

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 10-K

(Mark One)

- ☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2018
OR
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____
Commission file number: 001-34028

AMERICAN WATER WORKS COMPANY, INC.
(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 1 Water Street, Camden, NJ (Address of principal executive offices)	51-0063696 (I.R.S. Employer Identification No.) 08102-1658 (Zip Code) (856) 955-4001 (Registrant's telephone number, including area code) Securities registered pursuant to Section 12(b) of the Act:
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Title of each class	Name of each exchange on which registered
Common stock, par value \$0.01 per share	New York Stock Exchange
Securities registered pursuant to Section 12(g) of the Act: None.	

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input type="checkbox"/>
	Emerging growth company <input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒
State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter.
Common Stock, \$0.01 par value— \$13,802,100,000 as of June 29, 2018 (solely for purposes of calculating this aggregate market value, American Water has defined its affiliates to include (i) those persons who were, as of June 29, 2018, its executive officers, directors or known beneficial owners of more than 10% of its common stock, and (ii) such other persons who were deemed, as of June 29, 2018, to be controlled by, or under common control with, American Water or any of the persons described in clause (i) above).
Indicate the number of shares outstanding of each of the registrant's classes of common stock as of the latest practicable date: Common Stock, \$0.01 par value per share— 180,751,697 shares as of February 14, 2019 .

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the American Water Works Company, Inc. definitive proxy statement for the 2019 Annual Meeting of Shareholders to be filed with the Securities and Exchange Commission within 120 days after December 31, 2018 are incorporated by reference into Part III of this report.

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FORWARD-LOOKING STATEMENTS

We have made statements in Item 1—Business, Item 1A—Risk Factors, and Item 7—Management’s Discussion and Analysis of Financial Condition and Results of Operations, and in other sections of this Form 10-K, or incorporated certain statements by reference into this Form 10-K, that are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Private Securities Litigation Reform Act of 1995. In some cases, these forward-looking statements can be identified by words with prospective meanings such as “intend,” “plan,” “estimate,” “believe,” “anticipate,” “expect,” “predict,” “project,” “propose,” “assume,” “forecast,” “likely,” “uncertain,” “outlook,” “future,” “pending,” “goal,” “objective,” “potential,” “continue,” “seek to,” “may,” “can,” “should,” “will” and “could” or the negative of such terms or other variations or similar expressions. Forward-looking statements may relate to, among other things: our future financial performance, including our operation and maintenance (“O&M”) efficiency ratio; our liquidity and future cash flows; our growth and portfolio optimization strategies; our projected capital expenditures and related funding requirements; our ability to repay debt; our projected strategy to finance current operations and growth initiatives; the impact of legal proceedings and potential fines and penalties; business process, technology improvement and other strategic initiatives; trends in our industry; regulatory, legislative, tax policy or legal developments; rate adjustments, including through general rate case filings, filings for infrastructure surcharges and filings to address regulatory lag; and impacts that the Tax Cuts and Jobs Act (the “TCJA”) may have on us and on our business, results of operations, cash flows and liquidity.

Forward-looking statements are predictions based on our current expectations and assumptions regarding future events. They are not guarantees or assurances of any outcomes, financial results or levels of activity, performance or achievements, and you are cautioned not to place undue reliance upon them. These forward-looking statements are subject to a number of estimates and assumptions, and known and unknown risks, uncertainties and other factors. Our actual results may vary materially from those discussed in the forward-looking statements included herein as a result of the factors discussed under Item 1A—Risk Factors, and the following important factors:

- the decisions of governmental and regulatory bodies, including decisions to raise or lower customer rates;
- the timeliness and outcome of regulatory commissions’ actions concerning rates, capital structure, authorized return on equity, capital investment, system acquisitions, taxes, permitting and other decisions;
- changes in customer demand for, and patterns of use of, water, such as may result from conservation efforts;
- limitations on the availability of our water supplies or sources of water, or restrictions on our use thereof, resulting from allocation rights, governmental or regulatory requirements and restrictions, drought, overuse or other factors;
- changes in laws, governmental regulations and policies, including with respect to environmental, health and safety, water quality and emerging contaminants, public utility and tax regulations and policies, and impacts resulting from U.S., state and local elections;
- weather conditions and events, climate variability patterns, and natural disasters, including drought or abnormally high rainfall, prolonged and abnormal ice or freezing conditions, strong winds, coastal and intercoastal flooding, earthquakes, landslides, hurricanes, tornadoes, wildfires, electrical storms and solar flares;
- the outcome of litigation and similar governmental and regulatory proceedings, investigations or actions;
- our ability to appropriately maintain current infrastructure, including our operational and technology systems, and manage the expansion of our business;
- exposure or infiltration of our critical infrastructure and our technology systems, including the disclosure of sensitive, personal or confidential information contained therein, through physical or cyber attacks or other means;
- our ability to obtain permits and other approvals for projects;
- changes in our capital requirements;
- our ability to control operating expenses and to achieve efficiencies in our operations;
- the intentional or unintentional actions of a third party, including contamination of our water supplies or water provided to our customers;
- our ability to obtain adequate and cost-effective supplies of chemicals, electricity, fuel, water and other raw materials that are needed for our operations;
- our ability to successfully meet growth projections for our regulated and market-based businesses, either individually or in the aggregate, and capitalize on growth opportunities, including our ability to, among other things:
 - acquire, close and successfully integrate regulated operations and market-based businesses;

- enter into contracts and other agreements with, or otherwise obtain, new customers in our market-based businesses; and
- realize anticipated benefits and synergies from new acquisitions;
- risks and uncertainties associated with contracting with the U.S. government, including ongoing compliance with applicable government procurement and security regulations;
- cost overruns relating to improvements in or the expansion of our operations;
- our ability to maintain safe work sites;
- our exposure to liabilities related to environmental laws and similar matters resulting from, among other things, water and wastewater service provided to customers, including, for example, our water transfer business focused on customers in the shale natural gas exploration and production market;
- changes in general economic, political, business and financial market conditions;
- access to sufficient capital on satisfactory terms and when and as needed to support operations and capital expenditures;
- fluctuations in interest rates;
- restrictive covenants in or changes to the credit ratings on us or our current or future debt that could increase our financing costs or funding requirements or affect our ability to borrow, make payments on debt or pay dividends;
- fluctuations in the value of benefit plan assets and liabilities that could increase our cost and funding requirements;
- changes in federal or state general, income and other tax laws, including any further rules, regulations, interpretations and guidance by the U.S. Department of the Treasury and state or local taxing authorities (collectively, the “Related Interpretations”) related to the enactment of the TCJA, the availability of tax credits and tax abatement programs, and our ability to utilize our U.S. federal and state income tax net operating loss (“NOL”) carryforwards;
- migration of customers into or out of our service territories;
- the use by municipalities of the power of eminent domain or other authority to condemn our systems, or the assertion by private landowners of similar rights against us;
- our difficulty or inability to obtain insurance, our inability to obtain insurance at acceptable rates and on acceptable terms and conditions, or our inability to obtain reimbursement under existing insurance programs for any losses sustained;
- the incurrence of impairment charges related to our goodwill or other assets;
- labor actions, including work stoppages and strikes;
- our ability to retain and attract qualified employees;
- civil disturbances or terrorist threats or acts, or public apprehension about future disturbances or terrorist threats or acts; and
- the impact of new, and changes to existing, accounting standards.

These forward-looking statements are qualified by, and should be read together with, the risks and uncertainties set forth above and the risk factors included in Item 1A—Risk Factors and other statements contained in this Form 10-K, and you should refer to such risks, uncertainties and risk factors in evaluating such forward-looking statements. Any forward-looking statements we make speak only as of the date this Form 10-K was filed with the U.S. Securities and Exchange Commission (“SEC”). Except as required by the federal securities laws, we do not have any obligation, and we specifically disclaim any undertaking or intention, to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changed circumstances or otherwise. New factors emerge from time to time, and it is not possible for us to predict all such factors. Furthermore, it may not be possible to assess the impact of any such factor on our businesses, either viewed independently or together, or the extent to which any factor, or combination of factors, may cause results to differ materially from those contained in any forward-looking statement. The foregoing factors should not be construed as exhaustive.

PART I

ITEM 1. BUSINESS

Our Company

With a history dating back to 1886, American Water is the largest and most geographically diverse, publicly-traded water and wastewater utility company in the United States, as measured by both operating revenues and population served. A holding company originally incorporated in Delaware in 1936, we employ approximately 7,100 professionals who provide drinking water, wastewater and other related services to more than 14 million people in 46 states and Ontario, Canada. We conduct the majority of our business through regulated utilities that provide water and wastewater services, collectively presented as our “Regulated Businesses.” We also operate market-based businesses that provide a broad range of related and complementary water, wastewater and other services. Individually, these businesses do not meet the criteria of a reportable segment in accordance with generally accepted accounting principles in the United States (“GAAP”), and are collectively presented as our Market-Based Businesses, which is consistent with how management assesses the results of these businesses.

Throughout this Form 10-K, unless the context otherwise requires, references to “we,” “us,” “our,” the “Company,” and “American Water” mean American Water Works Company, Inc. and its subsidiaries, taken together as a whole. References to “parent company” mean American Water Works Company, Inc., without its subsidiaries.

Regulated Businesses

Our primary business involves the ownership of utilities that provide water and wastewater services to residential, commercial, industrial, public authority, fire service and sale for resale customers. Our utilities operate in approximately 1,600 communities in 16 states in the United States, with approximately 3.4 million active customers to our water and wastewater networks. Services provided by our utilities are generally subject to economic regulation by certain state utility commissions or other entities engaged in utility regulation, collectively referred to as Public Utility Commissions (“PUCs” or “Regulators”). Certain federal, state and local governments also regulate environmental, health and safety, and water quality matters. We report the results of the services provided by our utilities in our Regulated Businesses segment. Operating revenues for our Regulated Businesses were \$2,984 million for 2018, \$2,958 million for 2017 and \$2,871 million for 2016, accounting for 87%, 88% and 87%, respectively, of the Company’s total operating revenues for the same periods.

The following table provides a geographic summary of our Regulated Businesses’ operating revenues and the number of customers we serve, by type of service, for and as of the year ended December 31, 2018:

	Operating Revenues (in millions)				Number of Customers (in thousands)			
	Water (a)	Wastewater	Total	% of Total	Water	Wastewater	Total	% of Total
New Jersey	\$ 682	\$ 41	\$ 723	24.2%	648	49	697	20.6%
Pennsylvania	627	62	689	23.1%	660	65	725	21.4%
Missouri	309	10	319	10.7%	469	14	483	14.3%
Illinois	277	20	297	10.0%	286	35	321	9.5%
California	218	3	221	7.4%	176	3	179	5.3%
Indiana	219	—	219	7.3%	305	2	307	9.1%
West Virginia	143	1	144	4.8%	166	1	167	4.9%
Total—Top Seven States (b)	2,475	137	2,612	87.5%	2,710	169	2,879	85.1%
Other states (c)	348	24	372	12.5%	472	31	503	14.9%
Total Regulated Businesses	\$ 2,823	\$ 161	\$ 2,984	100.0%	3,182	200	3,382	100.0%

(a) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.

(b) Our “Top Seven States” are determined based upon operating revenues.

(c) Includes our utilities in the following states: Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New York, Tennessee and Virginia.

See Item 7—Management’s Discussion and Analysis of Financial Condition and Results of Operations and Note 20—Segment Information in the Notes to Consolidated Financial Statements for additional information.

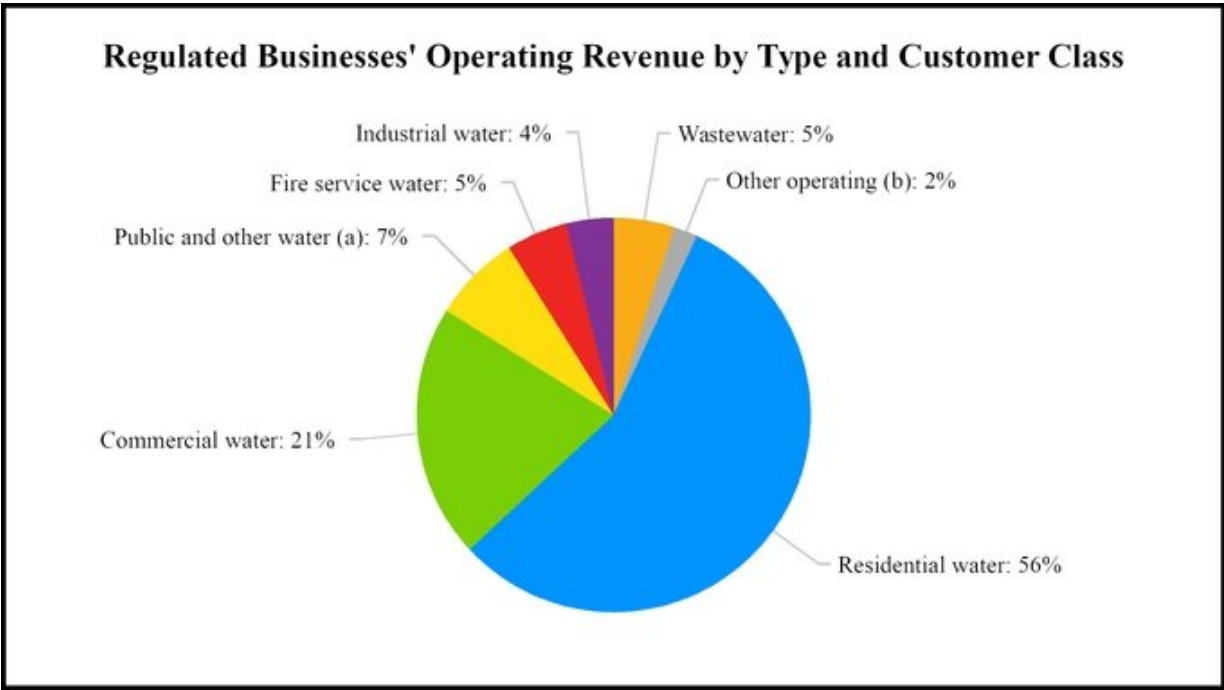
Customers

Our Regulated Businesses have a large and geographically diverse customer base. A customer is defined as a person, business, municipality or any other entity that purchases our water or wastewater services as of the last business day of a reporting period. One single customer may purchase our services for use by multiple individuals or businesses, as is the case in many homes, apartment complexes, businesses and governmental entities.

The vast majority of our regulated water customers are metered, which allows us to measure and bill for our customers’ water usage, typically on a monthly basis. We employ a variety of methods of customer meter reading to monitor consumption. These methods range from meters with mechanical registers where consumption is manually recorded by meter readers, to meters with electronic registers capable of transmitting consumption data to proximity devices or via radio frequency to mobile or fixed network data collectors. Our wastewater customers are billed either a flat rate or based upon their water consumption.

Residential customers make up a substantial portion of our customer base in all of the states in which we operate. We also serve (i) commercial customers, such as food and beverage providers, commercial property developers and proprietors, and energy suppliers, (ii) fire service customers, where we supply water through our distribution systems to public fire hydrants for firefighting purposes and to private fire customers for use in fire suppression systems in office buildings and other facilities, (iii) industrial customers, such as large-scale manufacturers, mining and production operations, (iv) public authorities, such as government buildings and other public sector facilities, including schools and universities, and (v) other utilities and community water and wastewater systems in the form of bulk contracts for the supply of water or the treatment of wastewater, for their own customers.

The following chart depicts the allocation of our Regulated Businesses’ operating revenue by type, including a breakout of the total water services revenues by class of customer, for the year ended December 31, 2018 :



(a) Includes water revenues from public authorities and other utilities and community water systems under bulk contracts.
(b) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.

The following table provides the number of water and wastewater customers we served by class as of December 31:

(In thousands)	2018		2017		2016	
	Water	Wastewater	Water	Wastewater	Water	Wastewater
Residential	2,892	188	2,872	182	2,846	171
Commercial	222	11	221	11	220	10
Fire service	48	—	47	—	45	—
Industrial	4	—	4	—	4	—
Public and other (a)	16	1	16	—	16	—
Total	3,182	200	3,160	193	3,131	181

(a) Includes public authorities and other utilities and community water and wastewater systems under bulk contracts. Bulk contracts, which are accounted for as a single customer in the table above, generally result in service to multiple customers.

Customer growth in our Regulated Businesses is primarily from (i) adding new customers to our customer base through acquisitions of water and/or wastewater utility systems, (ii) organic population growth in our authorized service areas, and (iii) sale of water to other water utilities and community water systems.

Capital Investment

The aging water and wastewater infrastructure in the United States is in need of replacement and modernization. The American Society of Civil Engineers published its *Report Card for America's Infrastructure* in 2017 and gave the drinking water industry a grade of “D,” and the wastewater infrastructure a grade of “D+,” primarily because much of the country’s infrastructure is nearing the end of its useful life. The report also stated that, on an annual basis, approximately 2 trillion gallons of treated water are lost in the United States through more than 240,000 main breaks, at an estimated cost of \$2.6 billion. This represents approximately 20% of all treated water in the country. In addition, approximately 900 billion gallons of untreated sewage is discharged into the country’s rivers and streams every year. As documented in the American Water Works Association’s *Buried No Longer: Confronting America's Water Infrastructure Challenge*, restoring the country’s existing water systems as they reach the end of their useful lives, and expanding them to serve a growing population, will cost at least \$1 trillion between 2011 and 2035, just to maintain the current levels of water service. In addition, increased regulation related to water quality and the management of water and wastewater residual discharges, which began with the passage of the Clean Water Act in 1972 and the Safe Drinking Water Act in 1974, is also a primary driver for the need to modernize the country’s water and wastewater infrastructure.

To address the growing infrastructure needs in the areas we serve, we plan to invest \$7.3 billion over the next five years, including \$1.6 billion in 2019, for capital improvements to our Regulated Businesses’ water and wastewater infrastructure, largely for pipe replacement and upgrading aging water and wastewater treatment facilities. We have proactively improved our pipe renewal rate from a 250-year replacement cycle to a 120-year replacement cycle, which we anticipate will enable us to replace nearly 2,000 miles of mains and collection pipes between 2019 and 2023. In addition, during this same five-year period, our capital investment in treatment plants, storage tanks and other key, above-ground facilities has increased over 10%, further addressing infrastructure renewal, resiliency, water quality, operational efficiency, technology and innovation, and emerging regulatory compliance needs. Additionally, we are investing significantly in resiliency projects to address the impacts of climate and weather variability by hardening our assets.

Economic Regulation and Rate Making

Our Regulated Businesses operate under a regulatory compact whereby, in exchange for exclusive rights to provide water and wastewater services in defined service territories, we have an obligation to serve customers within those territories requesting service, within reasonable limits. In return for agreeing to invest capital into our water and wastewater systems, we are given the opportunity to recover our costs of doing business and earn a reasonable rate of return on our investments.

The operations of our Regulated Businesses are generally subject to economic regulation by PUCs in the state in which they operate, with the primary responsibility of the PUCs to promote the overall public interest by balancing the interest of customers and utility investors. Specific authority might differ from state to state, but in most states, PUCs review and approve rates charged to customers, accounting treatments, long-term financing programs and cost of capital, O&M expenses, capital expenditures, taxes, affiliated transactions and relationships, reorganizations and mergers and acquisitions, along with imposing certain penalties or granting certain incentives. Regulatory policies vary from state to state and could potentially change over time. These policies will affect the timing, as well as the extent, of recovery of expenses and the realized return on invested capital.

The process to obtain approval for a change in rates generally occurs by way of a rate case filed by the utility with the PUC on a periodic basis. The timing of rate case filings is typically determined by either periodic requirements in the regulatory jurisdiction or by the utility's need to increase its revenue requirement to recover capital investment costs, changes in operating revenues, operating costs or other market conditions. Our rate case management program is guided by the principles of (i) obtaining timely recovery of capital investment costs, (ii) recognizing declining sales resulting from reduced consumption, and (iii) obtaining appropriate recovery of utility O&M costs, including costs incurred for compliance with environmental regulations. The program attempts to minimize "regulatory lag," which is the time between the occurrence of an event that triggers a change in the utility's revenue requirement and its recognition in rates. For example, regulatory lag describes the time between when a capital investment is placed into service for the benefit of the customer and when the Company can begin earning a return of and on that capital investment, through the ratemaking process. It also applies to the lag in the recognition in rate recovery of changes in expenses and revenues.

Our Regulated Businesses support regulatory practices at the PUCs and state legislatures that mitigate the adverse impact of regulatory lag. The following table provides examples of approved regulatory practices:

Regulatory Practices	Description	States Allowed
Infrastructure replacement surcharges	Allows rates to change periodically, outside a general rate case proceeding, to reflect recovery of capital investments made to replace infrastructure necessary to sustain safe, reliable services for our customers. These mechanisms typically involve periodic filings and reviews to ensure transparency.	IA, IL, IN, MO, NJ, NY, PA, TN, VA, WV
Future test year	A test period used for setting rates, which begins with the date new rates are effective. This allows current or projected revenues, expenses and capital investments to be collected on a timelier basis.	CA, HI, IA, IL, IN, KY, NY, PA, TN, VA
Hybrid test year	Allows an update to historical data for "known and measurable" changes that occur subsequent to the historical test year.	MD, MO, NJ, WV
Utility plant recovery mechanisms	Allows recovery of the full return on utility plant costs during the construction period, instead of capitalizing an allowance for funds used during construction. In addition, some states allow the utility to seek pre-approval of certain capital projects and associated costs. In this pre-approval process, the PUC may assess the prudence of such projects.	CA, IL, KY, NY, PA, TN, VA
Expense mechanisms	Allows changes in certain operating expenses, which may fluctuate based on conditions beyond the utility's control, to be recovered outside of a general rate case proceeding or deferred until the next general rate case proceeding.	CA, IL, MD, MO, NJ, NY, PA, TN, VA
Revenue stability mechanisms	Separates a utility's cost recovery from the amount of water it sells to recover its fixed costs and ongoing infrastructure investment needs. Such a mechanism adjusts rates periodically to ensure that a utility's revenue will be sufficient to cover its costs, regardless of sales volume, including recognition of declining sales resulting from reduced consumption, while providing an incentive for customers to use water more efficiently.	CA, IL, NY
Consolidated tariffs	Use of a unified rate structure for water systems owned and operated by a single utility, which may or may not be physically interconnected. The consolidated tariff pricing structure may be used fully or partially in a state, and is generally used to prioritize capital investments and moderate the impact of periodic fluctuations in local costs, while lowering administrative costs for customers. Pennsylvania also permits a blending of water and wastewater revenue requirements.	CA, IA, IL, IN, KY, MD, MO, NJ, NY, PA, VA, WV

We pursue or seek enhancement to these regulatory practices to facilitate efficient recovery of our costs and capital investments in order to continue to provide safe, clean, reliable and affordable services to our customers. The ability to seek regulatory treatment as described above does not guarantee that the PUCs will accept our proposal in the context of a particular rate case, and these regulatory practices may reduce, but not eliminate, regulatory lag associated with traditional rate making processes. It is also our strategy to expand their use in areas where they may not currently apply.

Acquisitions and Strategic Growth

The U.S. water and wastewater industries include investor-owned systems as well as municipal systems that are owned and operated by local governments or governmental subdivisions. Both industries are highly fragmented. According to the U.S. Environmental Protection Agency ("EPA"), approximately 84% of the water market is served by municipal systems and approximately 98% of the country's wastewater systems are government owned. The EPA also estimates that there are approximately 50,000 community water systems and approximately 15,000 community wastewater systems in the United States, with approximately 80% of the community water systems serving a population of 3,000 or less. This large number of relatively small, fragmented water and wastewater systems may result in inefficiencies in the marketplace, since such utilities may not have the operating expertise, financial and technological capability or economies of scale to provide services or raise capital as efficiently as larger utilities. Larger utilities that have greater access to capital are generally more capable of making mandated and other necessary infrastructure upgrades to their water and wastewater systems. In addition, water and wastewater utilities with large customer bases, spread across broad geographic regions, may more easily absorb the impact of significant variations in precipitation and temperatures, such as droughts, excessive rain and cool or warm temperatures in specific areas. Larger utilities generally are able to spread support services over a larger customer base, thereby reducing the costs to serve each customer. Since many administrative and support activities can be efficiently centralized to gain economies of scale, companies that participate in industry consolidation have the potential to improve operating efficiencies, lower costs per unit and improve service at the same time. Larger utilities also typically have the expertise to operate systems more efficiently and can attract and retain employees needed to operate the utility over time.

A fundamental aspect of our growth strategy is to pursue acquisitions of small and medium water and/or wastewater systems of between 3,000 and 30,000 customers, in geographic proximity to areas where we operate our Regulated Businesses. The proximity of acquisition opportunities to our regulated footprint allows us to integrate and manage the acquired systems and operations primarily using our existing management, although we typically retain the majority of employees, and to achieve operational efficiencies and prioritize capital investment needs. Our current customer mix of 94% water and 6% wastewater also presents strategic opportunities for wastewater growth and systems consolidation, allowing us to add wastewater customers where we already serve water customers. We intend to continue to expand our regulated footprint geographically by acquiring water and wastewater systems in our existing markets and, if appropriate, pursuing acquisition opportunities in certain domestic markets where we do not currently operate our Regulated Businesses. Before entering new regulated markets, we will evaluate the business and regulatory climates to ensure that we will have the opportunity to achieve an appropriate rate of return on our investment while maintaining our high standards for providing safe, reliable and affordable services to our customers, as well as a line of sight to grow our base customers to attain efficiencies after entering the new domestic market.

Increasingly stringent environmental, health and safety, and water quality regulations, the amount of infrastructure in need of significant capital investment, financial challenges and industry legislation are several elements that may drive more municipalities to consider selling their water and wastewater assets.

We are an experienced utility with proven access to capital and financial, technical, and managerial resources with public service commission oversight. We are a solution provider and believe that many communities could benefit from receiving safe and reliable water and wastewater service.

Industry Legislation

In 2017, New Jersey enacted the Water Quality Accountability Act (the “WQAA”), which sets new operational standards for all water utilities in New Jersey, including municipal and investor-owned utilities with more than 500 service connections. This law imposes new requirements in areas such as cybersecurity, asset management, water quality reporting, remediation of notices of violation, and hydrant and valve maintenance. The WQAA requires the most senior water manager, or either the executive director for municipal utility authorities or the mayor or chief executive officer for municipally owned public water systems, to certify that the system meets the requirements under the WQAA. On October 19, 2018, our New Jersey American Water subsidiary certified that it was in compliance with all aspects of the Act.

In 2018, similar legislation was passed in Indiana, which sets new operational standards and requirements for water and wastewater treatment plants in areas such as capital asset management, cost-benefit analysis and cybersecurity.

Also, in 2018, President Trump signed America’s Water Infrastructure Act of 2018. The legislation includes policies intended to improve water and wastewater system management and authorization for states to assess options for consolidation for systems that do not comply with the federal Safe Drinking Water Act and its rules and regulations. The legislation increases funding to water system funding programs, including the State Revolving Loan Fund program and the Water Infrastructure Finance and Innovation Act.

Our regulated subsidiaries in California, Illinois, Indiana, Iowa, Maryland, Missouri, New Jersey and Pennsylvania have access to fair market value legislation for private sector investment in public sector systems. We support full optionality for municipalities, including state legislation that enables the consolidation of the largely fragmented water and wastewater industries through third-party fair market valuations of purchased property. Fair market value assessment of water and wastewater systems is an alternative to the traditional depreciated original cost method of valuation, providing municipalities with a purchase price that is reflective of the assets’ value, while the utility has increased assurance of recovering the purchase price over the life of the assets, subject to state regulatory commission approval.

Consolidated tariffs use a unified rate structure for systems owned and operated by a single utility, which may or may not be physically interconnected. Consolidated tariff pricing moderates the impact of periodic fluctuations in local costs and promotes a more universal water infrastructure investment in the state. As a result, consolidated tariffs can make it easier to incorporate new systems into an existing utility and can ensure economies of scale for even the smallest of systems and prioritize capital needs across the state. Overall, this brings cost-effective, higher quality services to a larger number of citizens. Eleven of our regulated subsidiaries currently have some form of consolidated tariff pricing, including Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, New Jersey, New York, Pennsylvania, Virginia, and West Virginia.

In 2018, legislation was passed in our Missouri and California subsidiaries changing the public vote requirement for the sale of water or wastewater systems. In Missouri, the public vote requirement for the sale of a municipal water or wastewater system changed to a simple majority for more than 500 small towns. Historically, only larger communities required a simple majority, while smaller communities needed a two-thirds majority. This legislation increases the options for small towns, should they decide to address their water and sewer challenges through an asset sale. In California, the vote required to allow cities to sell sewer systems changed to a simple majority as compared to a two-thirds majority.

Competition

In our Regulated Businesses, we generally do not face direct competition in our existing markets because (i) we operate in those markets pursuant to franchises, charters, certificates of public convenience and necessity or similar authorizations (collectively, “CPCNs”) issued by state PUCs, and (ii) the high cost of constructing a new water and wastewater system in an existing market creates a high barrier to market entry. However, our Regulated Businesses do face competition from governmental agencies, other investor-owned utilities, large industrial customers with the ability to provide their own water supply/treatment process and strategic buyers that are entering new markets and/or making strategic acquisitions. When pursuing acquisitions, our largest investor-owned competitors, based on a comparison of operating revenues and population served, are Aqua America, Inc., Suez North America, American States Water Company and California Water Service Group. From time to time, we also face competition from infrastructure funds, multi-utility companies and others, such as Algonquin Power and Utilities Corp., Eversource Energy and Corix.

Condemnation and Eminent Domain

All or portions of our Regulated Businesses’ utility assets could be acquired by state, municipal or other government entities through one or more of the following methods: (i) eminent domain (also known as condemnation); (ii) the right of purchase given or reserved by a municipality or political subdivision when the original CPCN was granted; and (iii) the right of purchase given or reserved under the law of the state in which the utility subsidiary was incorporated or from which it received its CPCN. The acquisition consideration related to such a proceeding initiated by a local government may be determined consistent with applicable eminent domain law, or may be negotiated or fixed by appraisers as prescribed by the law of the state or in the particular CPCN.

As such, we are periodically subject to condemnation proceedings in the ordinary course of business. For example, a citizens group in Monterey, California successfully added “Measure J” to the November 6, 2018 election ballot asking voters to decide whether the Monterey Peninsula Water Management District (the “MPWMD”) should conduct a feasibility study concerning the potential purchase of our California subsidiary’s Monterey water service assets, and, if feasible, to proceed with a purchase of those assets without an additional public vote. This service territory represents approximately 40,000 customers. On November 27, 2018, Measure J was certified to have passed. The MPWMD has until August 27, 2019 to complete a feasibility study and submit to its board a written plan for acquiring the system assets. If the MPWMD were to determine that such an acquisition is feasible, then the MPWMD would commence a multi-year eminent domain proceeding against our California subsidiary to first establish the MPWMD’s right to take the system assets and, if such right is established, determine the amount of just compensation to be paid for the system assets.

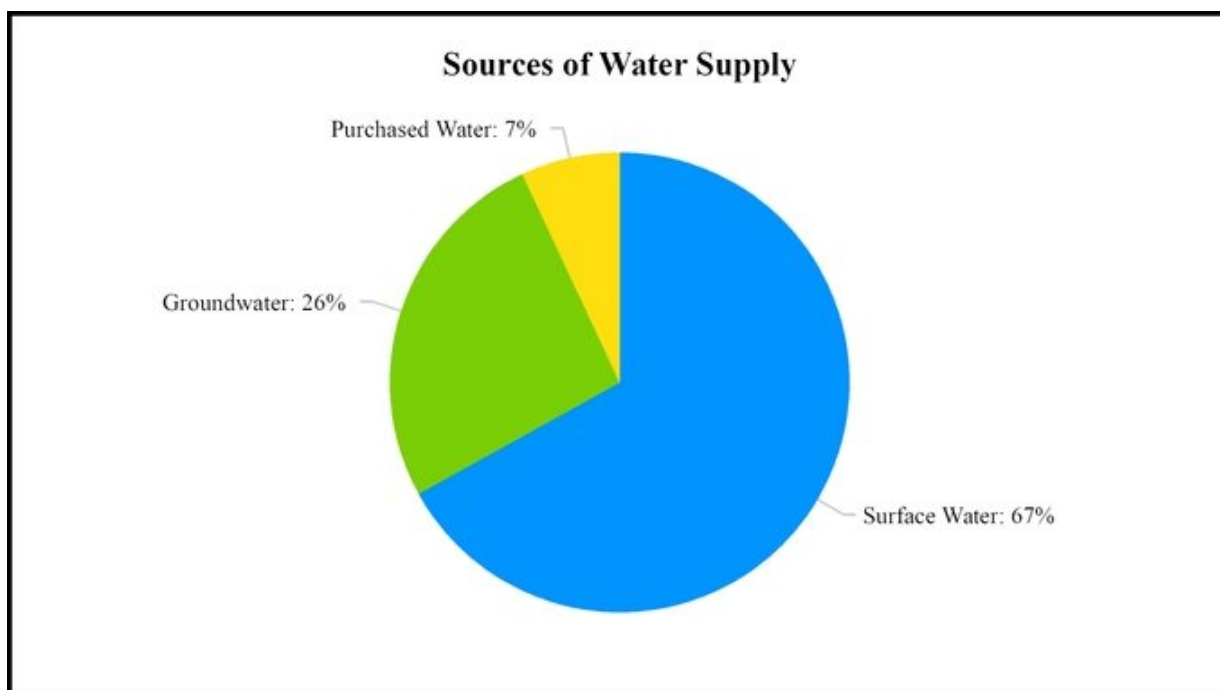
Also, five municipalities in the Chicago, Illinois area (approximately 30,300 customers in total) formed a water agency and filed an eminent domain lawsuit against our Illinois subsidiary in January 2013, seeking to condemn the water pipeline that serves those five municipalities. Before filing its eminent domain lawsuit, the water agency made an offer of \$38 million for the pipeline. A jury trial will take place to establish the value of the pipeline. Although the date of this trial has not currently been scheduled, it is likely to commence in the fourth quarter of 2019.

Furthermore, the law in certain jurisdictions in which our Regulated Businesses operate provides for eminent domain rights allowing private property owners to file a lawsuit to seek just compensation against a public utility, if a public utility’s infrastructure has been determined to be a substantial cause of damage to that property. In these actions, the plaintiff would not have to prove that the public utility acted negligently. In California, most recently, lawsuits have been filed in connection with large-scale natural events such as wildfires. Some have included allegations that infrastructure of certain utilities triggered the natural event that resulted in damage to the property. In some cases, the PUC has allowed certain costs or losses incurred by the utility to be recovered from customers in rates, but in other cases such recovery in rates has been disallowed. Also, the utility may have obtained insurance that could respond to some or all of such losses, although the utility would be at risk for any losses not ultimately subject to rate or insurance recovery or losses that exceed the limits of such insurance.

Water Supply and Wastewater Services

Our Regulated Businesses generally own the physical assets used to store, pump, treat and deliver water to our customers and collect, treat, transport and recycle wastewater. Typically, we do not own the water itself, which is held in public trust and is allocated to us through contracts, permits and allocation rights granted by federal and state or multi-state agencies or through the ownership of water rights pursuant to local law. We are dependent on defined sources of water supply and obtain our water supply from surface water sources such as reservoirs, lakes, rivers and streams; from groundwater sources, such as wells and aquifers; and water purchased from third-party water suppliers. The level of water treatment we apply varies significantly depending upon the quality of the water source and customer stipulations. Surface water sources typically generally require significant treatment, while groundwater sources often require chemical treatment only.

The following chart depicts our sources of water supply as of December 31, 2018 :



The following table provides percentages of water supply by source type for our top seven states for 2018 were as follows:

	Surface Water	Ground Water	Purchased Water
New Jersey	71%	24%	5%
Pennsylvania	91%	7%	2%
Missouri	79%	20%	1%
Illinois	53%	36%	11%
California	—	64%	36%
Indiana	44%	56%	—
West Virginia	99%	—	1%

Our ability to meet the existing and future water demands of our customers depends on an adequate water supply. Drought, governmental restrictions, overuse of sources of water, the protection of threatened species or habitats, contamination or other factors may limit the availability of ground and surface water. We employ a variety of measures in an effort to obtain adequate sources of water supply, both in the short-term and over the long-term. The geographic diversity of our service areas may mitigate some of the economic effects on the water supply associated with weather extremes we might encounter in any particular service territory. For example, in any given summer, some areas may experience drier than average weather, which may reduce the amount of source water available, while other areas we serve may experience wetter than average weather.

In our long-term planning, we evaluate quality, quantity, growth needs and alternate sources of water supply as well as transmission and distribution capacity. Water supply is seasonal in nature and weather conditions can have a pronounced effect on supply. In order to ensure that we have adequate water supply, we use long-term planning processes and maintain contingency plans to minimize the potential impact on service caused by climate variability and a wide range of weather fluctuations. In connection with supply planning for most surface or groundwater sources, we employ models to determine safe yields under different rainfall and drought conditions. Surface and ground water levels are routinely monitored so that supply capacity deficits may, to the extent possible, be predicted and mitigated through demand management and additional supply development. An example of our use of long-term planning to ensure that we have adequate water supply is our involvement in the Monterey Peninsula Water Supply Project (the “Water Supply Project”) in California. The Water Supply Project includes the construction of a desalination plant, owned by our California subsidiary, and the construction of wells that would supply water to the desalination plant. In addition, the Water Supply Project also includes our California subsidiary’s purchase of water from a groundwater replenishment project between the Monterey Regional Water Pollution Control Agency (now known as Monterey One Water) and the MPWMD. The Water Supply Project is intended, among other things, to fulfill obligations of our California subsidiary to eliminate unauthorized diversions from the Carmel River as required under orders of the California State Water Resources Control Board (the “SWRCB”). For more information, see Item 3—Legal Proceedings —Alternative Water Supply in Lieu of Carmel River Diversions.

Wastewater services involve the collection of wastewater from customers’ premises through sewer lines. The wastewater is then transported through a sewer network to a treatment facility, where it is treated to meet required regulatory standards for wastewater before being returned to the environment. The solid waste by-product of the treatment process is disposed of or recycled in accordance with applicable standards and regulations.

Seasonality

Customer demand for our water service is affected by weather and tends to vary with temperature, rainfall levels and the frequency of rainfall. Customer demand is generally greater during the warmer months, primarily due to increased water usage for irrigation systems and other outdoor water use. As such, we typically expect our operating revenues to be the highest in the third quarter of each year. Weather that is hotter and drier than average generally increases operating revenues, whereas, weather that is cooler and/or wetter than average generally serves to suppress customer water demand and can reduce water operating revenues. Three of our jurisdictions, California, Illinois and New York, have adopted revenue stability mechanisms which permit us to collect state PUC-authorized revenue for a given period which is not tied to the volume of water sold during that period, thereby lessening the impact of weather variability. See “Economic Regulation and Rate Making ” for additional information regarding revenue stability mechanisms.

Market-Based Businesses

Through our Market-Based Businesses , we provide a broad range of related and complementary water and wastewater services primarily to residential and smaller commercial customers, the U.S. government on military installations and shale natural gas exploration and production companies, as well as municipalities, utilities and industrial customers. These businesses are not subject to economic regulation by state PUCs and the services provided generally do not require significant capital investment. Operating revenues for our Market-Based Businesses were \$476 million for 2018 , \$422 million for 2017 and \$451 million for 2016 , accounting for 14% , 13% and 14% , respectively, of the Company’s total operating revenues for the same periods.

Our primary Market-Based Businesses include the following operating segments:

- Homeowner Services Group , which provides various warranty protection programs to residential and smaller commercial customers;
- Military Services Group , which enters into long-term contracts with the U.S. government to provide water and wastewater services on various military installations; and
- Keystone Clearwater Solutions, LLC (“Keystone”), which provides customized water transfer services for shale natural gas exploration and production companies.

We also enter into contracts with municipal, commercial and industrial customers to operate and manage water and wastewater facilities and provide other related services through our Contract Services Group . During 2018, we closed on the sale of the majority of our Contract Services Group ’s O&M contracts to subsidiaries of Veolia Environnement S.A. See Note 4—Acquisitions and Divestitures in the Notes to Consolidated Financial Statements for additional information. We will retain four of our Contract Services Group ’s O&M contracts due to their proximity to our existing service areas, and expect the majority of the remaining contracts to be sold to other parties, or expire within the next twelve months.

Homeowner Services Group

Our Homeowner Services Group , which includes our June 4, 2018 acquisition of Pivotal Home Solutions (“Pivotal”), provides warranty protection programs to residential and smaller commercial customers to protect against repair costs for interior and exterior water and sewer lines, interior gas and electric lines, heating and cooling systems, water heaters and other home appliances, as well as power surge protection and other related services. We also develop partnerships with municipalities, utilities and other organizations to offer our protection programs to customers serviced by, or affiliated with, those municipalities, utilities and organizations. The term of these partnership agreements is typically three to five years, with mutual optional renewals. As of December 31, 2018 , our Homeowner Services Group had approximately 3 million customer contracts in 43 states, and 26 partnership agreements with utilities, municipalities and other organizations.

Military Services Group

Our Military Services Group operates on 14 military installations under 50-year contracts with the U.S. government as part of its Utility Privatization Program. The scope of these contracts generally includes the operation and maintenance of the installation’s water and wastewater systems and a capital program focused on asset replacement and, in certain instances, systems expansion. The replacement of assets assumed when a contract is awarded to the Company is funded from the contract fee. At times, new assets are required to support the installation’s mission and the construction of these assets are funded by the U.S. government as separate modifications or amendments to the contract. The capital program historically has not used the Company’s equity or debt borrowings; rather, we have used limited working capital for short-term needs under these contracts. In April 2018, the U.S. Army instituted a requirement that a bidder must offer financing in its proposal for a new capital project. The Company is currently exploring strategies to address the U.S. Army’s revised requirements for new projects on which it may seek to bid, including partnering with third parties for off-balance sheet financing.

The contract price for nine of our contracts with the U.S. government is subject to redetermination two years after commencement of operations, and every three years thereafter. Price redetermination is a contract mechanism to periodically adjust the service fee in the next period, to reflect changes in contract obligations and anticipated market conditions. The remaining five contracts with the U.S. government are subject to annual price adjustments under a mechanism similar to price redetermination called “Economic Price Adjustment.” All of these contracts may be terminated, in whole or in part, prior to the end of the 50-year term for convenience of the U.S. government, or as a result of default or non-performance by the subsidiary performing the contract. In either event, pursuant to termination provisions applicable to these contracts, we would be entitled to recover allowable costs that we may have incurred under the contract, plus the contract profit margin on incurred costs. Our backlog of revenue associated with our contracts with the U.S. government is approximately \$4.3 billion , with an average remaining contract term of 42 years.

Keystone

In July 2015, we acquired a 95% interest in Water Solutions Holdings, LLC, including its wholly owned subsidiary, Keystone. During 2018, pursuant to the exercise of put options by the minority owners, we acquired the remaining 5% interest in Keystone, bringing our ownership interest to 100% . Keystone is a water service and management solutions company that serves shale natural gas exploration and production customers in the Appalachian Basin. During 2018, Keystone exited its construction and water trucking business lines, narrowing the scope of its business going forward to customized water transfer services. Keystone operates under master service agreements that are generally shorter term in nature. When the initial term of these agreements expire, they typically renew automatically on an annual basis, and are generally cancelable by either party with 30 days prior notice. As of December 31, 2018 , Keystone serves approximately 47 customers.

Competition

We face competition in our Market-Based Businesses from a number of service providers, including HomeServe USA in our Homeowner Services Group , and American States Water Company, Suez North America, and Veolia Environnement S.A. in our Military Services Group . Keystone currently faces competition from water service providers that typically provide services to particular segments of the water management cycle, such as Select Energy Services, Inc., TETRA Technologies, Inc. and Baker Corp.

Environmental, Health and Safety, and Water Quality Regulation

Our water and wastewater operations, including the services provided by both our Regulated Businesses and Market-Based Businesses, are subject to extensive federal, state and local laws and regulations, and in the case of our Canadian operations, Canadian laws and regulations, governing the protection of the environment, health and safety, the provision of water and wastewater services, particularly with respect to the quality of water we deliver to our customers, and the manner in which we collect, treat, discharge, recycle and dispose of wastewater. In the United States, these regulations are developed under legislation including the Safe Drinking Water Act, the Reduction of Lead in Drinking Water Act and the Clean Water Act. States also have the authority to develop their standards and requirements in these areas. We are subject to various federal, state, local and Canadian laws and regulations governing the storage of hazardous materials, the management and disposal of hazardous and solid wastes, discharges to air and water, the cleanup of contaminated sites, dam safety and other matters relating to the protection of the environment and health and safety. PUCs also set conditions and standards for the water and wastewater services we deliver.

Environmental, health and safety, and water quality regulations are complex and change frequently. For example, while the EPA has issued a non-enforceable Health Advisory for the combined level of two perfluorinated compounds, the New Jersey Department of Environmental Protection has adopted a more stringent maximum contaminant level for a third compound, perfluorononanoic acid, or PFNA, and perfluorooctanoic acid, or PFOA, and will be seeking to adopt similar standards for other perfluoroalkyl and polyfluoroalkyl substances, or PFAS. The overall trend has been that drinking water standards have become increasingly more stringent over time. As newer or stricter standards are introduced, our capital and operating costs could increase. We incur substantial costs associated with compliance with the environmental, health and safety, and water quality standards to which our operations are subject and we invest in technology solutions for enhanced detection and monitoring. In the past, our Regulated Businesses have generally been able to recover the costs associated with compliance; however, this recovery is affected by regulatory lag and the corresponding uncertainties surrounding rate recovery. We estimate that we will make capital expenditures of \$133 million and \$120 million during 2019 and 2020, respectively, for environmental control facilities, which we define for this purpose as any project (or portion thereof) that involves the preservation of air, water or land. We also maintain an environmental program that includes responsible business practices, compliance with environmental laws and regulations, and effective use of natural resources. We believe that our operations are materially in compliance with, and in many cases surpass, minimum standards required by applicable environmental laws and regulations.

Our operations also involve the use, storage and disposal of hazardous substances and wastes. For example, our water and wastewater treatment facilities store and use chlorine and other chemicals that generate wastes that require proper handling and disposal under applicable environmental requirements. We also could incur remedial costs in connection with any contamination relating to our operations or facilities or our off-site disposal of wastes. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (“CERCLA”), authorizes the EPA, and comparable state laws authorize state environmental authorities, to issue orders and bring enforcement actions to compel responsible parties to investigate and take remedial actions at any site that is determined to present an actual or potential threat to human health or the environment because of an actual or threatened release of one or more hazardous substances. Parties that generated or transported hazardous substances to such sites, as well as current and former owners and operators of such sites, may be deemed liable, without regard to fault, under CERCLA or comparable state laws. Although we are not aware of any material cleanup or decontamination obligations, the discovery of contamination or the imposition of such obligations in the future could result in additional costs. Our facilities and operations are also subject to requirements under the U.S. Occupational Safety and Health Act and inspections thereunder. Certain of our subsidiaries are involved in pending legal proceedings relating to environmental matters. See Item 3—Legal Proceedings for additional information.

Safe Drinking Water Act

The Safe Drinking Water Act and related regulations establish national quality standards for drinking water. The EPA has issued rules governing the levels of numerous, naturally occurring and man-made chemical and microbial contaminants and radionuclides allowable in drinking water, and continues to propose new rules. These rules also prescribe testing requirements for detecting regulated contaminants, the treatment systems that may be used for removing those contaminants, and other requirements. To date, the EPA has set standards for approximately 90 contaminants and indicators for drinking water, and there is a process in place to make a regulatory determination on at least five additional compounds every five years.

To help formulate the basis for future regulations, the EPA has the authority to require monitoring for additional, unregulated contaminants under the Unregulated Contaminant Monitoring Rule (the “Monitoring Rule”). Our facilities have participated in the data gathering effort for the Monitoring Rule in previous rounds, which occurs every five years, and are also a participant in the ongoing fourth round, which is scheduled for completion by the end of 2020. There are millions of other chemical compounds that are not regulated, many of which are lacking a testing methodology, occurrence data, health effects information and/or treatment technology. The process of developing new drinking water standards is long and complex, but we actively participate with the EPA and other water industry groups by sharing research and water quality operational knowledge. See Item 1—Business—Research and Development—Emerging Contaminants for additional information.

To effect the removal or inactivation of microbial organisms, the EPA has established various rules to improve the disinfection and filtration of drinking water and to reduce consumers' exposure to disinfectants and by-products of the disinfection process. In 2006, the EPA issued the Long-Term 2 Enhanced Surface Water Treatment Rule and the Stage 2 Disinfectants and Disinfection Byproduct Rule and finalized the Ground Water Rule, which is applicable to systems providing water from underground sources. In 2016, the revised Total Coliform Rule implemented a "find and fix" process where exceeding bacterial trigger levels requires an assessment to correct any sanitary defects. We are within the EPA's time frame for compliance with these standards, which includes sample collection, data analysis, engineering planning and system implementation. Recent monitoring under the Long-Term 2 Rule has resulted in the need for more than 30 of our surface water systems to provide additional protection against cryptosporidium. In most cases, this will involve installing UV disinfection at an estimated cost ranging from \$150 million to \$250 million. Further, the EPA is actively considering regulations for a number of contaminants, including strontium, hexavalent chromium, fluoride, nitrosamines, perchlorate, some pharmaceuticals and certain volatile organic compounds. We do not anticipate that any such regulations, if enacted, will require implementation in 2019.

Across the Company, we conduct over one million water quality tests each year at our laboratory facilities and plant operations, including continuous online instrumentations such as monitoring turbidity levels, disinfectant residuals and adjustments to chemical treatment based on changes in incoming water. We participate in the Partnership for Safe Water, the EPA's voluntary program to meet more stringent goals for reducing microbial contaminants. With 69 of our 81 surface water treatment plants receiving the EPA program's prestigious "Director" award, which recognizes utilities that (i) have completed a comprehensive self-assessment report, (ii) created an action plan for continuous improvement, and (iii) produced high-quality drinking water, we account for approximately one-third of the plants receiving such awards nationwide. In addition, 67 of our surface water treatment plants have received the "Five-Year Phase III" award, 62 plants have received the "Ten-Year Phase III" award, 58 plants have received the "Fifteen-Year Phase III" award, and 3 plants have received the "Twenty-Year Phase III" award; these awards recognize plants that have met the Director award status for five, 10, 15 and 20 years, respectively. Further, nine of our surface water plants have received the "Presidents" award, which recognizes treatment plants that achieve the Partnership's rigorous individual filter effluent turbidity standards.

Although it is difficult to project the ultimate costs of complying with the above or other pending or future requirements, we expect current requirements under the Safe Drinking Water Act and other similar laws to be recoverable through the regulatory process and therefore compliance costs are not expected to have a material impact on our operations or financial condition. In addition, capital expenditures and operating costs to comply with environmental mandates have been traditionally recognized by PUCs as appropriate for inclusion in establishing rates. As a result, we expect to recover the operating and capital costs resulting from these pending or future requirements.

Lead and Copper Rule and Reduction of Lead in Drinking Water Act

Across the country, there is a renewed focus on the potential risk of lead in drinking water. In 1991, the EPA published the Lead and Copper Rule ("LCR") to control lead and copper in drinking water and, since that time, has issued minor revisions in 2000, 2004 and 2007, enhancing monitoring, reporting and public education requirements. In 2011, Congress enacted the Reduction of Lead in Drinking Water Act regarding the use and introduction into commerce of lead pipes, plumbing fittings for fixtures, solder and flux. While these advances have made an impact in reducing lead exposure in drinking water, legacy lead plumbing materials, primarily in building plumbing, still remain in many communities. The EPA is currently working to develop long-term revisions to the LCR, with a revised draft likely in 2019. It is currently estimated that approximately 5% of our service lines contain lead ("LSLs"). We have reviewed our inventories of company owned service lines, our related practices and are working with stakeholders to develop feasible solutions to remove legacy lead from service lines in older neighborhoods. Our goal is to replace our LSLs in most areas over an approximate 10-year time frame, at an estimated cost ranging from \$600 million to \$1.2 billion. In cases where we are replacing an American Water owned LSL, our standard approach will be to replace the company-owned portion of the service line, and work with the customer to replace the customer-owned portion of the service line at the same time. Replacing the full service line is considered a best practice as advised by the Lead Service Line Replacement Collaborative and the American Water Works Association. The Lead Service Line Replacement Collaborative is a diverse group of public health, water utility, environmental, labor, consumer, and housing organizations from across the country working together to encourage communities to accelerate the full replacement of LSLs through collaborative efforts at the local level. The prioritization of this work will depend on several factors, including our planned water main and service line renewal projects, adjacent projects by municipalities or other utilities, LCR compliance monitoring results and cooperation with our customers with respect to the customer-owned portion of the service line. There is also a special focus placed on low-income neighborhoods.

Clean Water Act

The Clean Water Act regulates discharges from drinking water and wastewater treatment facilities into lakes, rivers, streams and groundwater. In addition to requirements applicable to our wastewater collection systems, our operations require discharge permits under the National Pollutant Discharge Elimination System (“NPDES”) permit program established under the Clean Water Act, which must be renewed every five years. Pursuant to the NPDES permit program, the EPA and implementing states set maximum discharge limits for wastewater effluents and overflows from wastewater collection systems. Discharges that exceed the limits specified under NPDES permits can lead to the imposition of fines and penalties, and persistent non-compliance could lead to significant fines and penalties and other compliance costs. In addition, the difficulty of obtaining and complying with NPDES permits, and renewing expiring permits, may impose time and cost burdens on our operations. From time to time, discharge violations occur at our facilities, some of which result in fines. We do not expect any such violations or fines to have a material impact on our results of operations or financial condition.

Environmental, Social Responsibility and Governance

Integrating environmental, social responsibility and governance (“ESG”) policies and practices into our daily operations emphasizes our belief that the only way to do business is to do it responsibly, and that the “how” is just as important as the “what” for long-term financial sustainability. Being committed to ESG principles means striving to:

- keep employees safe and injury-free, and develop each person to his or her full potential;
- be a leader in environmental sustainability, caring for the planet, and leading the nation in outstanding water safety and quality;
- deliver personalized customer service with empathy and care;
- make communities better because we are there; and
- be transparent, accessible and well-governed for our shareholders and investors.

This focus is derived from our vision statement, “clean water for life,” and our core values: (i) safety; (ii) trust; (iii) environmental leadership; (iv) teamwork; and (v) high performance, the principles by which we work and live. Our vision and values drive our company strategy, which is centered on five central themes:

- **Safety**—The safety of our employees and our customers is the number one focus for American Water.
- **Customers**—Our customers are at the center of everything we do, helping us to shape our strategic priorities. We challenge ourselves so that if our regulated utility customers had a choice of providers, we would want them to choose us.
- **People**—Maintaining an environment which is open, transparent, diverse and inclusive, and where our people feel valued, included and accountable, is critical to our ability to serve our customers every day.
- **Operational Excellence**—Our operational excellence strategy helps us to find better and more efficient ways to do business, and to provide safe, clean and affordable water services for our customers.
- **Growth**—We believe that when companies grow, they can invest more in creating stable jobs, training, benefits, infrastructure and our communities. Our growth benefits all of our stakeholders, including our shareholders.

In 2017, we issued our fourth biennial Corporate Responsibility Report, covering our performance in 2015 to 2016. Our first report was issued in 2011, making us the first large water services company to measure its performance against the Global Reporting Index. In addition, our sustainability practices have supported our inclusion in the Euronext Vigeo® U.S. 50 index, FTSE4Good index series, 2018 Constituent MSCI ESG Leaders Indexes, NAACP Equity Inclusion and Empowerment Index and the most recent 2019 Bloomberg Gender-Equality Index. Highlights of our commitment to our ESG policies and practices are summarized below:

Environmental and Sustainability Practices

- Energy Use
 - Lowered our greenhouse gas emissions through December 31, 2017 by approximately 31% since our base year of 2007 with a goal of reducing 40% by 2025.
 - Design, construct, operate and maintain our systems for efficiency and best practices.
- Water Supply
 - Deconstructed the San Clemente Dam in California to restore the “run of the river” and we are building the Water Supply Project using marine life friendly slant wells.

- Water Policy Leadership

- Expect to spend between \$8.0 billion and \$8.6 billion on capital investments from 2019 to 2023 to address aging infrastructure, reduce or eliminate leaks, improve cyber and physical security, and increase resiliency of critical assets from the impacts of climate variability.
- Scientists dedicated to research and partnering with water research foundations, on water quality and technology-water source monitoring.
- Collaboration and partnerships with federal and state agencies to support effective environmental, health and safety and water quality standards and regulations.

Social Responsibility

- Our People

- During 2018, nearly 80,000 hours of safety training were completed by our employees.
- During 2018, over 86% of our job requisitions had a diverse candidate pool, with more than 50% of transfers or promotions filled by minority, female, veteran or disabled individuals.

- Our Customers

- Achieved a customer satisfaction rating in the top quartile among our industry peer group.

- Our Communities

- More than 5,000 hours of Company-sponsored community service performed during 2018 by our employees.
- Company-sponsored workplace giving campaigns with the United Way and Water For People.
- Through annual contributions from the American Water Charitable Foundation, we focused on supporting our employees in their own charitable endeavors, providing support for disaster relief efforts, and providing funding for initiatives related to clean water, conservation, education and community sustainability.

Governance

- Board and Committee

- The Board of Directors and each of its committees are led by an independent, non-executive chairperson.
- Board of Directors met 13 times in 2018.
- Established the Safety, Environmental, Technology and Operations committee of the Board of Directors.

- Diversity

- We have achieved gender parity among the members of the Board of Directors.
- Our average director tenure is approximately seven years.

- Demonstrated & Representative Expertise

- Our Board of Directors has demonstrated expertise, including experience in utilities, cybersecurity, financial services, serving as a public company CEO, operational and manufacturing, and global entity management.

Research and Development

Our Research and Development Program

We maintain an industry-leading Research and Development (“R&D”) program that is designed to enhance our services, help ensure compliance, and improve quality and operational effectiveness. Our R&D personnel are located in New Jersey and Illinois, the latter housing our quality control and testing laboratory, which supports our R&D activities through testing and analysis.

We continue to leverage the Company's expertise and collaborate with the EPA and state agencies to help establish effective environmental, health and safety, and water quality standards and regulation. This relationship includes the sharing of our research, such as our treatment and distribution system optimization research and our national water quality monitoring data. Our engagement with the EPA provides us with early insight into emerging regulatory issues and initiatives, thereby allowing us to anticipate and to accommodate our future compliance requirements. We also frequently engage with the Centers for Disease Control and other state environmental agencies. We believe that continued R&D activities are critical for providing safe, reliable and affordable services, as well as maintaining our leadership position in the industry, which provides us with a competitive advantage as we seek additional business with new and existing customers.

Emerging Contaminants

Emerging contaminants include chemicals such as pharmaceuticals, personal care products, pesticides, herbicides and endocrine disrupting compounds, as well as some naturally occurring microbes, such as bacteria, viruses and parasites, which have been detected in drinking water supplies, for which the risk to the public's health is not fully understood and/or has not been quantified. While these contaminants have been present in our drinking water for as long as they have been in use, technological advances have only recently made it possible to detect many of them. The ability to detect contaminants, even at trace levels, has raised questions among regulators and government agencies, further affecting the public's perception of drinking water quality.

The Chemicals Abstract Service Registry contains over 140 million registered chemicals, with a new substance being produced approximately every 3 seconds from chemical breakdown and reformation. There are over 1,400 microbes which can affect drinking water. We are continually investigating new substances and contaminants, employing a team of scientists, engineers and public health professionals to identify threats to our water supply, to act on emerging regulations and new health advisories, and to evaluate the benefits of alternative or advanced treatment technologies. We maintain state-of-the-art water quality testing equipment and implement new and emerging technologies to help predict and manage potential water supply contamination issues. Examples of our efforts include:

- using our research findings to communicate information to our customers on the actions they can take to manage Legionella (the Centers for Disease Control statistics indicate that water-associated disease from Legionella is on the rise, with exposure typically associated with customer-owned plumbing systems in large buildings);
- aerial drone testing to detect harmful algal blooms and testing ultrasonic technology to help prevent taste and odor events and to eliminate cyanotoxins before they get to the water treatment plant;
- the implementation of water source assessment tools, including sensors and analytics, to evaluate and track chemical storage and transport through watersheds and to detect source water contamination events; and
- the implementation of activated carbon and biofiltration for the control of emerging contaminants.

Service Company and Security

American Water Works Service Company, Inc. (the "Service Company") is our wholly owned subsidiary that provides support and operational services to the Company's operating subsidiaries. These services are predominantly provided to our Regulated Businesses under contracts that have been approved by PUCs, where necessary, and are also provided to our Market-Based Businesses organized under American Water Enterprises, LLC, our wholly owned subsidiary ("AWE"), and Keystone as requested or may otherwise be necessary. Services provided by the Service Company may include accounting and finance, administration, business development, communications, compliance, education and training, engineering, health and safety, human resources, information systems, internal audit, investor relations, legal and governance, operations, procurement, rates and regulatory support, security, risk management and insurance, treasury, water quality and R&D. The Service Company also operates two national customer service centers located in Alton, Illinois and Pensacola, Florida, which provide customer relations, field service and operational support to our Regulated Businesses. Services are provided by the Service Company at cost, enabling our operating subsidiaries to fulfill their responsibilities in a cost-effective manner, while providing them access to in-depth, functional expertise.

Our security team provides oversight and policy guidance on physical, cyber and information security, as well as business continuity, throughout our operations. It is responsible for designing, implementing, monitoring and supporting effective physical and technical security controls for our physical assets, business systems and operational technologies. Risk assessments are conducted periodically to evaluate the effectiveness of existing security controls and serve as the basis for additional safeguards, security controls and measures. Operational and technical security controls are deployed and integrated as safeguards against unauthorized access to the Company's information systems. These controls (i) are aimed at assuring the continuity of business processes that are dependent upon automation, (ii) seek to maintain the integrity of our data, (iii) support regulatory and legislative compliance requirements, and (iv) are aimed at maintaining safe and reliable service to our customers. We engage in partnerships with U.S. federal, state and local law enforcement agencies to coordinate and improve the security of our water delivery systems and to safeguard our water supply and operations.

Employee Matters

As of December 31, 2018, approximately 49% of our workforce was represented by unions, which include 70 collective bargaining agreements with 15 different unions. Additionally, as of December 31, 2018 we had two collective bargaining agreement beyond expiration, affecting approximately 220 employees, all of which are actively working under the terms of the existing agreement, and another collective bargaining agreement in its initial stage of renegotiation, affecting approximately 140 employees. During 2019, 18 of our collective bargaining agreements will be expiring in accordance with their terms.

Every five years, we negotiate national health and welfare benefits with our union-represented employees. On July 31, 2018, a new, five-year national benefits agreement was ratified, covering approximately 3,200 of our union-represented employees. Highlights of the new agreement include union-represented employees' participation in the Company's cash-based annual performance plan, changes to certain retiree medical benefits and additional medical plan options for our employees and their families.

Executive Officers

The following table provides the name, age, offices held and business experience for each of our executive officers, as of February 19, 2019:

Name	Age	Office and Experience
Susan N. Story	59	President and Chief Executive Officer. Ms. Story has served as President and Chief Executive Officer of the Company since May 2014. Ms. Story served as Senior Vice President and Chief Financial Officer of the Company from April 2013 until May 2014. Prior to joining American Water, she served as President and Chief Executive Officer of Southern Company Services, a subsidiary of Southern Company, from January 2011 until March 2013 and President and Chief Executive Officer of Gulf Power Company, also a subsidiary of Southern Company, from 2003 until December 2010. Since 2008, Ms. Story has served as a member of the Board of Directors of Raymond James Financial, Inc., a diversified financial services company, and as lead director since 2016. Since January 2017, Ms. Story has also served on the Board of Directors of Dominion Energy, Inc., a producer and transporter of energy.
Brian Chin	45	Senior Vice President, Strategic Financial Planning. Mr. Chin joined the Company as its Senior Vice President, Planning and Strategy Integration in June 2017. He has had his current title since February 15, 2019, and he also served as Interim Treasurer from October 26, 2018 until February 15, 2019. Prior to joining the Company, from May 2013 to April 2017, Mr. Chin served as the lead utility analyst for the North America research function at Bank of America Merrill Lynch. From 2001 to 2013, Mr. Chin worked in Electric Utilities Research at Citigroup. Within that period, Mr. Chin was the global head of Electric Utilities Research for Citigroup.
Melanie M. Kennedy	45	Senior Vice President, Human Resources. Since March 1, 2017, Ms. Kennedy has served as the Company's Senior Vice President, Human Resources. From August 2014 until February 2017, Ms. Kennedy served as Vice President, Human Resources of the Company, and from August 2012 to August 2014, she served as Director, Human Resources in the Company's Northeast Division. Ms. Kennedy initially joined the Company in 2007, and before that time, she practiced law for nine years.
Walter J. Lynch	56	Executive Vice President and Chief Operating Officer. Mr. Lynch has over 20 years of experience in the water and wastewater industry. He has served as the Company's Executive Vice President and Chief Operating Officer since January 2016, as Chief Operating Officer of Regulated Operations from February 2010 to December 2015, and President of Regulated Operations from July 2008 to December 2015. Mr. Lynch joined the Company in 2001. Mr. Lynch is on the Board of Directors of the National Association of Water Companies and serves on its Executive Committee. In addition, Mr. Lynch also serves on the Water Research Foundation Board of Trustees.
James S. Merante	44	Vice President and Treasurer. Mr. Merante was appointed as the Company's Vice President and Treasurer on February 15, 2019. Prior to that, Mr. Merante was Vice President, Internal Audit, from February 2018 to February 15, 2019, and served as Divisional Chief Financial Officer for the Company's Mid-Atlantic Division from July 2014 to February 2018. Prior to joining American Water, Mr. Merante served as Vice President of Operations for FSM, Inc., a private digital media company, from February 2010 until July 2014. Mr. Merante is licensed as a Certified Public Accountant in Pennsylvania.
Michael A. Sgro	60	Executive Vice President, General Counsel and Secretary. Mr. Sgro has 25 years of experience in the water and wastewater industry. He has served as the Company's Executive Vice President, General Counsel and Secretary since January 1, 2016 and its Senior Vice President, General Counsel and Secretary from February 2015 to January 2016. Prior to that, he served as the Company's Interim General Counsel and Secretary from January 2015 until February 2015 and as Vice President, General Counsel and Secretary of American Water's Northeast Division beginning in 2002.
Linda G. Sullivan	55	Executive Vice President and Chief Financial Officer. Ms. Sullivan has served as the Company's Executive Vice President and Chief Financial Officer since January 1, 2016 and the Company's Senior Vice President and Chief Financial Officer from May 2014 to December 31, 2015. Prior to joining American Water, Ms. Sullivan served as the Senior Vice President and Chief Financial Officer of Southern California Edison Company, a subsidiary of Edison International, from July 2009 until May 2014, and Vice President and Controller of both Edison International and Southern California Edison Company, from July 2004 until July 2009. Ms. Sullivan is a Certified Public Accountant (inactive) and a Certified Management Accountant. On April 27, 2017, Ms. Sullivan was elected to the Board of Directors of NorthWestern Corporation, where she serves as the Chair of its Audit Committee and on its Human Resources Committee. In addition, Ms. Sullivan serves on the Board of Directors of University of Maryland University College Ventures and on its Audit & Finance Committee and is a member of the EPA's Finance Advisory Board.

Name	Age	Office and Experience
Radhakrishnan Swaminathan	57	Executive Vice President, Chief Customer, Strategy and Technology Officer. Mr. Swaminathan has served as our Executive Vice President, Chief Customer, Strategy and Technology Officer since November 1, 2018. Prior to that, he served as Senior Vice President, Chief Technology and Innovation Officer of the Company from November 1, 2017 to October 31, 2018. Mr. Swaminathan joined the Company in March 2016 as our Chief Technology and Innovation Officer. Prior to that, from October 2012 through February 2016, he served as Vice President and Chief Technology Officer, Energy, Natural Resources and Utilities, of WIPRO Technologies. Prior to that, he served as the Director of Smart Grid Technologies at NextEra Energy, Inc. from January 2009 through September 2012.
Lloyd “Aldie” Warnock	59	Senior Vice President of External Affairs and Business Development. Mr. Warnock has served as the Company’s Senior Vice President of External Affairs and Business Development since August 1, 2017. From April 2014 to July 31, 2017, Mr. Warnock served as the Company’s Senior Vice President of External Affairs, Communications and Public Policy. Prior to joining the Company, he served as Senior Vice President of External Affairs at Midwest Independent System Operator, Inc., a non-profit, self-governing organization, from March 2011 to April 2014. Prior to that, he served as Vice President of External Affairs for Allegheny Energy, Inc. from December 2005 to February 2011 and Senior Vice President of Governmental and Regulatory Affairs at Mirant Corporation from July 2004 to November 2005. Mr. Warnock serves on the Board of Directors of the National Association of Water Companies and on the Executive Advisory Board of the Mississippi State University College of Business.
Melissa K. Wikle	53	Vice President and Controller. Ms. Wikle joined the Company in July 2016 as its Vice President and Controller, and assumed the duties of the Company’s principal accounting officer in August 2016. Prior to joining the Company, Ms. Wikle served as Corporate Controller and Chief Accounting Officer of Columbus McKinnon Corporation, a publicly-traded worldwide designer, manufacturer and marketer of material handling products, systems and services, since April 2011. Ms. Wikle is a Certified Public Accountant.

Each executive officer is elected annually by the Board of Directors and serves until his or her respective successor has been elected and qualified or his or her earlier death, resignation or removal.

Available Information

We are subject to the reporting requirements of the Exchange Act. We file or furnish annual, quarterly and current reports, proxy statements and other information with the SEC. You may obtain a copy of our annual reports on Form 10-K, our quarterly reports on Form 10-Q or our current reports on Form 8-K, or any amendments to them, that are filed with or furnished to the SEC, free of charge, from the Investor Relations section of our website, <http://ir.amwater.com>, as soon as reasonably practicable after we file or furnish the information to the SEC. Information contained on our website shall not be deemed incorporated into, or to be a part of, this report, and any website references included herein are not intended to be made through active hyperlinks. We recognize our website as a key channel of distribution to reach public investors and as a means of disclosing material non-public information to comply with our disclosure obligations under SEC Regulation FD.

The American Water corporate governance guidelines and the charters for each of the standing committees of the Board of Directors, together with the American Water Code of Ethics and additional information regarding our corporate governance, are available on our Investor Relations website, <http://ir.amwater.com>, and will be made available, without charge, in print to any shareholder who requests such documents from our Investor Relations Department, American Water Works Company, Inc., 1 Water Street, Camden, NJ, 08102.

ITEM 1A. RISK FACTORS

We operate in a market and regulatory environment that involves significant risks, many of which are beyond our control. In addition to the other information included or incorporated by reference in this Form 10-K, the following factors should be considered in evaluating our business and future prospects. Any of the following risks, either alone or taken together, could materially and adversely affect our business, financial position, results of operations, cash flows and liquidity.

Risks Related to Our Industry and Business Operations

Our utility operations are subject to extensive economic regulation by state PUCs and other regulatory agencies, which significantly affects our business, financial condition, results of operations and cash flows. Our utility operations also may be subject to fines, penalties and other sanctions for the inability to meet these regulatory requirements.

Our Regulated Businesses provide water and wastewater services to our customers through subsidiaries that are subject to economic regulation by state PUCs. Economic regulation affects the rates we charge our customers and has a significant impact on our business and results of operations. Generally, the state PUCs authorize us to charge rates that they determine are sufficient to recover our prudently incurred operating expenses, including, but not limited to, operating and maintenance costs, depreciation, financing costs and taxes, and provide us the opportunity to earn an appropriate rate of return on invested capital.

Our ability to successfully implement our business plan and strategy depends on the rates authorized by the various state PUCs. We periodically file rate increase applications with state PUCs. The ensuing administrative process may be lengthy and costly. Our rate increase requests may or may not be approved, or may be partially approved, and any approval may not occur in a timely manner. Moreover, a PUC may not approve a rate request to an extent that is sufficient to:

- cover our expenses, including purchased water and costs of chemicals, fuel and other commodities used in our operations;
- enable us to recover our investment; and
- provide us with an opportunity to earn an appropriate rate of return on our investment.

Approval of the PUCs is also required in connection with other aspects of our utilities' operations. Some state PUCs are empowered to impose financial penalties, fines and other sanctions for non-compliance with applicable rules and regulations. Our utilities are also required to have numerous permits, approvals and certificates from the PUCs that regulate their businesses and authorize acquisitions. Although we believe that each utility subsidiary has obtained or sought renewal of the material permits, approvals and certificates necessary for its existing operations, we are unable to predict the impact that future regulatory activities may have on our business.

In any of these cases, our business, financial condition, results of operations, cash flows and liquidity may be adversely affected. Even if rates are sufficient, we face the risk that we will not achieve the rates of return on our invested capital to the extent permitted by state PUCs. This could occur if certain conditions exist, including, but not limited to, if water usage is less than the level anticipated in establishing rates, or if our investments or expenses prove to be higher than the level estimated in establishing rates.

Our operations and the quality of water we supply are subject to extensive and increasingly stringent environmental, water quality and health and safety laws and regulations, including with respect to emerging contaminants, compliance with which could impact our operating costs, and violations of which could subject us to substantial liabilities and costs, as well as damage to our reputation.

Our regulated water and wastewater operations and the operations of our Market-Based Businesses are subject to extensive federal, state and local laws and regulations and, in the case of our Canadian operations, Canadian laws and regulations that govern the protection of the environment, health and safety, the quality of the water we deliver to our customers, water allocation rights, and the manner in which we collect, treat, discharge and dispose of wastewater. These requirements include CERCLA, the Clean Water Act and the Safe Drinking Water Act, EPA requirements and similar federal, state and Canadian laws and regulations. For example, CERCLA authorizes the EPA to issue orders and bring enforcement actions to compel responsible parties to investigate and take remedial actions with respect to actual or threatened releases of hazardous substances, and can impose joint and several liability, without regard to fault, on responsible parties for the costs thereof. We are also required to obtain various environmental permits from regulatory agencies for our operations.

In addition, state PUCs and environmental regulators also set conditions and standards for the water and wastewater services we deliver. If we deliver water or wastewater services to our customers that do not comply with regulatory standards, or otherwise violate environmental laws, regulations or permits, or other health and safety and water quality regulations, we could incur substantial fines, penalties or other sanctions or costs, as well as damage to our reputation. In the most serious cases, regulators could reduce requested rate increases or force us to discontinue operations and sell our operating assets to another utility or to a municipality. Given the nature of our business which, in part, involves supplying water for human consumption, any potential non-compliance with, or violation of, environmental, water quality and health and safety laws or regulations would likely pose a more significant risk to us than to a company not similarly involved in the water and wastewater industry.

We incur substantial operating and capital costs on an ongoing basis to comply with environmental, water quality and health and safety laws and regulations. These laws and regulations, and their enforcement, generally have become more stringent over time, and new or stricter requirements could increase our costs. Although we may seek to recover ongoing compliance costs in our Regulated Businesses through customer rates, there can be no guarantee that the various state PUCs or similar regulatory bodies that govern our Regulated Businesses would approve rate increases that would enable us to recover such costs or that such costs will not materially and adversely affect our financial condition, results of operations, cash flows and liquidity.

We may also incur liabilities if, under environmental laws and regulations, we are required to investigate and clean up environmental contamination, including potential spills of hazardous chemicals, such as chlorine, which we use to treat water, or at off-site locations where we have disposed of waste or caused an adverse environmental impact. The discovery of previously unknown conditions, or the imposition of cleanup obligations in the future, could result in significant costs and could adversely affect our financial condition, results of operations, cash flows and liquidity. Such remediation costs may not be covered by insurance and may make it difficult for us to secure insurance at acceptable rates in the future.

Attention is being given to emerging contaminants, including, without limitation, chemicals and other substances that currently do not have any regulatory standard in drinking water or have been recently created or discovered (including by means of scientific achievements in the analysis and detection of trace amounts of substances). Examples of sources of emerging contaminants include, but are not limited to, newly created chemical compounds (including, for example, manufactured nanomaterials); human and veterinary products; perfluorinated and polyfluorinated compounds, including PFNA, PFOA and other PFAS; bacteria, microbes, viruses, amoebae and other pathogens; and residual by-products of disinfection. We rely upon governmental agencies to set appropriate regulatory standards to protect the public from these and other contaminants, and our role is to provide service that meets these standards, if any. In some of our states, PUCs may disapprove of cost recovery, in whole or in part, for implementation of treatment infrastructure for an emerging contaminant in the absence of a regulatory standard. Furthermore, given the rapid pace at which emerging contaminants are being created and/or discovered, we may not be able to detect and/or mitigate all such substances in our drinking water system or supplies, which could have a material adverse impact on our financial condition, results of operations and reputation. In addition, we believe emerging contaminants may form the basis for additional or increased federal or state regulatory initiatives and requirements in the future, which could significantly increase the cost of our operations.

