Officer	38.0	33.0	-	-	-	-	-	-	-	-
Safety and Security	12.0	13.0	-	-	-	-	-	-	-	-
Recreation Management	6.0	6.0	-	-	-	-	-	-	-	-
	<b>56.0</b>	52.0	-	-	-	-	-	-	-	-

See accompanying footnotes on final page of report.

(continued)

**EMPLOYEES BY DIVISION<sup>1</sup>: 2008 - 2017, (continued)**

	2017 <sup>6</sup>	2016 <sup>3</sup>	2015	2014	2013	2012	2011 <sup>4</sup>	2010	2009 <sup>5</sup>	2008
<b>Operations and Maintenance Division</b>										
Chief OM Officer	6.0	6.0	7.0	5.0	6.0	3.0	4.0	4.0	4.0	3.0
Source of Supply	52.0	58.0	56.0	58.0	57.0	57.0	59.0	61.0	60.0	60.0
Water Quality & Treatment	102.0	118.0	35.0	44.0	44.0	42.0	37.0	33.0	33.0	32.0
Water Treatment	-	-	86.0	85.0	87.0	84.0	88.0	89.0	89.0	92.0
Treated Water Operations	-	-	53.0	55.0	62.0	58.0	59.0	59.0	57.5	57.0
Water Distribution	194.0	190.0	136.0	122.0	132.0	142.0	144.0	157.0	149.0	145.0
Emergency Management	-	-	4.0	2.0	2.0	2.0	-	-	-	-
Support Services	86.0	92.0	-	-	-	-	-	-	-	-
Safety and Loss Control	-	-	11.0	10.0	15.0	15.0	16.0	14.0	16.0	15.0
Instrumentation & Ctrl Systems	-	-	-	18.0	11.0	14.0	12.0	11.0	12.0	11.0
Maintenance and Warehouse	-	-	106.0	106.0	102.0	113.0	115.0	118.0	121.0	123.0
	<b>440.0</b>	464.0	494.0	505.0	518.0	530.0	534.0	546.0	541.5	538.0
<b>Total All Divisions</b>	<b>1,033.3</b>	1,058.0	1,057.3	1,064.6	1,064.9	1,080.2	1,069.8	1,089.1	1,095.1	1,055.0

<sup>1</sup> Number of employees includes regular and introductory employees. Temporary and project employees are not included. The source of the data is Human Resource employee records.

<sup>2</sup> Section names may have changed due to business needs.

<sup>3</sup> In 2016, the Legal Division was added to the Manager & Staff division. The Customer Relations division was added to the Public Affairs division. The Administrative Services division is new.

<sup>4</sup> In 2011, the Customer Relations Division was split out from Public Affairs.

<sup>5</sup> In 2009, Director positions were moved to their respective divisions and manager positions were moved to their respective sections.

<sup>6</sup> In 2017, Planning and Public Affairs were combined to create a new division External Affairs. Hydraulics Eng. was added to Eng. (formerly was in Planning).



## CAPITAL ASSETS BY FUNCTION: 2008 - 2017

(amounts expressed in thousands)

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>CAPITAL ASSETS NOT BEING DEPRECIATED</b>										
Land and land rights	\$ 129,789	\$ 99,108	\$ 99,098	\$ 115,291	\$ 115,304	\$ 115,107	\$ 114,149	\$ 113,473	\$ 112,348	\$ 97,262
Water rights and other	70,472	105,785	105,785	75,550	75,550	74,161	74,100	70,033	66,975	65,582
Construction work in progress (CWIP)	265,757	259,690	163,266	171,215	124,244	117,862	129,770	110,483	77,340	109,316
Total capital assets not being depreciated	466,018	464,583	368,149	362,056	315,098	307,130	318,019	293,989	256,663	272,160
<b>CAPITAL ASSETS BEING DEPRECIATED</b>										
Buildings and improvements	405,375	199,329	201,538	281,772	279,280	254,796	236,538	224,496	217,774	212,288
Improvements other than buildings	1,971,680	2,044,423	2,002,297	1,955,572	1,890,470	1,860,363	1,761,486	1,698,311	1,648,231	1,575,950
Machinery and equipment	412,683	392,963	393,007	246,368	246,433	221,915	222,362	231,107	226,396	210,761
Total capital assets being depreciated	2,789,738	2,636,715	2,596,842	2,483,712	2,416,183	2,337,074	2,220,386	2,153,914	2,092,401	1,998,999
<b>Less accumulated depreciation</b>										
Buildings and improvements	(117,420)	(48,453)	(47,372)	(76,257)	(72,278)	(68,216)	(63,781)	(59,093)	(55,819)	(52,176)
Improvements other than buildings	(563,245)	(596,587)	(570,105)	(578,572)	(549,357)	(520,020)	(501,992)	(475,222)	(454,312)	(430,600)
Machinery and equipment	(227,197)	(211,396)	(200,614)	(121,358)	(112,055)	(101,296)	(92,405)	(86,676)	(78,929)	(83,382)
Total accumulated depreciation	(907,862)	(856,436)	(818,091)	(776,187)	(733,690)	(689,532)	(658,178)	(620,991)	(589,060)	(566,158)
Total capital assets being depreciated, net	1,881,876	1,780,279	1,778,751	1,707,525	1,682,493	1,647,542	1,562,208	1,532,923	1,503,341	1,432,841
<b>TOTAL CAPITAL ASSETS, NET</b>	\$ 2,347,894	\$ 2,244,862	\$ 2,146,900	\$ 2,069,581	\$ 1,997,591	\$ 1,954,672	\$ 1,880,227	\$ 1,826,912	\$ 1,760,004	\$ 1,705,001

## RECEIPTS AND EXPENDITURES

### BUDGET TO ACTUAL COMPARISON 2013 - 2017 AND 2018 BUDGET (BUDGET BASIS)

	(amounts expressed in thousands)										
	2018	2017 <sup>5</sup>		2016 <sup>4</sup>		2015		2014		2013	
	Budget	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget <sup>1</sup>	Actual <sup>3</sup>
<b>BEGINNING CASH &amp; INVESTMENTS</b>	<b>\$ 449,379</b>	\$ 287,394	\$ 287,394	\$ 240,889	\$ 240,889	\$ 234,924	\$ 234,924	\$ 219,744	\$ 219,744	\$ 222,299	\$ 222,299
<b>RECEIPTS FROM:</b>											
Sale of water	282,658	269,481	284,304	273,112	274,299	269,256	242,225	250,376	238,777	233,058	230,857
Nonoperating, interest & other	23,524	20,305	29,456	19,482	19,200	19,951	21,184	19,336	24,026	20,502	24,946
System development charges	34,000	34,035	42,486	20,294	38,752	17,294	36,109	15,294	32,736	8,640	34,616
Developer participation (new facilities), reimbursements & grants	4,800	-	9,640	8,129	3,239	4,415	10,795	2,163	6,384	2,911	7,426
	<b>344,982</b>	323,821	365,886	321,017	335,490	310,916	310,313	287,169	301,923	265,111	297,845
Sale of bonds or issuance of notes	60,000	205,000	205,864	56,923	71,238	42,000	30,000	36,000	40,102	25,600	10,000
Total receipts	<b>404,982</b>	528,821	571,750	377,940	406,728	352,916	340,313	323,169	342,025	290,711	307,845
<b>LESS EXPENDITURES FOR:</b>											
Operations, maintenance & refunds	197,515	201,270	197,455	196,865	191,060	191,036	185,820	197,662	185,820	183,092	185,857
Debt service	49,149	45,456	43,686	43,835	41,121	48,822	56,742	48,364	46,742	46,752	46,218
	<b>246,664</b>	246,726	241,141	240,700	232,181	239,858	242,562	246,026	232,562	229,844	232,075
Capital improvements (new facilities)	137,895	125,237	117,330	85,758	94,231	29,808	33,011	45,931	44,343	26,958	24,471
System replacements	53,148	53,081	44,651	51,171	44,941	50,125	44,668	59,734	52,153	42,823	35,271
Equipment	5,483	6,507	6,405	7,000	7,548	12,700	10,603	5,813	3,030	6,486	4,214
	<b>196,526</b>	184,825	168,386	143,929	146,720	92,633	88,282	111,478	99,526	76,267	63,956
Indirects to capital	-	-	-	-	-	11,527	9,058	13,994	9,585	12,735	9,954
Total expenditures	<b>443,190</b>	431,551	409,527	384,629	378,901	344,018	339,902	371,498	341,673	318,846	305,985
Cash Balance Adjustment <sup>2</sup>			(238)		18,678		5,554		14,828		(4,415)
<b>ENDING CASH &amp; INVESTMENTS</b>	<b>\$ 411,171</b>	\$ 384,664	\$ 449,379	\$ 234,200	\$ 287,394	\$ 243,822	\$ 240,889	\$ 171,415	\$ 234,924	\$ 194,164	\$ 219,744

#### GENERAL EXPLANATION OF VARIANCES:

<sup>1</sup> The 2013 budget represents the revised budget approved by the Board on April 10, 2013 in response to the drought.

<sup>2</sup> The cash balance adjustment is due to a timing difference between cash payments that were made in January but were accrued for in December.

<sup>3</sup> In 2014 prior year information was adjusted for 2012 and 2013 due to timing differences after the original reporting period.

<sup>4</sup> In 2016, financial system underwent a significant conversion eliminating the allocation of indirect costs to capital. Totals include Applied Labor. The financial system conversion also resulted in changes to the categorization and inclusion/exclusion of certain budgeted costs for the 2016 budget.

<sup>5</sup> Beginning in 2017, totals include Applied Labor. The 2017 budget for Build America Bonds was reclassified from sale of bonds or issuance of notes to nonoperating, interest & other.

Variations in operating receipts are generally due to abnormal climatic conditions. Variations in system development charges are generally related to levels of activity in the home building industry. Variations in capital improvements are generally due to changes in project scheduling.

Cash and investments do not agree with amounts on the statements of net position due to differences in valuation methods. Prior year information has been updated to adjust for timing differences the original reporting period.

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# Supply

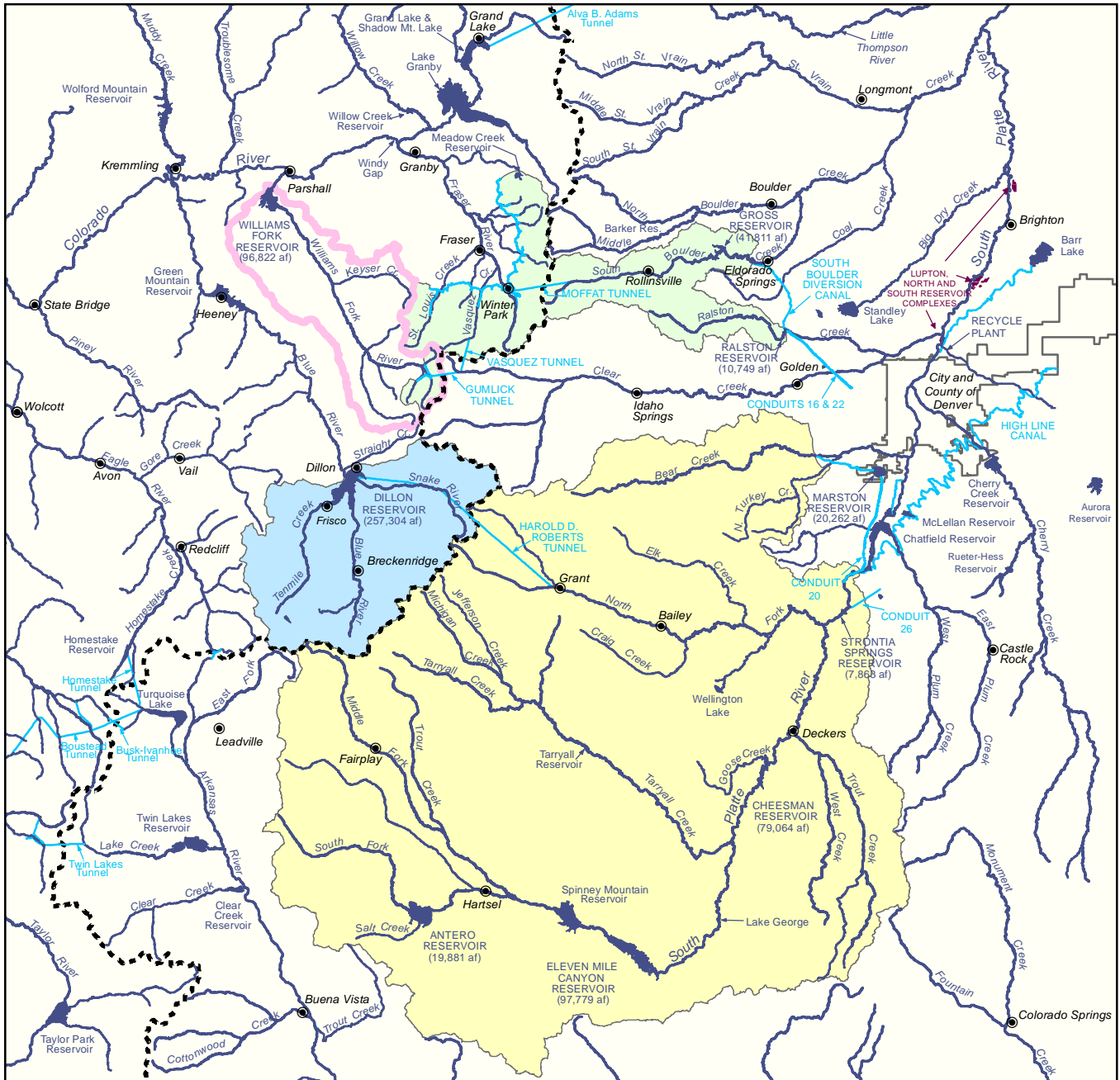
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## 2017 Facts

