

## C0. Introduction

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### C0.1

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#### **(C0.1) Give a general description and introduction to your organization.**

With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The Company employs approximately 6,800 dedicated professionals, including over 125 water quality and environmental professionals who provide regulated and market-based drinking water, wastewater and other related services to more than 15 million people in 46 states. The Company conducts most of its business through regulated utilities that provide water and wastewater services, collectively presented as the "Regulated Businesses." The Company also operates market-based businesses that provide complementary services. American Water tracks GHGs related to its Regulated Business as those are the operations that it has direct control over; responses in this report apply accordingly.

We serve residential homes and businesses through our Regulated Businesses, as well as perform contract operations for military bases and municipalities that own their utility systems. The Company develops and implements solutions to meet the country's many water challenges, including through our own proprietary Research and Development (R&D) group comprised of scientists with backgrounds in chemistry, engineering and microbiology, half with Ph.Ds., all working in partnership with the Environmental Protection Agency (EPA), the Centers for Disease Control (CDC), state Departments of Environmental Protection, and international water research foundations.

We are driven by a purpose to be the best for our customers, employees, and investors. We never forget that, at the end of every water pipe, there's a family depending on us to provide life's essential need. At every fire hydrant, we provide security and safety, and every wastewater treatment plant serves as a shield against potential disease. We believe every community should be stronger because we are there.

A company is its people. We are committed to making sure our people have a safe place to work, are trained and developed to reach their potential, and feel respected and valued. In 2019, we had the fewest employee injuries in our recorded history. Safety is a value and a strategy for us, and we will continue to strengthen our safety culture, because it is not acceptable for anyone to get hurt on the job. Our target is zero injuries.

Our people are also an integral part of the communities we serve. Throughout the country, our employees are constantly giving back to the community by participating in and supporting organizations such as the United Way, Special Olympics, and American Heart Association. American Water employees volunteered more than 5,000 hours to community projects during 2019. We donate to various critical agencies and non-profits serving the U.S. such as United Way and Water for People. American Water and its employees are proud to provide a significant contribution annually to Water for People in its mission to provide safe drinking water, clean sanitation and water education to people in developing countries, predominantly Africa and South America, where thousands of children die each day from waterborne illness. In 2019, our partnership raised more than \$207,000 including an annual donation of \$50,000 from the American Water Charitable Foundation. Additionally, in 2019, our partnership with United Way raised more than \$390,000, including an annual donation of \$50,000 from the American Water Charitable Foundation. Over the past 15 years, American Water has donated over \$7 million to both Water for People and United Way.

Our customers are at the center of everything we do and every decision we make. Our focus is not just on customer service, but on the entire customer experience. We also know that if we don't get water quality right that nothing else we do matters. Last year, we expanded our customer experience initiative, utilizing social media, on-line customer communities, and face-to-face groups to determine how we can be easier to do business with. We are leveraging technology, making needed infrastructure investments, and implementing operational efficiency improvements to keep customer bills affordable for these critical services.

Our customers and all our stakeholders trust in our solid execution of business fundamentals and operations. We don't take that trust for granted. We will keep working to be the leaders in engaging stakeholders to address potential climate-related risks so that we can continue providing reliable and affordable water and wastewater services. We have a long and rich history of serving and providing solutions for our customers, making the communities we serve stronger because we are there, and working with EPA, CDC, and other critical agencies on constructive water policy issues and challenges.

DOING WELL BY DOING GOOD. Finally, it is our firm belief that companies do well by doing good. We believe that the "how" is just as important as the "what" for long-term financial stability.

### C0.2

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**(C0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2019	December 31 2019	No	<Not Applicable>

**C0.3**

**(C0.3) Select the countries/areas for which you will be supplying data.**

United States of America

**C0.4**

**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

USD

**C0.5**

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Financial control

**C1. Governance**

**C1.1**

**(C1.1) Is there board-level oversight of climate-related issues within your organization?**

Yes

**C1.1a**

**(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.**

Position of individual(s)	Please explain
Board-level committee	The Safety, Environmental, Technology & Operations (SETO) Committee is American Water's board committee with oversight of: employee and public safety; compliance with all environmental laws, regulations, environmental policies and practices, including water quality and emerging contaminants; technology policy, strategy and governance, including physical/cyber security issues; and operational performance and risks not covered by another Board Committee. The SETO Committee reviews/monitors operational risk exposure and risk mitigation strategies, which cascade up from the Company's management and its Enterprise Risk Management Committee to the Audit, Finance and Risk Committee and the Board, and reviews management's processes for assessing business continuity risks and developing contingency plans. This also includes climate-related risks and resulting resiliency investments and efforts. An example of review through the SETO Committee includes the actions being taken by the Company to improve asset resiliency considering the increasing impacts of climate variability. The Company uses a Priority Risk Pre Mitigation process to quantify key business risks, including climate-related risks. From a climate variability risk perspective, the Company's goal is to minimize the consequence of climate variability, even as the likelihood of climate-related impacts increase. This has materialized into the adoption of risk and resiliency assessments and an associated risk register to categorize risks and threats to assets to better prioritize resiliency projects. The Board of Directors reviews and approves both the 5 and 10 year budgets, which includes a breakdown of capital expenditures (CAPEX). Approximately 8% of the 5 year detailed CAPEX budget is allocated to resiliency – which addresses climate-related issues. The SETO Committee reviews and monitors significant environmental strategies as well as policy and planning issues related to our operations—including matters before environmental regulatory agencies, compliance with environmental laws and regulations, and environmental performance. Additional committee responsibilities include overseeing programs and policies regarding the protection of the environment, water conservation, and GHG emissions.

**C1.1b**

**(C1.1b) Provide further details on the board's oversight of climate-related issues.**

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Monitoring implementation and performance of objectives</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<Not Applicable>	<p>The SETO Committee, which meets quarterly before the board meeting, oversees programs and policies with respect to protecting the environment, including the Company's sustainable efforts with respect to water conservation, climate variability, emerging contaminants, and greenhouse gas (GHG) emissions. The board is set up with consecutive committee meetings rather than run concurrently, and all board members (including non-committee members) are encouraged to attend all committees—and the majority of them do regularly and thus have detailed insight into the work of the SETO on climate-related details. Additionally, Environmental Leadership is one of the five defined values of the Company and so reporting addresses our work there as well.</p>

**C1.2**

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Chief Financial Officer (CFO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other C-Suite Officer, please specify (President of Regulated Operations and Military Services Group (COO equivalent))	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other C-Suite Officer, please specify (Chief Environmental Officer)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other C-Suite Officer, please specify (Senior Vice President and Chief Operational Excellence and Safety Officer)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other, please specify (Capital Planning Management Committee (CPMC))	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

**C1.2a**

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

Positions listed are on the Executive Leadership Team, responsible for driving programs and policies that support the Company's environmental goals, receive updates on climate-related issues and Company metrics regularly.

**CEO** has overall responsibility for creating, planning, implementing, and integrating the strategic direction of the Company. Integration of climate-related issues, and strategy to mitigate such risks into overarching Company plans is integral to the success of the business.