Limitations on availability of water supplies or restrictions on our use of water supplies as a result of government regulation or action may adversely affect our access to sources of water, our ability to supply water to customers or the demand for our water services.

Our ability to meet the existing and future demand of our customers depends on the availability of an adequate supply of water. As a general rule, sources of public water supply, including rivers, lakes, streams and groundwater aquifers, are held in the public trust and are not owned by private interests. As a result, we typically do not own the water that we use in our operations, and the availability of our water supply is established through allocation rights (determined by legislation or court decisions) and passing-flow requirements set by governmental entities. Passing-flow requirements set minimum volumes of water that must pass through specified water sources, such as rivers and streams, in order to maintain environmental habitats and meet water allocation rights of downstream users. Allocation rights are imposed to ensure sustainability of major water sources and passing-flow requirements are most often imposed on source waters from smaller rivers, lakes and streams. These requirements, which can change from time to time, and vary by state or region, may adversely impact our water supply. Supply issues, such as drought, overuse of sources of water, the protection of threatened species or habitats, contamination or other factors may limit the availability of ground and surface water.

For example, in our Monterey County, California operations, we are seeking to augment our sources of water supply, principally to comply with an October 20, 2009 cease and desist order (the “2009 Order”), as amended by an order in July 2016 (the “2016 Order”), of the SWRCB that requires California-American Water Company, our wholly owned subsidiary (“Cal Am”), to significantly decrease its diversions from the Carmel River in accordance with a reduction schedule that terminates on December 31, 2021 (the “2021 Deadline”). We are also required to augment our Monterey County sources of water supply to comply with the requirements of the Endangered Species Act. We cannot predict whether Cal Am will be able to secure alternative sources of water, or if Cal Am will be exposed to liabilities if it is unable to meet the 2021 Deadline under the 2009 Order and the 2016 Order. If Cal Am or any of our other subsidiaries are unable to secure an alternative source of water, or if other adverse consequences result from the events described above, our business, financial condition, results of operations and cash flows could be adversely affected. See Item 3—Legal Proceedings —Alternative Water Supply in Lieu of Carmel River Diversions, which includes additional information regarding this matter.

The current regulatory rate setting process may result in a significant delay, also known as “regulatory lag,” from the time that we invest in infrastructure improvements, incur increased operating expenses or experience declining water usage, to the time at which we can seek to address these events in rate case applications; our inability to minimize regulatory lag could adversely affect our business.

There is typically a delay, known as “regulatory lag,” between the time one of our regulated subsidiaries makes a capital investment or incurs an operating expense increase and the time when those costs are reflected in rates. In addition, billings permitted by state PUCs typically are, to a considerable extent, based on the volume of water usage in addition to a minimum base rate. Thus, we may experience regulatory lag between the time our revenues are affected by declining usage and the time we are able to adjust the rate per gallon of usage to address declining usage. Our inability to reduce regulatory lag could have an adverse effect on our financial condition, results of operations, cash flows and liquidity.

We endeavor to reduce regulatory lag by pursuing constructive regulatory policies. For example, three of our states have approved revenue stability mechanisms that adjust rates periodically to ensure that a utility's revenue will be sufficient to cover its costs regardless of sales volume, including recognition of declining sales resulting from reduced consumption, while providing an incentive for customers to use water more efficiently. In addition, ten of our state PUCs permit rates to be adjusted outside of the general rate case application process through surcharges that address certain capital investments, such as replacement of aging infrastructure. These surcharges are adjusted periodically based on factors such as project completion or future budgeted expenditures, and specific surcharges are eliminated once the related capital investment is incorporated in new PUC approved rates. Furthermore, in setting rates, ten of our state PUCs allow us to use future test years, which extend beyond the date a rate request is filed to allow for current or projected revenues, expenses and investments to be reflected in rates on a more timely basis. Other examples of such programs include states that allow us to increase rates for certain cost increases that are beyond our control, such as purchased water costs, property or other taxes, or power, conservation, chemical or other expenditures. These surcharge mechanisms enable us to adjust rates in less time after costs have been incurred than would be the case under the general rate case application process.

While these programs have reduced regulatory lag in several of our regulated states, we continue to seek expansion of programs to reduce regulatory lag in those jurisdictions that have not approved such programs. Furthermore, PUCs may fail to adopt new surcharge programs and existing programs may not continue in their current form, or at all. Although we intend to continue our efforts to expand state PUC approval of surcharges to address issues of regulatory lag, our efforts may not be successful, or even if successful they may not completely address our regulatory lag, in which case our business, financial condition, results of operations, cash flows and liquidity may be materially and adversely affected.

Changes in laws and regulations and changes in certain agreements can significantly affect our business, financial condition, results of operations, cash flows and liquidity.

New legislation, regulations, government policies or court decisions, including, without limitation with respect to federal and state income and other tax laws, can materially affect our operations, results of operations and cash flows. The individuals who serve as regulators are elected or political appointees. Therefore, elections which result in a change of political administration or new appointments may also result in changes in the individuals who serve as regulators and the policies of the regulatory agencies that they serve. New laws or regulations, new interpretations of existing laws or regulations, changes in agency policy, including those made in response to shifts in public opinion, or conditions imposed during the regulatory hearing process could have the following consequences, among others:

- making it more difficult for us to increase our rates and, as a consequence, to recover our costs or earn our expected rates of return;
- changing the determination of the costs, or the amount of costs, that would be considered recoverable in rate cases;
- restricting our ability to terminate our services to customers who owe us money for services previously provided or limiting our bill collection efforts;
- requiring us to provide water or wastewater services at reduced rates to certain customers;
- limiting or restricting our ability to acquire water or wastewater systems, purchase or dispose of assets or issue securities, or making it less cost-effective for us to do so;
- negatively impacting the deductibility of expenses under federal or state tax laws, the amount of tax credits or tax abatement benefits that may be available, the amount of taxes owed, or the ability to utilize our net operating loss carryforwards;
- changing regulations that affect the benefits we expected to receive when we began offering services in a particular area;
- increasing the costs associated with complying with environmental, health, safety and water quality regulations to which our operations are subject;
- changing or placing additional limitations on change in control requirements relating to any concentration of ownership of our common stock;
- making it easier for governmental entities to convert our assets to public ownership via condemnation, eminent domain or other similar process, or for governmental agencies or private plaintiffs to assess liability against us for damages under these or similar processes;
- placing limitations, prohibitions or other requirements with respect to the sharing of information and participation in transactions by or between a regulated subsidiary and us or our other affiliates, including Service Company and any of our other subsidiaries;
- restricting or prohibiting our extraction of water from rivers, streams, reservoirs or aquifers; and
- revoking or altering the terms of the CPCN issued to us by state PUCs.

Any of the foregoing consequences could have an adverse effect on our business, financial condition, results of operations, cash flows and liquidity.

In addition, new Federal, state and local laws, changes in existing laws, rules or regulations, or administrative interpretations thereof, could impact us. On December 22, 2017, the TCJA was signed into law, which, among other things, enacted significant and complex changes to the Internal Revenue Code of 1986, as amended (the “Code”), including a reduction in the maximum U.S. federal corporate income tax rate from 35% to 21% as of January 1, 2018, and certain other provisions related specifically to the public utility industry, including continuation of interest expense deductibility, the exclusion from utilizing bonus depreciation and the normalization of deferred income taxes. The enactment of the TCJA required re-measurement of our deferred income taxes, which materially impacted our 2017 results of operations and financial position and had a lesser impact on our 2018 results of operations and financial position. During 2018, all of our 14 jurisdictions subject to economic regulation opened formal proceedings related to the TCJA, and proceedings presently remain open in three of them. Further, the regulatory treatment of the re-measured deferred income taxes remains open in a number of these jurisdictions. At this time, we cannot predict the impacts on us of the regulatory treatment of the TCJA in these open proceedings or matters, or of the enactment or adoption of any Related Interpretations, if and when issued. Moreover, we are unable to determine or predict the potential impacts, if any, of any other new or amended laws, rules or regulations, or interpretations thereof, to the extent they may be ultimately enacted, adopted or issued, on us or our businesses, financial condition, results of operations, cash flows and liquidity.

Service disruptions caused by severe weather conditions, climate variability patterns or natural disasters may disrupt our operations or reduce the demand for our water services, which could adversely affect our financial condition, results of operations, cash flows and liquidity.

Service interruptions due to severe weather, climate variability patterns and other natural events are possible across all our businesses. These include, among other things, storms, freezing conditions, high wind conditions, hurricanes, tornadoes, earthquakes, landslides, drought, wildfires, coastal and intercoastal floods or high water conditions, including those in or near designated flood plains, severe electrical storms and solar flares. Weather and other natural events such as these may affect the condition or operability of our facilities, limiting or preventing us from delivering water or wastewater services to our customers, or requiring us to make substantial capital expenditures to repair any damage. Tariffs in place or cost recovery proceedings with respect to our Regulated Businesses may not provide reimbursement to us, in whole or in part, for any of these impacts.

Government restrictions on water use may also result in decreased use of water services, even if our water supplies are sufficient to serve our customers, which may adversely affect our financial condition, results of operations and cash flows. Seasonal drought conditions that may impact our water services are possible across all of our service areas. Governmental restrictions imposed in response to a drought may apply to all systems within a region independent of the supply adequacy of any individual system. As examples, drought conditions had persisted in California over a five-year period, and had been declared in New Jersey in 2016. In 2017, these droughts were declared concluded, but other droughts that may occur from time to time may result in the imposition of voluntary or mandatory water use targets, rationing restrictions, water conservation regulations, and requirements to minimize water system leaks. While expenses incurred in implementing water conservation and rationing plans may generally be recoverable provided the relevant PUC determines they were reasonable and prudent, we cannot assure that any such expenses incurred will, in fact, be fully recovered. Moreover, reductions in water consumption, including those resulting from installation of equipment or changed consumer behavior, may persist even after drought restrictions are repealed and the drought has ended, which could adversely affect our business, financial condition, results of operations and cash flows.

Climate variability may cause increased volatility in weather and may impact water usage and related revenue or require additional expenditures, all of which may not be fully recoverable in rates or otherwise.

The issue of climate variability is receiving increasing attention nationally and worldwide. Some scientific experts are predicting a worsening of weather volatility in the future associated with climate variability. Many climate variability predictions, if true, present several potential challenges to water and wastewater utilities, such as:

- increased frequency and duration of droughts;
- increased precipitation and flooding;
- increased frequency and severity of storms and other weather events;
- challenges associated with changes in temperature or increases in ocean levels;
- potential degradation of water quality;
- decreases in available water supply and changes in water usage patterns;
- increases in disruptions in service;

- increased costs to repair damaged facilities; or
- increased costs to reduce risks associated with the increasing frequency of natural events, including to improve the resiliency and reliability of our water production and delivery facilities and systems.

Because of the uncertainty of weather volatility related to climate variability, we cannot predict its potential impact on our business, financial condition, results of operations, cash flows and liquidity. Although some or all potential expenditures and costs with respect to our Regulated Businesses could be recovered through rates, infrastructure replacement surcharges or other regulatory mechanisms, there can be no assurance that state PUCs would authorize rate increases to enable us to recover such expenditures and costs, in whole or in part.

A loss of one or more large industrial customers could have a material adverse impact upon the results of operations of one or more of our Regulated Businesses.

Adverse economic conditions or other factors can cause our customers, particularly industrial customers, to curtail operations. A curtailment of operations by an industrial customer would typically result in reduced water usage by that customer. In more severe circumstances, the decline in usage could be permanent. Any decrease in demand resulting from difficult economic conditions affecting these industrial customers could adversely affect our financial condition and results of operations. Tariffs in place with respect to our Regulated Businesses may not reimburse us, in whole or in part, for any of these impacts.

Our Regulated Businesses require significant capital expenditures and may suffer if we fail to secure appropriate funding to make investments, or if we experience delays in completing major capital expenditure projects.

The water and wastewater utility business is capital intensive. We invest significant amounts of capital to add, replace and maintain property, plant and equipment, and to improve aging infrastructure. In 2018, we invested \$1.5 billion in net Company-funded capital improvements. The level of capital expenditures necessary to maintain the integrity of our systems will continue into the future and may increase. We expect to fund capital improvement projects using cash generated from operations, borrowings under our revolving credit facility and commercial paper programs and issuances of long-term debt. We may not be able to access our revolving credit facility or the commercial paper, long-term debt and equity capital markets, when necessary or desirable to fund capital improvements on favorable terms or at all. If we are not able to obtain sufficient financing, we could be unable to maintain our existing property, plant and equipment, fund our capital investment strategies, meet our growth targets and expand our rate base to enable us to earn satisfactory future returns on our investments. Even with adequate financial resources to make required capital expenditures, we face the additional risk that we will not complete our major capital projects on time, as a result of construction delays, permitting delays, labor shortages or other disruptions, environmental restrictions, or other obstacles. Each of these outcomes could adversely affect our financial condition, results of operations and cash flows.

Seasonality could adversely affect the volume of water sold and our revenues.

The volume of water we sell during the warmer months, typically in the summer, is generally greater than during other months, due primarily to increased water usage for irrigation systems, swimming pools, cooling systems and other applications. Throughout the year, and particularly during typically warmer months, the volume of water sold tends to vary with temperature, rainfall levels and rainfall frequency. In the event that temperatures during the typically warmer months are cooler than normal, or if there is more rainfall than normal, the amount of water we sell may decrease and adversely affect our revenues.

Three of our jurisdictions, California, Illinois, and New York, have adopted revenue stability mechanisms that permit us to collect state PUC-authorized revenue for a given period, which is not tied to the volume of water sold during that period. Revenue stability mechanisms are designed to allow utilities to recover the fixed cost of operations while supporting water conservation goals. In those jurisdictions that have not adopted a revenue stability mechanism, operating results could continue to be affected by seasonality.

Regulatory and environmental risks associated with the collection, treatment and disposal of wastewater may impose significant costs.

The wastewater collection, treatment and disposal operations of our subsidiaries are subject to substantial regulation and involve environmental risks. If collection, treatment or disposal systems fail, overflow, or do not operate properly, untreated wastewater or other contaminants could spill onto nearby properties or into nearby streams and rivers, causing damage to persons or property, injury to aquatic life and economic damages. This risk is most acute during periods of substantial rainfall or flooding, which are the main causes of sewer overflow and system failure. Liabilities resulting from such damage could adversely and materially affect our business, financial condition, results of operations and cash flows.

Contamination of water supplies or our water service provided to our customers could result in service limitations and interruptions and exposure to substances not typically found in potable water supplies, and could subject us and our subsidiaries to reductions in usage and other responsive obligations, government enforcement actions, damage to our reputation and private litigation.

The water supplies that flow into our treatment plants or are delivered through our distribution system, or the water service that is provided to our customers, may be subject to contamination, including, among other items, contamination from naturally-occurring compounds, chemicals in groundwater systems, pollution resulting from man-made sources (such as perchlorate, methyl tertiary butyl ether, lead and other materials, chemical spills or other accidents that result in contaminants entering the water source), and possible terrorist attacks. In addition, new categories of these substances continue to emerge in the water industry. If one of our water supplies or the water service provided to our customers is contaminated, depending on the nature of the contamination, we may have to take responsive actions that could include, among other things (1) continuing limited use of the water supply under a “Do Not Use” protective order that enables continuation of basic sanitation and essential fire protection, or (2) interrupting the use of that water supply. If service is disrupted, our financial condition, results of operations, cash flows, liquidity and reputation may be adversely affected. In addition, we may incur significant costs in order to treat the contaminated source through the expansion of our current treatment facilities or the development of new sources of supply or new treatment methods. We may be unable to recover costs associated with treating or decontaminating water supplies through insurance, customer rates, tariffs or contract terms. Any recovery of these costs that we are able to obtain through regulatory proceedings or otherwise may not occur in a timely manner. Moreover, we could be subject to claims for damages arising from government enforcement actions or toxic tort or other lawsuits arising out of an interruption of service or human exposure to hazardous substances in our drinking water and water supplies.

Since we engage in the business of providing water service to our customers, contamination of the water supply, or the water service provided to our customers, could result in substantial injury or damage to our customers, employees or others and we could be exposed to substantial claims and litigation. Such claims could relate to, among other things, personal injury, loss of life, business interruption, property damage, pollution, and environmental damage and may be brought by our customers or third parties. Litigation and regulatory proceedings are subject to inherent uncertainties and unfavorable rulings can and do occur, and we may not be protected from these claims or negative impacts therefrom in whole or in part by tariffs or other contract terms. Negative impacts to our reputation may occur even if we are not liable for any contamination or other environmental damage or the consequences arising out of human exposure to contamination or hazardous substances in the water or water supplies. In addition, insurance coverage may not cover all or a portion of these losses, and are subject to deductibles and other limitations. Pending or future claims against us could have a material adverse impact on our business, financial condition, results of operations and cash flows.

We may sustain losses that exceed or are excluded from our insurance coverage or for which we are self-insured.

We maintain insurance coverage as part of our overall legal and risk management strategy to minimize potential liabilities arising from our utility operations, as well as the operations of our Market-Based Businesses . Our insurance programs have varying coverage limits, exclusions and maximums, and insurance companies may seek to deny claims we might make. Generally, our insurance policies cover property damage, worker’s compensation, employer’s liability, general liability, cybersecurity, terrorism risks and automobile liability. Each policy includes deductibles or self-insured retentions and policy limits for covered claims. As a result, we may sustain losses that exceed or that are excluded from our insurance coverage or for which we are self-insured.

Although in the past we have been generally able to obtain insurance coverage related to our business, there can be no assurance that we can secure all necessary or appropriate insurance in the future, or that such insurance can be economically secured. For example, catastrophic events can result in decreased coverage limits, more limited coverage, increased premium costs or deductibles.

We are subject to adverse publicity and reputational risks, which make us vulnerable to negative customer perception and could lead to increased regulatory oversight or sanctions.

Water and wastewater utilities, including our regulated subsidiaries and our Market-Based Businesses , have a large direct and indirect customer base and, as a result, are exposed to public criticism regarding, among other things, the reliability of their water, wastewater and related or ancillary services, the quality of water provided, and the amount, timeliness, accuracy and format of bills that are provided for such services. Adverse publicity and negative consumer sentiment may render legislatures and other governing bodies, state PUCs and other regulatory authorities, and government officials less likely to view us in a favorable light, and may cause us to be susceptible to less favorable legislative, regulatory and economic outcomes, as well as increased regulatory or other oversight and more stringent regulatory or economic requirements. Unfavorable regulatory and economic outcomes may include the enactment of more stringent laws and regulations governing our operations and less favorable economic terms in our agreements related to our Market-Based Businesses , as well as fines, penalties or other sanctions or requirements. The imposition of any of the foregoing could have a material negative impact on us and our financial condition, results of operations and cash flows.

New York American Water Company, Inc. (“NYAW”) has been the subject of a New York State Public Service Commission (“NYSPSC”) investigation related to the unintentional provision of incorrect data to a taxing authority that resulted in an over-assessment of real property taxes. NYAW self-reported this issue to the NYSPSC promptly after NYAW’s senior leadership became aware of it. Neither NYAW nor any of its employees received any financial benefit as a result of this matter, as all customer overpayments were provided to the local taxing authorities. The NYSPSC investigation also related to the failure of a few employees working on NYAW’s 2016 general rate case to properly disclose these issues in that rate case. On September 11, 2018, the Supreme Court of the State of New York, Albany County, approved a settlement of these matters, and NYAW is cooperating with the NYSDPS to implement its terms. As part of the settlement, NYAW agreed that it would provide up to \$4.5 million to benefit NYAW customers through several different mechanisms, which amounts would not be recoverable in rates. NYAW also agreed to accelerate the timing of the payment of approximately \$6.4 million in aggregate customer credits. Finally, NYAW agreed to engage and cooperate with an independent monitor through September 30, 2021. While the settlement resolves the NYSPSC’s investigation involving NYAW and those matters set forth above, there can be no assurance that NYAW will not be subject to additional federal, state or local proceedings regarding these and other related matters, and these proceedings could result in increased oversight and civil, administrative and/or criminal sanctions, which may have a material adverse effect upon our reputation and perception.

Unfavorable regulatory and economic outcomes also may include the enactment of more stringent laws and regulations governing our operations and less favorable economic terms in our agreements related to our Market-Based Businesses, as well as fines, penalties or other sanctions or requirements. The imposition of any of the foregoing could have a material negative impact on us and our financial condition, results of operations and cash flows.

The failure of, or the requirement to repair, upgrade or dismantle, any of our dams may adversely affect our financial condition, results of operations, cash flows and liquidity.

The properties of our Regulated Businesses segment include 80 dams, the majority of which are earthen dams, and the failure of any of which could result in personal injury and property damage, including without limitation downstream property damage, for which we may be liable. The failure of a dam would also adversely affect our ability to supply water in sufficient quantities to our customers and could adversely affect our financial condition and results of operations. Any losses or liabilities incurred due to a failure of one of our dams might not be covered by insurance policies or be recoverable in rates, and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

We also are required from time to time to decommission, repair or upgrade the dams that we own. The cost of such repairs or upgrades can be and has been material. The federal and state agencies that regulate our operations may adopt rules and regulations requiring us to dismantle our dams, which also could entail material costs. Although in most cases, the PUC has permitted recovery of expenses and capital investment related to dam rehabilitation, we might not be able to recover costs of repairs, upgrades or dismantling through rates in the future. The inability to recover these costs or delayed recovery of the costs as a result of regulatory lag can affect our financial condition, results of operations, cash flows and liquidity.

Any failure of our network of water and wastewater pipes and water reservoirs could result in losses and damages that may affect our financial condition and reputation.

Our operating subsidiaries distribute water and collect wastewater through an extensive network of pipes and storage systems located across the United States. A failure of major pipes or reservoirs could result in injuries, property and other damage for which we may be liable. The failure of major pipes and reservoirs may also result in the need to shut down some facilities or parts of our network in order to conduct repairs. Such failures and shutdowns may limit our ability to supply water in sufficient quantities to our customers and to meet the water and wastewater delivery requirements prescribed by government regulators, including state PUCs with jurisdiction over our operations, and adversely affect our financial condition, results of operations, cash flows, liquidity and reputation. Any business interruption or other losses might not be covered by insurance policies or be recoverable in rates, and such losses may make it difficult for us to secure insurance at acceptable rates in the future. Moreover, to the extent such business interruptions or other losses are not covered by insurance, they may not be recovered through rate adjustments.

An important part of our growth strategy is the acquisition of water and wastewater systems, which involves risks, including competition for acquisition opportunities from other regulated utilities, governmental entities and other buyers, that may hinder or limit our ability to grow our business.

An important element of our growth strategy is the acquisition of water and wastewater systems in order to broaden our current, and move into new, service areas. We may not be able to acquire other systems or businesses if we cannot identify suitable acquisition opportunities or reach mutually agreeable terms with acquisition candidates. Further, competition for acquisition opportunities from other regulated utilities, governmental entities, and other buyers may hinder our ability to expand our business.

The negotiation of potential acquisitions as well as the integration of acquired systems or businesses with our existing operations could require us to incur significant costs and cause diversion of our management's time and resources. Future acquisitions by us could result in, among other things:

- incurrence or assumption of debt, contingent liabilities and environmental liabilities of or with respect to an acquired business, including liabilities that were unknown at the time of acquisition;
- failure to recover acquisition premiums;
- unanticipated capital expenditures;
- failure to maintain effective internal control over financial reporting;
- recording goodwill and other intangible assets at values that ultimately may be subject to impairment charges;
- fluctuations in quarterly results;
- unanticipated acquisition-related expenses;
- failure to realize anticipated benefits, such as cost savings and revenue enhancements; and
- difficulties in assimilating personnel, benefits, services and systems.

Some or all of these items could have a material adverse effect on our business. The systems and businesses we acquire in the future may not achieve anticipated sales and profitability or other perceived synergies, and any difficulties we encounter in the integration process could interfere with our operations, reduce our operating margins and adversely affect our internal control over financial reporting.

We compete with governmental entities, other regulated utilities, and strategic and financial buyers for acquisition opportunities. If consolidation becomes more prevalent in the water and wastewater industries and competition for acquisitions increases, the prices for suitable acquisition candidates may increase and limit our ability to expand through acquisitions.

Our Regulated Businesses are subject to condemnation and other proceedings through eminent domain or other similar authorized process, which could materially and adversely affect their results of operations and financial condition.

Municipalities and other government subdivisions have historically been involved in the provision of water and wastewater services in the United States, and organized efforts may arise from time to time in one or more of the service areas in which our Regulated Businesses operate to convert our assets to public ownership and operation through exercise of the governmental power of eminent domain, or another similar authorized process. If a municipality or other government subdivision or a citizen group seeks to acquire our assets through eminent domain or such other process, either directly or indirectly as a result of a citizen petition, we may resist the acquisition.

For example, on November 27, 2018, Monterey, California ballot Measure J was certified as having been approved by a public vote, requiring the MPWMD to conduct a feasibility study and submit a written plan concerning the feasibility of a potential purchase of our California subsidiary's Monterey water service assets without an additional public vote. Also, five municipalities in the Chicago, Illinois area formed a water agency that filed an eminent domain lawsuit against our Illinois subsidiary in January 2013, seeking to condemn a water pipeline that serves those five municipalities. See Item 1—Business—Regulated Businesses—Condemnation and Eminent Domain, which includes additional information regarding these matters.

Furthermore, the law in certain jurisdictions in which our Regulated Businesses operate provides for eminent domain rights allowing private property owners to file a lawsuit to seek just compensation against a public utility, if the public utility's infrastructure has been determined to be a substantial cause of damage to that property. In these actions, the plaintiff would not have to prove that the public utility acted negligently. In California, most recently, lawsuits have been filed in connection with large-scale natural events such as wildfires. Some have included allegations that infrastructure of certain utilities triggered the natural event that resulted in damage to the property. In some cases, the PUC has disallowed recovery in rates of losses incurred by these utilities as a result of such lawsuits.

Contesting an exercise of condemnation, eminent domain or other similar process, or responding to a citizen petition, may result in costly legal proceedings and may divert the attention of management. Moreover, our efforts to resist the condemnation, eminent domain or other process may not be successful, which may require us to sell the operations at issue in a condemnation proceeding or to pay a private property owner compensation for the property damage suffered. If a municipality or other government subdivision succeeds in acquiring the assets of one or more of our Regulated Businesses through eminent domain or other process, there is a risk that we will not receive adequate compensation for the business, that we will not be able to keep the compensation, or that we will not be able to divest the business without incurring significant charges. Any of these outcomes may have a material adverse effect on our business, results of operations, financial condition, cash flows and liquidity.

We rely on technology systems to facilitate the management of our business and customer and supplier relationships, and a disruption of these systems could adversely affect our business.

Our technology systems are an integral part of our business, and any disruption of these systems could significantly limit our ability to manage and operate our business efficiently, which, in turn, could cause our business and competitive position to suffer and adversely affect our results of operations. For example, we depend on these systems to bill customers, process orders, provide customer service, manage certain plant operations and construction projects, manage our financial records, track assets, remotely monitor certain of our plants and facilities and manage human resources, supply chain, inventory and accounts receivable collections.

Although we do not believe that these systems are at a materially greater risk of failure than other similar organizations, our technology systems remain vulnerable to damage or interruption from:

- power loss, computer systems failures, and internet, telecommunications or data network failures;
- operator error or improper operation by, the negligent or improper supervision of, or the intentional acts of, employees and contractors;
- physical and electronic loss of customer or employee data due to security breaches, cyber attacks, hacking, denial of services action, misappropriation of data or other property and similar events;
- computer viruses; and
- severe weather and other events, including without limitation, hurricanes, tornadoes, fires, floods, earthquakes and other disasters.

These events may result in physical and electronic loss of customer, employee or financial data, security breaches, misappropriation of property and other adverse consequences. In addition, a lack of or inadequate levels of redundancy for certain of these systems, including billing systems, could exacerbate the impact of any of these events on us. We may not be successful in developing or acquiring technology that is competitive and responsive to the needs of our business, and we might lack sufficient resources to make the necessary upgrades or replacements of outdated existing technology to enable us to continue to operate at our current level of efficiency. Any or all of these events could have a material adverse impact on our business, results of operations, financial condition and cash flows.

We may be subject to physical and/or cyber attacks.

As operators of critical infrastructure, we may face a heightened risk of physical and/or cyber attacks from internal or external sources. Our water and wastewater systems may be vulnerable to disability or failures as a result of physical or cyber attacks, acts of war or terrorism, vandalism or other causes. Our operational technology and IT systems throughout our businesses may be vulnerable to unauthorized external or internal access, due to hacking, viruses, acts of war or terrorism, and other causes. Unauthorized access to confidential information located or stored on these systems could negatively and materially impact our customers, employees, suppliers and other third parties. Further, third parties, including vendors, suppliers and contractors, who perform certain services for us or administer and maintain our sensitive information, could also be targets of cyber attacks and unauthorized access. While we have instituted safeguards to protect our operational technology and IT systems, those safeguards may not always be effective due to the evolving nature of cyber attacks and cyber vulnerabilities. We cannot guarantee that such protections will be completely successful in the event of a cyber attack.

If, despite our security measures, a significant physical attack or cyber breach occurred, our operations could be disrupted, property damaged, and customer and other confidential information lost or stolen; experience substantial loss of revenues, response costs and other financial loss; suffer a loss of management time, attention and resources from our regular business operations; and be subject to increased regulation, litigation, and damage to our reputation, any of which could have a negative impact on our business, results of operations and cash flows. Experiencing a cyber security incident could also cause us to be non-compliant with applicable laws and regulations or contracts that require us to securely maintain confidential data, causing us to incur costs related to legal claims or proceedings and regulatory fines or penalties. These types of events, either impacting our facilities or the industry in general, could also cause us to incur additional security and insurance related costs.

In addition, in the ordinary course of business, we collect and retain sensitive information, including personally identifiable information, about our customers and employees. In many cases, we outsource administration of certain functions to vendors that could be targets of cyber attacks. Any theft, loss and/or fraudulent use of customer, employee or proprietary data as a result of a cyber attack could subject us to significant litigation, liability and costs, as well as adversely impact our reputation with customers and regulators, among others.

We have obtained cyber insurance to provide coverage for a portion of the losses and damages that may result from a security breach of our IT systems, but such insurance is subject to a number of exclusions and may not cover the total loss or damage caused by a breach. The market for cybersecurity insurance is relatively new and coverage available for cybersecurity events may evolve as the industry matures. In the future, adequate insurance may not be available at rates that we believe are reasonable, and the costs of responding to and recovering from a cyber incident may not be covered by insurance or recoverable in rates.

Our inability to efficiently upgrade and improve our operational technology and IT systems, or implement new systems, could result in higher than expected costs or otherwise adversely impact our internal controls environment, operations and profitability.

Upgrades and improvements to computer systems and networks, or the implementation of new systems, may require substantial amounts of management's time and financial resources to complete, and may also result in system or network defects or operational errors due to multiple factors, including employees' ability to effectively use the new or upgraded system. We continue to implement technology to improve our business processes and customer interactions, and have installed new, and upgraded existing, technology systems. These efforts support our broader strategic initiatives and are intended to improve our operations and enhance our customer service capabilities. Any technical or other difficulties in upgrading and improving existing or implementing new technology systems may increase costs beyond those anticipated and have an adverse or disruptive effect on our operations and reporting processes, including our internal control over financial reporting. We may also experience difficulties integrating current systems with new or upgraded systems, which may impact our ability to serve our customers effectively or efficiently. Although we make efforts to minimize any adverse impact on our controls, business and operations, we cannot assure that all such impacts have been or will be mitigated, and any such impacts could harm our business (individually or collectively) and have a material adverse effect on our results of operations, financial condition and cash flows.

Our business has inherently dangerous workplaces. If we fail to maintain safe work sites, we may experience workforce injuries or loss of life, and be exposed to financial losses, including penalties and other liabilities.

Our safety record is critical to our reputation. We maintain health and safety standards to protect our employees, customers, contractors, vendors and the public. Although we intend to adhere to such health and safety standards and aim for zero injuries, it is extremely difficult to avoid all accidents or other safety incidents at all times.

Our business sites, including construction and maintenance sites, often put our employees, contractors and others in close proximity with large pieces of equipment, moving vehicles, pressurized water, underground trenches and vaults, chemicals and other regulated materials. On many sites we are responsible for safety and, accordingly, must implement safety procedures. If we fail to implement such procedures or if the procedures we implement are ineffective or are not followed by our employees or others, our employees, contractors and others may be injured or die. Unsafe work sites also have the potential to increase employee turnover, expose us to litigation and raise our operating costs. Any of the foregoing could result in financial losses, which could have a material adverse impact on our business, financial condition, results of operations and cash flows.

In addition, our operations can involve the delivery, handling and storage of hazardous chemicals, which, if improperly delivered, handled, stored or disposed of, could result in serious injury, death or property damage, and could subject us to penalties or other liabilities. We are also subject to regulations dealing with occupational health and safety. Although we maintain functional employee groups whose primary purpose is to ensure we implement effective health, safety, and environmental work procedures throughout our organization, including construction sites and maintenance sites, the failure to comply with such regulations or procedures could subject us to liability.

Work stoppages and other labor relations matters could adversely affect our results of operations.

As of December 31, 2018, approximately 49% of our workforce was represented by unions, and we had 70 collective bargaining agreements in place with 15 different unions representing our unionized employees. These collective bargaining agreements, including 20 which expired in 2018, and 18 which will expire during 2019, are subject to periodic renewal and renegotiation. We may not be able to successfully renew or renegotiate these labor contracts on terms that are fair to us. Any negotiations or dispute resolution processes undertaken in connection with our labor contracts could be delayed or affected by labor actions or work stoppages. Labor actions, work stoppages or the threat of work stoppages, and our failure to obtain favorable labor contract terms during renegotiations, may disrupt our operations and result in higher labor costs, which could adversely affect our financial condition, results of operations, cash flows and liquidity. While we have developed contingency plans to be implemented as necessary if a work stoppage or strike does occur, a strike or work stoppage may have a material adverse impact on our financial position, results of operations and cash flows.

Our continued success is dependent upon our ability to hire, retain, and utilize qualified personnel.

The success of our business is dependent upon our ability to hire, retain, and utilize qualified personnel, including engineers, licensed operators, water quality and other operating and craft personnel, and management professionals who have the required experience and expertise. From time to time, it may be difficult to attract and retain qualified individuals with the expertise and in the timeframe demanded for our business needs. In certain geographic areas, for example, we may not be able to satisfy the demand for our services because of our inability to successfully hire and retain qualified personnel.

In addition, as some of our key personnel approach retirement age, we need to have appropriate succession plans in place and to successfully implement such plans. If we cannot attract and retain qualified personnel or effectively implement appropriate succession plans, it could have a material adverse impact on our business, financial condition, results of operations and cash flows.

Financial and Market-Related Risks

Our indebtedness could affect our business adversely and limit our ability to plan for or respond to changes in our business, and we may be unable to generate sufficient cash flows to satisfy our liquidity needs.

As of December 31, 2018, our aggregate long-term and short-term debt balance (including preferred stock with mandatory redemption requirements) was \$8.6 billion, and our working capital (defined as current assets less current liabilities) was in a deficit position. Our indebtedness could have important consequences, including:

- limiting our ability to obtain additional financing to fund future working capital requirements or capital expenditures;
- exposing us to interest rate risk with respect to the portion of our indebtedness that bears interest at variable rates;
- limiting our ability to pay dividends on our common stock or make payments in connection with our other obligations;
- impairing our access to the capital markets for debt and equity;
- requiring that an increasing portion of our cash flows from operations be dedicated to the payment of the principal and interest on our debt, thereby reducing funds available for future operations, dividends on our common stock or capital expenditures;
- limiting our ability to take advantage of significant business opportunities, such as acquisition opportunities, and to react to changes in market or industry conditions; and
- placing us at a competitive disadvantage compared to those of our competitors that have less debt.

In order to meet our capital expenditure needs, we may be required to make additional borrowings under our revolving credit facility or issue new short-term and long-term debt securities. Moreover, additional borrowings may be required to refinance outstanding indebtedness. Debt maturities and sinking fund payments in 2019, 2020 and 2021 will be \$72 million, \$32 million and \$303 million, respectively. We can provide no assurance that we will be able to access the debt capital markets on favorable terms, if at all. Moreover, if new debt is added to our current debt levels, the related risks we now face could intensify, limiting our ability to refinance existing debt on favorable terms.

In an attempt to manage our exposure to interest rate risk associated with our issuance of variable and fixed rate debt, we have entered into, and in the future may enter into, financial derivative instruments, including without limitation, interest rate swaps, forward starting swaps, swaptions and U.S. Treasury lock agreements. See Item 7A—Quantitative and Qualitative Disclosures About Market Risk. However, these efforts may not be effective to fully mitigate interest rate risk, and may expose us to other risks and uncertainties, including quarterly “mark to market” valuation risk associated with these instruments, that could negatively and materially affect our financial condition, results of operations and cash flows.

We will depend primarily on cash flows from operations to fund our expenses and to pay the principal and interest on our outstanding debt. Therefore, our ability to pay our expenses and satisfy our debt service obligations depends on our future performance, which will be affected by financial, business, economic, competitive, legislative (including tax initiatives and reforms, and other similar legislation or regulation), regulatory and other factors largely beyond our control. If we do not have sufficient cash flows to pay the principal and interest on our outstanding debt, we may be required to refinance all or part of our existing debt, reduce capital investments, sell assets, borrow additional funds or sell additional equity. In addition, if our business does not generate sufficient cash flows from operations, or if we are unable to incur indebtedness sufficient to enable us to fund our liquidity needs, we may be unable to plan for or respond to changes in our business, which could cause our financial condition, operating results and prospects to be affected adversely.

Our inability to access the capital or financial markets or other events could affect our ability to meet our liquidity needs at reasonable cost and our ability to meet long-term commitments, which could adversely affect our financial condition and results of operations.

In addition to cash from operations, we rely primarily on our revolving credit facility, commercial paper programs, and the capital markets to satisfy our liquidity needs. In this regard, our principal external sources of short-term liquidity are our \$2.10 billion commercial paper program and our \$2.25 billion revolving credit facility. Our revolving credit facility expires in accordance with its terms in March 2023. We regularly use our commercial paper program under this revolving credit facility as a principal source of short-term borrowing due to the generally more attractive rates we generally can obtain in the commercial paper market. As of December 31, 2018, American Water Capital Corp. (“AWCC”), our wholly owned financing subsidiary, had no outstanding borrowings under the revolving credit facility, and had \$954 million of commercial paper outstanding and \$81 million in outstanding letters of credit. There can be no assurance that AWCC will be able to continue to access its commercial paper program or its revolving credit facility, when, as and if desired, or that the amount of capital available thereunder will be sufficient to meet all of our liquidity needs at a reasonable, or any, cost.

Under the terms of our revolving credit facility, our consolidated debt cannot exceed 70% of our consolidated capitalization, as determined under the terms of the credit facility. If our equity were to decline or debt were to increase to a level that caused our debt to exceed this limit, lenders under the credit facility would be entitled to refuse any further extension of credit and to declare all of the outstanding debt under the credit facility immediately due and payable. To avoid such a default, a waiver or renegotiation of this covenant would be required, which would likely increase funding costs and could result in additional covenants that would restrict our operational and financing flexibility.

Our ability to comply with this and other covenants contained in the revolving credit facility and our other consolidated indebtedness is subject to various risks and uncertainties, including events beyond our control. For example, events that could cause a reduction in equity include, without limitation, a significant write-down of our goodwill. Even if we are able to comply with this or other covenants, the limitations on our operational and financial flexibility could harm our business by, among other things, limiting our ability to incur indebtedness or reduce equity in connection with financings or other corporate opportunities that we may believe would be in our best interests or the interests of our shareholders to complete.

Disruptions in the capital markets or changes in our credit ratings could also limit our ability to access capital on terms favorable to us or at all. On January 2018, Moody’s Investors Service changed its rating outlook from stable to negative for 24 regulated utilities and utility holding companies, including us. While the lending banks that participate in our revolving credit facility have met all of their obligations, disruptions in the credit markets, changes in our credit ratings, or deterioration of the banking industry’s financial condition could discourage or prevent lenders from meeting their existing lending commitments, extending the terms of such commitments, or agreeing to new commitments. These or other occurrences may cause our lenders to not meet their existing commitments, and we may not be able to access the commercial paper or loan or debt markets in the future on terms acceptable to us or at all. Furthermore, our inability to maintain, renew or replace commitments under this facility could materially increase our cost of capital and adversely affect our financial condition, results of operations and liquidity. Longer-term disruptions in the capital and credit markets as a result of uncertainty, including as a result of changes in U.S. tax and other laws, reduced financing alternatives, or failures of significant financial institutions could adversely affect our access to the liquidity needed for our business. Any significant disruption in the capital, debt or credit markets, or financial institution failures could require us to take measures to conserve cash until the market stabilizes or until alternative financing can be arranged. Such measures could include deferring capital expenditures, reducing or suspending dividend payments, and reducing other discretionary expenditures.

Any of the foregoing events that impede our access to the capital markets, or the failure of any of our lenders to meet their commitments that result from financial market disruptions, could expose us to increased interest expense, require us to institute cash conservation measures or otherwise adversely and materially affect our business, financial condition, results of operations, cash flows and liquidity.

American Water may be unable to meet its ongoing and future financial obligations and to pay dividends on its common stock if its subsidiaries are unable to pay upstream dividends or repay funds to American Water.

American Water is a holding company and, as such, American Water has no substantive operations of its own. Substantially all of our consolidated assets are held by subsidiaries. American Water’s ability to meet its financial obligations and to pay dividends on its common stock is primarily dependent on the net income and cash flows of its subsidiaries and their ability to pay upstream dividends to American Water or repay indebtedness to American Water. Prior to paying dividends to American Water, American Water’s regulated subsidiaries must comply with applicable regulatory restrictions and financial obligations, including, for example, debt service and preferred and preference stock dividends, as well as applicable corporate, tax and other laws and regulations and agreements, and covenants and other agreements made or entered into by American Water and its subsidiaries. American Water’s subsidiaries are separate legal entities and have no obligation to pay dividends to American Water. A failure or inability of any of these subsidiaries to pay such dividends or repay intercompany obligations could have a material adverse impact on American Water’s liquidity and its ability to pay dividends on its common stock and meet its other obligations.

We may not be able to fully utilize our U.S. and state net operating loss carryforwards.

As of December 31, 2018, we had U.S. federal and state NOL carryforwards of approximately \$707 million and \$547 million, respectively, and management believes it is more likely than not that these NOL carryforwards will be recovered in the future. With the enactment of the TCJA, the Company analyzed the impacts of the reduction in the U.S. federal corporate income tax rate from 35% to 21% on the Company's deferred tax assets and liabilities, including its NOL carryforwards, and as a result, remeasured those NOL carryforwards as of the date of enactment of the TCJA based on this tax rate change.

Our federal NOL carryforwards will begin to expire in 2028, and our state NOL carryforwards began to expire in 2019 and will continue to expire through 2037. We expect to fully utilize our federal NOL balance before it expires, and our ability to do so is primarily dependent upon our ability to generate sufficient taxable income. We have, in the past, been unable to utilize certain of our state NOL carryforwards, and the establishment or increase of a valuation allowance in the future would reduce our deferred income tax assets and our net income.

Our actual results may differ from those estimated by management in making its assessment as to our ability to use the NOL carryforwards. Moreover, adoption of Related Interpretations with respect to the TCJA and other changes in income tax laws, the economy and the general business environment could affect the future utilization of our NOL carryforwards. If we are unable to fully utilize our NOL carryforwards to offset taxable income generated in the future, our financial position, results of operations and cash flows could be materially adversely affected.

We have recorded a significant amount of goodwill, and we may never realize the full value of our intangible assets, causing us to record impairments that may negatively affect our results of operations.

Our total assets include \$1.6 billion of goodwill at December 31, 2018. The goodwill is primarily associated with the acquisition of American Water by an affiliate of our previous owner in 2003, the acquisition of E'town Corporation by a predecessor to our previous owner in 2001, the acquisition of Pivotal in 2018 and, to a lesser extent, the acquisition of Keystone in 2015. Goodwill represents the excess of the purchase price the purchaser paid over the fair value of the net tangible and other intangible assets acquired. Goodwill is recorded at fair value on the date of an acquisition and is reviewed annually or more frequently if changes in circumstances indicate the carrying value may not be recoverable. As required by the applicable accounting rules, we have taken significant non-cash charges to operating results for goodwill impairments in the past.

We may be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to our performance or the performance of an acquired business. These market conditions could include a decline over a period of time of our stock price, a decline over a period of time in valuation multiples of comparable water utilities, market price performance of our common stock that compares unfavorably to our peer companies, decreases in control premiums, or, with respect to Keystone, fluctuations in the level of exploration and production activities in the Marcellus and Utica shale regions served by Keystone, a prolonged depression of natural gas prices or other factors that negatively impact our current or future forecasts of operating results, cash flows or key assumptions. In this regard, in the third quarter of 2018, we strategically narrowed the scope of the Keystone business solely to water transfer services due to operational and financial challenges in the other businesses of Keystone. As a result of this strategic change, we recorded a non-cash, pre-tax impairment charge of \$57 million in the third quarter of 2018 related to Keystone. See Note 8—Goodwill and Other Intangible Assets in the Notes to Consolidated Financial Statements for further information.

A decline in the results forecasted in our business plan due to events such as changes in rate case results, capital investment budgets or interest rates, could also result in an impairment charge. Recognition of impairments of goodwill would result in a charge to income in the period in which the impairment occurred, which may negatively affect our financial condition, results of operations and total capitalization. The effects of any such impairment could be material and could make it more difficult to maintain our credit ratings, secure financing on attractive terms, maintain compliance with debt covenants and meet the expectations of our regulators.

Market conditions may impact the value of benefit plan assets and liabilities, as well as assumptions related to the benefit plans, which may require us to provide significant additional funding.

The performance of the capital markets affects the values of the assets that are held in trust to satisfy significant future obligations under our pension and postretirement benefit plans. The value of these assets is subject to market fluctuations, which may cause investment returns to fall below our projected return rates. A decline in the market value of the pension and postretirement benefit plan assets can increase the funding requirements under our pension and postretirement benefit plans. Additionally, our pension and postretirement benefit plan liabilities are sensitive to changes in interest rates. If interest rates decrease, our liabilities would increase, potentially increasing benefit expense and funding requirements. Further, changes in demographics, such as increases in life expectancy assumptions and increasing trends in health care costs may also increase our funding requirements. Future increases in pension and other postretirement costs as a result of reduced plan assets may not be fully recoverable in rates, in which case our results of operations and financial position could be negatively affected.

In addition, market factors can affect assumptions we use in determining funding requirements with respect to our pension and postretirement plans. For example, a relatively modest change in our assumptions regarding discount rates can materially affect our calculation of funding requirements. To the extent that market data compels us to reduce the discount rate used in our assumptions, our benefit obligations could be materially increased, which could adversely affect our financial position, results of operations and cash flows.

New accounting standards or changes to existing accounting standards could materially impact how we report our results of operations, cash flow and financial condition.

Our Consolidated Financial Statements are prepared in accordance with GAAP. The SEC, the Financial Accounting Standards Board or other authoritative bodies or governmental entities may issue new pronouncements or new interpretations of existing accounting standards that may require us to change our accounting policies. These changes are beyond our control, can be difficult to predict and could materially impact how we report our results of operations, cash flow and financial condition. We could be required to apply a new or revised standard retroactively, which could adversely affect our results of operations, cash flow and financial condition.

Undetected errors in internal controls and information reporting could result in the disallowance of cost recovery and noncompliant disclosure.

Our internal controls, accounting policies and practices and internal information systems are designed to enable us to capture and process transactions and information in a timely and accurate manner in compliance with GAAP, taxation requirements, federal securities laws and regulations and other laws and regulations applicable to us. Such compliance permits us to, among other things, disclose and report financial and other information in connection with the recovery of our costs and with the reporting requirements under federal securities, tax and other laws and regulations.

We have implemented corporate governance, internal control and accounting policies and procedures in connection with the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”) and relevant SEC rules, as well as other applicable regulations. Such internal controls and policies have been and continue to be closely monitored by our management and Board of Directors to ensure continued compliance with these laws, rules and regulations. Management is also responsible for establishing and maintaining internal control over financial reporting and is required to assess annually the effectiveness of these controls. While we believe these controls, policies, practices and systems are adequate to verify data integrity, unanticipated and unauthorized actions of employees or temporary lapses in internal controls due to shortfalls in oversight or resource constraints could lead to undetected errors that could result in the disallowance of cost recovery and noncompliant disclosure and reporting. The consequences of these events could have a negative impact on our results of operations and financial condition. The inability of management to certify as to the effectiveness of these controls due to the identification of one or more material weaknesses in these controls could also increase financing costs or could also adversely affect our or AWCC’s ability to access the capital markets.

Additional Risks Related to Our Market-Based Businesses

We (excluding our regulated subsidiaries) provide performance guarantees with respect to certain obligations of our Market-Based Businesses, including financial guarantees or deposits, to our public-sector and public clients, and these clients may seek to enforce the guarantees if our Market-Based Businesses do not satisfy these obligations.

Under the terms of some of our agreements for the provision of services to water and wastewater facilities with municipalities, other governmental entities and other customers, American Water (excluding our regulated subsidiaries) provides guarantees of specified performance obligations of our Market-Based Businesses, including financial guarantees or deposits, primarily related to Military Service Group. In the event our Market-Based Businesses fail to perform these obligations, the entity holding the guarantees may seek to enforce the performance commitments against us or proceed against the deposit. In that event, our financial condition, results of operations, cash flows, and liquidity could be adversely affected.

At December 31, 2018, we had remaining performance commitments as measured by remaining contract revenue totaling approximately \$4.3 billion related to our Military Services Group contracts, and this amount is likely to increase if our Market-Based Businesses expand. The presence of these commitments may adversely affect our financial condition and make it more difficult for us to secure financing on attractive terms.

Our Market-Based Businesses' operations under our Military Services Group are subject to various risks associated with doing business with the U.S. government.

We enter into contracts with the U.S. government for the operation and maintenance of water and wastewater systems, which contracts may be terminated, in whole or in part, prior to the end of the 50-year term for convenience of the U.S. government or as a result of default or non-performance by the subsidiary performing the contract. In addition, the contract price for each of these military contracts is typically subject to redetermination two years after commencement of operations and every three years thereafter. Price redetermination is a contract mechanism to periodically adjust the service fee in the next period to reflect changes in contract obligations and anticipated market conditions. Any early contract termination or unfavorable price redetermination could adversely affect our financial condition, results of operations and cash flows.

Moreover, entering into contracts with the U.S. government subjects us to a number of operational and compliance risks, including dependence on the level of government spending and compliance with and changes in governmental procurement and security regulations. We are subject to potential government investigations of our business practices and compliance with government procurement and security regulations, which are complex, and compliance with these regulations can be expensive and burdensome. If we were charged with wrongdoing as a result of an investigation, we could be suspended or barred from bidding on or receiving awards of new contracts with the U.S. government or our existing contracts could be terminated, which could have a material adverse effect on our results of operations and cash flows.

Our Market-Based Businesses under the Contract Services Group operate a limited number of water and wastewater systems under long-term O&M contracts and face the risk that the owners of those systems may fail to provide capital to properly maintain those systems, which may negatively affect the Contract Services Group as the operator of the systems, and we may incur costs in excess of payments received.

The Contract Services Group operates a limited number of water and wastewater systems under O&M contracts. Pursuant to these contracts, the Contract Services Group operates the system according to the standards set forth in the applicable contract, and it is generally the responsibility of the owner of the system to undertake capital improvements. In some cases, the Contract Services Group may not be able to convince the owner to make needed improvements in order to maintain compliance with applicable regulations. Although violations and fines incurred by water and wastewater systems may be the responsibility of the owner of the system under these contracts, those non-compliance events may reflect poorly on the Contract Services Group as the operator of the system and us, and damage our reputation, and in some cases, may result in liability to us to the same extent as if we were the owner.

In addition, the Contract Services Group has entered into long-term contracts under which they agree to operate and maintain a municipality's or other party's water or wastewater treatment and delivery facilities, which includes specified major maintenance for some of those facilities, in exchange for an annual fee. The Contract Services Group is generally subject to the risk that costs associated with operating and maintaining the facilities, including production costs such as purchased water, electricity, fuel and chemicals used in water treatment, may exceed the fees received from the municipality or other contracting party. Losses under these contracts or guarantees may adversely affect our financial condition, results of operations, cash flows and liquidity.

Keystone's operations may expose us to substantial costs and liabilities with respect to environmental laws and matters.

Keystone's operations, and the operation generally of natural gas and oil exploration and production facilities by Keystone's customers, are subject to stringent federal, state and local laws, rules, regulations and ordinances governing the release of materials into the environment or otherwise relating to environmental protection. These provisions may require the acquisition by Keystone of permits or licenses before providing its services to customers, prohibit the release of substances defined thereunder as hazardous in connection with these activities, and impose substantial liabilities for the violation thereof that may result from these operations. Failure to comply with these laws, rules, regulations and ordinances may result in substantial environmental remediation and other costs to Keystone, the assessment of administrative, civil and criminal penalties or the issuance of injunctions restricting or prohibiting certain activities. Under existing environmental laws and regulations, Keystone could be held strictly liable for the removal or remediation of previously released materials or property contamination regardless of whether the release resulted from its operations, or whether its operations were in compliance with all applicable laws at the time they were performed. While we have structured and maintained our ownership and control of Keystone's operations in such a way that we believe should insulate the Company, its regulated subsidiaries and its other Market-Based Businesses from any liabilities associated with Keystone's operations, including liabilities for environmental matters, there can be no assurance that such efforts will be sufficient to prevent the Company from incurring liability for the operations of Keystone.

Changes in environmental laws and regulations occur frequently, and any changes to these or other laws governing the natural gas and oil exploration industry that result in more stringent or costly water or wastewater handling, storage, transport, disposal or cleanup requirements could require Keystone to make significant expenditures to maintain compliance with such requirements, may harm Keystone's business and results of operations by reducing the demand for Keystone's water and related services, and may otherwise have a material adverse effect on Keystone's competitive position, financial condition, results of operations and cash flows.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our properties consist primarily of (i) water and wastewater treatment plants, (ii) mains and pipes used for transmission, distribution and collection of water and wastewater, (iii) wells and other sources of water supply, such as reservoirs, (iv) water and wastewater pumping stations, (v) meters and fire hydrants, (vi) general structures, including buildings, dams and treated water storage facilities, (vii) land and easements, (viii) vehicles, (ix) software rights, and (x) other equipment and facilities, the majority of which are used directly in the operation of our systems. Substantially all of our properties are owned by our subsidiaries, with a large percentage subject to liens of our mortgage bonds. We own our corporate headquarters, located in Camden, New Jersey, and we lease office space, equipment and furniture from certain of our wholly owned subsidiaries. These properties are utilized by our directors, officers and staff in the conduct of the business.

The properties of our Regulated Businesses consist mainly of approximately:

- 81 surface water treatment plants;
- 530 groundwater treatment plants;
- 10 combined (surface water and groundwater) treatment plants;
- 130 wastewater treatment plants;
- 51,000 miles of transmission, distribution and collection mains and pipes;
- 1,000 groundwater wells;
- 1,400 water and wastewater pumping stations;
- 1,300 treated water storage facilities; and
- 80 dams.

We have ongoing infrastructure renewal programs in all states in which our Regulated Businesses operate. These programs consist of both the rehabilitation of existing mains and equipment, and the replacement of mains and equipment that have been damaged or have reached, or are near, the end of their useful service lives. The properties of our Market-Based Businesses consist mainly of office furniture and IT equipment, and are primarily located in New Jersey. Approximately 52% of all properties that we own are located in New Jersey and Pennsylvania.

We maintain property insurance against loss or damage to our properties by fire or other perils, subject to certain exceptions. For insured losses, we are self-insured to the extent that any losses are within the policy deductible or exceed the amount of insurance maintained.

We believe that our properties are generally maintained in good operating condition and in accordance with current standards of good water and wastewater industry practice.

ITEM 3. LEGAL PROCEEDINGS

Alternative Water Supply in Lieu of Carmel River Diversions

Compliance with SWRCB Orders to Reduce Carmel River Diversions

Under the 2009 Order, Cal Am is required, among other things, to decrease significantly its yearly diversions of water from the Carmel River according to a set reduction schedule. The 2009 Order responded to claims that Cal Am had not sufficiently implemented actions to terminate its unpermitted diversions of water from the Carmel River as required by a 1995 order of the SWRCB. In July 2016, at the request of Cal Am and several Monterey County government agencies, the SWRCB issued the 2016 Order approving a five-year extension of the deadline to comply with the 2009 Order, to December 31, 2021.

The 2009 Order includes a condition prohibiting Cal Am from diverting water from the Carmel River for new service connections or for any increased use of water at existing service addresses resulting from a change in zoning or use. In 2011, the California Public Utilities Commission (the “CPUC”) issued a decision directing modifications in Cal Am’s tariffs to recognize the moratorium mandated by the 2009 Order, and directing Cal Am to seek written guidance from the SWRCB with respect to any unresolved issues of interpretation or implementation of this condition. In 2012, the Deputy Director of the SWRCB sent a letter to Cal Am providing an interpretation as to the calculation of a baseline to determine increases in use of water at existing service addresses. On March 19, 2018, the MPWMD adopted a resolution directing Cal Am to interpret the baseline in a manner that conflicts with the SWRCB’s written interpretation. On May 4, 2018, Cal Am notified the MPWMD and the SWRCB that it intends to seek declaratory relief concerning the conflicting regulatory interpretations under the 2009 Order. In an attempt to resolve these conflicting interpretations prior to seeking judicial intervention, Cal Am met with the MPWMD and the SWRCB several times. The SWRCB has circulated revisions to its 2012 interpretive letter, which are being reviewed and discussed by the parties. Any failure to follow the MPWMD’s resolution or the SWRCB’s written interpretation, despite these conflicting interpretations, could potentially result in fines, penalties and other actions against Cal Am.

The 2016 Order provides that if the CPUC authorizes Cal Am to acquire more than 1,000 acre-feet per year of water from a source other than the Water Supply Project, proponents of the alternative water source could submit revised milestones to the SWRCB for consideration. On May 8, 2018, certain parties to the Water Supply Project proceeding submitted a petition to the SWRCB to add parallel milestones to the 2009 Order for 2019, 2020, and 2021, based on the proposed expansion of the Pure Water Monterey project, another groundwater replenishment project under construction on the Monterey peninsula. Petitioners claim that compliance with the alternate milestones would still provide for cessation of Cal Am’s unauthorized diversions from the Carmel River by 2021. A preliminary report on feasibility concluded that the expanded Pure Water Monterey project could provide an additional 2,250 acre-feet of water per year. Cal Am believes that (i) the petition is premature, (ii) the expanded Pure Water Monterey project is not yet a sufficiently certain or reliable water supply and, even if construction is successfully completed, would provide an insufficient quantity of water to allow full compliance with the 2009 Order, and (iii) the imposition of parallel milestones would distract from completion of the Water Supply Project. This petition remains pending.

Regional Desalination Project Litigation

Review of CPUC-Approved Settlement Agreement

The Regional Desalination Project (the “RDP”) involved the construction of a desalination facility in the City of Marina, north of Monterey. The RDP was intended to, among other things, eliminate unauthorized diversions from the Carmel River as required under the 2009 Order. In December 2010, the CPUC approved the RDP, which was to be implemented through a Water Purchase Agreement and ancillary agreements (collectively, the “Agreements”) among the Marina Coast Water District (“MCWD”), the Monterey County Water Resources Agency (“MCWRA”) and Cal Am. In 2011, due to a conflict of interest concerning a former member of MCWRA’s Board of Directors, MCWRA stated that the Agreements were void, and, as a result, Cal Am terminated the Agreements. In April 2015, the CPUC approved a settlement agreement among Cal Am, MCWRA and the County of Monterey to resolve these matters among the parties signing the agreement. In March 2016, the Supreme Court of California granted MCWD’s petition for review of the CPUC approval, and following the court’s disposition of a related issue in another case, MCWD’s petition for review of the CPUC-approved settlement agreement was remanded to the CPUC, and remains pending.

Cal Am’s Action for Damages Following RDP Termination

In October 2012, Cal Am filed a Complaint for Declaratory Relief against MCWRA and MCWD, which was ultimately transferred to the San Francisco County Superior Court, seeking a determination as to whether the Agreements are void as a result of the alleged conflict of interest. In June 2015, the court entered a final judgment agreeing with Cal Am’s position that four of the five Agreements are void, and one, the credit line agreement, is not void. In November 2016, the Supreme Court of California denied MCWD’s final appeal of this judgment, which allows further proceedings, discussed below, to determine the amount of damages that may be awarded in the proceeding.

In July 2015, Cal Am and MCWRA filed a Complaint in San Francisco County Superior Court against MCWD and RMC Water and Environment (“RMC”), a private engineering consulting firm, seeking to recover compensatory damages in excess of \$10 million associated with the failure of the RDP, as well as punitive and treble damages, statutory penalties and attorneys’ fees. Shortly thereafter, complaints seeking similar damages were filed in the same court by MCWD and RMC against Cal Am and MCWRA in excess of \$19 million in the aggregate. In December 2015, the court consolidated all of these complaints into a single action. Trial in the consolidated action currently remains set for March 25, 2019 in San Francisco County Superior Court.

Monterey Peninsula Water Supply Project

CPUC Final Approval of Water Supply Project

The Water Supply Project is intended to reduce water diversions from the Carmel River and involves construction of a desalination plant, owned by Cal Am, and purchase of water by Cal Am from a groundwater replenishment project (the “GWR Project”) between the Monterey Regional Water Pollution Control Agency and the MPWMD. Cal Am’s ability to move forward on the Water Supply Project is and has been subject to extensive administrative review by the CPUC and other government agencies, obtaining necessary permits, and intervention from other parties. In September 2016, the CPUC unanimously approved a decision to authorize Cal Am to enter into a water purchase agreement for the GWR Project and to construct a pipeline and pump station facilities and recover up to \$50 million in associated costs, subject to meeting certain criteria. If construction costs exceed \$50 million, Cal Am would be allowed to seek additional cost recovery.

On August 13, 2018, the CPUC issued its proposed decision granting Cal Am’s request for a CPCN for a 6.4 million gallons per day desalination plant, certifying the final Environmental Impact Report/Environmental Impact Statement (“EIR/EIS”) and denying all other outstanding motions. On September 13, 2018, the CPUC unanimously adopted a final decision (i) finding that the Water Supply Project meets the CPUC’s requirements for a CPCN, and (ii) finding that (a) the issuance of the final decision should not be delayed, and (b) an additional procedural phase was not necessary to consider alternative projects. The CPUC’s decision directs Cal Am to enter into negotiations regarding expansion of the GWR Project between the Monterey Regional Water Pollution Control Agency and the MPWMD and to indicate whether Cal Am plans to file an application for approval of an agreement to purchase additional water from the GWR Project. The decision notes, however, that the CPUC will only consider such an application if the Water Supply Project is delayed such that Cal Am would not be able to meet the December 31, 2021 deadline to comply with the 2009 Order. The decision accepts Cal Am’s estimates of future water demand in Monterey and concludes that the Water Supply Project is the best project to address those needs, and adopts Cal Am’s most recent cost estimates. The decision also allows Cal Am to earn an allowance for funds used during construction, or AFUDC, at a rate representative of its actual financing costs. The final decision adopted frameworks as to cost caps, O&M costs, financing, ratemaking and contingency matters.

In addition, the CPUC final decision imposes numerous reporting and filing requirements to ensure the expenditures for the Water Supply Project are reasonable, including that the financing is the lowest cost and most beneficial for ratepayers, and that construction is progressing in a timely manner and within the authorized cost caps. The reasonableness of Water Supply Project costs will be reviewed in the first general rate case filed by Cal Am after the Water Supply Project becomes operational. Cal Am is also required to implement mitigation measures to avoid, minimize or offset significant environmental impacts from the construction and operation of the Water Supply Project and comply with a mitigation monitoring and reporting program, a reimbursement agreement for CPUC costs associated with that program, and reporting requirements on plant operations following placement of the Water Supply Project in service. Consistent with that decision, on December 31, 2018, Cal Am sought adjustments to certain financing and ratemaking provisions, including the timing and amount of surcharge recovery, and addressed related implementation issues.

On October 19, 2018, MCWD and the City of Marina filed applications for rehearing before the CPUC. Cal Am filed its response to the applications for rehearing on November 5, 2018. On January 31, 2019, the CPUC denied these applications for rehearing.

On October 12, 2018, MCWD and the City of Marina filed petitions for writ of review in the Supreme Court of California challenging the sufficiency of the final EIR/EIS. On December 12, 2018, the Supreme Court of California denied the petitions for writ of review without prejudice to the filing of renewed submissions upon completion of the rehearing proceedings pending before the CPUC. The City of Marina and MCWD filed their renewed petitions for writ of review on January 16, 2019 and January 17, 2019, respectively.

Coastal Development Permit Application

On June 22, 2018, Cal Am submitted a coastal development permit application to the City of Marina for those project components of the Water Supply Project located within the City of Marina’s coastal zone. Members of the City’s Planning Commission, as well as City councilpersons, have publicly expressed opposition to the Water Supply Project. On August 9, 2018, the City deemed Cal Am’s application incomplete pending certification and submission of the final environmental impact report, and stated that the City could not rule on the permit until certification. As noted above, the CPUC certified the final EIR/EIS for the Water Supply Project on September 13, 2018. A public hearing before the Planning Commission on Cal Am’s application was held on February 14, 2019, and the Planning Commission voted to direct staff to prepare findings supporting a denial of the application. The Planning Commission continued the hearing until March 7, 2019, at which time it is expected to take formal action on the application.

Proposed Zoning Changes at Cemex Site for Slant Wells

On August 30, 2018, the City circulated a public review draft of proposed amendments to its local coastal program and zoning ordinance, and placed the matter for consideration on the Planning Commission's agenda for its September 13, 2018 meeting. The proposed amendments would change zoning at the Cemex site to open space and restrict future uses, including with respect to Cal Am's planned use of the site for the slant wells for the Water Supply Project. Any change to the City's local coastal program must ultimately be approved by the California Coastal Commission (the "Coastal Commission"). Cal Am, Cemex and the Coastal Commission each submitted letters opposing the proposed amendments. At its November 8, 2018 meeting, the Planning Commission adopted a resolution recommending that the Marina City Council consider approving the amendments.

On December 4, 2018, the Marina City Council considered the proposed amendments. Cal Am, Cemex and the Coastal Commission again submitted letters opposing the proposed changes, but the City Council unanimously adopted a resolution amending its local coastal plan and a draft amendment to its zoning ordinance. Changes to the ordinance require a second reading before becoming final, which occurred at the City's December 18, 2018 meeting. The changes to the local coastal plan must be submitted to the Coastal Commission for approval and are not effective until such approval is obtained.

Test Slant Well Permitting

A preliminary step to building the Water Supply Project desalination plant is the construction and operation of a test slant well to confirm the suitability of the property on which intake wells will be located to draw water from under Monterey Bay. In November 2014, the Coastal Commission approved coastal development permits for the test slant well, enabling Cal Am to construct and operate the test slant well. The Coastal Commission has approved permit amendments to allow the test slant well to remain and place and be maintained until February 28, 2020. A required lease obtained from the California State Lands Commission, as amended, will expire on December 16, 2019. Effective February 28, 2018, test slant well pumping ceased, except for minimal maintenance pumping activities, in accordance with Cal Am's coastal development permits.

In November 2015, MCWD filed a Petition for Writ of Mandate and Complaint for Declaratory and Injunctive Relief in Santa Cruz County Superior Court against the Coastal Commission and Cal Am challenging the amendment of the coastal development permits and seeking an injunction against further test well pumping. In orders issued in September 2016 and October 2017, the court denied MCWD's challenges. On January 12, 2018, MCWD filed a notice of appeal of the court's judgment. On March 13, 2018, Cal Am filed a motion to dismiss MCWD's appeal, which was denied on June 25, 2018. The appeal remains pending.

In July 2017, the Coastal Commission adopted a consent agreement and cease and desist order requiring sand mining operations on the property on which intake wells will be located to cease by the end of 2020 and the property to be sold to either a non-profit or governmental entity. The consent agreement strictly limits future use of the property but preserves Cal Am's existing property rights and allows uses consistent with existing easements and other rights of record.

Based on all of the foregoing, Cal Am estimates that the earliest date by which the Water Supply Project desalination plant could be completed is sometime in 2021. There can be no assurance that the Water Supply Project will be completed on a timely basis, if ever. Furthermore, there can be no assurance that Cal Am will be able to comply with the diversion reduction requirements and other remaining requirements under the 2009 Order and the 2016 Order, or that any such compliance will not result in material additional costs or obligations to Cal Am or the Company.

West Virginia Elk River Freedom Industries Chemical Spill

See Note 16—Commitments and Contingencies—Contingencies—West Virginia Elk River Freedom Industries Chemical Spill in the Notes to Consolidated Financial Statements for information regarding the final court approval of the global settlement with respect to the January 2014 Freedom Industries, Inc. chemical spill, which is incorporated herein by reference.

In April 2017, the Lincoln County (West Virginia) Commission (the "LCC") filed a complaint in Lincoln County state court against West Virginia-American Water Company ("WVAWC") and certain other defendants not affiliated with the Company, which in June 2017 was transferred to the West Virginia Mass Litigation Panel, alleging that the Freedom Industries chemical spill caused a public nuisance in Lincoln County under an ordinance enacted by the LCC in March 2017, more than three years after the Freedom Industries chemical spill occurred. The complaint sought an injunction against WVAWC that would have required the creation of various databases and public repositories of documents related to the Freedom Industries chemical spill, as well as further study and risk assessments regarding the alleged exposure of Lincoln County residents to the released chemicals. On July 31, 2018, WVAWC filed a motion to dismiss the LCC's complaint. On December 12, 2018, the Mass Litigation Panel granted WVAWC's motion to dismiss on several grounds, including being barred by the applicable statute of limitations, failure to allege a nuisance under applicable law, lack of standing, improper retroactive application of the nuisance ordinance and violation of WVAWC's due process. The LCC declined to appeal this ruling.

Dunbar, West Virginia Water Main Break Class Action Litigation

On the evening of June 23, 2015, a 36-inch pre-stressed concrete transmission water main, installed in the early 1970s, failed. The water main is part of WVAWC's West Relay pumping station located in the City of Dunbar. The failure of the main caused water outages and low pressure to up to approximately 25,000 WVAWC customers. In the early morning hours of June 25, 2015, crews completed a repair, but that same day, the repair developed a leak. On June 26, 2015, a second repair was completed and service was restored that day to approximately 80% of the impacted customers, and to the remaining approximately 20% by the next morning. The second repair showed signs of leaking but the water main was usable until June 29, 2015 to allow tanks to refill. The system was reconfigured to maintain service to all but approximately 3,000 customers while a final repair was completed safely on June 30, 2015. Water service was fully restored on July 1, 2015 to all customers affected by this event.

On June 2, 2017, a class action complaint was filed in West Virginia Circuit Court in Kanawha County against WVAWC on behalf of a purported class of residents and business owners who lost water service or pressure as a result of the Dunbar main break. The complaint alleges breach of contract by WVAWC for failure to supply water, violation of West Virginia law regarding the sufficiency of WVAWC's facilities and negligence by WVAWC in the design, maintenance and operation of the water system. The plaintiffs seek unspecified alleged damages on behalf of the class for lost profits, annoyance and inconvenience, and loss of use, as well as punitive damages for willful, reckless and wanton behavior in not addressing the risk of pipe failure and a large outage.

In October 2017, WVAWC filed with the court a motion seeking to dismiss all of the plaintiffs' counts alleging statutory and common law tort claims. Furthermore, WVAWC asserted that the Public Service Commission of West Virginia, and not the court, has primary jurisdiction over allegations involving violations of the applicable tariff, the public utility code and related rules. On May 30, 2018, the court, at a hearing, denied WVAWC's motion to apply the primary jurisdiction doctrine, and on October 11, 2018, the court issued a written order to that effect. The court has not yet issued a written order on WVAWC's motion to dismiss plaintiffs' tort claims. The court has requested the parties submit a scheduling order with a trial date of August 26, 2019, and WVAWC has sought to prevent further discovery while its motion to dismiss is pending.

The Company and WVAWC believe that WVAWC has valid, meritorious defenses to the claims raised in this class action complaint and WVAWC will continue to vigorously defend itself against these allegations.

Contract Services Group -- East Palo Alto Water System Voluntary Report

In April 2017, AWE, the parent entity of the Company's Contract Services Group, voluntarily reported to the Division of Drinking Water of the SWRCB potential violations of the California Safe Drinking Water Act (the "CSDWA") in connection with AWE's operation of the City of East Palo Alto's water distribution system. Upon the resignation of the system's general manager in March 2017, AWE discovered that it may have operated the system without a properly certified operator for two years, the triennial LCR sampling was not completed, and the 2015 Consumer Confidence Report improperly reported data for lead and copper samples from the system's upstream water provider. Promptly after discovering these issues, AWE engaged an outside law firm to conduct an internal investigation and reported the results of that investigation to the SWRCB.

On June 15, 2017, the SWRCB issued to AWE a citation that required AWE to, among other things: comply with regulations related to water operator certifications, lead and copper tap sampling requirements and the publishing of a Consumer Confidence Report; provide public notification of the LCR violation; and prepare a corrective action plan to evaluate the causes leading to these incidents and measures to be taken to prevent recurrence of future incidents. The citation did not impose on AWE any monetary penalties, but the SWRCB reserved the right to take additional enforcement action.

In October 2017, the SWRCB advised AWE that it is in compliance with all of the directives and relevant statutory and administrative provisions specified in the SWRCB's June 2017 citation. While AWE has completed all required compliance activities with respect to the citation, the SWRCB has previously reserved the right to take additional enforcement action. In February 2018, the SWRCB referred this matter to the San Mateo County, California District Attorney's office for further investigation. AWE continues to cooperate with the SWRCB, the City of East Palo Alto and the San Mateo County District Attorney regarding this matter. Proven violations of the CSDWA may result in civil and criminal penalties.

General

Periodically, the Company is involved in other proceedings or litigation arising in the ordinary course of business. Other than those proceedings described in this Item 3—Legal Proceedings, the Company does not believe that the ultimate resolution of these matters will materially affect its financial position or results of operations. However, litigation and other proceedings are subject to many uncertainties, and the outcome of individual matters is not predictable with assurance. It is possible that some litigation and other proceedings could be decided unfavorably to the Company, and that any such unfavorable decisions could have a material adverse effect on its business, financial condition, results of operations and cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Since April 23, 2008, our common stock has traded on the New York Stock Exchange ("NYSE") under the symbol "AWK." As of February 14, 2019, there were 180,751,697 shares of common stock outstanding held by approximately 2,619 record holders. Holders of our common stock are entitled to receive dividends when they are declared by our Board of Directors. See Note 9—Shareholders' Equity in the Notes to Consolidated Financial Statements for additional information regarding our dividends.

In February 2015, our Board of Directors authorized an anti-dilutive stock repurchase program to mitigate the dilutive effect of shares issued through our dividend reinvestment, employee stock purchase and executive compensation activities. The program allows us to purchase up to 10 million shares of our outstanding common stock over an unrestricted period of time in the open market or through privately negotiated transactions. The program is conducted in accordance with Rule 10b-18 of the Exchange Act, and, to facilitate these repurchases, we enter into Rule 10b5-1 stock repurchase plans with a third-party broker, which allows us to repurchase shares of our common stock at times when we otherwise might be prevented from doing so under insider trading laws or because of self-imposed trading blackout periods. Subject to applicable regulations, we may elect to amend or cancel the program or stock repurchase parameters at our discretion to manage dilution.

From April 1, 2015, the date repurchases under the anti-dilutive stock repurchase program commenced, through December 31, 2018, we repurchased an aggregate of 4,510,000 shares of our common stock under the program, including 560,000 shares repurchased during the first quarter of 2018. There were no repurchases of common stock in the last three quarters of 2018.