Raw water collected .....	297,878 Acre Feet
Percent of average yield-last 10 years .....	99%
Percent from South Platte System .....	44%
Percent from Moffat System .....	27%
Percent from Roberts Tunnel System .....	29%
Reservoir storage, January 1 .....	568,124 Acre Feet
Percent of capacity .....	84.0%
Reservoir storage, December 31 .....	586,617 Acre Feet
Percent of capacity .....	86.7%
Power generation (excluding power purchased).....	76,948,391 KWH
Value of power generation (excluding power purchased)..	\$4,510,456

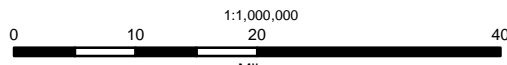
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# City and County of Denver Board of Water Commissioners Water Collection System



**LEGEND**

<span style="display: inline-block; width: 20px; height: 10px; background-color: yellow; border: 1px solid black;"></span> South Platte Collection System	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%;"></span> Town
<span style="display: inline-block; width: 20px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Roberts Tunnel Collection System	<span style="border-bottom: 2px dashed black; width: 20px; display: inline-block;"></span> Continental Divide
<span style="display: inline-block; width: 20px; height: 10px; background-color: lightgreen; border: 1px solid black;"></span> Moffat Collection System	<span style="display: inline-block; width: 20px; border-bottom: 2px solid blue;"></span> Major Canal or Aqueduct
<span style="display: inline-block; width: 20px; height: 10px; background-color: pink; border: 1px solid black;"></span> Williams Fork Reservoir Watershed	<span style="display: inline-block; width: 20px; border-bottom: 2px solid blue;"></span> Major Stream or River
<span style="display: inline-block; width: 20px; height: 10px; background-color: lightblue; border: 1px solid black; border-radius: 50%;"></span> Major Lake or Reservoir	



Scale number is accurate when printed at 8.5 x 11 inches in size.



Map Date: 12/29/2015  
 Author: Planning WRGIS  
 Sources: USGS-NHD, DOLA,  
 Denver Water,  
 NRCS, CDWR.

## SOURCE OF SUPPLY - 2017

### Reservoirs and Collection Systems

	<u>Capacity in Acre-Feet</u>	<u>Capacity in Million Gals.</u>
<b>RAW WATER STORAGE</b>		
Storage Reservoirs:		
Antero	19,881	6,478.2
Chatfield	27,076	8,822.7
Cheesman	79,064	25,763.1
Dillon	257,304	83,842.8
Eleven Mile Canyon	97,779	31,861.4
Gross	41,811	13,624.2
Meadow Creek Reservoir (Denver Water portion)	4,520	1,472.8
Soda Lakes (Denver Water portion)	615	200.4
Total Storage Reservoirs	<u>528,050</u>	<u>172,065.6</u>
Operating Reservoirs:		
Long Lakes	1,787	582.3
Marston Lake	20,262	6,602.4
Platte Canyon	910	296.5
Ralston	10,776	3,511.4
Strontia Springs	7,863	2,562.2
Total Operating Reservoirs	<u>41,598</u>	<u>13,554.8</u>
<b>TOTAL RAW WATER STORAGE</b>	<u><u>569,648</u></u>	<u><u>185,620.4</u></u>
<b>REPLACEMENT RESERVOIRS</b>		
Bambei/Walker	2,081	678.1
Welby	1,480	482.3
Williams Fork	96,822	31,549.5
Wolford Mountain (Denver Water portion)	25,610	8,345.0
<b>TOTAL REPLACEMENT RESERVOIRS</b>	<u><u>125,993</u></u>	<u><u>41,054.9</u></u>
<b>MOUNTAIN COLLECTION SYSTEM</b>		
	<u>Length in Feet</u>	<u>Length in Miles</u>
Moffat Collection System:		
Concrete and Steel Pipe	101,589	19.2
Moffat Water Tunnel	32,383	6.1
Open Canals	15,443	2.9
Covered Canals	18,041	3.4
Other Tunnels	10,953	2.1
Total Moffat Collection System	<u>178,409</u>	<u>33.7</u>
Williams Fork Collection System:		
Steel Pipe	18,939	3.6
Vasquez Tunnel	17,874	3.4
A. P. Gumlick Tunnel	15,572	2.9
Open Canals	1,795	0.3
Total Williams Fork Collection System	<u>54,180</u>	<u>10.2</u>
Roberts Tunnel	<u>122,953</u>	<u>23.3</u>
South Boulder Diversion Conduit:		
Open Canals	30,250	5.7
Concrete and Steel Pipe	13,948	2.6
Tunnels	7,704	1.5
Covered Canals	1,748	0.3
Total South Boulder Diversion Conduit	<u>53,650</u>	<u>10.1</u>
<b>TOTAL MOUNTAIN COLLECTION SYSTEM</b>	<u><u>409,192</u></u>	<u><u>77.3</u></u>
<b>DOWNSTREAM RESERVOIRS</b>		
Metro Collection System:		
Open Canals	362,736	68.7
Concrete and Steel Pipe	31,680	6.0
Total Metro Collection System	<u><u>394,416</u></u>	<u><u>74.7</u></u>

## SOURCE OF SUPPLY - 2017

### Supply Mains and Wells

#### RAW WATER SUPPLY MAINS

	<u>Size</u>	<u>Kind of Pipe</u>	<u>Length in Feet</u>	<u>Length in Miles</u>		<u>Size</u>	<u>Kind of Pipe</u>	<u>Length in Feet</u>	<u>Length in Miles</u>
Conduit 5:	< 20"	No Material breakout	1,511	0.3	Conduit 15:	< 20"	No Material breakout	410	0.1
	24"	Cast Iron	10	0.0		24"	Cast Iron	90	0.0
	24"	Ductile Iron	58	0.0		30"	Reinforced Concrete Cyl	410	0.1
	24"	High Density Polyethylene	2,239	0.4		60"	Reinforced Concrete Cyl	8,036	1.5
	24"	Steel	144	0.0		60"	Steel	11,235	2.1
	30"	Cast Iron	157	0.0		72"	Reinforced Concrete Cyl	5,532	1.0
	30"	Concrete	242	0.0		72"	Steel	6,741	1.3
	30"	Reinforced Concrete Cyl	24,491	4.6		84"	Reinforced Concrete Cyl	437	0.1
	30"	Steel	87	0.0	Total Conduit 15			<u>32,891</u>	<u>6.2</u>
	36"	Cast Iron	965	0.2	Conduit 16:	< 20"	No Material breakout	533	0.1
	36"	Reinforced Concrete Cyl	637	0.1		24"	Steel	22	0.0
	42"	Steel	204	0.0		36"	Steel	19	0.0
Total Conduit 5			<u>30,745</u>	<u>5.6</u>		42"	Reinforced Concrete	3,071	0.6
Conduit 8:	< 20"	No Material breakout	26	0.0		42"	Reinforced Concrete Cyl	40,980	7.8
	36"	Cast Iron	913	0.2		42"	Steel	1,433	0.3
	36"	Concrete	106	0.0		48"	Steel	25	0.0
	36"	Reinforced Concrete Cyl	2,550	0.5		72"	Steel	229	0.0
	36"	Steel	1,094	0.2	Total Conduit 16			<u>46,312</u>	<u>8.8</u>
	44"	Cast Iron	15	0.0	Conduit 20:	< 20"	No Material breakout	247	0.0
	60"	Steel	504	0.1		30"	Concrete	8	0.0
	84"	Steel	47	0.0		36"	Concrete	6	0.0
	90"	Steel	23	0.0		40"	Reinforced Concrete Cyl	75	0.0
Total Conduit 8			<u>5,278</u>	<u>1.0</u>		60"	Reinforced Concrete Cyl	122	0.0
Conduit 14:	24"	Steel	8	0.0		60"	Steel	509	0.1
	30"	Reinforced Concrete Cyl	69	0.0		84"	Steel	518	0.1
	36"	Corrugated Metal Pipe	104	0.0		84"	Reinforced Concrete Cyl	10	0.0
	36"	Concrete	1,381	0.3		90"	Steel	60	0.0
	36"	Steel	117	0.0		90"	Reinforced Concrete Non-Cyl	59,922	11.3
	48"	Reinforced Concrete Cyl	3,322	0.6		96"	Steel	3,007	0.6
Total Conduit 14			<u>5,001</u>	<u>0.9</u>	Total Conduit 20			<u>64,484</u>	<u>12.1</u>

(continued)



**SOURCE OF SUPPLY - 2017, (continued)**

Supply Mains and Wells

RAW WATER SUPPLY MAINS

	<u>Size</u>	<u>Kind of Pipe</u>	<u>Length in Feet</u>	<u>Length in Miles</u>		<u>Size</u>	<u>Kind of Pipe</u>	<u>Length in Feet</u>	<u>Length in Miles</u>
Conduit 22:	< 20"	No Material breakout	418	0.1	Conduit 160:	36"	Steel	321	0.1
	24"	Ductile Iron	133	0.0					
	24"	Steel	37	0.0	Other (no number) <sup>1</sup> :	< 20"	No Material breakout	6,624	1.3
	36"	Ductile Iron	68	0.0		24"	Cast Iron	110	0.0
	42"	Reinforced Concrete Cyl	14	0.0		24"	Ductile Iron	24	0.0
	42"	Steel	10	0.0		24"	Steel	164	0.0
	48"	Steel	74	0.0		24"	PVC	101	0.0
	54"	Reinforced Concrete Cyl	43,520	8.2		30"	Cast Iron	12	0.0
	54"	Steel	1,318	0.2		30"	Steel	3,223	0.6
	60"	Steel	51	0.0		36"	Cast Iron	1,129	0.2
Total Conduit 22			45,643	8.5		36"	Concrete	1,516	0.3
						36"	Steel	624	0.1
Conduit 26:	< 20"	No Material breakout	50	0.0		36"	Reinforced Concrete Non-Cyl	1,499	0.3
	24"	Ductile Iron	13	0.0		42"	Steel	10,547	2.0
	24"	Reinforced Concrete Cyl	365	0.1		48"	Cast Iron	157	0.0
	24"	Steel	72	0.0		48"	Concrete	15	0.0
	36"	Steel	54	0.0		48"	Steel	179	0.0
	60"	Steel	76	0.0		48"	Reinforced Concrete Non-Cyl	3,727	0.7
	72"	Steel	64	0.0		54"	Reinforced Concrete Non-Cyl	887	0.2
	78"	Steel	213	0.0		54"	Steel	2,896	0.5
	96"	Steel	225	0.0		60"	Steel	1,718	0.3
	120"	Steel	14	0.0		66"	Reinforced Concrete Non-Cyl	1,629	0.3
	126"	Concrete	13,976	2.6		72"	Steel	978	0.2
	126"	Steel	5,766	1.1		84"	Steel	65	0.0
Total Conduit 26			20,888	3.8		90"	Steel	31	0.0
						108"	Concrete	123	0.0
Conduit 155:	< 20"	No Material breakout	89	0.0		108"	Steel	8,263	1.6
	24"	Ductile Iron	27	0.0		120"	Steel	104	0.0
	30"	Ductile Iron	2,492	0.5		132"	Steel	322	0.1
Total Conduit 155			2,608	0.5		144"	Steel	830	0.2
					Total Conduit Other			47,497	8.9
See acc Conduit 157:	30"	Steel	25	0.0					
	42"	Reinforced Concrete Cyl	3,044	0.6	TOTAL RAW WATER SUPPLY MAINS			305,335	57.1
	42"	Steel	468	0.1					
	48"	Reinforced Concrete Cyl	130	0.0					
Total Conduit 157			3,667	0.7					

See accompanying footnotes on final page of report.

(continued)

**SOURCE OF SUPPLY - 2017, (continued)**

Supply Mains and Wells

RAW WATER SUPPLY MAINS

INFILTRATION GALLERIES & WE	Capacity <u>in MGD</u>		Capacity <u>in MGD</u>		Capacity <u>in MGD</u>
Cherry Creek Wells - Well O	1.6	Glendale Well No.2	1.15	Glendale LFH-1	0.43
Cherry Creek Galleries/Conduit 1	9.06	Glendale Well No.3	1.29	Glendale UA-1	0.22
Farnell Lane Well Field	- <sup>2</sup>	Glendale Well No.4	1.29	Glendale LA-1	0.22
Glendale Well No.1	1.15	Glendale Well No.5	0.72	Garland Park	0.76

<sup>1</sup> These are raw water supply mains typically on Denver Water property that are not assigned a conduit number.

<sup>2</sup> Alternative uses for supplies from the Farnell Lane Well Field are presently under study.