**CFO** leads the Finance and Operational Services teams, including responsibility for all aspects of financial management and strategy, including directing finance strategy, investor relations, treasury, financial planning, accounting, internal audit, risk management, customer relations, regulatory compliance, and control functions. The CFO reports directly to the President/CEO, as well as manages the ESG efforts and position, under Investor Relations.

**President of Regulated Operations and Military Services Group** has overall responsibility for creating, planning and integrating the strategic direction of regulated operations; including Regulated Operations, and Military Services Group, including oversight of advancement of technology within operations to improve effectiveness. Climate-related responsibilities are assigned to this position because the President of Regulated Operations and Military Services Group helps make certain that our operations meet current/future capacity, requirements and have resiliency to withstand climate-related impacts. This position reports directly to the President/CEO.

**Chief Environmental Officer** is responsible for Environmental Leadership and oversight of activities directly related to the management of climate-related risks. This includes the advancement of research and development, water quality, and technology to improve effectiveness; compliance with requirements in multiple media (including drinking water, wastewater, air, and waste), stewardship of the environment, and oversight of the Central Lab that analyzes 80,000+ drinking water samples per year; and ensuring our operations meet current/future capacity, water quality requirements, and have resiliency to withstand climate-related impacts. The Chief Environmental Officer shapes the organizational Environmental Leadership mission, vision, and targets for American Water's 6,800 dedicated professionals, which includes over 125 water quality and environmental professionals. This position reports directly to the President/CEO.

**Senior Vice President and Chief Operational Excellence and Safety Officer** is responsible for leading the Company's Technology and Innovation (T&I) efforts, which are helping to support the business' efforts in achieving growth and operational efficiency, Operational Excellence, Meter Operations, and Engineering. An example of the overlap of climate-related issues and T&I is the creation of customer applications to assist in conservation measures, usage tracking, and increased communication with customers regarding their use of water resources. This position reports directly to the CEO.

**Capital Planning Management Committee (CPMC)**- Each Regulated Business, as defined in C0.1, develops an annual, bottom-up capital business plan based on the infrastructure needs within their footprint. These plans are reviewed by the CPMC of the Regulated Businesses, rolled up and reviewed at the Company-wide level for ultimate approval by the Board annually. After approval, these plans are administered by the individual engineering teams and governed by the associated regulated utilities and CPMCs, which meet monthly. Our Regulated Businesses' CPMCs include state presidents, engineering, operations, and finance leads, while the Company-wide CPMC is comprised of CFO, President of Regulated Operations and Military Service Group, and VP Engineering. We utilize a long-term planning process as part of our CPM process to evaluate our water and wastewater systems for capacity, condition, and performance today and into the future. Our Comprehensive Planning Study (CPS) process evaluates a 15yr+ horizon to develop a system road map. The CPS process includes an evaluation of supply availability against projected customer usage growth; water treatment performance vs. projected changes to water quality standards and research information on emerging contaminants of importance; asset condition and performance vs. efficiency, safety, and obsolescence; climate variability impact assessments. We conduct numerous CPS studies each year, with systems evaluated on a rotating basis based on priority. The recommended CPS studies are integrated into the capital program management. We expect to spend between \$20 billion and \$22 billion on capital investments from 2020 to 2029 to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security, and increase resiliency of critical assets to climate variability.

**C1.3**

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	All employees, including Executive Leadership, goals are aligned for performance-based compensation on an annual basis.

**C1.3a**

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Corporate executive team	Monetary reward	Efficiency target	The Annual Performance Plan (APP) performance measures chosen for 2019 reflected our primary objectives for financial performance, aligned with our core business strategies of safety, customers, people, growth, technology and operational efficiency. Each year a specific Operations and Maintenance (O&M) Efficiency target is included. The O&M Efficiency target is based on the ratio of adjusted regulated O&M expenses to adjusted regulated operating revenues. Additionally, it is a key performance metric because we want to focus on improving the overall cost structure of our Regulated Businesses, as defined in C0.1, and improving our return on equity. We meet our efficiency target through enhancements to customer service tools and technology for greater operational efficiency and by partnering with stakeholders to maintain customer confidence in quality of water. The operating efficiency targets can be tied to climate variability through optimal management of systems to control cost as well as reduce GHG emissions (i.e. energy demand), chemical dosage, and associated residual water generation. These efficiencies are also critical in helping to keep our costs affordable while at the same time investing sufficient capital to strengthen our water supply and infrastructure.
All employees	Monetary reward	Efficiency target	The APP performance measures chosen for 2019 reflected our primary objectives for financial performance, aligned with our core business strategies of safety, customers, people, growth, technology and operational efficiency. Each year a specific O&M Efficiency target is included. The O&M Efficiency target is based on the ratio of adjusted regulated O&M expenses to adjusted regulated operating revenues. Additionally, it is a key performance metric because we want to focus on improving the overall cost structure of our Regulated Businesses, as defined in C0.1, and improving our return on equity. We meet our efficiency target through enhancements to customer service tools and technology for greater operational efficiency and by partnering with stakeholders to maintain customer confidence in quality of water. The operating efficiency targets can be tied to climate variability through optimal management of systems to control cost as well as reduce GHG emissions (i.e. energy demand), chemical dosage, and associated residual water generation. These efficiencies are also critical in helping to keep our costs affordable while at the same time investing sufficient capital to strengthen our water supply and infrastructure.
All employees	Monetary reward	Other (please specify) (Demonstration of Corporate Values)	The APP is designed to promote all employees in achieving annual business objectives by providing an opportunity to earn performance-based compensation tied to corporate and individual performance. The APP performance measures chosen for 2019 reflected our primary objectives for financial performance, aligned with our core business strategies of Safety, Customers, People, Growth, and Operational Excellence. Nested within these core business strategies are goals related to water quality, environmental leadership, and environmental excellence. Our five core values of Safety, Trust, Environmental Leadership, Teamwork, and High Performance are the principles by which we work and live. They guide the decisions we make every day and help us educate stakeholders about what the Company is about and what it represents. "Environmental Leadership", defined as "What" we do makes a difference in people's lives by providing an essential service. Clean water does not happen without environmental leadership, and just good stewardship of the environment is not sufficient for a water services provider—we must be leaders. For APP purposes, Environmental Leadership is determined by comparing our performance to the EPA national drinking water industry average and assessing how many times better we perform compared to the industry average. We are committed to high-quality water, protecting the environment and maintaining our history of materially complying with, and in many cases, achieving results better than minimum standards required by applicable laws and regulations. All employees, including executive leadership, share the same aligned annual goals.
Corporate executive team	Monetary reward	Other (please specify) (Demonstration of Corporate Values)	The APP is designed to promote all employees in achieving annual business objectives by providing an opportunity to earn performance-based compensation tied to corporate and individual performance. The APP performance measures chosen for 2019 reflected our primary objectives for financial performance, aligned with our core business strategies of Safety, Customers, People, Growth, and Operational Excellence. Nested within these core business strategies are goals related to water quality, environmental leadership, and environmental excellence. Our five core values of Safety, Trust, Environmental Leadership, Teamwork, and High Performance are the principles by which we work and live. They guide the decisions we make every day and help us educate stakeholders about what the Company is about and what it represents. "Environmental Leadership", defined as "What" we do makes a difference in people's lives by providing an essential service. Clean water does not happen without environmental leadership, and just good stewardship of the environment is not sufficient for a water services provider—we must be leaders. For APP purposes, Environmental Leadership is determined by comparing our performance to the EPA national drinking water industry average and assessing how many times better we perform compared to the industry average. We are committed to high-quality water, protecting the environment and maintaining our history of materially complying with, and in many cases, achieving results better than minimum standards required by applicable laws and regulations. All employees, including executive leadership, share the same aligned annual goals.
All employees	Non-monetary reward	Other (please specify) (Continued attraction of Capital and Environmentally beneficial investments)	Demonstrating Environmental Leadership (doing good) will attract capital from investors which lowers our cost of capital and allows us to invest more in projects, including those related to climate variability resiliency. This continued investment provides job stability and growth opportunities for employees while strengthening our communities and customer service.