ITEM 6. SELECTED FINANCIAL DATA

(In millions, except per share data)	For the Years Ended December 31,				
	2018	2017	2016	2015	2014
Statement of Operations data:					
Operating revenues	\$ 3,440	\$ 3,357	\$ 3,302	\$ 3,159	\$ 3,011
Net income attributable to common shareholders (a)	567	426	468	476	430
Net income attributable to common shareholders per basic common share (a)	\$ 3.16	\$ 2.39	\$ 2.63	\$ 2.66	\$ 2.40
Net income attributable to common shareholders per diluted common share (a)	3.15	2.38	2.62	2.64	2.39
Balance Sheet data:					
Total assets (b) (c)	\$ 21,223	\$ 19,482	\$ 18,482	\$ 17,241	\$ 16,038
Long-term debt and redeemable preferred stock at redemption value (b)	7,576	6,498	5,759	5,874	5,442
Other data:					
Cash dividends declared per common share	\$ 1.82	\$ 1.66	\$ 1.50	\$ 1.36	\$ 1.24
Net cash provided by operating activities (d) (e)	1,386	1,449	1,289	1,195	1,122
Net cash used in investing activities (e)	(2,036)	(1,672)	(1,590)	(1,459)	(1,029)
Net cash provided by (used in) financing activities (d) (e)	726	207	328	290	(104)
Capital expenditures included in net cash used in investing activities	(1,586)	(1,434)	(1,311)	(1,160)	(956)

- (a) In November 2014, we disposed of our Class B Biosolids operating segment by selling our subsidiary, Terratec Environmental Ltd (“Terratec”) in Ontario, Canada. The results of Terratec are presented as discontinued operations and, as such, have been excluded from Net income attributable to common shareholders in the table above, for the year ended December 31, 2014.
- (b) The information for the year ended December 31, 2014, has been revised to reflect the retrospective application of Accounting Standards Update 2015-15, *Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements*, which was adopted by the Company as of December 31, 2015.
- (c) The information for the year ended December 31, 2014, has been revised to reflect the retrospective application of Accounting Standards Update 2015-17, *Balance Sheet Classification of Deferred Taxes*, which was adopted by the Company as of December 31, 2015.
- (d) The information for the years ended December 31, 2016, 2015 and 2014, has been revised to reflect the retrospective application of Accounting Standards Update 2016-09, *Improvements to Employee Share-Based Payment Accounting*, which was adopted by the Company as of January 1, 2017.
- (e) The information for the years ended December 31, 2016, 2015 and 2014, has been revised to reflect the retrospective application of Accounting Standards Update 2016-18, *Restricted Cash*, which was adopted by the Company as of December 31, 2017.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read together with the Consolidated Financial Statements and the Notes thereto included elsewhere in this Form 10-K. This discussion contains forward-looking statements that are based on management's current expectations, estimates and projections about our business, operations and financial performance. The cautionary statements made in this Form 10-K should be read as applying to all related forward-looking statements whenever they appear in this Form 10-K. Our actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those we discuss under "Forward-Looking Statements," Item 1A—Risk Factors and elsewhere in this Form 10-K.

Overview

American Water is the largest and most geographically diverse, publicly-traded water and wastewater utility company in the United States, as measured by both operating revenues and population served. We employ approximately 7,100 professionals who provide drinking water, wastewater and other related services to more than 14 million people in 46 states and Ontario, Canada. Our primary business involves the ownership of utilities that provide water and wastewater services to residential, commercial, industrial, public authority, fire service and sale for resale customers, collectively presented as our "Regulated Businesses." Our utilities operate in approximately 1,600 communities in 16 states in the United States, with approximately 3.4 million active customers to our water and wastewater networks. Services provided by our utilities are generally subject to economic regulation by certain state utility commissions or other entities engaged in utility regulation. We also operate market-based businesses which provide a broad range of related and complementary water, wastewater and other services to residential and smaller commercial customers, the U.S. government on military installations and shale natural gas exploration and production companies, as well as municipalities, utilities and industrial customers, collectively presented as our Market-Based Businesses. See Item 1—Business for additional information.

Financial Results

The following table provides our diluted earnings per share (GAAP) and our adjusted diluted earnings per share (a non-GAAP measure):

	For the Years Ended December 31,		
	2018	2017	2016
Diluted earnings per share (GAAP):			
Net income attributable to common shareholders	\$ 3.15	\$ 2.38	\$ 2.62
Adjustments:			
Gain on sale of Contract Services Group contracts	(0.08)	—	—
Income tax impact	0.02	—	—
Net adjustment	(0.06)	—	—
Keystone impairment charge	0.31	—	—
Income tax impact	(0.08)	—	—
Net loss attributable to noncontrolling interest	(0.01)	—	—
Net adjustment	0.22	—	—
Freedom Industries settlement and insurance recoveries	(0.11)	(0.12)	0.36
Income tax impact	0.03	0.05	(0.14)
Net adjustment	(0.08)	(0.07)	0.22
Early extinguishment of debt at the parent company	—	0.03	—
Income tax impact	—	(0.01)	—
Net adjustment	—	0.02	—
Impact of re-measurement from the TCJA	0.07	0.70	—
Total net adjustments	0.15	0.65	0.22
Adjusted diluted earnings per share (non-GAAP)	\$ 3.30	\$ 3.03	\$ 2.84

For the year ended December 31, 2018, diluted earnings per share (GAAP) were \$3.15, an increase of \$0.77 per diluted share, or 32.4% compared to the prior year, which includes the net adjustments presented in the table above and discussed in greater detail in the “Adjustments to GAAP” section below.

Excluding the net adjustments presented in the table above, adjusted diluted earnings per share (non-GAAP) were \$3.30 for the year ended December 31, 2018, an increase of \$0.27 per diluted share, or 8.9% compared to the prior year.

These results were driven by continued growth in our Regulated Businesses from infrastructure investment, acquisitions and organic growth, combined with strong results in our Market-Based Businesses, primarily in our Homeowner Services Group with the mid-year acquisition of Pivotal. These increases were partially offset by higher O&M and depreciation expenses from the growth of the business and a lower tax shield on interest expense at the parent company resulting from the TCJA.

For the year ended December 31, 2017, diluted earnings per share (GAAP) were \$2.38 per diluted share, a decrease of \$0.24 per diluted share, or 9.2% compared to the prior year, which includes the net adjustments presented in the table above and discussed in greater detail in the “Adjustments to GAAP” section below.

Excluding the net adjustments presented in the table above, adjusted diluted earnings per share (non-GAAP) were \$3.03 for the year ended December 31, 2017, an increase of \$0.19 per diluted share, or 6.7% compared to the prior year.

These results were driven by continued growth in our Regulated Businesses from infrastructure investment, acquisitions and organic growth, combined with growth in our Market-Based Businesses from our Homeowner Services Group and Keystone. These increases were partially offset by lower water services demand in our Regulated Businesses and lower capital upgrades in our Military Services Group.

Adjustments to GAAP

Adjusted diluted earnings per share represents a non-GAAP financial measure and is calculated as GAAP diluted earnings per share, excluding the impact of one or more of the following events: (i) a gain in the third quarter of 2018 on the sale of the majority of our Contract Services Group’s O&M contracts; (ii) a goodwill and intangible impairment charge in the third quarter of 2018 resulting from narrowing the scope of the Keystone business; (iii) insurance settlements received in the third quarter of 2017 and the second quarter of 2018 related to the Freedom Industries chemical spill in West Virginia; (iv) non-cash re-measurement charges recorded in the fourth quarters of 2017 and 2018 resulting from the impact of the change in the federal corporate income tax rate on the Company’s deferred income taxes from the enactment of the TCJA; (v) an early extinguishment of debt charge at the parent company in the third quarter of 2017; and (vi) a charge in the fourth quarter of 2016 related to the binding global agreement in principle to settle claims related to the Freedom Industries chemical spill.

We believe that this non-GAAP measure provides investors with useful information by excluding certain matters that may not be indicative of our ongoing operating results, and that providing this non-GAAP measure will allow investors to understand better our businesses’ operating performance and facilitate a meaningful year-to-year comparison of our results of operations. Although management uses this non-GAAP financial measure internally to evaluate our results of operations, we do not intend results excluding the adjustments to represent results as defined by GAAP, and the reader should not consider them as indicators of performance. This non-GAAP financial measure is derived from our consolidated financial information and it should be considered in addition to, and not as a substitute for, measures of financial performance prepared in accordance with GAAP. In addition, this non-GAAP financial measure as defined and used above may not be comparable to similarly titled non-GAAP measures used by other companies, and, accordingly, it may have significant limitations on its use.

Achievements and Strategic Focus

We believe our success has, and will continue to be, guided by the following strategic philosophies:

- Purpose Driven—“We keep life flowing” is our trademark purpose, for our customers and our communities, because we provide the most precious of life’s critical needs.
- People Powered—A company is its people. People who have a safe place to work, both physically and emotionally.
- Customer Obsessed—Without customers, we don’t exist. They are why we are here.
- Trusted Source of Everything Water— Best in class, ensuring we have safe, reliable and affordable water.

Our strategy, which is driven by our vision and values, will continue to be anchored on our five central themes:

- **Safety**—Safety is both a strategy and a value at American Water. We put safety first in everything that we do.
 - In 2018 , we:
 - finished the year with fewer employee injuries than the prior year, improving both our Occupational Safety and Health Administration Recordable Incident Rate (“ORIR”) and Days Away, Restricted or Transferred (“DART”) injury severity rate;
 - continued to strengthen our safety culture as measured by employee responses to safety-related questions in the Company’s culture survey, and feedback from our in-person, labor-management conferences;
 - initiated a frontline safety leadership strategic action group, developed to provide recommendations to improve safety leadership training, tools, and engagement; and
 - championed, through our safety council which consists of management and labor employees, our annual Safety Day, the CEO Safety Award and other recognition programs.
 - Looking forward, we will:
 - strive toward zero workplace incidents and eliminate hazards to reduce the potential for incidents;
 - continue our focus on “near miss reporting” and promoting continuous learning and corrective action regarding potential safety hazards before incidents can occur;
 - improve toward the achievement of our ORIR and DART targets;
 - continue our focus on requiring contractors that perform work for the Company be held to the same safety standards as our employees; and
 - continue to promote the Company’s employee Stop Work Authority, where every employee is empowered to stop any work he or she perceives as unsafe, and to initiate a review to resolve concerns and to eliminate safety hazards.
- **Customer**—Our customers are at the center of everything we plan and do. Customer input, their ideas and experiences will drive how we improve our processes and systems. We want to be the best, and if our customers have a choice as to who serves them, we want it to be us.
 - In 2018 , we:
 - achieved a customer satisfaction rating in the top quartile among our industry peer group;
 - expanded our customer experience initiative, designed to make it easier for customers to do business with us, and enhanced our quality of service through implementation and upgrades of technology tools; and
 - continued to make needed infrastructure investments while implementing operational efficiency improvements to keep customer bills affordable.
 - Looking forward, we will:
 - aim to achieve customer satisfaction and service quality ratings in the top quartile of service industries beyond the water and wastewater industry. We are implementing a multi-year plan to enhance technology and innovation in our customer experience through (i) leveraging secure artificial intelligence to better serve our customers, (ii) using online customer communities for immediate input and reactions before implementing programs, and (iii) mapping our most frequent customer interactions and re-working our internal processes to how customers want services; and
 - aim for top quartile ratings for drinking water quality and being an industry leader in system resiliency and environmental stewardship.
- **People**—We are building an inclusive, diverse, fully-engaged, high performance workforce and culture, creating an environment where our people feel valued, included and accountable.
 - In 2018 , we:
 - continued to demonstrate our commitment to employees by expanding training and development across the Company, with virtually all employees completing at least 20 hours of formal training during 2018 ;

- expanded the executive leadership team to include key operational leaders across the Company to enable a broader operational focus and stronger communication throughout the organization;
 - reached a new, five -year national benefits agreement with approximately 3,200 of our union-represented employees, including their participation in the Company’s annual performance plan, which will align Company goals across all employees, as well as providing additional medical plan options for our employees and their families; and
 - simplified our performance management process to foster meaningful feedback conversations and ensure feedback is the focus of performance management.
- Looking forward, we will:
 - implement a strategic workforce plan which will address the changing requirements of our business and our jobs, largely driven by our customer’s expectations and new technologies;
 - continue to improve inclusion and diversity of our overall employee population, ensuring our workforce is reflective of the customers and communities we serve;
 - implement a new and more frequent culture survey focused on employee insights into how American Water can become a better company to work for, and to implement recommendations with the goal of increasing employees’ likelihood to recommend American Water as a place to work; and
 - leverage technology to ensure our employees have the tools and resources they need to keep the customer at the center of everything that we plan and do.
 - Growth—We expect to continue to grow our businesses, with the majority of our growth to be achieved in our Regulated Businesses through (i) continued capital investment in our infrastructure to provide safe, clean, reliable and affordable water and wastewater services to our customers, and (ii) regulated acquisitions to expand our services to new customers. We also expect to continue to grow our Market-Based Businesses , which leverage our core water and wastewater competencies.

- In 2018 , we invested \$2.0 billion in our Regulated Businesses and Market-Based Businesses .

Regulated Businesses Growth

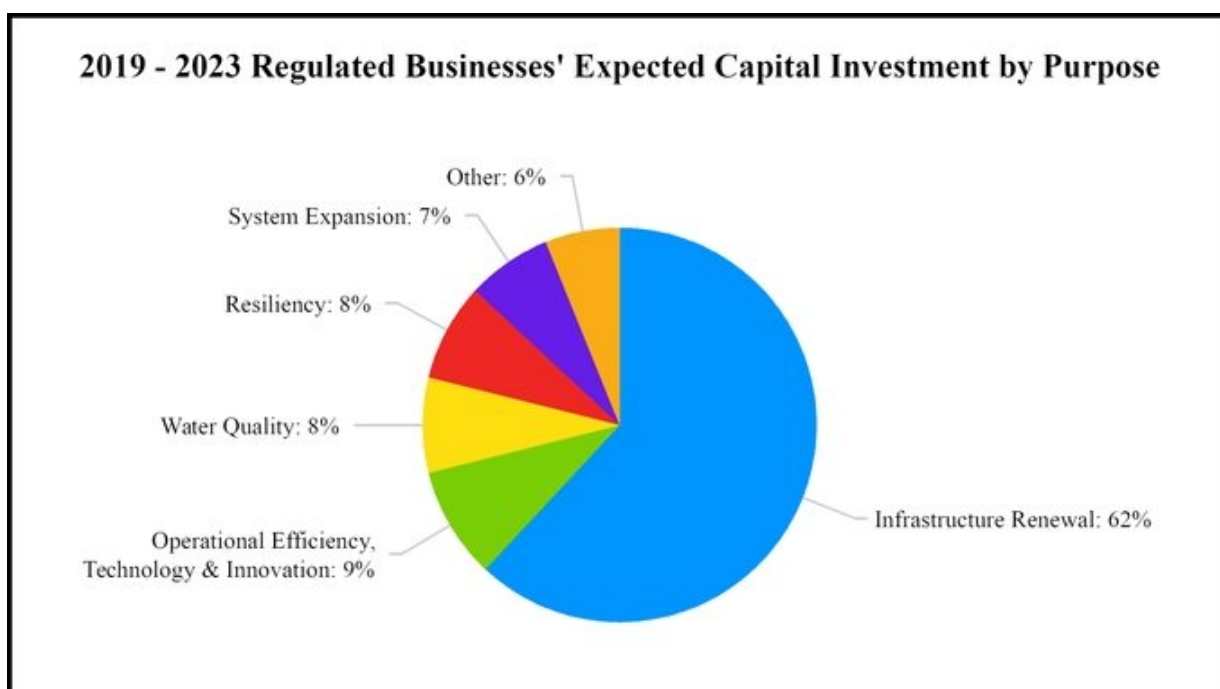
- \$1.5 billion capital investment in our Regulated Businesses , the majority for infrastructure improvements and replacements.
- \$33 million to fund acquisitions in our Regulated Businesses , which added approximately 14,000 water and wastewater customers.
- Entered into agreements as of January 31, 2019 for pending acquisitions to add approximately 61,000 customers including:
 - On May 30, 2018 , our Pennsylvania subsidiary entered into an agreement to acquire the wastewater assets of Exeter Township, Pennsylvania, for approximately \$96 million . This system currently serves approximately 9,000 customers. We are expecting to close this acquisition during the third quarter of 2019, pending regulatory approval.
 - On April 13, 2018 , our Illinois subsidiary entered into an agreement to acquire the City of Alton, Illinois’ regional wastewater system for approximately \$54 million . This system currently represents approximately 23,000 customers, comprised of approximately 11,000 customers in Alton and an additional 12,000 customers under bulk contracts in the nearby communities of Bethalto and Godfrey. In connection with the execution of the purchase agreement, our Illinois subsidiary made a \$5 million non-escrowed deposit to the seller during January 2019. We are expecting to close this acquisition during the second quarter of 2019, pending regulatory approval.

Market-Based Businesses Growth and Optimization

- We invested \$365 million to acquire Pivotal, a leading provider of home warranty protection products and services for gas, electric and other service lines inside and around a home, heating and cooling systems, and home appliances. Pivotal, which joins our Homeowner Services Group , operates in 18 states with approximately 1.2 million customer contracts at the time of acquisition.

- Our Military Services Group was awarded a contract for ownership, operation and maintenance of the water and wastewater systems at Fort Leonard Wood in Missouri, effective October 1, 2018 . Designated as the U.S. Army’s Maneuver Support Center of Excellence and the home to three U.S. Army schools, Fort Leonard Wood directly and indirectly supports 36,400 jobs across the state of Missouri. The contract award includes estimated revenues of approximately \$591 million over a 50 -year period, subject to an annual economic price adjustment.
- On July 5, 2018 , we entered into an agreement for the sale of 22 of our Contract Services Group ’s 33 O&M contracts to subsidiaries of Veolia Environnement S.A. for \$27 million . We closed on the sale of 20 of the 22 contracts during the third quarter of 2018, and expect to close on the sale of the remaining two contracts, subject to customer consents, in the first half of 2019. We will retain four of our O&M contracts due to their proximity to our existing service areas, and expect the majority of our remaining O&M contracts to be sold to other parties, or expire within the next year.
- As a result of operational and financial challenges encountered in the construction business of Keystone, the Company decided to exit this business line during the third quarter of 2018. This action, along with the exit of the water trucking business line during the first half of 2018, narrowed the scope of the Keystone business going forward, focusing solely on providing water transfer services. These factors prompted the impairment testing of Keystone’s goodwill and customer relationship intangible asset at September 30, 2018, resulting in a non-cash, after-tax, impairment charge of \$40 million , net of noncontrolling interest. See Note 8—Goodwill and Other Intangible Assets in the Notes to the Consolidated Financial Statements for additional information.
- Looking forward, we expect to invest between \$8.0 billion to \$8.6 billion from 2019 to 2023, including a range of \$1.7 billion to \$1.8 billion in 2019 . Our expected future investment includes:
 - capital investment for infrastructure improvements in our Regulated Businesses of \$7.3 billion over the next five years, including \$1.6 billion expected in 2019 ;
 - growth from acquisitions in our Regulated Businesses to expand our water and wastewater customer base of between \$600 million to \$1.2 billion over the next five years, including a range of \$120 million to \$240 million expected in 2019 ; and
 - strategic capital investments of approximately \$100 million over the next five years, which consists primarily of intellectual property development and strategic growth opportunities in our Market-Based Businesses .

The following chart depicts the estimated allocation of our expected capital investment for infrastructure improvements in our Regulated Businesses over the next five years, by purpose:



- Operational Excellence—We continue to strive for industry-leading operational efficiency, driven largely by technology. Our technology investments are aimed at enhancing our customer experience and operational efficiency.
- In 2018 :
 - our Regulated Businesses achieved an adjusted O&M efficiency ratio (a non-GAAP measure) of 35.6% for the year ended December 31, 2018 , compared to 35.3% and 36.6% for the years ended December 31, 2017 and 2016 , respectively. The unfavorability in our adjusted O&M efficiency ratio in 2018 , when compared to 2017 , was primarily due to a settlement agreement in our New York subsidiary and higher expenses incurred from the colder weather experienced during the first quarter of 2018. The improvement in our adjusted O&M efficiency ratio in 2017 , when compared to 2016 , was attributable to both an increase in operating revenues and a decrease in O&M expenses;
 - we worked to decrease costs and deploy capital efficiently, including using trenchless technologies for pipeline rehabilitation and leveraging our buying power and strategic sourcing to drive cost savings;
 - we continued our commitment to water quality and the environment by leveraging new technologies; we now have advanced water quality sensors at all of our major drinking water intake sites and we are automating our reporting and compliance systems; and
 - we implemented other technology tools that will enhance communication, collaboration and mobility to help our employees work safely and efficiently, and enhance the customer experience.
- Looking forward, we will focus on technology and efficiency to:
 - be the leader in optimizing technology deployment across the water and wastewater industry, with a keen focus on specific, innovative projects that will set us apart from other utilities; aiding us in serving our customers with greater ease, making us safer and helping us operate more efficiently; and
 - achieve our goal of an adjusted O&M efficiency ratio of 31.5% by 2023.

Our adjusted O&M efficiency ratio is defined as the operation and maintenance expenses from our Regulated Businesses , divided by the pro forma operating revenues from our Regulated Businesses , where both operation and maintenance expenses and pro forma operating revenues were adjusted to eliminate purchased water expense. Additionally, from operation and maintenance expenses, we excluded the allocable portion of non-operation and maintenance support services costs, mainly depreciation and general taxes, that are reflected in our Regulated Businesses segment as operation and maintenance expenses, but for consolidated financial reporting purposes, are categorized within other line items in the accompanying Consolidated Statements of Operations.

In addition to the adjustments discussed above, for period-to-period comparability purposes, we have presented the estimated impact of the TCJA on operating revenues for our Regulated Businesses on a pro forma basis for all periods presented prior to January 1, 2018, as if the lower federal corporate income tax rate was in effect for these periods (see Note 7—Regulatory Assets and Liabilities in the Notes to Consolidated Financial Statements for additional information). We also made the following adjustments to our O&M efficiency ratio: (i) excluded from operation and maintenance expenses, the impact of certain Freedom Industries chemical spill settlement activities recognized in 2016, 2017 and 2018; and (ii) excluded from operation and maintenance expenses, the impact of the Company's January 1, 2018 adoption of Accounting Standards Update 2017-07, *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Post-Retirement Benefit Cost* ("ASU 2017-07") for 2016, 2017 and 2018. See Note 2—Significant Accounting Policies in the Notes to the Consolidated Financial Statements for additional information. We excluded the items discussed above from the calculation as we believe such items are not reflective of management's ability to increase the efficiency of our Regulated Businesses .

We evaluate our operating performance using this ratio because we believe it directly measures improvement in the efficiency of our Regulated Businesses . This information is intended to enhance an investor's overall understanding of our operating performance. Our adjusted O&M efficiency ratio is not an accounting measure that is based on GAAP, may not be comparable to other companies' operating measures and should not be used in place of the GAAP information provided elsewhere in this Form 10-K.

With respect to our adjusted O&M efficiency ratio goal for 2023, we are unable to provide without unreasonable efforts a quantitative reconciliation of each component of this ratio to the most comparable financial measure calculated in accordance with GAAP. In calculating the components of the ratio, certain items that may ultimately be excluded would be reflective of events that cannot be reasonably predicted at this time. The unavailable information would include, among other things, the impact of items currently excluded from the calculation of the components, adjustments for weather conditions that exceed a certain threshold of variability and adjustments for events or circumstances that may not be reflective of ongoing operating results. The probable significance of these items is also presently unknown and cannot be reasonably estimated.

The following table provides the calculation of our adjusted O&M efficiency ratio and a reconciliation that compares operation and maintenance expenses and operating revenues, each as determined in accordance with GAAP, to those amounts utilized in the calculation of our adjusted O&M efficiency ratio:

(Dollars in millions)	For the Years Ended December 31,		
	2018	2017	2016
Total operation and maintenance expenses (a)	\$ 1,479	\$ 1,369	\$ 1,499
Less:			
Operation and maintenance expenses—Market-Based Businesses	362	337	372
Operation and maintenance expenses—Other (a)	(42)	(44)	(38)
Total operation and maintenance expenses—Regulated Businesses (a)	1,159	1,076	1,165
Less:			
Regulated purchased water expenses	133	128	122
Allocation of non-operation and maintenance expenses	31	29	30
Impact of Freedom Industries settlement activities (b)	(20)	(22)	65
Adjusted operation and maintenance expenses—Regulated Businesses (i)	\$ 1,015	\$ 941	\$ 948
Total operating revenues	\$ 3,440	\$ 3,357	\$ 3,302
Less:			
Pro forma adjustment for impact of the TCJA (c)	—	166	161
Total pro forma operating revenues	3,440	3,191	3,141
Less:			
Operating revenues—Market-Based Businesses	476	422	451
Operating revenues—Other	(20)	(23)	(20)
Total operating revenues—Regulated Businesses	2,984	2,792	2,710
Less:			
Regulated purchased water revenues (d)	133	128	122
Adjusted operating revenues—Regulated Businesses (ii)	\$ 2,851	\$ 2,664	\$ 2,588
Adjusted O&M efficiency ratio—Regulated Businesses (i) / (ii)	35.6%	35.3%	36.6%

NOTE The adjusted O&M efficiency ratios previously reported for the years ended December 31, 2017 and 2016, were 33.8% and 34.9%, respectively, which did not include the adjustments for the items discussed in footnotes (a) and (c) below.

- (a) Includes the impact of the Company's adoption of ASU 2017-07 on January 1, 2018. See Note 2—Significant Accounting Policies in the Notes to Consolidated Financial Statements for additional information.
- (b) Includes the impact of the binding global agreement in principle to settle claims in 2016, and settlements in 2017 and 2018 with two of our general liability insurance carriers in connection with the Freedom Industries chemical spill.
- (c) Includes the estimated impact of the TCJA on operating revenues for our Regulated Businesses for all periods presented prior to January 1, 2018, as if the lower federal corporate income tax rate was in effect for these periods. See Note 7—Regulatory Assets and Liabilities in the Notes to Consolidated Financial Statements for additional information.
- (d) The calculation assumes regulated purchased water revenues approximate regulated purchased water expenses.

Regulatory Matters

General Rate Cases

The following table provides annualized incremental revenues resulting from general rate case authorizations that became effective during 2016 through 2018, assuming a constant water sales volume:

(In millions)	2018	2017	2016
General rate cases by state:			
New Jersey (a)	\$ 40	\$ —	\$ —
Missouri (effective May 28, 2018, July 22, 2016 and July 20, 2016)	33	—	5
New York (effective April 1, 2018 and June 1, 2017)	5	4	—
Pennsylvania (effective January 1, 2018)	62	—	—
California (b)	10	5	2
Virginia (c)	—	5	—
Iowa (effective March 27, 2017)	—	4	—
Illinois (effective January 1, 2017)	—	25	—
Kentucky (effective August 28, 2016)	—	—	7
West Virginia (effective February 25, 2016)	—	—	18
Indiana (effective January 29, 2016)	—	—	2
Total general rate case authorizations	<u>\$ 150</u>	<u>\$ 43</u>	<u>\$ 34</u>

- (a) The effective date was June 15, 2018. As part of the resolution of the general rate case, our New Jersey customers will receive refunds for the amount of provisional rates implemented as of June 15, 2018 and collected that exceeded the final rate increase, plus interest.
- (b) On December 13, 2018, a settlement in our California subsidiary's general rate case filing was approved, authorizing rates effective January 1, 2018. In 2017, step rates were effective January 13 through February 2. In 2016, step rates were effective January 1.
- (c) The effective date was May 24, 2017, authorizing the implementation of interim rates as of April 1, 2016.

On February 8, 2019, a settlement in our West Virginia subsidiary's general rate case filing was approved authorizing additional annualized revenues of \$19 million, effective February 25, 2019, exclusive of infrastructure replacement surcharges effective in 2017 and 2018.

On February 5, 2019, a settlement in our Maryland subsidiary's general rate case filing was approved authorizing additional annualized revenues of \$1 million, effective February 5, 2019.

Pending General Rate Case Filings

On November 28, 2018, our Kentucky subsidiary filed a general rate case requesting \$20 million in additional annualized revenues.

On November 2, 2018, our Virginia subsidiary filed a general rate case requesting \$5 million in additional annualized revenues.

On September 14, 2018, our Indiana subsidiary filed a general rate case requesting \$18 million and \$21 million in additional annualized revenues in 2019 and 2020, respectively.

Infrastructure Surcharges

A number of states have authorized the use of regulatory mechanisms that permit rates to be adjusted outside of a general rate case for certain costs and investments, such as infrastructure surcharge mechanisms that permit recovery of capital investments to replace aging infrastructure. The following table provides annualized incremental revenues resulting from infrastructure surcharge authorizations that became effective during 2016 through 2018, assuming a constant water sales volume:

(In millions)	2018	2017	2016
Infrastructure surcharges by state:			
Missouri (effective December 15, 2018 and December 15, 2017)	\$ 6	\$ 6	\$ —
Tennessee (effective April 10, 2018, March 14, 2017 and March 15, 2016)	1	2	2
Indiana (effective March 14, 2018, March 22, 2017 and May 4, 2016)	7	8	3
Virginia (effective March 1, 2018)	1	—	—
Illinois (a)	3	—	7
West Virginia (effective January 1, 2018 and January 1, 2017)	3	2	—
New Jersey (b)	—	14	19
Pennsylvania (c)	—	1	28
Total infrastructure surcharge authorizations	<u>\$ 21</u>	<u>\$ 33</u>	<u>\$ 59</u>

(a) In 2018, the effective date was January 1. In 2016, \$1 million was effective January 1 and \$6 million was effective August 1.

(b) In 2017, \$10 million was effective June 1 and \$4 million was effective December 10. In 2016, \$9 million was effective June 1 and \$10 million was effective December 1.

(c) In 2017, the effective date was January 1. In 2016, \$11 million, \$2 million, \$6 million and \$9 million were effective January 1, April 1, July 1 and October 1, respectively.

On February 8, 2019, our West Virginia subsidiary received authorization for additional annualized revenues of \$2 million from an infrastructure surcharge filing, effective January 1, 2019.

On December 20, 2018, our Illinois subsidiary filed for an infrastructure surcharge requesting \$8 million in additional annualized revenues, which will become effective on January 1, 2019.

Pending Infrastructure Surcharge Filings

On November 16, 2018, our Tennessee subsidiary filed for an infrastructure surcharge requesting \$2 million in additional annualized revenues.

There is no assurance that all or any portion of these requests will be granted.

Tax Matters

Tax Cuts and Jobs Act

On December 22, 2017, the TCJA was signed into law, which, among other things, enacted significant and complex changes to the Internal Revenue Code of 1986, including a reduction in the federal corporate income tax rate from 35% to 21% as of January 1, 2018, and certain other provisions related specifically to the public utility industry, including continuation of interest expense deductibility, the exclusion from utilizing bonus depreciation and the normalization of deferred income tax. The enactment of the TCJA required a re-measurement of our deferred income taxes that materially impacted our 2017 results of operations and financial position. The portion of this re-measurement related to our Regulated Businesses was substantially offset by a regulatory liability, as we believe it is probable that the deferred income tax excesses created by the TCJA will benefit our regulated customers in future rates. The remaining portion of this re-measurement of the net deferred income tax liability was recorded as a non-cash charge to earnings during the fourth quarter of 2017. During 2018, we continued to gather, assess and evaluate additional guidance and regulations related to the changes related to the TCJA. As a result of this process, we have recorded additional adjustments to finalize our initial 2017 estimates. See Note 14—Income Taxes in the Notes to Consolidated Financial Statements for additional information.

During 2018, the Company's 14 regulatory jurisdictions began to consider the impacts of the TCJA. The Company has adjusted customer rates to reflect the lower income tax rate in 10 states. In one of those 10 states, a portion of the tax savings is being used to reduce certain regulatory assets. In one additional state, we are using the tax savings to offset additional capital investment and to reduce a regulatory asset. Proceedings in the other three jurisdictions remain pending. With respect to excess accumulated deferred income taxes, regulators in the eight states that have considered the issue have agreed with our overall timeline of passing the excess back to customers beginning no earlier than 2019, when the Company is able to produce the normalization schedule using the average rate assumption method. In one of those states, we will use the amortization of the excess accumulated deferred income taxes to offset future infrastructure investments.

On March 23, 2018, President Trump signed the Consolidated Appropriations Act of 2018 (the "CAA"). The CAA corrects and clarifies some aspects of the TCJA related to bonus depreciation eligibility. Specifically, property that was acquired, or the construction began, prior to September 27, 2017, is eligible for bonus depreciation. This clarification allowed the Company to benefit from additional bonus depreciation deductions on the 2017 tax return, and as a result, we believe that we will likely begin paying federal income taxes towards the end of 2019, when we expect our federal NOL carryforwards balance will be fully used, and expect to be a full year cash taxpayer by 2020, although this timing could be impacted by any significant changes in our future results of operations and the outcome of pending regulatory proceedings regarding the TCJA.

On November 26, 2018, the U.S. Department of the Treasury released proposed regulations concerning interest expense limitation rules. The TCJA revised and broadened the existing interest expense limitation regulations. The Company has considered all the rules set forth in the proposed regulation including allocated interest expense and interest income based on the relative amounts of the Company's adjusted basis in the assets used in its excepted and non-excepted trades or business, or our Regulated Businesses and Market-Based Businesses. Based on our interpretation of the new guidance, the Company reasonably believes the deductibility of its interest expense will not be limited under the new regulations.

Other Tax Matters

On June 1, 2018, the State of Missouri enacted legislation that decreased the state income tax rate on our taxable income attributable to Missouri from 6.25% to 4.00%, beginning in the 2020 tax year. As a result, we were required to re-measure our cumulative deferred income tax balances using the lower state income tax rate in the second quarter of 2018. This resulted in a decrease to the Company's unitary deferred income tax liability of \$12 million, and an increase to a regulatory liability of \$13 million, as we believe it is probable of refund in future rates.

On May 30, 2018, the State of Iowa enacted legislation that decreased the state income tax rate on our taxable income attributable to Iowa from 12.0% to 9.8%, beginning in the 2021 tax year. The deferred income tax liability for our Iowa subsidiary was reduced by \$1 million, and offset by a regulatory liability, as we believe this liability is probable of refund in future rates.

On April 13, 2018, the State of Kentucky enacted legislation that decreased the state income tax rate on our taxable income attributable to Kentucky from 6% to 5%, beginning in the 2018 tax year. In addition, beginning in the 2019 tax year, a consolidated return, including all affiliated group members, will be required. As a result, we were required to record a deferred income tax liability of \$7 million for our Kentucky unitary filing group, and the existing deferred income tax liability related to our Kentucky subsidiary was reduced by \$1 million, offset by a regulatory liability, as we believe this liability is probable of refund in future rates.

The Company performed its annual review of the apportionment rates in all of its unitary filing jurisdictions and implemented changes to reflect considerations for historical results and future business outlooks in each of the jurisdictions. As of December 31, 2018, we recorded a non-cash, cumulative charge to earnings of \$12 million, resulting from the legislative changes described above and the adjustments made through various state income tax apportionment rates.

On July 1, 2018, the State of New Jersey enacted legislation that increased the corporate business tax rate from 9.0% to 11.5% for the 2018 and 2019 tax years, and to 10.5% for the 2020 and 2021 tax years. The tax rate will revert back to 9.0% for tax year 2022 and beyond. Additionally, the new legislation states that for the year beginning on and after January 1, 2019, a unitary group will be required to file a combined unitary New Jersey tax return. The legislation allows a deduction over a 10-year period, commencing five years after the enactment of unitary combined reporting, if the combined reporting provisions result in an aggregate increase to the net deferred income tax liability or an aggregate decrease to the net deferred income tax asset. Thus, the deferred income tax liability resulting from the unitary filing requirement would be completely offset by the deferred income tax asset derived from this deduction. There are no underlying impacts to the Company's earnings as a result of the new filing requirement. On October 4, 2018, New Jersey's governor signed a technical correction bill into law. The correction bill provides an exclusion for water and wastewater utility companies whose rates are regulated from the combined reporting requirement. The Company's tax credit granted by the State of New Jersey will not be impacted by the law changes mentioned above.

Legislative Updates

During 2018, our regulatory jurisdictions enacted legislation as follows:

- House File 2307 in Iowa and House Bill 1566 in Maryland allow a fair market value methodology to be included in rate base with respect to prospective acquisitions.
- Senate Enrolled Act 362 in Indiana, which, similar to the Water Quality Accountability Act enacted in New Jersey in 2017, sets new operational standards and requirements for water and wastewater treatment plants in areas such as capital asset management, cost-benefit analysis and cybersecurity.
- Senate Bill 705 in Missouri allows the Missouri Public Service Commission to approve a revenue stability mechanism (“RSM”) for water utilities. In an effort to encourage conservation, a RSM adjusts rates periodically to ensure that a utility’s revenue will be sufficient to cover its costs, and customers will not overpay for service.
- Senate Bill 592 in Missouri changes the public vote requirement for the sale of a municipal water or wastewater system to a simple majority for more than 500 small towns. Historically, only larger communities required a simple majority, while smaller communities needed a two-thirds majority. This legislation increases the options for small towns, should they decide to address their water and sewer challenges through an asset sale.
- Legislation was passed in Iowa that allows private water utilities to use a future test year approach in rate cases, decreasing potential regulatory lag and helping to spread out the time between rate cases.
- In California, Assembly Bill 2179 changed the vote required to allow cities to sell sewer systems to a simple majority as compared to a two-thirds majority, and Assembly Bill 2339 allowed certain cities to sell water systems without an election.
- Act 58 of 2018 in Pennsylvania allows public utilities to implement alternative rates and rate mechanisms in rate base proceedings. These alternative rates and rate mechanisms include, but are not limited to the following: revenue stability mechanisms, performance-based rates, formula rates, multi-year rate plans, or a combination of those mechanisms or other mechanisms. Petitions to establish alternative rate mechanisms are subject to PUC review and approval and can only be filed by a utility in a rate base proceeding.
- On October 17, 2018, the Pennsylvania General Assembly passed legislation that allows an investor-owned water utility to include the replacement costs for customer-owned LSLs and customer-owned damaged wastewater laterals in rate base when replaced as part of a Pennsylvania Public Utility Commission approved program. The law became effective December 23, 2018. Prior to the new law, our Pennsylvania subsidiary sought the approval of the Pennsylvania Public Utility Commission to revise the Company’s rules to permit it to replace customer-owned LSLs and to recover associated costs. Our Pennsylvania subsidiary’s proposed replacement of customer-owned LSL program is being reviewed under the provisions of the new law.
- On October 23, 2018, President Trump signed America’s Water Infrastructure Act of 2018. The legislation includes policies intended to improve water and wastewater system management and authorization for states to assess options for consolidation for systems that do not comply with the federal Safe Drinking Water Act and its rules and regulations. The legislation increases funding to water system funding programs, including the State Revolving Loan Fund program and the Water Infrastructure Finance and Innovation Act.

Consolidated Results of Operations

The following table provides our consolidated results of operations and the ensuing discussions provide explanations for the variances related to the major components:

(Dollars in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
	\$		\$	\$	%	\$	%
Operating revenues	\$ 3,440	\$ 3,357	\$ 3,302	\$ 83	2.5	\$ 55	1.7
Operating expenses:							
Operation and maintenance	1,479	1,369	1,499	110	8.0	(130)	(8.7)
Depreciation and amortization	545	492	470	53	10.8	22	4.7
General taxes	277	259	258	18	6.9	1	0.4
(Gain) on asset dispositions and purchases	(20)	(16)	(10)	(4)	25.0	(6)	60.0
Impairment charge	57	—	—	57	100.0	—	—
Total operating expenses, net	2,338	2,104	2,217	234	11.1	(113)	(5.1)
Operating income	1,102	1,253	1,085	(151)	(12.1)	168	15.5
Other income (expense):							
Interest, net	(350)	(342)	(325)	(8)	2.3	(17)	5.2
Non-operating benefit costs, net	20	(9)	(5)	29	322.2	(4)	80.0
Loss on early extinguishment of debt	(4)	(7)	—	3	(42.9)	(7)	100.0
Other, net	19	17	15	2	11.8	2	13.3
Total other income (expense)	(315)	(341)	(315)	26	(7.6)	(26)	8.3
Income before income taxes	787	912	770	(125)	(13.7)	142	18.4
Provision for income taxes	222	486	302	(264)	(54.3)	184	60.9
Consolidated net income	565	426	468	139	32.6	(42)	(9.0)
Net loss attributable to noncontrolling interest	(2)	—	—	(2)	(100.0)	—	—
Net income attributable to common shareholders	\$ 567	\$ 426	\$ 468	\$ 141	33.1	\$ (42)	(9.0)

In 2018, net income attributable to common shareholders increased \$141 million, or 33.1 percent, compared to the same period in 2017. This increase was due to a \$125 million non-cash charge in 2017 related to the implementation of TCJA, continued growth in the Regulated Businesses, driven by infrastructure investment, acquisitions and organic growth and growth in the Market-Based Businesses, mainly from our Homeowner Services Group due to the mid-year acquisition of Pivotal. These increases were partially offset by higher O&M and depreciation expenses across the Company due to growth of the business and the asset impairment charge recorded for our Keystone subsidiary during the third quarter of 2018.

In 2017, net income attributable to common shareholders decreased \$42 million, or 9.0 percent, as compared to the same period in 2016. This decrease was due to a \$125 million non-cash charge in 2017 related to the implementation of TCJA resulting from the re-measurement of deferred taxes primarily at the parent company from the reduction in the federal corporate income tax rate from 35% to 21%. Partially offsetting this non-cash charge was continued growth in the Regulated Businesses driven mainly by infrastructure investment, acquisitions and organic growth, combined with growth in the Market-Based Businesses mainly from the Homeowner Services Group and Keystone.

Segment Results of Operations

Our operating segments are comprised of the revenue-generating components of the business for which separate financial information is internally produced and regularly used by management to make operating decisions, assess performance and allocate resources. The Company operates its business primarily through one reportable segment, the Regulated Businesses segment. We also operate several market-based businesses within operating segments that individually do not meet the criteria of a reportable segment in accordance with GAAP. These non-reportable operating segments are collectively presented as our Market-Based Businesses, which is consistent with how management assesses the results of these businesses.

Regulated Businesses Segment

The following table provides financial information for our Regulated Businesses :

(Dollars in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				\$	%	\$	%
Operating revenues	\$ 2,984	\$ 2,958	\$ 2,871	\$ 26	0.9	\$ 87	3.0
Operation and maintenance	1,159	1,076	1,165	83	7.7	(89)	(7.6)
Depreciation and amortization	500	462	440	38	8.2	22	5.0
General taxes	261	244	242	17	7.0	2	0.8
(Gain) on asset dispositions and purchases	(7)	(16)	(7)	9	(56.3)	(9)	128.6
Interest, net	(280)	(268)	(256)	(12)	4.5	(12)	4.7
Other income (expenses)	(247)	(266)	(257)	19	(7.1)	(9)	3.5
Income before income taxes	826	925	775	(99)	(10.7)	150	19.4
Provision for income taxes	224	367	303	(143)	(39.0)	64	21.1
Net income attributable to common shareholders	602	559	472	43	7.7	87	18.4

Operating Revenues

The following tables provide information regarding the main components of our Regulated Businesses ' operating revenues and the ensuing discussions provide explanation for the material variances:

(Dollars in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				\$	%	\$	%
Water services:							
Residential	\$ 1,663	\$ 1,644	\$ 1,601	\$ 19	1.2	\$ 43	2.7
Commercial	616	601	582	15	2.5	19	3.3
Fire service	137	139	134	(2)	(1.4)	5	3.7
Industrial	136	137	134	(1)	(0.7)	3	2.2
Public and other	216	244	259	(28)	(11.5)	(15)	(5.8)
Total water services	2,768	2,765	2,710	3	0.1	55	2.0
Wastewater services	161	142	112	19	13.4	30	26.8
Other (a)	55	51	49	4	7.8	2	4.1
Total operating revenues	\$ 2,984	\$ 2,958	\$ 2,871	\$ 26	0.9	\$ 87	3.0

(a) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.

(Gallons in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				Gallons	%	Gallons	%
Billed water services volumes:							
Residential	172,827	174,420	174,599	(1,593)	(0.9)	(179)	(0.1)
Commercial	82,572	82,147	82,489	425	0.5	(342)	(0.4)
Industrial	38,432	39,404	38,465	(972)	(2.5)	939	2.4
Fire service, public and other	50,651	51,341	50,678	(690)	(1.3)	663	1.3
Total billed water services volumes	344,482	347,312	346,231	(2,830)	(0.8)	1,081	0.3

In 2018 , operating revenues increased \$26 million , or 0.9% , primarily due to a:

- \$149 million increase from authorized rate increases, including infrastructure surcharges, principally to fund infrastructure investment in various states;
- \$22 million increase from water and wastewater acquisitions, as well as organic growth in existing systems; and
- \$148 million decrease from the impacts of the TCJA which have or are expected to benefit customers. This decrease is made up of two components: (i) a reserve on revenue billed during 2018, for the estimated income tax savings expected to benefit customers in future rates; and (ii) rate adjustments made in certain subsidiaries where our Regulators have authorized lower rates or offsets to regulatory assets or capital investments to pass the benefits to customers.

In 2017 , operating revenues increased \$87 million , or 3.0% , primarily due to a:

- \$81 million increase from authorized rate increases, including infrastructure surcharges, principally to fund infrastructure investment in various states;
- \$43 million increase from water and wastewater acquisitions, as well as organic growth in existing systems; and
- \$9 million increase from higher wastewater treatment volumes and an increase in private fire service connections; partially offset by a
- \$48 million decrease from lower water services demand, including a \$15 million reduction due to warmer weather in 2016.

Operation and Maintenance

The following tables provide information regarding the main components of our Regulated Businesses ' operating and maintenance expense and the ensuing discussions provide an explanation for the material variances:

	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				\$	%	\$	%
(Dollars in millions)							
Production costs	\$ 313	\$ 298	\$ 288	\$ 15	5.0	\$ 10	3.5
Employee-related costs	451	431	431	20	4.6	—	—
Operating supplies and services	227	209	212	18	8.6	(3)	(1.4)
Maintenance materials and supplies	81	70	73	11	15.7	(3)	(4.1)
Customer billing and accounting	60	51	54	9	17.6	(3)	(5.6)
Other	27	17	107	10	58.8	(90)	(84.1)
Total	\$ 1,159	\$ 1,076	\$ 1,165	\$ 83	7.7	\$ (89)	(7.6)

Production Costs

	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				\$	%	\$	%
(Dollars in millions)							
Purchased water	\$ 133	\$ 128	\$ 122	\$ 5	3.9	\$ 6	4.9
Fuel and power	91	89	87	2	2.2	2	2.3
Chemicals	52	47	47	5	10.6	—	—
Waste disposal	37	34	32	3	8.8	2	6.3
Total	\$ 313	\$ 298	\$ 288	\$ 15	5.0	\$ 10	3.5

In 2018 , production costs increased \$15 million , or 5.0% , primarily due to a:

- \$5 million increase in purchased water from higher prices in our California subsidiary;
- \$5 million increase in chemicals from higher usage, the result of wet weather conditions in 2018, primarily in the Northeast and Mid-Atlantic; and
- \$3 million increase in waste disposal from higher sludge removal costs, primarily in our New Jersey subsidiary.

In 2017 , production costs increased \$10 million , or 3.5% , primarily due to a:

- \$6 million increase in purchased water from higher usage in our California subsidiary, the result of the California water usage restrictions, which were mandated in 2015 due to the state's extreme drought, being lifted in the second quarter of 2017; and
- \$2 million increase in waste disposal from higher sludge removal costs in our Illinois and Missouri subsidiaries.

Employee-Related Costs

(Dollars in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				\$	%	\$	%
Salaries and wages	\$ 349	\$ 334	\$ 336	\$ 15	4.5	\$ (2)	(0.6)
Pensions	19	14	18	5	35.7	(4)	(22.2)
Group insurance	57	57	56	—	—	1	1.8
Other benefits	26	26	21	—	—	5	23.8
Total	<u>\$ 451</u>	<u>\$ 431</u>	<u>\$ 431</u>	<u>\$ 20</u>	<u>4.6</u>	<u>\$ —</u>	<u>—</u>

In 2018 , employee-related costs increased \$20 million , or 4.6% , primarily due to a:

- \$15 million increase in salaries and wages to support growth of the business, as well as an increase in overtime related to a higher volume of main breaks during the first quarter of 2018, the result of harshly frigid weather in the Midwest, Northeast and parts of the Mid-Atlantic; and
- \$5 million increase in pensions from an authorized change in regulatory recovery of pension expense in our Pennsylvania subsidiary.

In 2017 , employee-related costs remained consistent primarily due to a:

- \$5 million increase in other benefits from higher employer 401(k) savings plan contributions and an increase in training costs; partially offset by a
- \$4 million decrease in pensions from higher capitalization rates in 2017.

Operating Supplies and Services

In 2018 , operating supplies and services increased \$18 million , or 8.6% , primarily due to a \$17 million increase in contracted services from higher costs for various legal matters including a settlement agreement in our New York subsidiary and costs associated with condemnation proceedings in Monterey, California, higher costs from temporary workers as a result of restructuring initiatives in our technology support services, as well as an increase in other operating expenses.

In 2017 , operating supplies and services decreased \$3 million , or 1.4% , primarily due to a decrease in charges recorded in 2016, including a \$5 million write-off of timekeeping system costs that were previously capitalized and a \$7 million judgment in litigation, partially offset by an increase in office supplies and services from higher employee relocation, telecommunication and office supplies costs.

Maintenance Materials and Supplies

In 2018 , maintenance materials and supplies increased \$11 million , or 15.7% , from a higher volume of main breaks and paving costs, driven by the colder weather experienced during the first quarter of 2018, as well as higher tank painting costs in our New Jersey subsidiary and various maintenance projects in our Pennsylvania, Missouri and Indiana subsidiaries.

In 2017 , maintenance materials and supplies decreased \$3 million , or 4.1% , from lower tank painting costs in our New Jersey subsidiary and the timing of maintenance activities.

Customer Billing and Accounting

In 2018 , customer billing and accounting increased \$9 million , or 17.6% , from an increase in customer uncollectible expense, primarily in our Pennsylvania, Missouri and New York subsidiaries, and higher call volumes experienced at our customer service centers.

In 2017, customer billing and accounting decreased \$3 million or 5.6%, from lower customer uncollectible expense attributable to focused collection efforts.

Other (Operation and Maintenance)

In 2018, other (operation and maintenance) increased \$10 million, or 58.8%, primarily due to higher casualty insurance claims in 2018, and a \$3 million charge from a regulatory authorization allowing a portion of the income tax savings resulting from the TCJA to be used to reduce certain regulatory assets. During 2018, we recorded a \$20 million benefit resulting from an insurance settlement with one of our general liability insurance carriers associated with the Freedom Industries chemical spill in West Virginia.

In 2017, other (operation and maintenance) decreased \$90 million, or 84.1%, primarily due to a \$65 million net charge recorded in 2016, resulting from the binding global agreement in principle to settle claims associated with the Freedom Industries chemical spill in West Virginia, and a \$22 million benefit recorded in 2017, resulting from a related insurance settlement with one of our general liability insurance carriers, as well as a decrease in casualty insurance expense attributable to a lower claims experience in 2017.

Depreciation and Amortization

In 2018 and 2017, depreciation and amortization increased \$38 million and \$22 million, or 8.2% and 5.0%, respectively. The increase for both periods was primarily due to additional utility plant placed in service.

General Taxes

In 2018 and 2017, general taxes increased \$17 million and \$2 million, or 7.0% and 0.8%, respectively. The increase in 2018 was primarily due to incremental property taxes in several of our subsidiaries, including in Missouri and New York.

(Gain) on Asset Dispositions and Purchases

In 2018 and 2017, (gain) on asset dispositions and purchases increased \$9 million, or 56.3%, and decreased \$9 million, or 128.6%, respectively. The decrease in 2018 was primarily due to higher gains recognized in 2017, including a \$7 million gain on a land sale in our Kentucky subsidiary, along with acquisition and land sale gains in our Pennsylvania, Missouri and California subsidiaries, partially offset by gains recognized in 2018 for the sale of a treatment plant in our Illinois subsidiary and a building in our New Jersey subsidiary.

Interest, net

In 2018 and 2017, interest, net increased \$12 million and \$12 million, respectively. The increase in interest expense during 2018 was driven by the issuance of incremental long-term debt in the third quarter of 2018 to support growth of the business, and higher levels of short-term borrowings during 2018, coupled with an increase in the average short-term borrowing rate in the current year. For the year ended December 31, 2017, the increase in interest expense was driven by the issuance of incremental long-term debt in 2017 to support growth of the business.

Other Income (Expenses)

In 2018, other income (expenses) increased \$19 million, or 7.1%, primarily due to a reduction in the non-service cost components of pension and other postretirement benefits expense resulting from favorable actuarial performance, and an increase in allowance for funds used during construction attributable to higher capital investment in 2018, partially offset by an increase in interest expense as discussed above. For the year ended December 31, 2017, the increase in other income (expenses) was primarily due to an increase in interest expense as discussed above.

Provision for Income Taxes

For the year ended December 31, 2018, our provision for income taxes decreased primarily due to the reduction in the federal corporate income tax rate from 35% to 21% as of January 1, 2018, resulting from the enactment of the TCJA. We expect the reduced tax rate will benefit our customers through established ratemaking, tax and regulatory normalization provisions. During 2018, we continued assessing the impacts of the TCJA as allowed by Staff Accounting Bulletin 118 ("SAB 118"), and as a result we recorded adjustments to federal and state income tax TCJA estimates. For the year ended December 31, 2017, our provision for income taxes increased primarily due to higher pretax income in 2017 compared to 2016.

Market-Based Businesses

The following table provides financial information for our Market-Based Businesses and the ensuing discussions provide explanation for the material variances:

(Dollars in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
				\$	%	\$	%
Operating revenues	\$ 476	\$ 422	\$ 451	\$ 54	12.8	\$ (29)	(6.4)
Operation and maintenance	362	337	372	25	7.4	(35)	(9.4)
Depreciation and amortization	29	18	15	11	61.1	3	20.0
(Gain) on asset dispositions and purchases	(13)	—	(1)	(13)	(100.0)	1	(100.0)
Impairment charge	57	—	—	57	100.0	—	—
Income before income taxes	41	66	65	(25)	(37.9)	1	1.5
Provision for income taxes	11	28	26	(17)	(60.7)	2	7.7
Net loss attributable to noncontrolling interest	(2)	—	—	(2)	(100.0)	—	—
Net income attributable to common shareholders	32	38	39	(6)	(15.8)	(1)	(2.6)

Operating Revenues

In 2018 , operating revenues increased \$54 million , or 12.8% , primarily due to a:

- \$76 million increase in our Homeowner Services Group from contract growth, including \$67 million from the acquisition of Pivotal on June 4, 2018 ; and
- \$6 million increase in Keystone from an increase in water transfer operations resulting from market recovery in the shale natural gas industry; partially offset by a
- \$16 million decrease in our Military Services Group from lower capital upgrades; and
- \$14 million decrease in our Contract Services Group from the sale of the majority of our O&M contracts to subsidiaries of Veolia Environnement S.A. during the third quarter of 2018.

In 2017 , operating revenues decreased \$29 million , or 6.4% , primarily due to a:

- \$56 million decrease in our Military Services Group from lower capital upgrades, largely driven by reduced military base budgets and the completion of a large project in the first half of 2017 at Fort Polk; and
- \$6 million decrease in our Contract Services Group from the completion of several O&M contracts during 2017; partially offset by a
- \$18 million increase in our Homeowner Services Group from contract growth, as well as expansion into new geographic areas and price increases for existing customers; and
- \$16 million increase in Keystone due to an increase in operations resulting from market recovery in the shale natural gas industry.

Operation and Maintenance

The following table provides information regarding the main components of our Market-Based Businesses' operating and maintenance expense and the ensuing discussions provide an explanation for the material variances:

(Dollars in millions)	For the Years Ended December 31,			Increase (Decrease)		Increase (Decrease)	
	2018	2017	2016	2018 vs. 2017		2017 vs. 2016	
	\$			\$	%	\$	%
Production costs	\$ 32	\$ 37	\$ 35	\$ (5)	(13.5)	\$ 2	5.7
Employee-related costs	104	97	94	7	7.2	3	3.2
Operating supplies and services	142	121	165	21	17.4	(44)	(26.7)
Maintenance materials and supplies	69	67	68	2	3.0	(1)	(1.5)
Other	15	15	10	—	—	5	50.0
Total	<u>\$ 362</u>	<u>\$ 337</u>	<u>\$ 372</u>	<u>\$ 25</u>	<u>7.4</u>	<u>\$ (35)</u>	<u>(9.4)</u>

In 2018, operation and maintenance expense increased \$25 million, or 7.4%, primarily due to a:

- \$7 million increase in employee-related costs mainly in our Homeowner Services Group related to the acquisition of Pivotal on June 4, 2018, partly offset by lower costs in our Contract Services Group resulting from the sale of the majority of our O&M contracts during the third quarter of 2018; and
- \$21 million increase in operating supplies and services from the acquisition of Pivotal and higher advertising and marketing expense in our Homeowner Services Group, as well as an increase in water transfer operations in Keystone, offset in part by lower capital upgrades in our Military Services Group and the sale of the majority of our Contract Services Group's O&M contracts during the third quarter of 2018, as discussed above; partially offset by a
- \$5 million decrease in production costs from lower purchased water and chemical usage in our Contract Services Group resulting from the sale of the majority of our O&M contracts during the third quarter of 2018.

In 2017, operation and maintenance expense decreased \$35 million, or 9.4%, primarily due to a:

- \$44 million decrease in operating supplies and services from lower capital upgrades in our Military Services Group, as discussed above, as well as lower advertising and marketing expense in our Homeowner Services Group; partially offset by a
- \$3 million increase in employee-related costs from higher headcount in Keystone from an increase in operations, as discussed above, offset in part in our Contract Services Group from the completion of several O&M contracts during 2017; and
- \$5 million increase in other (operating and maintenance expense) from an increase in customer uncollectible expense in our Homeowner Services Group resulting from contract growth in 2017.

Depreciation and Amortization

In 2018 and 2017, depreciation and amortization increased \$11 million and \$3 million, or 61.1% and 20.0%, respectively. The increase in 2018 was primarily due to the addition of property, plant and equipment and intangible assets from the acquisition of Pivotal on June 4, 2018.

(Gain) on Asset Dispositions and Purchases

In 2018, (gain) on asset dispositions and purchases increased \$13 million primarily due to the (gain) recognized on the sale of the majority of our Contract Services Group's O&M contracts to subsidiaries of Veolia Environnement S.A. during the third quarter of 2018, partially offset by a loss recognized on the sale of property, plant and equipment in Keystone. See Note 4—Acquisitions and Divestitures in the Notes to Consolidated Financial Statements for additional information regarding the Veolia Environnement S.A. transaction.

Impairment Charge

During the third quarter of 2018, a goodwill and intangible asset impairment charge of \$57 million was recorded for Keystone, the result of operational and financial challenges encountered in the construction business, and the Company's determination to narrow the scope of the Keystone business, to focus on its core operations of providing water transfer services. See Note 8—Goodwill and Other Intangible Assets in the Notes to Consolidated Financial Statements for additional information.

Provision for Income Taxes

In 2018 and 2017, provision for income taxes decreased \$17 million, or 60.7%, and increased \$2 million, or 7.7%, respectively. The decrease in 2018 was primarily due to the reduction in the federal corporate income tax rate from 35% to 21% as of January 1, 2018, resulting from the enactment of the TCJA.

Liquidity and Capital Resources

We regularly evaluate and monitor our cash requirements for capital investments, acquisitions, operations, commitments, debt maturities, interest and dividends. Our business is capital intensive, with a majority of this capital funded by cash flows from operations. When necessary, we also obtain funds from external sources, primarily in the debt markets and through short-term commercial paper borrowings. We also have access to equity capital markets, if needed. Our access to external financing on reasonable terms depends on our credit ratings and current business conditions, including that of the utility and water utility industry in general, as well as conditions in the debt or equity capital markets, and the national and international economic and geopolitical arenas. If these business, market, financial and other conditions deteriorate to the extent that we no longer are able to access the capital markets on reasonable terms, we have access to an unsecured revolving credit facility with aggregate bank commitments of \$2.25 billion, with an expiration date of June 2023 (subject to extension by us for up to two one-year periods). We rely on this revolving credit facility and the capital markets to fulfill our short-term liquidity needs, to issue letters of credit and to support our \$2.10 billion commercial paper program. Disruptions in the credit markets may discourage lenders from extending the terms of such commitments or agreeing to new commitments. Market disruptions may also limit our ability to issue debt and equity securities in the capital markets. See “Credit Facilities and Short-Term Debt” section below for additional information.

In order to meet our short-term liquidity needs, we, through AWCC, our wholly owned financing subsidiary, issue commercial paper, which is supported by the revolving credit facility. As of December 31, 2018, AWCC had no outstanding borrowings and \$81 million of outstanding letters of credit under its revolving credit facility, with \$2.25 billion available to fulfill our short-term liquidity needs and to issue letters of credit, which supported \$954 million in outstanding commercial paper. We believe that our ability to access the capital markets, our revolving credit facility and our cash flows from operations will generate sufficient cash to fund our short-term requirements. We have no plans to issue equity under normal operating conditions in the foreseeable future with the limited exception of privately or investor-owned acquisitions whose sellers require equity to complete the acquisition or other opportunistic acquisitions. We believe we have sufficient liquidity and the ability to manage our expenditures, should there be a disruption of the capital and credit markets. However, we can provide no assurances that the lenders will meet their existing commitments to AWCC under the revolving credit facility or that we will be able to access the commercial paper or loan markets in the future on terms acceptable to us or at all.

In addition, our Regulated Businesses receive advances and contributions from customers, home builders and real estate developers to fund construction necessary to extend service to new areas. Advances for construction are refundable for limited periods, which vary according to state regulations, as new customers begin to receive service or other contractual obligations are fulfilled. Amounts which are no longer refundable are reclassified to contributions in aid of construction. Utility plant funded by advances and contributions is excluded from our Regulated Businesses rate base. Generally, we depreciate contributed property and amortize contributions in aid of construction at the composite rate of the related property. Some of our subsidiaries do not depreciate contributed property, based upon regulatory guidelines. The taxability of advances and contributions in aid of construction was changed with the enactment of the TCJA. Previously, the majority of advances and contributions that we collected were not taxable; however, with the enactment of the TCJA, they are now treated as taxable income. Regulatory treatment for advances and contributions under the TCJA has been resolved by most of our regulatory jurisdictions in a manner that passes the tax consequences of the change in law to the customer making the advance or contribution, or allows the utility to pass those consequences onto a larger base of customers. We are working with the remaining regulatory jurisdictions to determine impacts to the Company and our customers.

We use our capital resources, including cash, primarily to (i) fund operating and capital requirements, (ii) pay interest and meet debt maturities, (iii) pay dividends, (iv) fund acquisitions, (v) fund pension and postretirement benefit obligations, and (vi) we estimate beginning at the end of 2019, to pay federal income taxes. We invest a significant amount of cash on regulated capital projects where we expect to earn a long-term return on investment. Additionally, we operate in rate regulated environments in which the amount of new investment recovery may be limited, and where such recovery generally takes place over an extended period of time, and certain capital recovery is also subject to regulatory lag. See Item 1—Business — Regulated Businesses — Economic Regulation and Rate Making for additional information. We expect to fund future maturities of long-term debt through a combination of external debt and, to the extent available, cash flows from operations. Since we expect our capital investments over the next few years to be greater than our cash flows from operating activities, we have no plans to reduce debt significantly. If necessary, we may delay certain capital investments or other funding requirements, or pursue financing from other sources to preserve liquidity. In this event, we believe we can rely upon cash flows from operations to meet our obligations and fund our minimum required capital investments for an extended period of time.

With the enactment of the TCJA and the reduction of the U.S. federal corporate income tax rate from 35% to 21% , we anticipate a decrease in future revenue authorizations associated with our Regulated Businesses , initially leading to lower cash flows. We expect this cash flow impact to decline over time, as our Regulated Businesses ' rate base grows, the result of lower deferred income tax liabilities, which offset rate base. The lower deferred income tax liabilities are mainly due to (i) a lower U.S. federal corporate income tax rate, (ii) the normalization (refunding to customers) of the re-measured deferred income tax liabilities over the remaining life of the associated assets, and (iii) the loss of future bonus depreciation deductions on capital projects that began after September 27, 2017.

The Water Infrastructure Finance and Innovation Act of 2014 ("WIFIA") established the WIFIA program, a federal credit program administered by the EPA for eligible water and wastewater infrastructure projects. The WIFIA program accelerates investment in our nation's water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects. Our letters of interest have been approved by the EPA, and we have begun the full application process for two WIFIA loans totaling \$187 million for two separate projects in our Missouri subsidiary.

Cash Flows Provided by Operating Activities

Cash flows provided by operating activities primarily result from the sale of water and wastewater services and, due to the seasonality of demand, are generally greater during the warmer months. Our future cash flows provided by operating activities will be affected by, among other things; economic utility regulation inflation; compliance with environmental, health and safety standards; production costs; maintenance costs; customer growth; declining customer usage of water; employee-related costs, including pension funding; weather and seasonality; taxes; and overall economic conditions.

We expect that the enactment of the TCJA to be accretive to our consolidated earnings over time through (i) growth in rate base for the same level of expected capital expenditures due to the impact of the lower U.S. federal corporate income tax rate and the re-measurement of our deferred income tax assets and liabilities, (ii) increased earnings in our Market-Based Businesses due to the lower U.S. federal corporate income tax rate, all partially offset by (iii) the lower tax shield on interest expense at the parent, as well as increased debt levels from lower cash flows from operations as we pass the lower tax rate benefits to our regulated customers. We believe that we will likely begin paying federal income taxes towards the end of 2019, when we expect our federal NOL carryforwards balance will be fully used, and expect to be a full year cash taxpayer by 2020, although this timing could be impacted by any significant changes in our future results of operations and the outcome of regulatory proceedings regarding the TCJA.

Cash flows provided by operating activities have been a reliable, steady source of funding, sufficient to meet operating requirements and fund the majority of our capital investments. We expect to seek access to debt capital markets to meet the balance of our capital investment, if any, and fund our dividend payments, as needed. We also have access to equity capital markets, if needed. We do not foresee the need to access equity markets over the next five years under normal operating conditions. Operating cash flows can be negatively affected by changes in our rate regulated environments, changes in our Market-Based Businesses , changes in the economy, interest rates, the timing of tax payments, and our customers' ability to pay for service in a timely manner, among other items. We can provide no assurance that our customers' historical payment pattern will continue in the future. Sometimes our current liabilities exceed current assets mainly from debt maturities due within one year and the periodic use of short-term debt as a funding source, primarily to meet scheduled maturities of long-term debt, fund acquisitions and construction projects, as well as cash needs which can fluctuate significantly due to the seasonality of the business. We address cash timing differences through the aforementioned liquidity funding mechanisms.

The following table provides a summary of the major items affecting our cash flows provided by operating activities:

(In millions)	For the Years Ended December 31,		
	2018	2017	2016
Net income	\$ 565	\$ 426	\$ 468
Add (less):			
Depreciation and amortization	545	492	470
Deferred income taxes and amortization of investment tax credits	195	462	295
Non-cash impairment charge	57	—	—
Other non-cash activities (a)	56	16	35
Changes in working capital (b)	30	123	9
Pension and postretirement benefit contributions	(22)	(48)	(53)
Impact of Freedom Industries settlement activities	(40)	(22)	65
Net cash flows provided by operating activities	\$ 1,386	\$ 1,449	\$ 1,289

(a) Includes provision for losses on accounts receivable, (gain) on asset dispositions and purchases, pension and non-pension postretirement benefits and other non-cash, net. Details of each component can be found on the Consolidated Statements of Cash Flows.

(b) Changes in working capital include changes to receivables and unbilled revenues, accounts payable and accrued liabilities, and other current assets and liabilities, net.

In 2018, cash flows provided by operating activities decreased \$63 million, primarily due to lower revenues as a result of the enactment of the TCJA and changes in working capital. These decreases are partially offset by an increase in net income. The main factors contributing to the net income increase are described in this section under “Consolidated Results of Operations” and included higher operating revenue and a lower provision for income taxes.

In 2017, cash flows provided by operations increased \$160 million, primarily due to an increase in net income after non-cash adjustments, including the impact of the enactment of the TCJA, and an increase in cash flows from working capital. The main factors contributing to the net income increase are described in the “Consolidated Results of Operations” section and include higher operating revenues, partially offset by higher income taxes due to a \$125 million re-measurement charge resulting from the impact of the change in the federal tax rate on the Company’s deferred income taxes from the enactment of the TCJA. The increase in non-cash activities was mainly attributable to the increase in deferred income taxes, as mentioned above, and an increase in depreciation and amortization due to additional utility plant placed in service. The change in working capital was principally due to (i) the timing of accounts payable and accrued liabilities, including the accrual recorded during 2016 for the binding global agreement in principle to settle claims associated with the Freedom Industries chemical spill in West Virginia, (ii) a decrease in unbilled revenues as a result of our Military Services Group achieving significant capital project milestones during 2016, and (iii) a change in other current assets and liabilities, including the decrease in other current assets associated with the termination of our four forward starting swap agreements and timing of payments clearing our cash accounts.

The Company expects to make pension contributions to the plan trusts of up to \$31 million in 2019. In addition, we estimate that contributions will amount to \$32 million, \$29 million, \$29 million and \$29 million in 2020, 2021, 2022 and 2023, respectively. Actual amounts contributed could change materially from these estimates as a result of changes in assumptions and actual investment returns, among other factors.

Cash Flows Used in Investing Activities

The following table provides a summary of the major items affecting our cash flows used in investing activities:

(In millions)	For the Years Ended December 31,		
	2018	2017	2016
Net capital expenditures	\$ (1,586)	\$ (1,434)	\$ (1,311)
Acquisitions	(398)	(177)	(204)
Other investing activities, net (a)	(52)	(61)	(75)
Net cash flows used in investing activities	\$ (2,036)	\$ (1,672)	\$ (1,590)

(a) Includes removal costs from property, plant and equipment retirements and proceeds from sale of assets.

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In 2018 and 2017 , cash flows used in investing activities increased primarily due to an increase in our regulated capital expenditures, principally from incremental investments associated with the replacement and renewal of our transmission and distribution infrastructure in our Regulated Businesses , as well as acquisitions in both our Regulated Businesses and Market-Based Businesses , as discussed below.

Our infrastructure investment plan consists of both infrastructure renewal programs, where we replace infrastructure, as needed, and major capital investment projects, where we construct new water and wastewater treatment and delivery facilities to meet new customer growth and water quality regulations. Our projected capital expenditures and other investments are subject to periodic review and revision to reflect changes in economic conditions and other factors.

The following table provides a summary of our historical capital expenditures related to the upgrading of our infrastructure and systems:

(In millions)	For the Years Ended December 31,		
	2018	2017	2016
Transmission and distribution	\$ 572	\$ 551	\$ 568
Treatment and pumping	231	171	151
Services, meter and fire hydrants	303	281	297
General structure and equipment	371	281	202
Sources of supply	26	54	59
Wastewater	83	96	34
Total capital expenditures	\$ 1,586	\$ 1,434	\$ 1,311

In 2018 , our capital expenditures increased \$152 million , or 10.6% , primarily due to investment across the majority of our infrastructure categories. In 2017 , our capital expenditures increased \$123 million , or 9.4% , primarily due to investment in our general structure and equipment and wastewater categories.

We also grow our business primarily through acquisitions of water and wastewater systems, as well as other water-related services. These acquisitions are complementary to our existing business and support continued geographical diversification and growth of our operations. Generally, acquisitions are funded initially with short-term debt, and later refinanced with the proceeds from long-term debt.

The following is a summary of the acquisitions and dispositions affecting our cash flows from investing activities:

2018 :

- The majority of cash paid for acquisitions pertained to the \$365 million purchase of Pivotal within our Homeowner Services Group .
- Paid \$33 million for 15 water and wastewater systems, representing approximately 14,000 customers.
- Received \$35 million for the sale of assets, including \$27 million for the sale of the majority of the O&M contracts in our Contract Services Group during the third quarter of 2018.

2017 :

- The majority of cash paid for acquisitions pertained to the \$159 million purchase of the wastewater collection and treatment system assets of the Municipal Authority of the City of McKeesport, Pennsylvania (the “McKeesport system”), excluding a \$5 million non-escrowed deposit made in 2016.
- Paid \$18 million for 16 water and wastewater systems, excluding the McKeesport system and Shorelands (a stock-for-stock transaction), representing approximately 7,000 customers.
- Received \$15 million for the sale of assets.

2016 :

- Paid \$199 million for 15 water and wastewater systems, representing approximately 42,000 customers.
- Made a non-escrowed deposit of \$5 million related to the McKeesport system acquisition.
- Received \$9 million for the sale of assets.

As previously noted, we expect to invest between \$8.0 billion to \$8.6 billion from 2019 to 2023 , with \$7.3 billion of this range for infrastructure improvements in our Regulated Businesses . In 2019 , we expect to invest between a range of \$1.7 billion to \$1.8 billion in 2019 , with \$1.6 billion for infrastructure improvements in our Regulated Businesses . Also in 2019 , we expect to invest between \$120 million to \$240 million for acquisitions in our Regulated Businesses .

Cash Flows from Financing Activities

The following table provides a summary of the major items affecting our cash flows provided by financing activities:

	For the Years Ended December 31,		
	2018	2017	2016
(In millions)			
Proceeds from long-term debt	\$ 1,358	\$ 1,395	\$ 553
Repayments of long-term debt	(526)	(896)	(144)
Net proceeds from short-term borrowings	60	55	221
Proceeds from issuance of common stock	183	—	—
Dividends paid	(319)	(289)	(261)
Anti-dilutive stock repurchases	(45)	(54)	(65)
Other financing activities, net (a)	15	(4)	24
Net cash flows provided by financing activities	\$ 726	\$ 207	\$ 328

(a) Includes proceeds from issuances of common stock under various employee stock plans and our dividend reinvestment plan, net of taxes paid, advances and contributions for construction, net of refunds, and debt issuance costs and make-whole premium on early debt redemption.

In 2018, cash flows provided by financing activities increased \$519 million , primarily due to the issuance of common stock to finance a portion of the purchase price of the Pivotal acquisition and a decrease in cash used for short-term borrowings. Short-term borrowings were used to fund the growth of our Regulated Businesses , finance approximately 50% of the Pivotal acquisition, pay dividends and repay long-term debt, offset by the use of the \$1.325 billion long-term debt issuance to support growth of the business and repay short-term borrowings.

Our financing activities, primarily focused on funding regulated infrastructure expenditures, regulated and market-based acquisitions and payment of dividends. These activities included the issuance of long-term and short-term debt, primarily through AWCC and in 2018, included an equity issuance for approximately 50% of the Pivotal acquisition. In addition, new infrastructure may be funded with customer advances and contributions in aid of construction, net of refunds, which amounted to \$21 million , \$28 million and \$16 million for the years ended December 31, 2018 , 2017 and 2016 , respectively. Based on the needs of our Regulated Businesses and the Company, AWCC may borrow funds or issue its debt in the capital markets and then, through intercompany loans, provide those borrowings to the Regulated Businesses and the parent company. The Regulated Businesses and the parent company are obligated to pay their portion of the respective principal and interest to AWCC, in the amount necessary to enable AWCC to meet its debt service obligations. The parent company's borrowings are not a source of capital for the Regulated Businesses , therefore, the parent company is not able to recover the interest charges on its debt through regulated water and wastewater rates. As of December 31, 2018 , AWCC has made long-term fixed rate loans and commercial paper loans to our Regulated Businesses amounting to \$4.4 billion and \$392 million , respectively. Additionally, as of December 31, 2018 , AWCC has made long-term fixed rate loans and commercial paper loans to the parent company amounting \$1.7 billion and \$533 million , respectively. As of December 31, 2018 , the parent company has made long-term fixed rate loans to our Market-Based Businesses amounting to \$183 million related to the acquisition of Pivotal on June 4, 2018 .