## HYDROELECTRIC POWER - 2017

### POWER GENERATION, PURCHASE, DISTRIBUTION, AND BANKING

	<u>Kilowatt Hours</u>	<u>Value<sup>2</sup></u>
<b>POWER GENERATION AND PURCHASE</b>		
Net Power Generation: <sup>1</sup>		
Dillon	10,058,863	\$ 478,732
Foothills	10,048,530	631,957
Gross	15,659,611	1,185,039
Hillcrest	6,833,675	456,679
Roberts Tunnel	16,325,728	1,073,486
Strontia Springs	5,092,907	262,994
Williams Fork	12,929,077	421,569
Total Power Generation	<u>76,948,391</u>	<u>4,510,456</u>
Power Purchased for Department of Energy (DOE) power interference	6,799,714	263,516
<b>TOTAL POWER GENERATION AND PURCHASE</b>	<u><u>83,748,105</u></u>	<u><u>4,773,972</u></u>
<b>POWER DISTRIBUTION</b>		
Internal Power Consumption: <sup>1</sup>		
Foothills	3,897,924	231,564
Hillcrest	1,553,435	84,449
Total Internal Power Consumption	<u>5,451,359</u>	<u>316,013</u>
Power Deliveries:		
To Xcel Energy:		
Dillon	10,058,863	478,732
Foothills	6,150,606	400,393
Gross	15,659,611	1,185,039
Hillcrest	5,280,240	372,230
Roberts Tunnel	16,325,728	1,073,486
Strontia Springs	5,092,907	262,994
	<u>58,567,955</u>	<u>3,772,874</u>
To Tri-State Generation and Transmission Association:		
Williams Fork	12,929,077	421,569
Total Power Deliveries to Xcel and Tri-State	<u>71,497,032</u>	<u>4,194,443</u>
Total Power Generation	76,948,391	4,510,456
To DOE for Power Interference:		
Purchased Power	6,799,714	263,516
Total Power Deliveries to DOE	<u>6,799,714</u>	<u>263,516</u>
<b>TOTAL POWER DISTRIBUTION</b>	<u><u>83,748,105</u></u>	<u><u>4,773,972</u></u>
<b>DOE BANKED POWER INTERFERENCE ACCOUNT<sup>3</sup></b>		
Balance, Beginning of Year	37,742,666	1,132,280
Net Interference	(19,670,594)	(590,118)
Total Allocation	6,799,714	263,516
Balance, End of Year	<u><u>24,871,786</u></u>	<u><u>\$ 805,678</u></u>

<sup>1</sup> Net Power Generation is total generation less station service (except Foothills and Hillcrest) and transmission wheeling losses. Value of Williams Fork power and that consumed by Foothills and Hillcrest based on PSC tariff schedule TT, June 4, 1988.

<sup>2</sup> Values on this schedule represent the value of power produced and distributed and do not relate to power sales on other schedules.

<sup>3</sup> Value based on 30 mills/kwh (approximate average of PSC and DOE rates).

(continued)

## HYDROELECTRIC POWER - 2017, (continued)

### POWER VALUE, COST, AND RETURN ON INVESTMENT

	Power Plant							Total
	Dillon	Foothills	Gross	Hillcrest	Roberts Tunnel	Strontia Springs	Williams Fork	
Date of Commercial Operation:	Oct 1, 1987	May 25, 1985	Aug 1, 2007	Jun 30, 1993	Jan 30, 1988	Aug 11, 1986	July 25, 1959	
VALUE OF POWER GENERATION <sup>1</sup>								
Delivered to Xcel Energy	\$ 478,732	\$ 400,393	\$ 1,185,039	\$ 372,230	\$ 1,073,486	\$ 262,994	\$ -	\$ 3,772,874
Foothills Internal Consumption	-	231,564	-	-	-	-	-	231,564
Hillcrest Internal Consumption	-	-	-	84,449	-	-	-	84,449
Delivered to Tri-State	-	-	-	-	-	-	421,569	421,569
TOTAL VALUE	478,732	631,957	1,185,039	456,679	1,073,486	262,994	421,569	4,510,456
COST OF POWER GENERATION								
Transmission Wheeling	-	17,367	-	-	43,434	-	-	60,801
Operation and Maintenance	20,035	6,651	42,901	9,393	18,906	6,719	38,219	142,824
Administrative Expense	3,807	1,264	8,151	1,785	3,592	1,276	7,262	27,137
Depreciation	89,705	77,581	500,663	122,601	130,193	52,224	753,727	1,726,694
TOTAL COST	113,547	102,863	551,715	133,779	196,125	60,219	799,208	1,957,456
Net Return (Loss)	\$ 365,185	\$ 529,094	\$ 633,324	\$ 322,900	\$ 877,361	\$ 202,775	\$ (377,639)	\$ 2,553,000
Plant Investment (Before Depreciation)	\$ 4,646,727	\$ 2,936,645	\$ 18,685,773	\$ 6,309,868	\$ 6,007,230	\$ 1,733,652	\$ 25,336,393	\$ 65,656,288
Return on Investment - Current Year	8%	18%	3%	5%	15%	12%	(1)%	4%
Return on Investment - Cumulative	192%	367%	37%	30%	132%	274%	8%	66%

<sup>1</sup> Values on this schedule represent the value of power produced and distributed and do not relate to power sales on other schedules.

**WATER SUPPLY, USE AND STORAGE: 2008 - 2017**

Values in acre-feet<sup>1</sup>

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>SUPPLY</b>										
South Platte System:										
South Platte Direct Rights	86,988	96,293	110,915	108,990	72,254	46,557	75,389	94,795	84,365	67,152
South Platte Storage Rights	30,290	41,301	46,741	31,939	37,816	4,283	25,739	31,347	39,402	31,786
Bear Creek Rights	1,337	-	-	-	2,067	61	1,359	1,222	1,178	1,862
Total South Platte System	118,615	137,594	157,656	140,929	112,137	50,901	102,487	127,364	124,945	100,800
Blue River/Roberts Tunnel System	86,124	40,795	39,801	77,765	111,564	54,394	148,643	74,674	58,468	80,056
Effluent Exchange <sup>2</sup>	13,500	20,730	8,905	7,751	30,778	34,864	15,072	24,527	13,846	21,455
Moffat System:										
Fraser Collection System	33,180	19,190	20,943	24,012	49,036	29,399	45,353	27,240	37,640	58,490
Williams Fork Collection System	28,384	25,393	21,288	26,680	68,483	23,275	33,565	28,362	31,138	26,268
Cabin-Meadow Creek System	2,836	4,217	2,271	85	3,080	1,448	4,112	1,452	4,668	3,794
South Boulder Creek	14,005	21,453	22,172	19,516	7,418	-	9,606	15,178	4,816	-
Ralston Creek	1,234	5,298	6,342	3,292	13,142	401	1,127	4,086	1,374	290
Total Moffat System	79,639	75,551	73,016	73,585	141,159	54,523	93,763	76,318	79,636	88,842
Total Water Supply	297,878	274,670	279,378	300,030	395,638	194,682	359,965	302,883	276,895	291,153
<b>USE</b>										
Foothills Filters	124,091	125,327	113,433	101,795	116,095	155,334	137,330	142,811	117,784	117,973
Marston Filters	39,345	34,719	34,427	52,777	36,135	46,029	25,763	40,489	31,853	56,498
Moffat Filters	32,544	39,393	33,691	33,173	32,503	19,477	46,380	30,642	40,910	46,438
Total Water Filtered	195,980	199,439	181,551	187,745	184,733	220,840	209,473	213,942	190,547	220,909
Change in Clear Water Storage	3,582	123	(76)	26	52	24	12	(55)	52	(23)
Total Treated Water Delivered <sup>3</sup>	199,562	199,562	181,475	187,771	184,785	220,864	209,485	213,887	190,599	220,886
Raw Water Deliveries	25,753	21,752	26,566	19,260	24,533	31,574	27,535	24,641	25,717	30,079
Other Uses <sup>4</sup>	54,070	67,247	90,815	103,131	46,075	91,467	100,922	79,819	58,632	39,620
Total Water Use	279,385	288,561	298,856	310,162	255,393	343,905	337,942	318,347	274,948	290,585
<b>STORAGE</b>										
Total Reservoir Storage, December 31	586,617	568,124	582,015	601,493	611,625	471,380	620,603	598,580	614,044	612,097
Total Reservoir Storage, January 1	568,124	582,015	601,493	611,625	471,380	620,603	598,580	614,044	612,097	611,529
Storage Gain or (Loss)	18,493	(13,891)	(19,478)	(10,132)	140,245	(149,223)	22,023	(15,464)	1,947	568

<sup>1</sup> Starting in Water Year 2011 the conversion factor from cfs to acre-feet was changed from 2 to 1.9835.

<sup>2</sup> Initiated exchange programs for Blue River effluent on September 10, 1976.

<sup>3</sup> Total Treated Water Delivered is determined by adding or subtracting Change in Clear Water Storage from Total Water Filtered.

<sup>4</sup> Other Uses include, but are not limited to, evaporation, carriage losses, seepage losses, Chatfield bypasses, flood bypasses, substitution and releases for power production and maintenance projects.

# Pumping

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## 2017 Facts

Treated Water pumped - Current year .....	29,446.8 MG <sup>1</sup>
Treated Water pumped - Last year .....	26,767.2 MG <sup>1</sup>
Percentage increase (decrease) from last year .....	10%
Number of treated water pump stations .....	18
Maximum pumping capacity .....	1,048.4 MGD <sup>2</sup>
Pumping energy costs (Treated Water) - Current year .....	\$2,959,900
Pumping energy costs (Treated Water) - Last year .....	\$2,903,926
Percentage increase from last year .....	2%

<sup>1</sup> Million Gallons

<sup>2</sup> Million Gallons per Day

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## PUMPING STATION CAPACITIES - 2017

Center of pump U.S.G.S. elevation in parentheses

Pump Station/Elevation	Pump Number	Make of Pump	Make of Motor	Horsepower	Head in Feet	Capacity in MGD
BELLEVIEW (5,714) (High Pressure)	4	Goulds	Ideal Electric	900	260	15.0
	5	Worthington	Westinghouse	300	260	5.0
	6	Goulds	US Motor	700	271	10.0
	7	Worthington	General Electric	900	260	15.0
				2,800		45.0
BELLEVIEW (5,714) (Low Pressure)	1	Goulds	General Electric	250	175	6.0
	2	Goulds	General Electric	400	175	10.0
				650		16.0
BROOMFIELD (5,316)	1	Goulds	US Motor	500	350	6.5
	2	Goulds	US Motor	500	350	6.5
	3	Goulds	US Motor	500	350	6.5
	4	Goulds	US Motor	500	300	6.5
				2,000		26.0
CASTLEWOOD (5,785) <sup>1</sup>	1	Peerless	US Motor	10		0.5
	2	Peerless	General Electric	40		1.5
	3	Peerless	General Electric	100		4.2
				150		6.2
CHATFIELD (5,717) (Low Pressure)	1	ITT	US Motor	200	150	5.0
	2	ITT	US Motor	200	150	5.0
	3	ITT	US Motor	200	150	5.0
				600		15.0
CHATFIELD (5,717) (High Pressure)	5	ITT	US Motor	400	320	5.0
	6	ITT	US Motor	400	320	5.0
	7	ITT	Nidec	400	320	5.0
				1,200		15.0
CHERRY HILLS (5,380)	1	Worthington	General Electric	1,000	220	20.0
	2	Worthington	General Electric	1,000	220	20.0
	3	Worthington	General Electric	1,000	220	20.0
	4	Worthington	General Electric	1,000	220	20.0
	5	Worthington	General Electric	1,000	220	20.0
	6	Worthington	General Electric	1,000	220	20.0
				6,000		120.0
CLARKSON (5,482) <sup>1</sup>	1	Fairbanks Morse	Fairbanks Morse	150	234	2.1
	2	Fairbanks Morse	Fairbanks Morse	150	234	2.1
	3	Fairbanks Morse	Fairbanks Morse	150	234	2.1
	4	Fairbanks Morse	Fairbanks Morse	150	234	2.1
	5	Fairbanks Morse	Fairbanks Morse	150	234	2.1
	6	Fairbanks Morse	Reliance Electric	150	234	2.1
				900		12.6
EINFELDT (5,341)	2	Wheeler Economy	General Electric	800	175	20.0
	3	Byron Jackson	General Electric	600	175	17.0
	4	Byron Jackson	General Electric	400	175	12.0
	5	Byron Jackson	Westinghouse	200	175	5.3
	6	Worthington	General Electric	800	175	20.0
	7	Wheeler Economy	General Electric	800	175	20.0
					3,600	
ELIZABETH (5,374)	1	Goulds	US Motor	400	164	11.0
	2	Goulds	US Motor	600	164/250	8.5
	3	Goulds	US Motor	600	164/250	8.5
	4	Goulds	US Motor	600	164/250	8.5
	5	Goulds	US Motor	200	164	5.0
				2,400		41.5

See accompanying footnotes on final page of report.