**C2. Risks and opportunities**

**C2.1**

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

**C2.1a**

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment
Short-term	0	1	American Water tracks, monitors, and studies extreme weather events on an on-going basis and is continuously taking action in this area to provide safe, reliable, and consistent water and wastewater services to our customers. We are also active in conservation activities with our customers, with an eye on the potential impact related changes in water supply and usage will have on our operations.
Medium-term	1	5	American Water conducts Master Plans through Capital Planning Studies on each of our water and wastewater systems approximately every 5 - 7 years, and implements projects identified in these plans. We expect to spend between \$8.8 billion - \$9.4 billion on capital investments from 2020 - 2024 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, including approximately 8% dedicated to resiliency. Capital investment projects in part go to projects that improve energy efficiency, enhance resiliency of our assets and facilities and enhance water treatment processes to maintain compliance with all environmental regulations.
Long-term	5	25	Where significant impact from climate-related droughts, flooding, or natural disasters drive major capital improvement upgrade projects, the risks will be evaluated on a longer time period such as 25 years. We expect to spend between \$20 billion and \$22 billion on capital investments from 2020 to 2029 to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security, and increase resiliency of critical assets to climate variability.

## C2.1b

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### (C2.1b) How does your organization define substantive financial or strategic impact on your business?

Substantive financial risk is defined as anything \$50million or more. Such risk is elevated to the Enterprise Risk Management Committee and managed using a heat map that defines risk into three categories (1) 0<\$50m, (2) \$50 - \$100m and (3) >\$100m. The heat map plots risk by substantive financial consequence and likelihood. Non-climate related risks combined with climate related risks can result in the need for higher priority mitigation steps. For these reasons, the impact of climate-related risks on critical assets are considered in combination with other potential risks including the risks posed by aging infrastructure.

## C2.2

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### (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

#### Value chain stage(s) covered

Direct operations

#### Risk management process

Integrated into multi-disciplinary company-wide risk management process

#### Frequency of assessment

More than once a year

#### Time horizon(s) covered

Short-term

Medium-term

Long-term

#### Description of process

Climate-related risks are manifested throughout American Water. Risks evaluated may include increased storm severity and power outage; changes in precipitation trends impacting stream flows, aquifer recharge, flooding and drought occurrences; water quality impacts due to increased temperatures and increased rainfall runoff; and other natural hazards. Understanding the enterprise and local impacts of climate-related risks and opportunities are critical steps to implementing targeted adaptation and mitigation plans that will bolster climate resiliency, efficient operations, and consequently GHG emissions reductions. Climate risk and resiliency of water and wastewater systems and operations are assessed through the American Water's Comprehensive Planning Studies (CPS) / Master Plans. Short, medium, and long-term time horizons (0-25+ years) are examined during these studies. The CPS process was enhanced in 2019 to include a more specific risk and resiliency assessment (RRA) component. Comprehensive Plans with risk and resiliency assessments (CPS-RRA) will be updated on an approximate 5-year cycle. An asset management risk register process was also added as an enhancement to our existing process in 2019. This was implemented across the enterprise in 2020 to prioritize the risks identified via the CPS-RRA studies. Each state risk register is reviewed and updated at least twice per year. Risk mitigation and opportunity projects are implemented through the Capital Improvement Program (CIP) and through refinements to emergency response and business continuity plans. The CIP is developed with specific projects ranked on risk mitigation and other benefits. At an executive level, risk mitigation steps are reviewed at least twice a year with senior leadership and include discussion on how operational risks, both current and future, are being addressed. The risks from natural disasters and climate variability are specifically reviewed by the Company's Enterprise Risk Management (ERM) Committee each year and presented at least annually to the Board of Directors through the Safety, Environmental, Technology & Operations (SETO) Committee, and/or the Audit, Finance and Risk Committee of the board. Substantive financial risks are elevated to the ERM Committee and managed using a heat map that defines risk into three categories (1) <\$50m, (2) \$50 - \$100m and (3) >\$100m. The heat map plots risk by substantive financial consequence and likelihood. Non-climate-related risks combined with climate-related risks can result in the need for higher priority mitigation steps. For these reasons, the impact of climate-related risks on critical assets is considered in combination with other potential risks including the risks posed by aging infrastructure. Growth is a key component in our strategy and as other water systems, typically municipal owned encounter increasing risk from climate variability as well as other impacts (e.g. emerging contaminants, aging infrastructure, etc.), this provides opportunity for American Water to provide solutions including acquiring systems or entering into operations and maintenance contracts, which leverage American Water's reputation as a leader in both the water and wastewater sector. Physical Risk/Opportunity: For example, in October 2019, American Water installed four solar powered mixer units on the Huntsville Raw Water Reservoir in Pennsylvania as a risk mitigation project. The mixers are used as a preventative treatment technique to help mitigate algal blooms during warm temperatures. Situation: American Water faces a number of physical climate-related risks that could impact operations. This includes algal blooms that result from warming temperatures. Task: As a result of this, American Water needs to develop approaches to lower the impact that such algal blooms could have on the Company's water supply. Action: In 2019, American Water installed four solar powered mixer units at the Huntsville Raw Water Reservoir in Pennsylvania in order to preventatively mitigate algal blooms and manage this risk. Result: The solar powered mixers are performing as expected since implementation, although full results will not be known until fall 2020 which will complete their first full year of implementation and stress testing as typical algal blooms peak in late summer/early fall. Also, as a result of this case study, low-emission solutions for algal bloom prevention is being investigated at additional American Water facilities. Based on performance within this case study, solar powered mixer units may be an effective, low-emission solution for algal bloom prevention at other American Water facilities. Transitional Risk/Opportunity: Transitional projects are typically long-term and are aimed at incorporating current and emerging technology to assist in operation efficiency, as well as provide tools and increased data insight to respond to emerging patterns related to climate risk. Situation: The changing energy landscape requires increased investments in technologies and upgrades to reduce energy use, particularly from traditional fossil-based sources. This could include further investment in alternative forms of energy production, or increased energy efficiency to mitigate American Water's climate impact. Task: As such, American Water is investigating methods to decrease the amount of energy used by its direct operations. In particular the energy demand from pumping water, which accounts for approximately 90% of our own electricity consumption. Action: Based on this need, in 2019, American Water has implemented pump maintenance and replacement programs at 16 stations in Pennsylvania to take advantage of energy efficiency opportunities. Result: The efficiency and subsequent GHG reductions from these pump upgrades are yet to be quantified. However, previous American Water projects in Pennsylvania and Kentucky have resulted in significant energy intensity reductions. This project also increases pump reliability to better provide our services. The success of actions such as these led to tangible results which increase American Water's climate resiliency, while reducing GHG emissions, and provide a roadmap for similar future investments.