On August 9, 2018 , AWCC completed a \$1.325 billion debt offering which included the sale of \$625 million aggregate principal amount of its unsecured 3.75% Senior Notes due in 2028, and \$700 million aggregate principal amount of its unsecured 4.20% Senior Notes due in 2048. At the closing of the offering, AWCC received, after deduction of underwriting discounts and before deduction of offering expenses, net proceeds of approximately \$1.3 billion . AWCC used proceeds from the offering to (i) lend funds to American Water and its regulated operating subsidiaries, (ii) repay \$191 million principal amount of AWCC's 5.62% Senior Notes due 2018 upon maturity on December 21, 2018, (iii) prepay \$100 million aggregate principal amount of AWCC's outstanding 5.62% Series E Senior Notes due March 29, 2019 (the "Series E Notes") and \$100 million aggregate principal amount of AWCC's outstanding 5.77% Series F Senior Notes due March 29, 2022 (the "Series F Notes," and, together with the Series E Notes, the "Series Notes"), and (iv) repay AWCC's commercial paper obligations and for general corporate purposes.

As a result of AWCC's prepayment of the Series Notes, a make-whole premium of \$10 million was paid to the holders thereof on September 11, 2018. Substantially all of the early debt extinguishment costs were allocable to our utility subsidiaries and recorded as regulatory assets, as we believe they are probable of recovery in future rates.

On August 6, 2018, the Company terminated four forward starting swap agreements with an aggregate notional amount of \$400 million, realizing a net gain of \$9 million, to be amortized through interest, net over 10- and 30-year periods, in correlation with the terms of the new debt issued on August 9, 2018.

On August 17, 2018, we entered into two forward starting swap agreements, each with a notional amount of \$80 million, to reduce interest rate exposure on debt expected to be issued in 2019. These forward starting swap agreements terminate in August 2019 and have an average fixed rate of 2.98%. On October 11, 2018, we entered into two additional forward starting swap agreements, each with a notional amount of \$100 million, to reduce interest rate exposure on debt expected to be issued in 2019. These forward starting swap agreements terminate in December 2019, and have an average fixed rate of 3.31%. On January 8, 2019, we entered into an additional forward starting swap agreement, with a notional amount of \$150 million, to reduce interest rate exposure on debt expected to be issued in 2019. This forward starting swap agreement terminates in December 2019, and has an average fixed rate of 2.76%. We have designated these forward starting swap agreements as cash flow hedges, with their fair value recorded in accumulated other comprehensive gain or loss. Upon termination, the cumulative gain or loss recorded in accumulated other comprehensive gain or loss will be amortized through interest, net over the term of the new debt.

One of the principal market risks to which the Company is exposed is changes in interest rates. In order to manage the exposure, we follow risk management policies and procedures, including the use of derivative contracts such as swaps. We reduce exposure to interest rates by managing commercial paper and debt maturities. We do not enter into derivative contracts for speculative purposes and do not use leveraged instruments. The derivative contracts entered into are for periods consistent with the related underlying exposures. The Company is exposed to the risk that counterparties to derivative contracts will fail to meet their contractual obligations. We minimize the counterparty credit risk on these transactions by only dealing with leading, credit-worthy financial institutions, having long-term credit ratings of “A” or better.

On April 11, 2018, we effected an equity forward transaction by entering into a forward sale agreement with each of two forward purchasers in connection with a public offering of 2,320,000 shares of our common stock. In the equity forward transaction, the forward purchasers, or an affiliate, borrowed an aggregate of 2,320,000 shares of our common stock from third parties and sold them to the underwriters in the public offering. On June 7, 2018, we elected to fully and physically settle both forward sale agreements, resulting in the issuance of a total of 2,320,000 shares of our common stock at a price of \$79.01 per share, for aggregate net proceeds of \$183 million. The net proceeds of the transaction were used to pay a portion of the purchase price of the Pivotal acquisition on June 4, 2018.

In May 2018, the parent company and AWCC filed with the SEC a universal shelf registration statement that enables us to meet our capital needs through the offer and sale to the public from time to time of an unlimited amount of various types of securities, including American Water common stock, preferred stock, and other equity and hybrid securities, and AWCC debt securities, all subject to market conditions and demand, general economic conditions, and as applicable, rating status. The shelf registration statement will expire in May 2021. During 2018, 2017 and 2016, \$1.325 billion, \$1.350 billion and \$550 million, respectively, of debt securities were issued pursuant to this and predecessor registration statements. Additionally, during 2018 under this registration statement, we issued 2,320,000 shares of our common stock at a price of \$79.01 per share, for aggregate net proceeds of \$183 million.

The following table provides the issuances of long-term debt in 2018:

Company	Type	Rate	Maturity	Amount (in millions)
AWCC (a)	Senior notes—fixed rate	3.75%-4.20%	2028-2048	\$ 1,325
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate (b)	0.00%-5.00%	2021-2048	33
Total issuances				\$ 1,358

(a) This indebtedness is considered “debt” for purposes of a support agreement between American Water and AWCC, the Company’s wholly owned finance subsidiary, which serves as a functional equivalent of a guarantee by American Water of AWCC’s payment obligations under such indebtedness.

(b) Approximately \$29 million of this debt relates to the New Jersey Environmental Infrastructure Financing Program.

The following table provides the retirements and redemptions of long-term debt in 2018 through sinking fund provisions, optional redemption or payment at maturity:

Company	Type	Rate	Maturity	Amount (in millions)
AWCC	Senior notes—fixed rate	5.62%-6.25%	2018-2022	\$ 501
AWCC	Private activity bonds and government funded debt—fixed rate	1.79%-2.90%	2021-2031	1
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-5.50%	2018-2047	18
Other American Water subsidiaries	Mortgage bonds—fixed rate	9.13%	2021	1
Other American Water subsidiaries	Mandatorily redeemable preferred stock	8.49%-9.18%	2031-2036	2
Other American Water subsidiaries	Term loan	4.83%-5.69%	2021	3
Total retirements and redemptions				<u>\$ 526</u>

The following table provides the issuances of long-term debt in 2017 :

Company	Type	Rate	Maturity	Amount (in millions)
AWCC	Senior notes—fixed rate	2.95%-3.75%	2027-2047	\$ 1,350
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-1.44%	2020-2037	31
Other American Water subsidiaries	Mortgage bonds—fixed rate	3.92%	2020	3
Other American Water subsidiaries	Term Loan	4.48%-4.98%	2021	11
Total issuances				<u>\$ 1,395</u>

The following table provides the retirements and redemptions of long-term debt in 2017 through sinking fund provisions, optional redemption or payment at maturity:

Company	Type	Rate	Maturity	Amount (in millions)
AWCC	Senior notes—fixed rate	5.62%-6.09%	2017-2021	\$ 844
AWCC	Private activity bonds and government funded debt—fixed rate	1.79%-2.90%	2021-2031	1
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-5.38%	2017-2041	15
Other American Water subsidiaries	Mortgage bonds—fixed rate	7.08%	2017	33
Other American Water subsidiaries	Mandatorily redeemable preferred stock	8.49%-9.18%	2031-2036	2
Other American Water subsidiaries	Term loan	4.31%-5.31%	2021	1
Total retirements and redemptions				<u>\$ 896</u>

The following table provides the issuances of long-term debt in 2016 :

Company	Type	Rate	Maturity	Amount (in millions)
AWCC	Senior notes—fixed rate	3.00%-4.00%	2026-2046	\$ 550
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate	1.00%-1.36%	2026-2037	3
Total issuances				<u>\$ 553</u>

The following table provides the retirements and redemptions of long-term debt in 2016 through sinking fund provisions, optional redemption or payment at maturity:

Company	Type	Rate	Maturity	Amount (in millions)
AWCC	Senior notes—fixed rate	5.52%	2016	\$ 37
AWCC	Private activity bonds and government funded debt—fixed rate	1.79%-2.90%	2021-2031	1
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-5.30%	2016-2041	104
Other American Water subsidiaries	Mandatorily redeemable preferred stock	8.49%-9.18%	2031-2036	2
Total retirements and redemptions				<u>\$ 144</u>

From time to time and as market conditions warrant, we may engage in long-term debt retirements through tender offers, open market repurchases or other viable alternatives to strengthen our balance sheets.

In February 2015, our Board of Directors authorized an anti-dilutive, common stock repurchase program to mitigate the effect of shares issued through our dividend reinvestment, employee stock purchase and executive compensation activities. The program allows the Company to purchase up to 10 million shares of its outstanding common stock, over an unrestricted period of time, in the open market or through privately negotiated transactions. The program is conducted in accordance with Rule 10b-18 of the Exchange Act, and to facilitate the repurchases, we have also entered into Rule 10b5-1 share repurchase plans with a third-party broker, which allows us to repurchase shares at times when we may otherwise be prevented from doing so under insider trading laws or because of self-imposed trading blackout periods. Subject to applicable regulations, we may elect to amend or cancel this repurchase program or the share repurchase parameters at our discretion. As of December 31, 2018, we have repurchased an aggregate of 4,510,000 shares of common stock under this program.

Credit Facilities and Short-Term Debt

We have an unsecured revolving credit facility of \$2.25 billion that expires in June 2023. In March 2018, AWCC and its lenders amended and restated the credit agreement with respect to AWCC's revolving credit facility to increase the maximum commitments under the facility from \$1.75 billion to \$2.25 billion, and to extend the expiration date of the facility from June 2020 to March 2023. All other terms, conditions and covenants with respect to the existing facility remained unchanged. Subject to satisfying certain conditions, the credit agreement also permits AWCC to increase the maximum commitment under the facility by up to an aggregate of \$500 million, and to request extensions of its expiration date for up to two, one-year periods.

Interest rates on advances under the facility are based on a credit spread to the LIBOR rate or base rate in accordance with Moody Investors Service's and Standard & Poor's Financial Services' then applicable credit rating on AWCC's senior unsecured, non-credit enhanced debt. The facility is used principally to support AWCC's commercial paper program and to provide up to \$150 million in letters of credit. Indebtedness under the facility is considered "debt" for purposes of a support agreement between the Company and AWCC, which serves as a functional equivalent of a guarantee by the Company of AWCC's payment obligations under the credit facility.

AWCC also has an outstanding commercial paper program that is backed by the revolving credit facility, the maximum aggregate outstanding amount of which was increased in March 2018, from \$1.60 billion to \$2.10 billion.

The following table provides the aggregate credit facility commitments, letter of credit sub-limit under the revolving credit facility and commercial paper limit, as well as the available capacity for each as of December 31, 2018 and 2017:

(In millions)	Credit Facility Commitment	Available Credit Facility Capacity	Letter of Credit Sublimit	Available Letter of Credit Capacity	Commercial Paper Limit	Available Commercial Paper Capacity
December 31, 2018	\$ 2,262	\$ 2,177	\$ 150	\$ 69	\$ 2,100	\$ 1,146
December 31, 2017	1,762	1,673	150	66	1,600	695

The weighted average interest rate on AWCC short-term borrowings for the years ended December 31, 2018 and 2017 was approximately 2.28% and 1.24%, respectively.

Capital Structure

The following table provides the percentage of our capitalization represented by the components of our capital structure as of December 31:

	2018	2017	2016
Total common shareholders' equity	40.4%	41.0%	42.1%
Long-term debt and redeemable preferred stock at redemption value	52.4%	49.6%	46.4%
Short-term debt and current portion of long-term debt	7.2%	9.4%	11.5%
Total	100%	100%	100%

The changes in the capital structure between periods were mainly attributable to an increase in long-term debt.

Debt Covenants

Our debt agreements contain financial and non-financial covenants. To the extent that we are not in compliance with these covenants, an event of default may occur under one or more debt agreements and we or our subsidiaries may be restricted in our ability to pay dividends, issue new debt or access our revolving credit facility. Our long-term debt indentures contain a number of covenants that, among other things, prohibit or restrict the Company from issuing debt secured by the Company's assets, subject to certain exceptions. Our failure to comply with any of these covenants could accelerate repayment obligations.

Covenants in certain long-term notes and the revolving credit facility require us to maintain a ratio of consolidated debt to consolidated capitalization (as defined in the relevant documents) of not more than 0.70 to 1.00. On December 31, 2018, our ratio was 0.59 to 1.00 and therefore we were in compliance with the covenants.

Security Ratings

Our access to the capital markets, including the commercial paper market, and respective financing costs in those markets, may be directly affected by our securities ratings. We primarily access the debt capital markets, including the commercial paper market, through AWCC. However, we have also issued debt through our regulated subsidiaries, primarily in the form of tax exempt securities or borrowings under state revolving funds, to lower our overall cost of debt.

The following table provides our long-term and short-term credit rating and rating outlook as of February 19, 2019 :

Securities	Moody's Investors Service	Standard & Poor's Ratings Service
Rating Outlook	Negative	Stable
Senior unsecured debt	A3	A
Commercial paper	P-2	A-1

On June 11, 2018, Standard & Poor's Ratings Service affirmed the Company's long-term 'A' and short-term 'A-1' credit ratings, with a stable outlook remaining unchanged.

On January 19, 2018, Moody's Investors Service changed its rating outlook to negative, from stable, for 24 regulated utilities and utility holding companies, including the Company, all of which were primarily impacted by the enactment of the TCJA.

A security rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time by the assigning rating agency, and each rating should be evaluated independently of any other rating. Security ratings are highly dependent upon our ability to generate cash flows in an amount sufficient to service our debt and meet our investment plans. We can provide no assurances that our ability to generate cash flows is sufficient to maintain our existing ratings. None of our borrowings are subject to default or prepayment as a result of the downgrading of these security ratings, although such a downgrading could increase fees and interest charges under our credit facility.

As part of the normal course of business, we routinely enter into contracts for the purchase and sale of water, energy, chemicals and other services. These contracts either contain express provisions or otherwise permit us and our counterparties to demand adequate assurance of future performance when there are reasonable grounds for doing so. In accordance with the contracts and applicable contract law, if we are downgraded by a credit rating agency, especially if such downgrade is to a level below investment grade, it is possible that a counterparty would attempt to rely on such a downgrade as a basis for making a demand for adequate assurance of future performance, which could include a demand that we provide collateral to secure our obligations. We do not expect to post any collateral which will have a material adverse impact on the Company's results of operations, financial position or cash flows.

Dividends and Regulatory Restrictions

For discussion of our dividends, dividend restrictions and dividend policy, see Note 9—Shareholders' Equity in the Notes to Consolidated Financial Statements for additional information.

Insurance Coverage

We carry various property, casualty and financial insurance policies with limits, deductibles and exclusions that we believe are consistent with industry standards. However, insurance coverage may not be adequate or available to cover unanticipated losses or claims. Additionally, annual policy renewals can be impacted by claims experience which in turn can impact coverage terms and conditions on a going-forward basis. We are self-insured to the extent that losses are within the policy deductible or exceed the amount of insurance maintained. Such losses could have a material adverse effect on our short-term and long-term financial condition and our results of operations and cash flows.

Contractual Obligations and Commitments

We enter into contractual obligations with third parties in the ordinary course of business. The following table provides information related to our contractual obligations as of December 31, 2018 :

(In millions)	Total	1 year or less	2-3 years	4-5 years	More than 5 years
Long-term debt obligations (a)	\$ 7,655	\$ 72	\$ 335	\$ 184	\$ 7,064
Interest on long-term debt (b)	5,832	352	688	648	4,144
Operating lease obligations (c)	141	17	27	17	80
Purchase water obligations (d)	957	65	130	121	641
Other purchase obligations (e)	637	637	—	—	—
Pension plan obligations (f)	156	31	64	61	—
Other obligations (g)	924	312	255	62	295
Total	<u>\$ 16,302</u>	<u>\$ 1,486</u>	<u>\$ 1,499</u>	<u>\$ 1,093</u>	<u>\$ 12,224</u>

NOTE The above table reflects only financial obligations and commitments. Therefore, performance obligations associated with our Market-Based Businesses are not included in the above amounts. Also, uncertain tax positions of \$97 million are not reflected in this table as we cannot predict when open tax years will close with completed examinations. See Note 14—Income Taxes in the Notes to Consolidated Financial Statements.

- (a) Represents sinking fund obligations, debt maturities, capital lease obligations and preferred stocks with mandatory redemption requirements.
- (b) Represents expected interest payments on outstanding long-term debt and interest on preferred stock with mandatory redemption requirements. Amounts reported may differ from actual due to future financing of debt.
- (c) Represents future minimum payments under non-cancelable operating leases, primarily for the lease of motor vehicles, buildings, land and other equipment including water facilities and systems constructed by partners under the Public-Private Partnerships described below.
- (d) Represents future payments under water purchase agreements for minimum quantities of water.
- (e) Represents the open purchase orders as of December 31, 2018 for goods and services purchased in the ordinary course of business.
- (f) Represents contributions expected to be made to pension for the years 2019 through 2023 .
- (g) Includes an estimate of advances for construction to be refunded, capital expenditures estimated to be required under legal and binding contractual obligations, contracts entered into for energy purchases, a liability associated with a conservation agreement, and service agreements.

Public-Private Partnerships

WVAWC has entered into a series of agreements with various public entities, which we refer to as the Partners, to establish certain joint ventures, commonly referred to as “public-private partnerships.” Under the public-private partnerships, WVAWC constructed utility plant, financed by WVAWC, and the Partners constructed utility plant (connected to WVAWC’s property), financed by the Partners. WVAWC agreed to transfer and convey some of its real and personal property to the Partners in exchange for an equal principal amount of Industrial Development Bonds, commonly referred to as IDBs, issued by the Partners under a state Industrial Development Bond and Commercial Development Act. WVAWC leased back the total facilities, including portions funded by both WVAWC and the Partners, under leases for a period of 40 years.

The leases have payments that approximate the payments required by the terms of the IDBs. These payments are considered “PILOT payments” which represent payments that WVAWC otherwise would pay as property taxes on the properties. We have presented the transaction on a net basis on the Consolidated Financial Statements. The carrying value of the transferred facilities, which is presented in property, plant and equipment on the Consolidated Balance Sheets, was approximately \$147 million as of December 31, 2018 .

Performance Obligations

We have entered into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. For discussion of our performance obligations see Note 3—Revenue Recognition in the Notes to Consolidated Financial Statements for additional information.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with GAAP requires that management apply accounting policies and make estimates, assumptions and judgments that could affect the Company’s financial condition, results of operations and cash flows. Actual results could differ from these estimates, assumptions and judgments. Management believes that the areas described below require significant judgment in the application of accounting policy or in making estimates and assumptions in matters that are inherently uncertain and that may change in subsequent periods. Accordingly, changes in the estimates, assumptions and judgments applied to these accounting policies could have a significant impact on our financial condition, results of operations and cash flows, as reflected in our Consolidated Financial Statements. Management has reviewed the critical accounting policies described below with our Audit, Finance and Risk Committee, including the estimates, assumptions and judgments used in their application. Additional discussion regarding these critical accounting policies and their application can be found in Note 2—Significant Accounting Policies in the Notes to Consolidated Financial Statements.

Regulation and Regulatory Accounting

Our regulated utilities are generally subject to economic regulation by PUCs and, as such, we follow the authoritative accounting principles required for rate regulated utilities, which requires us to reflect the effects of rate regulation in our Consolidated Financial Statements. Use of this authoritative guidance is applicable to utility operations that meet the following criteria: (i) third-party regulation of rates; (ii) cost-based rates; and (iii) a reasonable assumption that rates will be set to recover the estimated costs of providing service, plus a return on net investment, or rate base. As of December 31, 2018 , we concluded that the operations of our utilities met the criteria.

Application of this authoritative guidance has a further effect on our financial statements as it pertains to allowable costs used in the ratemaking process. We make significant assumptions and estimates to quantify amounts recorded as regulatory assets and liabilities. Such judgments include, but are not limited to, assets and liabilities related to regulated acquisitions, pension and postretirement benefits, depreciation rates and taxes. Due to timing and other differences in the collection of revenues, these authoritative accounting principles allow a cost that would otherwise be charged as an expense by a non-regulated entity, to be deferred as a regulatory asset if it is probable that such cost is recoverable through future rates. Conversely, the principles require the creation of a regulatory liability for amounts collected in rates to recover costs expected to be incurred in the future, or amounts collected in excess of costs incurred and are refundable to customers. Regulators may also impose certain fines or penalties.

For each regulatory jurisdiction where we conduct business, we assess, at the end of each reporting period, whether the regulatory assets and liabilities continue to meet the criteria for probable, future recovery or settlement. This assessment includes consideration of factors such as changes in applicable regulatory environments; recent rate orders on recovery of a specific or similar incurred cost to other regulated entities in the same jurisdiction and the status of any pending or potential legislation that could impact the ability to recover costs through regulated rates. If subsequent events indicate that the regulatory assets or liabilities no longer meet the criteria for probable, future recovery or settlement, our Consolidated Statements of Operations and financial position could be materially affected. In addition, if we conclude in a future period that a separable portion of the business no longer meets the criteria, we are required to eliminate the financial statement effects of regulation for that part of the business, which would include the elimination of any or all regulatory assets and liabilities that had been recorded in the Consolidated Financial Statements. Failure to meet the criteria of this authoritative guidance could materially impact our Consolidated Financial Statements.

On December 22, 2017, the TCJA was signed into law, which, among other things, enacted significant and complex changes to the Internal Revenue Code of 1986, including a reduction in the maximum U.S. federal corporate income tax rate from 35% to 21% as of January 1, 2018. The TCJA created significant excess deferred income taxes that we and our regulatory jurisdictions believe should be refunded to customers. As such, we recorded these amounts as regulatory liabilities.

As of December 31, 2018 and 2017, our regulatory asset balance was \$1.2 billion and \$1.1 billion, respectively, and our regulatory liability balance was \$1.9 billion and \$1.7 billion, respectively. See Note 7—Regulatory Assets and Liabilities in the Notes to Consolidated Financial Statements for further information regarding our significant regulatory assets and liabilities.

Goodwill

As of December 31, 2018 and 2017, our goodwill balances were \$1.6 billion and \$1.4 billion, respectively. In accordance with GAAP, goodwill must be allocated at the reporting unit level, which is defined as an operating segment or one level below, and tested for impairment at least annually. We perform our annual impairment testing of goodwill as of November 30 of each year, or more frequently if an event occurs or circumstances change that would more likely than not, reduce the fair value of a reporting unit below its carrying value. Adverse industry or economic trends, lower projections of profitability, or a sustained decline in our market capitalization, among other things, may be indicators of potential goodwill impairment issues, requiring further testing of a reporting unit's carrying value.

Entities testing goodwill for impairment have the option of first performing a qualitative assessment to determine whether quantitative testing is necessary. In performing a qualitative assessment, we assess and make judgments, among other things, around macroeconomic conditions, industry and market conditions, overall financial performance, cost factors and entity specific events. These factors require significant judgment and estimates, and application of alternative assumptions could produce significantly different results. If it is determined, based upon qualitative factors, that the estimated fair value of a reporting unit is more likely than not, greater than its carrying value, no further testing is required. If we bypass the qualitative assessment, or perform the qualitative assessment and determine that the estimated fair value of a reporting unit is more likely than not less than its carrying value, a quantitative, fair value-based test is performed. This quantitative test compares the estimated fair value of the reporting unit to its respective net carrying value, including goodwill, on the measurement date. An impairment loss will be recognized in the amount equal to the excess of the reporting unit's carrying value compared to its estimated fair value, limited to the total amount of goodwill allocated to that reporting unit.

Application of goodwill impairment testing requires management judgment, including the identification of reporting units and determining the fair value of reporting units. We estimate fair value using a combination of a discounted cash flow analysis and a market multiples analysis. Significant assumptions used in these fair value analyses include, but are not limited to, forecasts of future operating results, discount and growth rates, capital expenditures, tax rates, working capital, weighted average cost of capital and projected terminal values. Changes in estimates or the application of alternative assumptions could produce significantly different results. See Note 8—Goodwill and Other Intangible Assets in the Notes to Consolidated Financial Statements for additional information regarding our goodwill.

Impairment of Long-Lived Assets

Long-lived assets include property, plant and equipment, goodwill, intangible assets and long-term investments. We evaluate our long-lived assets for impairment when circumstances indicate the carrying value of those assets may not be recoverable. Such circumstances include, but are not limited to, a significant decrease in the market value of the asset, a change in the asset's expected useful life or physical condition, a history of operating or cash flow losses associated with the use of the asset or a significant adverse change in the manner in which the asset is being used or is planned to be used. When such indicators arise, we estimate the fair value of the long-lived asset from future cash flows expected to result from its use and, if applicable, the eventual disposition of the asset, and compare the estimated value fair to the carrying value of the asset. An impairment loss will be recognized in the amount equal to the excess of the long-lived asset's carrying value compared to its estimated fair value. Key variables that must be estimated include assumptions regarding sales volume, rates, operating costs, labor and other benefit costs, capital additions, assumed discount rates and other economic factors. These variables require management judgment and include inherent uncertainties, since they are forecasting future events. A variation in the assumptions used could lead to a different conclusion regarding the realizability of a long-lived asset and, thus, could have a significant effect on our Consolidated Financial Statements.

The long-lived assets of our Regulated Businesses are grouped on a separate entity basis for impairment testing, as they are integrated state-wide operations that do not have the option to curtail service and generally have uniform tariffs. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

The Company holds other investments in privately held companies and joint ventures accounted for using the equity method. The estimated fair value of the long-term investments are dependent on the financial performance and solvency of the entities in which the Company invests, as well as volatility inherent in the external markets. If such long-term investments are considered impaired, an impairment loss will be recognized in the amount equal to the excess of the investment's carrying value compared to its estimated fair value.

The Company believes the assumptions and other considerations used to value long-lived assets to be appropriate, however, if actual experience differs from the assumptions and considerations used in its estimates, the resulting change could have a material adverse impact on the Consolidated Financial Statements.

Revenue Recognition

Revenue from the Company's Regulated Businesses is generated primarily from water and wastewater services delivered to customers. These contracts contain a single performance obligation, the delivery of water or wastewater services, as the promise to transfer the individual good or service is not separately identifiable from other promises within the contracts and, therefore, is not distinct. Revenues are recognized over time, as services are provided. There are generally no significant financing components or variable consideration. Revenues include amounts billed to customers on a cycle basis, and unbilled amounts calculated based on estimated usage from the date of the meter reading associated with the latest customer bill, to the end of the accounting period. The amounts that the Company has a right to invoice are determined by each customer's actual usage, an indicator that the invoice amount corresponds directly to the value transferred to the customer.

Increases or decreases in the volumes delivered to customers and rate mix due to changes in usage patterns in customer classes in the period could be significant to the calculation of unbilled revenue. In addition, changes in the timing of meter reading schedules and the number and type of customers scheduled for each meter reading date would also have an effect on the unbilled revenue calculation. Unbilled revenue for our regulated utilities as of December 31, 2018 and 2017 was \$144 million and \$152 million, respectively.

The Company also recognizes revenue when it is probable that future recovery of previously incurred costs or future refunds that are to be credited to customers will occur through the ratemaking process.

Revenue from the Company's Homeowner Services Group is generated through various protection programs in which the Company provides fixed fee services to domestic homeowners and smaller commercial customers to protect against repair costs for interior and external water and sewer lines, interior electric and gas lines, heating and cooling systems, water heaters, power surge protection and other related services. Most of the contracts have a one-year term and each service is a separate performance obligation, satisfied over time, as the customers simultaneously receive and consume the benefits provided from the service. Customers are obligated to pay for the protection programs ratably over 12 months or via a one-time, annual fee, with revenues recognized ratably over time for these services. Advances from customers are deferred until the performance obligation is satisfied.

The Company also has long-term, fixed fee contracts to operate and maintain water and wastewater facilities with the U.S. government on various military bases and facilities owned by municipal and industrial customers, as well as shorter-term contracts that provide customized water transfer services for shale natural gas companies and customers. Billing and revenue recognition for the fixed fee revenues occurs ratably over the term of the contract, as customers simultaneously receive and consume the benefits provided by the Company. Additionally, these contracts allow the Company to make capital improvements to underlying infrastructure, which are initiated through separate modifications or amendments to the original contract, whereby stand-alone, fixed pricing is separately stated for each improvement. The Company has determined that these capital improvements are separate performance obligations, with revenue recognized over time based on performance completed at the end of each reporting period. Losses on contracts are recognized during the period in which the losses first become probable and estimable. Revenues recognized during the period in excess of billings on construction contracts are recorded as unbilled revenues, with billings in excess of revenues recorded as other current liabilities until the recognition criteria are met. Changes in contract performance and related estimated contract profitability may result in revisions to costs and revenues, and are recognized in the period in which revisions are determined. Unbilled revenue for our Market-Based Businesses as of December 31, 2018 and 2017 was \$42 million and \$60 million, respectively.

Accounting for Income Taxes

Significant management judgment is required in determining the provision for income taxes, primarily due to the uncertainty related to tax positions taken, as well as deferred tax assets and liabilities, valuation allowances and the utilization of NOL carryforwards.

In accordance with applicable authoritative guidance, we account for uncertain income tax positions using a benefit recognition model with a two-step approach, including a more-likely-than-not recognition threshold and a measurement approach based on the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate settlement. If it is not more-likely-than-not that the benefit of the tax position will be sustained on its technical merits, no benefit is recorded. Uncertain tax positions that relate only to timing of when an item is included on a tax return are considered to have met the recognition threshold. Management evaluates each position based solely on the technical merits and facts and circumstances of the position, assuming the position will be examined by a taxing authority having full knowledge of all relevant information. Significant judgment is required to determine whether the recognition threshold has been met and, if so, the appropriate amount of unrecognized tax benefit to be recorded in the Consolidated Financial Statements.

We evaluate the probability of realizing deferred tax assets quarterly by reviewing a forecast of future taxable income and our intent and ability to implement tax planning strategies, if necessary, to realize deferred tax assets. We also assess our ability to utilize tax attributes, including those in the form of carryforwards, for which the benefits have already been reflected in the financial statements. We record valuation allowances for deferred tax assets when we conclude it is more-likely-than-not such benefit will not be realized in future periods.

Under GAAP, specifically Accounting Standards Codification Topic 740, *Income Taxes* (“ASC 740”), the tax effects of changes in tax laws must be recognized in the period in which the law is enacted. ASC 740 also requires deferred tax assets and liabilities to be measured at the enacted tax rate expected to apply when temporary differences are to be realized or settled. Thus, at the date of enactment of the TCJA, the Company’s deferred taxes were re-measured based upon the new tax rate. For our regulated entities, the change in deferred taxes are recorded as either an offset to a regulatory asset or liability and may be subject to refund to customers. For our unregulated operations, the change in deferred taxes are recorded as a non-cash re-measurement adjustment to earnings.

The staff of the SEC has recognized the complexity of reflecting the impacts of changes in tax law, more specifically the TCJA, and on December 22, 2017, issued guidance in SAB 118 which clarifies accounting for income taxes under ASC 740 if information is not yet available or complete and provides for up to a one year period in which to complete the required analyses and accounting. SAB 118 describes three scenarios or buckets associated with a company’s status of accounting for the TCJA: (i) a company is complete with its accounting for certain effects of tax reform; (ii) a company is able to determine a reasonable estimate for certain effects of tax reform and records that estimate as a provisional amount; or (iii) a company is not able to determine a reasonable estimate and therefore continues to apply ASC 740, based on the provisions of the tax laws that were in effect immediately prior to the TCJA being enacted. The significant assumptions considered and evaluated by the Company relating to accounting for the TCJA, include, but are not limited to, the:

- recording of regulatory liabilities from the re-measurement of the Company’s deferred income taxes, and the uncertainty of regulatory treatment in various jurisdictions in which the Company currently operates;
- allocation to our subsidiaries of interest deductibility at the parent;
- bonus depreciation deductions for assets constructed and placed in service during the period from September 28, 2017 through December 31, 2017; and
- normalization periods for our re-measured deferred taxes.

Actual income taxes could vary from estimated amounts due to the future impacts of various items, including changes in income tax laws, our forecasted financial condition and results of operations, failure to successfully implement tax planning strategies and recovery of taxes through the regulatory process for our Regulated Businesses, as well as results of audits and examinations of filed tax returns by taxing authorities. While we believe the resulting tax balances as of December 31, 2018 and 2017 are appropriately accounted for in accordance with the applicable authoritative guidance, the ultimate outcome of tax matters could result in favorable or unfavorable adjustments to our Consolidated Financial Statements and such adjustments could be material. See Note 14—Income Taxes in the Notes to Consolidated Financial Statements for additional information regarding income taxes.

Accounting for Pension and Postretirement Benefits

We maintain noncontributory defined benefit pension plans covering eligible employees of our regulated utility and shared service operations. See Note 15—Employee Benefits in the Notes to Consolidated Financial Statements for additional information regarding the description of and accounting for the defined benefit pension plans and postretirement benefit plans.

The Company’s pension and postretirement benefit costs are developed from actuarial valuations. Inherent in these valuations are key assumptions provided by the Company to its actuaries, including the discount rate and expected long-term rate of return on plan assets. Material changes in the Company’s pension and postretirement benefit costs may occur in the future due to changes in these assumptions as well as fluctuations in plan assets. The assumptions are selected to represent the average expected experience over time and may differ in any one year from actual experience due to changes in capital markets and the overall economy. These differences will impact the amount of pension and other postretirement benefit expense that the Company recognizes. The primary assumptions are:

- **Discount Rate**—The discount rate is used in calculating the present value of benefits, which are based on projections of benefit payments to be made in the future. The objective in selecting the discount rate is to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the accumulated benefits when due.
- **Expected Return on Plan Assets (“EROA”)**—Management projects the future return on plan assets considering prior performance, but primarily based upon the plans’ mix of assets and expectations for the long-term returns on those asset classes. These projected returns reduce the net benefit costs we record currently.
- **Rate of Compensation Increase**—Management projects employees’ pay increases, which are used to project employees’ pension benefits at retirement.

- Health Care Cost Trend Rate—Management projects the expected increases in the cost of health care.
- Mortality—Management retained the Society of Actuaries RP-2014 mortality base table, which provides rates of mortality in 2006, but adopted the new MP-2018 mortality improvement scale to gradually adjust future mortality rates downward due to increased longevity in each year after 2006.

The discount rate assumption, which is determined for the pension and postretirement benefit plans independently, is subject to change each year, consistent with changes in applicable high-quality, long-term corporate bond indices. We use an approach that approximates the process of settlement of obligations tailored to the plans' expected cash flows by matching the plans' cash flows to the coupons and expected maturity values of individually selected bonds. For each plan, the discount rate was developed as the level equivalent rate that would yield the same present value as using spot rates aligned with the projected benefit payments. The discount rate for determining pension benefit obligations was 4.38% , 3.75% and 4.28% at December 31, 2018 , 2017 and 2016 , respectively. The discount rate for determining other postretirement benefit obligations was 4.32% , 3.73% and 4.26% at December 31, 2018 , 2017 and 2016 , respectively.

In selecting an EROA, we considered tax implications, past performance and economic forecasts for the types of investments held by the plans. The long-term EROA assumption used in calculating pension cost was 5.95% for 2018 , 6.49% for 2017 , and 7.02% for 2016 . The weighted average EROA assumption used in calculating other postretirement benefit costs was 4.77% for 2018 , 5.09% for 2017 and 5.37% for 2016 .

The following table provides the allocations of the pension plan assets by asset category:

Asset Category	2019 Target Allocation	Percentage of Plan Assets as of December 31,	
		2018	2017
Equity securities	43%	42%	44%
Fixed income	50%	52%	49%
Real Estate	5%	5%	5%
Real estate investment trusts ("REITs")	2%	1%	2%
Total	100%	100%	100%

During 2017, the Company reduced the risk of its investments in the pension plan by reducing its exposure to equities from 60% to 50%, and increasing its long duration fixed-income allocation from 40% to 50%. This structure is designed to reduce the plan's funded status volatility. It is also intended to reduce the pension plan's exposure to interest rates since a higher proportion of long duration fixed-income securities that have a duration similar to that of the pension liabilities should reduce interest rate risk associated with the plan's liabilities.

Postretirement Medical Bargaining Plan Changes

On July 31, 2018 , a new, five -year national benefits agreement was ratified, covering approximately 3,200 of our union-represented employees. Most of the benefits under this new agreement will become effective on January 1, 2019, and include, among other things, union-represented employees' participation in the Company's cash-based annual performance plan, additional medical plan options and changes to certain retiree medical benefits, which required the Company to remeasure its other postretirement benefit plan obligation during the third quarter of 2018.

For those eligible union retirees and dependents over age 65, the current supplemental retiree medical plan will be replaced with a Health Reimbursement Arrangement ("HRA") similar to the cap currently in place for non-union retirees. The Company is providing a subsidy allowing the post-65 retirees to purchase a Medicare supplemental plan on a private exchange network. The pre-65 coverage plan was also amended to provide a cap on future employer costs designed to limit the employer costs to 2018 levels. For pre-65 union members retiring early in 2019-2021 a supplemental benefit will be provided to alleviate the effect of the cap.

On August 31, 2018 , the Postretirement Medical Benefit Plan was remeasured to reflect this plan change. The plan change resulted in a \$175 million reduction in future benefits payable to plan participants, and, in combination with other experience reflected as of the remeasurement date, resulted in a \$227 million reduction to the net accumulated postretirement benefit obligation. The plan amendment will be amortized over 10.2 years, the average future working lifetime to full eligibility age for all plan participants.

After the remeasurement, the Retirement and Benefit Plans Investment Committee (the "Investment Committee"), which is responsible for overseeing the investment of the Company's pension and other postretirement benefit plans' assets, determined that the funded status of the Postretirement Medical Bargaining Plan was in excess of that needed to pay current and future benefits.

Given the change in funded status, the Investment Committee commissioned a new asset-liability study for the Postretirement Medical Bargaining Plan. This study concluded that it was prudent to decrease the risk in the plan and to remove its equity exposure. The study also recommended reducing its exposure to changes in interest rates by matching the assets of the plan to the projected cash flows for future benefit payments of the liability. The Investment Committee agreed with the recommendations and approved the investment of the Postretirement Medical Bargaining Plan assets in fixed-income securities.

The restructuring of the plan was initiated toward year-end. Once fully completed, the plan's assets will be invested in fixed-income securities. The majority of the securities will be used to match the projected cash flows for future benefit payments of the liability. Plan assets in excess of those securities designed to match the long-term liabilities will be invested in shorter duration securities with a duration of about three years.

The following table provides the allocations of the other postretirement benefit plan assets by asset category:

Asset Category	2019 Target Allocation (a)	Percentage of Plan Assets as of December 31,	
		2018	2017
Equity securities	14%	17%	35%
Fixed income	86%	83%	65%
REITs	—	—	—
Total	100%	100%	100%

(a) Includes the American Water Postretirement Medical Benefits Bargaining Plan, the New York Water Service Corporation Postretirement Medical Benefits Bargaining Plan, the American Water Postretirement Medical Benefits Non-Bargaining Plan, and the American Water Life Insurance Trust.

The investments of the pension and postretirement welfare plan trusts include debt and equity securities held either directly or through commingled funds. The trustee for the Company's defined benefit pension and postretirement welfare plans uses an independent valuation firm to calculate the fair value of plan assets. Additionally, the Company independently verifies the assets' values. Approximately 88% of the assets are valued using the quoted market price for the assets in an active market at the measurement date, while 12% of the assets are valued using other inputs.

In selecting a rate of compensation increase, we consider past experience in light of movements in inflation rates. Our rate of compensation increase was 3% for 2018, 3.02% for 2017 and 3.07% for 2016.

In selecting health care cost trend rates, we consider past performance and forecasts of increases in health care costs. As of January 1, 2017, our health care cost trend rate assumption used to calculate the periodic cost was 7% in 2018 gradually declining to 4.5% in 2026 and thereafter. As of December 31, 2018, the Company is projecting that medical inflation will be 6.75% in 2019 and, it will ultimately trend down to 5%, but not until 2026.

We will use a discount rate and EROA of 4.38% and 6.2%, respectively, for estimating our 2019 pension costs. Additionally, we will use a discount rate and expected blended return based on weighted assets of 4.32% and 3.56%, respectively, for estimating our 2019 other postretirement benefit costs. A decrease in the discount rate or the EROA would increase our pension expense. Our 2018 and 2017 pension and postretirement benefit costs were \$21 million and \$56 million, respectively. The Company expects to make pension and postretirement benefit contributions to the plan trusts up to \$31 million in 2019, and \$32 million, \$29 million, \$29 million and \$29 million in 2020, 2021, 2022 and 2023, respectively. Actual amounts contributed could change significantly from these estimates. The assumptions are reviewed annually and at any interim re-measurement of the plan obligations. The impact of assumption changes is reflected in the recorded pension and postretirement benefit amounts as they occur, or over a period of time if allowed under applicable accounting standards. As these assumptions change from period to period, recorded pension and postretirement benefit amounts and funding requirements could also change.

Accounting for Contingencies

We record loss contingencies when management determines that the outcome of future events is probable of occurring and when the amount of the loss or a range of losses can be reasonably estimated. The determination of a loss contingency is based on management's judgment and estimates about the likely outcome of the matter, which may include an analysis of different scenarios. Liabilities are recorded or adjusted when events or circumstances cause these judgments or estimates to change. In assessing whether a loss is reasonably possible, management considers many factors, which include, but are not limited to: the nature of the litigation, claim or assessment, review of applicable law, opinions or views of legal counsel and other advisors, and the experience gained from similar cases or situations. We provide disclosures for material contingencies when management deems there is a reasonable possibility that a loss or an additional loss may be incurred. We provide estimates of reasonably possible losses when such estimates may be reasonably determined, either as a single amount or within a reasonable range.

Actual amounts realized upon settlement of contingencies may be different than amounts recorded and disclosed and could have a significant impact on the liabilities, revenue and expenses recorded on the Consolidated Financial Statements. See Note 16—Commitments and Contingencies in the Notes to Consolidated Financial Statements for additional information regarding contingencies.

New Accounting Standards

See Note 2—Significant Accounting Policies in the Notes to Consolidated Financial Statements for a description of recent accounting standards.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk associated with changes in commodity prices, equity prices and interest rates. We are exposed to risks from changes in interest rates as a result of our issuance of variable and fixed rate debt and commercial paper. We manage our interest rate exposure by limiting our variable rate exposure and by monitoring the effects of market changes in interest rates. We also have the ability to enter into financial derivative instruments, which could include instruments such as, but not limited to, interest rate swaps, forward starting swaps, swaptions and U.S. Treasury lock agreements to manage and mitigate interest rate risk exposure. As of December 31, 2018, a hypothetical increase of interest rates by 1% associated with our short-term borrowings would result in a \$10 million increase in short-term interest expense.

As of December 31, 2018, the Company had four forward starting swap agreements with an aggregate notional amount of \$360 million to reduce interest rate exposure on debt expected to be issued in 2019. The forward starting swap agreements terminate in 2019 and have an average fixed rate of 3.16%. When entering into forward starting interest rate swaps, the Company is subject to market risk with respect to changes in the underlying benchmark interest rate that impacts the fair value of the forward starting interest rate swaps. We manage market risk by matching terms of the swaps with the critical terms of the expected debt issuance. The fair value of the forward starting swaps at December 31, 2018 was in a loss position of \$14 million. A hypothetical 1% adverse change in interest rates would result in a decrease in the fair value of our forward starting swaps of approximately \$66 million at December 31, 2018.

On January 8, 2019, we entered into an additional forward starting swap agreement, with a notional amount of \$150 million, to reduce interest rate exposure on debt expected to be issued in 2019. This forward starting swap agreement terminates in December 2019, and has an average fixed rate of 2.76%.

Our risks associated with price increases for chemicals, electricity and other commodities are reduced through contractual arrangements and the expected ability to recover price increases through rates, in the next general rate case proceeding or other regulatory mechanism, as authorized by each regulatory jurisdiction. Non-performance by these commodity suppliers could have a material adverse impact on our results of operations, financial position and cash flows.

The market price of our common stock may experience fluctuations, which may be unrelated to our operating performance. In particular, our stock price may be affected by general market movements as well as developments specifically related to the water and wastewater industry. These could include, among other things, interest rate movements, quarterly variations or changes in financial estimates by securities analysts and governmental or regulatory actions. This volatility may make it difficult for us to access the capital markets in the future through additional offerings of our common stock, regardless of our financial performance, and such difficulty may preclude us from being able to take advantage of certain business opportunities or meet business obligations.

We are exposed to credit risk through our water, wastewater and other water-related services provided by our Regulated Businesses and Market-Based Businesses. Our Regulated Businesses serve residential, commercial, industrial and other customers while our Market-Based Businesses engage in business activities with developers, government entities and other customers. Our primary credit risk is exposure to customer default on contractual obligations and the associated loss that may be incurred due to the non-payment of customer accounts receivable balances. Our credit risk is managed through established credit and collection policies which are in compliance with applicable regulatory requirements and involve monitoring of customer exposure and the use of credit risk mitigation measures such as letters of credit or prepayment arrangements. Our credit portfolio is diversified with no significant customer or industry concentrations. In addition, our Regulated Businesses are generally able to recover all prudently incurred costs including uncollectible customer accounts receivable expenses and collection costs through rates.

The Company's retirement trust assets are exposed to the market prices of debt and equity securities. Changes to the retirement trust asset values can impact the Company's pension and other benefits expense, funded status and future minimum funding requirements. Changes in interest rates can impact retirement liabilities. We aim to reduce risk through asset diversification and by investing in long duration fixed-income securities that have a duration similar to that of our pension liabilities, seeking to hedge some of the interest rate sensitivity of our liabilities. That way, if interest rates fall and liabilities increase, we expect that the fixed-income assets in our retirement trust will also increase in value. We also expect our risk to be reduced through our ability to recover pension and other benefit costs through rates.

We are also exposed to a potential national economic recession or deterioration in local economic conditions in the markets in which we operate. The credit quality of our customer accounts receivable is dependent on the economy and the ability of our customers to manage through unfavorable economic cycles and other market changes. In addition, there can be no assurances that regulators will grant sufficient rate authorizations. Therefore, our ability to fully recover operating expense, recover our investment and provide an appropriate return on invested capital made in our Regulated Businesses may be adversely impacted.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
American Water Works Company, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of American Water Works Company, Inc. and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income, cash flows, and changes in shareholders’ equity for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company’s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management’s Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As described in Management’s Report on Internal Control over Financial Reporting, management has excluded Pivotal Home Solutions from its assessment of internal control over financial reporting as of December 31, 2018 because it was acquired by the Company in a purchase business combination during 2018. We have also excluded Pivotal Home Solutions from our audit of internal control over financial reporting. Pivotal Home Solutions is a wholly-owned subsidiary whose total assets and total revenues excluded from management’s assessment and our audit of internal control over financial reporting represent less than 1% and approximately 2%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania

February 19, 2019

We have served as the Company's auditor since 1948.

American Water Works Company, Inc. and Subsidiary Companies
Consolidated Balance Sheets
(In millions, except share and per share data)

	December 31, 2018	December 31, 2017
ASSETS		
Property, plant and equipment	\$ 23,204	\$ 21,716
Accumulated depreciation	(5,795)	(5,470)
Property, plant and equipment, net	17,409	16,246
Current assets:		
Cash and cash equivalents	130	55
Restricted funds	28	27
Accounts receivable, net	301	272
Unbilled revenues	186	212
Materials and supplies	41	41
Other	95	113
Total current assets	781	720
Regulatory and other long-term assets:		
Regulatory assets	1,156	1,061
Goodwill	1,575	1,379
Intangible assets	84	9
Postretirement benefit asset	155	—
Other	63	67
Total regulatory and other long-term assets	3,033	2,516
Total assets	\$ 21,223	\$ 19,482

The accompanying notes are an integral part of these Consolidated Financial Statements.

American Water Works Company, Inc. and Subsidiary Companies
Consolidated Balance Sheets
(In millions, except share and per share data)

	December 31, 2018	December 31, 2017
CAPITALIZATION AND LIABILITIES		
Capitalization:		
Common stock (\$0.01 par value, 500,000,000 shares authorized, 185,367,158 and 182,508,564 shares issued, respectively)	\$ 2	\$ 2
Paid-in-capital	6,657	6,432
Accumulated deficit	(464)	(723)
Accumulated other comprehensive loss	(34)	(79)
Treasury stock, at cost (4,683,156 and 4,064,010 shares, respectively)	(297)	(247)
Total common shareholders' equity	5,864	5,385
Long-term debt	7,569	6,490
Redeemable preferred stock at redemption value	7	8
Total long-term debt	7,576	6,498
Total capitalization	13,440	11,883
Current liabilities:		
Short-term debt	964	905
Current portion of long-term debt	71	322
Accounts payable	175	195
Accrued liabilities	556	630
Taxes accrued	45	33
Interest accrued	87	73
Other	196	167
Total current liabilities	2,094	2,325
Regulatory and other long-term liabilities:		
Advances for construction	252	271
Deferred income taxes, net	1,718	1,551
Deferred investment tax credits	22	22
Regulatory liabilities	1,907	1,664
Accrued pension expense	390	384
Accrued postretirement benefit expense	—	40
Other	78	66
Total regulatory and other long-term liabilities	4,367	3,998
Contributions in aid of construction	1,322	1,276
Commitments and contingencies (See Note 16)		
Total capitalization and liabilities	\$ 21,223	\$ 19,482

The accompanying notes are an integral part of these Consolidated Financial Statements.

American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Operations
(In millions, except per share data)

	For the Years Ended December 31,		
	2018	2017	2016
Operating revenues	\$ 3,440	\$ 3,357	\$ 3,302
Operating expenses:			
Operation and maintenance	1,479	1,369	1,499
Depreciation and amortization	545	492	470
General taxes	277	259	258
(Gain) on asset dispositions and purchases	(20)	(16)	(10)
Impairment charge	57	—	—
Total operating expenses, net	2,338	2,104	2,217
Operating income	1,102	1,253	1,085
Other income (expense):			
Interest, net	(350)	(342)	(325)
Non-operating benefit costs, net	20	(9)	(5)
Loss on early extinguishment of debt	(4)	(7)	—
Other, net	19	17	15
Total other income (expense)	(315)	(341)	(315)
Income before income taxes	787	912	770
Provision for income taxes	222	486	302
Consolidated net income	565	426	468
Net loss attributable to noncontrolling interest	(2)	—	—
Net income attributable to common shareholders	\$ 567	\$ 426	\$ 468
Basic earnings per share: (a)			
Net income attributable to common shareholders	\$ 3.16	\$ 2.39	\$ 2.63
Diluted earnings per share: (a)			
Net income attributable to common shareholders	\$ 3.15	\$ 2.38	\$ 2.62
Weighted average common shares outstanding:			
Basic	180	178	178
Diluted	180	179	179

(a) Amounts may not calculate due to rounding.

The accompanying notes are an integral part of these Consolidated Financial Statements.

American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Comprehensive Income
(In millions)

	For the Years Ended December 31,		
	2018	2017	2016
Net income attributable to common shareholders	\$ 567	\$ 426	\$ 468
Other comprehensive income (loss), net of tax:			
Change in employee benefit plan funded status, net of tax of \$20, \$2 and \$(14) in 2018, 2017 and 2016, respectively	60	7	(21)
Pension amortized to periodic benefit cost:			
Actuarial loss, net of tax of \$3, \$5 and \$4 in 2018, 2017 and 2016, respectively	7	7	6
Pension reclassification from accumulated other comprehensive loss of tax effects resulting from the Tax Cuts and Jobs Act	(22)	—	—
Foreign currency translation adjustment	—	(1)	—
Unrealized (loss) gain on cash flow hedges, net of tax of \$0, \$(4) and \$10 in 2018, 2017 and 2016, respectively	(2)	(6)	17
Cash flow hedges reclassification from accumulated other comprehensive loss of tax effects resulting from the Tax Cuts and Jobs Act	2	—	—
Net other comprehensive income	45	7	2
Comprehensive income attributable to common shareholders	\$ 612	\$ 433	\$ 470

The accompanying notes are an integral part of these Consolidated Financial Statements.

American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Cash Flows
(In millions)

	For the Years Ended December 31,		
	2018	2017	2016
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income	\$ 565	\$ 426	\$ 468
Adjustments to reconcile to net cash flows provided by operating activities:			
Depreciation and amortization	545	492	470
Deferred income taxes and amortization of investment tax credits	195	462	295
Provision for losses on accounts receivable	33	29	27
Gain on asset dispositions and purchases	(20)	(16)	(10)
Impairment charge	57	—	—
Pension and non-pension postretirement benefits	23	57	54
Other non-cash, net	20	(54)	(36)
Changes in assets and liabilities:			
Receivables and unbilled revenues	(17)	21	(31)
Pension and non-pension postretirement benefit contributions	(22)	(48)	(53)
Accounts payable and accrued liabilities	25	38	60
Other assets and liabilities, net	22	64	(20)
Impact of Freedom Industries settlement activities	(40)	(22)	65
Net cash provided by operating activities	1,386	1,449	1,289
CASH FLOWS FROM INVESTING ACTIVITIES			
Capital expenditures	(1,586)	(1,434)	(1,311)
Acquisitions, net of cash acquired	(398)	(177)	(204)
Proceeds from sale of assets	35	15	9
Removal costs from property, plant and equipment retirements, net	(87)	(76)	(84)
Net cash used in investing activities	(2,036)	(1,672)	(1,590)
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from long-term debt	1,358	1,395	553
Repayments of long-term debt	(526)	(896)	(144)
Net short-term borrowings with maturities less than three months	60	55	221
Issuance of common stock	183	—	—
Proceeds from issuances of employee stock plans and direct stock purchase plan, net of taxes paid of \$8, \$11 and \$13 in 2018, 2017 and 2016, respectively	16	15	13
Advances and contributions for construction, net of refunds of \$22, \$22 and \$31 in 2018, 2017 and 2016, respectively	21	28	16
Debt issuance costs and make-whole premium on early debt redemption	(22)	(47)	(5)
Dividends paid	(319)	(289)	(261)
Anti-dilutive share repurchases	(45)	(54)	(65)
Net cash provided by financing activities	726	207	328
Net increase (decrease) in cash and cash equivalents and restricted funds	76	(16)	27
Cash and cash equivalents and restricted funds at beginning of period	83	99	72
Cash and cash equivalents and restricted funds at end of period	\$ 159	\$ 83	\$ 99
Cash paid during the year for:			
Interest, net of capitalized amount	\$ 332	\$ 338	\$ 327
Income taxes, net of refunds of \$0 in 2018, 2017 and 2016	\$ 38	\$ 30	\$ 16
Non-cash investing activity:			
Capital expenditures acquired on account but unpaid as of year end	\$ 181	\$ 204	\$ 171
Acquisition financed by treasury stock	\$ —	\$ 33	\$ —

The accompanying notes are an integral part of these Consolidated Financial Statements.

American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Changes in Shareholders' Equity
(In millions, except per share data)

	Common Stock			Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Total Shareholders' Equity
	Shares	Par Value	Paid-in Capital			Shares	At Cost	
Balance as of December 31, 2015	180.9	\$ 2	\$ 6,351	\$ (1,073)	\$ (88)	(2.6)	\$ (143)	\$ 5,049
Net income attributable to common shareholders	—	—	—	468	—	—	—	468
Direct stock reinvestment and purchase plan	0.1	—	5	—	—	—	—	5
Employee stock purchase plan	0.1	—	7	—	—	—	—	7
Stock-based compensation activity	0.7	—	25	(1)	—	(0.1)	(5)	19
Repurchases of common stock	—	—	—	—	—	(1.0)	(65)	(65)
Net other comprehensive income	—	—	—	—	2	—	—	2
Dividends (\$1.50 declared per common share)	—	—	—	(267)	—	—	—	(267)
Balance as of December 31, 2016	181.8	\$ 2	\$ 6,388	\$ (873)	\$ (86)	(3.7)	\$ (213)	\$ 5,218
Cumulative effect of change in accounting principle	—	—	—	21	—	—	—	21
Net income attributable to common shareholders	—	—	—	426	—	—	—	426
Direct stock reinvestment and purchase plan	0.1	—	8	—	—	—	—	8
Employee stock purchase plan	0.1	—	7	—	—	—	—	7
Stock-based compensation activity	0.5	—	22	—	—	(0.1)	(7)	15
Acquisitions via treasury stock	—	—	7	—	—	0.4	27	34
Repurchases of common stock	—	—	—	—	—	(0.7)	(54)	(54)
Net other comprehensive income	—	—	—	—	7	—	—	7
Dividends (\$1.66 declared per common share)	—	—	—	(297)	—	—	—	(297)
Balance as of December 31, 2017	182.5	\$ 2	\$ 6,432	\$ (723)	\$ (79)	(4.1)	\$ (247)	\$ 5,385
Cumulative effect of change in accounting principle	—	—	—	20	—	—	—	20
Net income attributable to common shareholders	—	—	—	567	—	—	—	567
Direct stock reinvestment and purchase plan	0.1	—	8	—	—	—	—	8
Employee stock purchase plan	0.1	—	8	—	—	—	—	8
Stock-based compensation activity	0.4	—	26	(1)	—	(0.1)	(5)	20
Issuance of common stock	2.3	—	183	—	—	—	—	183
Repurchases of common stock	—	—	—	—	—	(0.5)	(45)	(45)
Net other comprehensive income	—	—	—	—	45	—	—	45
Dividends (\$1.82 declared per common share)	—	—	—	(327)	—	—	—	(327)
Balance as of December 31, 2018	185.4	\$ 2	\$ 6,657	\$ (464)	\$ (34)	(4.7)	\$ (297)	\$ 5,864

The accompanying notes are an integral part of these Consolidated Financial Statements.

American Water Works Company, Inc. and Subsidiary Companies

Notes to Consolidated Financial Statements

(Unless otherwise noted, in millions, except per share data)

Note 1: Organization and Operation

American Water Works Company, Inc. (the “Company” or “American Water”) is a holding company for regulated and market-based subsidiaries throughout the United States and Ontario, Canada. The Company’s primary business involves the ownership of regulated utilities that provide water and wastewater services in 16 states in the United States, collectively referred to as the “Regulated Businesses.” The Company also operates market-based businesses that provide a broad range of related and complementary water and wastewater services within non-reportable operating segments, collectively referred to as the “Market-Based Businesses.” The Company’s primary Market-Based Businesses include the Homeowner Services Group, which provides warranty protection programs to residential and smaller commercial customers; the Military Services Group, which provides water and wastewater services to the U.S. government on military installations; and Keystone Clearwater Solutions, LLC, which provides water transfer services for shale natural gas exploration and production companies.

Note 2: Significant Accounting Policies

Principles of Consolidation

The accompanying Consolidated Financial Statements include the accounts of American Water and all of its subsidiaries in which a controlling interest is maintained after the elimination of intercompany balances and transactions. The Company uses the equity method to report its investments in joint ventures where it holds up to a 50% voting interest and cannot exercise control over the operations and policies of the investments. Under the equity method, the Company records its interests as an investment and its percentage share of the investee’s earnings as income or losses.

In July 2015, the Company acquired a 95% interest in Water Solutions Holdings, LLC, including its wholly owned subsidiary, Keystone Clearwater Solutions, LLC (collectively referred to as “Keystone”). During the fourth quarter of 2018, pursuant to the exercise of put options by the minority owners, the Company acquired the remaining 5% interest in Keystone, bringing its ownership interest to 100%. The former minority owners’ interest was recognized as redeemable noncontrolling interest and was included in Other long-term liabilities on the Consolidated Balance Sheets. There was no remaining redeemable noncontrolling interest as of December 31, 2018, and \$7 million of redeemable noncontrolling interest as of December 31, 2017.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States (“GAAP”) requires that management make estimates, assumptions and judgments that could affect the Company’s financial condition, results of operations and cash flows. Actual results could differ from these estimates, assumptions and judgments. The Company considers its critical accounting estimates to include (i) the application of regulatory accounting principles and the related determination and estimation of regulatory assets and liabilities, (ii) assumptions used in impairment testing of goodwill and long-lived assets, including regulatory assets, (iii) revenue recognition and the estimates used in the calculation of unbilled revenue, (iv) accounting for income taxes and the enacted Tax Cuts and Jobs Act (the “TCJA”), (v) benefit plan assumptions and (vi) the estimates and judgments used in determining loss contingencies. The Company’s critical accounting estimates that are particularly sensitive to change in the near term are amounts reported for regulatory assets and liabilities, goodwill, income taxes, benefit plan assumptions and contingency-related obligations.

Regulation

The Company’s regulated utilities are generally subject to economic regulation by certain state utility commissions or other entities engaged in utility regulation, collectively referred to as Public Utility Commissions (“PUCs” or “Regulators”). As such, the Company follows authoritative accounting principles required for rate regulated utilities, which requires the effects of rate regulation to be reflected in the Company’s Consolidated Financial Statements. PUCs generally authorize revenue at levels intended to recover the estimated costs of providing service, plus a return on net investments, or rate base. Regulators may also approve accounting treatments, long-term financing programs and cost of capital, operation and maintenance (“O&M”) expenses, capital expenditures, taxes, affiliated transactions and relationships, reorganizations, mergers, and acquisitions, along with imposing certain penalties or granting certain incentives. Due to timing and other differences in the collection of a regulated utility’s revenues, these authoritative accounting principles allow a cost that would otherwise be charged as an expense by a non-regulated entity, to be deferred as a regulatory asset if it is probable that such cost is recoverable through future rates. Conversely, these principles also require the creation of a regulatory liability for amounts collected in rates to recover costs expected to be incurred in the future, or amounts collected in excess of costs incurred and are refundable to customers. See Note 7—Regulatory Assets and Liabilities for additional information.

Property, Plant and Equipment

Property, plant and equipment consists primarily of utility plant utilized by the Company's regulated utilities. Additions to utility plant and replacement of retirement units of utility plant are capitalized and include costs such as materials, direct labor, payroll taxes and benefits, indirect items such as engineering and supervision, transportation and an allowance for funds used during construction ("AFUDC"). Costs for repair, maintenance and minor replacements are charged to O&M expense as incurred.

The cost of utility plant is depreciated using the straight-line average remaining life, group method. The Company's regulated utilities record depreciation in conformity with amounts approved by PUCs, after regulatory review of the information the Company submits to support its estimates of the assets' remaining useful lives.

Nonutility property consists primarily of buildings and equipment utilized by the Company's Market-Based Businesses and for internal operations. This property is stated at cost, net of accumulated depreciation, which is calculated using the straight-line method over the useful lives of the assets.

When units of property, plant and equipment are replaced, retired or abandoned, the carrying value is credited against the asset and charged to accumulated depreciation. To the extent the Company recovers cost of removal or other retirement costs through rates after the retirement costs are incurred, a regulatory asset is recorded. In some cases, the Company recovers retirement costs through rates during the life of the associated asset and before the costs are incurred. These amounts result in a regulatory liability being reported based on the amounts previously recovered through customer rates, until the costs to retire those assets are incurred.

The costs incurred to acquire and internally develop computer software for internal use are capitalized as a unit of property. The carrying value of these costs amounted to \$336 million and \$346 million as of December 31, 2018 and 2017, respectively.

Cash and Cash Equivalents, and Restricted Funds

Substantially all cash is invested in interest-bearing accounts. All highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents.

Restricted funds consists primarily of proceeds from financings for the construction and capital improvement of facilities, and deposits for future services under O&M projects. Proceeds are held in escrow or interest-bearing accounts until the designated expenditures are incurred. Restricted funds are classified on the Consolidated Balance Sheets as either current or long-term based upon the intended use of the funds.

The following table provides a reconciliation of the Cash and cash equivalents and Restricted funds amounts as presented on the Consolidated Balance Sheets, to the sum of such amounts presented on the Consolidated Statements of Cash Flows for the years ended December 31 :

	2018	2017
Cash and cash equivalents	\$ 130	\$ 55
Restricted funds	28	27
Restricted funds included in other long-term assets	1	1
Cash and cash equivalents and restricted funds as presented on the Consolidated Statements of Cash Flows	<u>\$ 159</u>	<u>\$ 83</u>

Accounts Receivable and Unbilled Revenues

Accounts receivable include regulated utility customer accounts receivable, which represent amounts billed to water and wastewater customers generally on a monthly basis. Credit is extended based on the guidelines of the applicable PUCs and collateral is generally not required. Also included are market-based trade accounts receivable and nonutility customer receivables of the regulated subsidiaries. Unbilled revenues are accrued when service has been provided but has not been billed to customers and when costs exceed billings on market-based construction contracts.

Allowance for Uncollectible Accounts

Allowances for uncollectible accounts are maintained for estimated probable losses resulting from the Company's inability to collect receivables from customers. Accounts that are outstanding longer than the payment terms are considered past due. A number of factors are considered in determining the allowance for uncollectible accounts, including the length of time receivables are past due and previous loss history. The Company generally writes off accounts when they become uncollectible or are over a certain number of days outstanding. See Note 6—Allowance for Uncollectible Accounts for additional information.

Materials and Supplies

Materials and supplies are stated at the lower of cost or net realizable value. Cost is determined using the average cost method.

Goodwill

Goodwill represents the excess of the purchase price paid over the estimated fair value of the assets acquired and liabilities assumed in the acquisition of a business. Goodwill is not amortized and must be allocated at the reporting unit level, which is defined as an operating segment or one level below, and tested for impairment at least annually, or more frequently if an event occurs or circumstances change that would more likely than not, reduce the fair value of a reporting unit below its carrying value.

The Company's goodwill is primarily associated with (i) the acquisition of American Water by an affiliate of the Company's previous owner in 2003, (ii) the acquisition of E'town Corporation by a predecessor to the Company's previous owner in 2001, (iii) the acquisition of Pivotal Home Solutions ("Pivotal") in 2018, and (iv) the acquisition of Keystone in 2015; and has been allocated to reporting units based on the fair values at the date of the acquisitions. For purposes of testing goodwill for impairment, the reporting units in the Regulated Businesses segment are aggregated into a single reporting unit. The Market-Based Businesses is comprised of the Homeowner Services Group reporting unit, the Military Services Group reporting unit and the Keystone reporting unit.

The Company's annual impairment testing is performed as of November 30 of each year, in conjunction with the completion of the Company's annual business plan. The Company assesses qualitative factors to determine whether quantitative testing is necessary. If it is determined, based upon qualitative factors, that the estimated fair value of a reporting unit is more likely than not, greater than its carrying value, no further testing is required. If the Company bypasses the qualitative assessment, or performs the qualitative assessment and determines that the estimated fair value of a reporting unit is more likely than not, less than its carrying value, a quantitative, fair value-based test is performed. This quantitative testing compares the estimated fair value of the reporting unit to its respective net carrying value, including goodwill, on the measurement date. An impairment loss will be recognized in the amount equal to the excess of the reporting unit's carrying value compared to its estimated fair value, limited to the total amount of goodwill allocated to that reporting unit.

Application of goodwill impairment testing requires management judgment, including the identification of reporting units and determining the fair value of reporting units. Management estimates fair value using a combination of a discounted cash flow analysis and a market multiples analysis. Significant assumptions used in these fair value estimations include, but are not limited to, forecasts of future operating results, discount and growth rates, capital expenditures, tax rates, working capital, weighted average cost of capital and projected terminal values.

The Company believes the assumptions and other considerations used to value goodwill to be appropriate, however, if actual experience differs from the assumptions and considerations used in its analysis, the resulting change could have a material adverse impact on the Consolidated Financial Statements. See Note 8—Goodwill and Other Intangible Assets for additional information.

Intangible Assets

Intangible assets consist primarily of finite-lived customer relationships associated with the acquisition of Pivotal and Keystone. Finite-lived intangible assets are initially measured at their estimated fair values, and are amortized over their estimated useful lives based on the pattern in which the economic benefits of the intangible assets are consumed or otherwise used. See Note 8—Goodwill and Other Intangible Assets for additional information.

Impairment of Long-Lived Assets

Long-lived assets include property, plant and equipment, goodwill, intangible assets and long-term investments. The Company evaluates long-lived assets for impairment when circumstances indicate the carrying value of those assets may not be recoverable. When such indicators arise, the Company estimates the fair value of the long-lived asset from future cash flows expected to result from its use and, if applicable, the eventual disposition of the asset, comparing the estimated value fair to the carrying value of the asset. An impairment loss will be recognized in the amount equal to the excess of the long-lived asset's carrying value compared to its estimated fair value.

The long-lived assets of the Company's regulated utilities are grouped on a separate entity basis for impairment testing, as they are integrated state-wide operations that do not have the option to curtail service and generally have uniform tariffs. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

The Company holds other long-term investments in privately held companies and joint ventures accounted for using the equity method, and are classified as other Long-term assets on the Consolidated Balance Sheets. The estimated fair value of the long-term investments are dependent on the financial performance and solvency of the entities in which the Company invests, as well as volatility inherent in the external markets. If such long-term investments are considered impaired, an impairment loss will be recognized in the amount equal to the excess of the investment's carrying value compared to its estimated fair value.

The Company believes the assumptions and other considerations used to value long-lived assets to be appropriate, however, if actual experience differs from the assumptions and considerations used in its estimates, the resulting change could have a material adverse impact on the Consolidated Financial Statements.

Advances for Construction and Contributions in Aid of Construction

Regulated utility subsidiaries may receive advances for construction and contributions in aid of construction from customers, home builders and real estate developers to fund construction necessary to extend service to new areas.

Advances are refundable for limited periods of time as new customers begin to receive service or other contractual obligations are fulfilled. Included in Other current liabilities as of December 31, 2018 and 2017 on the Consolidated Balance Sheets are estimated refunds of \$23 million and \$23 million, respectively. Those amounts represent expected refunds during the next 12-month period.

Advances that are no longer refundable are reclassified to contributions. Contributions are permanent collections of plant assets or cash for a particular construction project. For ratemaking purposes, the amount of such contributions generally serves as a rate base reduction since the contributions represent non-investor supplied funds.

Generally, the Company depreciates utility plant funded by contributions and amortizes its contributions balance as a reduction to depreciation expense, producing a result which is functionally equivalent to reducing the original cost of the utility plant for the contributions. In accordance with applicable regulatory guidelines, some of the Company's utility subsidiaries do not amortize contributions, and any contribution received remains on the balance sheet indefinitely. Amortization of contributions in aid of construction was \$28 million, \$27 million and \$27 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Revenue Recognition

On January 1, 2018, the Company adopted Accounting Standards Codification Topic 606, *Revenue From Contracts With Customers*, and all related amendments (collectively, "ASC 606"), using the modified retrospective approach, applied to contracts which were not completed as of January 1, 2018. Under this approach, periods prior to the adoption date have not been restated and continue to be reported under the accounting standards in effect for those periods.

Under ASC 606, a performance obligation is a promise within a contract to transfer a distinct good or service, or a series of distinct goods and services, to a customer. Revenue is recognized when performance obligations are satisfied and the customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration to which the Company expects to be entitled to receive in exchange for goods or services. Under ASC 606, a contract's transaction price is allocated to each distinct performance obligation. To determine revenue recognition for arrangements that the Company determines are within the scope of ASC 606, the Company performs the following five steps: (i) identifies the contracts with a customer; (ii) identifies the performance obligations within the contract, including whether any performance obligations are distinct and capable of being distinct in the context of the contract; (iii) determines the transaction price; (iv) allocates the transaction price to the performance obligations in the contract; and (v) recognizes revenue when, or as, the Company satisfies each performance obligation.

The Company's revenues from contracts with customers are discussed below. Customer payments for contracts are generally due within 30 days of billing and none of the contracts with customers have payment terms that exceed one year; therefore, the Company elected to apply the significant financing component practical expedient and no amount of consideration has been allocated as a financing component.

Regulated Businesses Revenue

Revenue from the Company's Regulated Businesses is generated primarily from water and wastewater services delivered to customers. These contracts contain a single performance obligation, the delivery of water and/or wastewater services, as the promise to transfer the individual good or service is not separately identifiable from other promises within the contracts and, therefore, is not distinct. Revenues are recognized over time, as services are provided. There are generally no significant financing components or variable consideration. Revenues include amounts billed to customers on a cycle basis and unbilled amounts calculated based on estimated usage from the date of the meter reading associated with the latest customer bill, to the end of the accounting period. The amounts that the Company has a right to invoice are determined by each customer's actual usage, an indicator that the invoice amount corresponds directly to the value transferred to the customer. The Company also recognizes revenue when it is probable that future recovery of previously incurred costs or future refunds that are to be credited to customers will occur through the ratemaking process.

Market-Based Businesses Revenue

Through various warranty protection programs, the Company provides fixed fee services to residential and smaller commercial customers to protect against repair costs for interior and exterior water and sewer lines, interior electric and gas lines, heating and cooling systems, water heaters and other home appliances, as well as power surge protection and other related services. Most of the contracts have a one-year term and each service is a separate performance obligation, satisfied over time, as the customers simultaneously receive and consume the benefits provided from the service. Customers are obligated to pay for the protection programs ratably over 12 months or via a one-time, annual fee, with revenues recognized ratably over time for these services. Advances from customers are deferred until the performance obligation is satisfied.

The Company also has long-term, fixed fee contracts to operate and maintain water and wastewater systems for the U.S. government on various military installations and facilities owned by municipal and industrial customers, as well as shorter-term contracts that provide customized water transfer services for shale natural gas companies and customers. Billing and revenue recognition for the fixed fee revenues occurs ratably over the term of the contract, as customers simultaneously receive and consume the benefits provided by the Company. Additionally, these contracts allow the Company to make capital improvements to underlying infrastructure, which are initiated through separate modifications or amendments to the original contract, whereby stand-alone, fixed pricing is separately stated for each improvement. The Company has determined that these capital improvements are separate performance obligations, with revenue recognized over time based on performance completed at the end of each reporting period. Losses on contracts are recognized during the period in which the losses first become probable and estimable. Revenues recognized during the period in excess of billings on construction contracts are recorded as unbilled revenues, with billings in excess of revenues recorded as other current liabilities until the recognition criteria are met. Changes in contract performance and related estimated contract profitability may result in revisions to costs and revenues, and are recognized in the period in which revisions are determined. See Note 3—Revenue Recognition for additional information.

Income Taxes

The Company and its subsidiaries participate in a consolidated federal income tax return for U.S. tax purposes. Members of the consolidated group are charged with the amount of federal income tax expense determined as if they filed separate returns.

Certain income and expense items are accounted for in different time periods for financial reporting than for income tax reporting purposes. The Company provides deferred income taxes on the difference between the tax basis of assets and liabilities and the amounts at which they are carried in the financial statements. These deferred income taxes are based on the enacted tax rates expected to be in effect when these temporary differences are projected to reverse. In addition, the regulated utility subsidiaries recognize regulatory assets and liabilities for the effect on revenues expected to be realized as the tax effects of temporary differences, previously flowed through to customers, reverse.

Investment tax credits have been deferred by the regulated utility subsidiaries and are being amortized to income over the average estimated service lives of the related assets.

The Company recognizes accrued interest and penalties related to tax positions as a component of income tax expense and accounts for sales tax collected from customers and remitted to taxing authorities on a net basis. See Note 14—Income Taxes for additional information.

Allowance for Funds Used During Construction

AFUDC is a non-cash credit to income with a corresponding charge to utility plant that represents the cost of borrowed funds or a return on equity funds devoted to plant under construction. The regulated utility subsidiaries record AFUDC to the extent permitted by the PUCs. The portion of AFUDC attributable to borrowed funds is shown as a reduction of Interest, net on the Consolidated Statements of Operations. Any portion of AFUDC attributable to equity funds would be included in Other, net on the Consolidated Statements of Operations. AFUDC is provided in the following table for the years ended December 31 :

	2018	2017	2016
Allowance for other funds used during construction	\$ 24	\$ 19	\$ 15
Allowance for borrowed funds used during construction	13	8	6

Environmental Costs

The Company's water and wastewater operations and the operations of its Market-Based Businesses are subject to U.S. federal, state, local and foreign requirements relating to environmental protection, and as such, the Company periodically becomes subject to environmental claims in the normal course of business. Environmental expenditures that relate to current operations or provide a future benefit are expensed or capitalized as appropriate. Remediation costs that relate to an existing condition caused by past operations are accrued, on an undiscounted basis, when it is probable that these costs will be incurred and can be reasonably estimated. A conservation agreement entered into by a subsidiary of the Company with the National Oceanic and Atmospheric Administration in 2010 and amended in 2017 required the subsidiary to, among other provisions, implement certain measures to protect the steelhead trout and its habitat in the Carmel River watershed in the State of California. The subsidiary agreed to pay \$1 million annually commencing in 2010 with the final payment being made in 2021. Remediation costs accrued amounted to \$4 million and \$6 million as of December 31, 2018 and 2017, respectively.

Derivative Financial Instruments

The Company uses derivative financial instruments for purposes of hedging exposures to fluctuations in interest rates. These derivative contracts are entered into for periods consistent with the related underlying exposures and do not constitute positions independent of those exposures. The Company does not enter into derivative contracts for speculative purposes and does not use leveraged instruments.