(continued)



**PUMPING STATION CAPACITIES - 2017, (continued)**

Center of pump U.S.G.S. elevation in parentheses

<u>Pump Station/Elevation</u>	<u>Pump Number</u>	<u>Make of Pump</u>	<u>Make of Motor</u>	<u>Horsepower</u>	<u>Head in Feet</u>	<u>Capacity in MGD</u>
FIFTY-SIXTH AVENUE (5,203)	2	Allis Chalmers	Ideal Electric	1,750	450	15.0
	3	Allis Chalmers	Ideal Electric	1,750	450	15.0
	4	Allis Chalmers	Ideal Electric	1,750	450	15.0
	5	Allis Chalmers	Ideal Electric	1,750	450	15.0
	8	Gould	U.S. Motor	500	75	30.0
	9	Gould	U.S. Motor	500	75	30.0
				<u>8,000</u>		<u>120.0</u>
GREEN MOUNTAIN (5,837)	1	Flow Serve	General Electric	600	200	12.0
	2	Flow Serve	General Electric	300	200	6.0
	3	Flow Serve	General Electric	300	200	6.0
				<u>1,200</u>		<u>24.0</u>
HIGHLANDS (5,704) (Low Pressure)	1	Fairbanks Morse	General Electric	125	165	3.0
	2	Fairbanks Morse	General Electric	125	165	3.0
	3	Fairbanks Morse	General Electric	125	165	3.0
	4	Fairbanks Morse	General Electric	125	165	3.0
	5	DeLaval	Ideal Electric	350	165	10.0
	6	DeLaval	Ideal Electric	350	165	10.0
	7	DeLaval	Ideal Electric	350	165	10.0
				<u>1,550</u>		<u>42.0</u>
HIGHLANDS (5,704) (High Pressure)	1	Gould	General Electric	900	260	15.0
	2	Gould	General Electric	900	260	15.0
	6	Gould	General Electric	300	110	10.0
	7	Gould	General Electric	300	110	10.0
	8	Gould	General Electric	150	110	5.0
9	Gould	General Electric	150	110	5.0	
				<u>2,700</u>		<u>60.0</u>
HILLCREST (5,602) (Low Pressure)	1	Allis Chalmers	Allis Chalmers	50	169	1.0
	2	Allis Chalmers	Allis Chalmers	100	167	2.0
	3	DeLaval	Electric Machinery	200	163	5.0
	4	DeLaval	Electric Machinery	400	163	11.0
	5	DeLaval	Electric Machinery	400	163	11.0
	6	Worthington	Fairbanks Morse	400	163	11.0
	7	Worthington	Fairbanks Morse	400	163	11.0
				<u>1,950</u>		<u>52.0</u>
HILLCREST (5,602) (High Pressure)	8	American Marsh	Westinghouse	75	320	0.8
	9	Gould	US Motor	1,500	330	20.0
	10	DeLaval	Electric Machinery	350	313	4.8
	11	DeLaval	Electric Machinery	800	315	10.5
	12	DeLaval	Electric Machinery	800	315	10.5
13	Patterson	Ideal Electric	900	320	10.0	
				<u>4,425</u>		<u>56.6</u>
KENDRICK (5,607) (Low Pressure)	1	Peerless	US Motor	300	120	10.6
	2	Peerless	US Motor	200	120	6.7
	3	Peerless	US Motor	100	120	3.3
	4	Peerless	US Motor	100	120	3.3
	5	Peerless	US Motor	100	120	3.3
				<u>800</u>		<u>27.2</u>

(continued)

## PUMPING STATION CAPACITIES - 2017, (continued)

Center of pump U.S.G.S. elevation in parentheses

Pump Station/Elevation	Pump Number	Make of Pump	Make of Motor	Horsepower	Head in Feet	Capacity in MGD
KENDRICK (5,607) (High Pressure)	7	Worthington	Electric Machinery	800	260	10.0
	8	Worthington	Electric Machinery	800	260	10.0
	9	Goulds	Waukesha <sup>2</sup>	700	260	10.0
	10	DeLaval	Waukesha <sup>2</sup>	400	260	5.0
	11	Flow Serve	General Electric	600	243	10.0
				3,300		45.0
LAKERIDGE (5,516)	1	American Marsh	General Electric	25	120	0.7
	2	American Marsh	General Electric	75	120	2.9
	3	American Marsh	General Electric	75	120	2.9
	4	American Marsh	General Electric	60	120	1.7
				235		8.2
LAMAR (5,443) <sup>1</sup>	1	Peerless	US Motor	40	111	1.1
	2	Peerless	US Motor	60	113	2.1
	3	Peerless	US Motor	125	119	4.1
				225		7.3
LONE TREE (5,904) (Low Pressure)	3	Gould	US Motor	300	127	10.0
	4	Gould	US Motor	150	127	5.0
	5	Gould	US Motor	150	127	5.0
				600		20.0
LONE TREE (5,904) (High Pressure)	6	Gould	Siemens & Allis	300	227	5.0
	7	Gould	Siemens & Allis	600	227	10.0
	8	Gould	Siemens & Allis	600	227	10.0
				1,500		25.0
MARSTON (5,485) (Low Pressure)	1	Worthington	Waukesha <sup>2</sup>	700	166	20.0
	2	Worthington	General Electric	700	166	20.0
	3	Worthington	General Electric	700	166	20.0
	4	Worthington	General Electric	700	166	20.0
	5	Worthington	General Electric	700	166	20.0
				3,500		100.0
MARSTON (5,485) (High Pressure)	8	Patterson	Waukesha <sup>2</sup>	400	260	6.5
	9	Ingersoll-Rand	Reliance Electric	500	260	8.0
	10	Gould	US Motor	900	260	15.0
	11	Gould	US Motor	900	260	15.0
				2,700		44.5
SIXTY-FOURTH AVENUE (5,427) (Low Pressure)	3	Fairbanks Morse	United States	100	90	5.0
	6	Fairbanks Morse	United States	200	90	10.0
				300		15.0
SIXTY-FOURTH AVENUE (5,427) (High Pressure)	1	Fairbanks Morse	United States	400	170	10.0
			Grand Total	53,685		1,048.4

Note: City Datum = 5,172.91

<sup>1</sup> Vault Type Structure (underground)

<sup>2</sup> Natural Gas Engine

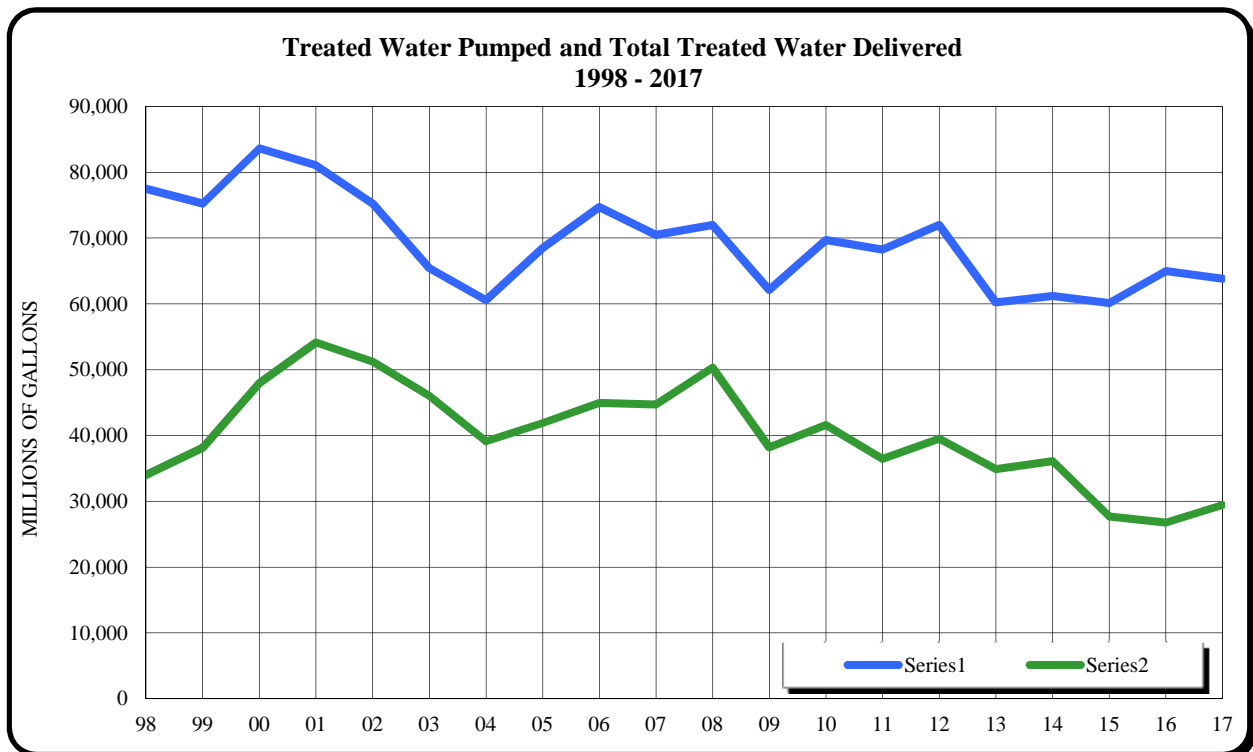
**TREATED WATER PUMPED AND POWER COSTS: 1998 - 2017**

Year <sup>3</sup>	Total Treated Water Pumped (million gallons)	Total Treated Water Delivered (million gallons)	Pumps		Treated Water Total Pumping (Power Used (kwh) <sup>1</sup> )	Gas Used (dth)	Total Power, Electric and Gas Costs <sup>2</sup>
			Number	Capacity (million gallons)			
1998	33,990.21	77,466.65	105	1,027.5	30,170,882	38,331	\$1,881,873
1999	38,149.92	75,232.01	106	1,052.5	33,378,202	18,927	1,915,984
2000	47,953.92	83,585.25	106	1,052.5	39,257,987	20,159	2,166,806
2001	54,161.28	81,051.42	106	1,052.5	42,691,836	15,096	2,774,857
2002	51,205.33	75,221.18	109	1,070.6	46,058,108	7,217	1,986,429
2003	46,030.79	65,399.47	110	1,077.1	33,489,508	1,858	2,322,558
2004	39,105.07	60,578.77	110	1,077.1	35,898,176	-	2,820,144
2005	41,890.71	68,473.70	110	1,096.3	38,384,576	-	3,686,475
2006	44,937.60	74,724.98	110	1,096.3	44,823,999	-	3,247,213
2007	44,684.79	70,479.84	112	1,097.4	38,635,526	-	2,942,190
2008	50,283.70	71,975.87	112	1,097.4	33,898,600	-	3,583,417
2009	38,198.90	62,106.90	112	1,095.9	27,801,487	-	2,568,082
2010	41,611.30	69,695.40	112	1,095.9	28,457,672	-	2,709,675
2011	36,443.49	68,260.80	112	1,003.3	25,674,399	-	3,042,871
2012	39,484.07	71,968.70	112	1,003.3	26,277,763	-	3,328,526
2013	34,895.37	60,212.44	112	1,007.9	25,604,391	-	3,259,289
2014	36,088.94	61,185.27	112	1,007.9	29,118,267	-	3,517,530
2015	27,677.64	60,115.97	113	1,048.4	22,901,689	-	2,960,292
2016	26,767.23	65,003.83	113	1,048.4	23,870,718	-	3,145,819
<b>2017</b>	<b>29,446.76</b>	<b>63,808.64</b>	<b>113</b>	<b>1,048.4</b>	<b>25,781,660</b>	<b>-</b>	<b>3,002,868</b>

<sup>1</sup> Years prior to 2008 included some raw water pumping and a portion of power used at the treatment plants.

<sup>2</sup> Total energy costs for all Denver metropolitan area Board treated water distribution facilities.

<sup>3</sup> Foothills Treatment Plant out of service from December 4, 2007 through April 25, 2008.



## DISTRIBUTING RESERVOIRS AND RAW WATER PUMPING STATIONS - 2017

High water U.S.G.S. elevation in parentheses

		Capacity (million gals.)			Capacity (million gals.)
Alameda & Beech (6,042) <sup>1</sup>	Number 1	1.0	Hillcrest (5,624)	Number 1	14.8
	Number 2	2.0		Number 2	14.8
		3.0			29.6
Ashland (5,430)	East Basin	under construction	Hogback (6,007)		4.0
	West Basin	10.0			
		10.0			
Belleview (5,743)		10.0	Ken Caryl Ranch (6,410) <sup>1</sup>	Number 3	2.0
				Number 4	2.0
					4.0
Broomfield (5,335)	Number 1	2.5	Kendrick (5,627)		15.0
	Number 2	2.5			
		5.0			
Broomfield Tank (5,534) <sup>1</sup>	Number 1	3.0	Lone Tree (5,930)	Number 1	10.0
	Number 2	3.0		Number 2	10.0
		6.0			20.0
Capitol Hill (5,395)	Number 1	23.4	Marston Treatment (5,497)	Number 3	6.8
	Number 3	27.0		Number 4	9.2
		50.4			16.0
Chatfield Tank (5,740)	Number 1	5.0	Moffat Treatment (5,620)	Number 1	4.3
	Number 2	5.0		Number 2	4.3
		10.0		Number 3	5.0
Colorow (6007)		3.7	Number 4	Number 4	4.4
					18.0
Fifty-Sixth Avenue (5,223)		15.0	Sixty-Fourth Avenue (5,460)		15.0
Foothills (5,860)	Number 1	25.0	Southgate (6,123) <sup>1</sup>	9E	2.0
	Number 2	25.0		9E2	6.0
	Number 3	25.0			8.0
Green Mountain (5,859)		75.0	Southgate (6,270) <sup>1</sup>	10E	1.5
				10E2	1.5
					3.0
Highlands (5,722)		5.0	Utah Tank (6,042) <sup>1</sup>		3.0
	Number 1	7.2			
	Number 3	13.5			
		20.7	Valley Tank (6,000) <sup>1</sup>		2.0
			Total Capacity		351.4

<sup>1</sup> Not Owned by Denver Water.