## C2.2a

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**(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?**

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	We use current federal, state, and local regulations to drive facility operations and upgrades. We often go beyond existing standards to provide environmental benefit and improved resiliency. Justification for including current regulation into our climate-related risk assessments is that failure to do so could result in a variety of repercussions including service interruptions, reputational, financial, and permit related violations. An example of this specific risk type is program related to current Pennsylvania regulation, Dam Safety and Waterway Management, Chapter 105 regulations, which is a comprehensive regulation of dams, reservoirs, water obstructions and encroachments in the Commonwealth in order to protect the health, safety, welfare and property of the people. Regulations regarding dams and other waterway management approaches are relevant as climate variability influences water systems and supply. The 2018 Scranton Lake dam project, cost approximately \$10 million included modifications to the current spillway providing additional capacity to meet this regulation.
Emerging regulation	Relevant, always included	Climate and environmental driven changes to source water quality are bringing a heightened focus on drinking water quality. Justification for including emerging regulation into our climate-related risk assessments is that failure to do so could result in a variety of repercussions including service interruptions, reputational, financial, and permit related violations. As an example, the EPA currently provides guidance and best practices on monitoring and planning for cyanotoxin algal blooms. American Water participates in external collaborations to remain at the forefront of regulatory and monitoring strategies. Our staff are members of the technical advisory work group for Safe Drinking Water Act (SDWA) processes and New Contaminants of the American Water Works Association (AWWA), which is charged with review and monitoring of Federal guidance on cyanotoxins and harmful algal blooms (HABs). In response to these emerging concerns, which could be exacerbated by climate variability, we identify and evaluate technologies to detect and control algal blooms, as well as technologies to remove cyanotoxins during water treatment. Additionally, our own proprietary research and development group consists of 9 PhD scientists working in partnership with the Environmental Protection Agency (EPA), the Centers for Disease Control (CDC), all of our state Departments of Environmental Protection (DEPs), and international water research foundations on a variety of projects. Such projects include the Water Research Foundation project entitled "Utility Responses to Cyanobacterial/Cyanotoxin Events; Case Studies and Lessons Learned." This project will provide much needed information to effectively manage HABs and cyanotoxin events by establishing streamlined recommendations for monitoring, treatment and communications between water utilities, customers, and other stakeholders (e.g., public health and regulatory agencies).
Technology	Relevant, always included	Climate-related risks can create potentially adverse impacts to source water quality, such as algal growth during warm weather events or river turbidity spikes due to storm events. We are implementing new technology at our raw water reservoirs and treatment plants as enhanced treatment to adapt to and mitigate these potential risks. For every \$1 saved in operational expense allows for \$8 in capital investment without affecting customer bills. Justification for including technology into our climate-related risk assessments is important in meeting our operational water quality targets and continuously improve utilization of resources. Other benefits of enhanced water treatment technologies (e.g., solar powered mixers, membrane, UV light research, etc.) include reduced chemical usage and associated residual waste. For example, we installed solar powered mixers in our Huntsville, PA reservoir in 2019 as a preventative treatment technique to control algal blooms. The mixers have been effective in improving raw water quality and have resulted in a savings of \$4000/ year in avoided chemical costs. Additionally, by utilizing solar energy to run the mixers, there are no increases in electrical consumption demands, related costs, or greenhouse gas emissions. As with all technology projects there comes potential risk that the anticipated saving may not be achieved, or the life cycle cost may exceed the realized value. Strong identification of the value of the technology is needed to assist in the regulatory rate recovery process. These risks are considered when assessing technology options.
Legal	Relevant, always included	Our regulated water and wastewater operations are subject to extensive federal, state and local laws and regulations. These requirements include, among others, the Clean Water Act, the Safe Drinking Water Act, the Lead and Copper Rule, and the Comprehensive Environmental Response, Compensation, and Liability Act. Environmental Protection Agency requirements and similar federal and state regulations set conditions and standards for the water and wastewater services we deliver. Our ability to meet the existing and future demand of our customers depends on the availability of an adequate supply of water and the amount of treatment required to meet quality standards, some of which are impacted by climate variability (e.g., harmful algal blooms). Not only can failure to deliver impact reputation and customer satisfaction, but can involve elevated legal risk from increased litigation activity. Additionally, as projects (GHG reduction, efficiency, loss water) are identified, there is a risk of such capital expenditures and therefore recoverable cost may not be fully recognized which may require legal interaction with regulatory rate approval boards. 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. The ability to meet passing-flow requirements in the future is an example of a climate-related risk that could be subject to fines or legal review. 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. Changes in annual or seasonal precipitation may impact streamflow or groundwater levels, as well as water quality and are considered in our Master Planning process. The long-term supply planning is used to identify, mitigate and adapt to this type of risk including where complying with permit or legislative conditions would pose a legal risk as well as an environmental, regulatory or service risk.
Market	Relevant, always included	Increased volatility in weather may impact water source availability and quality and water use patterns. We address climate-related risks and opportunities in both our water supply and water demand management activities. On the supply side, we prepare drought management plans, monitor water supply availability, implement pipeline upgrade projects to reduce leakage, and perform Master Plans as discussed in C2.2. On the demand side, we issue general customer education materials for wise water use / water efficiency on our website and social media accounts as well as bill inserts to educate customers. We also work with regulators on issues related to conservation. For example, in California, we have posted specific programs, including joint partnerships, for customers to learn more about the variety of water-saving resources available, including free classes, services, rebates, conservation tips. These efforts will help us meet the new California Conservation Framework designed to implement long term conservation standards. The Framework was signed into law by Governor Brown and sets water use efficiency standards for indoor and outdoor urban water use to be effective by 2022. These market risks are incorporated into our short and long-term Capital Planning Processes and failure to mitigate these risk may impact organic growth within our footprint impact.
Reputation	Relevant, always included	Integrating environmental, social, 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. Justification for including reputation into our climate-related risk assessments is the fact that we are a public water and wastewater utility that directly services over 15 million people. Reputation is imperative in our business as customer confidence is critical. We participate in national policy and best practice committees as the leading water and wastewater provider in the nation. Reputation allows for continued growth. We pride ourselves on being a solution provider to distressed water and wastewater systems and seek to improve quality and services for the benefit of our customers. Reputational risk within our current footprint, such as failure to meet demand, meeting water and wastewater quality standards and major asset failure are considered in the asset management risk register process to identify those that pose high consequence and likelihood. Likewise, our water efficiency measures, such as non-revenue water volumes, is important to state regulators. An example of an action taken in our New Jersey operations includes the installation of over 8,250 hydrant-mounted leak detection caps that listen for water leaks and help proactively identify leaks. One specific operational area achieved a decrease in non-revenue water losses of 10% between 2015 and 2018. New Jersey's leak detection efforts are part of a continuous water efficiency program for that state and has been shared as a best practice across the industry through conference presentations. The proactive implementation of best practices in water efficiency is a component of our reputation in sustainability and customer service and is important to communities and regulators.
Acute physical	Relevant, always included	Examples of acute physical climate risks that have influenced American Water's risk assessments include numerous extreme events in the past few years such as Hurricane Irene, Superstorm Sandy, the Joplin, MO service area tornado and periodic flooding along the Mississippi River have provided key lessons learned which drive our current resiliency projects as well as emergency plan enhancements. Justification for including acute physical risk into our climate-related risk assessments is critical to providing clean and reliable operations during future events. For example, events have highlighted the need to collect accurate spatial data using the Global Positioning System for locations of valve and service assets to allow for access and shut-off of these valves during and after extreme weather events. A pilot to GPS all customer curb valves was executed shortly before Superstorm Sandy and proved invaluable in locating and shutting off leaking services and minimize system impacts.
Chronic physical	Relevant, always included	In order to 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. As a part of our long-term Capital Planning Process, we design and construct renewal and resiliency projects that incorporate mitigation for these types chronic risk. Justification for including chronic physical risks, including long term shifts in climate patterns that could lead to sea level rise or precipitation changes is needed to provide safe, reliable, and consistent water and wastewater services to all customers. For example, chronic physical risks that could lead to future droughts or changing precipitation patterns have the potential to impact some of American Water's service areas. In response to these risks, American Water built a reservoir to store a backup water supply for the town of Bel Air, MD. The project is designed to hold 90 million gallons of water taken from the nearby Winters Run stream, enough for a 100-day supply for the treatment plant. The project is the result of discussions among the town, county, and Maryland Department of Environment regarding the need to have a backup water supply for the town in the event of a drought or disaster that contaminates the stream. This project is about water sustainability and a model for meeting the water supply needs of a community.