All derivatives are recognized on the balance sheet at fair value. On the date the derivative contract is entered into, the Company may designate the derivative as a hedge of the fair value of a recognized asset or liability (fair-value hedge) or a hedge of a forecasted transaction or of the variability of cash flows to be received or paid related to a recognized asset or liability (cash-flow hedge).

Changes in the fair value of a fair-value hedge, along with the gain or loss on the underlying hedged item, are recorded in current-period earnings. The gains and losses on the effective portion of cash-flow hedges are recorded in other comprehensive income, until earnings are affected by the variability of cash flows. Any ineffective portion of designated cash-flow hedges is recognized in current-period earnings.

Cash flows from derivative contracts are included in Net cash provided by operating activities on the Consolidated Statements of Cash Flows. See Note 11 —Long-Term Debt for additional information.

New Accounting Standards

The following accounting standards were adopted by the Company in 2018 :

Standard	Description	Date of Adoption	Application	Effect on the Consolidated Financial Statements
Revenue from Contracts with Customers	Changes the criteria for recognizing revenue from a contract with a customer. Replaces existing guidance on revenue recognition, including most industry-specific guidance. The objective is to provide a single, comprehensive revenue recognition model for all contracts with customers to improve comparability within industries, across industries and across capital markets. The underlying principle is that an entity will recognize revenue to depict the transfer of goods and services to customers at an amount the entity expects to be entitled to in exchange for those goods or services. The guidance also requires a number of disclosures regarding the nature, amount, timing and uncertainty of revenue and the related cash flows.	January 1, 2018	Modified retrospective	The adoption had no material impact on the Consolidated Financial Statements. Additional disclosures were added in the Notes to Consolidated Financial Statements. See Note 3—Revenue Recognition for additional information.
Clarifying the Definition of a Business	Updated the accounting guidance to clarify the definition of a business, with the objective of assisting entities with evaluating whether transactions should be accounted for as acquisitions, or disposals, of assets or businesses.	January 1, 2018	Prospective	The adoption had no material impact on the Consolidated Financial Statements.
Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost	Updated authoritative guidance to require the service cost component of net periodic benefit cost to be presented in the same income statement line item(s) as other employee compensation costs arising from services rendered during the period. The remaining components of net periodic benefit cost are required to be presented separately from the service cost component, in an income statement line item outside of operating income. Also, the guidance only allows for the service cost component to be eligible for capitalization. The updated guidance does not impact the accounting for net periodic benefit costs as regulatory assets or liabilities.	January 1, 2018	Retrospective for the presentation of the service cost component and the other components of net periodic benefit costs on the Consolidated Statements of Operations; prospective for the limitation of capitalization to only the service cost component of net periodic benefit costs in total assets.	The Company presented in the current period, and reclassified in the prior periods, net periodic benefit costs, other than the service cost component, in non-operating benefit costs, net on the Consolidated Statements of Operations.
Simplifying the Test for Goodwill Impairment	Updated authoritative guidance to simplify the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Under the amendments in the update, an entity should perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An impairment charge should be recognized for the amount by which the carrying value exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. An entity still has the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary.	August 31, 2018	Prospective	See Note 8—Goodwill and Other Intangible Assets for additional information.
Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract	Updated the accounting and disclosure guidance for cloud computing arrangements that are service contracts. Under this guidance, implementation costs incurred in cloud computing arrangements and in developing or obtaining internal-use software follow the same capitalization requirements. The accounting for the service element of the arrangement remains unchanged.	September 30, 2018	Prospective	The adoption had no material impact on the Consolidated Financial Statements.
Changes to the Disclosure Requirements for Defined Benefit Plans	Updated the disclosure requirements for defined benefit plans. The guidance removes the requirement to disclose the amounts in accumulated other comprehensive income to be recognized as net periodic benefit cost, the effects of a one percent change in assumed healthcare costs and a number of other disclosures. The guidance clarifies that projected benefit obligations and accumulated benefit obligations should be disclosed, and adds disclosure requirements for the weighted average interest crediting rates for promised interest crediting rates and an explanation of the reasons for significant gains and losses related to changes in the benefit obligation.	December 31, 2018	Retrospective	The adoption had no material impact on the Consolidated Financial Statements.
Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income	Permits an entity to reclassify tax effects in accumulated other comprehensive income ("AOCI") as a result of the TCJA, to retained earnings.	December 31, 2018	In the period of adoption.	See Note 14—Income Taxes for additional information.

The following recently issued accounting standards have not yet been adopted by the Company as of December 31, 2018 :

Standard	Description	Date of Adoption	Application	Estimated Effect on the Consolidated Financial Statements
Accounting for Leases	Updated the accounting and disclosure guidance for leasing arrangements. Under this guidance, a lessee will be required to recognize the following for all leases, excluding short-term leases, at the commencement date: (i) a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and (ii) a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. Under the guidance, lessor accounting is largely unchanged. A package of optional transition practical expedients allows an entity not to reassess under the new guidance (i) whether any existing contracts are or contain leases (ii) lease classification, and (iii) initial direct costs. Additional optional transition practical expedients are available which allow an entity not to evaluate existing land easements if the easements were not previously accounted for as leases, and to apply the new lease standard at the adoption date and recognize a cumulative-effect adjustment in the opening balance of retained earnings in the period of adoption.	January 1, 2019; early adoption permitted	Modified retrospective	The adoption will result in recording operating lease right-of-use assets of approximately \$118 million and operating lease liabilities of approximately \$116 million on the Consolidated Balance Sheets. The immaterial difference between the operating lease right-of-use assets and operating lease liabilities will be recorded as an adjustment to retained earnings. The Company has defined a process and implemented internal controls and software to meet the accounting and reporting requirements of the guidance and did not elect early adoption for the standard. The Company will elect all practical expedients available under the new lease accounting and disclosure guidance. The practical expedient related to land easements allowed the Company to carry forward accounting treatment for existing land easements, which is to record easements as land and land rights in utility plant.
Targeted Improvements to Accounting for Hedging Activities	Updated the accounting and disclosure guidance for hedging activities, which allows for more financial and nonfinancial hedging strategies to be eligible for hedge accounting. Under this guidance, a qualitative effectiveness assessment is permitted for certain hedges if an entity can reasonably support an expectation of high effectiveness throughout the term of the hedge, provided that an initial quantitative test establishes that the hedge relationship is highly effective. Also, for cash flow hedges determined to be highly effective, all changes in the fair value of the hedging instrument will be recorded in other comprehensive income, with a subsequent reclassification to earnings when the hedged item impacts earnings.	January 1, 2019; early adoption permitted	Modified retrospective for adjustments related to the measurement of ineffectiveness for cash flow hedges; prospective for the updated presentation and disclosure requirements.	The adoption will not have a material impact on the Consolidated Financial Statements based upon the Company's hedging activities as of the most recent balance sheet date.
Inclusion of the Secured Overnight Financing Rate ("SOFR") Overnight Index Swap ("OIS") Rate as a Benchmark Interest Rate for Hedge Accounting Purposes	Designates the OIS rate based on SOFR as an eligible U.S. benchmark interest rate for the purposes of applying hedge accounting.	January 1, 2019; early adoption permitted	Prospective	The adoption will not have a material impact on the Consolidated Financial Statements based upon the Company's hedging activities as of the most recent balance sheet date.
Measurement of Credit Losses on Financial Instruments	Updated the accounting guidance on reporting credit losses for financial assets held at amortized cost basis and available-for-sale debt securities. Under this guidance, expected credit losses are required to be measured based on historical experience, current conditions and reasonable and supportable forecasts that affect the collectability of the reported amount of financial assets. Also, this guidance requires that credit losses on available-for-sale debt securities be presented as an allowance rather than as a direct write-down.	January 1, 2020; early adoption permitted	Modified retrospective	The Company is evaluating any impact on its Consolidated Financial Statements, as well as the timing of adoption.
Changes to the Disclosure Requirements for Fair Value Measurement	Updated the disclosure requirements for fair value measurement. The guidance removes the requirements to disclose transfers between Level 1 and Level 2 measurements, the timing of transfers between levels, and the valuation processes for Level 3 measurements. Disclosure of transfers into and out of Level 3 measurements will be required. The guidance adds disclosure requirements for the change in unrealized gains and losses in other comprehensive income for recurring Level 3 measurements, as well as the range and weighted average of significant unobservable inputs used to develop Level 3 measurements.	January 1, 2020; early adoption permitted	Prospective for added disclosures and for the narrative description of measurement uncertainty; retrospective for all other amendments.	The Company does not expect the adoption to have a material impact on its Consolidated Financial Statements, and the Company is evaluating the timing of adoption.

Reclassifications

Certain reclassifications have been made to prior periods in the Consolidated Financial Statements and Notes to conform to the current presentation.

Note 3: Revenue Recognition

Disaggregated Revenues

The following table provides operating revenues disaggregated for the year ended December 31, 2018 :

	Revenues from Contracts with Customers	Other Revenues Not from Contracts with Customers (a)	Total Operating Revenues
Regulated Businesses:			
Water services:			
Residential	\$ 1,663	\$ —	\$ 1,663
Commercial	616	—	616
Fire service	137	—	137
Industrial	136	—	136
Public and other	197	—	197
Total water services	2,749	—	2,749
Wastewater services:			
Residential	115	—	115
Commercial	30	—	30
Industrial	2	—	2
Public and other	14	—	14
Total wastewater services	161	—	161
Miscellaneous utility charges	48	—	48
Alternative revenue programs	—	19	19
Lease contract revenue	—	7	7
Total Regulated Businesses	2,958	26	2,984
Market-Based Businesses	476	—	476
Other	(17)	(3)	(20)
Total operating revenues	\$ 3,417	\$ 23	\$ 3,440

(a) Includes revenues associated with alternative revenue programs, lease contracts and intercompany rent which are outside the scope of ASC 606 and accounted for under other existing GAAP.

Contract Balances

Contract assets and contract liabilities are the result of timing differences between revenue recognition, billings and cash collections. In the Company's Market-Based Businesses, certain contracts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals or upon achievement of contractual milestones. Contract assets are recorded when billing occurs subsequent to revenue recognition, and are reclassified to accounts receivable when billed and the right to consideration becomes unconditional. Contract liabilities are recorded when the Company receives advances from customers prior to satisfying contractual performance obligations, particularly for construction contracts and home warranty protection program contracts, and are recognized as revenue when the associated performance obligations are satisfied. Contract assets are included in Unbilled revenues and contract liabilities are included in Other current liabilities on the Consolidated Balance Sheets as of December 31, 2018 .

The following table provides the changes in contract assets and liabilities for the year ended December 31, 2018 :

	Amount
Contract assets:	
Balance at January 1, 2018	\$ 35
Additions	18
Transfers to accounts receivable, net	(39)
Balance at December 31, 2018	<u>\$ 14</u>
Contract liabilities:	
Balance at January 1, 2018	\$ 25
Additions	52
Transfers to operating revenues	(57)
Balance at December 31, 2018	<u>\$ 20</u>

Remaining Performance Obligations

Remaining performance obligations (“RPOs”) represent revenues the Company expects to recognize in the future from contracts that are in progress. The Company enters into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. As of December 31, 2018, the Company’s operation and maintenance and capital improvement contracts in the Market-Based Businesses have RPOs. Contracts with the U.S. government for work on various military installations expire between 2051 and 2069 and have RPOs of \$4.4 billion as of December 31, 2018, as measured by estimated remaining contract revenue. Such contracts are subject to customary termination provisions held by the U.S. government, prior to the agreed-upon contract expiration. Contracts with municipalities and commercial customers expire between 2019 and 2038 and have RPOs of \$596 million as of December 31, 2018, as measured by estimated remaining contract revenue. Some of the Company’s long-term contracts to operate and maintain a municipality’s, the federal government’s or other party’s water or wastewater treatment and delivery facilities include responsibility for certain maintenance for some of those facilities, in exchange for an annual fee. Unless specifically required to perform certain maintenance activities, the maintenance costs are recognized when the maintenance is performed. Approximately \$61 million of RPOs were eliminated in conjunction with the sale of 20 of the Contract Services Group’s contracts to subsidiaries of Veolia Environnement S.A. See Note 4—Acquisitions and Divestitures for further discussion of this transaction.

Note 4: Acquisitions and Divestitures

Regulated Businesses

Acquisitions

During 2018, the Company closed on 15 various regulated water and wastewater systems for a total aggregate purchase price of \$33 million. Assets acquired in these acquisitions, principally utility plant, totaled \$32 million. Liabilities assumed, primarily contributions in aid of construction, totaled \$1 million. The Company recorded additional goodwill of \$2 million associated with one of its acquisitions, which is reported in its Regulated Businesses segment. Of this total goodwill, none is expected to be deductible for tax purposes. The preliminary purchase price allocations related to these acquisitions will be finalized once the valuation of assets acquired has been completed, no later than one year after their acquisition date.

During 2017, the Company closed on 18 acquisitions of various regulated water and wastewater systems for a total aggregate purchase price of \$210 million. This included the acquisition of the wastewater system assets of the Municipal Authority of the City of McKeesport, Pennsylvania, on December 18, 2017. Assets acquired, principally utility plant, totaled \$207 million. Liabilities assumed totaled \$23 million, including \$9 million of contributions in aid of construction and assumed debt of \$7 million. The Company recorded additional goodwill of \$29 million associated with four of its acquisitions, which is reported in its Regulated Businesses segment. Of this total goodwill, approximately \$1 million is expected to be deductible for tax purposes. Additionally, the Company recognized a bargain purchase gain of \$3 million associated with three of the acquisitions.

During 2016, the Company closed on 15 acquisitions of various regulated water and wastewater systems for a total aggregate purchase price of \$199 million . This included the acquisition of substantially all of the wastewater collection and treatment assets of the Sewer Authority of the City of Scranton, Pennsylvania (“Scranton”) in December 2016. Assets acquired, principally utility plant, totaled \$194 million . Liabilities assumed totaled \$30 million , including \$14 million of contributions in aid of construction and assumed debt of \$6 million . During 2017 , the Company recorded additional goodwill of \$43 million associated with five of its acquisitions, which is reported in its Regulated Businesses segment. Of this total goodwill, approximately \$31 million is expected to be deductible for tax purposes. Additionally, during 2018 the Company recorded a measurement period adjustment of \$5 million , increasing the goodwill recognized from the Scranton acquisition.

Highlighted Pending Acquisitions

On April 13, 2018 , the Company’s Illinois subsidiary entered into an agreement to acquire the City of Alton, Illinois’ regional wastewater system for approximately \$54 million . This system currently serves approximately 23,000 customers, comprised of approximately 11,000 customers in Alton and an additional 12,000 customers under bulk contracts in the nearby communities of Bethalto and Godfrey. In connection with the execution of the purchase agreement, the Company’s Illinois subsidiary made a \$5 million non-escrowed deposit to the seller during January 2019. The Company expects to close this acquisition during the second quarter of 2019, pending regulatory approval.

On May 30, 2018 , the Company’s Pennsylvania subsidiary entered into an agreement to acquire the wastewater assets of Exeter Township, Pennsylvania, for approximately \$96 million . This system currently serves approximately 9,000 customers and the Company expects to close this acquisition during the third quarter of 2019, pending regulatory approval.

Market-Based Businesses

Pivotal Acquisition

On June 4, 2018 , the Company, through its wholly-owned subsidiary American Water Enterprises, LLC, completed the acquisition of Pivotal for a total purchase price of \$365 million , net of cash received and including \$9 million in working capital. Pivotal is headquartered in Naperville, Illinois, and is a provider of home warranty protection products and services, operating in 18 states, with approximately 1.2 million customer contracts at the time of acquisition. Pivotal is complementary to the Company’s Homeowner Services Group product offerings, and enhances its presence in the home warranty solutions markets through utility partnerships. The results of Pivotal have been consolidated into the Homeowner Services Group non-reportable operating segment.

This acquisition was funded through the issuance of common stock, as described below, and from borrowings through the Company’s commercial paper program, which were subsequently refinanced with the issuance of long-term debt during the third quarter of 2018. This acquisition is being accounted for as a business combination which requires, among other things, the assets acquired and the liabilities assumed to be recognized at their fair values at the acquisition date. The measurement period adjustments for Pivotal were complete as of December 31, 2018.

The following table provides the purchase price allocation for the Pivotal acquisition as of June 4, 2018 , and the adjustments that were made through December 31, 2018:

	June 4, 2018 (as initially reported)	Measurement Period Adjustments	June 4, 2018 (as adjusted)
Identifiable assets acquired:			
Accounts receivable	\$ 23	\$ (1)	\$ 22
Other current assets	1	1	2
Property, plant and equipment	21	1	22
Intangible assets	96	(6)	90
Total identifiable assets acquired	141	(5)	136
Liabilities assumed:			
Accounts payable and accrued liabilities	(5)	—	(5)
Other current liabilities	(14)	2	(12)
Long-term liabilities	(1)	—	(1)
Total liabilities assumed	(20)	2	(18)
Net identifiable assets acquired	121	(3)	118
Goodwill	242	5	247
Net assets acquired	\$ 363	\$ 2	\$ 365

Goodwill was calculated as the excess of the consideration transferred over the net assets recognized, and represents the expected revenue and cost synergies of the combined business and assembled workforce of Pivotal. The goodwill is included in the Company's Homeowner Services Group reporting unit, within the Market-Based Businesses , and is deductible for income tax purposes.

Customer relationships, which comprise the majority of the intangible assets balance, are amortized based on historical attrition rates over their estimated useful lives of up to 21 years , with a weighted average life of approximately six years , as the assets are expected to contribute to the cash flows of the Company. The remaining intangible assets are amortized over their expected benefit periods of up to six years , with a weighted average life of approximately three years . The following table provides the valuation of the intangible assets acquired:

	Amount
Intangible asset class:	
Customer relationships	\$ 78
Other intangible assets	12
Total intangible assets	\$ 90

Pivotal's revenue and net income included on the Company's Consolidated Statements of Operations for the year ended December 31, 2018 , did not have a material impact on the overall consolidated results of operations of the Company.

Equity Forward Transaction and Common Stock Issuance

On April 11, 2018 , the Company effected an equity forward transaction by entering into a forward sale agreement with each of two forward purchasers in connection with a public offering of 2,320,000 shares of the Company's common stock. In the equity forward transaction, the forward purchasers, or an affiliate, borrowed an aggregate of 2,320,000 shares of the Company's common stock from third parties and sold them to the underwriters in the public offering. On June 7, 2018 , the Company elected to fully and physically settle both forward sale agreements, resulting in the issuance of a total of 2,320,000 shares of its common stock at a price of \$79.01 per share, for aggregate net proceeds of \$183 million . The net proceeds of the transaction were used to finance a portion of the purchase price of the Pivotal acquisition described above.

Divestitures

On July 5, 2018, the Company entered into an agreement for the sale of the majority of the O&M contracts in its Contract Services Group to subsidiaries of Veolia Environnement S.A. for \$27 million. The Company closed on the sale of 20 of the 22 contracts associated with this agreement during the third quarter of 2018, and expects to close on the remaining two contracts, subject to customer consents, during the first half of 2019. As part of the sale, the Company recognized a pre-tax gain of \$14 million during the third quarter of 2018.

The pro forma impact of the Company's acquisitions was not material to the Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016.

Note 5: Property, Plant and Equipment

The following table provides the major classes of property, plant and equipment by category as of December 31 :

	2018	2017	Range of Remaining Useful Lives	Weighted Average Useful Life
Utility plant:				
Land and other non-depreciable assets	\$ 155	\$ 151		
Sources of supply	821	798	2 to 127 Years	47 years
Treatment and pumping facilities	3,607	3,356	3 to 101 Years	40 years
Transmission and distribution facilities	10,164	9,583	9 to 149 Years	70 years
Services, meters and fire hydrants	4,008	3,754	5 to 90 Years	31 years
General structures and equipment	1,625	1,458	3 to 109 Years	15 years
Waste collection	943	904	5 to 114 Years	60 years
Waste treatment, pumping and disposal	570	557	3 to 139 Years	41 years
Construction work in progress	593	585		
Total utility plant	22,486	21,146		
Nonutility property	718	570	3 to 50 Years	6 years
Total property, plant and equipment	\$ 23,204	\$ 21,716		

Property, plant and equipment depreciation expense amounted to \$497 million, \$460 million and \$435 million for the years ended December 31, 2018, 2017 and 2016, respectively and was included in Depreciation and amortization expense on the Consolidated Statements of Operations. The provision for depreciation expressed as a percentage of the aggregate average depreciable asset balances was 3.09%, 3.07% and 3.14% for years December 31, 2018, 2017 and 2016, respectively.

Note 6: Allowance for Uncollectible Accounts

The following table provides the changes in the allowances for uncollectible accounts for the years ended December 31 :

	2018	2017	2016
Balance as of January 1	\$ (42)	\$ (40)	\$ (39)
Amounts charged to expense	(33)	(29)	(27)
Amounts written off	34	30	29
Recoveries of amounts written off	(4)	(3)	(3)
Balance as of December 31	\$ (45)	\$ (42)	\$ (40)

Note 7: Regulatory Assets and Liabilities

Regulatory Assets

Regulatory assets represent costs that are probable of recovery from customers in future rates. The majority of the regulatory assets earn a return. The following table provides the composition of regulatory assets as of December 31 :

	2018	2017
Deferred pension expense	\$ 362	\$ 285
Removal costs recoverable through rates	292	269
Regulatory balancing accounts	110	113
San Clemente Dam project costs	85	89
Debt expense	70	67
Purchase premium recoverable through rates	56	57
Deferred tank painting costs	42	42
Make-whole premium on early extinguishment of debt	33	27
Other	106	112
Total regulatory assets	\$ 1,156	\$ 1,061

The Company's deferred pension expense includes a portion of the underfunded status that is probable of recovery through rates in future periods of \$352 million and \$270 million as of December 31, 2018 and 2017, respectively. The remaining portion is the pension expense in excess of the amount contributed to the pension plans which is deferred by certain subsidiaries and will be recovered in future service rates as contributions are made to the pension plan.

Removal costs recoverable through rates represent costs incurred for removal of property, plant and equipment or other retirement costs.

Regulatory balancing accounts accumulate differences between revenues recognized and authorized revenue requirements until they are collected from customers or are refunded. Regulatory balancing accounts include low income programs and purchased power and water accounts.

San Clemente Dam project costs represent costs incurred and deferred by the Company's utility subsidiary in California pursuant to its efforts to investigate alternatives and remove the dam due to potential earthquake and flood safety concerns. In June 2012, the California Public Utilities Commission ("CPUC") issued a decision authorizing implementation of a project to reroute the Carmel River and remove the San Clemente Dam. The project includes the Company's utility subsidiary in California, the California State Conservancy and the National Marine Fisheries Services. Under the order's terms, the CPUC has authorized recovery for pre-construction costs, interim dam safety measures and environmental costs and construction costs. The authorized costs were being recovered via a surcharge over a twenty -year period which began in October 2012. The unrecovered balance of project costs incurred, including cost of capital, net of surcharges totaled \$85 million and \$89 million as of December 31, 2018 and 2017, respectively. Surcharges collected were \$8 million and \$7 million for the years ended December 31, 2018 and 2017, respectively. Pursuant to the general rate case approved in December 2018, approval was granted to reset the twenty -year amortization period to begin January 1, 2018 and to establish an annual revenue requirement of \$8 million to be recovered through base rates.

Debt expense is amortized over the lives of the respective issues. Call premiums on the redemption of long-term debt, as well as unamortized debt expense, are deferred and amortized to the extent they will be recovered through future service rates.

Purchase premium recoverable through rates is primarily the recovery of the acquisition premiums related to an asset acquisition by the Company's utility subsidiary in California during 2002, and acquisitions in 2007 by the Company's utility subsidiary in New Jersey. As authorized for recovery by the California and New Jersey PUCs, these costs are being amortized to depreciation and amortization on the Consolidated Statements of Operations through November 2048.

Tank painting costs are generally deferred and amortized to operations and maintenance expense on the Consolidated Statements of Operations on a straight-line basis over periods ranging from five to fifteen years, as authorized by the regulatory authorities in their determination of rates charged for service.

As a result of the prepayment by American Water Capital Corp., the Company's wholly owned finance subsidiary ("AWCC"), of the 5.62% Series C Senior Notes due upon maturity on December 21, 2018 (the "Series C Notes"), 5.62% Series E Senior Notes due March 29, 2019 (the "Series E Notes") and 5.77% Series F Senior Notes due December 21, 2022 (the "Series F Notes," and together with the Series E Notes, the "Series Notes"), a make-whole premium of \$10 million was paid to the holders of the Series Notes on September 11, 2018. Substantially all of these early debt extinguishment costs were allocable to the Company's utility subsidiaries and recorded as regulatory assets, as the Company believes they are probable of recovery in future rates.

Other regulatory assets include certain construction costs for treatment facilities, property tax stabilization, employee-related costs, deferred other postretirement benefit expense, business services project expenses, coastal water project costs, rate case expenditures and environmental remediation costs among others. These costs are deferred because the amounts are being recovered in rates or are probable of recovery through rates in future periods.

Regulatory Liabilities

Regulatory liabilities generally represent amounts that are probable of being credited or refunded to customers through the rate-making process. Also, if costs expected to be incurred in the future are currently being recovered through rates, the Company records those expected future costs as regulatory liabilities. The following table provides the composition of regulatory liabilities as of December 31 :

	2018	2017
Income taxes recovered through rates	\$ 1,279	\$ 1,242
Removal costs recovered through rates	309	315
Postretirement benefit liability	209	33
Pension and other postretirement benefit balancing accounts	46	48
TCJA reserve on revenue	36	—
Other	28	26
Total regulatory liabilities	\$ 1,907	\$ 1,664

Income taxes recovered through rates relate to deferred taxes that will likely be refunded to the Company's customers. On December 22, 2017, the TCJA was signed into law, which, among other things, enacted significant and complex changes to the Internal Revenue Code of 1986, including a reduction in the maximum U.S. federal corporate income tax rate from 35% to 21% as of January 1, 2018. The TCJA created significant excess deferred income taxes that the Company and its regulatory jurisdictions believe should be refunded to customers. Since these are significant refundable amounts, the Company believes it is probable these amounts will be refunded to customers through future rates, and as such the amounts have been recorded to a regulatory liability.

Removal costs recovered through rates are estimated costs to retire assets at the end of their expected useful life that are recovered through customer rates over the life of the associated assets. In December 2008, the Company's utility subsidiary in New Jersey, at the direction of the New Jersey Board of Public Utilities, began to depreciate \$48 million of the total balance into depreciation and amortization expense on the Consolidated Statements of Operations via straight line amortization through November 2048.

On August 31, 2018, the Postretirement Medical Benefit Plan was remeasured to reflect an announced plan amendment which changed benefits for certain union and non-union plan participants. As a result of the remeasurement, the Company recorded a \$227 million reduction to the net accumulated postretirement benefit obligation, with a corresponding regulatory liability. See Note 15—Employee Benefits for additional information.

Pension and other postretirement benefit balancing accounts represent the difference between costs incurred and costs authorized by the PUCs that are expected to be refunded to customers.

During 2018, the Company's 14 regulatory jurisdictions began to consider the impacts of the TCJA. The Company has adjusted customer rates to reflect the lower income tax rate in 10 states. In one of those 10 states, a portion of the tax savings is being used to reduce certain regulatory assets. In one additional state, the Company is using the tax savings to offset additional capital investment and to reduce a regulatory asset. Proceedings in the other three jurisdictions remain pending. With respect to excess accumulated deferred income taxes, regulators in the eight states that have considered the issue have agreed with the Company's overall timeline of passing the excess back to customers beginning no earlier than 2019, when the Company is able to produce the normalization schedule using the average rate assumption method. In one of those states, the Company will use the amortization of the excess accumulated deferred income taxes to offset future infrastructure investments.

The Company generally expects its regulated customers to benefit from the tax savings resulting from the TCJA. As a result, the Company has recorded a \$54 million reserve on revenue during the year ended December 31, 2018, for the estimated tax savings resulting from the TCJA, with a corresponding regulatory liability, of which the current portion is \$18 million and is recorded in other current liabilities, and the long-term portion is \$36 million and is recorded in regulatory liabilities. The Company cannot predict how each jurisdiction may calculate the amount of credits due to customers. If any of the Company's regulatory jurisdictions determines the credits due to customers are higher than the expected reduction to income tax expense, this would result in an adverse impact to the Company's results of operations and cash flows.

Other regulatory liabilities include legal settlement proceeds, deferred gains and various regulatory balancing accounts.

Note 8: Goodwill and Other Intangible Assets

Goodwill

The following table provides the changes in the carrying value of goodwill for the years ended December 31, 2018 and 2017 :

	Regulated Businesses		Market-Based Businesses		Consolidated		
	Cost	Accumulated Impairment	Cost	Accumulated Impairment	Cost	Accumulated Impairment	Total Net
Balance as of January 1, 2017	\$ 3,458	\$ (2,332)	\$ 327	\$ (108)	\$ 3,785	\$ (2,440)	\$ 1,345
Goodwill from acquisitions	29	—	—	—	29	—	29
Measurement period adjustments	5	—	—	—	5	—	5
Balance as of December 31, 2017	\$ 3,492	\$ (2,332)	\$ 327	\$ (108)	\$ 3,819	\$ (2,440)	\$ 1,379
Goodwill from acquisitions	2	—	247	—	249	—	249
Goodwill impairment charge	—	—	—	(53)	—	(53)	(53)
Balance as of December 31, 2018	\$ 3,494	\$ (2,332)	\$ 574	\$ (161)	\$ 4,068	\$ (2,493)	\$ 1,575

In 2018, the Company acquired goodwill of \$247 million associated with its acquisition of Pivotal, which was allocated to the Homeowner Services Group reporting unit, within the Market-Based Businesses. Additionally, the Company acquired goodwill of \$2 million associated with one of its acquisitions in the Regulated Businesses segment.

In 2017, the Company recorded aggregate goodwill of \$29 million associated with four of its acquisitions in the Regulated Businesses segment. Additionally, the Company recorded a measurement period adjustment of \$5 million, increasing the goodwill recognized from the Scranton acquisition completed in December 2016.

As a result of operational and financial challenges encountered in the construction business of Keystone, the Company substantially exited this business line during the third quarter of 2018. This action, along with the exit of the water trucking business line during the first half of 2018, narrowed the scope of the Keystone business going forward, focusing solely on providing water transfer services. Based on these factors, the Company concluded there were indicators that the Keystone reporting unit may be impaired. Accordingly, impairment testing was performed as part of the preparation of the Company's Consolidated Financial Statements during the third quarter of 2018.

In terms of the process followed, the Company first completed an impairment test of the Keystone reporting unit's customer relationship intangible asset as of September 30, 2018. The results of this impairment test showed the fair value of the intangible asset was lower than its carrying value, resulting in a non-cash, pre-tax impairment charge of \$4 million.

The Company then completed an interim goodwill impairment test of the Keystone reporting unit as of September 30, 2018. The results of this impairment test showed the fair value of the Keystone reporting unit was lower than its carrying value, resulting in a non-cash, pre-tax impairment charge of \$53 million. The Company estimated the fair value of the Keystone reporting unit using an income approach valuation technique which estimates the amount and timing of future discounted cash flows from operations of the Keystone reporting unit, relying on multiple projected scenarios. Significant assumptions used in estimating the fair value included, but was not limited to, forecasts of future operating results, including revenue and revenue growth, profit margins, and weighted average cost of capital.

In aggregate, a non-cash, pre-tax impairment charge of \$57 million was recorded in Impairment charge on the Consolidated Statement of Operations for the year ended December 31, 2018, of which, \$54 million was attributable to the Company, after adjustment for noncontrolling interest. See Note 18—Fair Value of Financial Information for further information.

During 2018, the Company adopted Accounting Standards Update 2017-04, *Simplifying the Test for Goodwill Impairment*. See Note 2—Significant Accounting Policies for additional information.

The Company completed its annual impairment testing of goodwill as of November 30, 2018, which included qualitative assessments of its Regulated Businesses, Homeowner Services Group, Military Services Group and Keystone reporting units. Based on these assessments, the Company determined that there were no factors present that would indicate that the fair value of these reporting units was less than their respective carrying values and, as such, quantitative, fair value-based testing was not necessary for these reporting units as of November 30, 2018.

There can be no assurances that the Company will not be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to the performance of the Company's reporting units. These market events could include a decline over a period of time of the Company's stock price, a decline over a period of time in valuation multiples of comparable water utilities and reporting unit companies, the lack of an increase in the Company's market price consistent with its peer companies, decreases in control premiums, or continued downward pressure on commodity prices. A decline in the forecasted results in the Company's business plan, such as changes in rate case results, capital investment budgets or interest rates, could also result in an impairment of goodwill. In regards to the Keystone reporting unit's goodwill, adverse developments in market conditions, including prolonged depression of natural gas or oil prices or other factors that negatively impact the Company's forecasted operating results, cash flows or key assumptions, could result in an impairment of a portion, or all, of Keystone's goodwill.

Intangible Assets

The following tables provide the gross carrying value and accumulated amortization of the finite-lived intangible assets held by the Company as of December 31:

	2017	Acquisitions	Impairments	Other	2018
Customer relationships	\$ 12	\$ 78	\$ (4)	\$ —	\$ 86
Other intangible assets	2	12	—	(1)	13
Total gross carrying value	\$ 14	\$ 90	\$ (4)	\$ (1)	\$ 99

	2017	Amortization	Impairments	Other	2018
Customer relationships	\$ (4)	\$ (9)	\$ —	\$ —	\$ (13)
Other intangible assets	(1)	(3)	—	2	(2)
Total accumulated amortization	\$ (5)	\$ (12)	\$ —	\$ 2	\$ (15)
Total intangible assets, net	\$ 9				\$ 84

In 2018, the Company acquired finite-lived intangibles of \$90 million associated with its acquisition of Pivotal. See Note 4—Acquisitions and Divestitures for additional information. Additionally, the Company recorded a \$4 million impairment charge associated with Keystone's customer relationships intangible asset. See the "Goodwill" section above for additional information.

Intangible asset amortization expense amounted to \$12 million, \$4 million and \$4 million for the years ended December 31, 2018, 2017 and 2016, respectively. Estimated amortization expense for the next five years subsequent to December 31, 2018 is as follows:

	Amount
2019	\$ 15
2020	13
2021	11
2022	10
2023	7

Note 9: Shareholders' Equity

Common Stock

Under the dividend reinvestment and direct stock purchase plan (the “DRIP”), shareholders may reinvest cash dividends and purchase additional Company common stock, up to certain limits, through the plan administrator without commission fees. Shares purchased by participants through the DRIP may be newly issued shares, treasury shares, or at the Company’s election, shares purchased by the plan administrator in the open market or in privately negotiated transactions. Purchases generally will be made and credited to DRIP accounts once each week. As of December 31, 2018, there were approximately 4.2 million shares available for future issuance under the DRIP.

Anti-dilutive Stock Repurchase Program

In February 2015, the Company’s Board of Directors authorized an anti-dilutive stock repurchase program, which allowed the Company to purchase up to 10 million shares of its outstanding common stock over an unrestricted period of time. The Company repurchased 0.6 million shares and 0.7 million shares of common stock in the open market at an aggregate cost of \$45 million and \$54 million under this program for the years ended December 31, 2018 and 2017, respectively. As of December 31, 2018, there were 5.5 million shares of common stock available for purchase under the program.

Accumulated Other Comprehensive Loss

The following table provides the changes in accumulated other comprehensive loss by component, net of tax, for the years ended December 31, 2018 and 2017:

	Defined Benefit Plans			Foreign Currency Translation	Gain (Loss) on Cash Flow Hedge	Accumulated Other Comprehensive Loss
	Employee Benefit Plan Funded Status	Amortization of Prior Service Cost	Amortization of Actuarial Loss			
Beginning balance as of January 1, 2017	\$ (147)	\$ 1	\$ 42	\$ 2	\$ 16	\$ (86)
Other comprehensive income (loss) before reclassification	7	—	—	(1)	(6)	—
Amounts reclassified from accumulated other comprehensive loss	—	—	7	—	—	7
Net other comprehensive income (loss)	7	—	7	(1)	(6)	7
Ending balance as of December 31, 2017	<u>\$ (140)</u>	<u>\$ 1</u>	<u>\$ 49</u>	<u>\$ 1</u>	<u>\$ 10</u>	<u>\$ (79)</u>
Other comprehensive income (loss) before reclassification	60	—	—	—	(2)	58
TCJA tax effects reclassified from accumulated other comprehensive loss	(22)	—	—	—	2	(20)
Amounts reclassified from accumulated other comprehensive loss	—	—	7	—	—	7
Net other comprehensive income	38	—	7	—	—	45
Ending balance as of December 31, 2018	<u>\$ (102)</u>	<u>\$ 1</u>	<u>\$ 56</u>	<u>\$ 1</u>	<u>\$ 10</u>	<u>\$ (34)</u>

The Company does not reclassify the amortization of defined benefit pension cost components from accumulated other comprehensive loss directly to net income in its entirety, as a portion of these costs have been capitalized as a regulatory asset. These accumulated other comprehensive loss components are included in the computation of net periodic pension cost. See Note 15—Employee Benefits for additional information.

The amortization of the loss on cash flow hedge is reclassified to net income during the period incurred and is included in interest, net in the accompanying Consolidated Statements of Operations.

As of December 31, 2018, the Company adopted Accounting Standards Update 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which permits entities to reclassify the tax effects in AOCI as a result of the TCJA to retained earnings. See Note 14—Income Taxes for additional information.

Dividends

The Company's Board of Directors authorizes the payment of dividends. The Company's ability to pay dividends on its common stock is subject to having access to sufficient sources of liquidity, net income and cash flows of the Company's subsidiaries, the receipt of dividends and repayments of indebtedness from the Company's subsidiaries, compliance with Delaware corporate and other laws, compliance with the contractual provisions of debt and other agreements, and other factors. The Company's dividend rate on its common stock is determined by the Board of Directors on a quarterly basis and takes into consideration, among other factors, current and possible future developments that may affect the Company's income and cash flows. When dividends on common stock are declared, they are typically paid in March, June, September and December. Historically, dividends have been paid quarterly to holders of record less than 30 days prior to the distribution date. Since the dividends on the Company's common stock are not cumulative, only declared dividends are paid.

During 2018 , 2017 and 2016 , the Company paid \$319 million , \$289 million and \$261 million in cash dividends, respectively. The following table provides the per share cash dividends paid for the years ended December 31 :

	2018	2017	2016
December	\$ 0.455	\$ 0.415	\$ 0.375
September	\$ 0.455	\$ 0.415	\$ 0.375
June	\$ 0.455	\$ 0.415	\$ 0.375
March	\$ 0.415	\$ 0.375	\$ 0.34

On December 7, 2018 , the Company's Board of Directors declared a quarterly cash dividend payment of \$0.455 per share payable on March 1, 2019 , to shareholders of record as of February 7, 2019 .

Equity Forward Transaction

See Note 4—Acquisitions and Divestitures for information regarding the forward sale agreements entered into by the Company on April 11, 2018 , and the subsequent settlement of these agreements on June 7, 2018 .

Regulatory Restrictions

The issuance of long-term debt or equity securities by the Company or American Water Capital Corp. ("AWCC"), the Company's wholly owned financing subsidiary, does not require authorization of any state PUC if no guarantee or pledge of the regulated subsidiaries is utilized. However, state PUC authorization is required to issue long-term debt at most of the Company's regulated subsidiaries. The Company's regulated subsidiaries normally obtain the required approvals on a periodic basis to cover their anticipated financing needs for a period of time or in connection with a specific financing.

Under applicable law, the Company's subsidiaries can pay dividends only from retained, undistributed or current earnings. A significant loss recorded at a subsidiary may limit the dividends that the subsidiary can distribute to American Water. Furthermore, the ability of the Company's subsidiaries to pay upstream dividends or repay indebtedness to American Water is subject to compliance with applicable regulatory restrictions and financial obligations, including, for example, debt service and preferred and preference stock dividends, as well as applicable corporate, tax and other laws and regulations, and other agreements or covenants made or entered into by the Company and its subsidiaries.

Note 10: Stock Based Compensation

The Company has granted stock options, stock units and dividend equivalents to non-employee directors, officers and other key employees of the Company pursuant to the terms of its 2007 Omnibus Equity Compensation Plan (the "2007 Plan"). Stock units under the 2007 Plan generally vest based on (i) continued employment with the Company ("RSUs"), or (ii) continued employment with the Company where distribution of the shares is subject to the satisfaction in whole or in part of stated performance-based goals ("PSUs"). The total aggregate number of shares of common stock that may be issued under the 2007 Plan is 15.5 million . As of December 31, 2018 , 7.5 million shares were available for issuance under the 2007 Plan. The 2007 Plan has been replaced by the 2017 Omnibus Plan, as defined below, and no additional awards may be granted under the 2007 Plan. However, shares may still be issued under the 2007 Plan pursuant to the terms of awards previously issued under that plan prior to May 12, 2017.

In May 2017, the Company's shareholders approved the American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan (the "2017 Omnibus Plan"). The Company has granted stock units, including RSUs and PSUs, stock awards and dividend equivalents to non-employee directors, officers and employees under the 2017 Omnibus Plan. A total of 7.2 million shares of common stock may be issued under the 2017 Omnibus Plan. As of December 31, 2018, 6.9 million shares were available for grant under the 2017 Omnibus Plan. The 2017 Omnibus Plan provides that grants of awards may be in any of the following forms: incentive stock options, nonqualified stock options, stock appreciation rights, stock units, stock awards, other stock-based awards and dividend equivalents. Dividend equivalents may be granted only on stock units or other stock-based awards.

The cost of services received from employees in exchange for the issuance of stock options and restricted stock awards is measured based on the grant date fair value of the awards issued. The value of stock options and stock unit awards at the date of the grant is amortized through expense over the three -year service period. All awards granted in 2018, 2017 and 2016 are classified as equity. The Company recognizes compensation expense for stock awards over the vesting period of the award. The Company stratified its grant populations and used historic employee turnover rates to estimate employee forfeitures. The estimated rate is compared to the actual forfeitures at the end of the reporting period and adjusted as necessary. The following table provides the stock-based compensation expense recorded in operation and maintenance expense in the accompanying Consolidated Statements of Operations for the years ended December 31 :

	2018	2017	2016
Stock options	\$ 1	\$ 1	\$ 2
RSUs and PSUs	15	9	8
Nonqualified employee stock purchase plan	1	1	1
Stock-based compensation	17	11	11
Income tax benefit	(5)	(4)	(4)
Stock-based compensation expense, net of tax	\$ 12	\$ 7	\$ 7

There were no significant stock-based compensation costs capitalized during the years ended December 31, 2018, 2017 and 2016.

The Company receives a tax deduction based on the intrinsic value of the award at the exercise date for stock options and the distribution date for stock units. For each award, throughout the requisite service period, the Company recognizes the tax benefits, which have been included in deferred income tax assets, related to compensation costs. The tax deductions in excess of the benefits recorded throughout the requisite service period are recorded to the Consolidated Statements of Operations and are presented in the financing section of the Consolidated Statements of Cash Flows.

Stock Options

There were no grants of stock options to employees in 2018 and 2017. In 2016, the Company granted non-qualified stock options to certain employees under the 2007 Plan. The stock options vest ratably over the three -year service period beginning on January 1 of the year of the grant and have no performance vesting conditions. Expense is recognized using the straight-line method and is amortized over the requisite service period.

The following table provides the weighted average assumptions used in the Black-Scholes option-pricing model for grants and the resulting weighted average grant date fair value per share of stock options granted for the years ended December 31 :

	2018	2017	2016
Dividend yield	—%	—%	2.09%
Expected volatility	—%	—%	15.89%
Risk-free interest rate	—%	—%	1.15%
Expected life (years)	0	0	4.0
Exercise price	\$ —	\$ —	\$ 65.25
Grant date fair value per share	\$ —	\$ —	\$ 6.61

The Company used the actual historical experience of exercises or expirations of the 2009 grant to determine the expected stock option life. The Company began granting stock options at the time of its initial public offering in April 2008. Expected volatility is based on a weighted average of historic volatilities of traded common stock of peer companies (regulated water companies) over the expected term of the stock options and historic volatilities of the Company's common stock during the period it has been publicly traded. The dividend yield is based on the Company's expected dividend payments and the stock price on the date of grant. The risk-free interest rate is the market yield on U.S. Treasury strips with maturities similar to the expected term of the stock options. The exercise price of the stock options is equal to the fair market value of the underlying stock on the date of option grant. Stock options vest over periods ranging from one to three years and have a maximum term of seven years from the effective date of the grant.

The following table provides stock option activity for the year ended December 31, 2018 :

	Shares (in thousands)	Weighted Average Exercise Price (per share)	Weighted Average Remaining Life (years)	Aggregate Intrinsic Value
Options outstanding as of December 31, 2017	711	\$ 53.51	3.67	\$ 29
Granted	—	—		
Forfeited or expired	(7)	65.15		
Exercised	(187)	49.32		
Options outstanding as of December 31, 2018	517	\$ 54.92	2.96	\$ 19
Options exercisable as of December 31, 2018	(434)	\$ 52.93	2.76	\$ 16

As of December 31, 2018 , less than \$1 million of total unrecognized compensation cost related to nonvested stock options is expected to be recognized over the remaining weighted average period of less than one year. The total fair value of stock options vested was \$1 million , \$2 million and \$1 million for the years ended December 31, 2018 , 2017 and 2016 , respectively.

The following table provides additional information regarding stock options exercised during the years ended December 31 :

	2018	2017	2016
Intrinsic value	\$ 9	\$ 10	\$ 18
Exercise proceeds	7	11	15
Income tax benefit realized	2	3	6

Stock Units

During 2018 , 2017 and 2016 , the Company granted RSUs to certain employees under the 2007 Plan and 2017 Omnibus Plan, as applicable. RSUs generally vest based on continued employment with the Company over periods ranging from one to three years.

During 2018 and 2017 , the Company granted stock units to non-employee directors under the 2017 Omnibus Plan, and during 2016 , these awards were granted under the 2007 Plan. The stock units were vested in full on the date of grant; however, distribution of the shares will be made within 30 days of the earlier of (i) 15 months after the grant date, subject to any deferral election by the director, or (ii) the participant's separation from service. Because these stock units vested on the grant date, the total grant date fair value was recorded in operation and maintenance expense on the grant date.

The RSUs are valued at the market value of the closing price of the Company's common stock on the date of the grant and the majority vest ratably over the three -year service period beginning January 1 of the year of the grant. These RSUs are amortized through expense over the requisite service period using the straight-line method.

The following table provides RSU activity for the year ended December 31, 2018 :

	Shares (in thousands)	Weighted Average Grant Date Fair Value (per share)
Non-vested total as of December 31, 2017	89	\$ 67.48
Granted	107	82.75
Vested	(57)	72.11
Forfeited	(6)	74.34
Non-vested total as of December 31, 2018	133	\$ 77.44

As of December 31, 2018 , \$5 million of total unrecognized compensation cost related to the nonvested RSUs is expected to be recognized over the weighted average remaining life of 2.1 years. The total fair value of stock units and RSUs vested was \$4 million , \$3 million and \$2 million for the years ended December 31, 2018 , 2017 and 2016 , respectively.

During 2018 , 2017 and 2016 , the Company granted PSUs to certain employees under the 2007 Plan and 2017 Omnibus Plan, as applicable. The majority of PSUs vest ratably based on continued employment with the Company over the three -year performance period beginning January 1 of the year of the grant (the “Performance Period”). Distribution of the performance shares is contingent upon the achievement of one or more internal performance measures and, separately, a relative total shareholder return performance measure, over the Performance Period.

The following table provides PSU activity for the year ended December 31, 2018 :

	Shares (in thousands)	Weighted Average Grant Date Fair Value (per share)
Non-vested total as of December 31, 2017	281	\$ 67.33
Granted	165	72.50
Vested	(122)	58.18
Forfeited	(16)	73.87
Non-vested total as of December 31, 2018	308	\$ 73.39

As of December 31, 2018 , \$4 million of total unrecognized compensation cost related to the nonvested PSUs is expected to be recognized over the weighted average remaining life of 1.35 years. The total fair value of PSUs vested was \$12 million , \$13 million and \$12 million for the years ended December 31, 2018 , 2017 and 2016 , respectively.

PSUs granted with one or more internal performance measures are valued at the market value of the closing price of the Company’s common stock on the date of grant. PSUs granted with a relative total shareholder return condition are valued using a Monte Carlo model. Expected volatility is based on historical volatilities of traded common stock of the Company and comparative companies using daily stock prices over the past three years. The expected term is three years and the risk-free interest rate is based on the three-year U.S. Treasury rate in effect as of the measurement date. The following table provides the weighted average assumptions used in the Monte Carlo simulation and the weighted average grant date fair values of PSUs granted for the years ended December 31 :

	2018	2017	2016
Expected volatility	17.23%	17.40%	15.90%
Risk-free interest rate	2.36%	1.53%	0.91%
Expected life (years)	3.0	3.0	3.0
Grant date fair value per share	\$ 73.62	\$ 72.81	\$ 77.16

The grant date fair value of PSUs that vest ratably and have market and/or performance conditions are amortized through expense over the requisite service period using the graded-vesting method.

If dividends are paid with respect to shares of the Company's common stock before the RSUs and PSUs are distributed, the Company credits a liability for the value of the dividends that would have been paid if the RSUs and PSUs were shares of Company common stock. When the RSUs and PSUs are distributed, the Company pays the participant a lump sum cash payment equal to the value of the dividend equivalents accrued. The Company accrued dividend equivalents totaling \$1 million, less than \$1 million and \$1 million to accumulated deficit in the accompanying Consolidated Statements of Changes in Shareholders' Equity for the years ended December 31, 2018, 2017 and 2016, respectively.

Employee Stock Purchase Plan

The Company maintains a nonqualified employee stock purchase plan (the "ESPP") through which employee participants may use payroll deductions to acquire Company common stock at a discount. Prior to February 5, 2019, the purchase price of common stock acquired under the ESPP was the lesser of 90% of the fair market value of the common stock at either the beginning or the end of a three-month purchase period. On July 27, 2018, the ESPP was amended, effective February 5, 2019, to permit employee participants to acquire Company common stock at 85% of the fair market value of the common stock at the end of the purchase period. As of December 31, 2018, there were 1.9 million shares of common stock reserved for issuance under the ESPP. The ESPP is considered compensatory. During the years ended December 31, 2018, 2017 and 2016, the Company issued 95 thousand, 93 thousand and 93 thousand shares, respectively, under the ESPP.

Note 11: Long-Term Debt

The Company obtains long-term debt primarily to fund capital expenditures of the Regulated Businesses and to lend funds to the parent company to refinance debt and for other purposes. The following table provides the components of long-term debt as of December 31:

	Rate	Weighted Average Rate	Maturity	2018	2017
Long-term debt of AWCC: (a)					
Senior notes—fixed rate	2.95%-8.27%	4.26%	2019-2048	\$ 6,116	\$ 5,292
Private activity bonds and government funded debt—fixed rate	1.79%-6.25%	5.45%	2021-2040	192	193
Long-term debt of other American Water subsidiaries:					
Private activity bonds and government funded debt—fixed rate (b)	0.00%-6.20%	4.54%	2019-2048	727	712
Mortgage bonds—fixed rate	3.92%-9.71%	7.41%	2019-2039	606	607
Mandatorily redeemable preferred stock	8.47%-9.75%	8.60%	2019-2036	8	10
Capital lease obligations	12.91%	12.91%	2026	1	1
Term loan	5.60%-5.63%	5.62%	2021	6	9
Long-term debt				7,656	6,824
Unamortized debt premium, net (c)				7	9
Unamortized debt issuance costs				(16)	(13)
Less current portion of long-term debt				(71)	(322)
Total long-term debt				\$ 7,576	\$ 6,498

- (a) This indebtedness is considered "debt" for purposes of a support agreement between American Water and AWCC, which serves as a functional equivalent of a guarantee by American Water of AWCC's payment obligations under such indebtedness.
- (b) Includes \$3 million and \$5 million of variable rate debt as of December 31, 2018 and 2017, respectively, with variable-to-fixed interest rate swaps ranging between 3.93% and 4.72%. This debt was assumed via an acquisition in 2013.
- (c) Primarily fair value adjustments previously recognized in acquisition purchase accounting.

All mortgage bonds, term loans and \$725 million of the private activity bonds and government funded debt held by the Company's subsidiaries were collateralized as of December 31, 2018.

Long-term debt indentures contain a number of covenants that, among other things, limit, subject to certain exceptions, the Company from issuing debt secured by the Company's assets. Certain long-term notes require the Company to maintain a ratio of consolidated total indebtedness to consolidated total capitalization of not more than 0.70 to 1.00. The ratio as of December 31, 2018 was 0.59 to 1.00. In addition, the Company has \$889 million of notes which include the right to redeem the notes at par value, in whole or in part, from time to time, subject to certain restrictions.

The following table provides future sinking fund payments and debt maturities:

	Amount
2019	\$ 72
2020	32
2021	303
2022	26
2023	159
Thereafter	7,064

The following table provides the issuances of long-term debt in 2018 :

Company	Type	Rate	Maturity	Amount
AWCC (a)	Senior notes—fixed rate	3.75%-4.20%	2028-2048	\$ 1,325
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate (b)	0.00%-5.00%	2021-2048	33
Total issuances				<u>\$ 1,358</u>

(a) Approximately \$29 million of this debt relates to the New Jersey Environmental Infrastructure Financing Program.

The Company incurred debt issuance costs of \$12 million related to the above issuances.

The following table provides the retirements and redemptions of long-term debt in 2018 through sinking fund provisions, optional redemption or payment at maturity:

Company	Type	Rate	Maturity	Amount
AWCC	Senior notes—fixed rate	5.62%-6.25%	2018-2022	\$ 501
AWCC	Private activity bonds and government funded debt—fixed rate	1.79%-2.90%	2021-2031	1
Other American Water subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-5.50%	2018-2047	18
Other American Water subsidiaries	Mortgage bonds—fixed rate	9.13%	2021	1
Other American Water subsidiaries	Mandatorily redeemable preferred stock	8.49%-9.18%	2031-2036	2
Other American Water subsidiaries	Term loan	4.83%-5.69%	2021	3
Total retirements and redemptions				<u>\$ 526</u>

On August 9, 2018, AWCC completed a \$1.325 billion debt offering which included the sale of \$625 million aggregate principal amount of its 3.75% Senior Notes due in 2028, and \$700 million aggregate principal amount of its 4.20% Senior Notes due in 2048. At the closing of the offering, AWCC received, after deduction of underwriting discounts and before deduction of offering expenses, net proceeds of approximately \$1.3 billion. AWCC used proceeds from the offering to (i) lend funds to American Water and its regulated operating subsidiaries, (ii) repay \$191 million principal amount of AWCC's Series C Notes upon maturity on December 21, 2018, (iii) prepay \$100 million aggregate principal amount of AWCC's outstanding Series E Notes and \$100 million aggregate principal amount of AWCC's outstanding Series F Notes, and (iv) repay AWCC's commercial paper obligations and for general corporate purposes.

As a result of AWCC's prepayment of the Series Notes, a make-whole premium of \$10 million was paid to the holders thereof on September 11, 2018. Substantially all of these early debt extinguishment costs were allocable to the Company's utility subsidiaries and recorded as regulatory assets, as the Company believes they are probable of recovery in future rates.

Interest, net includes interest income of approximately \$11 million, \$14 million and \$14 million in 2018, 2017 and 2016, respectively.

One of the principal market risks to which the Company is exposed is changes in interest rates. In order to manage the exposure, the Company follows risk management policies and procedures, including the use of derivative contracts such as swaps. The Company reduces exposure to interest rates by managing commercial paper and debt maturities. The Company also does not enter into derivative contracts for speculative purposes and does not use leveraged instruments. The derivative contracts entered into are for periods consistent with the related underlying exposures. The Company is exposed to the risk that counterparties to derivative contracts will fail to meet their contractual obligations and minimizes this risk by dealing only with leading, credit-worthy financial institutions having long-term credit ratings of “A” or better.

On August 6, 2018, the Company terminated four forward starting swap agreements with an aggregate notional amount of \$400 million, realizing a net gain of \$9 million, to be amortized through interest, net over 10- and 30-year periods, in correlation with the terms of the new debt issued on August 9, 2018.

On August 17, 2018, the Company entered into two forward starting swap agreements, each with a notional amount of \$80 million, to reduce interest rate exposure on debt expected to be issued in 2019. These forward starting swap agreements terminate in August 2019, and have an average fixed rate of 2.98%. On October 11, 2018, the Company entered into two additional forward starting swap agreements, each with a notional amount of \$100 million, to reduce interest rate exposure on debt expected to be issued in 2019. These forward starting swap agreements terminate in December 2019, and have an average fixed rate of 3.31%. On January 8, 2019, the Company entered into an additional forward starting swap agreement, with a notional amount of \$150 million, to reduce interest rate exposure on debt expected to be issued in 2019. This forward starting swap agreement terminates in December 2019, and has an average fixed rate of 2.76%. The Company has designated these forward starting swap agreements as cash flow hedges, with their fair value recorded in accumulated other comprehensive gain or loss. Upon termination, the cumulative gain or loss recorded in accumulated other comprehensive gain or loss will be amortized through interest, net over the term of the new debt.

The Company has employed interest rate swaps to fix the interest cost on a portion of its variable-rate debt with an aggregate notional amount of \$3 million. The Company has designated these instruments as economic hedges, accounted for at fair value, with gains or losses recognized in interest, net. The gain recognized by the Company was de minimis for the years ended 2018 and 2017.

The following table provides the gross fair value of the Company’s derivative liabilities, as well as the location of the liability balances on the Consolidated Balance Sheets as of December 31:

Derivative Instrument	Derivative Designation	Balance Sheet Classification	2018	2017
Liability derivative:				
Forward starting swaps	Cash flow hedge	Other current liabilities	14	3

Note 12: Short-Term Debt

Short-term debt consists of commercial paper and credit facility borrowings totaling \$964 million and \$905 million as of December 31, 2018 and 2017, respectively. On March 21, 2018, AWCC increased the maximum aggregate principal amount of borrowings authorized for issuance under its commercial paper program from \$1.60 billion to \$2.10 billion. The weighted average interest rate on AWCC short-term borrowings was approximately 2.28% and 1.24% for the year ended December 31, 2018 and 2017, respectively. As of December 31, 2018 there were no borrowings outstanding with maturities greater than three months.

On March 21, 2018, AWCC and certain lenders amended and restated the credit agreement with respect to AWCC’s revolving credit facility to increase the maximum commitments under the facility from \$1.75 billion to \$2.25 billion, and to extend the expiration date of the facility from June 2020 to March 2023. The facility is used principally to support AWCC’s commercial paper program and to provide a sub-limit of up to \$150 million for letters of credit. Subject to satisfying certain conditions, the credit agreement also permits AWCC to increase the maximum commitment under the facility by up to an aggregate of \$500 million, and to request extensions of its expiration date for up to two one-year periods. As of December 31, 2018, AWCC had no outstanding borrowings and \$81 million of outstanding letters of credit under the revolving credit facility, with \$2.17 billion available to fulfill the Company’s short-term liquidity needs and to issue letters of credit. Letters of credit are non-debt instruments maintained to provide credit support for certain transactions as requested by third parties. The financial covenants with respect to the facility remained unchanged from the credit agreement in effect on December 31, 2017. Issuance costs related to the increased lending commitments will be amortized over the remaining life of the credit facility and is included in interest, net in the accompanying Consolidated Statements of Operations. Interest rates on advances under the facility are based on a credit spread to the LIBOR rate or base rate in accordance with Moody Investors Service’s and Standard & Poor’s Financial Services’ then applicable credit rating on AWCC’s senior unsecured, non-credit enhanced debt.

The following table provides the aggregate credit facility commitments, letter of credit sub-limit under the revolving credit facility and commercial paper limit, as well as the available capacity for each as of December 31, 2018 and 2017 :

	Credit Facility Commitment (a)	Available Credit Facility Capacity (a)	Letter of Credit Sublimit	Available Letter of Credit Capacity	Commercial Paper Limit	Available Commercial Paper Capacity
December 31, 2018	\$ 2,262	\$ 2,177	\$ 150	\$ 69	\$ 2,100	\$ 1,146
December 31, 2017	1,762	1,673	150	66	1,600	695

(a) Includes amounts related to the revolving credit facility of Keystone. As of December 31, 2018, the total commitment under the Keystone revolving credit facility was \$12 million, of which \$8 million was available for borrowing, subject to compliance with a collateral base calculation.

The following table provides the short-term borrowing activity for AWCC for the years ended December 31 :

	2018	2017
Average borrowings	\$ 1,029	\$ 779
Maximum borrowings outstanding	1,905	1,135
Weighted average interest rates, computed on daily basis	2.28%	1.24%
Weighted average interest rates, as of December 31	2.84%	1.61%

The credit facility requires the Company to maintain a ratio of consolidated debt to consolidated capitalization of not more than 0.70 to 1.00. The ratio as of December 31, 2018 was 0.59 to 1.00.

None of the Company's borrowings are subject to default or prepayment as a result of a downgrading of securities, although such a downgrading could increase fees and interest charges under the Company's credit facility.

As part of the normal course of business, the Company routinely enters contracts for the purchase and sale of water, energy, fuels and other services. These contracts either contain express provisions or otherwise permit the Company and its counterparties to demand adequate assurance of future performance when there are reasonable grounds for doing so. In accordance with the contracts and applicable contract law, if the Company is downgraded by a credit rating agency, especially if such downgrade is to a level below investment grade, it is possible that a counterparty would attempt to rely on such a downgrade as a basis for making a demand for adequate assurance of future performance. Depending on the Company's net position with the counterparty, the demand could be for the posting of collateral. In the absence of expressly agreed provisions that specify the collateral that must be provided, the obligation to supply the collateral requested will be a function of the facts and circumstances of the Company's situation at the time of the demand. If the Company can reasonably claim that it is willing and financially able to perform its obligations, it may be possible that no collateral would need to be posted or that only an amount equal to two or three months of future payments should be sufficient. The Company does not expect to post any collateral which will have a material adverse impact on the Company's results of operations, financial position or cash flows.

Note 13: General Taxes

The following table provides the components of general tax expense for the years ended December 31 :

	2018	2017	2016
Gross receipts and franchise	\$ 112	\$ 110	\$ 106
Property and capital stock	120	105	106
Payroll	33	31	32
Other general	12	13	14
Total general taxes	\$ 277	\$ 259	\$ 258

Note 14: Income Taxes

The following table provides the components of income tax expense for the years ended December 31 :

	2018	2017	2016
Current income taxes:			
State	\$ 26	\$ 25	\$ 20
Federal	1	(1)	1
Total current income taxes	\$ 27	\$ 24	\$ 21
Deferred income taxes:			
State	\$ 33	\$ 50	\$ 24
Federal	163	413	258
Amortization of deferred investment tax credits	(1)	(1)	(1)
Total deferred income taxes	195	462	281
Provision for income taxes	\$ 222	\$ 486	\$ 302

The following table provides a reconciliation between the statutory federal income tax rate and the Company's effective tax rate for the years ended December 31 :

	2018	2017	2016
Income tax at statutory rate	21.0%	35.0 %	35.0%
Increases (decreases) resulting from:			
State taxes, net of federal taxes	5.5%	5.4 %	3.8%
TCJA	1.5%	13.7 %	—%
Other, net	0.2%	(0.8)%	0.4%
Effective tax rate	28.2%	53.3 %	39.2%

On December 22, 2017 , President Trump signed into law the TCJA. Substantially all of the provisions of the TCJA are effective for taxable years beginning after December 31, 2017. The TCJA includes significant changes to the Internal Revenue Code of 1986, including amendments which significantly change the taxation of individuals and business entities, and includes specific provisions related to regulated public utilities. The more significant changes that impact the Company included in the TCJA are reductions in the corporate federal income tax rate from 35% to 21% , and several technical provisions including, among others, limiting the utilization of net operating losses ("NOLs") arising after December 31, 2017 to 80% of taxable income with an indefinite carryforward. The specific provisions related to regulated public utilities in the TCJA generally allow for the continued deductibility of interest expense, the elimination of full expensing for tax purposes of certain property acquired after September 27, 2017 and continue certain rate normalization requirements for accelerated depreciation benefits. Non-regulated segments of the Company's business may be able to take advantage of the full expensing provisions of the TCJA.

Changes in the Code from the TCJA had a material impact on the Company's financial statements in 2017. Under GAAP, specifically Accounting Standards Codification Topic 740, *Income Taxes* ("ASC 740"), the tax effects of changes in tax laws must be recognized in the period in which the law is enacted. ASC 740 also requires deferred income tax assets and liabilities to be measured at the enacted tax rate expected to apply when temporary differences are to be realized or settled. Thus, at the date of enactment, the Company's deferred income taxes were re-measured based upon the new tax rate. For the Company's regulated entities, substantially all of the change in deferred income taxes are recorded as either an offset to a regulatory asset or liability because changes are expected to be recovered by or refunded to customers. For the Company's unregulated operations, the change in deferred income taxes is recorded as a non-cash re-measurement adjustment to earnings.

The staff of the U.S. Securities and Exchange Commission recognized the complexity of reflecting the impacts of the TCJA, and on December 22, 2017 issued guidance in Staff Accounting Bulletin 118 ("SAB 118") which clarifies accounting for income taxes under ASC 740 if information is not yet available or complete and provides for up to a one year period in which to complete the required analyses and accounting. The Company made a reasonable estimate for the measurement and accounting of certain effects of the TCJA which were reflected in the financial statements as of December 31, 2017. The re-measurement of deferred income taxes at the new federal tax rate increased the 2017 deferred income tax provision by \$125 million for the year ending December 31, 2017. Additionally, the accumulated deferred income tax liability decreased by \$1.39 billion and regulatory liabilities increased by \$1.51 billion , respectively, as of December 31, 2017.

As of December 31, 2018, the Company has recorded all its reasonable estimates resulting from the TCJA under SAB 118. These estimates, however, are still subject to changes due to the future impacts of various items, including further changes in income tax laws, forecasted financial conditions and the actual tax return filings with the tax authorities.

ASC 740 requires the re-measurement of deferred income tax assets and liabilities as a result of a change in tax laws or rates to be presented in net income. Adjusting temporary differences originally recorded to AOCI through the income statement result in disproportionate tax effects remaining in AOCI. As of December 31, 2018, the Company adopted Accounting Standards Update 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which allows companies to reclassify the income tax effects of TCJA on items within AOCI to retained earnings. As a result of the TCJA tax rate reduction, there were income tax effects related to the Company's hedge and pension positions of \$2 million and \$22 million, respectively, remaining in the Company's accumulated other comprehensive loss balance. The Company reclassified these tax effects from accumulated other comprehensive loss to accumulated deficit as of December 31, 2018.

During 2018, the Company continued to assess the impacts of the TCJA and filed its 2017 federal and state income tax returns. As of December 31, 2018, the Company completed its analysis of the estimated impact of TCJA on its federal and state income taxes based on information available to date, and recorded adjustments to its provisional estimates under SAB 118 in the amount of \$12 million. These estimates may be revised in the future for changes in income tax laws, additional regulatory guidance, changes to forecasted financial conditions, and actual tax return filings with the tax authorities.

The following table provides the components of the net deferred tax liability as of December 31 :

	2018	2017
Deferred tax assets:		
Advances and contributions	\$ 402	\$ 395
Tax losses and credits	131	196
Regulatory income tax assets	339	327
Pension and other postretirement benefits	91	96
Other	44	49
Total deferred tax assets	1,007	1,063
Valuation allowance	(14)	(13)
Total deferred tax assets, net of allowance	\$ 993	\$ 1,050
Deferred tax liabilities:		
Property, plant and equipment	\$ 2,537	\$ 2,429
Deferred pension and other postretirement benefits	77	69
Other	97	103
Total deferred tax liabilities	2,711	2,601
Total deferred tax liabilities, net of deferred tax assets	\$ (1,718)	\$ (1,551)

As of December 31, 2018 and 2017, the Company recognized federal NOL carryforwards of \$707 million and \$1.05 billion, respectively. The Company believes the federal NOL carryforwards are more likely than not to be recovered and require no valuation allowance. The Company's federal NOL carryforwards will begin to expire in 2028.

As of December 31, 2018 and 2017, the Company had state NOLs of \$547 million and \$322 million, respectively, a portion of which are offset by a valuation allowance because the Company does not believe these NOLs are more likely than not to be realized. The state NOL carryforwards began to expire in 2018 through 2037.

As of December 31, 2018 and 2017, the Company had an insignificant amount of Canadian NOL carryforwards and capital loss carryforwards for federal income tax purposes.

The Company files income tax returns in the United States federal jurisdiction and various state and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state or local or non-U.S. income tax examinations by tax authorities for years on or before 2012. The Company has state income tax examinations in progress and does not expect material adjustments to result.

The following table provides the changes in gross liability, excluding interest and penalties, for unrecognized tax benefits:

	Amount
Balance as of January 1, 2017	\$ 169
Increases in current period tax positions	8
Decreases in prior period measurement of tax positions	(71)
Balance as of December 31, 2017	\$ 106
Increases in current period tax positions	13
Decreases in prior period measurement of tax positions	(22)
Balance as of December 31, 2018	\$ 97

The Company's tax positions relate primarily to the deductions claimed for repair and maintenance costs on its utility plant. The gross liability was reduced primarily as a result of the Section 481(a) adjustment allocated for the current year related to the accounting method change the Company filed with its 2015 tax return. The Company does not anticipate material changes to its unrecognized tax benefits within the next year. However, the Company expects to utilize a significant portion of the remaining NOLs in 2019 and fully utilize its NOLs in 2020, as a result, a balance sheet reclassification between the unrecognized tax benefits and deferred income tax asset is anticipated due to the lack of available NOLs to offset. If the Company sustains all of its positions as of December 31, 2018, an unrecognized tax benefit of \$10 million, excluding interest and penalties, would impact the Company's effective tax rate. The Company had an insignificant amount of interest and penalties related to its tax positions as of December 31, 2018 and 2017.

The following table provides the changes in the valuation allowance:

	Amount
Balance as of January 1, 2016	\$ 8
Decreases in current period tax positions	(2)
Balance as of December 31, 2016	\$ 6
Decreases in current period tax positions	7
Balance as of December 31, 2017	\$ 13
Increases in current period tax positions	1
Balance as of December 31, 2018	\$ 14

Note 15: Employee Benefits

Pension and Other Postretirement Benefits

The Company maintains noncontributory defined benefit pension plans covering eligible employees of its regulated utility and shared services operations. Benefits under the plans are based on the employee's years of service and compensation. The pension plans have been closed for all new employees. The pension plans were closed for most employees hired on or after January 1, 2006. Union employees hired on or after January 1, 2001, except for specific eligible groups specified in the plan, had their accrued benefit frozen and will be able to receive this benefit as a lump sum upon termination or retirement. Union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006 are provided with a 5.25% of base pay defined contribution plan. The Company does not participate in a multi-employer plan. The Company also has unfunded noncontributory supplemental non-qualified pension plans that provide additional retirement benefits to certain employees.

The Company's pension funding practice is to contribute at least the greater of the minimum amount required by the Employee Retirement Income Security Act of 1974 or the normal cost. Further, the Company will consider additional contributions if needed to avoid "at risk" status and benefit restrictions under the Pension Protection Act of 2006 ("PPA"). The Company may also consider increased contributions, based on other financial requirements and the plans' funded position. Pension expense in excess of the amount contributed to the pension plans is deferred by certain regulated subsidiaries pending future recovery in rates charged for utility services as contributions are made to the plans. See Note 7—Regulatory Assets and Liabilities for additional information. Pension plan assets are invested in a number of actively managed, commingled funds, and limited partnerships including equities, fixed income securities, guaranteed annuity contracts with insurance companies, real estate funds and real estate investment trusts ("REITs").

The Company maintains other postretirement benefit plans providing varying levels of medical and life insurance to eligible retirees. The retiree welfare plans are closed for union employees hired on or after January 1, 2006. The plans had previously closed for non-union employees hired on or after January 1, 2002. The Company's policy is to fund other postretirement benefit costs up to the amount recoverable through rates. Assets of the plans are invested in a number of actively managed and commingled funds including equities and fixed income securities.

The investment policy guideline of the pension plan is focused on diversification, improving returns and reducing the volatility of the funded status over a long-term horizon. The investment policy guidelines of the postretirement plans focus on the appropriate strategy given the funded status of the plans. None of the Company's securities are included in pension or other postretirement benefit plan assets.

The Company uses fair value for all classes of assets in the calculation of market-related value of plan assets. As of 2017, the fair values and asset allocations of the pension plan assets include the American Water Pension Plan, the New York Water Service Corporation Pension Plan, and the Shorelands Water Company, Inc. Pension Plan.

The following tables provide the fair values and asset allocations of the pension plan assets as of December 31, 2018 and 2017, respectively, by asset category:

Asset Category	2019 Target Allocation	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets as of December 31, 2018
Cash		\$ 24	\$ 24	\$ —	\$ —	2%
Equity securities:	50%					
U.S. large cap		297	297	—	—	20%
U.S. small cap		76	70	6	—	5%
International		256	2	132	122	17%
Real estate fund		65	—	—	65	4%
REITs		20	—	20	—	1%
Fixed income securities:	50%					
U.S. Treasury securities and government bonds		181	167	14	—	12%
Corporate bonds		491	—	491	—	33%
Mortgage-backed securities		11	—	11	—	1%
Municipal bonds		28	—	28	—	2%
Long duration bond fund		7	7	—	—	—
Guarantee annuity contracts		43	—	—	43	3%
Total	100%	\$ 1,499	\$ 567	\$ 702	\$ 230	100%

Asset Category	2018 Target Allocation	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets as of December 31, 2017
Cash		\$ 7	\$ 7	\$ —	\$ —	—
Equity Securities:	50%					
U.S. large cap		344	344	—	—	21%
U.S. small cap		84	79	5	—	5%
International		295	2	149	144	18%
Real estate fund		86	—	—	86	5%
REITs		26	—	26	—	2%
Fixed income securities:	50%					
U.S. Treasury securities and government bonds		200	180	20	—	12%
Corporate bonds		519	—	519	—	31%
Mortgage-backed securities		1	—	1	—	—
Municipal bonds		31	—	31	—	2%
Long duration bond fund		8	8	—	—	1%
Guarantee annuity contracts		48	—	—	48	3%
Total	100%	\$ 1,649	\$ 620	\$ 751	\$ 278	100%

The following tables provide a reconciliation of the beginning and ending balances of the fair value measurements using significant unobservable inputs (Level 3) for 2018 and 2017, respectively:

	Level 3
Balance as of January 1, 2018	\$ 278
Actual return on assets	(23)
Purchases, issuances and settlements, net	(25)
Balance as of December 31, 2018	\$ 230

	Level 3
Balance as of January 1, 2017	\$ 140
Actual return on assets	2
Purchases, issuances and settlements, net	136
Balance as of December 31, 2017	\$ 278

The Company's postretirement benefit plans have different levels of funded status and the assets are held under various trusts. The investments and risk mitigation strategies for the plans are tailored specifically for each trust. In setting new strategic asset mixes, consideration is given to the likelihood that the selected asset allocation will effectively fund the projected plan liabilities and meet the risk tolerance criteria of the Company. The Company periodically updates the long-term, strategic asset allocations for these plans through asset liability studies and uses various analytics to determine the optimal asset allocation. Considerations include plan liability characteristics, liquidity needs, funding requirements, expected rates of return and the distribution of returns.

In 2012, the Company implemented a de-risking strategy for the American Water Pension Plan after conducting an asset-liability study to reduce the volatility of the funded status of the plan. As part of the de-risking strategy, the Company revised the asset allocations to increase the matching characteristics of fixed-income assets relative to liabilities. The fixed income portion of the portfolio was designed to match the bond-like and long-dated nature of the postretirement liabilities. In 2017, the Company further increased its exposure to liability-driven investing and increased its fixed-income allocation to 50%, up from 40%, in an effort to further decrease the funded status volatility of the plan and hedge the portfolio from movements in interest rates.