## RAW WATER PUMPING STATIONS

<u>Pump Station</u>	<u>Pump No.</u>	<u>Make of Pump</u>	<u>Make of Motor</u>	<u>Horse-Power</u>	<u>Head in Feet</u>	<u>Capacity in MGD</u>
Last Chance	1	Worthington	General Electric			
Metro Sewer	1	Peerless	United States	30	60	2.2
	2	Peerless	General Electric	200	30	30.0
	3	Peerless	General Electric	200	30	30.0
Kassler				200	30	30.0
	3	Peerless	General Electric	600	90	90.0
	5	Peerless	General Electric	600	153	10.0
				600	153	10.0
			Total	1,200	306	20.0
				1,830	456	112.2

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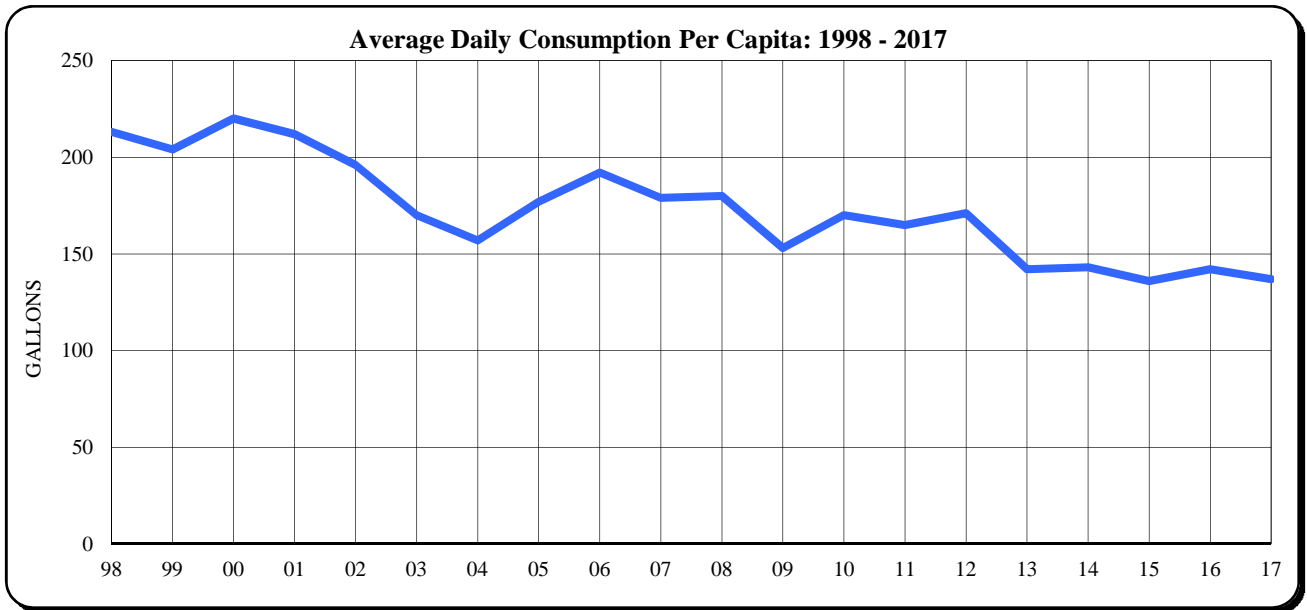
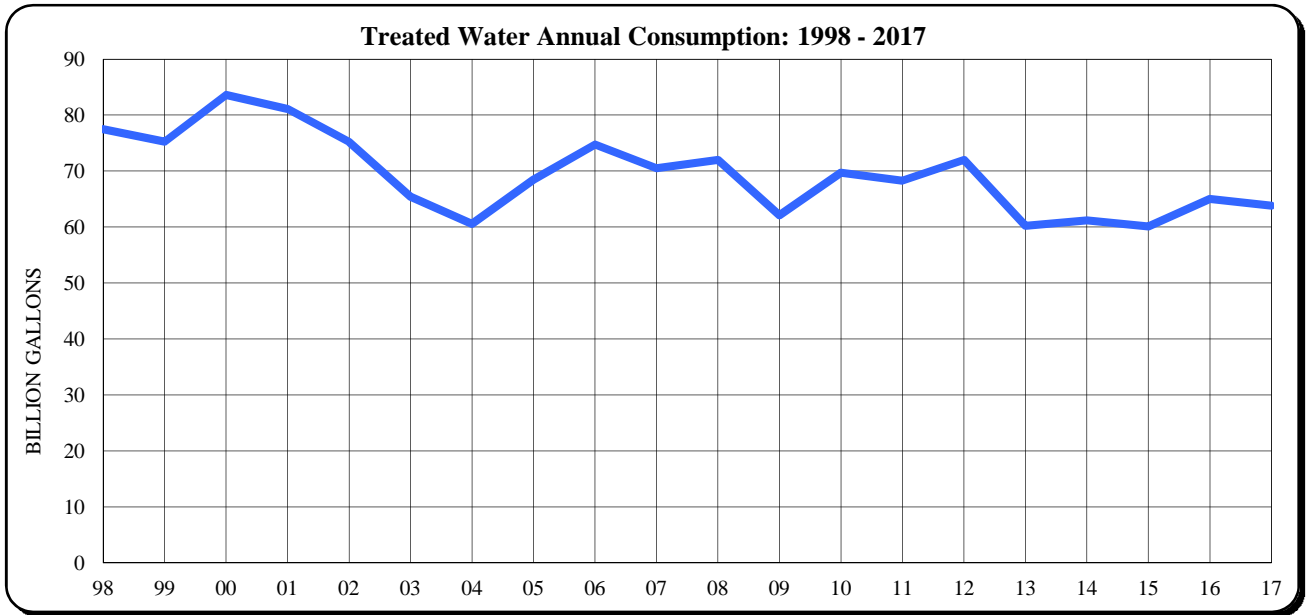
# Treatment and Water Quality

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## 2017 Facts

Treated water consumption.....	63,808.64 MG
Increase (decrease) from last year.....	(1,195.19) MG
Average daily consumption.....	174.82 MG
Maximum daily consumption: (July 24).....	364.92 MG
Maximum hour treated water use rate: (July 19 at 6:30 a.m.).....	628.50 MGD
Water Quality:	
Total samples collected.....	48,226
Microbiological analyses completed.....	22,568
Chemical analyses completed.....	147,819

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**CONSUMPTION OF TREATED WATER: 1998 - 2017**

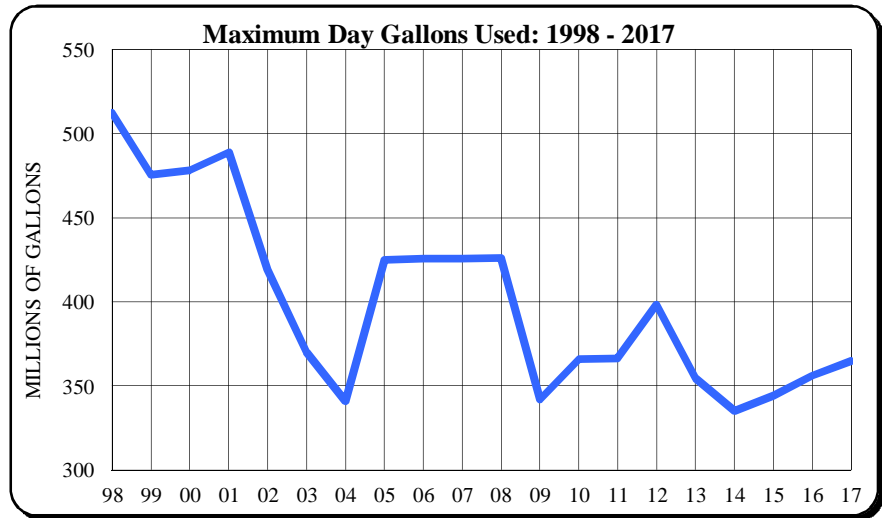
Year	Acre-Feet	(million gallons)			Population July 1 <sup>1</sup>	Avg. Daily Gals.Per Capita	Precipitation in Inches <sup>2</sup>	
		Annual	Daily Avg.	Daily Max.			Year	4/1 to 9/30
1998	237,764	77,475.48	212.26	512.53	996,000	213	17.61	12.77
1999	230,879	75,232.01	206.12	475.66	1,012,000	204	20.03	17.04
2000	256,514	83,585.25	228.38	478.19	1,036,000	220	14.87	11.07
2001	248,738	81,051.42	222.06	488.71	1,048,000	212	16.45	12.43
2002	230,845	75,221.18	206.09	419.20	1,049,000	196	9.95	6.59
2003	200,704	65,399.47	179.18	370.05	1,052,000	170	17.00	8.77
2004	185,909	60,578.77	165.52	340.92	1,055,000	157	21.35	16.06
2005	210,138	68,473.70	187.60	424.80	1,057,000	177	16.32	10.90
2006	229,323	74,724.98	204.73	425.68	1,064,000	192	16.15	8.66
2007	216,295	70,479.84	193.10	425.70	1,077,000	179	18.10	11.45
2008	220,886	71,975.87	196.66	426.16	1,093,000	180	12.42	8.19
2009	190,599	62,106.90	170.16	341.80	1,111,000	153	21.34	15.09
2010	213,887	69,695.40	190.95	365.81	1,125,000	170	14.28	9.74
2011	209,485	68,260.80	187.02	366.40	1,135,000	165	19.29	13.99
2012	220,864	71,968.70	196.64	398.20	1,147,000	171	12.39	8.72
2013	184,785	60,212.44	164.97	354.50	1,161,000	142	22.41	17.95
2014	187,771	61,185.27	167.63	335.20	1,172,000	143	20.26	14.77
2015	184,489	60,115.97	164.70	344.26	1,210,000	136	27.80	19.07
2016	199,489	65,003.83	177.61	355.88	1,249,000	142	13.84	8.25
<b>2017</b>	<b>195,822</b>	<b>63,808.64</b>	<b>174.82</b>	<b>364.92</b>	<b>1,275,000</b>	<b>137</b>	<b>15.35</b>	<b>11.85</b>

<sup>1</sup> Population estimates are treated water customers only.

<sup>2</sup> Precipitation readings are the averages of Stapleton, Lakewood and Kassler measurement stations.

**TREATMENT PLANT CAPACITY**

Plant	Type	Capacity in MGD
Foothills	Dual-Media	280.0
Marston	Dual-Media	250.0
Moffat	Rapid Sand	185.0
		<u>715.0</u>

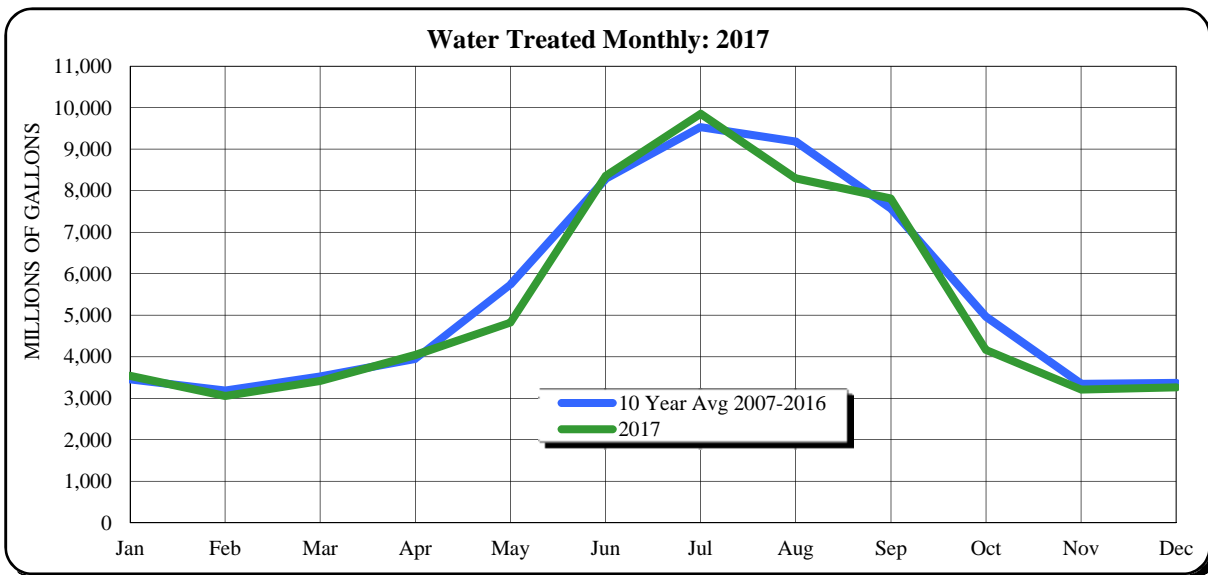


## WATER TREATED MONTHLY - 2017

(millions of gallons)

	Treatment Plant			Total Produced
	Foothills	Marston	Moffat	
January	-	2,864.88	678.91	3,543.79
February	964.22	1,420.79	670.98	3,055.99
March	2,234.55	1,183.26	-	3,417.81
April	2,718.95	1,320.89	-	4,039.84
May	3,299.35	934.91	582.89	4,817.15
June	5,709.18	1,117.79	1,534.21	8,361.18
July	6,559.94	1,148.40	2,142.43	9,850.77
August	5,812.38	617.90	1,869.36	8,299.64
September	5,656.90	545.71	1,609.20	7,811.81
October	2,972.55	567.23	624.90	4,164.68
November	2,229.59	540.25	440.47	3,210.31
December	2,262.75	553.99	447.30	3,264.04
	<u>40,420.36</u>	<u>12,816.00</u>	<u>10,600.65</u>	<u>63,837.01</u>

Note: Totals are based on multiple totalizer meter readings at various treatment plant sites. The accuracy of the readings varies within the limits inherent to each water meter.