**C2.3**

**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

**C2.3a**

**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Market	Increased cost of raw materials
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**Primary potential financial impact**

Increased indirect (operating) costs

**Climate risk type mapped to traditional financial services industry risk classification**

&lt;Not Applicable&gt;

**Company-specific description**

The increased cost of water treatment, wastewater treatment, and pumping due to changes in input pricing (e.g., energy, water) and loading from other external factors (e.g., regulatory requirements, water quality impairment) presents a risk with substantive financial and strategic impact. The cost of electric energy for water treatment, wastewater treatment and pumping operations (about 1 million MWh/yr) represents a significant portion of our annual operations budget. The climate-related risk, which could range from <0.5% to 5% of electricity costs, is the ability to achieve full cost recovery for associated costs. Increased fuel and power costs will cause changes to the operational efficiency profile by limiting financial resources available. This climate-related risk will vary in scope and magnitude across the American Water footprint. For example, the impact of prolonged droughts and wildfires on California operations will further strain fresh water drinking supplies, or the increase in frequency of high intensity rainfall events in the north eastern operations (e.g., Pennsylvania and New Jersey) may negatively impact source water quality and increase inflow and infiltration into wastewater collection systems. If unmitigated these examples will likely lead to increased energy demands. In 2019, American Water invested \$1.7 billion in net Company-funded capital improvements. American Water expects to spend between \$20 billion and \$22 billion on capital investments from 2020 to 2029 to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security, and increase resiliency of critical assets to climate variability. Our utility operations are subject to extensive economic regulation by state Public Utility Commissions (PUCs) and other regulatory agencies, which significantly affects our business, financial condition, results of operations and cash flows. Example projects/case studies that achieve reduction in resource inputs, while navigating the PUC and regulatory requirements include: large pump replacement within Kentucky operations, and water distribution leak detection program in New Jersey.

**Time horizon**

Medium-term

**Likelihood**

More likely than not

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

&lt;Not Applicable&gt;

**Potential financial impact figure – minimum (currency)**

50000

**Potential financial impact figure – maximum (currency)**

4000000

**Explanation of financial impact figure**

The financial impact to operating costs would be contingent on a number of factors including, but not limited to, the energy source being impacted (e.g., electricity, natural gas, etc.), whether it was a national or localized issue, the size and breadth of American Water operations being impacted, and the rate structure in the area impacted. The financial impact figure range was calculated based on the current cost of electric energy for water treatment, wastewater treatment and pumping operations (about 1 million MWh/yr). As such, the presented figures represent the minimum and maximum annual financial impact. The potential financial impact to operating costs is based on a minimum of \$0.05 / MWh (for RCP4.5 scenario) to a maximum of \$4.00 / MWh (for RCP8.5 scenario) energy price increase across the portfolio by 2099. This was estimated using the study data published by Fant et al 2020. Citation listed below uses RCP4.5 and RCP 8.5 projections. No estimate is available for the cost impact to chemicals used in treatment. The increase in energy is not expected to increase our management costs as we negotiate power costs as a normal business practice. Source: Fant, Charles et al, Climate change impacts and costs to U.S. electricity transmission and distribution infrastructure, Journal Elsevier Science Direct. 3 Jan 2020.

**Cost of response to risk**

1500000

**Description of response and explanation of cost calculation**

Situation: American Water's business is asset intensive including thousands of pumps and motors. As mechanical equipment ages, the level of needed maintenance increases and the equipment can become less efficient. Similarly, as buried infrastructure ages, proactive preventative maintenance programs become increasingly important for minimizing non-revenue water (NRW) volumes. Task: Strategically mitigate the risk of increased cost of raw materials by continuing to make needed infrastructure investments while implementing operational efficiency improvements, to minimize resource input demands and keep customer bills affordable. Action: American Water has multiple ongoing programs to improve water and energy efficiency. These programs include pump rehabilitation/replacement, generator replacement, water and sewer main replacements, and the construction of new water storage tanks. Example case studies include Kentucky American Water's large pump replacement project and New Jersey American Water's proactive leak detection program. Result: Efficiency gains are achieved in each program. Old pumps are replaced with new more efficient motors and pumping units. The ongoing large pump replacement project in our Kentucky operation has replaced four 1950s vintage large pumps, improving efficiency per pump by 10-35%. Operations have adjusted their practices to rely on the newer pumps. Kentucky operations continues to evaluate pump efficiency to prioritize future pump replacement. New Jersey operates 8,250 leak detection nodes, including hydrant-mounted leak detection caps that listen for water leaks and help proactively identify leaks. One operational area achieved a NRW decrease of 10% between 2015 and 2018. New Jersey's leak detection efforts are a continuous preventative maintenance program. The projects described in the summarized case studies are, only in part, pursued due to this climate-related risk. Many other factors impact the prioritization of capital expenditures. Therefore, it is difficult to assign a realistic cost of response to this risk; however, cost information related to the projects described in the case studies above is cited to provide better insight into the significant magnitude of the cost. The cost associated to replace a 10 million gallon/day pump for operations in Kentucky is approximately \$1,500,000. Cost of response will vary based on project scope, geographic location, and tariff, among other variables.