In 2012, the Company also implemented a de-risking strategy for the medical bargaining trust within the plan to minimize volatility. In 2017, the Company conducted a new asset-liability study that indicated medical trend inflation that outpaced the Consumer Price Index by more than 2% for the last 20 years. Given continuously rising medical costs, the Company decided to increase the equity exposure of the portfolio to 30% , up from 20% , while reducing the fixed-income portion of the portfolio from 80% to 70% . The Company also conducted an asset-liability study for the Postretirement Non-Bargaining Medical Plan. Its allocation was adjusted to make it more conservative, reducing the equity allocation from 70% to 60% and increasing the fixed-income allocation from 30% to 40% . The Postretirement Medical Non-Bargaining plan's equity allocation was reduced due to the cap on benefits for some non-union participants and resultant reduction in the plan's liabilities.

In 2018, the Company announced plan design changes to the medical bargaining benefit plan, which resulted in a cap on future benefits and an over funded postretirement medical benefits bargaining plan. Given the change in funded status, the Retirement and Benefit Plans Investment Committee (the "Investment Committee"), which is responsible for overseeing the investment of the Company's pension and other postretirement benefit plans' assets, commissioned a new asset-liability study for the postretirement medical bargaining plan. This study concluded that it was prudent to decrease the risk in the plan and to remove its equity exposure. The study also recommended reducing its exposure to changes in interest rates by matching the assets of the plan to the projected cash flows for future benefit payments of the liability. The Investment Committee agreed with the recommendations and voted to invest the postretirement medical bargaining plan assets in fixed-income securities.

The restructuring of the plan was initiated towards the end of 2018. Once fully completed, the plans assets will be invested in fixed-income securities. The majority of the securities will be used to match the projected cash flows for future benefit payments of the liability. Plan assets in excess of those securities designed to match the long-term liabilities will be invested in shorter duration securities with a duration of about three years .

The Company engages third-party investment managers for all invested assets. Managers are not permitted to invest outside of the asset class (e.g. fixed income, equity, alternatives) or strategy for which they have been appointed. Investment management agreements and recurring performance and attribution analysis are used as tools to ensure investment managers invest solely within the investment strategy they have been provided. Futures and options may be used to adjust portfolio duration to align with a plan's targeted investment policy.

In order to minimize asset volatility relative to the liabilities, a portion of plan assets is allocated to fixed income investments that are exposed to interest rate risk. Increases in interest rates generally will result in a decline in the value of fixed income assets while reducing the present value of the liabilities. Conversely, rate decreases will increase fixed income assets, partially offsetting the related increase in the liabilities. Within equities, risk is mitigated by constructing a portfolio that is broadly diversified by geography, market capitalization, manager mandate size, investment style and process. For the postretirement medical bargaining plan, all of its assets are in fixed-income securities and the asset structure is designed to meet the cash flows of the liabilities. This design reduces the plan's exposure to changes in interest rates.

Actual allocations to each asset class vary from target allocations due to periodic investment strategy updates, market value fluctuations, the length of time it takes to fully implement investment allocations, and the timing of benefit payments and contributions. The asset allocation is rebalanced on a quarterly basis, if necessary. Voluntary Employees' Beneficiary Association ("VEBA") Trust assets include the American Water Postretirement Medical Benefits Bargaining Plan, the New York Water Service Corporation Postretirement Medical Benefits Bargaining Plan, the American Water Postretirement Medical Benefits Non-Bargaining Plan, and the American Water Life Insurance Trust.

The following tables provide the fair values and asset allocations of the postretirement benefit plan assets as of December 31, 2018 and 2017, respectively, by asset category:

Asset Category	2019 Target Allocation	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets as of December 31, 2018
Bargain VEBA:						
Cash		\$ 31	\$ 31	\$ —	\$ —	—
Equity securities:	2%					
U.S. large cap		1	1	—	—	—
International		17	—	—	17	4%
Fixed income securities:	98%					
U.S. Treasury securities and government bonds		179	178	1	—	47%
Corporate bonds		141	—	141	—	37%
Municipal bonds		9	—	9	—	3%
Long duration bond fund		4	4	—	—	1%
Future and option contracts (a)		—	—	—	—	8%
Total bargain VEBA	100%	\$ 382	\$ 214	\$ 151	\$ 17	100%
Non-bargain VEBA:						
Cash		\$ 3	\$ 3	\$ —	\$ —	—
Equity securities:	60%					
U.S. large cap		43	43	—	—	35%
International		24	24	—	—	20%
Fixed income securities:	40%					
Core fixed income bond fund (a)		52	—	52	—	45%
Total non-bargain VEBA	100%	\$ 122	\$ 70	\$ 52	\$ —	100%
Life VEBA:						
Equity securities:	70%					
U.S. large cap		2	2	—	—	67%
Fixed income securities:	30%					
Core fixed income bond fund (a)		1	1	—	—	33%
Total life VEBA	100%	\$ 3	\$ 3	\$ —	\$ —	100%
Total	100%	\$ 507	\$ 287	\$ 203	\$ 17	100%

(a) Includes cash for margin requirements.

Asset Category	2018 Target Allocation	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets as of 12/31/2017
Bargain VEBA:						
Cash		\$ 18	\$ 18	\$ —	\$ —	—
Equity securities:	30%					
U.S. large cap		44	44	—	—	10%
International		51	51	—	—	12%
Fixed income securities:	70%					
U.S. Treasury securities and government bonds		48	21	27	—	11%
Corporate bonds		233	—	233	—	55%
Municipal bonds		26	—	26	—	6%
Long duration bond fund		4	4	—	—	1%
Future and option contracts (a)		2	2	—	—	5%
Total bargain VEBA	100%	\$ 426	\$ 140	\$ 286	\$ —	100%
Non-bargain VEBA:						
Cash		\$ 1	\$ 1	\$ —	\$ —	—
Equity securities:	60%					
U.S. large cap		53	53	—	—	37%
U.S. small cap		5	5	—	—	4%
International		47	47	—	—	33%
Fixed income securities:	40%					
Core fixed income bond fund (a)		36	36	—	—	26%
Total non-bargain VEBA	100%	\$ 142	\$ 142	\$ —	\$ —	100%
Life VEBA:						
Cash		\$ 3	\$ 3	\$ —	\$ —	—
Equity securities:	70%					
U.S. large cap		3	3	—	—	38%
Fixed income securities:	30%					
Core fixed income bond fund (a)		2	2	—	—	62%
Total life VEBA	100%	\$ 8	\$ 8	\$ —	\$ —	100%
Total	100%	\$ 576	\$ 290	\$ 286	\$ —	100%

(a) Includes cash for margin requirements.

Valuation Techniques Used to Determine Fair Value

Cash—Cash and investments with maturities of three months or less when purchased, including certain short-term fixed-income securities, are considered cash and are included in the recurring fair value measurements hierarchy as Level 1.

Equity securities—For equity securities, the trustees obtain prices from pricing services, whose prices are obtained from direct feeds from market exchanges, that the Company is able to independently corroborate. Equity securities are valued based on quoted prices in active markets and categorized as Level 1. Certain equities, such as international securities held in the pension plan are invested in commingled funds and/or limited partnerships. These funds are valued to reflect the plan fund's interest in the fund based on the reported year-end net asset value. Since net asset value is not directly observable or not available on a nationally recognized securities exchange for the commingled funds, they are categorized as Level 2. For limited partnerships, the assets as a whole are categorized as Level 3 due to the fact that the partnership provides the pricing and the pricing inputs are less readily observable. In addition, the limited partnership vehicle cannot be readily traded.

Fixed-income securities—The majority of U.S. Treasury securities and government bonds have been categorized as Level 1 because they trade in highly-liquid and transparent markets and their prices can be corroborated. The fair values of corporate bonds, mortgage backed securities, and certain government bonds are based on prices that reflect observable market information, such as actual trade information of similar securities. They are categorized as Level 2 because the valuations are calculated using models which utilize actively traded market data that the Company can corroborate. Exchange-traded options and futures, for which market quotations are readily available, are valued at the last reported sale price or official closing price on the primary market or exchange on which they are traded and are classified as Level 1.

Real estate fund—Real estate fund is categorized as Level 3 as the fund uses significant unobservable inputs for fair value measurement and the vehicle is in the form of a limited partnership.

REITs—REITs are invested in commingled funds. Commingled funds are valued to reflect the plan fund's interest in the fund based on the reported year-end net asset value. Since the net asset value is not directly observable for the commingled funds, they are categorized as Level 2.

Guaranteed annuity contracts—Guaranteed annuity contracts are categorized as Level 3 because the investments are not publicly quoted. Since these market values are determined by the provider, they are not highly observable and have been categorized as Level 3. Exchange-traded future and option positions are reported in accordance with changes in variation margins that are settled daily.

The following table provides a rollforward of the changes in the benefit obligation and plan assets for the two most recent years, for all plans combined:

	Pension Benefits		Other Benefits	
	2018	2017	2018	2017
Change in benefit obligation:				
Benefit obligation as of January 1,	\$ 2,034	\$ 1,864	\$ 614	\$ 610
Service cost	34	33	8	10
Interest cost	76	80	20	26
Plan participants' contributions	—	—	2	2
Plan amendments	(23)	—	(174)	—
Actuarial (gain) loss	(153)	118	(89)	(9)
Acquisitions	—	9	—	—
Gross benefits paid	(76)	(70)	(29)	(26)
Federal subsidy	—	—	1	1
Benefit obligation as of December 31,	<u>\$ 1,892</u>	<u>\$ 2,034</u>	<u>\$ 353</u>	<u>\$ 614</u>
Change in plan assets:				
Fair value of plan assets as of January 1,	\$ 1,649	\$ 1,443	\$ 576	\$ 525
Actual return on plan assets	(97)	227	(40)	69
Employer contributions	24	42	(2)	6
Plan participants' contributions	—	—	2	2
Acquisitions	—	7	—	—
Benefits paid	(77)	(70)	(29)	(26)
Fair value of plan assets as of December 31,	<u>\$ 1,499</u>	<u>\$ 1,649</u>	<u>\$ 507</u>	<u>\$ 576</u>
Funded value as of December 31,	<u>\$ (393)</u>	<u>\$ (385)</u>	<u>\$ 154</u>	<u>\$ (38)</u>
Amounts recognized on the balance sheet:				
Noncurrent asset	\$ —	\$ —	\$ 155	\$ 2
Current liability	(3)	(1)	—	—
Noncurrent liability	(390)	(384)	(1)	(40)
Net amount recognized	<u>\$ (393)</u>	<u>\$ (385)</u>	<u>\$ 154</u>	<u>\$ (38)</u>

The pension and postretirement plans were negatively impacted from the market's volatile and abrupt fourth quarter 2018 decline, that reversed all market gains in 2018.

On July 31, 2016, the other postretirement benefit plan was re-measured to reflect a plan amendment, which capped benefits for certain non-union plan participants. The re-measurement included a \$156 million reduction in future benefits payable to plan participants, and resulted in an \$89 million reduction to the net accrued postretirement benefit obligation. The plan amendment will be amortized over 10.2 years, the average future working lifetime to full eligibility age for all plan participants.

On August 31, 2018, the Postretirement Medical Benefit Plan was remeasured to reflect a plan change. The plan change resulted in a \$175 million reduction in future benefits payable to plan participants, and, in combination with other experience reflected as of the remeasurement date, resulted in a \$227 million reduction to the net accumulated postretirement benefit obligation.

The following table provides the components of accumulated other comprehensive income and regulatory assets that have not been recognized as components of periodic benefit costs as of December 31 :

	Pension Benefits		Other Benefits	
	2018	2017	2018	2017
Net actuarial loss	\$ 431	\$ 416	\$ 83	\$ 108
Prior service cost (credit)	(22)	2	(291)	(140)
Net amount recognized	<u>\$ 409</u>	<u>\$ 418</u>	<u>\$ (208)</u>	<u>\$ (32)</u>
Regulatory assets (liabilities)	\$ 352	\$ 270	\$ (208)	\$ (32)
Accumulated other comprehensive income	57	148	—	—
Total	<u>\$ 409</u>	<u>\$ 418</u>	<u>\$ (208)</u>	<u>\$ (32)</u>

The following table provides the projected benefit obligation, accumulated benefit obligation and fair value of plan assets for pension plans with a projected obligation in excess of plan assets as of December 31, 2018 and 2017 :

	Projected Benefit Obligation Exceeds the Fair Value of Plans' Assets	
	2018	2017
Projected benefit obligation	\$ 1,892	\$ 2,034
Fair value of plan assets	1,499	1,649
	Accumulated Benefit Obligation Exceeds the Fair Value of Plans' Assets	
	2018	2017
Accumulated benefit obligation	\$ 1,768	\$ 1,888
Fair value of plan assets	1,499	1,649

The accumulated postretirement plan assets exceed benefit obligations for all of the Company's other postretirement benefit plans, except for the Northern Illinois Retiree Welfare Plan.

In August 2006, the PPA was signed into law in the U.S. The PPA replaces the funding requirements for defined benefit pension plans by requiring that defined benefit plans contribute to 100% of the current liability funding target over seven years. Defined benefit plans with a funding status of less than 80% of the current liability are defined as being "at risk" and additional funding requirements and benefit restrictions may apply. The PPA was effective for the 2008 plan year with short-term phase-in provisions for both the funding target and at-risk determination. The Company's qualified defined benefit plan is currently funded above the at-risk threshold, and therefore the Company expects that the plans will not be subject to the "at risk" funding requirements of the PPA. The Company is proactively monitoring the plan's funded status and projected contributions under the law to appropriately manage the potential impact on cash requirements.

Minimum funding requirements for the qualified defined benefit pension plan are determined by government regulations and not by accounting pronouncements. The Company plans to contribute amounts at least equal to or greater than the minimum required contributions or the normal cost in 2019 to the qualified pension plans. The Company plans to contribute to its 2019 other postretirement benefit cost for rate-making purposes.

The following table provides information about the expected cash flows for the pension and postretirement benefit plans:

	Pension Benefits	Other Benefits
2019 expected employer contributions:		
To plan trusts	\$ 31	\$ —
To plan participants	2	—

The following table provides the net benefits expected to be paid from the plan assets or the Company's assets:

	Pension Benefits Expected Benefit Payments	Other Benefits Expected Benefit Payments	Expected Federal Subsidy Payments
2019	\$ 102	\$ 27	\$ 1
2020	107	27	1
2021	111	28	1
2022	115	28	1
2023	120	28	1
2024-2028	634	136	6

Because the above amounts are net benefits, plan participants' contributions have been excluded from the expected benefits.

Accounting for pensions and other postretirement benefits requires an extensive use of assumptions about the discount rate, expected return on plan assets, the rate of future compensation increases received by the Company's employees, mortality, turnover and medical costs. Each assumption is reviewed annually. The assumptions are selected to represent the average expected experience over time and may differ in any one year from actual experience due to changes in capital markets and the overall economy. These differences will impact the amount of pension and other postretirement benefit expense that the Company recognizes.

The following table provides the significant assumptions related to the pension and other postretirement benefit plans:

	Pension Benefits			Other Benefits		
	2018	2017	2016	2018	2017	2016
Weighted average assumptions used to determine December 31 benefit obligations:						
Discount rate	4.38%	3.75%	4.28%	4.32%	3.73%	4.26%
Rate of compensation increase	3.00%	3.02%	3.07%	N/A	N/A	N/A
Medical trend	N/A	N/A	N/A	graded from 6.75% in 2019 to 5.00% in 2026+	graded from 7.00% in 2018 to 4.50% in 2026+	graded from 7.00% in 2017 to 5.00% in 2021+
Weighted average assumptions used to determine net periodic cost:						
Discount rate	3.75%	4.28%	4.66%	4.23%	4.26%	3.66%
Expected return on plan assets	5.95%	6.49%	7.02%	4.77%	5.09%	5.37%
Rate of compensation increase	3.02%	3.07%	3.10%	N/A	N/A	N/A
Medical trend	N/A	N/A	N/A	graded from 7.00% in 2018 to 4.50% in 2026+	graded from 7.00% in 2017 to 5.00% in 2021+	graded from 6.50% in 2016 to 5.00% in 2021+

NOTE "N/A" in the table above means assumption is not applicable.

The discount rate assumption was determined for the pension and postretirement benefit plans independently. At year-end 2011, the Company began using an approach that approximates the process of settlement of obligations tailored to the plans' expected cash flows by matching the plans' cash flows to the coupons and expected maturity values of individually selected bonds. Historically, for each plan, the discount rate was developed at the level equivalent rate that would produce the same present value as that using spot rates aligned with the projected benefit payments.

The expected long-term rate of return on plan assets is based on historical and projected rates of return, prior to administrative and investment management fees, for current and planned asset classes in the plans' investment portfolios. Assumed projected rates of return for each of the plans' projected asset classes were selected after analyzing historical experience and future expectations of the returns and volatility of the various asset classes. Based on the target asset allocation for each asset class, the overall expected rate of return for the portfolio was developed, adjusted for historical and expected experience of active portfolio management results compared to the benchmark returns. The Company's pension expense increases as the expected return on assets decreases. The Company used an expected return on plan assets of 5.95% to estimate its 2018 pension benefit costs, and an expected blended return based on weighted assets of 4.77% to estimate its 2018 other postretirement benefit costs.

In the determination of year end 2014 projected benefit plan obligations, the Company adopted a new table based on the Society of Actuaries RP 2014 mortality table including a generational BB-2D projection scale. The adoption resulted in a significant increase to pension and other postretirement benefit plans' projected benefit obligations. In 2015, a new MP 2015 Projection Scale was issued, but not adopted by the Company since all of the experience upon which the MP 2015 Projection Scale is based was considered by the Company in selecting its 2014 assumptions. For year-end 2017, the Company retained the Society of Actuaries RP-2014 mortality table as its base mortality table but adopted the new MP-2017 generational projection scale to project mortality improvements after 2006. In 2018, the Company adopted the new MP-2018 mortality improvement scale to gradually adjust future mortality rates downward.

The following table provides the components of net periodic benefit costs for the years ended December 31 :

	2018	2017	2016
Components of net periodic pension benefit cost:			
Service cost	\$ 34	\$ 33	\$ 32
Interest cost	76	80	80
Expected return on plan assets	(97)	(93)	(95)
Amortization of:			
Prior service cost (credit)	1	1	1
Actuarial (gain) loss	27	34	27
Net periodic pension benefit cost	\$ 41	\$ 55	\$ 45
Other changes in plan assets and benefit obligations recognized in other comprehensive income:			
Current year actuarial (gain) loss	(60)	(7)	21
Amortization of actuarial gain (loss)	(7)	(7)	(6)
Total recognized in other comprehensive income	\$ (67)	\$ (14)	\$ 15
Total recognized in net periodic benefit cost and other comprehensive income	\$ (26)	\$ 41	\$ 60
Components of net periodic other postretirement benefit cost:			
Service cost	\$ 8	\$ 10	\$ 12
Interest cost	20	26	28
Expected return on plan assets	(26)	(26)	(27)
Amortization of:			
Prior service cost (credit)	(23)	(18)	(9)
Actuarial (gain) loss	3	10	5
Net periodic other postretirement benefit cost	\$ (18)	\$ 2	\$ 9

The Company's policy is to recognize curtailments when the total expected future service of plan participants is reduced by greater than 10% due to an event that results in terminations and/or retirements.

Cumulative gains and losses that are in excess of 10% of the greater of either the projected benefit obligation or the fair value of plan assets are amortized over the expected average remaining future service of the current active membership for the plans.

Savings Plans for Employees

The Company maintains 401(k) savings plans that allow employees to save for retirement on a tax-deferred basis. Employees can make contributions that are invested at their direction in one or more funds. The Company makes matching contributions based on a percentage of an employee's contribution, subject to certain limitations. Due to the Company's discontinuing new entrants into the defined benefit pension plan, on January 1, 2006, the Company began providing an additional 5.25% of base pay defined contribution benefit for union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006. Plan expenses totaled \$12 million, \$13 million and \$9 million for 2018, 2017 and 2016, respectively. All of the Company's contributions are invested in one or more funds at the direction of the employees.

Note 16: Commitments and Contingencies

Commitments have been made in connection with certain construction programs. The estimated capital expenditures required under legal and binding contractual obligations amounted to \$419 million as of December 31, 2018.

The Company's regulated subsidiaries maintain agreements with other water purveyors for the purchase of water to supplement their water supply. The following table provides the future annual commitments related to minimum quantities of purchased water having non-cancelable:

	Amount
2019	\$ 65
2020	65
2021	65
2022	64
2023	57
Thereafter	641

The Company enters into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. See Note 3—Revenue Recognition for additional information regarding the Company's performance obligations.

Contingencies

The Company is routinely involved in legal actions incident to the normal conduct of its business. As of December 31, 2018, the Company has accrued approximately \$54 million of probable loss contingencies and has estimated that the maximum amount of losses associated with reasonably possible loss contingencies that can be reasonably estimated is \$26 million. For certain matters, claims and actions, the Company is unable to estimate possible losses. The Company believes that damages or settlements, if any, recovered by plaintiffs in such matters, claims or actions, other than as described in this Note 16—Commitments and Contingencies, will not have a material adverse effect on the Company.

West Virginia Elk River Freedom Industries Chemical Spill

On June 8, 2018, the U.S. District Court for the Southern District of West Virginia granted final approval of a settlement class and global class action settlement (the "Settlement") for all claims and potential claims by all putative class members (collectively, the "Plaintiffs") arising out of the January 2014 Freedom Industries, Inc. chemical spill in West Virginia. The effective date of the Settlement is July 16, 2018.

Under the terms and conditions of the Settlement, West Virginia-American Water Company ("WVAWC") and certain other Company affiliated entities (collectively, the "American Water Defendants") did not admit, and will not admit, any fault or liability for any of the allegations made by the Plaintiffs in any of the actions that were resolved. Under federal class action rules, claimants had the right, until December 8, 2017, to elect to opt out of the final Settlement. Less than 100 of the 225,000 estimated putative class members elected to opt out from the Settlement, and these claimants will not receive any benefit from or be bound by the terms of the Settlement.

In June 2018, the Company and its remaining non-participating general liability insurance carrier settled for a payment to the Company of \$20 million, out of a maximum of \$25 million in potential coverage under the terms of the relevant policy, in exchange for a full release by the American Water Defendants of all claims against the insurance carrier related to the Freedom Industries chemical spill.

As a result, the aggregate pre-tax amount to be contributed by WVAWC of the \$126 million Settlement with respect to the Company, net of insurance recoveries, is \$23 million. As of December 31, 2018, \$40 million of the aggregate settlement amount of \$126 million, reflecting payments made by the Company under the terms of the Settlement, is reflected in Accrued liabilities, and the offsetting insurance receivables are reflected in Other current assets on the Consolidated Balance Sheet. The Company has funded WVAWC's contributions to the Settlement through existing sources of liquidity.

In April 2017, the Lincoln County (West Virginia) Commission (the "LCC") filed a complaint in Lincoln County state court against WVAWC and certain other defendants not affiliated with the Company, which in June 2017 was transferred to the West Virginia Mass Litigation Panel, alleging that the Freedom Industries chemical spill caused a public nuisance in Lincoln County under an ordinance enacted by the LCC in March 2017, more than three years after the Freedom Industries chemical spill occurred. The complaint sought an injunction against WVAWC that would have required the creation of various databases and public repositories of documents related to the Freedom Industries chemical spill, as well as further study and risk assessments regarding the alleged exposure of Lincoln County residents to the released chemicals. On July 31, 2018, WVAWC filed a motion to dismiss the LCC's complaint. On December 12, 2018, the Mass Litigation Panel granted WVAWC's motion to dismiss on several grounds, including being barred by the applicable statute of limitations, failure to allege a nuisance under applicable law, lack of standing, improper retroactive application of the nuisance ordinance and violation of WVAWC's due process. The LCC voted not to appeal this decision.

Dunbar, West Virginia Water Main Break Class Action Litigation

On the evening of June 23, 2015, a 36-inch pre-stressed concrete transmission water main, installed in the early 1970s, failed. The water main is part of WVAWC's West Relay pumping station located in the City of Dunbar. The failure of the main caused water outages and low pressure to up to approximately 25,000 WVAWC customers. In the early morning hours of June 25, 2015, crews completed a repair, but that same day, the repair developed a leak. On June 26, 2015, a second repair was completed and service was restored that day to approximately 80% of the impacted customers, and to the remaining approximately 20% by the next morning. The second repair showed signs of leaking but the water main was usable until June 29, 2015 to allow tanks to refill. The system was reconfigured to maintain service to all but approximately 3,000 customers while a final repair was completed safely on June 30, 2015. Water service was fully restored by July 1, 2015 to all customers affected by this event.

On June 2, 2017, a class action complaint was filed in West Virginia Circuit Court in Kanawha County against WVAWC on behalf of a purported class of residents and business owners who lost water service or pressure as a result of the Dunbar main break. The complaint alleges breach of contract by WVAWC for failure to supply water, violation of West Virginia law regarding the sufficiency of WVAWC's facilities and negligence by WVAWC in the design, maintenance and operation of the water system. The plaintiffs seek unspecified alleged damages on behalf of the class for lost profits, annoyance and inconvenience, and loss of use, as well as punitive damages for willful, reckless and wanton behavior in not addressing the risk of pipe failure and a large outage.

In October 2017, WVAWC filed with the court a motion seeking to dismiss all of the plaintiffs' counts alleging statutory and common law tort claims. Furthermore, WVAWC asserted that the Public Service Commission of West Virginia, and not the court, has primary jurisdiction over allegations involving violations of the applicable tariff, the public utility code and related rules. On May 30, 2018, the court, at a hearing, denied WVAWC's motion to apply the primary jurisdiction doctrine, and on October 11, 2018, the court issued a written order to that effect. The court has not yet issued a written order on WVAWC's motion to dismiss plaintiffs' tort claims. The court has requested the parties submit a scheduling order with a trial date of August 26, 2019, and WVAWC has sought to prevent further discovery while its motion to dismiss is pending.

The Company and WVAWC believe that WVAWC has valid, meritorious defenses to the claims raised in this class action complaint. WVAWC is vigorously defending itself against these allegations. Given the current stage of this proceeding, the Company cannot reasonably estimate the amount of any reasonably possible losses or a range of such losses related to this proceeding.

Note 17: Earnings per Common Share

The following table provides a reconciliation of the numerator and denominator for basic and diluted earnings per share (“EPS”) calculations for the years ended December 31 :

	2018	2017	2016
Numerator:			
Net income attributable to common shareholders	\$ 567	\$ 426	\$ 468
Denominator:			
Weighted average common shares outstanding—Basic	180	178	178
Effect of dilutive common stock equivalents	—	1	1
Weighted average common shares outstanding—Diluted	180	179	179

The effect of dilutive common stock equivalents is related to outstanding stock options, RSUs and PSUs granted under the 2007 and 2017 Omnibus Equity Compensation Plans, as well as estimated shares to be purchased under the Company’s 2017 Nonqualified Employee Stock Purchase Plan. Less than one million share-based awards were excluded from the computation of diluted EPS for the years ended December 31, 2018 , 2017 and 2016 , because their effect would have been anti-dilutive under the treasury stock method.

Equity Forward Transaction and Common Stock Issuance

See Note 4—Acquisitions and Divestitures for information regarding the forward sale agreements entered into by the Company on April 11, 2018 , and the physical settlement of these agreements on June 7, 2018 .

Note 18: Fair Value of Financial Information

The following methods and assumptions were used by the Company in estimating its fair value disclosures for financial instruments:

Current assets and current liabilities—The carrying amounts reported on the Consolidated Balance Sheets for current assets and current liabilities, including revolving credit debt, due to the short-term maturities and variable interest rates, approximate their fair values.

Preferred stock with mandatory redemption requirements and long-term debt—The fair values of preferred stock with mandatory redemption requirements and long-term debt are categorized within the fair value hierarchy based on the inputs that are used to value each instrument. The fair value of long-term debt classified as Level 1 is calculated using quoted prices in active markets. Level 2 instruments are valued using observable inputs and Level 3 instruments are valued using observable and unobservable inputs. The fair values of instruments classified as Level 2 and Level 3 are determined by a valuation model that is based on a conventional discounted cash flow methodology and utilizes assumptions of current market rates. As a majority of the Company’s debt is not traded in active markets, the Company calculated a base yield curve using a risk-free rate (a U.S. Treasury securities yield curve) plus a credit spread that is based on the following two factors: an average of the Company’s own publicly-traded debt securities and the current market rates for U.S. Utility A debt securities. The Company used these yield curve assumptions to derive a base yield for the Level 2 and Level 3 securities. Additionally, the Company adjusted the base yield for specific features of the debt securities including call features, coupon tax treatment and collateral for the Level 3 instruments.

The following tables provide the carrying amounts, including fair value adjustments previously recognized in acquisition purchase accounting, and a fair value adjustment related to interest rate swap fair value hedges (classified as Level 2 in the fair value hierarchy), and the fair values of the financial instruments:

	Carrying Amount	December 31, 2018			
		Level 1	Level 2	Level 3	Total
Preferred stock with mandatory redemption requirements	\$ 8	\$ —	\$ —	\$ 9	\$ 9
Long-term debt (excluding capital lease obligations)	7,638	5,760	433	1,728	7,921

	Carrying Amount	December 31, 2017			
		Level 1	Level 2	Level 3	Total
Preferred stock with mandatory redemption requirements	\$ 10	\$ —	\$ —	\$ 14	\$ 14
Long-term debt (excluding capital lease obligations)	6,809	4,846	976	1,821	7,643

Fair Value Measurements

To increase consistency and comparability in fair value measurements, GAAP establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels as follows:

Level 1—Quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access as of the reporting date. Financial assets and liabilities utilizing Level 1 inputs include active exchange-traded equity securities, exchange-based derivatives, mutual funds and money market funds.

Level 2—Inputs other than quoted prices included within Level 1 that are directly observable for the asset or liability or indirectly observable through corroboration with observable market data. Financial assets and liabilities utilizing Level 2 inputs include fixed income securities, non-exchange-based derivatives, commingled investment funds not subject to purchase and sale restrictions and fair-value hedges.

Level 3—Unobservable inputs, such as internally-developed pricing models for the asset or liability due to little or no market activity for the asset or liability. Financial assets and liabilities utilizing Level 3 inputs include infrequently-traded non-exchange-based derivatives and commingled investment funds subject to purchase and sale restrictions.

Recurring Fair Value Measurements

The following tables provide assets and liabilities measured and recorded at fair value on a recurring basis and their level within the fair value hierarchy as of December 31, 2018 and 2017, respectively:

	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Restricted funds	\$ 29	\$ —	\$ —	\$ 29
Rabbi trust investments	15	—	—	15
Deposits	3	—	—	3
Other investments	3	—	—	3
Total assets	50	—	—	50
Liabilities:				
Deferred compensation obligations	17	—	—	17
Mark-to-market derivative liabilities	—	14	—	14
Total liabilities	17	14	—	31
Total assets (liabilities)	\$ 33	\$ (14)	\$ —	\$ 19

	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Assets:				
Restricted funds	\$ 28	\$ —	\$ —	\$ 28
Rabbi trust investments	15	—	—	15
Deposits	4	—	—	4
Other investments	3	—	—	3
Total assets	50	—	—	50
Liabilities:				
Deferred compensation obligations	17	—	—	17
Mark-to-market derivative liabilities	—	3	—	3
Total liabilities	17	3	—	20
Total assets (liabilities)	\$ 33	\$ (3)	\$ —	\$ 30

Restricted funds—The Company’s restricted funds primarily represent proceeds received from financings for the construction and capital improvement of facilities and from customers for future services under operations, maintenance and repair projects. Long-term restricted funds of \$1 million and \$1 million were included in Other long-term assets on the Consolidated Balance Sheets as of December 31, 2018 and 2017 , respectively.

Rabbi trust investments—The Company’s rabbi trust investments consist of equity and index funds from which supplemental executive retirement plan benefits and deferred compensation obligations can be paid. The Company includes these assets in Other long-term assets on the Consolidated Balance Sheets.

Deposits—Deposits include escrow funds and certain other deposits held in trust. The Company includes cash deposits in Other current assets on the Consolidated Balance Sheets.

Deferred compensation obligations—The Company’s deferred compensation plans allow participants to defer certain cash compensation into notional investment accounts. The Company includes such plans in Other long-term liabilities on the Consolidated Balance Sheets. The value of the Company’s deferred compensation obligations is based on the market value of the participants’ notional investment accounts. The notional investments are comprised primarily of mutual funds, which are based on observable market prices.

Mark-to-market derivative assets and liabilities—The Company utilizes fixed-to-floating interest rate swaps, typically designated as fair value hedges, to achieve a targeted level of variable-rate debt as a percentage of total debt. The Company also employs derivative financial instruments in the form of variable-to-fixed interest rate swaps and forward starting interest rate swaps, classified as economic hedges and cash flow hedges, respectively, in order to fix the interest cost on existing or forecasted debt. The Company uses a calculation of future cash inflows and estimated future outflows, which are discounted, to determine the current fair value. Additional inputs to the present value calculation include the contract terms, counterparty credit risk, interest rates and market volatility.

Other investments—Other investments primarily represent money market funds used for active employee benefits. The Company includes other investments in Other current assets on the Consolidated Balance Sheets.

Nonrecurring Fair Value Measurements

The following table provides assets measured and recorded at fair value on a nonrecurring basis and their level within the fair value hierarchy as of December 31, 2018 :

	At Fair Value as of December 31, 2018				2018 Impairment Charge
	Level 1	Level 2	Level 3	Total	
Assets:					
Keystone goodwill (a)	\$ —	\$ —	\$ 38	\$ 38	\$ 53
Keystone intangible asset (a)	—	—	3	3	4
Total	\$ —	\$ —	\$ 41	\$ 41	\$ 57

(a) As of December 31, 2017, Keystone’s goodwill balance was \$91 million and its intangible asset balance was \$8 million . Subsequent to the impairment charge recorded in the third quarter of 2018, Keystone’s goodwill and intangible asset balances were \$38 million and \$3 million , respectively, as of December 31, 2018.

The Company's estimation of the fair value of the Keystone reporting unit as part of evaluating its goodwill and intangible asset for impairment represents a Level 3 fair value measurement, due to the use of internal projections and unobservable measurement inputs. See Note 8—Goodwill and Other Intangible Assets for further discussion.

Note 19: Leases

The Company has entered into operating leases involving certain real property, vehicles, and equipment. Rental expenses under operating leases were \$35 million, \$29 million and \$24 million for the years ended December 31, 2018, 2017 and 2016, respectively. The operating leases for real property, vehicles, and equipment will expire over the next 40 years, seven years and five years, respectively. Certain operating leases have renewal options ranging from one to 60 years.

The following table provides the minimum annual future rental commitment under operating leases that have initial or remaining non-cancelable lease terms over the next five years and thereafter:

	Amount
2019	\$ 17
2020	15
2021	12
2022	11
2023	6
Thereafter	80

The Company has a series of agreements with various public entities (the "Partners") to establish certain joint ventures, commonly referred to as "public-private partnerships." Under the public-private partnerships, the Company constructed utility plant, financed by the Company, and the Partners constructed utility plant (connected to the Company's property), financed by the Partners. The Company agreed to transfer and convey some of its real and personal property to the Partners in exchange for an equal principal amount of Industrial Development Bonds ("IDBs"), issued by the Partners under a state Industrial Development Bond and Commercial Development Act. The Company leased back the total facilities, including portions funded by both the Company and the Partners, under leases for a period of 40 years.

The leases related to the portion of the facilities funded by the Company have required payments from the Company to the Partners that approximate the payments required by the terms of the IDBs from the Partners to the Company (as the holder of the IDBs). As the ownership of the portion of the facilities constructed by the Company will revert back to the Company at the end of the lease, the Company has recorded these as capital leases. The lease obligation and the receivable for the principal amount of the IDBs are presented by the Company on a net basis. The carrying value of the facilities funded by the Company recognized as a capital lease asset was \$147 million and \$150 million as of December 31, 2018 and 2017, respectively, which is presented in Property, plant and equipment on the Consolidated Balance Sheets. The future payments under the lease obligations are equal to and offset by the payments receivable under the IDBs.

As of December 31, 2018, the minimum annual future rental commitment under the operating leases for the portion of the facilities funded by the Partners that have initial or remaining non-cancelable lease terms in excess of one year included in the preceding minimum annual rental commitments are \$4 million in 2019 through 2023, and \$59 million thereafter.

Note 20: Segment Information

The Company's operating segments are comprised of the revenue-generating components of its businesses for which separate financial information is internally produced and regularly used by management to make operating decisions and assess performance. The Company operates its businesses primarily through one reportable segment, the Regulated Businesses segment. The Company also operates market-based businesses that provide a broad range of related and complementary water and wastewater services within non-reportable operating segments, collectively referred to as the Market-Based Businesses.

The Regulated Businesses segment is the largest component of the Company's business and includes 20 subsidiaries that provide water and wastewater services to customers in 16 states.

The Company's primary Market-Based Businesses include the Homeowner Services Group, which provides warranty protection programs to residential and smaller commercial customers; the Military Services Group, which provides water and wastewater services to the U.S. government on military installations; and Keystone, which provides water transfer services for shale natural gas exploration and production companies.

The accounting policies of the segments are the same as those described in Note 2—Significant Accounting Policies. The Regulated Businesses segment and Market-Based Businesses include intercompany costs that are allocated by American Water Works Service Company, Inc. and intercompany interest that is charged by AWCC, both of which are eliminated to reconcile to the Consolidated Statements of Operations. Inter-segment revenues include the sale of water from a regulated subsidiary to market-based subsidiaries, leased office space, and furniture and equipment provided by the market-based subsidiaries to regulated subsidiaries. “Other” includes corporate costs that are not allocated to the Company’s operating segments, eliminations of inter-segment transactions, fair value adjustments, and associated income and deductions related to the acquisitions that have not been allocated to the operating segments for evaluation of performance and allocation of resource purposes. The adjustments related to the acquisitions are reported in Other as they are excluded from segment performance measures evaluated by management.

The following tables provide summarized segment information as of and for the years ended December 31 :

	2018			
	Regulated Businesses	Market-Based Businesses	Other	Consolidated
Operating revenues	\$ 2,984	\$ 476	\$ (20)	\$ 3,440
Depreciation and amortization	500	29	16	545
Impairment charge	—	57	—	57
Total operating expenses, net	1,912	441	(15)	2,338
Interest, net	(280)	4	(74)	(350)
Income before income taxes	826	41	(80)	787
Provision for income taxes	224	11	(13)	222
Net income attributable to common shareholders	602	32	(67)	567
Total assets	18,680	999	1,544	21,223
Capital expenditures	1,477	13	96	1,586

	2017			
	Regulated Businesses	Market-Based Businesses	Other	Consolidated
Operating revenues	\$ 2,958	\$ 422	\$ (23)	\$ 3,357
Depreciation and amortization	462	18	12	492
Total operating expenses, net	1,766	360	(22)	2,104
Interest, net	(268)	3	(77)	(342)
Income before income taxes	925	66	(79)	912
Provision for income taxes	366	28	92	486
Net income attributable to common shareholders	559	38	(171)	426
Total assets	17,602	599	1,281	19,482
Capital expenditures	1,316	18	100	1,434

	2016			
	Regulated Businesses	Market-Based Businesses	Other	Consolidated
Operating revenues	\$ 2,871	\$ 451	\$ (20)	\$ 3,302
Depreciation and amortization	440	15	15	470
Total operating expenses, net	1,840	391	(14)	2,217
Interest, net	(256)	2	(71)	(325)
Income before income taxes	775	65	(70)	770
Provision for income taxes	303	26	(27)	302
Net income attributable to common shareholders	472	39	(43)	468
Total assets	16,405	637	1,440	18,482
Capital expenditures	1,274	18	19	1,311

Note 21: Unaudited Quarterly Data

The following tables provide supplemental, unaudited, consolidated, quarterly financial data for each of the four quarters in the years ended December 31, 2018 and 2017, respectively. The operating results for any quarter are not indicative of results that may be expected for a full year or any future periods.

	2018			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Operating revenues	\$ 761	\$ 853	\$ 976	\$ 850
Operating income	217	302	335	248
Net income attributable to common shareholders	106	162	187	112
Basic earnings per share:				
Net income attributable to common shareholders	\$ 0.60	\$ 0.90	\$ 1.04	\$ 0.62
Diluted earnings per share: (a)				
Net income attributable to common shareholders	0.59	0.91	1.04	0.62

(a) Amounts may not sum due to rounding.

	2017			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Operating revenues	\$ 756	\$ 844	\$ 936	\$ 821
Operating income	230	310	432	281
Net income attributable to common shareholders	93	131	203	(1)
Basic earnings per share:				
Net income attributable to common shareholders	\$ 0.52	\$ 0.74	\$ 1.14	\$ (0.01)
Diluted earnings per share:				
Net income attributable to common shareholders	0.52	0.73	1.13	—

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

The Company, under the supervision and with the participation of its management, including the Chief Executive Officer and the Chief Financial Officer, conducted an evaluation of the effectiveness of the design and operation of the Company's disclosure controls and procedures as such term is defined in Rule 13a-15(e) and Rule 15d-15(e) under the Exchange Act as of the end of the period covered by this report.

Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2018, our disclosure controls and procedures were effective at a reasonable level of assurance. Our disclosure controls and procedures are designed to provide reasonable assurance that the information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) of the Exchange Act. Our internal control over financial reporting is a process designed by or under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of our assets, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors, and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management, including our Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting, as of December 31, 2018, using the criteria described in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Management has excluded Pivotal from our assessment of internal control over financial reporting as of December 31, 2018 since it was acquired by the Company in a business combination in June 2018. Pivotal is a wholly owned subsidiary whose total assets and total revenues excluded from our assessment of internal control over financial reporting represent less than 1% and approximately 2%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Based on our evaluation under the framework in *Internal Control—Integrated Framework (2013)*, our management concluded that our internal control over financial reporting was effective as of December 31, 2018.

The effectiveness of our internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report appearing in Item 8—Financial Statements and Supplementary Data of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

On June 4, 2018, the Company completed the acquisition of Pivotal. See Note 4—Acquisitions and Divestitures in the Notes to Consolidated Financial Statements for additional information. We began to integrate Pivotal into our internal control over financial reporting structure and expect to complete this integration in 2019. We concluded that there have been no changes in internal control over financial reporting that occurred during the three months ended December 31, 2018, other than changes resulting from the acquisition of Pivotal, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. As permitted by the SEC, management has elected to exclude Pivotal from its assessment of the effectiveness of its internal controls over financial reporting as of December 31, 2018.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item and not given below or in Item 1—Business —Executive Officers of this Form 10-K, is incorporated by reference from the Company’s Proxy Statement for the 2019 Annual Meeting of Shareholders, to be filed with the SEC within 120 days following the end of the fiscal year covered by this report, under the captions entitled “Board of Directors and Corporate Governance,” “Proposal 1—Election of Directors” and “Certain Beneficial Ownership Matters—Section 16(a) Beneficial Ownership Reporting Compliance.”

We have adopted a Code of Ethics, which applies to directors, officers and employees. The full text of the Code of Ethics is publicly available on our website at <https://amwater.com>. We intend to post on our website any amendments to our Code of Ethics and any waivers of such provisions granted to certain principal officers.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this item is incorporated by reference in the Company’s Proxy Statement for the 2019 Annual Meeting of Shareholders, under the captions entitled “Proposal 1—Election of Directors—Director Compensation Table,” “Compensation Discussion and Analysis,” “Executive Compensation,” “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report.”

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information required by this item setting forth the security ownership of certain beneficial owners and management is incorporated by reference in the Company’s Proxy Statement for the 2019 Annual Meeting of Shareholders, under the captions entitled “Certain Beneficial Ownership Matters—Security Ownership of Management,” “Certain Beneficial Ownership Matters—Security Ownership of Certain Beneficial Owners” and “Equity Compensation Plan Information.”

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this item is incorporated by reference in the Company’s Proxy Statement for the 2019 Annual Meeting of Shareholders, under the caption entitled “Board of Directors and Corporate Governance—Board Review of Related Person Transactions” and “Proposal 1—Election of Directors—Director Independence.”

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information required by this item is incorporated by reference in the Company’s Proxy Statement for the 2019 Annual Meeting of Shareholders, under the caption entitled “Proposal 3—Ratification of Appointment of Independent Registered Public Accounting Firm—Fees Paid to Independent Registered Public Accounting Firm” and “Proposal 3—Ratification of Appointment of Independent Registered Public Accounting Firm—Pre-Approval of Services Provided by Independent Registered Public Accounting Firm.”

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

- (a) The following documents have been filed as a part of this Form 10-K:
1. The financial statements listed in the “Index to Consolidated Financial Statements” contained in Item 8—Financial Statements and Supplementary Data of this Form 10-K are hereby incorporated by reference in response to this Item 15(a).
 2. Financial statement schedules have been omitted since they are either not required or are not applicable as the information is otherwise included in the financial statements or notes thereto.
 3. Exhibits. The list of documents contained in “Exhibit Index” in Part IV of this Form 10-K is incorporated by reference in response to this Item 15(a). The warranties, representations and covenants contained in any of the agreements included or incorporated by reference herein or which appear as exhibits hereto should not be relied upon by buyers, sellers or holders of the Company’s or its subsidiaries’ securities and are not intended as warranties, representations or covenants to any individual or entity except as specifically set forth in such agreement.

The responses to Items 15(b) and (c) of Form 10-K are included above in response to Item 15(a).

ITEM 16. FORM 10-K SUMMARY

None.

EXHIBIT INDEX

Exhibit Number	Exhibit Description
2.1#	Stock Purchase Agreement, dated April 11, 2018, by and among American Water Enterprises, LLC and the other parties thereto (incorporated by reference to Exhibit 2.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed April 11, 2018).
3.1	Restated Certificate of Incorporation of American Water Works Company, Inc. (incorporated by reference to Exhibit 3.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed November 6, 2008).
3.2	Amended and Restated Bylaws of American Water Works Company, Inc. (incorporated by reference to Exhibit 3.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 5, 2015).
4.1	Indenture, dated as of October 22, 2007, between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.4 to American Water Capital Corp.'s Registration Statement on Form S-4, File No. 333-148284, and American Water Works Company, Inc.'s Registration Statement on Form S-4, File No. 333-148284-01, filed December 21, 2007).
4.2	Indenture, dated as of December 4, 2009, between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed December 3, 2010).
4.3	Officers' Certificate, dated December 15, 2010, establishing the 6.00% Senior Monthly Notes due 2040 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed December 15, 2010).
4.4	Officers' Certificate, dated December 17, 2012, establishing the 4.300% Senior Notes due 2042 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed December 17, 2012).
4.5	Officers' Certificate, dated November 20, 2013, establishing the 3.850% Senior Notes due 2024 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed November 20, 2013).
4.6	Officers' Certificate, dated August 14, 2014, establishing the 3.400% Senior Notes due 2025 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 14, 2014).
4.7	Officers' Certificate, dated August 14, 2014, providing for a further issuance of the 4.300% Senior Notes due 2042 (incorporated by reference to Exhibit 4.3 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 14, 2014).
4.8	Officers' Certificate, dated August 13, 2015, establishing the 4.300% Senior Notes due 2045 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 13, 2015).
4.9	Officers' Certificate, dated August 13, 2015, providing for a further issuance of the 3.400% Senior Notes due 2025 (incorporated by reference to Exhibit 4.3 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 13, 2015).
4.10	Officers' Certificate, dated November 17, 2016, establishing the 3.000% Senior Notes due 2026 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed November 17, 2016).
4.11	Officers' Certificate, dated November 17, 2016, establishing the 4.000% Senior Notes due 2046 (incorporated by reference to Exhibit 4.2 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed November 17, 2016).
4.12	Officers' Certificate, dated August 10, 2017, establishing the 2.950% Senior Notes due 2027 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 10, 2017).
4.13	Officers' Certificate, dated August 10, 2017, establishing the 3.750% Senior Notes due 2047 (incorporated by reference to Exhibit 4.2 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 10, 2017).
4.14	Officer's Certificate, dated August 9, 2018, establishing the 3.750% Senior Notes due 2028 (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 9, 2018).
4.15	Officer's Certificate, dated August 9, 2018, establishing the 4.200% Senior Notes due 2048 (incorporated by reference to Exhibit 4.2 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 9, 2018).
4.16	Note Purchase Agreement, as amended, dated December 21, 2006, between American Water Capital Corp. and the purchasers party thereto (incorporated by reference to Exhibit 4.2 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007) with respect to the 5.77% Series D Senior Notes due December 21, 2021.
4.17	Note Purchase Agreement, dated May 15, 2008, between American Water Capital Corp. and the purchasers party thereto (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed May 19, 2008) with respect to the 6.55% Series H Senior Notes due May 15, 2023.
10.1	Second Amended and Restated Credit Agreement, dated as of March 21, 2018, by and among American Water Works Company, Inc., American Water Capital Corp., each of the Lenders party thereto, Wells Fargo Bank, National Association, as administrative agent, JPMorgan Chase Bank, N.A., as syndication agent, and Mizuho Bank, Ltd., PNC Bank, National Association, and U.S. Bank National Association, as co-documentation agents (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed on March 21, 2018).
10.2	Confirmation of Forward Sale Transaction, dated April 11, 2018, among American Water Works Company, Inc., JPMorgan Chase Bank, National Association, and J.P. Morgan Securities LLC, solely as agent (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed April 16, 2018).
10.3	Confirmation of Forward Sale Transaction, dated April 11, 2018, between American Water Works Company, Inc. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed April 16, 2018).
10.4	Support Agreement, dated June 22, 2000, together with First Amendment to Support Agreement, dated July 26, 2000, by and between American Water Works Company, Inc. and American Water Capital Corp. (incorporated by reference to Exhibit 10.3 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.5.1*	Amended and Restated Letter Agreement between Loyd Warnock and American Water Works Company, Inc., dated May 7, 2014 (incorporated by reference to Exhibit 10.4 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 25, 2016).
10.5.2*	Amendment, dated April 25, 2018, to Amended and Restated Letter Agreement between Loyd Warnock and American Water Works Company, Inc. (incorporated by reference to Exhibit 10.2.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 2, 2018).

Exhibit Number	Exhibit Description
10.6.1*	Letter Agreement, dated February 17, 2015, between Michael A. Sgro and American Water Works Company, Inc. (incorporated by reference to Exhibit 10.4 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 5, 2015).
10.6.2*	Amendment, dated December 6, 2018, to Letter Agreement between Michael A. Sgro and American Water Works Company, Inc. (filed herewith).
10.7*	Executive Employment Agreement, dated November 1, 2018, between Radhakrishnan Swaminathan and American Water Works Service Company, Inc. (filed herewith).
10.8*	Amended and Restated American Water Works Company, Inc. Deferred Compensation Plan, dated as of January 1, 2001 (incorporated by reference to Exhibit 10.9 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.9.1*	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as amended and restated, effective as of January 1, 2009 (incorporated by reference to Exhibit 10.37 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-155245, filed November 18, 2008).
10.9.2*	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as amended and restated, effective as of January 1, 2017 (filed herewith).
10.9.3*	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as amended and restated, effective as of June 1, 2018 (filed herewith).
10.9.4*	Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc., as amended and restated, effective as of January 1, 2009 (incorporated by reference to Exhibit 10.38 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-155245, filed November 18, 2008).
10.10*	Amended and Restated American Water Works Company, Inc. Executive Retirement Plan, dated as of March 1, 2007 (incorporated by reference to Exhibit 10.8 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.11.1*	American Water Works Company, Inc. Annual Incentive Plan (incorporated by reference to Appendix C to American Water Works Company, Inc.'s Definitive Proxy Statement, File No. 001-34028, filed March 27, 2015).
10.11.2*	Amendment 2016-1 to American Water Works Company, Inc. Annual Incentive Plan (now known as the Annual Performance Plan), effective January 1, 2016 (incorporated by reference to Exhibit 10.14.2 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 25, 2016).
10.12.1*	American Water Works Company, Inc. and its Designated Subsidiaries 2017 Nonqualified Employee Stock Purchase Plan (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Registration Statement on Form S-8, File No. 333-219682, filed August 4, 2017).
10.12.2*	First Amended and Restated American Water Works Company, Inc. and its Designated Subsidiaries 2017 Nonqualified Employee Stock Purchase Plan, adopted on December 7, 2017, effective as of August 5, 2018 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed August 9, 2018).
10.12.3*	Second Amended and Restated American Water Works Company, Inc. and its Designated Subsidiaries 2017 Nonqualified Employee Stock Purchase Plan, adopted on July 27, 2018, effective as of February 5, 2019 (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed October 31, 2018).
10.13.1*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan, as amended (incorporated by reference to Appendix B to American Water Works Company, Inc.'s Definitive Proxy Statement, File No. 001-34028, filed March 27, 2015).
10.13.2*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2013 Nonqualified Stock Option Grant Form for ML2 – L5 (incorporated by reference to Exhibit 10.13 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 7, 2013).
10.13.3*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2014 Nonqualified Stock Option Grant Form for ML2 – L5 (incorporated by reference to Exhibit 10.6 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 7, 2014).
10.13.4*	Amendment to the American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2014 Nonqualified Stock Option Grant Form for ML2 – L5 (incorporated by reference to Exhibit 10.6A to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 7, 2014).
10.13.5*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan May 2014 Nonqualified Stock Option Grant Form for Susan N. Story (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 6, 2014).
10.13.6*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2015 Nonqualified Stock Option Grant (incorporated by reference to Exhibit 10.13.10 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 25, 2016).
10.13.7*	Amendment to American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2015 Nonqualified Stock Option Grant (incorporated by reference to Exhibit 10.13.11 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 25, 2016).
10.13.8*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2015 Nonqualified Stock Option Grant (for certain executives) (incorporated by reference to Exhibit 10.13.12 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 25, 2016).
10.13.9*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2016 Nonqualified Stock Option Grant (incorporated by reference to Exhibit 10.1.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 4, 2016).
10.13.10*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2016 Nonqualified Stock Option Grant (for certain executives) (incorporated by reference to Exhibit 10.1.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 4, 2016).
10.13.11*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2016 Restricted Stock Unit Grant (incorporated by reference to Exhibit 10.2.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 4, 2016).
10.13.12*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2016 Restricted Stock Unit Grant (for certain executives) (incorporated by reference to Exhibit 10.2.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 4, 2016).
10.13.13*	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2017 Restricted Stock Unit Grant (incorporated by reference to Exhibit 10.1.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 3, 2017).

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Exhibit Number	Exhibit Description
10.13.43*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2018 Performance Stock Unit Grant Form A (for Loyd A. Warnock) (incorporated by reference to Exhibit 10.10 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 2, 2018).
10.13.44*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2018 Performance Stock Unit Grant Form B-1 (incorporated by reference to Exhibit 10.11 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 2, 2018).
10.13.45*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2018 Performance Stock Unit Grant Form B-2 (incorporated by reference to Exhibit 10.12 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 2, 2018).
10.13.46*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2018 Performance Stock Unit Grant Form B-3 (incorporated by reference to Exhibit 10.13 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 2, 2018).
10.13.47*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2018 Performance Stock Unit Grant Form B (for Loyd A. Warnock) (incorporated by reference to Exhibit 10.14 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed May 2, 2018).
10.13.48*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2017 Non-Employee Director Stock Unit Grant (incorporated by reference to Exhibit 10.9 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed May 12, 2017).
10.13.49*	American Water Works Company, Inc. 2017 Omnibus Equity Compensation Plan 2018 Non-Employee Director Stock Unit Grant (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 1, 2018).
10.14*	American Water Works Company, Inc. Executive Severance Policy, dated as of December 16, 2008 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed November 3, 2010).
21.1	Subsidiaries of American Water Works Company, Inc. (filed herewith).
23.1	Consent of PricewaterhouseCoopers LLP (filed herewith).
31.1	Certification of Susan N. Story, President and Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act (filed herewith).
31.2	Certification of Linda G. Sullivan, Executive Vice President and Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act (filed herewith).
32.1	Certification of Susan N. Story, President and Chief Executive Officer, pursuant to Section 906 of the Sarbanes-Oxley Act (furnished herewith).
32.2	Certification of Linda G. Sullivan, Executive Vice President and Chief Financial Officer, pursuant to Section 906 of the Sarbanes-Oxley Act (furnished herewith).
101	The following financial statements from American Water Works Company, Inc.'s Annual Report on Form 10-K for the period ended December 31, 2018, formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Operations; (iii) the Consolidated Statements of Comprehensive Income; (iv) the Consolidated Statements of Cash Flows; (v) the Consolidated Statements of Changes in Shareholders' Equity; and (vi) the Notes to Consolidated Financial Statements (filed herewith).

* Denotes a management contract or compensatory plan or arrangement.

Certain schedules and exhibits to this agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company will furnish the omitted schedules and exhibits to the SEC upon request.

Instruments defining the rights of holders of certain issues of long-term debt of the Company and certain of its consolidated subsidiaries have not been filed as exhibits to this report because the authorized principal amount of any one of such issues does not exceed 10% of the Company's consolidated total assets. The Company agrees to furnish a copy of each such instrument to the SEC upon request.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 19th day of February, 2019 .

AMERICAN WATER WORKS COMPANY, INC.

B Y : /s/ SUSAN N. STORY
Susan N. Story
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed on the 19th day of February, 2019, by the following persons in the capacities indicated.

/s/ SUSAN N. STORY

Susan N. Story
President and Chief Executive Officer
(Principal Executive Officer and Director)

/s/ JEFFREY N. EDWARDS

Jeffrey N. Edwards
(Director)

/s/ LINDA G. SULLIVAN

Linda G. Sullivan
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

/s/ MARTHA CLARK GOSS

Martha Clark Goss
(Director)

/s/ MELISSA K. WIKLE

Melissa K. Wikle
Vice President and Controller
(Principal Accounting Officer)

/s/ VERONICA M. HAGEN

Veronica M. Hagen
(Director)

/s/ JULIA L. JOHNSON

Julia L. Johnson
(Director)

/s/ KARL F. KURZ

Karl F. Kurz
(Director)

/s/ GEORGE MacKENZIE

George MacKenzie
(Director)

/s/ JAMES G. STAVRIDIS

James G. Stavridis
(Director)

EXECUTIVE EMPLOYMENT AGREEMENT

THIS EXECUTIVE EMPLOYMENT AGREEMENT (this “ **Agreement** ”) is made as of November 1, 2018 (the “ **Effective Date** ”) between American Water Works Service Company, Inc. (“ **Company** ”) and Radhakrishnan Swaminathan, (“ **Executive** ”).

BACKGROUND

WHEREAS, Executive and the Company desire to enter into an employment agreement embodying the terms by which Executive will be employed by the Company and Executive desires to accept such employment and enter into such agreement;

NOW , THEREFORE , intending to be legally bound, the Company agrees to employ Executive, and Executive hereby agrees to be employed by the Company, upon the following terms and conditions:

1. **Employment Term**. Executive commenced employment on May 4, 2016 with the Company as its Chief Technology Officer. Beginning on November 1, 2018, Executive will serve as the Company’s Executive Vice President and Chief Customer, Strategy & Technology Officer (“ **CCSTO** ”). Executive hereby accepts this promotion, subject to all of the terms and conditions of this Agreement. This Agreement shall continue in full force and effect throughout Executive’s employment unless the Parties mutually agree to amend or modify the terms of Executive’s employment through written agreement. The term of this Agreement shall be the period from the Effective Date through the effective date of termination of Executive’s employment by either party.

2. **Employment by the Company**

2.1. **At-Will Employment**. Executive’s employment relationship with the Company is, and shall at all times remain, at-will. This means that either Executive or the Company may terminate the employment relationship at any time, for any reason or for no reason, with or without Cause (as defined below) or advance notice, subject to Section 4 below.

2.2. **Position and Duties**. As CCSTO, Executive shall have such duties and authority as shall be determined from time to time by the Chief Executive Officer of the Company (“ **CEO** ”). Executive shall devote Executive’s full business time, energy, skill and best efforts to the Company’s business and affairs and to the promotion of the Company’s interests. Executive shall not, during Executive’s employment by the Company, without the prior written approval of the CEO or Chief Operating Officer of the Company (“ **COO** ”), be employed by or otherwise engaged in any other business activity requiring any of Executive’s time, provided that Executive may, to the extent not otherwise prohibited by this Agreement, devote such amount of time as does not interfere or compete with the performance of Executive’s duties under this Agreement to any one or more of the following activities: (i) investing Executive’s personal assets in such manner as will not require services to be rendered by Executive in the operation of the affairs of the companies in which investments are made; or (ii) engaging in charitable activities, including serving on the boards of directors of charitable organizations; or (iii) serving on other boards of nonprofit or nonpublic companies, subject to the prior approval of the CEO.

2.3. **Location of Employment**. Executive’s principal place of employment shall be the Company’s offices located in Camden, New Jersey. Executive understands that Executive’s duties may require periodic business travel.

2.4. **Policies and Procedures**. The employment relationship between the parties shall be governed by this Agreement and by the written policies and practices established by the Company and provided to Executive in writing. In the event that the terms of this Agreement differ from or are in conflict with the Company’s policies or practices, this Agreement shall govern and control.

2.5. **Adverse Interests**. During Executive’s employment, Executive agrees not to acquire, assume or participate in, directly or indirectly, any position, investment or interest known by Executive to be adverse or antagonistic to the Company, its business, or prospects, financial or otherwise, or in any

company, person, or entity that is primarily in the water and/or wastewater treatment space without advance approval by the Company. Ownership by Executive in professionally managed funds over which Executive does not have control or discretion in investment decisions, or, an investment of less than one percent (1%) of the outstanding shares of capital stock of any corporation with one or more classes of its capital stock listed on a national securities exchange or publicly traded on a national securities exchange or in the over-the-counter market shall not constitute a breach of this Section, provided that Executive complies at all times with the Company's securities purchase and sale pre-clearance procedures.

3. **Compensation, Benefits and Expenses**.

3.1. **Base Salary**. Beginning November 1, 2018, the Company shall pay to Executive an annual base salary of \$450,000.00 for all services to be rendered by Executive hereunder. The annual salary of Executive in effect from time to time is hereinafter referred to as the "**Base Salary**." The Base Salary shall be payable in accordance with the Company's normal payroll practices and the Company shall deduct or cause to be deducted from the Base Salary, or any other payment made hereunder, all taxes and amounts required by law to be withheld. The Base Salary shall be prorated for any partial year of employment on the basis of a 365-day year. The Base Salary shall be subject to periodic review and may be adjusted from time to time in the discretion of the Executive Development and Compensation Committee.

3.2. **Annual Performance Plan ("APP")**. For each calendar year during which Executive is employed by the Company, Executive will be eligible to earn an annual discretionary cash bonus award ("**APP**"). Executive's APP award is targeted at 75% of Executive's Base Salary. Except as otherwise set forth in Section 4.2, in order to earn and receive APP, Executive must remain employed by the Company through and including the date on which APP is paid. Executive's 2018 APP, if any, will be prorated to as follows: the target amount will be 50% of the Base Salary paid to Executive for the period from January 1, 2018 to October 31, plus 75% of the Base Salary paid to Executive for the period from November 1, 2018 to December 31, 2018.

3.3. **Retirement Plans, Medical, Disability and Life Insurance**. Executive shall be entitled to participate in all savings and retirement plans, policies and programs, if any, made available by the Company to Executives generally, as amended from time to time at the discretion of the Company. During Executive's employment with the Company, Executive shall be entitled to the benefits of such group medical, travel and accident, short and long-term disability and term life insurance, if any, as the Company may reasonably determine from time to time. Nothing in this Agreement or otherwise shall prevent the Company from amending or terminating any retirement, welfare or other employee benefit plans, programs, policies or perquisites from time to time as the Company deems appropriate.

3.4. **Long-Term Performance Plan**. Executive shall be eligible to participate in the Company's Long-Term Performance Plan ("**LTPP**"). The terms of the LTPP awards, if and when granted by the Executive Development and Compensation Committee of the Company's Board of Directors (the "**Committee**"), shall be as set forth and governed by the Company's 2017 Omnibus Equity Compensation Plan (the "**Omnibus Plan**"), the LTPP plan documents and applicable award documents or agreements, and the Company shall cause the LTPP awards to be considered for approval by the Committee to include terms and conditions consistent with those described in this Agreement. Subject in each case to approval and grant by the Committee, the LTPP grants will be apportioned as follows: 30% Restricted Stock Units, 35% Performance Stock Units based on relative Total Shareholder Return and 35% Performance Stock Units based on compounded adjusted Earnings Per Share growth, and Executive will be eligible to receive grants of equity-based awards under the LTPP as follows, subject in all respects to the terms of the Omnibus Plan and applicable award documents or agreements:

Plan Year	Aggregate Value of Equity Awards (LTPP)	Vesting Date
2019	125 % of base salary	1/3rd annually on January 31, 2020, 2021 and 2022
2020	125 % of base salary	1/3rd annually on January 31, 2021, 2022 and 2023
2021	125 % of base salary	1/3 on January 31, 2022 1/3 on January 31, 2023 1/3 on March 31, 2023
2022	125 % of base salary	1/3 on January 31, 2023 2/3 on March 31, 2023
2023	125 % of base salary	All vest on March 31, 2023

3.5. Cash Retention Award. Executive will receive a cash retention award bonus as follows:

\$100,000.00 if actively employed on September 1, 2020

\$100,000.00 if actively employed on September 1, 2022

The Retention Bonus shall be payable on the first payroll cycle immediately following the above-referenced dates in accordance with the Company's normal payroll practices and the Company shall deduct or cause to be deducted from the Retention Bonus, all taxes and amounts required by law to be withheld.

3.6. Reimbursement of Expenses. Executive shall be reimbursed for all reasonable and documented out-of-pocket expenses paid to third parties incurred by Executive in connection with the performance of Executive's duties hereunder in accordance with Company policies. Reimbursement will be made as soon as practicable following receipt from Executive of sufficient documentation supporting said expenses.

3.7. Paid Time Off. Executive shall be entitled to paid time off and other leave in accordance with the Company's policies and practices with respect to similarly situated employees.

3.8. Indemnification. The Company agrees to defend, hold harmless, and indemnify Executive for any and all claims arising from and/or in any way related to Executive's employment with the Company, including but not limited to reasonable attorney's fees, costs and damages and other related litigation expenses, for any and all claims arising out of any lawsuits, charges of discrimination, or wage claims (the "**Cases**"). To the extent Executive was a covered insured by any Company insurance policy, nothing herein negates such coverage or indemnity provided by such policy except Executive's refusal to cooperate. The Company's duty to defend, indemnify, and hold Executive harmless shall not apply if Executive fails to cooperate in the investigation or defense of the Cases or any other proceedings in which Executive has been identified as a material witness. To the extent that it is necessary for Executive to retain counsel other than the Company's counsel with respect to any matter, counsel shall be selected and paid by the Company subject to approval by Executive, which approval shall not be withheld unreasonably.

4. Termination of Employment

4.1. Termination of Employment. Executive's employment shall be terminated upon the earliest of the following:

(i) Executive may voluntarily terminate employment with the Company at any time at the sole discretion of Executive upon thirty (30) days' prior written notice to the Company. The Company may decide to accept Executive's resignation immediately, and pay Executive thirty (30) days' Base Salary in lieu of notice.

(ii) The Company may terminate Executive's employment without Cause (as defined below) upon thirty (30) days' written notice to Executive (or pay Executive thirty (30) days' Base Salary in lieu of notice) in addition to any severance provided for in Section 4.2.

(iii) Executive's employment may, upon written notice to Executive, be terminated immediately by the Company at any time for Cause (as defined below).

(iv) This Agreement shall terminate automatically upon Executive's death.

(v) Executive may terminate employment with the Company for Good Reason (as defined below) upon the expiration of 30 days after Executive has provided prior written notice to the Company, unless the Company has remedied the event giving rise to such termination within such 30 days.

(vi) The Company may terminate this Agreement other than for Cause, death or disability or voluntary termination for Good Reason following a Change of Control (each as defined below).

(vii) By mutual written consent of the Company and Executive.

4.2. Benefits Payable Upon Termination.

(i) Following the termination of Executive's employment with the Company pursuant to any manner described in Section 4.1, the Company shall pay to Executive (or, in the event of Executive's death, Executive's surviving spouse, if any, or, if none, Executive's estate) (a) any Base Salary earned, but unpaid, for services rendered to the Company on or prior to the date of termination; and (b) any unreimbursed expenses reimbursable to Executive pursuant to Section 3.6 hereof for expenses incurred on or prior to the date of termination.

(ii) Provided that Executive signs (and does not revoke) a general release in favor of the Company in a form determined by the Company, and provided that Executive does not violate Executive's obligations under this Agreement, including without limitation Sections 5, or the Intellectual Property Agreement, dated September 20, 2018, and Confidentiality Agreement, dated September 20, 2018, in addition to any payments due to Executive pursuant to Section 4.2 (i), in the event the Company terminates Executive's employment without Cause pursuant to Section 4.1(ii), or the Executive terminates his employment for Good Reason pursuant to Section 4.1(v), the Company shall pay or provide to Executive (a) Base Salary continuation for the duration of the Noncompetition Period (as defined in Section 5.1 below, but without regard to any extension of such period pursuant to Section 5.1(iii)) less applicable taxes and withholding, in accordance with the Company's usual payroll practices; (b) if termination of employment occurs after July 1 in a calendar year, a pro-rata APP award (based on number of full calendar months worked during the calendar year in which termination occurs), based on the Company's financial and departmental performance as set forth in the Company's APP plan document along with the Company's assessment of Executive's performance for the year in which termination occurs, which APP award shall be paid at the time APP awards are paid to other employees of the Company; (c) if Executive elects coverage under COBRA, reimbursement for continuation of Executive's COBRA coverage to the extent the cost of such coverage exceeds the cost to Executive had Executive remained employed, for four months or, if earlier, until Executive becomes eligible for coverage under a subsequent employer's group health plan and (d) any LTTP grants issued to Executive pursuant to this Agreement will vest 90 days after the termination of employment.

(iii) Provided that Executive (or Executive's estate) signs and does not revoke a general release in favor of the Company in a form reasonably acceptable to the Company, and provided that Executive does not violate Executive's obligations under this Agreement, including without limitation Sections 5 below, the Intellectual Property Agreement, dated September 20, 2018, and the Confidentiality Agreement, dated September 20, 2018, in addition to any payments due to Executive pursuant to Section 4.2 (i), in the event that Executive's employment terminates on or after July 1 of a calendar year due to Executive's death, the Company shall pay to Executive's estate a pro-rata APP award (based on number of full calendar months worked during the calendar year in which termination occurs), based on the Company's financial and departmental performance as set forth in the Company's APP plan document along with the Company's

assessment of Executive's performance, for the year in which termination occurs. The pro-rata APP award shall be paid at the time APP awards are paid to other employees of the Company.

(iv) Provided that Executive signs (and does not revoke) a general release in favor of the Company in a form determined by the Company, and provided that Executive does not violate Executive's obligations under this Agreement, including without limitation Sections 5, or the Intellectual Property Agreement, dated September 20, 2018, and Confidentiality Agreement, dated September 20, 2018, in addition to any payments due to Executive pursuant to Section 4.2 (i), in the event Executive's employment is involuntarily terminated within 12 months following a Change of Control, other than for Cause, death or disability, or voluntarily terminated by the Executive for Good Reason, pursuant to Section 4.1(vi), the Company shall pay or provide to Executive (a) Base Salary continuation for the duration of the Noncompetition Period (as defined in Section 5.1 below, but without regard to any extension of such period pursuant to Section 5.1(iii)) less applicable taxes and withholding, in accordance with the Company's usual payroll practices; (b) if termination of employment occurs after July 1 in a calendar year, a pro-rata APP award (based on number of full calendar months worked during the calendar year in which termination occurs), based on the Company's financial and departmental performance as set forth in the Company's APP plan document along with the Company's assessment of Executive's performance for the year in which termination occurs, which APP award shall be paid at the time APP awards are paid to other employees of the Company; and (c) if Executive elects coverage under COBRA, reimbursement for continuation of Executive's COBRA coverage to the extent the cost of such coverage exceeds the cost to Executive had Executive remained employed, for four months or, if earlier, until Executive becomes eligible for coverage under a subsequent employer's group health plan. The vesting of LTTP grants previously issued to Executive shall continue to be governed by the change of control vesting provisions contained in the Omnibus Plan and/or in the grant document or agreement related thereto.

(v) It is intended that any benefits under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A of the Internal Revenue Code of 1986, as amended (" **Section 409A** "), provided under Treasury Regulations Sections 1.409A1(b)(4), and 1.409A1(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions, and to the extent not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A. For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulations Section 1.409A2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, if any, or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. A termination of employment shall not be deemed to have occurred for purposes of any provision of this Agreement providing for the payment of any amounts or benefits upon or following a termination of employment unless such termination is also a "separation from service" within the meaning of Section 409A and, for purposes of any such provision of this Agreement, references to a "resignation," "termination," "termination of employment" or like terms shall mean separation from service within the meaning of Section 409A. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of a separation from service to be a "specified employee" for purposes of Section 409A(a)(2)(B)(i), then to the extent delayed commencement of any portion of such payments or benefits is required in order to avoid a prohibited distribution under Section 409A(a)(2)(B)(i) and the related adverse taxation under Section 409A, such payments shall not be provided prior to the earliest of (a) the expiration of the six (6) month period measured from the date of separation from service, (b) the date of Executive's death or (c) such earlier date as permitted under Section 409A without the imposition of adverse taxation. Upon the first business day following the expiration of such period, all payments deferred pursuant to this paragraph shall be paid in a lump sum, and any remaining payments due shall be paid as otherwise provided herein. No interest shall be due on any amounts so deferred.

(vi) With regard to any provision herein that provides for reimbursement of costs and expenses or in-kind benefits, except as permitted by Section 409A, (a) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit, (b) the amount of expenses eligible for reimbursement, or in-kind benefits, provided during any taxable year shall not affect the expenses eligible for reimbursement, or in-kind benefits to be provided, in any other taxable year, and (c) such payments shall be made on or before the last day of Executive's taxable year following the taxable year in which the expense was incurred.

(vii) The Company makes no representation or warranty and shall have no liability to Executive or any other person if any compensation under this Agreement constitutes deferred compensation subject to Code Section 409A but does not satisfy an exemption from, or the conditions of, Code Section 409A.

4.3. Effect of Termination. Executive agrees that should Executive's employment be terminated for any reason, Executive shall be deemed to have resigned from any and all positions, including without limitation as a director or officer, with the Company and its parents, subsidiaries, and/or affiliates.

4.4. Definition of Cause. For purposes of this Agreement, "**Cause**" means that the Executive (i) has breached any employment, service, non-competition, non-solicitation, the Intellectual Property Agreement, dated September 20, 2018, and the Confidentiality Agreement, dated September 20, 2018, or other agreement or contract with the Company, if any, and, if such breach can be cured by Executive, the breach remains uncured after Executive receives notice of such breach and is afforded a period of not less than 30 days to remedy the breach; (ii) has persistently refused or willfully failed to perform substantially his duties and responsibilities to the Company, which continues after the Executive receives notice of such refusal or failure and is afforded a period of not less than 30 days to remedy the refusal or failure; (iii) has engaged in conduct that constitutes disloyalty to the Company or that materially damages the property, business or reputation of the Company; (iv) has engaged in fraud, embezzlement, theft, material misappropriation with respect the business or assets of the Company, or the proven commission of a felony; (v) has disclosed trade secrets or confidential information of the Company to persons not entitled to receive such information; or (vi) has engaged in such other behavior that is significantly detrimental to the interests of the Company, as determined by the Board of Directors .

4.5. Definition of Good Reason. For purposes of this Agreement, "**Good Reason**" shall mean the occurrence of any of the following, without Executive's written consent: (a) a materially adverse change or material diminution in the title, duties, powers, authority or responsibilities of Executive; (b) a material reduction in annual Base Salary below the amount set forth in Section 3.1; (c) a material diminution in the authority, duties, or responsibilities of the supervisor to whom Executive is required to report, from those in effect immediately prior to a Change of Control; (d) a material diminution in the budget over which the Participant retains authority from that in effect immediately prior to a Change in Control; or (e) the Company's requiring Executive to be based in any office or location more than 50 miles from that location at which he performed his services immediately prior to a Change of Control, except for travel reasonably required in the performance of Executive's responsibilities. Notwithstanding the foregoing, Executive's right to terminate his employment for Good Reason shall be conditioned upon and may in no event be exercised until and unless Executive has provided written notice to the Company of the existence of the circumstances providing grounds for termination for Good Reason within 30 days of the initial existence of such grounds and the Company has had at least 30 days from the date on which such notice is provided to cure such circumstances, and has failed to do so.