### RECONCILIATION OF WATER TREATED TO WATER DELIVERED/CONSUMED:

Total Water Treated for the Year (Produced)	63,837.01 MG
(Increase) Decrease In Clear Water Storage	(28.37) MG
Total Treated Water Delivered/Consumed for the Year	<u>63,808.64 MG</u>

## CHEMICAL TREATMENT AND ANALYSIS:

### TREATED WATER IN DISTRIBUTION SYSTEM - 2017

#### CHEMICAL TREATMENT

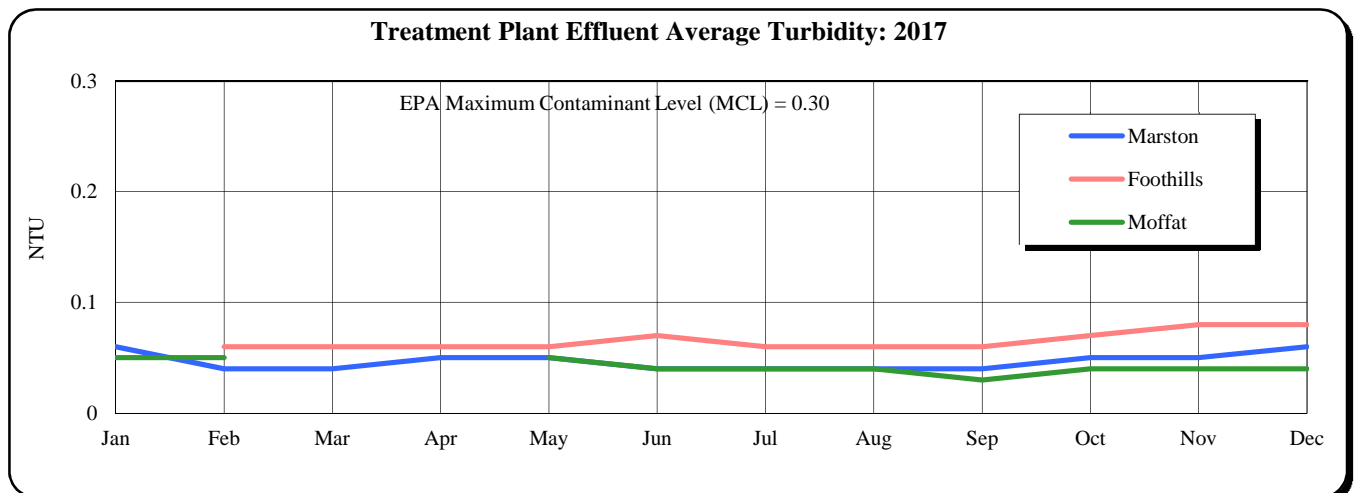
Chemicals are used at various points throughout the treatment plants to provide for appropriate water treatment including oxidation, coagulation, pH adjustment, fluoridation and disinfection. The following are total pounds and cost of chemicals used at each treatment plant.

	Pounds of Chemicals Used	Total Cost
Foothills	18,723,963	\$ 2,049,365
Moffat	6,187,617	682,461
Marston	6,003,483	574,232
Recycling	1,690,304	200,135
	<u>32,605,367</u>	<u>\$ 3,506,193</u>

#### DISTRIBUTION SYSTEM & TREATMENT PLANT EFFLUENT TOTAL COLIFORM RESULTS

Month	Number of Samples	Number of Positives	% Positive
January	421	0	0.00%
February	342	0	0.00%
March	430	0	0.00%
April	384	0	0.00%
May	433	0	0.00%
June	413	0	0.00%
July	401	1	0.25%
August	413	0	0.00%
September	440	0	0.00%
October	425	0	0.00%
November	366	0	0.00%
December	368	0	0.00%
	<u>4,836</u>	<u>1</u>	<u>0.02%</u>

The total coliform group of bacteria is a microbiological indicator used to determine the safety of drinking water for human consumption. The EPA and the Colorado Department of Public Health and Environment require that Denver Water test a minimum of 300 treated water samples each month for total coliforms. The Maximum Contaminant Level (MCL) for total coliform specifies that no more than 5% of the samples taken each month may be positive. All positive samples were further analyzed to determine if E. coli bacteria were present, which would indicate possible contamination from a fecal source. There were no E. coli positive samples in the current year.



Turbidity is a measure of the clarity of the water. EPA has established 0.30 NTU (Nephelometric Turbidity Unit) as the MCL for turbidity.

**TREATED WATER QUALITY SUMMARY: TREATMENT PLANT EFFLUENT AVERAGES – 2017**

Analysis	MCL	Marston	Foothills	Moffat
<b>General (mg/L)</b>				
Alkalinity, Total as CaCO <sub>3</sub>		66.17	59.09	27.30
Chlorine, Total		1.77	1.80	1.77
Hardness as CaCO <sub>3</sub>		83.40	73.19	28.60
pH (SU)		7.77	7.84	7.75
Specific Conductance (µS)		319.81	301.96	116.10
Temperature (°C)		12.44	13.07	12.05
Total Dissolved Solids		184.00	179.27	72.50
Turbidity (NTU)	0.3	0.05	0.06	0.04
<b>Metals (µg/L)</b>				
Aluminum		38.20	34.10	16.78
Barium	2,000	40.33	36.35	20.84
Boron		19.51	15.56	8.77
Calcium (mg/L)		29.80	27.09	10.40
Magnesium (mg/L)		7.71	7.54	2.45
Manganese		7.25	8.53	0.65
Molybdenum		11.59	11.48	1.06
Potassium (mg/L)		1.98	1.90	0.77
Sodium (mg/L)		19.28	18.78	7.97
Strontium (mg/L)		0.24	0.20	0.06
<b>Ions (mg/L)</b>				
Chloride		23.91	22.83	6.55
Fluoride	4	0.76	0.72	0.58
Nitrate + Nitrite- Nitrogen	10	0.07	0.11	0.06
Sulfate		55.64	53.33	20.21
<b>Radiological (pCi/L)</b>				
Radium 226 & 228		<1	<1	<1
Gross Alpha/Beta		<3	<3	<3
Uranium (µg/L)	30	0.66	0.46	0.07
<b>Disinfection By-Products (µg/L)</b>				
Haloacetic Acids	60	11.19	13.11	14.77
Total Trihalomethanes	80	13.00	16.60	15.60
<b>Nonspecific Organics</b>				
Total Organic Carbon (mg/L)		1.90	1.73	1.53
Total Organic Halogen (µg/L)		114.33	109.67	106.67

**TREATED WATER QUALITY SUMMARY: TREATMENT PLANT EFFLUENT AVERAGES – 2017**

The following analyses were performed and each of these constituents was either below the reporting limit or the average result was less than the reporting limit. The Maximum Contaminant Level is listed after the analysis in parentheses, if applicable. The unit of measure is also listed if different than that listed for the subsection.

<b>Metals - plumbing, mining, natural erosion (µg/L)</b>	Strontium-90	2-Chlorobiphenyl	Hexachlorocyclopentadiene
	Antimony (6)	Thorium-227,234	Indeno(1,2,3-cd)pyrene
	Arsenic (10)	Thallium=208	Isophorone
	Beryllium (4)	Uranium-235	Methacrylonitrile
	Cadmium (5)	Zinc-65	Methyl acrylate
	Chromium (100)	<b>Microbiological - animal and human activity, Algal toxins</b>	Methylmethacrylate
	Cobalt	<i>Cryptosporidium (oocysts/L)</i>	Naphthalene
	Copper (TT <sup>1</sup> )	<i>E. coli (count/100 ml)</i>	n-Butyl Acrylate
	Iron	<i>Giardia (TT<sup>1</sup>) (cysts/L)</i>	N-nirtosopyrollidine
	Lead (TT <sup>1</sup> )	<i>Legionella (TT<sup>1</sup>)</i>	Nitrobenzene
Lithium	Plankton	Nonylphenol isomer mix	
Mercury (2)	Cylindrospermopsin (Algal Toxin)	Pyrene	
Selenium (50)	Microcystin-LA (Algal Toxin)	TCPP	
Silver	Microcystin -LF (Algal Toxin)	TDCPP	
Thallium (2)	Microcystin-LR (Algal Toxin)	Trichloronate	
Titanium	Microcystin-LY (Algal Toxin)	<b>SOC - Plastizers, Surfactants, Personal Care Products µg/L, ng/L</b>	
Vanadium	Microcystin-RR (Algal Toxin)	Anthracene	1,2,4,5-Tetrachlorobenzene
<b>Ions - from farming, and industry, (mg/L, µg/L)</b>	Microcystin-YR (Algal Toxin)	Benzo(a)anthracene	1,1,2-Trichloro-1,2,2-trifluoroethane
Bromide	Nodularin (Algal Toxin)	Benzo(a)pyrene (0.2)	2,4,5-Trichlorobiphenyl
Carbon disulfide	Total Coliform (DS)	Benzo(b)fluoranthene	4-Chloro-3-methylphenol
Cyanide, Total	<b>Disinfection By-Products - reaction between the disinfectant and natural organic matter (µg/L)</b>	Benzo(g,h,i)perylene	Benzyl chloride
Hydroxide	Bromoform	Benzo(k)fluoranthene	Bis(2-ethylhexyl)adipate
Nitrite-Nitrogen (1)	Carbon Tetrachloride	Chloroprene	Bis(2-ethylhexyl)phthalate
Ortho Phosphorus, Dissolved	Chlorate	Chloropropylate	Bisphenol A
Perchlorate	Chloroacetonitrile	Chrysene	Butyl benzyl phthalate
<b>Radiological erosion of natural deposits/mining (pCi/L)</b>	Monochloroacetic Acid	Cyclohexanone	Butylparaben
Alpha	N-nitrosodiethylamine (Nitrosamine)	Dibenzo(a,h)anthracene	Chloroprene
Beta	N-nitrosodimethylamine (NDMA)	Diethanolmine (DEA)	Desethylatrazine
Cesium-134,137	N-nitrosodi-n-butylamine	Ethyl acrylate	Desisopropylatrazine
Iodine-129, 131	N-nitrosodi-n-propylamine	Ethyl tert-butyl ether	Diethyl phthalate
Radium <sup>226/228 (5)</sup>	N-nitrosomethylethylamine	Fluoranthene	Dimetyl phthalate
	N-nitrosodiphenylamine	Fluorene	Di-n-butyl phthalate
	Tribromoacetic Acid	Hexachlorobenzene	Di-n-octyl phthalate
	<b>Synthetic Organic Compounds (SOC) - from Feedstock/ combustion by-products, Flame retardants (µg/L)</b>		

<sup>1</sup> TT indicates that the MCL involves treatment techniques.

(continued)

**TREATED WATER QUALITY SUMMARY: TREATMENT PLANT EFFLUENT AVERAGES – 2017, (continued)**

Epichlorohydrin	alpha-Chlordane	Cyanazine	Ethion
Ethyl acrylate	Acifluorfen	Dacthal	Ethofumesate
Ethyl methacrylate	Alachlor (2)	Dalapon (200)	Ethoprop
Galaxolide	Aldicarb	DCPA acid metabolites	Ethylene dibromide
Isobutylparaben	Aldicarb sulfone	Demeton O	Etridiazole
Isopropyl ether	Aldicarb sulfoxide	Demeton S	Famphur
Methyl paraben	Aldrin	Desethylatrazine	Fenamiphos
Methacrylonitrile	Atraton	Desisopropylatrazine (DIA)	Fenarimol
Polychlorinated Biphenyls (PCB)	Atrazine (3)	delta- BHC	Fenitrothion
PCB 1016 Aroclor	Azinphos-ethyl	Diazinon	Fenoxaprop-ethyl
PCB 1221 Aroclor	Azoxystrobin	Dicamba	Fensulfothion
PCB 1232 Aroclor	Baygon	Dichlobenil	Fenthion
PCB 1242 Aroclor	Bendiocarb	Dichlofenthion	Fenuron
PCB 1248 Aroclor	Benfluralin	Dichloran	Fipronil
PCB 1254 Aroclor	Bensulide	Dichloprop	Fluazifop-butyl
PCB 1260 Aroclor	Bentazon	Dichlorvos	Fluchloralin
Perfluoro octanesulfonic acid (PFOS)	β-BHC (beta-BHC)	Dicrotophos	Fluometuron
Perfluoro-1-butanesulfonic acid (PFBS)	Bolstar	Dieldrin	Fluridone
Perfluoro-1-hexanesulfonic acid (PFHxS)	Bromacil	Diflubenzuron	Fonofos
Perfluoroheptanoic acid (PFHpA)	Butachlor	Dimethoate	gamma-Chlordane
Perfluoro-nonanoic acid (PFNA)	Butylate	Dinoseb	Halofenozide
Perfluorooctanoic acid (PFOA)	Carbaryl	Dioxathion	Halosulfuron methyl
Phenol	Carbofuran	Dioxin	Heptachlor (0.4)
Pyrene	Carbophenothion	Diphenamid	Heptachlor Epoxide (0.2)
Tetrabromobisphenol A	Carboxin	Disulfoton	Hexachlorobenzene
Toxaphene	Chlordane	Disulfoton sulfone	Hexazinone
<b>Pesticides µg/L</b>	Chlorfenvinphos	Disulfoton sulfoxide	Imidacloprid
1,2-Dibromo-3-chloropropane (0.2)	Chloridazon	Diuron	Isophorone
2,4,5-T	Chlorneb	Dursban	Kepone
2,4,5-Trichlorobiphenyl	Chlorobenzilate	Endosulfan sulfate	Leptophos
2,4,6-Trichlorophenol	Chlorothalonil	Endosulfan –A	Lindane
2,4-D (70)	chlorpyrifos methyl	Endosulfan –B	Linuron
2,4-DB	cis-Nonachlor	Endrin (2)	Malathion
3-Hydroxycarbofuran	cis-Permethrin	Endrin Aldehyde	Metalaxyl
4,4'-DDD	Clomazone	EPN	Metazachlor
4,4'-DDE	Clopyralid	EPTC	Methiocarb
4,4'-DDT	Coumaphos	Esfenvalerate	Methomyl
alpha-BHC	Crotoxyphos	Ethalfuralin	Methoxychlor
			Methyl paraoxon