**Comment****Identifier**

Risk 2

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods
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**Primary potential financial impact**

Increased capital expenditures

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

Service interruptions due to severe weather, climate patterns and other natural events are possible across all our water and wastewater operations. These potential risks include service interruptions or asset damage due to, among other things, storms, freezing conditions, high wind conditions, hurricanes, tornadoes, earthquakes, landslides, drought, wildfires, coastal and inter-coastal floods or high water conditions, severe electrical storms and solar flares. For example, the impact of prolonged droughts and wildfires on American Water's California operations, which serves 53 municipalities, will further strain fresh water drinking supplies, or the increase in frequency of high intensity rainfall events in the north eastern operations (e.g., Pennsylvania and New Jersey) may negatively impact source water quality and increase inflow and infiltration into wastewater collection systems. Following the devastating wildfires in Larkfield, California new local fire ordinances mandate the installation of larger residential meters to provide greater fire protection capacity. As a result, California American Water established a program to allow customers to request that their monthly service charge, which is based on water meter size, be modified to a lower rate based upon their previous, small meter size. In circumstances such as this, the increased need for fire protection capacity may require that capital improvements be made to water treatment plants and distribution systems. 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, as defined in C0.1, may not provide reimbursement to us, in whole or in part, for any of these impacts.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

49000000

**Potential financial impact figure – maximum (currency)**

1200000000

**Explanation of financial impact figure**

Financial impacts would be site-specific and dependent on the exact project undertaken as described in the management method below. The minimum financial impact reflects the flood wall projects completed at the Raritan-Millstone Plant in NJ, and Davenport, IA, which cost a sum of approximately \$49M. For the maximum financial impact figure, we used an approximate unit cost of up to \$20M to harden facilities within a Federal Emergency Management Agency flood zone. This calculation includes approximately 600 facilities, resulting in a total cost of \$12B.

**Cost of response to risk**

450000

**Description of response and explanation of cost calculation**

Situation: Acute physical climate risks could potentially impact American Water's ability to provide safe and reliable water to its customers. Increasing storm intensity poses a potential increased risk to water and wastewater utility operations. Task: American Water is tasked with the responsibility to address risks posed by aging infrastructure and the increasing impacts of climate variability to reduce or eliminate leaks, improve cyber and physical security, increase the resilience of critical assets and continue to provide safe and reliable water and wastewater to customers. Action: American Water expects to spend between \$20 and \$22 billion on capital investments from 2020 to 2029 to address these issues, including those exacerbated by climate-related risks. Examples of recent case studies include: American Water's investment of \$14 million on 14 generator projects across 6 states, and Virginia American Water's Master/Capital Planning Study (CPS) identifying significant inflow and infiltration (I&I). Non-capital solutions may also provide more system resiliency in mitigating such risks. Examples include more robust Emergency Response Plans, Drought Management Plans, condition-based and/or reliability-centered maintenance, and other operations plans and asset management strategies that enable better preparedness and service reliability. Result: The result of these projects, and the other capital investments made by American Water is improving the reliability of water service to customers during an emergency. The identification of improvements that help American Water respond to this climate-related risk, starts in the CPS process. As a result of the Virginia American Water CPS over a mile of sewer pipes have been rehabilitated over the past two years, reducing the I&I volumes. The CPS generally necessitates about \$10 million per year across the enterprise. Assuming that 8–10 % of this cost is directly related to analyzing climate-related risks such as severe storms, changes in hydrologic data and improving resiliency, then the cost to respond to this risk and the next risk listed (Risk 3 below) would be in the range of \$800,000 - \$1 million per year. This cost was divided evenly between Risk 2 and Risk 3, which is how a response risk of \$450,000 per year was deduced. Looking at our Capital Improvement Plan (CIP) program over the last 5 years, the portion invested for improved resiliency is about 8-10% of the total CIP.

**Comment**

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 and operations. The cost of risk management related to asset resiliency is a subset of our planning process that has not been quantified separately.

**Identifier**

Risk 3

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns
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**Primary potential financial impact**

Increased capital expenditures

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

Many climate variability predictions, if true, present several potential chronic physical 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; or • increased costs to repair damaged facilities. Changes in precipitation patterns can impact our operation in several ways. 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. Opposite to the drought risk, shorter duration, higher intensity precipitation events may also create risk. Intense storms may increase pathogen loading to our source waters requiring additional treatment. Warmer summers may result in increased frequency and duration of algal blooms, increasing treatment costs. Increased storm intensities will likely increase flooding intensity and frequency requiring modification of existing facilities as water and wastewater treatment plants are often located in low-lying areas near bodies of water. The implications of sea-level rise are significant long term as vulnerable facilities are likely to see increased flooding, thereby requiring a hardening (e.g., flood walls, elevated mechanical systems, etc.). Sea level rise can also impact the ground water aquifers in coastal areas, through a process known as saltwater intrusion, which can raise the cost of water treatment. Solutions to upgrade aged facilities present the opportunity to site new facilities further away from flood areas or at higher elevation which reduce this potential risk.

**Time horizon**

Long-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

1000000

**Potential financial impact figure – maximum (currency)**

15000000

**Explanation of financial impact figure**

The presented figures represent the minimum and maximum annual financial impact. The minimum and maximum financial impact listed is an example based on the recent annual cost ranges associated with upgrading similar spillway projects in the Company's Pennsylvania operations. A recent major dam upgrade and rehabilitation project at Pennsylvania American Water's Lake Scranton Reservoir cost approximately \$10,000,000. Financial impacts would be site-specific and dependent on the exact project undertaken. As such, a reasonable range is provided for the financial impact figure.

**Cost of response to risk**

450000

**Description of response and explanation of cost calculation**

Situation: Without mitigation and adaptation plans, climate risks may impact American Water's ability to provide safe and reliable water to its customers. Flooding and other climate-related events are increasing in frequency, and posing a risk to American Water. Task: American Water is tasked with the responsibility to address risks posed by aging infrastructure and the increasing impacts of climate variability to reduce or eliminate leaks, improve cyber and physical security, increase the resiliency of critical assets and continue to provide safe and reliable water and wastewater to customers. Action: American Water expects to invest between \$20 billion and \$22 billion on capital investments from 2020 to 2029 to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security & increase resiliency of critical assets from climate-related risks. Examples of capital improvement projects related to this potential risk include several projects to upgrade spillway structures or stream bank stabilization at raw water reservoirs. In general, two reservoir spillway upgrade projects may be active every year. Most recently, Pennsylvania American upgraded the Lake Scranton dam and spillway which provides reservoir capacity of 6,988 acre-feet. Result: The result of this project, and the other capital investments made by American Water is improving the reliability of water service to customers, These actions will also result in increased resiliency of American Water's assets and improve the Company's ability to provide its services to customers. The minimum and maximum financial impact listed is an example based on the recent annual cost ranges associated with upgrading spillways on water reservoir dams in Pennsylvania. Financial impacts would be site-specific and dependent on the exact size of the project undertaken. The CPS process which identifies these potential risks generally necessitates about \$10 million per year across the enterprise. Assuming that 8–10 % of this cost is directly related to analyzing risks to severe storms, changes in hydrologic data and improving resiliency, then the cost to respond to this risk and the prior risk listed would be in the range of \$800,000 - \$1 million per year. This cost was divided evenly between Risk 2 and Risk 3, which is how a response to risk of \$450,000 was generated. Looking at our CIP program over the last 5 years, the portion invested for improved resiliency is about 8-10% of the total CIP.