4.6. Definition of Change in Control. For purposes of this Agreement, "**Change in Control**" shall be deemed to have occurred if:

(i) Any "person" (as such term is used in sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**")) becomes (x) during the 12-month period ending on the date of any acquisition of securities, a "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of American Water Works Company, Inc. ("**Parent Company**") representing more than 35% of the voting power of the then outstanding securities of Parent Company, or (y) a "beneficial owner," as defined in clause (x) above, of more than 50% of the voting power of the then outstanding securities of Parent Company;

(ii) The consummation of (A) a merger or consolidation of Parent Company with another corporation where the stockholders of Parent Company, immediately prior to the merger or consolidation, will not beneficially own, immediately after the merger or consolidation, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the surviving corporation would be entitled in the election of directors, or (B) a sale or other disposition of all or substantially all of the assets of Parent Company; or

(iii) During any period of 12 consecutive months commencing on or after the Effective Date while the Omnibus Plan is in effect, directors are elected such that a majority of the members of the Board of Directors of Parent Company are individuals who shall not have been members of such board at the beginning of such 12-month period, except (x) in the case of a director's death or (y) the election or nomination for election of each new director who was not a director at the beginning of such 12-month period where such election was approved by a vote of at least two-thirds of the directors then still in office who were directors at the beginning of such period.

Notwithstanding the foregoing, the Committee may provide for a different definition of a "Change of Control" in an LTPP grant document or agreement if such LTPP grant is subject to the requirements of section 409A of the Code and the LTPP grant will become payable on, or in connection with, a Change of Control.

5. **Noncompetition and Nonsolicitation**.

5.1. **Executive's Noncompetition and Nonsolicitation Obligations.**

During employment and for a period ending 12 months following the Termination Date (" **Noncompetition Period** "), Executive shall not do any of the following (other than at the direction of the CEO) without the prior written consent of the CEO or COO:

(i) Engage in the same or similar duties Executive performed for the Company, including but not limited to new technology solutions, products, and mobile applications with and without autonomous intelligence engines; new mobile platform system design and development; and development of line extensions, technological quality improvements and productivity improvements, either for any business entity or organization that is engaged in any business or enterprise that is competitive with the Company's business ("Competitive Businesses"). Competitive Businesses are those that provide water and/or wastewater services in the United States and Canada at the time of termination of Employee's employment. By way of example, the Company has identified the following companies, including any of their subsidiaries and affiliated companies, as Competitive Businesses:

- Aqua America, Inc.
- Suez North America
- Aquarion
- Veolia
- Inframark
- Utilities Inc.
- EPCOR Utilities Inc.
- SouthWest Water Company
- Liberty Utilities

"Engaging in" on Executive's part shall include the following activities: engaging in, working with, having an interest or concern in, advising, or permitting one's name to be used in connection with, an enterprise or endeavor, either individually, in partnership or in conjunction with any person or persons, firms, associations, companies or corporations, whether as a principal, agent, shareholder, employee, officer, director, partner, consultant or in any manner whatsoever (it is being understood that Executive will retain the right to invest in or have an interest in entities traded on any public market or offered by any national brokerage house, provided that such interest does not exceed 5% of the voting control of that entity); or

(ii) Either alone or in association with others solicit, or permit any organization directly or indirectly controlled by Executive to solicit, any employee or executive of the Company to leave the employ of the Company, or solicit for employment, hire or engage as an independent contractor, or permit any organization directly or indirectly controlled by Executive to solicit for employment, hire or engage as an independent contractor, any person who was employed by the Company at the time of the termination or cessation of Executive's employment with the Company; provided that this clause shall not apply to the solicitation, hiring or engagement of any individual whose employment with the Company has been terminated for a period of six (6) months or longer at the time of such solicitation, hiring or employment.

(iii) **Extension of Restrictions**. If Executive violates the provisions of Section 5.1, the twelve (12) month period referred to in this Section 5.1 shall recommence and the Executive shall continue to be bound by the restrictions set forth in Section 5.1 until a period of twelve (12) months has expired without any violation of such provisions.

5.2. **Effect of Breach**. Notwithstanding the foregoing, in addition to any other right or remedy available to the Company, including but not limited to the equitable remedies set forth in Section 13, the Company may cease making any payments otherwise due under this Agreement, in the event of a breach by Executive of this Section 5.1. Additionally, instead of requiring any proof of damages or losses, Executive and Company agree that as liquidated damages for any breach of Section 5, Executive shall reimburse all Base Salary continuation payments set forth in Section 4.2(ii) to the Company.

6. **Advertising Waiver**. Executive agrees to permit the Company, and persons or other organizations authorized by the Company, to use, publish and distribute advertising or sales promotional literature concerning the products and/or services of the Company in which Executive's name and/or pictures of Executive appear. Executive hereby waives and releases any claim or right Executive may otherwise have arising out of such use, publication or distribution.

7. **Representations and Warranties**.

7.1. Executive represents and warrants that Executive is not a party to any other employment, non-competition, or other agreement or restriction which could interfere with Executive's employment with the Company or Executive's or the Company's rights and obligations hereunder and that Executive's acceptance of employment with the Company and the performance of Executive's duties hereunder will not breach the provisions of any contract, agreement, or understanding to which Executive is party or any duty owed by Executive to any other person.

7.2. The Company and its parents, subsidiaries, and/or affiliates, do not wish to incorporate any unlicensed or unauthorized material, or otherwise use such material in any way in connection with, its and their respective products and services. Therefore, Executive hereby represents, warrants and covenants that he has not and will not disclose to the Company or its parents, subsidiaries, and/or affiliates, use in their business, or cause them to use, any information or material which is a trade secret, or confidential or proprietary information, of a third party, including, but not limited to, any former employer, competitor or client, unless the Company or its parents, subsidiaries, and/or affiliates have a right to receive and use such information or material.

8. **Notices**. All notices, demands or other communications to be given or delivered under or by reason of the provisions of this Agreement shall be in writing and shall be deemed to have been given when delivered personally to the recipient, two (2) business days after the date when sent to the recipient by reputable express courier service (charges prepaid) or four (4) business days after the date when mailed to the recipient by certified or registered mail, return receipt requested and postage prepaid. Such notices, demands and other communications shall be sent to Executive and to the Company at the addresses set forth below:

If to Executive:

Radhakrishnan Swaminathan
2323 Race Street, Unit 1212
Philadelphia, PA 19103

If to the Company:

Michael Sgro, EVP, General Counsel and Secretary
American Water Works Service Company, Inc.
One Water Street
Camden, NJ 08102-1658

or to such other address or to the attention of such other person as the recipient party has specified by prior written notice to the sending party.

9. **Entire Agreement**. This Agreement constitutes the full and entire understanding and agreement between the parties with respect to the subject hereof and supersede all prior agreements and understandings, whether written or oral, among the parties, with respect thereto. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein, and it supersedes any other such promises, warranties or representations. Notwithstanding the foregoing sentence, Executive's obligations under the Intellectual Property Agreement, dated September 20, 2018, and Confidentiality Agreement, dated September 20, 2018, remain in full force and effect.

10. **Waivers and Amendments**. The respective rights and obligations of the Company and Executive under this Agreement may be waived (either generally or in a particular instance, either retroactively or prospectively, and either for a specified period of time or indefinitely) by such respective party. Any waiver of a breach of this Agreement shall be in writing and shall not be deemed to be a waiver of any successive breach, unless the writing so states. This Agreement may be amended only with the written consent of the Executive and a duly authorized representative of the Company.

11. **Binding Effect of Agreement**. This Agreement, being for the personal services of Executive, shall not be assignable by Executive. This Agreement will bind the heirs, personal representatives, successors and assigns of both Executive and the Company, and inure to the benefit of both Executive and the Company, and to Executive and its heirs, successors and assigns, except that the duties and responsibilities of Executive are of a personal nature and shall not be assignable or delegable in whole or in part by Executive. The Company may assign its rights, together with its obligations hereunder, (i) in connection with any merger, consolidation, or transfer or other disposition of all or substantially all of its assets, and such rights and obligations shall inure to, and be binding upon, any successor to the Company or any successor to all or substantially all of the assets of the Company or (ii) to the Company's parents, subsidiaries, and/or affiliates, which successor shall expressly assume such obligations.

12. **Choice of Law and Forum**. This Agreement shall be governed by the substantive law of the state of New Jersey without regard to its conflict of law rules. The Company and Employee consent to the exclusive jurisdiction of the courts of New Jersey to adjudicate any and all disputes arising between them and hereby waive any and all objections based on alleged lack of personal jurisdiction.

13. **Equitable Remedies**. Executive acknowledges and agrees that the Company's remedies at law for a breach or threatened breach of any of the provisions of Section 5 would be inadequate and the Company would suffer irreparable damages as a result of such breach or threatened breach. In recognition of this fact, Executive agrees that, in the event of such a breach or threatened breach, in addition to any remedies at law, the Company, without posting any bond, shall be entitled to obtain equitable relief in the form of specific performance, temporary restraining order, temporary or permanent injunction or any other equitable remedy which may then be available.

The Company and Executive agree that the covenants set forth in this Agreement shall be enforced to the fullest extent permitted by law. Accordingly, if, in any judicial proceedings, a court or arbitrator shall determine that such covenant is unenforceable for any reason, including, without limitation, because it covers too extensive a geographical area or survives too long a period of time, then the parties intend that such covenant shall be deemed to cover only such maximum geographical area and maximum period of time, if applicable, and/or shall otherwise be deemed to be limited in such manner, as will permit enforceability by such court or arbitrator. The Company and Executive further agree that the covenants set forth in this Agreement are reasonable in all circumstances for the protection of the legitimate interests of the Company and its members.

14. **Cooperation; No Disparagement**. During and after the Noncompetition Period, Executive agrees to provide reasonable assistance to the Company (including assistance with litigation matters), upon the Company's request, concerning Executive's previous employment responsibilities and functions with the Company. Additionally, Executive agrees not to make written (to include online or other written statements) or oral statements about the Company, its parents, subsidiaries, and/or affiliates, or any of their respective employees that are negative or disparaging. Nothing in this Agreement shall preclude Executive from communicating or testifying truthfully (i) to the extent required or protected by law, (ii) to any federal, state, or local governmental agency, (iii) in response to a subpoena to testify issued by a court of competent jurisdiction, or (iv) in any action to challenge or enforce the terms of this Agreement.

15. **Severability; Ambiguity; Title and Subtitles; Singular and Plural Counterparts; Electronic Mail.**

(i) In case any provision of this Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions of this Agreement shall not in any way be affected or impaired thereby.

(ii) Any ambiguity in this Agreement shall not be construed against either party as the drafter.

(iii) The titles of the sections and subsections of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

(iv) Except for purposes of Section 4 of this Agreement, a submission by electronic mail shall be deemed a writing and approval by electronic mail shall be considered written approval.

(v) This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together constitute one instrument.

(vi) Counterparts of this Agreement (or applicable signature pages hereof) that are manually signed and delivered by electronic mail (.pdf or similar format) shall be deemed to constitute signed original counterparts hereof and shall bind the parties signing and delivering in such manner.

[remainder of page intentionally left blank]

The Company and Executive have carefully read and understand all of the provisions of this Agreement. They enter into this Agreement freely, knowingly, and voluntarily. In entering into this Agreement, neither the Company nor Executive is relying upon any representations or promises not expressly set forth in this Agreement. Intending to be legally bound to this Agreement, the Company's representative and Executive sign their names below.

/s/ MELANIE KENNEDY

Melanie Kennedy
Senior Vice President Human Resources
American Water Works Service Company, Inc.

/s/ RADHAKRISHNAN SWAMINATHAN

Radhakrishnan Swaminathan

Dated: November 1, 2018

Dated: October 31, 2018



December 6, 2018

Michael Sgro
131 Walnut Street
Jenkintown, PA 19046

Dear Mike:

This letter agreement amends and supersedes in its entirety the section entitled “Long Term Incentive” in your offer letter, dated February 17, 2015, as follows:

Long-Term Performance Plan

You shall be eligible to participate in the Company’s Long-Term Performance Plan (“LTPP”), as it may be established or maintained from time to time. Your 2019 aggregate LTPP award opportunity is targeted to be 125% of your Base Salary for the 2019 calendar year, and is subject to increase or decrease as determined thereafter by the Executive Development and Compensation Committee of American Water’s Board of Directors (the “Committee”). The terms of any LTPP awards, if and when granted to you by the Committee, shall be governed by and subject to all of the terms and conditions of the Company’s 2017 Omnibus Equity Compensation Plan (the “Omnibus Plan”), as it may be amended from time to time, and the relevant LTPP plan documents and applicable LTPP award documents or agreements, and the Company shall recommend your LTPP awards to be considered for approval each year by the Committee to include terms and conditions consistent with those described in this letter. Subject in each case to approval and grant by the Committee, you will be eligible to receive grants of equity-based awards under the LTPP, subject in all respects to the terms of the Omnibus Plan and applicable award documents or agreements, with the following special vesting terms: (i) 2020 grants will vest 1/3rd on January 31, 2021 and 2/3rds on January 31, 2022; and (ii) 2021 grants will vest in full on January 31, 2022; provided, that, in each case, any grants subject to performance-based vesting shall be subject to distribution and payment based on the determination by the Committee of actual performance achieved following the completion of the applicable performance period for each such award.

This letter does not otherwise serve to amend or supersede the terms or conditions contained in your February 17, 2015 offer letter. Your signature below indicates your acceptance of this amendment. Please let me know if you have any questions or concerns.

Regards,

/s/ MELANIE KENNEDY

Melanie Kennedy
Senior Vice President, Human Resources

By my voluntary and knowing signature below, I, Michael Sgro, certify that I completely read and understand this document. I further understand that my employment remains “at will,” which means that I am not guaranteed employment or any particular job for any specified period of time. The Company or I may terminate my employment at any time, for any or no reason, with or without cause.

/s/ MICHAEL SGRO December 11, 2018

Signature: Michael Sgro

Date

**NONQUALIFIED SAVINGS AND
DEFERRED COMPENSATION PLAN FOR
EMPLOYEES OF
AMERICAN WATER WORKS COMPANY, INC.
AND ITS DESIGNATED SUBSIDIARIES**

(As amended and restated, effective as of January 1, 2017)

**NONQUALIFIED SAVINGS AND
DEFERRED COMPENSATION PLAN FOR
EMPLOYEES OF
AMERICAN WATER WORKS COMPANY, INC.
AND ITS DESIGNATED SUBSIDIARIES**

ARTICLE I

PURPOSE

AWW previously adopted this Plan, effective as of the Original Effective Date, in recognition of the services provided by certain key employees and officers of the Employer. The Plan is intended to provide Group I Employees with the opportunity to defer a portion of their Base Salary and Bonus on a tax-favored basis and to receive Group I Matching Contributions on such deferrals, as well as to receive an additional deemed annual contribution from AWW for a portion of their Bonus, plus the portion of their Base Salary that exceeds the limit on compensation under section 401(a)(17) of the Code. The Plan is also intended to provide Group II Employees with the opportunity to defer a portion of their Base Salary and Bonus on a tax-favored basis and to receive Group II Matching Contributions on such deferrals, as well as to receive an additional deemed annual contribution from AWW for a portion of their Base Salary that exceeds the limit on compensation under section 401(a)(17) of the Code. Further, the Plan is intended to provide Group III Employees with the opportunity to defer a portion of their Base Salary and Bonus on a tax-favored basis and to receive Group III Matching Contributions on their Base Salary Deferrals.

AWW intends that the Plan shall at all times be maintained on an unfunded basis for federal income tax purposes under the Code and administered as a non-qualified “top-hat” plan exempt from the substantive requirements of ERISA. AWW also intends that the Plan be operated and maintained in accordance with the requirements of section 409A of the Code and the regulations and rulings thereunder. AWW desires to amend and restate the Plan, effective as of the Effective Date, to incorporate prior amendments to the Plan, as well as to make certain design and clarifying changes to the Plan.

All capitalized terms shall have the meanings set forth in Article II below.

ARTICLE II

DEFINITIONS

For purposes of this Plan, the following terms shall have the meanings indicated, unless the context clearly indicates otherwise:

Section 2.01. “**Account(s)**” means, as applicable, for (a) a Group I Employee, his or her Group I Deferral Account, Group I Matching Account, Group I Employer Defined Contribution Account and Special Contribution Account, (b) for a Group II Employee, his or her Group II Deferral Account, Group II Matching Account and Group II Employer Defined Contribution Account, and (c) for a Group III Employee, his or her Group III Deferral Account, Group III Matching Account and Special Contribution Account.

Section 2.02. “**APP**” means the American Water Works Company, Inc. Annual Performance Plan, as in effect for the relevant Plan Year.

Section 2.03. “**Amended Enrollment Agreement**” means a new Enrollment Agreement executed by a Participant that satisfies the requirements of Section 7.05 and that changes the time and/or form of a distribution for a particular Plan Year.

Section 2.04. “**AWW**” means American Water Works Company, Inc. or any successor thereto.

Section 2.05. “**Base Salary**” means, for each Participant, his or her annual rate of base salary for the Plan Year, before taking into account amounts deferred under this Plan and amounts deferred to the Savings Plan (or any other qualified plan of the Employer) and to any section 125 of the Code plan of the Employer.

Section 2.06. “**Base Salary Deferral**” means that portion of Base Salary as to which a Participant has made an annual irrevocable election to defer receipt until the date specified in the Participant’s Enrollment Agreement.

Section 2.07. “**Beneficiary**” means the person or persons (natural or otherwise) designated by the Participant as such in accordance with Section 10.01.

Section 2.08. “**Board**” means the Board of Directors of AWW.

Section 2.09. “**Bonus**” means the amount earned by a Participant for a Plan Year under the APP, but does not include any other annual incentive plan maintained by the Employer for which the Participant earns a bonus for the Plan Year, before taking into account amounts deferred under this Plan with respect to the Plan Year and amounts deferred to the Savings Plan (or any other qualified plan of the Employer) and any section 125 of the Code plan of the Employer.

Section 2.10. “**Bonus Deferral**” means the portion of the Bonus as to which a Participant has made an annual irrevocable election to defer receipt.

Section 2.11. “**Cause**” means a finding by the Committee that the Participant (a) has breached his or her employment or service contract with the Employer, if any; (b) has engaged in disloyalty to the Employer, including, without limitation, fraud, embezzlement, theft, commission of a felony or proven dishonesty; (c) has disclosed trade secrets or confidential information of the Employer to persons not entitled to receive such information; (d) has breached any written noncompetition or nonsolicitation agreement between the Participant and the Employer; or (e) has engaged in such other behavior detrimental to the interests of the Employer as the Committee determines.

Section 2.12. “**Change of Control**” shall be deemed to have occurred if:

(i) Any “person” (as such term is used in sections 13(d) and 14(d) of the Exchange Act) becomes (x) during the 12-month period ending on the date of any acquisition of securities, a “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing more than 35% of the voting power of the then outstanding securities of the Company, or (y) a “beneficial owner,” as defined in clause (x) above, of more than 50% of the voting power of the then outstanding securities of the Company;

(ii) The consummation of (A) a merger or consolidation of the Company with another corporation where the stockholders of the Company, immediately prior to the merger or consolidation, will not beneficially own, immediately after the merger or consolidation, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the surviving corporation would be entitled in the election of directors, or (B) a sale or other disposition of all or substantially all of the assets of the Company; or

(iii) During any period of 12 consecutive months commencing on or after the Effective Date while the Plan is in effect, directors are elected such that a majority of the members of the Board are individuals who shall not have been members of the Board at the beginning of such 12-month period, except (x) in the case of a director’s death or (y) the election or nomination for election of each new director who was not a director at the beginning of such 12-month period where such election was approved by a vote of at least two-thirds of the directors then still in office who were directors at the beginning of such period.

Notwithstanding the foregoing, the Committee may provide for a different definition of a “Change of Control” in a Grant Agreement if such Grant is subject to the requirements of section 409A of the Code and the Grant will become payable on, or in connection with, a Change of Control.

Section 2.13. “**Code**” means the Internal Revenue Code of 1986, as amended.

Section 2.14. “**Committee**” means the AWW Benefits Administration Committee (or any successor thereto) or its delegate, or such other committee appointed by the Board to administer the Plan.

Section 2.15. “ **Compensation Limit** ” means the dollar limitation in effect under section 401(a)(17) of the Code with respect to a Plan Year, adjusted for inflation.

Section 2.16. “ **Deemed Investment Option** ” means the deemed investment options as designated by the Investment Committee for purposes of the Plan, as may be changed from time to time. Each Participant shall designate the Deemed Investment Options pursuant to which deemed earnings (or losses) shall be credited to the Participant’s Account(s) in accordance with Article V.

Section 2.17. “ **Designated Subsidiary** ” means a regulated subsidiary of AWW that is listed in Exhibit A and any other regulated subsidiary of AWW for which the Committee subsequently designates as a participating subsidiary for purposes of the Plan.

Section 2.18. “ **Effective Date** ” means January 1, 2017, the effective date of this amendment and restatement of the Plan. The “ **Original Effective Date** ” means January 1, 2008, the initial effective date of the Plan.

Section 2.19. “ **Employee** ” means any individual who is actively employed by the Employer on a full-time basis and whose earnings are reported on Form W-2; provided, however, that to qualify as an “Employee” for purposes of the Plan the individual must be a member of a select group of “management or highly compensation employees” of the Employer, within the meaning of sections 201, 301 and 401 of ERISA, and be specifically designated by the Committee as an Employee for purposes of the Plan.

Section 2.20. “ **Employer** ” means AWW and each Designated Subsidiary.

Section 2.21. “ **Enrollment Agreement** ” means the authorization form which a Group I Employee, Group II Employee and Group III Employee files with the Committee or its designee to make deferrals to the Plan.

Section 2.22. “ **ERISA** ” means the Employee Retirement Income Security Act of 1974, as amended.

Section 2.23. “ **Exchange Act** ” means the Securities Exchange Act of 1934, as amended.

Section 2.24. “ **Group I Deferral Account** ” means the bookkeeping account established by AWW to which are credited Group I Deferral Contributions, and notational earnings and losses thereon.

Section 2.25. “ **Group I Deferral Contribution** ” means the Base Salary Deferral and Bonus Deferral credited to the Plan by a Group I Employee pursuant to Section 4.01(b).

Section 2.26. “ **Group I Employee** ” means those Employees who meet the requirements set forth on the attached Exhibit B for the relevant Plan Year.

Section 2.27. “ **Group I Landover Defined Contribution Account** ” means the bookkeeping account established by AWW to which are credited Group I Employer Defined Contributions, and notational earnings and losses thereon.

Section 2.28. “ **Group I Employer Defined Contribution** ” means the amounts credited to the Plan for a Group I Employee by AWW pursuant to Section 4.01(a).

Section 2.29. “ **Group I Matching Account** ” means the bookkeeping account established by AWW to which are credited Group I Matching Contributions, and notational earnings and losses thereon.

Section 2.30. “ **Group I Matching Contribution** ” means the amounts credited to the Plan for a Group I Employee by AWW pursuant to Section 4.01(c).

Section 2.31. “ **Group II Deferral Account** ” means the bookkeeping account established by AWW to which are credited Group II Deferral Contributions, and notational earnings and losses thereon.

- Section 2.32.** “Group II Deferral Contribution” means the Base Salary Deferral and Bonus Deferral credited to the Plan by a Group II Employee pursuant to Section 4.02(b).
- Section 2.33.** “Group II Employee” means those Employees who meet the requirements set forth on the attached Exhibit C for the relevant Plan Year.
- Section 2.34.** “Group II Employer Defined Contribution Account” means the bookkeeping account established by AWW to which are credited Group II Employer Defined Contributions, and notational earnings and losses thereon.
- Section 2.35.** “Group II Employer Defined Contribution” means the amounts credited to the Plan for a Group II Employee by AWW pursuant to Section 4.02(a).
- Section 2.36.** “Group II Matching Account” means the bookkeeping account established by AWW to which are credited Group II Matching Contributions, and notational earnings and losses thereon.
- Section 2.37.** “Group II Matching Contribution” means the amounts credited to the Plan for a Group II Employee by AWW pursuant to Section 4.02(c).
- Section 2.38.** “Group III Deferral Account” means the bookkeeping account established by AWW to which are credited Group III Deferral Contributions, and notational earnings and losses thereon.
- Section 2.39.** “Group III Deferral Contribution” means the Base Salary and Bonus Deferral credited to the Plan by a Group III Employee pursuant to Section 4.03(a).
- Section 2.40.** “Group III Employee” means those Employees who meet the requirements set forth on the attached Exhibit D for the relevant Plan Year.
- Section 2.41.** “Group III Matching Account” means the bookkeeping account established by AWW to which are credited Group III Matching Contributions, and notational earnings and losses thereon.
- Section 2.42.** “Group III Matching Contribution” means the amounts credited to the Plan for a Group III Employee by AWW pursuant to Section 4.03(b).
- Section 2.43.** “Investment Committee” means the AWW Retirement and Benefits Plans Investment Committee (or any successor thereto).
- Section 2.44.** “Matching Compensation” means (a) for Group I Employees and Group II Employees - Base Salary, plus Bonus, for the Plan Year, and (b) for Group III Employees - Base Salary for the Plan Year.
- Section 2.45.** “Matching Contribution” means as such term is defined in the Savings Plan.
- Section 2.46.** “Participant” means each Group I Employee, Group II Employee and Group III Employee who is participating in the Plan in accordance with the provisions of Article IV. In the event of a Participant’s death, the term Participant shall mean the Participant’s Beneficiary. In the case of a Participant’s incompetency, the term Participant shall include an individual with a duly authorized power of attorney or, in the absence of a duly authorized power of attorney, the Participant’s personal representative or guardian. An individual shall remain a Participant until that individual has received full distribution of any amount credited to the Participant’s Account(s).
- Section 2.47.** “Plan” means this plan, called the Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as may be amended from time to time.
- Section 2.48.** “Plan Year” means the 12 month period beginning on each January 1 and ending on the following December 31.

Section 2.49. “**Savings Plan**” means the Savings Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as may be amended from time to time.

Section 2.50. “**Separation Date**” means the last day on which a Participant is employed by an Employer on account of a Separation From Service.

Section 2.51. “**Separation From Service**” means a Participant’s separation from service with the Employer within the meaning of section 409A of the Code and the regulations issued thereunder.

Section 2.52. “**Special Contribution**” means the amount credited to the Plan for a Group I Employee and Group III Employee during the 2008 Plan Year by AWW pursuant to Sections 4.01(d) and 4.03(c), respectively. The Group I Employees and Group III Employees who were eligible to receive the Special Contribution were those who were specifically designated as eligible to receive such under the Plan at the time of such Special Contribution. No other Group I Employees or Group III Employees were eligible to receive the Special Contribution.

Section 2.53. “**Special Contribution Account**” means the bookkeeping account established by AWW to which are credited Special Contributions, and notational earnings and losses thereon.

Section 2.54. “**Specified Distribution Date**” means (a) a specific time within the meaning of section 409A of the Code and the regulations issued thereunder that is designated by the Participant in his or her Enrollment Agreement or Amended Enrollment Agreement, as applicable; (b) provided, however, that (1) the Specified Distribution Date must be designated as a calendar year; (2) such calendar year must be later than the calendar year in which the Participant has vested in all of the amounts credited to his or her Account pursuant to Article VI; and (3) subject to Section 7.01, such date shall be deemed to be January of such calendar year.

Section 2.55. “**Specified Employee**” means any Participant who, at any time during the twelve month period ending on the identification date as determined by the Committee, is a specified employee under section 409A of the Code, as determined by the Committee. The determination of “specified employees,” including the number and identity of persons considered “specified employees” and identification date, shall be made by the Committee in accordance with the provisions of sections 416(i) and 409A of the Code and the regulations issued thereunder.

Section 2.56. “**Unforeseeable Emergency**” means the Participant has experienced an “unforeseeable emergency” within the meaning of Treas. Reg. §1.409A-3(i)(3)(i).

ARTICLE III

ADMINISTRATION OF THE PLAN AND DISCRETION

Section 3.01. **Administration**. The Committee shall have full power and authority to interpret the Plan, to prescribe, amend and rescind any rules, forms and procedures as it deems necessary or appropriate for the proper administration of the Plan and to make any other determinations and to take any other such actions as it deems necessary or advisable in carrying out its duties under the Plan. All actions taken by the Committee arising out of, or in connection with, the administration of the Plan or any rules adopted thereunder, shall, in each case, lie within its sole discretion, and shall be final, conclusive and binding upon AWW, the Employer, the Board, all Participants, all Beneficiaries of Participants and all persons and entities having an interest therein, and a Participant’s participation in the Plan shall constitute that Participant’s acknowledgement and acceptance of the Committee’s authority and discretion. The Committee may from time to time adopt rules and regulations governing the operation of this Plan and may employ and rely on such employees of the Employer, legal counsel, accountants, and agents, as it may deem advisable to assist in the administration of the Plan.

Section 3.02. **Compensation of Committee; Expenses**. Members of the Committee shall serve without compensation for their services unless otherwise determined by the Board. All expenses of administering the Plan shall be paid by AWW.

Section 3.03. **Indemnification**. AWW shall indemnify, defend and hold the Committee harmless from any and all claims, losses, damages, expenses (including counsel fees) and liability (including any

amounts paid in settlement of any claim or any other matter with the consent of the Board) arising from any act or omission of such member, except when the same is due to gross negligence or willful misconduct.

Section 3.04. Interpretations. Any decisions, actions or interpretations to be made under the Plan by AWW, the Employer, the Board or the Committee shall be made in its respective sole discretion, not as a fiduciary and need not be uniformly applied to similarly situated individuals and shall be final, binding and conclusive on all persons interested in the Plan.

ARTICLE IV

PARTICIPATION

Section 4.01. Group I Employees.

(a) **Employer Contributions.** Each Plan Year, AWW will make a Group I Employer Defined Contribution to the Plan on behalf of each Group I Employee who is employed by the Employer on the first day of such Plan Year. Except as otherwise provided in this Section 4.01, the amount of such Group I Employer Defined Contribution for the Plan Year for each Group I Employee will be equal to the sum of (i) 5.25% of such Group I Employee's Base Salary in excess of the Compensation Limit, and (ii) 5.25% of such Group I Employee's Bonus. Any Group I Employer Defined Contribution made under this Section 4.01(a) will be credited to the Group I Employee's Group I Employer Defined Contribution Account as soon as administratively practicable following the close of the Plan Year to which such Group I Employer Defined Contribution relates with respect to Base Salary for the Plan Year and as soon as administratively practicable following the date on which the Bonus for the Plan Year is paid to the Group I Employee.

(b) **Deferral Contributions.** Each Plan Year, all Group I Employees will be offered the opportunity to make a Base Salary Deferral with respect to Base Salary to be paid in the Plan Year and a Bonus Deferral with respect to Bonus to be earned in the Plan Year. Any Group I Employee may enroll in the Plan effective as of the first day of a Plan Year by filing a completed and fully executed Enrollment Agreement with the Committee by a date set by the Committee, but in any event prior to the first day of the Plan Year. Pursuant to said Enrollment Agreement, the Group I Employee shall irrevocably elect: (i) the percentage (up to 20%) (whole percentages only) by which (as a result of payroll reduction), the Group I Employee's Base Salary to be paid during that Plan Year will be deferred to the Plan, and (ii) the percentage (up to 100%) (whole percentages only) by which (as a result of payroll reduction), the Group I Employee's Bonus to be earned during that Plan Year will be deferred to the Plan. Any Group I Deferral Contribution made under this Section 4.01(b) will be credited to the Group I Employee's Group I Deferral Account as soon as administratively practicable following the end of the month for which the deferral relates. Each Plan Year, a Group I Employee must complete and fully execute a new Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year in which such Enrollment Agreement will become effective. Notwithstanding anything herein to the contrary, if the Group I Employee experiences an Unforeseeable Emergency, a Group I Employee may submit a request to the Committee on the form provided by the Committee to cease the Base Salary Deferrals and/or Bonus Deferrals, being made in the current Plan Year on the Group I Employee's behalf. If the Committee determines that the Group I Employee has experienced an Unforeseeable Emergency, the cessation of the Group I Employee's Base Salary Deferrals and/or Bonus Deferrals will be effective as soon as administratively practicable after the Committee's determination, but not later than sixty (60) days following such determination. Any Group I Employee who ceases Base Salary Deferrals and/or Bonus Deferrals on account of an Unforeseeable Emergency shall not be eligible to elect to make any future Base Salary Deferrals and/or Bonus Deferrals for the remainder of the Plan Year in which the Unforeseeable Emergency occurs. For any future Plan Year, the Group I Employee will need to execute a new Enrollment Agreement within the time period described above.

(c) **Matching Contributions.** Each Plan Year, each Group I Employee who makes a Group I Deferral Contribution for the Plan Year will receive a Group I Matching Contribution equal to (i) the sum of (A) 100% of his or her Group I Deferral Contribution, up to a maximum of 3% of the Group I Employee's Matching Compensation, and (B) 50% of his or her Group I Deferral Contribution, up to a maximum of the next 2% of the Group I Employee's Matching Compensation, less (ii) the maximum amount of Matching Contribution that the Group I Employee is eligible to receive under the Savings Plan, irrespective of whether the Group I Employee actually receives the maximum amount of Matching Contribution under the

Savings Plan for the Plan Year. Any Group I Matching Contribution made under this Section 4.01(c) will be credited to the Group I Employee's Group I Matching Account as soon as administratively practicable following the end of the Plan Year to which it relates (or such other time(s) as the Committee may determine, in its sole discretion). No Matching Contributions will be made for a Group I Employee if such Group I Employee does not make any Group I Deferral Contributions for the Plan Year.

(d) Special Contribution. Prior to the Effective Date, AWW credited to the Special Contribution Account certain Special Contributions for the benefit of those Group I Employees who were specifically designated by the Board to receive such Special Contributions, the value of which was determined by the Board at such time. Only those Group I Employees who were specifically designated to receive the Special Contributions were eligible to receive such Special Contributions.

(e) Time of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.01(b), the Group I Employee shall also designate the time on which such Group I Deferral Contributions for the Plan Year shall be paid to the Group I Employee. A Group I Employee may elect one of the following as a permitted time for distribution of his or her Group I Deferral Contributions for such Plan Year: (i) Separation From Service; or (ii) a Specified Distribution Date; provided, however, that if the Group I Employee does not make an election in the Enrollment Agreement as to the time of payment for his or her Group I Deferral Contributions for the Plan Year, the Group I Employee shall be deemed to have elected Separation From Service as the time of payment. A Group I Employee's Group I Matching Contributions for such Plan Year shall be paid at the same time as the Group I Deferral Contributions for the Plan Year are paid to the Group I Employee and no Group I Employee shall be eligible to make a separate election as to the time when his or her Group I Matching Contributions for the Plan Year shall be paid to him or her. A Group I Employee shall separately select the time of the distribution of his or her Group I Employer Defined Contribution for the relevant Plan Year among the permitted times set forth in this Section 4.01(e), provided, that the Group I Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which the Group I Employer Defined Contribution relates, but if no such election is made by the Group I Employee, the Group I Employee shall be deemed to have elected Separation From Service as the time of payment. Except as provided in Section 7.05, the election as to the time of payment cannot be subsequently changed. The Plan Year election that shall apply as to the time of distribution for the Special Contribution shall be the eligible Group I Employee's 2008 Plan Year election.

(f) Form of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.01(b), the Group I Employee shall also designate the form pursuant to which such Group I Deferral Contributions for the Plan Year shall be paid to the Group I Employee. A Group I Employee may elect one of the following forms for distribution of his or her Group I Deferral Contributions for such Plan Year: (i) lump sum or (ii) substantially equal annual installments that are paid over a period of between two (2) and ten (10) years, as designated by the Group I Employee in the Enrollment Agreement; provided, however, that if the Group I Employee does not make an election in the Enrollment Agreement as to the form of payment for his or her Group I Deferral Contributions for the Plan Year, the Group I Employee shall be deemed to have elected lump sum as the form of payment. A Group I Employee's Group I Matching Contributions for the Plan Year shall be paid in the same form as the Group I Deferral Contributions for the Plan Year are paid to the Group I Employee and no Group I Employee shall be eligible to make a separate election as to the form in which his or her Group I Matching Contributions for the Plan Year shall be paid to him or her. A Group I Employee shall separately select the form of the distribution of his or her Group I Employer Defined Contribution for the relevant Plan Year among the permitted forms set forth in this Section 4.01(f), provided, that the Group I Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which such Group I Employer Defined Contribution relates, but if no such election is made by the Group I Employee, the Group I Employee shall be deemed to have elected lump sum as the form of payment. Except as provided in Section 7.05, the election as to the form of payment cannot be subsequently changed. The Plan Year election that shall apply as to the form of distribution for the Special Contribution shall be the eligible Group I Employee's 2008 Plan Year election.

(g) Newly Eligible Group I Employees. Any individual who first qualifies as a Group I Employee during a particular Plan Year shall not be eligible to participate in the Plan as a Group I Employee until the following Plan Year.

(h) Change in Status. If at any time during the Plan Year a Group I Employee ceases to qualify as such, then the following provisions shall apply.

(i) Cessation as a Group I Employee. If a Group I Employee ceases to qualify as a Group I Employee at any time during the Plan Year, but remains employed by the Employer (or any employer in the Employer's controlled group), AWW will credit to (A) such Group I Employee's Group I Employer Defined Contribution Account, at the same time that Group I Employer Defined Contributions are credited to the other Group I Employees' Group I Employer Defined Contribution Accounts, an amount equal to the amount that the Group I Employee would have received if the Group I Employee continued as such for the remainder of the Plan Year; and (B) such Group I Employee's Group I Matching Account, at the same time that Matching Contributions are credited to the other Group I Employees' Group I Matching Accounts, an amount equal to the amount that the Group I Employee would have received if the Group I Employee continued as such for the remainder of the Plan Year. In addition, the Group I Employee's Base Salary Deferral and/or Bonus Deferral for the Plan Year will continue in effect for the remainder of the Plan Year. The Group I Employee shall not be eligible to receive any further Group I Employer Defined Contributions and Group I Matching Contributions, or elect to make Base Salary Deferrals and/or Bonus Deferrals, as a Group I Employee for any future Plan Year, unless the Group I Employee subsequently qualifies as a Group I Employee.

(ii) Termination of Employment for any Reason Other Than Cause. If a Group I Employee ceases to be employed by an Employer (including any employer in the Employer's controlled group) at any time during the Plan Year for any reason other than a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, AWW will credit, as soon as administratively practicable following the date the Group I Employee terminates employment with the Employer (or any employer in the Employer's controlled group), to (x) the Group I Employer Defined Contribution Account of such Group I Employee, a Group I Employer Defined Contribution equal to the amount that the Group I Employee accrued for the Plan Year ending on the date such Group I Employee terminated employment, except that no Group I Employer Defined Contribution will be credited for any portion of the Bonus, if any, that is paid to the Group I Employee following the date of his or her termination of employment, and (y) the Group I Matching Account of such Group I Employee, a Group I Matching Contribution equal to the amount that the Group I Employee accrued for the Plan Year ending on the date of such Group I Employee's termination of employment.

(iii) Termination of Employment for Cause. If a Group I Employee ceases to be employed by an Employer (or any employer in the Employer's controlled group) at any time during the Plan Year as a result of a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, all Group I Employer Defined Contributions, Group I Matching Contributions and Special Contributions that have previously been credited on behalf of such Group I Employee to his or her respective Account(s) shall be forfeited, and no such amounts shall be credited to such Group I Employee's Account(s) for the Plan Year in which such termination of employment occurs.

Section 4.02. Group II Employees

(a) Employer Contributions. Each Plan Year, AWW will make a Group II Employer Defined Contribution to the Plan on behalf of each Group II Employee who is employed by the Employer on the first day of the Plan Year. Except as otherwise provided in this Section 4.02, the amount of such Group II Employer Defined Contribution for the Plan Year for each Group II Employee will be equal to 5.25% of such Group II Employee's Base Salary in excess of the Compensation Limit. Any Group II Employer Defined Contribution made under this Section 4.02(a) will be credited to the Group II Employee's Group II Employer Defined Contribution Account as soon as administratively practicable following the close of the Plan Year to which such Group II Employer Defined Contribution relates with respect to Base Salary for the Plan Year.

(b) Deferral Contributions. Each Plan Year, all Group II Employees will be offered the opportunity to make a Base Salary Deferral with respect to Base Salary to be paid in the Plan Year and a Bonus Deferral with respect to Bonus to be earned in the Plan Year. Any Group II Employee may enroll in the Plan effective as of the first day of a Plan Year by filing a completed and fully executed Enrollment Agreement with the Committee by a date set by the Committee, but in any event prior to the first day of the Plan Year. Pursuant to said Enrollment Agreement, the Group II Employee shall irrevocably elect: (i) the percentage (up to 20%) (whole percentages only) by which (as a result of payroll reduction); the Group II Employee's Base Salary to be

paid during that Plan Year will be deferred to the Plan, and (ii) the percentage (up to 100%) (whole percentages only) by which (as a result of payroll reduction), the Group II Employee's Bonus to be earned during that Plan Year will be deferred to the Plan. Any Group II Deferral Contribution made under this Section 4.02(b) will be credited to the Group II Employee's Group II Deferral Account as soon as administratively practicable following the end of the applicable month for which the deferral relates. Each Plan Year, a Group II Employee must complete and fully execute a new Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year in which such Enrollment Agreement will become effective. Notwithstanding anything herein to the contrary, if the Group II Employee experiences an Unforeseeable Emergency, a Group II Employee may submit a request to the Committee on the form provided by the Committee to cease the Base Salary Deferrals and/or Bonus Deferrals, being made in the current Plan Year on the Group II Employee's behalf. If the Committee determines that the Group II Employee has experienced an Unforeseeable Emergency, the cessation of the Group II Employee's Base Salary Deferrals and/or Bonus Deferrals will be effective as soon as administratively practicable after the Committee's determination, but not later than sixty (60) days following such determination. Any Group II Employee who ceases Base Salary Deferrals and/or Bonus Deferrals on account of an Unforeseeable Emergency shall not be eligible to elect to make any future Base Salary Deferrals and/or Bonus Deferrals for the remainder of the Plan Year in which the Unforeseeable Emergency occurs. For any future Plan Year, the Group II Employee will need to execute a new Enrollment Agreement within the time period described above.

(c) Matching Contributions. Each Plan Year, each Group II Employee who makes a Group II Deferral Contribution for the Plan Year will receive a Group II Matching Contribution equal to (i) the sum of (A) 100% of his or her Group II Deferral Contribution, up to a maximum of 3% of the Group II Employee's Matching Compensation, and (B) 50% of his or her Group II Deferral Contribution, up to a maximum of the next 2% of the Group II Employee's Matching Compensation, less (ii) the maximum amount of Matching Contribution that the Group II Employee is eligible to receive under the Savings Plan, irrespective of whether the Group II Employee actually receives the maximum amount of Matching Contribution under the Savings Plan for the Plan Year. Any Group II Matching Contribution made under this Section 4.02(c) will be credited to the Group II Employee's Group II Matching Account as soon as administratively practicable following the end of the Plan Year to which it relates (or such other time(s) as the Committee may determine, in its sole discretion). No Matching Contributions will be made for a Group II Employee if such Group II Employee does not make any Group II Deferral Contributions for the Plan Year.

(d) Time of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.02(b), the Group II Employee shall also designate the time on which such Group II Deferral Contributions for the Plan Year shall be paid to the Group II Employee. A Group II Employee may elect one of the following as a permitted time for distribution of his or her Group II Deferral Contributions for such Plan Year: (i) Separation From Service; or (ii) a Specified Distribution Date; provided, however, that if the Group II Employee does not make an election in the Enrollment Agreement as to the time of payment for his or her Group II Deferral Contributions for the Plan Year, the Group II Employee shall be deemed to have elected Separation From Service as the time of payment. A Group II Employee's Group II Matching Contributions for the Plan Year shall be paid at the same time as the Group II Deferral Contributions for the Plan Year are paid to the Group II Employee and no Group II Employee shall be eligible to make a separate election as to the time when his or her Group II Matching Contributions for the Plan Year shall be paid to him or her. A Group II Employee shall separately select the time of the distribution of his or her Group II Employer Defined Contribution for the relevant Plan Year among the permitted times set forth in this Section 4.02(d), provided, that the Group II Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which the Group II Employer Defined Contribution relates, but if no such election is made by the Group II Employee, the Group II Employee shall be deemed to have elected Separation From Service as the time of payment. Except as provided in Section 7.05, the election as to the time of payment cannot be subsequently changed.

(e) Form of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.02(b), the Group II Employee shall also designate the form pursuant to which such Group II Deferral Contributions for the Plan Year shall be paid to the Group II Employee. A Group II Employee may elect one of the following forms for distribution of his or her Group II Deferral Contributions for such Plan Year: (i) lump sum or (ii) substantially equal annual installments that are paid over a period of between two (2) and ten (10) years, as designated by the Group II Employee in the

Enrollment Agreement; provided, however, that if the Group II Employee does not make an election in the Enrollment Agreement as to the form of payment for his or her Group II Deferral Contributions for the Plan Year, the Group II Employee shall be deemed to have elected lump sum as the form of payment. A Group II Employee's Group II Matching Contributions for the Plan Year shall be paid in the same form as the Group II Deferral Contributions for the Plan Year are paid to the Group II Employee and no Group II Employee shall be eligible to make a separate election as to the form in which his or her Group II Matching Contributions for the Plan Year shall be paid to him or her. A Group II Employee shall separately select the form of the distribution of his or her Group II Employer Defined Contribution for the relevant Plan Year among the permitted forms set forth in this Section 4.02(e), provided, that the Group II Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which such Group II Employer Defined Contribution relates, but if no such election is made by the Group II Employee, the Group II Employee shall be deemed to have elected lump sum as the form of payment. Except as provided in Section 7.05, the election as to the form of payment cannot be subsequently changed.

(f) Newly Eligible Group II Employees. Any individual who first qualifies as a Group II Employee during a particular Plan Year shall not be eligible to participate in the Plan as a Group II Employee until the following Plan Year.

(g) Change in Status. If at any time during the Plan Year a Group II Employee ceases to qualify as such, then the following provisions shall apply.

(i) Cessation as a Group II Employee. If a Group II Employee ceases to qualify as a Group II Employee at any time during the Plan Year, but remains employed by the Employer (or any employer in the Employer's controlled group), AWW will credit to (A) such Group II Employee's Group II Employer Defined Contribution Account, at the same time that Group II Employer Defined Contributions are credited to the other Group II Employees' Group II Employer Defined Contribution Accounts, an amount equal to the amount that the Group II Employee would have received if the Group II Employee continued as such for the remainder of the Plan Year; and (B) such Group II Employee's Group II Matching Account, at the same time that Matching Contributions are credited to the other Group II Employees' Group II Matching Accounts, an amount equal to the amount that the Group II Employee would have received if the Group II Employee continued as such for the remainder of the Plan Year. In addition, the Group II Employee's Base Salary Deferral and/or Bonus Deferral for the Plan Year will continue in effect for the remainder of the Plan Year. The Group II Employee shall not be eligible to receive any further Group II Employer Defined Contributions and Group II Matching Contributions, or elect to make Base Salary Deferrals and/or Bonus Deferrals, as a Group II Employee for any future Plan Year, unless the Group II Employee subsequently qualifies as a Group II Employee.

(ii) Termination of Employment for any Reason Other Than Cause. If a Group II Employee ceases to be employed by an Employer (including any employer in the Employer's controlled group) at any time during the Plan Year for any reason other than a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, AWW will credit, as soon as administratively practicable following the date the Group II Employee terminates employment with the Employer (or any employer in the Employer's controlled group), to (x) the Group II Employer Defined Contribution Account of such Group II Employee, a Group II Employer Defined Contribution equal to the amount that the Group II Employee accrued for the Plan Year ending on the date such Group II Employee terminated employment, and (y) the Group II Matching Account of such Group II Employee, a Group II Matching Contribution equal to the amount that the Group II Employee accrued for the Plan Year ending on the date of such Group II Employee's termination of employment.

(iii) Termination of Employment for Cause. If a Group II Employee ceases to be employed by an Employer (or any employer in the Employer's controlled group) at any time during the Plan Year as a result of a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, all Group II Employer Defined Contributions and all Group II Matching Contributions that have previously been credited on behalf of such Group II Employee to his or her respective Account(s) shall be forfeited, and no such amounts shall be credited to such Group II Employee's Account(s) for the Plan Year in which such termination of employment occurs.

Section 4.03. Group III Employees.

(a) Deferral Contributions. Each Plan Year, all Group III Employees will be offered the opportunity to make a Base Salary Deferral with respect to Base Salary to be paid in the Plan Year and a Bonus Deferral with respect to Bonus to be earned in the Plan Year. Any Group III Employee may enroll in the Plan effective as of the first day of a Plan Year by filing a completed and fully executed Enrollment Agreement with the Committee by a date set by the Committee, but in any event prior to the first day of the Plan Year. Pursuant to said Enrollment Agreement, the Group III Employee shall irrevocably elect (i) the percentage (up to 20%) (whole percentages only) by which (as a result of payroll reduction), the Group III Employee's Base Salary to be paid during that Plan Year will be deferred to the Plan, and (ii) the percentage (up to 100%) (whole percentages only) by which (as a result of payroll reduction), the Group III Employee's Bonus to be earned during that Plan Year will be deferred to the Plan. Any Group III Deferral Contribution made under this Section 4.03(a) will be credited to the Group III Employee's Group III Deferral Account as soon as administratively practicable following the end of the applicable month for which the deferral relates. Each Plan Year, a Group III Employee must complete and fully execute a new Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year in which such Enrollment Agreement will become effective. Notwithstanding anything herein to the contrary, if the Group III Employee experiences an Unforeseeable Emergency, a Group III Employee may submit a request to the Committee on the form provided by the Committee to cease the Base Salary Deferrals and/or Bonus Deferrals, being made in the current Plan Year on the Group III Employee's behalf. If the Committee determines that the Group III Employee has experienced an Unforeseeable Emergency, the cessation of the Group III Employee's Base Salary Deferrals and/or Bonus Deferrals will be effective as soon as administratively practicable after the Committee's determination, but not later than sixty (60) days following such determination. Any Group III Employee who ceases Base Salary Deferrals and/or Bonus Deferrals on account of an Unforeseeable Emergency shall not be eligible to elect to make any future Base Salary Deferrals and/or Bonus Deferrals for the remainder of the Plan Year in which the Unforeseeable Emergency occurs. For any future Plan Year, the Group III Employee will need to execute a new Enrollment Agreement within the time period described above.

(b) Matching Contributions. Each Group III Employee who makes a Base Salary Deferral for the Plan Year will receive a Group III Matching Contribution equal to (i) 50% of his or her Group III Deferral Contribution, up to a maximum of 5% of the Group III Employee's Matching Compensation, less (ii) the maximum amount of Matching Contribution that the Group III Employee is eligible to receive under the Savings Plan, irrespective of whether the Group III Employee actually receives the maximum amount of Matching Contribution under the Savings Plan for the Plan Year. Any Group III Matching Contribution made under this Section 4.03(b) will be credited to the Group III Employee's Group III Matching Account as soon as administratively practicable following the end of the Plan Year to which it relates (or such other time(s) as the Committee may determine, in its sole discretion). No Matching Contributions will be made for a Group III Employee if such Group III Employee does not make any Base Salary Deferral for the Plan Year.

(c) Special Contribution. Prior to the Effective Date, AWW credited to the Special Contribution Account certain Special Contributions for the benefit of those Group III Employees who were specifically designated by the Board to receive such Special Contributions, the value of which was determined by the Board at such time. Only those Group III Employees who were specifically designated to receive the Special Contributions were eligible to receive the Special Contributions.

(d) Time of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.03(a), the Group III Employee shall also designate the time on which such Group III Deferral Contribution for the Plan Year shall be paid to the Group III Employee. A Group III Employee may elect one of the following as a permitted time for distribution of his or her Group III Deferral Contributions for such Plan Year: (i) Separation From Service; or (ii) a Specified Distribution Date; provided, however, that if the Group III Employee does not make an election in the Enrollment Agreement as to the time of payment for his or her Group III Deferral Contributions for the Plan Year, the Group III Employee shall be deemed to have elected Separation From Service as the time of payment. A Group III Employee's Group III Matching Contributions for the Plan Year shall be paid at the same time as the Group III Deferral Contributions for the Plan Year are paid to the Group III Employee and no Group III Employee shall be eligible to make a separate election as to the time when his or her Group III Matching Contributions for the Plan Year shall be paid to him or her. Except as provided in Section 7.05, the election as to the time of payment cannot be subsequently

changed. The Plan Year election that shall apply as to the time of distribution for the Special Contribution shall be the eligible Group III Employee's 2008 Plan Year election.

(e) Form of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.03(a), the Group III Employee shall also designate the form pursuant to which such Group III Deferral Contribution for the Plan Year shall be paid to the Group III Employee. A Group III Employee may elect one of the following forms for distribution of his or her Group III Deferral Contributions for such Plan Year: (i) lump sum or (ii) substantially equal annual installments that are paid over a period of between two (2) and ten (10) years, as designated by the Group III Employee in the Enrollment Agreement; provided, however, that if the Group III Employee does not make an election in the Enrollment Agreement as to the form of payment for his or her Group III Deferral Contributions for the Plan Year, the Group III Employee shall be deemed to have elected lump sum as the form of payment. A Group III Employee's Group III Matching Contributions for the Plan Year shall be paid in the same form as the Group III Deferral Contributions for the Plan Year are paid to the Group III Employee and no Group III Employee shall be eligible to make a separate election as to the form in which his or her Group III Matching Contributions for the Plan Year shall be paid to him or her. Except as provided in Section 7.05, the election as to the form of payment cannot be subsequently changed. The Plan Year election that shall apply as to the form of distribution for the Special Contribution shall be the eligible Group III Employee's 2008 Plan Year election.

(f) Newly Eligible Group III Employees. Any individual who first qualifies as a Group III Employee during a particular Plan Year shall not be eligible to participate in the Plan as a Group III Employee until the following Plan Year.

(g) Change in Status. If at any time during the Plan Year a Group III Employee ceases to qualify as such, then the following provisions shall apply.

(i) Cessation as a Group III Employee. If a Group III Employee ceases to qualify as a Group III Employee at any time during the Plan Year, but remains employed by the Employer (or any employer in the Employer's controlled group), AWW will credit to such Group III Employee's Group III Matching Account, at the same time that Group III Matching Contributions are credited to the other Group III Employees' Group III Matching Accounts, an amount equal to the amount that the Group III Employee would have received if the Group III Employee continued as such for the remainder of the Plan Year. In addition, the Group III Employee's Base Salary Deferral and/or Bonus Deferral for the Plan Year will continue in effect for the remainder of the Plan Year. The Group III Employee shall not be eligible to receive any further Group III Matching Contributions, or elect to make Base Salary Deferrals and/or Bonus Deferrals as a Group III Employee for any future Plan Year, unless the Group III Employee subsequently qualifies as a Group III Employee.

(ii) Termination of Employment for any Reason Other Than Cause. If a Group III Employee ceases to be employed by an Employer (including any employer in the Employer's controlled group) at any time during the Plan Year for any reason other than a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, AWW will credit, as soon as administratively practicable following the date the Group III Employee terminates employment with the Employer (or any employer in the Employer's controlled group), to the Group III Matching Account of such Group III Employee a Group III Matching Contribution equal to the amount that the Group III Employee accrued for the Plan Year ending on the date of such Group III Employee's termination of employment.

(iii) Termination of Employment for Cause. If a Group III Employee ceases to be employed by an Employer (or any employer in the Employer's controlled group) at any time during the Plan Year as a result of a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, all Group III Matching Contributions and Special Contributions that have previously been credited on behalf of such Group III Employee to his or her respective Account(s) shall be forfeited, and no such amounts shall be credited to such Group III Employee's Account(s) for the Plan Year in which such termination of employment occurs.

ARTICLE V

INVESTMENT CREDITS AND FUNDING

Section 5.01. Deemed Investment Options. The Deemed Investment Options available under the Plan shall consist of those funds that the Investment Committee has designated as the Deemed Investment Options under the Plan, which for this purpose will include various funds designated by the Investment Committee; provided, however, the Investment Committee reserves the right, on a prospective basis, to add or delete Deemed Investment Options. Notwithstanding that the rates of return credited to Participants' Account(s) under the Deemed Investment Options are based upon the actual performance of the investment funds designated by the Investment Committee, AWW shall not be obligated to invest any amounts credited to a Participant's Account(s) under this Plan, or any other amounts, in such portfolios or in any other investment funds. The Plan shall be entirely unfunded and no provision shall at any time be made with respect to segregating any assets of AWW or an Employer for payment of any distributions hereunder. Notwithstanding the foregoing, however, the Investment Committee may, but shall not be required, to authorize the establishment of a trust or the purchase of insurance to serve as a funding vehicle for AWW's obligations with respect to the Plan. In any event, the obligation of AWW hereunder shall constitute a general, unsecured obligation, payable solely from the general assets of AWW, and no Participant shall have any rights to any specific assets of AWW or any Employer.

Section 5.02. Returns on Accounts. A Participant's Account(s) shall be credited with returns in accordance with the Deemed Investment Options elected by the Participant from time to time; provided, however, that if the Participant does not affirmatively elect a Deemed Investment Option, until the Participant makes an affirmative election as to the Deemed Investment Options under the Plan, the Participant will be deemed to have elected the default investment option that the Investment Committee has designated for this purpose. Unless otherwise provided under this Plan, Participants may allocate the amounts credited to their Account(s), as applicable, among the Deemed Investment Options available under the Plan only in whole percentages of not less than one percent. The rate of return, positive or negative, credited under each Deemed Investment Option is based upon the actual investment performance of the investment fund(s) designated by the Investment Committee from time to time, and shall equal the total return of such investment fund net of asset based charges, including, without limitation, money management fees, fund expenses and mortality and expense risk insurance contract charges.

Section 5.03. Changes in Deemed Investment Options. A Participant may change the Deemed Investment Options to which the Participant's Account(s) are deemed to be allocated on such basis as determined by the Investment Committee in its sole discretion. Each such change may include (a) reallocation of the Participant's existing Account(s) in whole percentages of not less than one percent, and/or (b) change in investment allocation of amounts to be credited to the Participant's Account(s) in the future, as the Participant may elect.

Section 5.04. Valuation of Accounts. The value of a Participant's Account(s) as of any date shall equal the amounts theretofore credited to such Account(s), including any earnings (positive or negative) deemed to be earned on such Account(s) in accordance with Section 5.02 through the day preceding such date, less the amounts theretofore deducted from such Account(s).

Section 5.05. Statement of Accounts. The Committee shall provide to each Participant, at such intervals determined by the Committee, a statement in such form as the Committee deems desirable setting forth the balance standing to the credit of each Participant in each of his or her Account(s).

ARTICLE VI

VESTING

Section 6.01. Vesting for Group I Employees.

(a) **Employer Contributions.** Unless the Committee determines otherwise, a Group I Employee shall be fully vested in the amounts credited to his or her Group I Employer Defined Contribution

Account upon the earliest of: (a) his or her completion of five (5) years of service with the Employer; (b) his or her attainment of age 65 while an Employee; (c) if he or she was an Employee at the time of his or her death, the date of his or her death; or (d) if he or she was an Employee at the time of the Change of Control, the date of a Change of Control. For this purpose, a Group I Employee shall be credited with a year of service for each twelve (12) consecutive months of employment as an Employee, measured from service his or her employment commencement date with the Employer and each anniversary thereof, *plus* any additional years of service credited under the AWW Executive Severance Policy, as it may be amended from time to time.

(b) Deferral Contributions. A Group I Employee shall at all times be fully vested in the amounts credited to his or her Group I Deferral Account.

(c) Matching Contributions. A Group I Employee shall at all times be fully vested in the amounts credited to his or her Group I Matching Account.

(d) Special Contribution. A Group I Employee shall at all times be fully vested in the amounts credited to his or her Special Contribution Account.

Section 6.02. Vesting for Group II Employees.

(a) Employer Contributions. Unless the Committee determines otherwise, a Group II Employee shall be fully vested in the amounts credited to his or her Group II Employer Defined Contribution Account upon the earliest of: (a) his or her completion of five (5) years of service with the Employer; (b) his or her attainment of age 65 while an Employee; (c) if he or she was an Employee at the time of his or her death, the date of his or her death; or (d) if he or she was an Employee at the time of the Change of Control, the date of a Change of Control. For this purpose, a Group II Employee shall be credited with a year of service for each twelve (12) consecutive months of employment as an Employee, measured from his or her employment commencement date with the Employer and each anniversary thereof.

(b) Deferral Contributions. A Group II Employee shall at all times be fully vested in the amounts credited to his or her Group II Deferral Account.

(c) Matching Contributions. A Group II Employee shall at all times be fully vested in the amounts credited to his or her Group II Matching Account.

Section 6.03. Vesting for Group III Employees.

(a) Deferral Contributions. A Group III Employee shall at all times be fully vested in the amounts credited to his or her Group III Deferral Account.

(b) Matching Contributions. A Group III Employee shall at all times be fully vested in the amounts credited to his or her Group III Matching Account.

(c) Special Contribution. A Group III Employee shall at all times be fully vested in the amounts credited to his or her Special Contribution Account.

ARTICLE VII

DISTRIBUTIONS

Section 7.01. Distributions. If a Participant is entitled to receive a distribution of the vested amount credited to his or her Account(s) under the Plan on account of Separation From Service, unless the Participant has filed an Amended Enrollment Agreement pursuant to Section 7.05, such amount shall commence to be distributed to the Participant in the form selected by the Participant for such Plan Year in the January of the Plan Year that follows the Plan Year in which his or her Separation From Service occurs; provided, however, that if the Participant is a Specified Employee at the time of his or her Separation From Service the provisions of Section 7.02 below shall apply to such distribution. If a Participant is entitled to receive a distribution of the vested amount credited to his or her Account(s) under the Plan on account of a Specified Distribution Date, unless the Participant has filed an Amended Enrollment Agreement pursuant to Section 7.05, such amount shall

commence to be distributed to the Participant in the form selected by the Participant on such Specified Distribution Date. If a Participant elects to receive his or her benefit in the form of a lump sum, the value of the Participant's Account(s) attributable to the relevant Plan Years that will be distributed on account of a lump sum will be determined as of the first business day of the month in which the distribution occurs. If a Participant elects to receive his or her benefits in the form of installments, the value of the Participant's Account(s) that will be distributed on account of installments shall be equal to (A) the value of such Account as of the first business day of the month in which the distribution occurs, divided by (B) the number of annual installment payments elected by the Participant for such Plan Year's contributions. The remaining annual installments shall be equal to (1) the value of such Account(s) as of the first business day of the month in which the distribution occurs for such Plan Year's contributions, divided by (2) the number of installments remaining for such Plan Year's contributions.

Section 7.02. Distributions on Separation From Service for Participants Who Are Deemed Specified Employees. Unless the Participant has filed an Amended Enrollment Agreement pursuant to Section 7.05, any Participant who is deemed a Specified Employee at the time of his or her Separation From Service and designated (or is deemed to have designated) Separation From Service as the time for distribution of the vested amounts credited to his or her Account(s) under the Plan for the Plan Year, shall commence to receive such distribution(s) under the Plan on the later of (i) as soon as administratively practicable following the first day of the seventh month following the Participant's Separation Date, but no later than thirty (30) days following such date, or (ii) the January of the Plan Year that follows the Plan Year in which his or her Separation From Service occurs. If a distribution payable in installments is delayed because of the immediately preceding sentence, the first distribution will be equivalent to the installment that the Participant would have received for the first six (6) months following the Participant's Separation From Service and the remaining installments shall be paid in accordance with the schedule designated by the Participant in the Enrollment Agreement or Amended Enrollment Agreement, if any, as if the installments commenced on the Participant's Separation Date. A distribution paid pursuant to this Section 7.02 shall be paid by AWW. If a Participant elects to receive his or her benefit in the form of a lump sum, the value of the Participant's Account(s) attributable to the relevant Plan Years that will be distributed on account of a lump sum will be determined as of the first business day of the month in which the distribution occurs. If a Participant elects to receive his or her benefits in the form of installments, the value of the Participant's Account(s) that will be distributed on account of installments shall be equal to (A) the value of such Account as of the first business day of the month in which the distribution occurs, divided by (B) the number of annual installment payments elected by the Participant for such Plan Year's contributions. The remaining annual installments shall be equal to (1) the value of such Account(s) as of the first business day of the month in which the distribution occurs for such Plan Year's contributions, divided by (2) the number of installments remaining for such Plan Year's contributions.

Section 7.03. Death of Participant. If a Participant dies prior to commencement of his or her benefit under the Plan, the Participant's Beneficiary shall receive a lump sum distribution of the entire vested amount credited to the Participant's Account(s) as soon as administratively practicable following the date of the Participant's death, but no later than sixty (60) days following the date of such death. If a Participant dies after commencement of his or her benefit under the Plan, the Participant's Beneficiary shall receive a lump sum distribution of the remaining installments payable to the Participant under the Plan as soon as administratively practicable following the date of the Participant's death, but not later than sixty (60) days following the date of the Participant's death. The value of the Participant's Account(s) subject to such distribution will be determined as of the first business day of the month in which the distribution occurs.

Section 7.04. Distribution While Employed on Account of an Unforeseeable Emergency. In the event that the Committee, upon written request of a Participant, determines, in its sole discretion, that the Participant has suffered an Unforeseeable Emergency, AWW shall pay from the Participant's Group I Deferral Account, Group II Deferral Account, or Group III Deferral Account, as applicable, as soon as practicable following such determination, but not later than sixty (60) days, an amount necessary to meet the Unforeseeable Emergency, after deduction of any and all taxes as may be required pursuant to Section 10.07. Except as otherwise provided in regulations under section 409A of the Code, the amounts distributed to a Participant pursuant to an Unforeseeable Emergency shall not exceed the amounts necessary to satisfy such Unforeseeable Emergency, plus amounts necessary to pay taxes reasonably anticipated as a result of the distribution, after taking into account the extent to which such hardship is or may be relieved through reimbursement of compensation by insurance or otherwise or by liquidation of the Participant's assets (to the extent the liquidation of such assets would not itself cause severe financial hardship). With respect to that portion of the Group I

Deferral Account, Group II Deferral Account, or Group III Deferral Account, as applicable, which is distributed to a Participant, in accordance with this Section 7.04, the value of such amount shall be reduced from the Participant's Group I Deferral Account, Group II Deferral Account, or Group III Deferral Account, as applicable.

Notwithstanding anything in this Plan to the contrary, a Participant who receives a distribution pursuant to this Section 7.04 in any Plan Year shall not be entitled to make any further Group I Deferral Contributions, Group II Deferral Contributions, or Group III Deferral Contributions, as applicable, for the remainder of such Plan Year. No distributions pursuant to this Section 7.04 may be made from the Participant's Group I Employer Defined Contribution Account, Group I Matching Account, Group II Employer Defined Contribution Account, Group II Matching Account, Group III Matching Account or Special Contribution Account. The value of the Participant's Account(s) subject to such distribution will be determined as of the first business day of the month in the distribution occurs.

Section 7.05. Change in Time and/or Form. A Participant may change the time and/or form of a distribution designated in an Enrollment Agreement for a particular Plan Year by filing an Amended Enrollment Agreement with the Committee in accordance with the requirements of this Section 7.05. Specifically, to change the time and/or form of a distribution for a particular Plan Year, the Amended Enrollment Agreement applicable to such distribution (i) will not become effective for the twelve (12) month period after the date on which the Amended Enrollment Agreement is filed with the Committee; (ii) the distribution cannot commence for a period that is not less than five (5) years from the date such payment was originally scheduled to commence pursuant to the original Enrollment Agreement; and (iii) cannot be made less than twelve (12) months prior to the date of the scheduled payment. Except as provided in Section 7.03, once payment has commenced, the form of such payment shall not be modified.

Section 7.06. Type of Distribution. All distributions from the Plan will be paid to the Participant in cash.

ARTICLE VIII

AMENDMENT AND TERMINATION

Section 8.01. Amendment and Termination. The Plan may be amended, suspended, discontinued or terminated at any time by the Committee; provided, however, that, except as provided below, no such amendment, suspension, discontinuance or termination shall reduce or in any manner adversely affect the rights of any Participant with respect to benefits that are payable or may become payable under the Plan based upon the balance of the Participant's Account as of the effective date of such amendment, suspension, discontinuance or termination. Notwithstanding anything to the contrary in this Section 8.01, if the Committee determines that, in order to comply with the requirements of section 409A of the Code, additional changes must be made to the Plan, then the Committee may, in its sole discretion and without the consent of a Participant, amend the Plan to comply with such requirements. If the Committee terminates the Plan, Participants shall be entitled to a distribution of their benefit under the Plan if the termination is on account of a permitted distribution event under Treas. Reg. §1.409A-3(j)(4)(ix)(A), (B), (C) or (D) and the requirements, as applicable, of such regulations are met with respect to the termination of the Plan and distribution of benefits hereunder.

ARTICLE IX

CLAIMS PROCEDURES

Section 9.01. Claim. A person who believes that he or she is being denied a benefit to which he or she is entitled under the Plan (hereinafter referred to as a "Claimant") may file a written request for such benefit with the Committee, setting forth the claim.

Section 9.02. Claim Decision. Upon receipt of a claim, the Committee shall advise the Claimant that a reply will be forthcoming within ninety (90) days and shall, in fact, deliver such reply within such period. The Committee may, however, extend the reply period for an additional ninety (90) days for reasonable cause. If the claim is denied in whole or in part, the Claimant shall be provided a written explanation, using language calculated to be understood by the Claimant, setting forth: (a) the specific reason or reasons for such denial; (b)

the specific reference to relevant provisions of the Plan on which such denial is based; (c) a description of any additional material or information necessary for the Claimant to perfect the claim and an explanation why such material or such information is necessary; (d) appropriate information as to the steps to be taken if the Claimant wishes to submit the claim for review; (e) the time limits for requesting a review; and (f) that the Claimant has the right to bring an action for benefits under section 502 of ERISA following an adverse determination on review.

Section 9.03. Request for Review. Within sixty (60) days after the receipt by the Claimant of the written opinion described above, the Claimant may request in writing that the Committee review its determination. The Claimant, or his or her duly authorized representative, may, but need not, review the pertinent documents and submit issues and comments in writing for consideration by the Committee. If the Claimant does not request a review of the initial determination within such sixty (60) day period, the Claimant shall be barred and estopped from challenging the determination.

Section 9.04. Review of Decision. Within sixty (60) days after the Committee's receipt of a request for review, it will review the initial determination. After considering all materials presented by the Claimant, the Committee will render a written opinion, written in a manner calculated to be understood by the Claimant. If the decision is adverse, the written opinion will (a) set forth the specific reasons for the decision and specific references to the relevant provisions of this Plan on which the decision is based; and (b) include a statement that the Claimant is entitled to receive, upon request and free of charge, reasonable access to, and copies of, all documents, records and other information relevant to the claim and that the Claimant may bring an action under section 502(a) of ERISA. If special circumstances require that the sixty (60) day time period be extended, the Committee will so notify the Claimant and will render the decision as soon as possible, but no later than one hundred twenty (120) days after receipt of the request for review.

Section 9.05. Limitations on Claims. A Participant (or Beneficiary, if applicable) shall have no right to bring any action at law or equity regarding a claim for benefits under the Plan, unless and until he or she exhausts his or her rights to review under Article IX in accordance with the time frames set forth therein. No action at law or in equity shall be brought to recover benefits under the Plan later than two years from the date of the Committee's final determination following the request for review of an adverse benefit determination made under Article IX. Notwithstanding the foregoing, if the applicable, analogous New Jersey statute of limitations has run or will run before the aforementioned two-year period, the New Jersey statute of limitations is controlling. No action at law or in equity shall be brought in connection with the Plan except in the U.S. District Court for the District of New Jersey.

ARTICLE X

MISCELLANEOUS

Section 10.01. Designation of Beneficiary. Each Participant may designate a Beneficiary or Beneficiaries (which Beneficiary may be an entity other than a natural person) to receive any payments which may be made following the Participant's death. Such designation may be changed or canceled at any time without the consent of any such Beneficiary. Any such designation, change or cancellation must be made in a form approved by the Committee and shall not be effective until received by the Committee, or its designee. If no Beneficiary has been named, or the designated Beneficiary or Beneficiaries shall have predeceased the Participant, the Beneficiary shall be, in descending order, (a) the Participant's spouse, (b) the person, persons or trust designated by the Participant as direct or contingent beneficiary in a manner prescribed by the Committee, or (c) if the Participant has no spouse and has failed to make an effective beneficiary designation, the Participant's estate. If a Participant designates more than one Beneficiary, the interests of such Beneficiaries shall be paid in equal percentages, unless the Participant has specifically designated otherwise. If the Participant and his or her spouse are divorced or legally separated, the designation of the spouse as Beneficiary under the Plan is automatically rescinded, provided the Plan receives notice prior to distribution, unless the Participant completes a new Beneficiary designation naming the prior spouse as Beneficiary.

Section 10.02. Limitation of Participant's Right. Nothing in this Plan shall be construed as conferring upon any Participant any right to continue in the employment of the Employer (or any employer in the Employer's controlled group), nor shall it interfere with the rights of the Employer (or any employer in the Employer's controlled group) to terminate the employment of any Participant and/or to take any personnel

action affecting any Participant without regard to the effect which such action may have upon such Participant as a recipient or prospective recipient of benefits under the Plan. Any amounts payable hereunder shall not be deemed salary or other compensation to a Participant for the purposes of computing benefits to which the Participant may be entitled under any other arrangement established by the Employer (or any employer in the Employer's controlled group) for the benefit of its employees.

Section 10.03. No Limitation on Employer Actions. Nothing contained in the Plan shall be construed to prevent the Employer from taking any action which is deemed by it to be appropriate or in its best interest. No Participant, Beneficiary, or other person shall have any claim against the Employer as a result of such action.

Section 10.04. Obligations to the Employer. To the maximum extent permitted under section 409A of the Code and its corresponding regulations, if a Participant becomes entitled to a distribution of benefits under the Plan, and if at such time the Participant has outstanding any debt, obligation, or other liability representing an amount owing to the Employer, then AWW may offset such amount owed to the Employer against the amount of benefits otherwise distributable. Such determination shall be made by the Committee.

Section 10.05. Nonalienation of Benefits. Except as expressly provided herein, no Participant or Beneficiary shall have the power or right to transfer (otherwise than by will or the laws of descent and distribution), alienate, or otherwise encumber the Participant's interest under the Plan. AWW's obligations under this Plan are not assignable or transferable except to (a) any corporation or partnership which acquires all or substantially all of AWW's assets or (b) any corporation or partnership into which AWW may be merged or consolidated. The provisions of the Plan shall inure to the benefit of each Participant and the Participant's Beneficiaries, heirs, executors, administrators or successors in interest.

Section 10.06. Protective Provisions. Each Participant shall cooperate with AWW by furnishing any and all information requested by AWW in order to facilitate the payment of benefits hereunder, taking such physical examinations as AWW may deem necessary and taking such other relevant action as may be requested by AWW. If a Participant refuses to cooperate, AWW shall have no further obligation to the Participant under the Plan, other than payment to such Participant of the then current balance of the Participant's Accounts in accordance with his or her prior elections.

Section 10.07. Withholding Taxes. AWW and/or the Employer may make such provisions and take such action as it may deem necessary or appropriate for the withholding of any taxes which AWW and/or the Employer is required by any law or regulation of any governmental authority, whether Federal, state or local, to withhold in connection with any deferrals to, amounts credited to and benefits payable under the Plan, including, but not limited to, withholding of appropriate sums from any amount payable to the Participant (or his or her Beneficiary) under the Plan or otherwise payable to the Participant from other sources. Each Participant, however, shall be responsible for the payment of all individual tax liabilities relating to any such deferrals, credits and benefits.

Section 10.08. Unfunded Status of Plan. The Plan is intended to constitute an "unfunded" plan of deferred compensation for Participants. Benefits payable hereunder shall be payable out of the general assets of AWW, and no segregation of any assets whatsoever for such benefits shall be made. With respect to any payments not yet made to a Participant, nothing contained herein shall give any such Participant any rights to assets that are greater than those of a general creditor of AWW.

Section 10.09. Severability. If any provision of this Plan is held unenforceable, the remainder of the Plan shall continue in full force and effect without regard to such unenforceable provision and shall be applied as though the unenforceable provision were not contained in the Plan.

Section 10.10. Governing Law. The Plan shall be construed in accordance with and governed by the laws of the State of New Jersey, without reference to the principles of conflict of laws.

Section 10.11. Headings. Headings are inserted in this Plan for convenience of reference only and are to be ignored in the construction of the provisions of the Plan.