(continued)

**TREATED WATER QUALITY SUMMARY: TREATMENT PLANT EFFLUENT AVERAGES – 2017, (continued)**

Methyl parathion	Propargite	1,2,4-Trimethylbenzene	Methyl tert-butyl ether (MTBE)
Metolachlor	Propazine	1,2-Dichloropropane (5)	n-Butylbenzene
Metribuzin	Propiconazole isomer a	1,3,5-Trimethylbenzene	n-Propylbenzene
Metsulfuron-methyl	Propiconazole isomer b	1,3-Dichloropropane	o-Chlorotoluene
Mevinphos	Propoxur	1,3-Dichloropropene	o-Dichlorobenzene (600)
MGK 264 isomer a	Prothiofos	1,4-Dioxane	p-Chlorotoluene
MGK 264 isomer b	Siduron, Total	1-Chlorobutane	p-Dichlorobenzene (78.5)
MGK 326	Silvex (50)	2,2-Dichloropropane	Pentachlorobenzene
Mirex	Simazine (4)	2-Hexanone	Pentachloroethane
Molinate	Simetryn	2-Nitropropane	p-Isopropyltoluene (Cymene)
Monocrotophos	Stirofos	4-Methyl-2-Pentanone (MIBK)	Propionitrile
Monuron	Sulfotep	Acrylonitrile	sec-Butylbenzene
Naled	Tebuthiuron	Allyl chloride	Styrene (100)
Napropamide	Terbacil	Anilazine	tert-Amyl Methyl ether (TAME)
Neburon	Terbufos	Anthracene	tert-Butyl alcohol
N-nitrosomorpholine	Terbutryn	Benzene (5)	tert-Butylbenzene
N-nitrosopiperidine	Thidiazuron	Bromobenzene	Tetrachloroethene (8)
Norflurazon	Thiobencarb	Bromoethane	Tetrahydrofuran
Oryzalin	Thionazin	Bromomethane	Toluene (1000)
Oxadiazon	trans-Nonachlor	Carbon disulfide	trans-1,2-Dichloroethene (100)
Oxamyl (200)	Triademefon	Chlorobenzene (100)	trans-1,3-Dichloropropene
Oxychlorane	Triadimenol	Chlorodifluoromethane (CFC 22)	trans-1,4-Dichloro-2-butene
Oxyfluorfen	Tribufos	Chloroethane	Trichloroethylene (5) (TCE)
Paclbutrazol	Trichloronate	Chloromethane	Trichlorofluoromethane
Parathion	Tricyclazole	cis-1,2-Dichloroethene (70)	Vinyl acetate
Pebulate	Trifluralin	cis-1,3-Dichloropropene	Vinyl Chloride (2)
Pendimethalin	Vernolate	Dibromomethane	Xylenes (10000)
Pentachlorophenol (1)	Vinclozolin	Dichlorodifluoromethane (CFC-12)	<b>Pharmaceuticals/Hormones (µg/L, ng/L)</b>
Pentachloronitrobenzene	Z-Phosphamidon	Dichloromethane (5)	17 alpha-Estradiol
Permethrin Isomers	<b>Volatile Organic Compounds (VOC)</b>	Diisopropyl ether	17 alpha-Ethynyl estradiol
	<b>- from solvents, feedstock/ fuels,</b>		
	<b>Flame retardants (µg/L, ng/L)</b>		
Permethrin, cis & trans	1,1,1,2-Tetrachloroethane	Epichlorohydrin	17-beta-Estradiol
Phorate	1,1,1-Trichloroethane (200)	Ether	Acetaminophen (Tylenol)
Phosmet	1,1,2,2-Tetrachloroethane	Ethyl Benzene (700)	Antipyrine
Picloram	1,1,2-Trichloroethane (5)	Ethyl tert-butyl ether	Atenolol
Profluralin	1,1-Dichloroethane	Hexachloroethane	Azithromycin
Prometon	1,1-Dichloroethene (7)	Hexachlorobutadiene	Bacitracin
Prometryn	1,1-Dichloropropene	Isopropylbenzene (Cumene)	Bezafibrate
Pronamide	1,2,3-Trichlorobenzene	m-Dichlorobenzene	Caffeine
Propachlor	1,2,3-Trichloropropane	Methyl iodide	
Propanil	1,2,3-Trimethylbenzene		
	1,2,4-Trichlorobenzene (70)		

(continued)

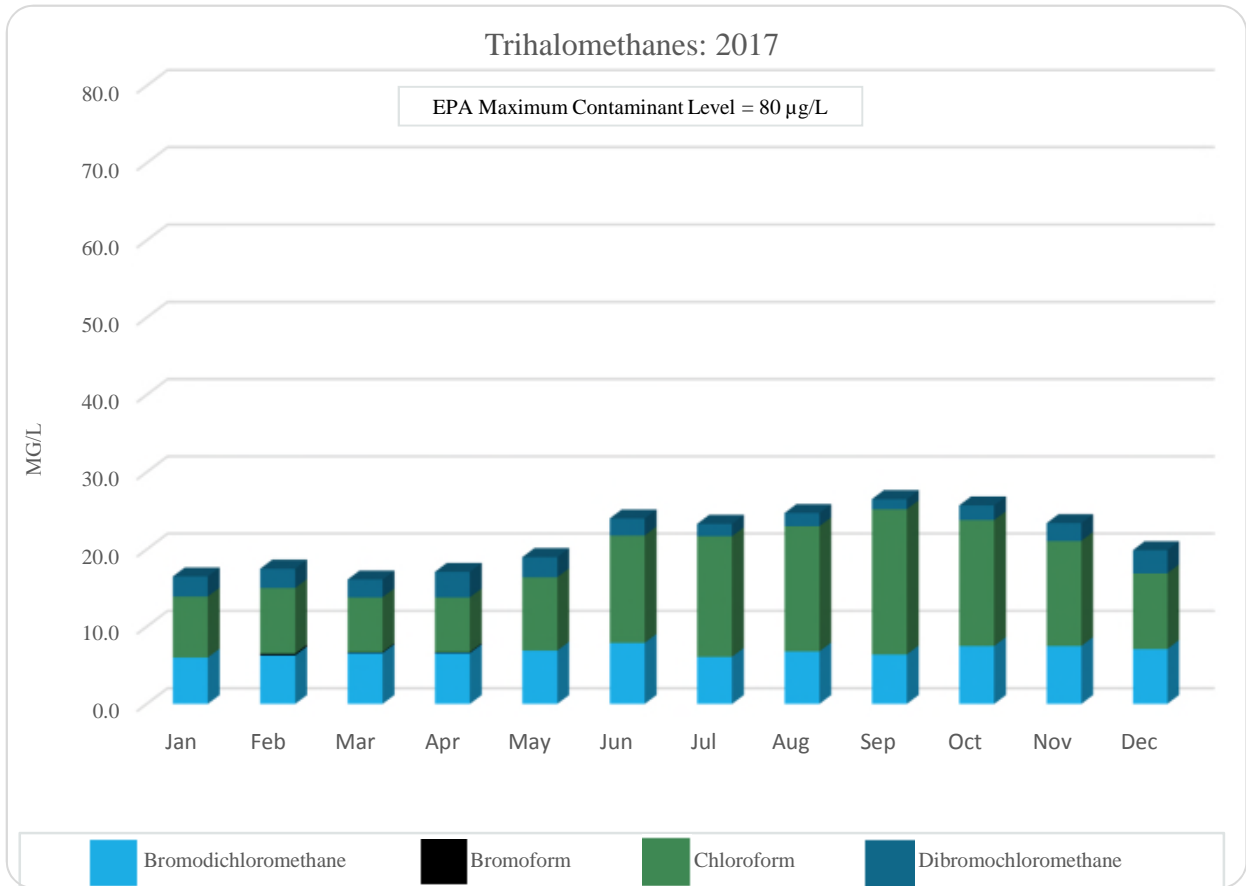
**TREATED WATER QUALITY SUMMARY: TREATMENT PLANT EFFLUENT AVERAGES – 2017, (continued)**

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Carbadox	Oleandomycin
Carbamazepine	Oxytetracycline
Carboxin	Paraxanthine
Chloramphenicol	Penicillin G
Chlorotetracycline	Penicillin V
Ciprofloxacin	Phenanthrene
Clofibric acid	Prednisone
cis-Testosterone	Primidone
Cotinine	Progesterone
Dexamethasone	Roxithromycin
Diazepam (Valium)	Salicylic acid
Diclofenac	Salinomycin
Diethylstilbestrol (DES)	Simvastatin
Dilantin	Sulfachloropyridazine
Diltiazem	Sulfadiazine
Doxycycline	Sulfadimethoxine
Enrofloxacin	Sulfamerazine
Erythromycin	Sulfamethazine
Estradiol	Sulfamethizole
Estriol	Sulfamethoxazole
Estrone	Sulfasalazine
Fluoxetine (Prozac)	Sulfathiazole
Gemfibrozil	trans-Testosterone
Ibuprofen	Tetracycline
Iopromide	Theobromine
Lasalocid	Theophylline
Levothyroxine (Synthroid)	Thiabendazole
Lincomycin	trans-Testosterone
Meprobamate	Triclocarban
Monensin	Triclosan
Naproxen (Aleve)	Trimethoprim
Narasin	Tylosin
Norfloxacin	Virginiamycin M1



**DISTRIBUTION SYSTEM AVERAGE TRIHALOMETHANES - 2017**



Trihalomethanes (THMs) are organic compounds formed when chlorine disinfectant is added to the water. The use of chlorine and other chlorine-based disinfectant compounds is mandated by health regulatory agencies to eliminate microbiological contaminants from drinking water. The creation of THMs is a consequence of this necessary practice. THMs are comprised of four individual compounds. EPA has established 80 mg/L as the MCL for Total Trihalomethanes (the sum of the four individual compounds). The amounts present in the Denver distribution system are consistently below the 80 mg/L level.

**WATER QUALITY SAMPLE COLLECTION AND ANALYTICAL PROCEDURES - 2017**

Samples Collected:

Watershed	6,624
Treatment plant	3,233
Distribution system	15,909
Lead & Copper	14,890
Other	7,570
	<u>48,226</u>

Analyses Performed:

Microbiological	22,568
Chemical	147,819
	<u>170,387</u>

# Transmission and Distribution

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## 2017 Facts

Miles of pipe installed, net of reductions .....	33.3
Miles of pipe in system .....	3,142.6
Miles of recycled water mains in system .....	70.4
Number of valves operated and maintained .....	84,674
Number of recycled water valves in system .....	1,459
Number of hydrants operated and maintained .....	20,967
Leak Detection Program:	
Miles of pipe surveyed .....	1,384
Visible leaks pinpointed .....	183
Non-visible leaks detected .....	100

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**TRANSMISSION AND DISTRIBUTION MAINS<sup>1</sup> - 2017**

**SUMMARY OF PIPE BY MATERIAL**

Kind of Pipe	Length in Feet		Length in Miles	
	12-31-16	Net Change	12-31-17	12-31-17
Cast Iron	5,839,626	(74,928)	5,764,698	1,091.8
Cement Asbestos	1,658,273	3,756	1,662,029	314.8
Cement Mortar Coated Steel	4	(4)	-	-
Concrete <sup>4</sup>	10,934	-	10,934	2.1
Copper	1,288	(47)	1,241	0.2
Ductile iron	3,233,318	89,902	3,323,220	629.4
Embedded Cyl Prestressed	79,110	(925)	78,185	14.8
Galvanized	4,236	-	4,236	0.8
Lined Cyl Prestressed	231,175	(7)	231,168	43.8
Non-Cyl Prestressed	7,558	-	7,558	1.4
Pretensioned Concrete	69,720	-	69,720	13.2
Polyvinyl Chloride	3,351,989	156,950	3,508,939	664.6
Reinforced Concrete Cyl	288,432	(17)	288,415	54.6
Reinforced Concrete Non-Cyl	72,911	(128)	72,783	13.8
Steel <sup>3</sup>	1,546,794	1,157	1,547,951	293.2
Steel -tape Coated	-	-	-	-
Steel - enamel Coated	-	-	-	-
Unknown <sup>2</sup>	21,661	-	21,661	4.1
	16,417,029	175,709	16,592,738	3,142.6