**Comment**

Service disruptions caused by severe weather conditions, climate variability patterns or natural disasters may disrupt our operations or reduce the demand for our water and wastewater services, which could adversely affect our financial condition and operations. Because of the uncertainty of weather volatility related to climate variability, we cannot predict with certainty 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, as defined in C0.1, could be recovered through rates, infrastructure replacement surcharges or other regulatory mechanisms, there can be no assurance that state Public Utility Commissions would authorize rate increases to enable us to recover such expenditures and costs, in whole or in part.

**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

**C2.4a**

**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Opp1

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Use of more efficient production and distribution processes

**Primary potential financial impact**

Reduced indirect (operating) costs

*Reduced operating costs including energy costs and thus carbon (e.g., through efficiency gains and cost reductions)*

**Company-specific description**

American Water's assets as of December 2019 included 52,500 miles of pipe, 600 water treatment plants, 140 wastewater facilities and thousands of wells, water storage facilities and pumping stations. Managing these assets and ensuring efficient operations are keys to American Water's business—both within our own operations and our customers'. It is expected that the climate-related impact on water resource quality and quantity will vary across American Water's footprint; however, actions which target pumping less water, more efficiently are taken by business units across the country. In addition, actions to protect source water quality such as the conservation project within the Swatara Creek Watershed, which provides water to the Hershey Water Treatment Plant, cited in C12.1d are being undertaken. As the marketplace continues to offer more efficient equipment and new technology, especially related to optimizing water and energy use, we can realize improved resource efficiency. Investing in technologies to prevent leaks and increasing the efficiency of water infrastructure, and educating consumers are our greatest opportunities to reduce environmental impacts while also saving money. Water and energy efficiency measures reduce operating costs, energy consumption, the need for water infrastructure expansion, and demand on the planet's limited water supply – all benefiting our customers by helping keep rates affordable.

**Time horizon**

Long-term

**Likelihood**

Virtually certain

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

2910000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

The projects described in the summarized case studies are, only in part, pursued due to this climate-related opportunity. Many other factors impact the prioritization of capital expenditures. Therefore, it is difficult to assign a realistic financial impact figure to this risk; however, cost information related to the projects described in the case studies below is cited to provide better insight into the magnitude of the potential financial impact. New Jersey American Water began strategically implementing advanced acoustic leak detection technology in 2016 to reduce non-revenue water losses in their drinking water systems. One of the first operating areas to deploy and adopt the practices experienced operational expenditure savings of \$2,910,000 in 2019. This operating area has approximately 85,000 service connections. The financial impact figure will vary based on project scope, geographic location, and tariff, among other variables.

**Cost to realize opportunity**

1680000

**Strategy to realize opportunity and explanation of cost calculation**

Situation: As American Water's assets approach the end of their useful life, there is an opportunity to deploy more climate resilient facility designs and more efficient equipment. Task: In upgrading facilities and deploying new technology, it is important to identify and select more efficient products and look ahead to future opportunities and climate-related risks. Action: American Water uses multiple approaches to achieve improvements including: Technology: We strive to reduce water losses by using technologies including improved metering systems, a smarter water grid, pressure management, and leak detection programs. For example, operations in New Jersey utilize 8,250 acoustic leak detection nodes to help proactively identify leaks, with 3,600 nodes within the operational area cited above. Customer Conservation: We encourage customers to conserve water through programs such as tiered-rate structures, water efficiency kits/rebates, water-saving tips on our website and social media. For example, California American Water has dedicated water conservation staff members. These staff members are trained in many facets of water conservation and are an excellent resource for all stakeholders. Internal Governance: American Water's non-revenue water (NRW) practice provides reporting guidelines, terminology, and supporting information to help accurately record, report, and retain NRW data. Accurate, reliable water system reporting for NRW is critical to documenting operations, financial disclosure, budget process, managing customer needs, tracking growth, capacity planning, and marketing. Result: American Water's focus on efficiency has yielded an improvement in the Operations and Maintenance (O&M) Efficiency Ratio from 46.1% in 2010 to less than 36% in 2019. These operational efficiency increases are based on factors such as more efficient pumps and run times, reduction of NRW, and reduction of drive times. Considering the New Jersey leak detection example from above, the operational area achieved a decrease in real water losses of 7.5% between 2015 and 2019. This corresponds to an increase in O&M efficiency, as operations can meet the same customer demand by treating and pumping less water. The cost to realize is the capital expenditure related to this operational area's leak detection program in 2019 (\$1,680,000). This cost was cited to maintain consistency with the financial impact figure reported above.

**Comment**

Water use and efficiency is key to American Water's business—both within our own operations and our customers'. Optimizing water use, investing in technologies to prevent leaks and increasing the efficiency of water infrastructure, and educating consumers are our greatest opportunities to reduce environmental impacts while also saving money. Water efficiency measures reduce operating costs, energy consumption, the need for water infrastructure expansion, and demand on the planet's limited water supply – all benefiting our customers by helping keep rates affordable.

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**Identifier**

Opp2

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Markets

**Primary climate-related opportunity driver**

Access to new markets

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

Increasing storm intensity and drought frequencies may lead to more power outages, and water shortages, and impaired source water quality thereby putting more pressure on water utility operations to meet financial and regulatory obligations. There will likely be a need to invest higher levels of capital within the utility sector. Since numerous American Water systems supply water across multiple counties and to neighboring utilities, our focus on infrastructure investment and resilient operation may create business opportunities through additional water sales or potential acquisition. An example of one such acquisition is Illinois American Water's acquisition of the Village of Glasford water (492 customers) and wastewater (482 customers) systems in 2019. Planned capital projects will integrate the Glasford water system into the larger Illinois American Water central Illinois operations through the installation of a transmission water main. This will allow the Glasford water system to benefit from existing operational efficiency and economy of scale present in this region. The Water and Wastewater industry is the most fragmented of utilities with over 50,000 community water and 15,000 wastewater systems, and regionalization and/or acquisition solutions could provide many benefits to many communities in terms of resiliency and long term economic growth. With increased climate variability comes increased regulations, emerging contaminants, and the need for increased infrastructure investment, many community water and wastewater systems are strained to meet the increasing standards of operation. These strains will increase with climate-related issues, creating the potential for increased growth opportunity. As we continue to enhance our facilities, supply chain and direct operations to adapt to climate variations, we also enhance the reliability and resiliency downstream. This benefit can be seen in data from the Value of Water Campaign, which states that investment in water infrastructure creates jobs and makes communities more sustainable. The economies of scale realized by regional water systems help attract and retain businesses and promote productive local economies.