Section 10.12. Gender, Singular and Plural. All pronouns and any variations thereof shall be deemed to refer to the masculine, feminine, or neuter, as the identity of the person or persons may require. As the context may require, the singular may read as the plural and the plural as the singular.

Section 10.13. Notice. Any notice required or permitted under the Plan shall be sufficient if in writing and hand delivered or sent by registered or certified mail. Such notice shall be deemed given as of the date of delivery or, if delivery is made by mail, as of the date shown on the postmark on the receipt for registration or certification. Mailed notice to the Committee shall be directed to AWW's address. Mailed notice to a Participant or Beneficiary shall be directed to the individual's last known address in the Employer's records.

Section 10.14. Incapacity. In the event that any amount becomes payable under the Plan to a person who, in the sole judgment of the Committee, is considered by reason of physical or mental condition to be unable to give a valid receipt therefore, the Committee may direct that such payment be made to any person found by the Committee, in its sole judgment, to have assumed the care of such person. Any payment made pursuant to such determination shall constitute a full release and discharge of the Committee, AWW and the Employer.

Section 10.15. Section 409A. The Plan is intended to comply with the applicable requirements of section 409A of the Code and its corresponding regulations and related guidance, and shall be administered in accordance with section 409A of the Code to the extent section 409A of the Code applies to the Plan. Notwithstanding anything in the Plan to the contrary, elections to defer Base Salary and Bonus, as applicable, to the Plan, and distributions from the Plan, may only be made in a manner and upon an event permitted by section 409A of the Code. To the extent that any provision of the Plan would cause a conflict with the requirements of section 409A of the Code, or would cause the administration of the Plan to fail to satisfy the requirements of section 409A of the Code, such provision shall be deemed null and void to the extent permitted by applicable law. Other than on a valid Enrollment Agreement or Amended Enrollment Agreement, in no event shall a Participant, directly or indirectly, designate the calendar year of payment. For avoidance of doubt, deferrals under the Plan are maintained on a Plan Year basis.

Executed this first day of January, 2017.

EXHIBIT A

REGULATED DESIGNATED SUBSIDIARIES

America Water Works Company, Inc.
American Water Works Service Company, Inc.
California-American Water Company
Hawaii-American Water Company
Illinois-American Water Company, Inc.
Indiana-American Water Company, Inc.
Iowa-American Water Company
Kentucky-American Water Company
Maryland-American Water Company
Michigan-American Water Company
Missouri-American Water Company
New Jersey-American Water Company, Inc.
New York American Water Company, Inc.
Pennsylvania-American Water Company
Tennessee-American Water Company
Virginia-American Water Company
West Virginia-American Water Company

EXHIBIT B

GROUP I EMPLOYEES

A non-union Employee hired or rehired by the Employer on or after January 1, 2006 and who is employed by the Employer at a salary level of 60 or above.

EXHIBIT C

GROUP II EMPLOYEES

A non-union Employee hired or rehired by the Employer on or after January 1, 2006 and who meets the following requirements: (i) is employed at the level of below 60, (ii) the sum of the non-union Employee's (A) Base Salary for the immediately prior Plan Year, and (B) Bonus that was paid in the immediately prior Plan Year, is greater than the Compensation Limit for the Plan Year in which the Employee will be eligible to participate in the Plan; and (iii) is designated as a Group II Employee by the Committee for the Plan Year. Notwithstanding the foregoing, the Committee may, in its sole discretion, waive the requirement in clause (ii) above with respect to any non-union Employee and designate such non-union Employee as a Group II Employee for the Plan Year.

EXHIBIT D

GROUP III EMPLOYEES

A non-union Employee hired prior to January 1, 2006, is employed by the Employer as of the Original Effective Date, and who meets one of the following requirements:

1. Is employed with the Employer at a level of 60 or above; or
2. (i) is employed at the level of below 60; (ii) the non-union Employee's Base Salary for the immediately prior Plan Year is greater than the Compensation Limit for the Plan Year in which the Employee will be eligible to participate in the Plan; and (iii) is designated as a Group III Employee by the Committee for the Plan Year. Notwithstanding the foregoing, the Committee may, in its sole discretion, waive the requirement in clause (ii) above with respect to any non-union Employee and designate such non-union Employee as a Group III Employee for the Plan Year.

**NONQUALIFIED SAVINGS AND
DEFERRED COMPENSATION PLAN FOR
EMPLOYEES OF
AMERICAN WATER WORKS COMPANY, INC.
AND ITS DESIGNATED SUBSIDIARIES**

(As amended and restated, effective as of June 1, 2018)

**NONQUALIFIED SAVINGS AND
DEFERRED COMPENSATION PLAN FOR
EMPLOYEES OF
AMERICAN WATER WORKS COMPANY, INC.
AND ITS DESIGNATED SUBSIDIARIES**

ARTICLE I

PURPOSE

AWW previously adopted this Plan, effective as of the Original Effective Date, in recognition of the services provided by certain key employees and officers of the Employer. The Plan is intended to provide Group I Employees with the opportunity to defer a portion of their Base Salary and Bonus on a tax-favored basis and to receive Group I Matching Contributions on such deferrals, as well as to receive an additional deemed annual contribution from AWW for a portion of their Bonus, plus the portion of their Base Salary that exceeds the limit on compensation under section 401(a)(17) of the Code. The Plan is also intended to provide Group II Employees with the opportunity to defer a portion of their Base Salary and Bonus on a tax-favored basis and to receive Group II Matching Contributions on such deferrals, as well as to receive an additional deemed annual contribution from AWW for a portion of their Base Salary that exceeds the limit on compensation under section 401(a)(17) of the Code. Further, the Plan is intended to provide Group III Employees with the opportunity to defer a portion of their Base Salary and Bonus on a tax-favored basis and to receive Group III Matching Contributions on their Base Salary Deferrals.

AWW intends that the Plan shall at all times be maintained on an unfunded basis for federal income tax purposes under the Code and administered as a non-qualified “top-hat” plan exempt from the substantive requirements of ERISA. AWW also intends that the Plan be operated and maintained in accordance with the requirements of section 409A of the Code and the regulations and rulings thereunder. AWW desires to amend and restate the Plan, effective as of the Effective Date, to incorporate prior amendments to the Plan, as well as to make certain design and clarifying changes to the Plan.

All capitalized terms shall have the meanings set forth in Article II below.

ARTICLE II

DEFINITIONS

For purposes of this Plan, the following terms shall have the meanings indicated, unless the context clearly indicates otherwise:

Section 2.01. “**Account(s)**” means, as applicable, for (a) a Group I Employee, his or her Group I Deferral Account, Group I Matching Account, Group I Employer Defined Contribution Account and Special Contribution Account, (b) for a Group II Employee, his or her Group II Deferral Account, Group II Matching Account and Group II Employer Defined Contribution Account, and (c) for a Group III Employee, his or her Group III Deferral Account, Group III Matching Account and Special Contribution Account.

Section 2.02. “**APP**” means the American Water Works Company, Inc. Annual Performance Plan, as in effect for the relevant Plan Year.

Section 2.03. “**Amended Enrollment Agreement**” means a new Enrollment Agreement executed by a Participant that satisfies the requirements of Section 7.05 and that changes the time and/or form of a distribution for a particular Plan Year.

Section 2.04. “**AWW**” means American Water Works Company, Inc. or any successor thereto.

Section 2.05. “**Base Salary**” means, for each Participant, his or her annual rate of base salary for the Plan Year, before taking into account amounts deferred under this Plan and amounts deferred to the Savings Plan (or any other qualified plan of the Employer) and to any section 125 of the Code plan of the Employer.

Section 2.06. “**Base Salary Deferral**” means that portion of Base Salary as to which a Participant has made an annual irrevocable election to defer receipt until the date specified in the Participant’s Enrollment Agreement.

Section 2.07. “**Beneficiary**” means the person or persons (natural or otherwise) designated by the Participant as such in accordance with Section 10.01.

Section 2.08. “**Board**” means the Board of Directors of AWW.

Section 2.09. “**Bonus**” means the amount earned by a Participant for a Plan Year under the APP, but does not include any other annual incentive plan maintained by the Employer for which the Participant earns a bonus for the Plan Year, before taking into account amounts deferred under this Plan with respect to the Plan Year and amounts deferred to the Savings Plan (or any other qualified plan of the Employer) and any section 125 of the Code plan of the Employer.

Section 2.10. “**Bonus Deferral**” means the portion of the Bonus as to which a Participant has made an annual irrevocable election to defer receipt.

Section 2.11. “**Cause**” means a finding by the Committee that the Participant (a) has breached his or her employment or service contract with the Employer, if any; (b) has engaged in disloyalty to the Employer, including, without limitation, fraud, embezzlement, theft, commission of a felony or proven dishonesty; (c) has disclosed trade secrets or confidential information of the Employer to persons not entitled to receive such information; (d) has breached any written noncompetition or nonsolicitation agreement between the Participant and the Employer; or (e) has engaged in such other behavior detrimental to the interests of the Employer as the Committee determines.

Section 2.12. “**Change of Control**” shall be deemed to have occurred if:

(i) Any “person” (as such term is used in sections 13(d) and 14(d) of the Exchange Act) becomes (x) during the 12-month period ending on the date of any acquisition of securities, a “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing more than 35% of the voting power of the then outstanding securities of the Company, or (y) a “beneficial owner,” as defined in clause (x) above, of more than 50% of the voting power of the then outstanding securities of the Company;

(ii) The consummation of (A) a merger or consolidation of the Company with another corporation where the stockholders of the Company, immediately prior to the merger or consolidation, will not beneficially own, immediately after the merger or consolidation, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the surviving corporation would be entitled in the election of directors, or (B) a sale or other disposition of all or substantially all of the assets of the Company; or

(iii) During any period of 12 consecutive months commencing on or after the Effective Date while the Plan is in effect, directors are elected such that a majority of the members of the Board are individuals who shall not have been members of the Board at the beginning of such 12-month period, except (x) in the case of a director’s death or (y) the election or nomination for election of each new director who was not a director at the beginning of such 12-month period where such election was approved by a vote of at least two-thirds of the directors then still in office who were directors at the beginning of such period.

Notwithstanding the foregoing, the Committee may provide for a different definition of a “Change of Control” in a Grant Agreement if such Grant is subject to the requirements of section 409A of the Code and the Grant will become payable on, or in connection with, a Change of Control.

Section 2.13. “**Code**” means the Internal Revenue Code of 1986, as amended.

Section 2.14. “**Committee**” means the AWW Benefits Administration Committee (or any successor thereto) or its delegate, or such other committee appointed by the Board to administer the Plan.

Section 2.15. “ Compensation Limit ” means the dollar limitation in effect under section 401(a)(17) of the Code with respect to a Plan Year, adjusted for inflation.

Section 2.16. “ Deemed Investment Option ” means the deemed investment options as designated by the Investment Committee for purposes of the Plan, as may be changed from time to time. Each Participant shall designate the Deemed Investment Options pursuant to which deemed earnings (or losses) shall be credited to the Participant’s Account(s) in accordance with Article V.

Section 2.17. “ Designated Subsidiary ” means a subsidiary of AWW that is listed in Exhibit A and any other subsidiary of AWW for which the Committee subsequently designates as a participating subsidiary for purposes of the Plan.

Section 2.18. “ Effective Date ” means June 1, 2018, the effective date of this amendment and restatement of the Plan. The “ Original Effective Date ” means January 1, 2008, the initial effective date of the Plan.

Section 2.19. “ Employee ” means any individual who is actively employed by the Employer on a full-time basis and whose earnings are reported on Form W-2; provided, however, that to qualify as an “Employee” for purposes of the Plan the individual must be a member of a select group of “management or highly compensation employees” of the Employer, within the meaning of sections 201, 301 and 401 of ERISA, and be specifically designated by the Committee as an Employee for purposes of the Plan.

Section 2.20. “ Employer ” means AWW and each Designated Subsidiary.

Section 2.21. “ Enrollment Agreement ” means the authorization form which a Group I Employee, Group II Employee and Group III Employee files with the Committee or its designee to make deferrals to the Plan.

Section 2.22. “ ERISA ” means the Employee Retirement Income Security Act of 1974, as amended.

Section 2.23. “ Exchange Act ” means the Securities Exchange Act of 1934, as amended.

Section 2.24. “ Group I Deferral Account ” means the bookkeeping account established by AWW to which are credited Group I Deferral Contributions, and notational earnings and losses thereon.

Section 2.25. “ Group I Deferral Contribution ” means the Base Salary Deferral and Bonus Deferral credited to the Plan by a Group I Employee pursuant to Section 4.01(b).

Section 2.26. “ Group I Employee ” means those Employees who meet the requirements set forth on the attached Exhibit B for the relevant Plan Year.

Section 2.27. “ Group I Landover Defined Contribution Account ” means the bookkeeping account established by AWW to which are credited Group I Employer Defined Contributions, and notational earnings and losses thereon.

Section 2.28. “ Group I Employer Defined Contribution ” means the amounts credited to the Plan for a Group I Employee by AWW pursuant to Section 4.01(a).

Section 2.29. “ Group I Matching Account ” means the bookkeeping account established by AWW to which are credited Group I Matching Contributions, and notational earnings and losses thereon.

Section 2.30. “ Group I Matching Contribution ” means the amounts credited to the Plan for a Group I Employee by AWW pursuant to Section 4.01(c).

Section 2.31. “ Group II Deferral Account ” means the bookkeeping account established by AWW to which are credited Group II Deferral Contributions, and notational earnings and losses thereon.

Section 2.32. “Group II Deferral Contribution” means the Base Salary Deferral and Bonus Deferral credited to the Plan by a Group II Employee pursuant to Section 4.02(b).

Section 2.33. “Group II Employee” means those Employees who meet the requirements set forth on the attached Exhibit C for the relevant Plan Year.

Section 2.34. “Group II Employer Defined Contribution Account” means the bookkeeping account established by AWW to which are credited Group II Employer Defined Contributions, and notational earnings and losses thereon.

Section 2.35. “Group II Employer Defined Contribution” means the amounts credited to the Plan for a Group II Employee by AWW pursuant to Section 4.02(a).

Section 2.36. “Group II Matching Account” means the bookkeeping account established by AWW to which are credited Group II Matching Contributions, and notational earnings and losses thereon.

Section 2.37. “Group II Matching Contribution” means the amounts credited to the Plan for a Group II Employee by AWW pursuant to Section 4.02(c).

Section 2.38. “Group III Deferral Account” means the bookkeeping account established by AWW to which are credited Group III Deferral Contributions, and notational earnings and losses thereon.

Section 2.39. “Group III Deferral Contribution” means the Base Salary and Bonus Deferral credited to the Plan by a Group III Employee pursuant to Section 4.03(a).

Section 2.40. “Group III Employee” means those Employees who meet the requirements set forth on the attached Exhibit D for the relevant Plan Year.

Section 2.41. “Group III Matching Account” means the bookkeeping account established by AWW to which are credited Group III Matching Contributions, and notational earnings and losses thereon.

Section 2.42. “Group III Matching Contribution” means the amounts credited to the Plan for a Group III Employee by AWW pursuant to Section 4.03(b).

Section 2.43. “Investment Committee” means the AWW Retirement and Benefits Plans Investment Committee (or any successor thereto).

Section 2.44. “Matching Compensation” means (a) for Group I Employees and Group II Employees - Base Salary, plus Bonus, for the Plan Year, and (b) for Group III Employees - Base Salary for the Plan Year.

Section 2.45. “Matching Contribution” means as such term is defined in the Savings Plan.

Section 2.46. “Participant” means each Group I Employee, Group II Employee and Group III Employee who is participating in the Plan in accordance with the provisions of Article IV. In the event of a Participant’s death, the term Participant shall mean the Participant’s Beneficiary. In the case of a Participant’s incompetency, the term Participant shall include an individual with a duly authorized power of attorney or, in the absence of a duly authorized power of attorney, the Participant’s personal representative or guardian. An individual shall remain a Participant until that individual has received full distribution of any amount credited to the Participant’s Account(s).

Section 2.47. “Plan” means this plan, called the Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as may be amended from time to time.

Section 2.48. “Plan Year” means the 12 month period beginning on each January 1 and ending on the following December 31.

Section 2.49. “**Savings Plan**” means the Savings Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as may be amended from time to time.

Section 2.50. “**Separation Date**” means the last day on which a Participant is employed by an Employer on account of a Separation From Service.

Section 2.51. “**Separation From Service**” means a Participant’s separation from service with the Employer within the meaning of section 409A of the Code and the regulations issued thereunder.

Section 2.52. “**Special Contribution**” means the amount credited to the Plan for a Group I Employee and Group III Employee during the 2008 Plan Year by AWW pursuant to Sections 4.01(d) and 4.03(c), respectively. The Group I Employees and Group III Employees who were eligible to receive the Special Contribution were those who were specifically designated as eligible to receive such under the Plan at the time of such Special Contribution. No other Group I Employees or Group III Employees were eligible to receive the Special Contribution.

Section 2.53. “**Special Contribution Account**” means the bookkeeping account established by AWW to which are credited Special Contributions, and notational earnings and losses thereon.

Section 2.54. “**Specified Distribution Date**” means (a) a specific time within the meaning of section 409A of the Code and the regulations issued thereunder that is designated by the Participant in his or her Enrollment Agreement or Amended Enrollment Agreement, as applicable; (b) provided, however, that (1) the Specified Distribution Date must be designated as a calendar year; (2) such calendar year must be later than the calendar year in which the Participant has vested in all of the amounts credited to his or her Account pursuant to Article VI; and (3) subject to Section 7.01, such date shall be deemed to be January of such calendar year.

Section 2.55. “**Specified Employee**” means any Participant who, at any time during the twelve month period ending on the identification date as determined by the Committee, is a specified employee under section 409A of the Code, as determined by the Committee. The determination of “specified employees,” including the number and identity of persons considered “specified employees” and identification date, shall be made by the Committee in accordance with the provisions of sections 416(i) and 409A of the Code and the regulations issued thereunder.

Section 2.56. “**Unforeseeable Emergency**” means the Participant has experienced an “unforeseeable emergency” within the meaning of Treas. Reg. §1.409A-3(i)(3)(i).

ARTICLE III

ADMINISTRATION OF THE PLAN AND DISCRETION

Section 3.01. **Administration**. The Committee shall have full power and authority to interpret the Plan, to prescribe, amend and rescind any rules, forms and procedures as it deems necessary or appropriate for the proper administration of the Plan and to make any other determinations and to take any other such actions as it deems necessary or advisable in carrying out its duties under the Plan. All actions taken by the Committee arising out of, or in connection with, the administration of the Plan or any rules adopted thereunder, shall, in each case, lie within its sole discretion, and shall be final, conclusive and binding upon AWW, the Employer, the Board, all Participants, all Beneficiaries of Participants and all persons and entities having an interest therein, and a Participant’s participation in the Plan shall constitute that Participant’s acknowledgement and acceptance of the Committee’s authority and discretion. The Committee may from time to time adopt rules and regulations governing the operation of this Plan and may employ and rely on such employees of the Employer, legal counsel, accountants, and agents, as it may deem advisable to assist in the administration of the Plan.

Section 3.02. **Compensation of Committee; Expenses**. Members of the Committee shall serve without compensation for their services unless otherwise determined by the Board. All expenses of administering the Plan shall be paid by AWW.

Section 3.03. **Indemnification**. AWW shall indemnify, defend and hold the Committee harmless from any and all claims, losses, damages, expenses (including counsel fees) and liability (including any

amounts paid in settlement of any claim or any other matter with the consent of the Board) arising from any act or omission of such member, except when the same is due to gross negligence or willful misconduct.

Section 3.04. Interpretations. Any decisions, actions or interpretations to be made under the Plan by AWW, the Employer, the Board or the Committee shall be made in its respective sole discretion, not as a fiduciary and need not be uniformly applied to similarly situated individuals and shall be final, binding and conclusive on all persons interested in the Plan.

ARTICLE IV

PARTICIPATION

Section 4.01. Group I Employees.

(a) **Employer Contributions.** Each Plan Year, AWW will make a Group I Employer Defined Contribution to the Plan on behalf of each Group I Employee who is employed by the Employer on the first day of such Plan Year. Except as otherwise provided in this Section 4.01, the amount of such Group I Employer Defined Contribution for the Plan Year for each Group I Employee will be equal to the sum of (i) 5.25% of such Group I Employee's Base Salary in excess of the Compensation Limit, and (ii) 5.25% of such Group I Employee's Bonus. Any Group I Employer Defined Contribution made under this Section 4.01(a) will be credited to the Group I Employee's Group I Employer Defined Contribution Account as soon as administratively practicable following the close of the Plan Year to which such Group I Employer Defined Contribution relates with respect to Base Salary for the Plan Year and as soon as administratively practicable following the date on which the Bonus for the Plan Year is paid to the Group I Employee.

(b) **Deferral Contributions.** Each Plan Year, all Group I Employees will be offered the opportunity to make a Base Salary Deferral with respect to Base Salary to be paid in the Plan Year and a Bonus Deferral with respect to Bonus to be earned in the Plan Year. Any Group I Employee may enroll in the Plan effective as of the first day of a Plan Year by filing a completed and fully executed Enrollment Agreement with the Committee by a date set by the Committee, but in any event prior to the first day of the Plan Year. Pursuant to said Enrollment Agreement, the Group I Employee shall irrevocably elect: (i) the percentage (up to 20%) (whole percentages only) by which (as a result of payroll reduction), the Group I Employee's Base Salary to be paid during that Plan Year will be deferred to the Plan, and (ii) the percentage (up to 100%) (whole percentages only) by which (as a result of payroll reduction), the Group I Employee's Bonus to be earned during that Plan Year will be deferred to the Plan. Any Group I Deferral Contribution made under this Section 4.01(b) will be credited to the Group I Employee's Group I Deferral Account as soon as administratively practicable following the end of the month for which the deferral relates. Each Plan Year, a Group I Employee must complete and fully execute a new Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year in which such Enrollment Agreement will become effective. Notwithstanding anything herein to the contrary, if the Group I Employee experiences an Unforeseeable Emergency, a Group I Employee may submit a request to the Committee on the form provided by the Committee to cease the Base Salary Deferrals and/or Bonus Deferrals, being made in the current Plan Year on the Group I Employee's behalf. If the Committee determines that the Group I Employee has experienced an Unforeseeable Emergency, the cessation of the Group I Employee's Base Salary Deferrals and/or Bonus Deferrals will be effective as soon as administratively practicable after the Committee's determination, but not later than sixty (60) days following such determination. Any Group I Employee who ceases Base Salary Deferrals and/or Bonus Deferrals on account of an Unforeseeable Emergency shall not be eligible to elect to make any future Base Salary Deferrals and/or Bonus Deferrals for the remainder of the Plan Year in which the Unforeseeable Emergency occurs. For any future Plan Year, the Group I Employee will need to execute a new Enrollment Agreement within the time period described above.

(c) **Matching Contributions.** Each Plan Year, each Group I Employee who makes a Group I Deferral Contribution for the Plan Year will receive a Group I Matching Contribution equal to (i) the sum of (A) 100% of his or her Group I Deferral Contribution, up to a maximum of 3% of the Group I Employee's Matching Compensation, and (B) 50% of his or her Group I Deferral Contribution, up to a maximum of the next 2% of the Group I Employee's Matching Compensation, less (ii) the maximum amount of Matching Contribution that the Group I Employee is eligible to receive under the Savings Plan, irrespective of whether the Group I Employee actually receives the maximum amount of Matching Contribution under the

Savings Plan for the Plan Year. Any Group I Matching Contribution made under this Section 4.01(c) will be credited to the Group I Employee's Group I Matching Account as soon as administratively practicable following the end of the Plan Year to which it relates (or such other time(s) as the Committee may determine, in its sole discretion). No Matching Contributions will be made for a Group I Employee if such Group I Employee does not make any Group I Deferral Contributions for the Plan Year.

(d) Special Contribution. Prior to the Effective Date, AWW credited to the Special Contribution Account certain Special Contributions for the benefit of those Group I Employees who were specifically designated by the Board to receive such Special Contributions, the value of which was determined by the Board at such time. Only those Group I Employees who were specifically designated to receive the Special Contributions were eligible to receive such Special Contributions.

(e) Time of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.01(b), the Group I Employee shall also designate the time on which such Group I Deferral Contributions for the Plan Year shall be paid to the Group I Employee. A Group I Employee may elect one of the following as a permitted time for distribution of his or her Group I Deferral Contributions for such Plan Year: (i) Separation From Service; or (ii) a Specified Distribution Date; provided, however, that if the Group I Employee does not make an election in the Enrollment Agreement as to the time of payment for his or her Group I Deferral Contributions for the Plan Year, the Group I Employee shall be deemed to have elected Separation From Service as the time of payment. A Group I Employee's Group I Matching Contributions for such Plan Year shall be paid at the same time as the Group I Deferral Contributions for the Plan Year are paid to the Group I Employee and no Group I Employee shall be eligible to make a separate election as to the time when his or her Group I Matching Contributions for the Plan Year shall be paid to him or her. A Group I Employee shall separately select the time of the distribution of his or her Group I Employer Defined Contribution for the relevant Plan Year among the permitted times set forth in this Section 4.01(e), provided, that the Group I Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which the Group I Employer Defined Contribution relates, but if no such election is made by the Group I Employee, the Group I Employee shall be deemed to have elected Separation From Service as the time of payment. Except as provided in Section 7.05, the election as to the time of payment cannot be subsequently changed. The Plan Year election that shall apply as to the time of distribution for the Special Contribution shall be the eligible Group I Employee's 2008 Plan Year election.

(f) Form of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.01(b), the Group I Employee shall also designate the form pursuant to which such Group I Deferral Contributions for the Plan Year shall be paid to the Group I Employee. A Group I Employee may elect one of the following forms for distribution of his or her Group I Deferral Contributions for such Plan Year: (i) lump sum or (ii) substantially equal annual installments that are paid over a period of between two (2) and ten (10) years, as designated by the Group I Employee in the Enrollment Agreement; provided, however, that if the Group I Employee does not make an election in the Enrollment Agreement as to the form of payment for his or her Group I Deferral Contributions for the Plan Year, the Group I Employee shall be deemed to have elected lump sum as the form of payment. A Group I Employee's Group I Matching Contributions for the Plan Year shall be paid in the same form as the Group I Deferral Contributions for the Plan Year are paid to the Group I Employee and no Group I Employee shall be eligible to make a separate election as to the form in which his or her Group I Matching Contributions for the Plan Year shall be paid to him or her. A Group I Employee shall separately select the form of the distribution of his or her Group I Employer Defined Contribution for the relevant Plan Year among the permitted forms set forth in this Section 4.01(f), provided, that the Group I Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which such Group I Employer Defined Contribution relates, but if no such election is made by the Group I Employee, the Group I Employee shall be deemed to have elected lump sum as the form of payment. Except as provided in Section 7.05, the election as to the form of payment cannot be subsequently changed. The Plan Year election that shall apply as to the form of distribution for the Special Contribution shall be the eligible Group I Employee's 2008 Plan Year election.

(g) Newly Eligible Group I Employees. Any individual who first qualifies as a Group I Employee during a particular Plan Year shall not be eligible to participate in the Plan as a Group I Employee until the following Plan Year.

(h) Change in Status. If at any time during the Plan Year a Group I Employee ceases to qualify as such, then the following provisions shall apply.

(i) Cessation as a Group I Employee. If a Group I Employee ceases to qualify as a Group I Employee at any time during the Plan Year, but remains employed by the Employer (or any employer in the Employer's controlled group), AWW will credit to (A) such Group I Employee's Group I Employer Defined Contribution Account, at the same time that Group I Employer Defined Contributions are credited to the other Group I Employees' Group I Employer Defined Contribution Accounts, an amount equal to the amount that the Group I Employee would have received if the Group I Employee continued as such for the remainder of the Plan Year; and (B) such Group I Employee's Group I Matching Account, at the same time that Matching Contributions are credited to the other Group I Employees' Group I Matching Accounts, an amount equal to the amount that the Group I Employee would have received if the Group I Employee continued as such for the remainder of the Plan Year. In addition, the Group I Employee's Base Salary Deferral and/or Bonus Deferral for the Plan Year will continue in effect for the remainder of the Plan Year. The Group I Employee shall not be eligible to receive any further Group I Employer Defined Contributions and Group I Matching Contributions, or elect to make Base Salary Deferrals and/or Bonus Deferrals, as a Group I Employee for any future Plan Year, unless the Group I Employee subsequently qualifies as a Group I Employee.

(ii) Termination of Employment for any Reason Other Than Cause. If a Group I Employee ceases to be employed by an Employer (including any employer in the Employer's controlled group) at any time during the Plan Year for any reason other than a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, AWW will credit, as soon as administratively practicable following the date the Group I Employee terminates employment with the Employer (or any employer in the Employer's controlled group), to (x) the Group I Employer Defined Contribution Account of such Group I Employee, a Group I Employer Defined Contribution equal to the amount that the Group I Employee accrued for the Plan Year ending on the date such Group I Employee terminated employment, except that no Group I Employer Defined Contribution will be credited for any portion of the Bonus, if any, that is paid to the Group I Employee following the date of his or her termination of employment, and (y) the Group I Matching Account of such Group I Employee, a Group I Matching Contribution equal to the amount that the Group I Employee accrued for the Plan Year ending on the date of such Group I Employee's termination of employment.

(iii) Termination of Employment for Cause. If a Group I Employee ceases to be employed by an Employer (or any employer in the Employer's controlled group) at any time during the Plan Year as a result of a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, all Group I Employer Defined Contributions, Group I Matching Contributions and Special Contributions that have previously been credited on behalf of such Group I Employee to his or her respective Account(s) shall be forfeited, and no such amounts shall be credited to such Group I Employee's Account(s) for the Plan Year in which such termination of employment occurs.

Section 4.02. Group II Employees

(a) Employer Contributions. Each Plan Year, AWW will make a Group II Employer Defined Contribution to the Plan on behalf of each Group II Employee who is employed by the Employer on the first day of the Plan Year. Except as otherwise provided in this Section 4.02, the amount of such Group II Employer Defined Contribution for the Plan Year for each Group II Employee will be equal to 5.25% of such Group II Employee's Base Salary in excess of the Compensation Limit. Any Group II Employer Defined Contribution made under this Section 4.02(a) will be credited to the Group II Employee's Group II Employer Defined Contribution Account as soon as administratively practicable following the close of the Plan Year to which such Group II Employer Defined Contribution relates with respect to Base Salary for the Plan Year.

(b) Deferral Contributions. Each Plan Year, all Group II Employees will be offered the opportunity to make a Base Salary Deferral with respect to Base Salary to be paid in the Plan Year and a Bonus Deferral with respect to Bonus to be earned in the Plan Year. Any Group II Employee may enroll in the Plan effective as of the first day of a Plan Year by filing a completed and fully executed Enrollment Agreement with the Committee by a date set by the Committee, but in any event prior to the first day of the Plan Year. Pursuant to said Enrollment Agreement, the Group II Employee shall irrevocably elect: (i) the percentage (up to 20%) (whole percentages only) by which (as a result of payroll reduction); the Group II Employee's Base Salary to be

paid during that Plan Year will be deferred to the Plan, and (ii) the percentage (up to 100%) (whole percentages only) by which (as a result of payroll reduction), the Group II Employee's Bonus to be earned during that Plan Year will be deferred to the Plan. Any Group II Deferral Contribution made under this Section 4.02(b) will be credited to the Group II Employee's Group II Deferral Account as soon as administratively practicable following the end of the applicable month for which the deferral relates. Each Plan Year, a Group II Employee must complete and fully execute a new Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year in which such Enrollment Agreement will become effective. Notwithstanding anything herein to the contrary, if the Group II Employee experiences an Unforeseeable Emergency, a Group II Employee may submit a request to the Committee on the form provided by the Committee to cease the Base Salary Deferrals and/or Bonus Deferrals, being made in the current Plan Year on the Group II Employee's behalf. If the Committee determines that the Group II Employee has experienced an Unforeseeable Emergency, the cessation of the Group II Employee's Base Salary Deferrals and/or Bonus Deferrals will be effective as soon as administratively practicable after the Committee's determination, but not later than sixty (60) days following such determination. Any Group II Employee who ceases Base Salary Deferrals and/or Bonus Deferrals on account of an Unforeseeable Emergency shall not be eligible to elect to make any future Base Salary Deferrals and/or Bonus Deferrals for the remainder of the Plan Year in which the Unforeseeable Emergency occurs. For any future Plan Year, the Group II Employee will need to execute a new Enrollment Agreement within the time period described above.

(c) Matching Contributions. Each Plan Year, each Group II Employee who makes a Group II Deferral Contribution for the Plan Year will receive a Group II Matching Contribution equal to (i) the sum of (A) 100% of his or her Group II Deferral Contribution, up to a maximum of 3% of the Group II Employee's Matching Compensation, and (B) 50% of his or her Group II Deferral Contribution, up to a maximum of the next 2% of the Group II Employee's Matching Compensation, less (ii) the maximum amount of Matching Contribution that the Group II Employee is eligible to receive under the Savings Plan, irrespective of whether the Group II Employee actually receives the maximum amount of Matching Contribution under the Savings Plan for the Plan Year. Any Group II Matching Contribution made under this Section 4.02(c) will be credited to the Group II Employee's Group II Matching Account as soon as administratively practicable following the end of the Plan Year to which it relates (or such other time(s) as the Committee may determine, in its sole discretion). No Matching Contributions will be made for a Group II Employee if such Group II Employee does not make any Group II Deferral Contributions for the Plan Year.

(d) Time of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.02(b), the Group II Employee shall also designate the time on which such Group II Deferral Contributions for the Plan Year shall be paid to the Group II Employee. A Group II Employee may elect one of the following as a permitted time for distribution of his or her Group II Deferral Contributions for such Plan Year: (i) Separation From Service; or (ii) a Specified Distribution Date; provided, however, that if the Group II Employee does not make an election in the Enrollment Agreement as to the time of payment for his or her Group II Deferral Contributions for the Plan Year, the Group II Employee shall be deemed to have elected Separation From Service as the time of payment. A Group II Employee's Group II Matching Contributions for the Plan Year shall be paid at the same time as the Group II Deferral Contributions for the Plan Year are paid to the Group II Employee and no Group II Employee shall be eligible to make a separate election as to the time when his or her Group II Matching Contributions for the Plan Year shall be paid to him or her. A Group II Employee shall separately select the time of the distribution of his or her Group II Employer Defined Contribution for the relevant Plan Year among the permitted times set forth in this Section 4.02(d), provided, that the Group II Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which the Group II Employer Defined Contribution relates, but if no such election is made by the Group II Employee, the Group II Employee shall be deemed to have elected Separation From Service as the time of payment. Except as provided in Section 7.05, the election as to the time of payment cannot be subsequently changed.

(e) Form of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.02(b), the Group II Employee shall also designate the form pursuant to which such Group II Deferral Contributions for the Plan Year shall be paid to the Group II Employee. A Group II Employee may elect one of the following forms for distribution of his or her Group II Deferral Contributions for such Plan Year: (i) lump sum or (ii) substantially equal annual installments that are paid over a period of between two (2) and ten (10) years, as designated by the Group II Employee in the

Enrollment Agreement; provided, however, that if the Group II Employee does not make an election in the Enrollment Agreement as to the form of payment for his or her Group II Deferral Contributions for the Plan Year, the Group II Employee shall be deemed to have elected lump sum as the form of payment. A Group II Employee's Group II Matching Contributions for the Plan Year shall be paid in the same form as the Group II Deferral Contributions for the Plan Year are paid to the Group II Employee and no Group II Employee shall be eligible to make a separate election as to the form in which his or her Group II Matching Contributions for the Plan Year shall be paid to him or her. A Group II Employee shall separately select the form of the distribution of his or her Group II Employer Defined Contribution for the relevant Plan Year among the permitted forms set forth in this Section 4.02(e), provided, that the Group II Employee files a completed and fully executed Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year for which such Group II Employer Defined Contribution relates, but if no such election is made by the Group II Employee, the Group II Employee shall be deemed to have elected lump sum as the form of payment. Except as provided in Section 7.05, the election as to the form of payment cannot be subsequently changed.

(f) Newly Eligible Group II Employees. Any individual who first qualifies as a Group II Employee during a particular Plan Year shall not be eligible to participate in the Plan as a Group II Employee until the following Plan Year.

(g) Change in Status. If at any time during the Plan Year a Group II Employee ceases to qualify as such, then the following provisions shall apply.

(i) Cessation as a Group II Employee. If a Group II Employee ceases to qualify as a Group II Employee at any time during the Plan Year, but remains employed by the Employer (or any employer in the Employer's controlled group), AWW will credit to (A) such Group II Employee's Group II Employer Defined Contribution Account, at the same time that Group II Employer Defined Contributions are credited to the other Group II Employees' Group II Employer Defined Contribution Accounts, an amount equal to the amount that the Group II Employee would have received if the Group II Employee continued as such for the remainder of the Plan Year; and (B) such Group II Employee's Group II Matching Account, at the same time that Matching Contributions are credited to the other Group II Employees' Group II Matching Accounts, an amount equal to the amount that the Group II Employee would have received if the Group II Employee continued as such for the remainder of the Plan Year. In addition, the Group II Employee's Base Salary Deferral and/or Bonus Deferral for the Plan Year will continue in effect for the remainder of the Plan Year. The Group II Employee shall not be eligible to receive any further Group II Employer Defined Contributions and Group II Matching Contributions, or elect to make Base Salary Deferrals and/or Bonus Deferrals, as a Group II Employee for any future Plan Year, unless the Group II Employee subsequently qualifies as a Group II Employee.

(ii) Termination of Employment for any Reason Other Than Cause. If a Group II Employee ceases to be employed by an Employer (including any employer in the Employer's controlled group) at any time during the Plan Year for any reason other than a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, AWW will credit, as soon as administratively practicable following the date the Group II Employee terminates employment with the Employer (or any employer in the Employer's controlled group), to (x) the Group II Employer Defined Contribution Account of such Group II Employee, a Group II Employer Defined Contribution equal to the amount that the Group II Employee accrued for the Plan Year ending on the date such Group II Employee terminated employment, and (y) the Group II Matching Account of such Group II Employee, a Group II Matching Contribution equal to the amount that the Group II Employee accrued for the Plan Year ending on the date of such Group II Employee's termination of employment.

(iii) Termination of Employment for Cause. If a Group II Employee ceases to be employed by an Employer (or any employer in the Employer's controlled group) at any time during the Plan Year as a result of a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, all Group II Employer Defined Contributions and all Group II Matching Contributions that have previously been credited on behalf of such Group II Employee to his or her respective Account(s) shall be forfeited, and no such amounts shall be credited to such Group II Employee's Account(s) for the Plan Year in which such termination of employment occurs.

Section 4.03. Group III Employees.

(a) Deferral Contributions. Each Plan Year, all Group III Employees will be offered the opportunity to make a Base Salary Deferral with respect to Base Salary to be paid in the Plan Year and a Bonus Deferral with respect to Bonus to be earned in the Plan Year. Any Group III Employee may enroll in the Plan effective as of the first day of a Plan Year by filing a completed and fully executed Enrollment Agreement with the Committee by a date set by the Committee, but in any event prior to the first day of the Plan Year. Pursuant to said Enrollment Agreement, the Group III Employee shall irrevocably elect (i) the percentage (up to 20%) (whole percentages only) by which (as a result of payroll reduction), the Group III Employee's Base Salary to be paid during that Plan Year will be deferred to the Plan, and (ii) the percentage (up to 100%) (whole percentages only) by which (as a result of payroll reduction), the Group III Employee's Bonus to be earned during that Plan Year will be deferred to the Plan. Any Group III Deferral Contribution made under this Section 4.03(a) will be credited to the Group III Employee's Group III Deferral Account as soon as administratively practicable following the end of the applicable month for which the deferral relates. Each Plan Year, a Group III Employee must complete and fully execute a new Enrollment Agreement with the Committee by the date set by the Committee, but in any event prior to the first day of the Plan Year in which such Enrollment Agreement will become effective. Notwithstanding anything herein to the contrary, if the Group III Employee experiences an Unforeseeable Emergency, a Group III Employee may submit a request to the Committee on the form provided by the Committee to cease the Base Salary Deferrals and/or Bonus Deferrals, being made in the current Plan Year on the Group III Employee's behalf. If the Committee determines that the Group III Employee has experienced an Unforeseeable Emergency, the cessation of the Group III Employee's Base Salary Deferrals and/or Bonus Deferrals will be effective as soon as administratively practicable after the Committee's determination, but not later than sixty (60) days following such determination. Any Group III Employee who ceases Base Salary Deferrals and/or Bonus Deferrals on account of an Unforeseeable Emergency shall not be eligible to elect to make any future Base Salary Deferrals and/or Bonus Deferrals for the remainder of the Plan Year in which the Unforeseeable Emergency occurs. For any future Plan Year, the Group III Employee will need to execute a new Enrollment Agreement within the time period described above.

(b) Matching Contributions. Each Group III Employee who makes a Base Salary Deferral for the Plan Year will receive a Group III Matching Contribution equal to (i) 50% of his or her Group III Deferral Contribution, up to a maximum of 5% of the Group III Employee's Matching Compensation, less (ii) the maximum amount of Matching Contribution that the Group III Employee is eligible to receive under the Savings Plan, irrespective of whether the Group III Employee actually receives the maximum amount of Matching Contribution under the Savings Plan for the Plan Year. Any Group III Matching Contribution made under this Section 4.03(b) will be credited to the Group III Employee's Group III Matching Account as soon as administratively practicable following the end of the Plan Year to which it relates (or such other time(s) as the Committee may determine, in its sole discretion). No Matching Contributions will be made for a Group III Employee if such Group III Employee does not make any Base Salary Deferral for the Plan Year.

(c) Special Contribution. Prior to the Effective Date, AWW credited to the Special Contribution Account certain Special Contributions for the benefit of those Group III Employees who were specifically designated by the Board to receive such Special Contributions, the value of which was determined by the Board at such time. Only those Group III Employees who were specifically designated to receive the Special Contributions were eligible to receive the Special Contributions.

(d) Time of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.03(a), the Group III Employee shall also designate the time on which such Group III Deferral Contribution for the Plan Year shall be paid to the Group III Employee. A Group III Employee may elect one of the following as a permitted time for distribution of his or her Group III Deferral Contributions for such Plan Year: (i) Separation From Service; or (ii) a Specified Distribution Date; provided, however, that if the Group III Employee does not make an election in the Enrollment Agreement as to the time of payment for his or her Group III Deferral Contributions for the Plan Year, the Group III Employee shall be deemed to have elected Separation From Service as the time of payment. A Group III Employee's Group III Matching Contributions for the Plan Year shall be paid at the same time as the Group III Deferral Contributions for the Plan Year are paid to the Group III Employee and no Group III Employee shall be eligible to make a separate election as to the time when his or her Group III Matching Contributions for the Plan Year shall be paid to him or her. Except as provided in Section 7.05, the election as to the time of payment cannot be subsequently

changed. The Plan Year election that shall apply as to the time of distribution for the Special Contribution shall be the eligible Group III Employee's 2008 Plan Year election.

(e) Form of Distribution. In addition to designating the percentage of deferrals in the Enrollment Agreement as provided in Section 4.03(a), the Group III Employee shall also designate the form pursuant to which such Group III Deferral Contribution for the Plan Year shall be paid to the Group III Employee. A Group III Employee may elect one of the following forms for distribution of his or her Group III Deferral Contributions for such Plan Year: (i) lump sum or (ii) substantially equal annual installments that are paid over a period of between two (2) and ten (10) years, as designated by the Group III Employee in the Enrollment Agreement; provided, however, that if the Group III Employee does not make an election in the Enrollment Agreement as to the form of payment for his or her Group III Deferral Contributions for the Plan Year, the Group III Employee shall be deemed to have elected lump sum as the form of payment. A Group III Employee's Group III Matching Contributions for the Plan Year shall be paid in the same form as the Group III Deferral Contributions for the Plan Year are paid to the Group III Employee and no Group III Employee shall be eligible to make a separate election as to the form in which his or her Group III Matching Contributions for the Plan Year shall be paid to him or her. Except as provided in Section 7.05, the election as to the form of payment cannot be subsequently changed. The Plan Year election that shall apply as to the form of distribution for the Special Contribution shall be the eligible Group III Employee's 2008 Plan Year election.

(f) Newly Eligible Group III Employees. Any individual who first qualifies as a Group III Employee during a particular Plan Year shall not be eligible to participate in the Plan as a Group III Employee until the following Plan Year.

(g) Change in Status. If at any time during the Plan Year a Group III Employee ceases to qualify as such, then the following provisions shall apply.

(i) Cessation as a Group III Employee. If a Group III Employee ceases to qualify as a Group III Employee at any time during the Plan Year, but remains employed by the Employer (or any employer in the Employer's controlled group), AWW will credit to such Group III Employee's Group III Matching Account, at the same time that Group III Matching Contributions are credited to the other Group III Employees' Group III Matching Accounts, an amount equal to the amount that the Group III Employee would have received if the Group III Employee continued as such for the remainder of the Plan Year. In addition, the Group III Employee's Base Salary Deferral and/or Bonus Deferral for the Plan Year will continue in effect for the remainder of the Plan Year. The Group III Employee shall not be eligible to receive any further Group III Matching Contributions, or elect to make Base Salary Deferrals and/or Bonus Deferrals as a Group III Employee for any future Plan Year, unless the Group III Employee subsequently qualifies as a Group III Employee.

(ii) Termination of Employment for any Reason Other Than Cause. If a Group III Employee ceases to be employed by an Employer (including any employer in the Employer's controlled group) at any time during the Plan Year for any reason other than a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, AWW will credit, as soon as administratively practicable following the date the Group III Employee terminates employment with the Employer (or any employer in the Employer's controlled group), to the Group III Matching Account of such Group III Employee a Group III Matching Contribution equal to the amount that the Group III Employee accrued for the Plan Year ending on the date of such Group III Employee's termination of employment.

(iii) Termination of Employment for Cause. If a Group III Employee ceases to be employed by an Employer (or any employer in the Employer's controlled group) at any time during the Plan Year as a result of a termination of employment by the Employer (or any employer in the Employer's controlled group) for Cause, all Group III Matching Contributions and Special Contributions that have previously been credited on behalf of such Group III Employee to his or her respective Account(s) shall be forfeited, and no such amounts shall be credited to such Group III Employee's Account(s) for the Plan Year in which such termination of employment occurs.

ARTICLE V

INVESTMENT CREDITS AND FUNDING

Section 5.01. Deemed Investment Options. The Deemed Investment Options available under the Plan shall consist of those funds that the Investment Committee has designated as the Deemed Investment Options under the Plan, which for this purpose will include various funds designated by the Investment Committee; provided, however, the Investment Committee reserves the right, on a prospective basis, to add or delete Deemed Investment Options. Notwithstanding that the rates of return credited to Participants' Account(s) under the Deemed Investment Options are based upon the actual performance of the investment funds designated by the Investment Committee, AWW shall not be obligated to invest any amounts credited to a Participant's Account(s) under this Plan, or any other amounts, in such portfolios or in any other investment funds. The Plan shall be entirely unfunded and no provision shall at any time be made with respect to segregating any assets of AWW or an Employer for payment of any distributions hereunder. Notwithstanding the foregoing, however, the Investment Committee may, but shall not be required, to authorize the establishment of a trust or the purchase of insurance to serve as a funding vehicle for AWW's obligations with respect to the Plan. In any event, the obligation of AWW hereunder shall constitute a general, unsecured obligation, payable solely from the general assets of AWW, and no Participant shall have any rights to any specific assets of AWW or any Employer.

Section 5.02. Returns on Accounts. A Participant's Account(s) shall be credited with returns in accordance with the Deemed Investment Options elected by the Participant from time to time; provided, however, that if the Participant does not affirmatively elect a Deemed Investment Option, until the Participant makes an affirmative election as to the Deemed Investment Options under the Plan, the Participant will be deemed to have elected the default investment option that the Investment Committee has designated for this purpose. Unless otherwise provided under this Plan, Participants may allocate the amounts credited to their Account(s), as applicable, among the Deemed Investment Options available under the Plan only in whole percentages of not less than one percent. The rate of return, positive or negative, credited under each Deemed Investment Option is based upon the actual investment performance of the investment fund(s) designated by the Investment Committee from time to time, and shall equal the total return of such investment fund net of asset based charges, including, without limitation, money management fees, fund expenses and mortality and expense risk insurance contract charges.

Section 5.03. Changes in Deemed Investment Options. A Participant may change the Deemed Investment Options to which the Participant's Account(s) are deemed to be allocated on such basis as determined by the Investment Committee in its sole discretion. Each such change may include (a) reallocation of the Participant's existing Account(s) in whole percentages of not less than one percent, and/or (b) change in investment allocation of amounts to be credited to the Participant's Account(s) in the future, as the Participant may elect.

Section 5.04. Valuation of Accounts. The value of a Participant's Account(s) as of any date shall equal the amounts theretofore credited to such Account(s), including any earnings (positive or negative) deemed to be earned on such Account(s) in accordance with Section 5.02 through the day preceding such date, less the amounts theretofore deducted from such Account(s).

Section 5.05. Statement of Accounts. The Committee shall provide to each Participant, at such intervals determined by the Committee, a statement in such form as the Committee deems desirable setting forth the balance standing to the credit of each Participant in each of his or her Account(s).

ARTICLE VI

VESTING

Section 6.01. Vesting for Group I Employees.

(a) **Employer Contributions.** Unless the Committee determines otherwise, a Group I Employee shall be fully vested in the amounts credited to his or her Group I Employer Defined Contribution Account upon the earliest of: (a) his or her completion of five (5) years of service with the Employer; (b) his or

her attainment of age 65 while an Employee; (c) if he or she was an Employee at the time of his or her death, the date of his or her death; or (d) if he or she was an Employee at the time of the Change of Control, the date of a Change of Control. For this purpose, a Group I Employee shall be credited with a year of service for each twelve (12) consecutive months of employment as an Employee, measured from service his or her employment commencement date with the Employer and each anniversary thereof, *plus* any additional years of service credited under the AWW Executive Severance Policy, as it may be amended from time to time.

(b) Deferral Contributions. A Group I Employee shall at all times be fully vested in the amounts credited to his or her Group I Deferral Account.

(c) Matching Contributions. A Group I Employee shall at all times be fully vested in the amounts credited to his or her Group I Matching Account.

(d) Special Contribution. A Group I Employee shall at all times be fully vested in the amounts credited to his or her Special Contribution Account.

Section 6.02. Vesting for Group II Employees.

(a) Employer Contributions. Unless the Committee determines otherwise, a Group II Employee shall be fully vested in the amounts credited to his or her Group II Employer Defined Contribution Account upon the earliest of: (a) his or her completion of five (5) years of service with the Employer; (b) his or her attainment of age 65 while an Employee; (c) if he or she was an Employee at the time of his or her death, the date of his or her death; or (d) if he or she was an Employee at the time of the Change of Control, the date of a Change of Control. For this purpose, a Group II Employee shall be credited with a year of service for each twelve (12) consecutive months of employment as an Employee, measured from his or her employment commencement date with the Employer and each anniversary thereof.

(b) Deferral Contributions. A Group II Employee shall at all times be fully vested in the amounts credited to his or her Group II Deferral Account.

(c) Matching Contributions. A Group II Employee shall at all times be fully vested in the amounts credited to his or her Group II Matching Account.

Section 6.03. Vesting for Group III Employees.

(a) Deferral Contributions. A Group III Employee shall at all times be fully vested in the amounts credited to his or her Group III Deferral Account.

(b) Matching Contributions. A Group III Employee shall at all times be fully vested in the amounts credited to his or her Group III Matching Account.

(c) Special Contribution. A Group III Employee shall at all times be fully vested in the amounts credited to his or her Special Contribution Account.

ARTICLE VII

DISTRIBUTIONS

Section 7.01. Distributions. If a Participant is entitled to receive a distribution of the vested amount credited to his or her Account(s) under the Plan on account of Separation From Service, unless the Participant has filed an Amended Enrollment Agreement pursuant to Section 7.05, such amount shall commence to be distributed to the Participant in the form selected by the Participant for such Plan Year in the January of the Plan Year that follows the Plan Year in which his or her Separation From Service occurs; provided, however, that if the Participant is a Specified Employee at the time of his or her Separation From Service the provisions of Section 7.02 below shall apply to such distribution. If a Participant is entitled to receive a distribution of the vested amount credited to his or her Account(s) under the Plan on account of a Specified Distribution Date, unless the Participant has filed an Amended Enrollment Agreement pursuant to Section 7.05, such amount shall commence to be distributed to the Participant in the form selected by the Participant on such Specified

Distribution Date. If a Participant elects to receive his or her benefit in the form of a lump sum, the value of the Participant's Account(s) attributable to the relevant Plan Years that will be distributed on account of a lump sum will be determined as of the first business day of the month in which the distribution occurs. If a Participant elects to receive his or her benefits in the form of installments, the value of the Participant's Account(s) that will be distributed on account of installments shall be equal to (A) the value of such Account as of the first business day of the month in which the distribution occurs, divided by (B) the number of annual installment payments elected by the Participant for such Plan Year's contributions. The remaining annual installments shall be equal to (1) the value of such Account(s) as of the first business day of the month in which the distribution occurs for such Plan Year's contributions, divided by (2) the number of installments remaining for such Plan Year's contributions.

Section 7.02. Distributions on Separation From Service for Participants Who Are Deemed Specified Employees. Unless the Participant has filed an Amended Enrollment Agreement pursuant to Section 7.05, any Participant who is deemed a Specified Employee at the time of his or her Separation From Service and designated (or is deemed to have designated) Separation From Service as the time for distribution of the vested amounts credited to his or her Account(s) under the Plan for the Plan Year, shall commence to receive such distribution(s) under the Plan on the later of (i) as soon as administratively practicable following the first day of the seventh month following the Participant's Separation Date, but no later than thirty (30) days following such date, or (ii) the January of the Plan Year that follows the Plan Year in which his or her Separation From Service occurs. If a distribution payable in installments is delayed because of the immediately preceding sentence, the first distribution will be equivalent to the installment that the Participant would have received for the first six (6) months following the Participant's Separation From Service and the remaining installments shall be paid in accordance with the schedule designated by the Participant in the Enrollment Agreement or Amended Enrollment Agreement, if any, as if the installments commenced on the Participant's Separation Date. A distribution paid pursuant to this Section 7.02 shall be paid by AWW. If a Participant elects to receive his or her benefit in the form of a lump sum, the value of the Participant's Account(s) attributable to the relevant Plan Years that will be distributed on account of a lump sum will be determined as of the first business day of the month in which the distribution occurs. If a Participant elects to receive his or her benefits in the form of installments, the value of the Participant's Account(s) that will be distributed on account of installments shall be equal to (A) the value of such Account as of the first business day of the month in which the distribution occurs, divided by (B) the number of annual installment payments elected by the Participant for such Plan Year's contributions. The remaining annual installments shall be equal to (1) the value of such Account(s) as of the first business day of the month in which the distribution occurs for such Plan Year's contributions, divided by (2) the number of installments remaining for such Plan Year's contributions.

Section 7.03. Death of Participant. If a Participant dies prior to commencement of his or her benefit under the Plan, the Participant's Beneficiary shall receive a lump sum distribution of the entire vested amount credited to the Participant's Account(s) as soon as administratively practicable following the date of the Participant's death, but no later than sixty (60) days following the date of such death. If a Participant dies after commencement of his or her benefit under the Plan, the Participant's Beneficiary shall receive a lump sum distribution of the remaining installments payable to the Participant under the Plan as soon as administratively practicable following the date of the Participant's death, but not later than sixty (60) days following the date of the Participant's death. The value of the Participant's Account(s) subject to such distribution will be determined as of the first business day of the month in which the distribution occurs.

Section 7.04. Distribution While Employed on Account of an Unforeseeable Emergency. In the event that the Committee, upon written request of a Participant, determines, in its sole discretion, that the Participant has suffered an Unforeseeable Emergency, AWW shall pay from the Participant's Group I Deferral Account, Group II Deferral Account, or Group III Deferral Account, as applicable, as soon as practicable following such determination, but not later than sixty (60) days, an amount necessary to meet the Unforeseeable Emergency, after deduction of any and all taxes as may be required pursuant to Section 10.07. Except as otherwise provided in regulations under section 409A of the Code, the amounts distributed to a Participant pursuant to an Unforeseeable Emergency shall not exceed the amounts necessary to satisfy such Unforeseeable Emergency, plus amounts necessary to pay taxes reasonably anticipated as a result of the distribution, after taking into account the extent to which such hardship is or may be relieved through reimbursement of compensation by insurance or otherwise or by liquidation of the Participant's assets (to the extent the liquidation of such assets would not itself cause severe financial hardship). With respect to that portion of the Group I Deferral Account, Group II Deferral Account, or Group III Deferral Account, as applicable, which is distributed

to a Participant, in accordance with this Section 7.04, the value of such amount shall be reduced from the Participant's Group I Deferral Account, Group II Deferral Account, or Group III Deferral Account, as applicable.

Notwithstanding anything in this Plan to the contrary, a Participant who receives a distribution pursuant to this Section 7.04 in any Plan Year shall not be entitled to make any further Group I Deferral Contributions, Group II Deferral Contributions, or Group III Deferral Contributions, as applicable, for the remainder of such Plan Year. No distributions pursuant to this Section 7.04 may be made from the Participant's Group I Employer Defined Contribution Account, Group I Matching Account, Group II Employer Defined Contribution Account, Group II Matching Account, Group III Matching Account or Special Contribution Account. The value of the Participant's Account(s) subject to such distribution will be determined as of the first business day of the month in the distribution occurs.

Section 7.05. Change in Time and/or Form. A Participant may change the time and/or form of a distribution designated in an Enrollment Agreement for a particular Plan Year by filing an Amended Enrollment Agreement with the Committee in accordance with the requirements of this Section 7.05. Specifically, to change the time and/or form of a distribution for a particular Plan Year, the Amended Enrollment Agreement applicable to such distribution (i) will not become effective for the twelve (12) month period after the date on which the Amended Enrollment Agreement is filed with the Committee; (ii) the distribution cannot commence for a period that is not less than five (5) years from the date such payment was originally scheduled to commence pursuant to the original Enrollment Agreement; and (iii) cannot be made less than twelve (12) months prior to the date of the scheduled payment. Except as provided in Section 7.03, once payment has commenced, the form of such payment shall not be modified.

Section 7.06. Type of Distribution. All distributions from the Plan will be paid to the Participant in cash.

ARTICLE VIII

AMENDMENT AND TERMINATION

Section 8.01. Amendment and Termination. The Plan may be amended, suspended, discontinued or terminated at any time by the Committee; provided, however, that, except as provided below, no such amendment, suspension, discontinuance or termination shall reduce or in any manner adversely affect the rights of any Participant with respect to benefits that are payable or may become payable under the Plan based upon the balance of the Participant's Account as of the effective date of such amendment, suspension, discontinuance or termination. Notwithstanding anything to the contrary in this Section 8.01, if the Committee determines that, in order to comply with the requirements of section 409A of the Code, additional changes must be made to the Plan, then the Committee may, in its sole discretion and without the consent of a Participant, amend the Plan to comply with such requirements. If the Committee terminates the Plan, Participants shall be entitled to a distribution of their benefit under the Plan if the termination is on account of a permitted distribution event under Treas. Reg. §1.409A-3(j)(4)(ix)(A), (B), (C) or (D) and the requirements, as applicable, of such regulations are met with respect to the termination of the Plan and distribution of benefits hereunder.

ARTICLE IX

CLAIMS PROCEDURES

Section 9.01. Claim. A person who believes that he or she is being denied a benefit to which he or she is entitled under the Plan (hereinafter referred to as a "Claimant") may file a written request for such benefit with the Committee, setting forth the claim.

Section 9.02. Claim Decision. Upon receipt of a claim, the Committee shall advise the Claimant that a reply will be forthcoming within ninety (90) days and shall, in fact, deliver such reply within such period. The Committee may, however, extend the reply period for an additional ninety (90) days for reasonable cause. If the claim is denied in whole or in part, the Claimant shall be provided a written explanation, using language calculated to be understood by the Claimant, setting forth: (a) the specific reason or reasons for such denial; (b) the specific reference to relevant provisions of the Plan on which such denial is based; (c) a description of any

additional material or information necessary for the Claimant to perfect the claim and an explanation why such material or such information is necessary; (d) appropriate information as to the steps to be taken if the Claimant wishes to submit the claim for review; (e) the time limits for requesting a review; and (f) that the Claimant has the right to bring an action for benefits under section 502 of ERISA following an adverse determination on review.

Section 9.03. Request for Review. Within sixty (60) days after the receipt by the Claimant of the written opinion described above, the Claimant may request in writing that the Committee review its determination. The Claimant, or his or her duly authorized representative, may, but need not, review the pertinent documents and submit issues and comments in writing for consideration by the Committee. If the Claimant does not request a review of the initial determination within such sixty (60) day period, the Claimant shall be barred and estopped from challenging the determination.

Section 9.04. Review of Decision. Within sixty (60) days after the Committee's receipt of a request for review, it will review the initial determination. After considering all materials presented by the Claimant, the Committee will render a written opinion, written in a manner calculated to be understood by the Claimant. If the decision is adverse, the written opinion will (a) set forth the specific reasons for the decision and specific references to the relevant provisions of this Plan on which the decision is based; and (b) include a statement that the Claimant is entitled to receive, upon request and free of charge, reasonable access to, and copies of, all documents, records and other information relevant to the claim and that the Claimant may bring an action under section 502(a) of ERISA. If special circumstances require that the sixty (60) day time period be extended, the Committee will so notify the Claimant and will render the decision as soon as possible, but no later than one hundred twenty (120) days after receipt of the request for review.

Section 9.05. Limitations on Claims. A Participant (or Beneficiary, if applicable) shall have no right to bring any action at law or equity regarding a claim for benefits under the Plan, unless and until he or she exhausts his or her rights to review under Article IX in accordance with the time frames set forth therein. No action at law or in equity shall be brought to recover benefits under the Plan later than two years from the date of the Committee's final determination following the request for review of an adverse benefit determination made under Article IX. Notwithstanding the foregoing, if the applicable, analogous New Jersey statute of limitations has run or will run before the aforementioned two-year period, the New Jersey statute of limitations is controlling. No action at law or in equity shall be brought in connection with the Plan except in the U.S. District Court for the District of New Jersey.

ARTICLE X

MISCELLANEOUS

Section 10.01. Designation of Beneficiary. Each Participant may designate a Beneficiary or Beneficiaries (which Beneficiary may be an entity other than a natural person) to receive any payments which may be made following the Participant's death. Such designation may be changed or canceled at any time without the consent of any such Beneficiary. Any such designation, change or cancellation must be made in a form approved by the Committee and shall not be effective until received by the Committee, or its designee. If no Beneficiary has been named, or the designated Beneficiary or Beneficiaries shall have predeceased the Participant, the Beneficiary shall be, in descending order, (a) the Participant's spouse, (b) the person, persons or trust designated by the Participant as direct or contingent beneficiary in a manner prescribed by the Committee, or (c) if the Participant has no spouse and has failed to make an effective beneficiary designation, the Participant's estate. If a Participant designates more than one Beneficiary, the interests of such Beneficiaries shall be paid in equal percentages, unless the Participant has specifically designated otherwise. If the Participant and his or her spouse are divorced or legally separated, the designation of the spouse as Beneficiary under the Plan is automatically rescinded, provided the Plan receives notice prior to distribution, unless the Participant completes a new Beneficiary designation naming the prior spouse as Beneficiary.

Section 10.02. Limitation of Participant's Right. Nothing in this Plan shall be construed as conferring upon any Participant any right to continue in the employment of the Employer (or any employer in the Employer's controlled group), nor shall it interfere with the rights of the Employer (or any employer in the Employer's controlled group) to terminate the employment of any Participant and/or to take any personnel action affecting any Participant without regard to the effect which such action may have upon such Participant

as a recipient or prospective recipient of benefits under the Plan. Any amounts payable hereunder shall not be deemed salary or other compensation to a Participant for the purposes of computing benefits to which the Participant may be entitled under any other arrangement established by the Employer (or any employer in the Employer's controlled group) for the benefit of its employees.

Section 10.03. No Limitation on Employer Actions. Nothing contained in the Plan shall be construed to prevent the Employer from taking any action which is deemed by it to be appropriate or in its best interest. No Participant, Beneficiary, or other person shall have any claim against the Employer as a result of such action.

Section 10.04. Obligations to the Employer. To the maximum extent permitted under section 409A of the Code and its corresponding regulations, if a Participant becomes entitled to a distribution of benefits under the Plan, and if at such time the Participant has outstanding any debt, obligation, or other liability representing an amount owing to the Employer, then AWW may offset such amount owed to the Employer against the amount of benefits otherwise distributable. Such determination shall be made by the Committee.

Section 10.05. Nonalienation of Benefits. Except as expressly provided herein, no Participant or Beneficiary shall have the power or right to transfer (otherwise than by will or the laws of descent and distribution), alienate, or otherwise encumber the Participant's interest under the Plan. AWW's obligations under this Plan are not assignable or transferable except to (a) any corporation or partnership which acquires all or substantially all of AWW's assets or (b) any corporation or partnership into which AWW may be merged or consolidated. The provisions of the Plan shall inure to the benefit of each Participant and the Participant's Beneficiaries, heirs, executors, administrators or successors in interest.

Section 10.06. Protective Provisions. Each Participant shall cooperate with AWW by furnishing any and all information requested by AWW in order to facilitate the payment of benefits hereunder, taking such physical examinations as AWW may deem necessary and taking such other relevant action as may be requested by AWW. If a Participant refuses to cooperate, AWW shall have no further obligation to the Participant under the Plan, other than payment to such Participant of the then current balance of the Participant's Accounts in accordance with his or her prior elections.

Section 10.07. Withholding Taxes. AWW and/or the Employer may make such provisions and take such action as it may deem necessary or appropriate for the withholding of any taxes which AWW and/or the Employer is required by any law or regulation of any governmental authority, whether Federal, state or local, to withhold in connection with any deferrals to, amounts credited to and benefits payable under the Plan, including, but not limited to, withholding of appropriate sums from any amount payable to the Participant (or his or her Beneficiary) under the Plan or otherwise payable to the Participant from other sources. Each Participant, however, shall be responsible for the payment of all individual tax liabilities relating to any such deferrals, credits and benefits.

Section 10.08. Unfunded Status of Plan. The Plan is intended to constitute an "unfunded" plan of deferred compensation for Participants. Benefits payable hereunder shall be payable out of the general assets of AWW, and no segregation of any assets whatsoever for such benefits shall be made. With respect to any payments not yet made to a Participant, nothing contained herein shall give any such Participant any rights to assets that are greater than those of a general creditor of AWW.

Section 10.09. Severability. If any provision of this Plan is held unenforceable, the remainder of the Plan shall continue in full force and effect without regard to such unenforceable provision and shall be applied as though the unenforceable provision were not contained in the Plan.

Section 10.10. Governing Law. The Plan shall be construed in accordance with and governed by the laws of the State of New Jersey, without reference to the principles of conflict of laws.

Section 10.11. Headings. Headings are inserted in this Plan for convenience of reference only and are to be ignored in the construction of the provisions of the Plan.

Section 10.12. Gender, Singular and Plural. All pronouns and any variations thereof shall be deemed to refer to the masculine, feminine, or neuter, as the identity of the person or persons may require. As the context may require, the singular may read as the plural and the plural as the singular.

Section 10.13. Notice. Any notice required or permitted under the Plan shall be sufficient if in writing and hand delivered or sent by registered or certified mail. Such notice shall be deemed given as of the date of delivery or, if delivery is made by mail, as of the date shown on the postmark on the receipt for registration or certification. Mailed notice to the Committee shall be directed to AWW's address. Mailed notice to a Participant or Beneficiary shall be directed to the individual's last known address in the Employer's records.

Section 10.14. Incapacity. In the event that any amount becomes payable under the Plan to a person who, in the sole judgment of the Committee, is considered by reason of physical or mental condition to be unable to give a valid receipt therefore, the Committee may direct that such payment be made to any person found by the Committee, in its sole judgment, to have assumed the care of such person. Any payment made pursuant to such determination shall constitute a full release and discharge of the Committee, AWW and the Employer.

Section 10.15. Section 409A. The Plan is intended to comply with the applicable requirements of section 409A of the Code and its corresponding regulations and related guidance, and shall be administered in accordance with section 409A of the Code to the extent section 409A of the Code applies to the Plan. Notwithstanding anything in the Plan to the contrary, elections to defer Base Salary and Bonus, as applicable, to the Plan, and distributions from the Plan, may only be made in a manner and upon an event permitted by section 409A of the Code. To the extent that any provision of the Plan would cause a conflict with the requirements of section 409A of the Code, or would cause the administration of the Plan to fail to satisfy the requirements of section 409A of the Code, such provision shall be deemed null and void to the extent permitted by applicable law. Other than on a valid Enrollment Agreement or Amended Enrollment Agreement, in no event shall a Participant, directly or indirectly, designate the calendar year of payment. For avoidance of doubt, deferrals under the Plan are maintained on a Plan Year basis.

Executed this first day of May, 2018.

EXHIBIT A

DESIGNATED SUBSIDIARIES

American Water Enterprises, LLC
American Water Resources, LLC
American Water Services CDM, Inc.
American Water Operations & Maintenance, Inc.
American Water Works Company, Inc.
American Water Works Service Company, Inc.
California-American Water Company
Environmental Management Corporation
Hawaii-American Water Company
Illinois-American Water Company
Indiana-American Water Company, Inc.
Iowa-American Water Company
Kentucky-American Water Company
Maryland-American Water Company
Michigan-American Water Company
Missouri-American Water Company
New Jersey-American Water Company, Inc.
New York-American Water Company, Inc.
Pennsylvania-American Water Company
Pivotal Home Solutions
Tennessee-American Water Company
Virginia-American Water Company
West Virginia-American Water Company

EXHIBIT B

GROUP I EMPLOYEES

A non-union Employee hired or rehired by the Employer on or after January 1, 2006 and who is employed by the Employer at a salary level of 60 or above.

EXHIBIT C

GROUP II EMPLOYEES

A non-union Employee hired or rehired by the Employer on or after January 1, 2006 and who meets the following requirements: (i) is employed at the level of below 60, (ii) the sum of the non-union Employee's (A) Base Salary for the immediately prior Plan Year, and (B) Bonus that was paid in the immediately prior Plan Year, is greater than the Compensation Limit for the Plan Year in which the Employee will be eligible to participate in the Plan; and (iii) is designated as a Group II Employee by the Committee for the Plan Year. Notwithstanding the foregoing, the Committee may, in its sole discretion, waive the requirement in clause (ii) above with respect to any non-union Employee and designate such non-union Employee as a Group II Employee for the Plan Year.

EXHIBIT D

GROUP III EMPLOYEES

A non-union Employee hired prior to January 1, 2006, is employed by the Employer as of the Original Effective Date, and who meets one of the following requirements:

1. Is employed with the Employer at a level of 60 or above; or
2. (i) is employed at the level of below 60; (ii) the non-union Employee's Base Salary for the immediately prior Plan Year is greater than the Compensation Limit for the Plan Year in which the Employee will be eligible to participate in the Plan; and (iii) is designated as a Group III Employee by the Committee for the Plan Year. Notwithstanding the foregoing, the Committee may, in its sole discretion, waive the requirement in clause (ii) above with respect to any non-union Employee and designate such non-union Employee as a Group III Employee for the Plan Year.

American Water Works Company, Inc.'s Subsidiaries
As of February 19, 2019

Entity Name	Entity Type	Jurisdiction of Organization
American Industrial Water LLC	Limited Liability Company	Ohio
American Lake Water Company	Corporation	Illinois
American Water – Acciona Agua LLC	Limited Liability Company	Delaware
American Water (USA), LLC	Limited Liability Company	Delaware
American Water Canada Corp.	Corporation	Ontario
American Water Capital Corp.	Corporation	Delaware
American Water Carbon Services Corp.	Corporation	Ontario
American Water Enterprises Holding, LLC	Limited Liability Company	Delaware
American Water Enterprises, LLC	Limited Liability Company	Delaware
American Water Military Services, LLC	Limited Liability Company	Delaware
American Water Operations and Maintenance, LLC	Limited Liability Company	Texas
American Water Resources Holdings, LLC	Limited Liability Company	Delaware
American Water Resources of Florida, LLC	Limited Liability Company	Delaware
American Water Resources of Texas, LLC	Limited Liability Company	Delaware
American Water Resources, LLC	Limited Liability Company	Virginia
American Water Services CDM, Inc.	Corporation	Washington
American Water Services, LLC	Limited Liability Company	Delaware
American Water Works Service Company, Inc.	Corporation	Delaware
AWI, Inc.	Corporation	Delaware
AWIP Holdings LLC	Limited Liability Company	Delaware
AW Technologies, LLC	Limited Liability Company	Delaware
Bluefield Valley Water Works Company	Corporation	Virginia
California-American Water Company	Corporation	California
Cocoa Properties I, LLC	Limited Liability Company	Delaware
Edison Water Company	Corporation	New Jersey
EMC American Water Canada Inc.	Corporation	Canada
Environmental Disposal Corporation	Corporation	New Jersey
Environmental Management, LLC	Limited Liability Company	Missouri
E'town Properties, Inc.	Corporation	Delaware
E'town Services L.L.C.	Limited Liability Company	New Jersey
Hawaii-American Water Company	Corporation	Nevada
Illinois-American Water Company	Corporation	Illinois
Indiana-American Water Company, Inc.	Corporation	Indiana
Iowa-American Water Company	Corporation	Delaware
Kentucky-American Water Company	Corporation	Kentucky
Keystone Clearwater Solutions, LLC	Limited Liability Company	Delaware
Laurel Oak Properties Corporation	Corporation	Delaware
Liberty Water Company	Corporation	New Jersey
Maryland-American Water Company	Corporation	Maryland
Michigan-American Water Company	Corporation	Michigan
Missouri-American Water Company	Corporation	Missouri
Mt. Ebo Sewage Works, Inc.	Corporation	New York
New Jersey-American Water Company, Inc.	Corporation	New Jersey
New York American Water Company, Inc.	Corporation	New York
OMI/Thames Water Stockton, Inc.	Corporation	Delaware

Entity Name	Entity Type	Jurisdiction of Organization
One Water Street LLC	Limited Liability Company	New Jersey
Pennsylvania-American Water Company	Corporation	Pennsylvania
Pivotal Home Solutions, LLC	Limited Liability Company	Delaware
Prism-Berlie (Windsor) Limited	Corporation	Ontario
Tennessee-American Water Company	Corporation	Tennessee
TWH LLC	Limited Liability Company	Delaware
TWNA, Inc.	Corporation	Delaware
Virginia-American Water Company	Corporation	Virginia
Water Solutions Holdings, LLC	Limited Liability Company	Delaware
West Virginia-American Water Company	Corporation	West Virginia
Whitlock Farms Water Corp., Inc.	Corporation	New York

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-219682, 333-217975, 333-168543 and 333-150381) and Form S-3 (Nos. 333-209933 and 333-224558) of American Water Works Company, Inc. of our report dated February 19, 2019 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania

February 19, 2019

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

I, Susan N. Story, certify that:

1. I have reviewed this annual report on Form 10-K of American Water Works Company, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2019

By: /s/ SUSAN N. STORY
Susan N. Story
President and Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

I, Linda G. Sullivan, certify that:

1. I have reviewed this annual report on Form 10-K of American Water Works Company, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2019

By: /s/ LINDA G. SULLIVAN

Linda G. Sullivan

Executive Vice President and Chief Financial Officer (Principal Financial Officer)

AMERICAN WATER WORKS COMPANY, INC.
CERTIFICATION PURSUANT TO
RULE 13a-14(b) UNDER THE SECURITIES EXCHANGE ACT OF 1934 AND
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Susan N. Story, President and Chief Executive Officer of American Water Works Company, Inc. (the “Company”), hereby certify that, based on my knowledge:

- (1) The Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2018 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ SUSAN N. STORY
Susan N. Story
President and Chief Executive Officer
(Principal Executive Officer)
February 19, 2019

AMERICAN WATER WORKS COMPANY, INC.
CERTIFICATION PURSUANT TO
RULE 13a-14(b) UNDER THE SECURITIES EXCHANGE ACT OF 1934 AND
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Linda G. Sullivan, Executive Vice President and Chief Financial Officer of American Water Works Company, Inc. (the “Company”), hereby certify that, based on my knowledge:

- (1) The Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2018 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ LINDA G. SULLIVAN

Linda G. Sullivan

Executive Vice President and Chief Financial Officer (Principal
Financial Officer)

February 19, 2019