**SUMMARY OF PIPE BY DIAMETER**

Diameter of Pipe in Inches	Length in Feet		Length in Miles	
	12-31-16	Net Change	12-31-17	12-31-17
0.75	110	(16)	94	-
1	315	(43)	272	0.1
1.5	394	-	394	0.1
2	1,762	(60)	1,702	0.3
3	5,159	36	5,195	1.0
4	119,255	1,778	121,033	22.9
6	4,755,626	13,754	4,769,380	903.3
8	4,789,432	113,521	4,902,953	928.6
10	128,321	(951)	127,370	24.1
12	3,377,234	45,280	3,422,514	648.2
14	39,996	11	40,007	7.6
15	4,502	-	4,502	0.9
16	567,083	2,256	569,339	107.8
18	50,626	-	50,626	9.6
20	132,817	(6)	132,811	25.2
24	480,873	26	480,899	91.1
27	24	-	24	-
30	419,307	24	419,331	79.4
33	-	-	-	-
36	491,673	98	491,771	93.1
40	59	-	59	-
42	203,636	35	203,671	38.6
45	76	-	76	-
46	22,110	-	22,110	4.2
48	122,539	(4)	122,535	23.2
51	6,359	-	6,359	1.2
54	177,176	-	177,176	33.6
57	12,988	-	12,988	2.5
60	185,912	790	186,702	35.4
63	17,583	-	17,583	3.3
66	78,566	(814)	77,752	14.7
67	1,007	-	1,007	0.2
72	111,997	(6)	111,991	21.2
78	-	-	-	-
84	18,235	-	18,235	3.5
88	-	-	-	-
90	32,598	-	32,598	6.2
96	358	-	358	0.1
108	57,886	-	57,886	11.0
120	3,369	-	3,369	0.6
144	66	-	66	-
150	-	-	-	-
	16,417,029	175,709	16,592,738	3,142.6

<sup>1</sup> Mains within the City and Total Service Contract Areas.

<sup>2</sup> Unknown pipe material is assumed to be cast iron.

<sup>3</sup> Steel pipe is no longer separated out by pipe coating. That information is tracked separately.

<sup>4</sup> The Conduit Rectification Project has allowed concrete pipe to be more discretely defined as variations of Cylindrical Prestressed and Reinforced.

**SUMMARY OF VALVES BY TYPE**

Type of Valve	12-31-16	Net Change	12-31-17
Air vacuum valve	3,195	30	3,225
Ball valve	41	-	41
Blowoff valve	3,289	34	3,323
Butterfly valve	1,812	7	1,819
Check valve	100	2	102
Cone valve	125	-	125
Gate valve	46,708	(266)	46,442
Hub valve	24	-	24
MacDougall blowoff valve	144	-	144
Pito (Corp stop)	617	(2)	615
Pressure regulating valve	286	5	291
Unknown	-	-	-
Vacuum valve	16	-	16
Gate valve - Resilient Seat	26,271	1,699	27,970
Altitude valve	1	-	1
Corp Stop	500	(6)	494
Surge valve	22	-	22
Slide gate valve	12	-	12
Plug valve	-	-	-
Sleeve valve	5	-	5
Knife valve	3	-	3
	<u>83,171</u>	<u>1,503</u>	<u>84,674</u>

**SUMMARY OF VALVES BY DIAMETER**

Diameter of Valve in Inches	12-31-16	Net Change	12-31-17
0.75	71	(1)	70
1	1,314	(7)	1,307
2	3,598	47	3,645
2.5	-	-	-
3	170	3	173
4	1,818	17	1,835
6	38,673	613	39,286
8	19,837	564	20,401
10	625	10	635
12	14,576	248	14,824
14	102	2	104
15	2	-	2
16	518	(3)	515
18	139	(2)	137
20	247	1	248
24	691	6	697
27	-	-	-
30	254	-	254
36	232	(2)	230
42	91	-	91
48	75	1	76
54	46	-	46
60	47	6	53
66	4	-	4
72	22	-	22
84	7	-	7
96	6	-	6
108	3	-	3
120	3	-	3
	<u>83,171</u>	<u>1,503</u>	<u>84,674</u>

<sup>1</sup> Valves within the City and Total Service Contract Areas.

FIRE HYDRANTS

<u>Size in Inches</u>	<u>Total Hydrants</u>		
	<u>12-31-16</u>	<u>Net Change</u>	<u>12-31-17</u>
4	41	(2)	39
6	20,515	413	20,928
	<u>20,556</u>	<u>411</u>	<u>20,967</u>

FIRE HYDRANT BRANCH PIPE

<u>Size in Inches</u>	<u>Kind of Pipe</u>	<u>Length in Feet</u>		
		<u>12-31-16</u>	<u>Net Change</u>	<u>12-31-17</u>
4	Cast iron	783	(30)	753
4	Ductile iron	108	-	108
6	Cast iron	84,316	(1,331)	82,985
6	Cement asbestos	3,019	28	3,047
6	Ductile iron	282,550	11,245	293,795
6	Polyvinylchloride	917	-	917
6	Steel	19,042	(3)	19,039
6	Unknown	12,446	(249)	12,197
8	Steel	385	-	385
		<u>403,566</u>	<u>9,660</u>	<u>413,226</u>

SUMMARY OF FIRE HYDRANT BRANCH PIPE BY MATERIAL

<u>Kind of Pipe</u>	<u>Length in Feet</u>		
	<u>12-31-16</u>	<u>Net Change</u>	<u>12-31-17</u>
Cast iron	85,099	(1,361)	83,738
Cement asbestos	3,019	28	3,047
Ductile iron	282,658	11,245	293,903
Polyvinylchloride	917	-	917
Steel	19,427	(3)	19,424
Unknown	12,446	(249)	12,197
	<u>403,566</u>	<u>9,660</u>	<u>413,226</u>

SUMMARY OF FIRE HYDRANT BRANCH PIPE BY DIAMETER

<u>Size in Inches</u>	<u>Length in Feet</u>		
	<u>12-31-16</u>	<u>Net Change</u>	<u>12-31-17</u>
4	891	(30)	861
6	402,290	9,690	411,980
8	385	-	385
	<u>403,566</u>	<u>9,660</u>	<u>413,226</u>

<sup>1</sup> Fire hydrants and branch pipe within the City and Total Service Contract Areas.

## RECYCLED WATER MAINS AND VALVES - 2017

### RECYCLED WATER MAINS

#### SUMMARY OF PIPE BY MATERIAL

Kind of Pipe	Length in Feet		
	12-31-16	Net Change	12-31-17
Copper	117	-	117
Ductile Iron	25,850	253	26,103
PVC <sup>1</sup>	199,150	10,801	209,951
Steel	135,691	29	135,720
	<u>360,808</u>	<u>11,083</u>	<u>371,891</u>

#### SUMMARY OF PIPE BY DIAMETER

Size	Kind of Pipe	Length in Feet		
		12-31-16 <sup>1</sup>	Net Change	12-31-17
2"	Copper	83	-	83
2"	PVC	5	-	5
2"	Steel	17	-	17
3"	Copper	34	-	34
3"	PVC	13	(10)	3
3"	Steel	-	9	9
4"	Ductile Iron	196	20	216
4"	PVC	9,849	-	9,849
4"	Steel	26	-	26
6"	Ductile Iron	4,744	175	4,919
6"	PVC	17,340	643	17,983
6"	Steel	481	12	493
8"	Ductile Iron	2,103	34	2,137
8"	PVC	36,235	(29)	36,206
8"	Steel	218	6	224
10"	Ductile Iron	107	-	107
10"	PVC	167	-	167
10"	Steel	93	-	93
12"	Ductile Iron	308	(13)	295
12"	PVC	44,718	2,422	47,140
12"	Steel	9,929	-	9,929
14"	Steel	13	-	13
16"	Ductile Iron	45	-	45
16"	PVC	26,015	-	26,015
16"	Steel	119	-	119
18"	PVC	42	-	42
18"	Steel	27	-	27
20"	Ductile Iron	-	38	38
20"	PVC	33,711	35	33,746
20"	Steel	286	-	286
24"	PVC	31,014	7,741	38,755
24"	Steel	5,748	-	5,748
30"	Ductile Iron	1,399	-	1,399
30"	PVC	41	-	41
30"	Steel	23,725	-	23,725
36"	DI	16,946	-	16,946
36"	PVC	-	-	-
36"	Steel	29,292	-	29,292
42"	PVC	-	-	-
42"	Steel	36,319	-	36,319
48"	PVC	-	-	-
48"	Steel	8,018	-	8,018
54"	Steel	21,304	-	21,304
84"	Steel	78	-	78
		<u>360,808</u>	<u>11,083</u>	<u>371,891</u>

### RECYCLED WATER VALVES

#### SUMMARY OF VALVES BY TYPE

Type of Valve	12-31-16 <sup>1</sup>	Net Change	12-31-17
Air vacuum valves	323	21	344
Blowoff valve	191	7	198
Butterfly valve	181	13	194
Check Valve	21	1	22
Corp Stop	94	2	96
Cone	6	-	6
Gate valve	563	16	579
Pitot	15	-	15
Plug Valve	1	-	1
PRV	2	1	3
Sleeve Valve	1	-	1
	<u>1,398</u>	<u>61</u>	<u>1,459</u>

#### SUMMARY OF VALVES BY DIAMETER

Diameter of Valve	12-31-16 <sup>1</sup>	Net Change	12-31-17
1"	102	2	104
2"	275	21	296
2.5"	4	-	4
4"	175	3	178
6"	407	26	433
8"	102	2	104
10"	24	-	24
12"	133	-	133
16"	20	-	20
18"	1	-	1
20"	41	-	41
24"	43	7	50
30"	19	-	19
36"	23	-	23
42"	12	-	12
48"	8	-	8
54"	9	-	9
	<u>1,398</u>	<u>61</u>	<u>1,459</u>

<sup>1</sup> 2016 totals were revised to more accurately reflect 2016 information.

**BREAKS IN MAINS, WATER CONTROL AND LEAK DETECTION SERVICES - 2017**

**DENVER MAIN BREAKS**

<u>Size</u>	<u>Pipe Material</u>	<u>Number of Breaks</u>
3"	Cast Iron	-
4"	Cast Iron	5
4"	Ductile Iron	4
4"	Cement Asbestos	1
6"	Ductile Iron	13
6"	Cement Asbestos	9
6"	PVC	2
6"	Cast Iron	135
8"	Cement Asbestos	5
8"	Ductile Iron	5
8"	PVC	1
8"	Cast Iron	58
12"	Cement Asbestos	4
12"	Cast Iron	29
12"	Ductile Iron	4
16"	PVC	-
16"	Ductile Iron	-
16"	Steel	-
20"	Steel	-
		<u>275</u>

**TOTAL SERVICE MAIN BREAKS**

<u>Size</u>	<u>Pipe Material</u>	<u>Number of Breaks</u>
4"	Cast Iron	1
4"	Ductile Iron	2
6"	Ductile Iron	3
6"	Cast Iron	4
6"	Cement Asbestos	-
8"	Cement Asbestos	-
8"	Ductile Iron	2
8"	Cast Iron	5
8"	PVC	-
10"	Cast Iron	-
12"	Cast Iron	3
12"	Ductile Iron	4
16"	Ductile Iron	-
		<u>24</u>

**WATER CONTROL SERVICES**

	<b>2017</b>	2016	2015	2014	2013
Service Calls	<b>10,339</b>	8,060	7,818	7,565	8,989
Service Leaks	<b>508</b>	503	542	337	719
Service Turn Ons	<b>524</b>	417	349	319	649
Service Turn Offs	<b>593</b>	586	601	614	1,588
Valve Leaks	<b>59</b>	66	128	59	64
Fire Hydrants Hit	<b>160</b>	151	109	155	146
Fire Hydrants Packed and Greased	<b>23,079</b>	21,123	17,351	28,110	22,153
Fire Hydrants Excavated for Replacement	<b>94</b>	60	41	116	160
Fire Hydrants, Miscellaneous Repairs	<b>2,657</b>	2,575	592	1,125	2,718
Total Fire Hydrants Tested and Repaired	<b>25,990</b>	23,909	18,093	29,506	25,177

**LEAK DETECTION PROGRAM**

	<b>2017</b>	2016	2015	2014	2013
Non-Visible Leaks Detected	<b>100</b>	68	62	110	61
Non-Visible Water Leaks Loss (1000's of Gallons) <sup>1</sup>	<b>26,280</b>	17,870	16,262	28,908	16,030
Visible Leaks Pinpointed	<b>183</b>	134	131	160	116
Miles Surveyed	<b>1,384</b>	922	808	1,290	615
Savings Generated from Saving Lost Water <sup>1</sup>	<b>\$ 50,194</b>	\$ 34,130	\$ 31,120	\$ 55,212	\$ 30,618
Savings Generated from Pinpointing Leaks <sup>1</sup>	<b>128,100</b>	93,800	91,700	112,000	81,200
Total Savings Generated from Leak Detection Program <sup>1</sup>	<b>\$ 178,294</b>	\$ 127,930	\$ 122,820	\$ 167,212	\$ 111,818

<sup>1</sup> Estimated.



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