**Time horizon**

Long-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

280000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

The potential financial impact figure of \$280,000 provided is the approximate annual revenue from the Glasford water and wastewater system. The customer base is comprised of 492 water customers and 482 wastewater customers. While the potential financial impact will vary based on project/acquisition scope, geographic location, customer base, and tariff, among other variables, this case study specific value provides insight into the magnitude of the financial impact.

**Cost to realize opportunity**

1900000

**Strategy to realize opportunity and explanation of cost calculation**

Situation: The Water and Wastewater industry is the most fragmented of utilities with over 50,000 community water and 15,000 wastewater systems. With increased storm intensity and frequency from climate variability comes an increased risk of infrastructure failures. With more stringent regulations, emerging contaminants, and the need for increased infrastructure investment, many community water and wastewater systems are strained to meet the increasing standards of operation. Climate-related impacts may hasten the failure of water and wastewater system assets approaching the end of their useful life. Task: American Water considers the impacts of climate-related risks during system upgrade and project designs, and business development opportunities. Action: American Water has a robust process to enhance resiliency for its water and wastewater operations and a robust business development process. 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 services. We believe we are positioned to realize these opportunities as they arise. American Water has closed 20 acquisitions in 2019 in 8 states, including Pennsylvania American Water's acquisition of the Turbotville wastewater system. The collection system is vulnerable to heavy inflow and infiltration during high intensity rainfall events. These events lead to regulatory and operational challenges. Result: We will incorporate these systems into our Comprehensive Planning Study program and capital investment management program that continues to enhance resiliency levels for our systems. For the acquisitions cited in Illinois and Pennsylvania, American Water is well positioned to pursue these opportunities due to its experience and expertise in water and wastewater operations and infrastructure. The acquisitions described in the summarized case studies are, only in part, enabled due to this particular climate-related opportunity. Many other factors impact the prioritization of mergers and acquisitions. The cost (\$1,900,000) related to the Glasford water and wastewater system acquisition as described above is cited to provide better insight into the magnitude of the cost to realize. The figure does not include any planned capital expenditures and will vary by case.

**Comment**

With increased storm intensity and frequency from climate variability comes increased risk of infrastructure failures, and more stringent regulations, emerging contaminants, and the need for increased infrastructure investment, many community water and wastewater systems are strained to meet the increasing standards of operation. These strains will increase with climate-related issues, creating the opportunity to assist neighboring utilities to increase their resiliency levels.

**Identifier**

Opp3

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Use of more efficient production and distribution processes

**Primary potential financial impact**

Reduced direct costs

**Company-specific description**

American Water's wastewater services involve the collection of wastewater from customers' sewer laterals. The wastewater is then transported through a sewer network to a treatment facility, where it is treated to meet required regulatory standards before the treated water is returned to the environment. In many systems, American Water also owns or operates the sewage treatment facility (e.g., Fairview Township system). The solid waste by-product of the treatment process is disposed of or recycled in accordance with applicable standards and regulations. American Water annually invests in renewing aging sanitary sewer systems. As the climate-related risk of more frequent and intense precipitation events continues to become realized, these types of investments will become increasingly necessary. Our expertise in managing wastewater systems is a growth opportunity for American Water. Intense storm events can cause infiltration and inflow (I&I) of stormwater into the sanitary sewer lines and then into the wastewater treatment plants. This becomes a direct cost for pumping and treatment operations. Our focus on reducing I&I into sanitary sewer systems help protect wastewater treatment plants during extreme weather events. The inundation of wastewater treatment plants and sewer collection systems during extreme weather events, may result in negative environmental and economic impacts. We identified sources of I&I during our engineering and Comprehensive Planning Study program and identify capital improvements to reduce this flow where needed. In addition, we use acoustic monitoring devices to identify areas where sewer main blockages could occur, thereby preventing a sewer overflow event. The study work is generally done on a five to seven-year cycle. For acquisitions, we generally performed this work within several years yielding time for operational practices to be refined. The wastewater collection, treatment, and disposal operations of our Regulated Businesses 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.

**Time horizon**

Long-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

0

**Potential financial impact figure – minimum (currency)**

&lt;Not Applicable&gt;

**Potential financial impact figure – maximum (currency)**

&lt;Not Applicable&gt;

**Explanation of financial impact figure**

The financial impact of capitalizing on these opportunities is multi-faceted. Direct impacts include quantifiable costs savings related to the reduction of wastewater volumes for treatment and pumping, which in-turn reduces energy and chemical demands. Additional indirect impacts include stronger environmental compliance by reducing sewer overflows and system failures, as well as stronger operational performance. These indirect impacts will better position American Water to capitalize on other opportunities such as growth through mergers and acquisitions. In many cases, the financial impact of these projects takes years to quantify. Within the Fairview Township, PA case study cited below many of the financial impacts have yet to materialize. Our attention for this and similar case study outcomes will continue to increasingly focus not only on the evaluation of risk mitigation, but also to define and understand the full financial impacts of pursuing these opportunities. The potential financial impact will vary based on project scope, geographic location, and tariff, among other variables.

**Cost to realize opportunity**

1300000

**Strategy to realize opportunity and explanation of cost calculation**

Situation: Sewer infrastructure designed multiple decades ago needs to be upgraded to improve system integrity and mitigate the climate-related risk of more frequent and intense precipitation events. American Water's acquisition and investment history in sewer systems has provided towns with an opportunity to upgrade sewer systems, reduce inflow and infiltration (I&I) and better protect wastewater treatment plants from inundation. Reducing the risk of inundation of a wastewater plant reduces the risk of a treatment failure. Task: American Water is tasked with the responsibility to address risks posed by aging infrastructure, to increase wastewater system resilience and to continue to provide safe and reliable water and wastewater to customers. Action: American Water performs Master Planning Studies and sewer flow modelling as part of its larger Engineering and Comprehensive Planning Study program. During this work, we field monitor flows during dry and wet weather events to develop a desktop computer model of the sewer pipeline networks. These models enable us to run various scenarios of I&I levels and identify areas needing upgrades. Action can then be taken to prioritize and budget pipeline improvements. Result: Recent Master Planning and other study efforts for our operations included I&I studies and identification of pipelines for rehabilitation. In the last two years, our Virginia operation rehabilitated more than one mile of sewer pipes using a cured-in-place pipe technology. Similarly, since acquiring our Fairview Township, PA system in 2015, we rehabilitated 5,100 feet of sewer trunk lines, 2,775 feet of sewer trunk lines with 250 feet of laterals in 2018 and 6,000 feet of sewer trunk lines with 200 feet of laterals in 2019, totaling 13,875 feet of sewer trunk lines and 450 feet of laterals. Through these rehabilitation projects, Pennsylvania American Water has been able to successfully reduce the wet weather flows by approximately 150,000 gallons per day. I&I studies will be repeated in the future at which time estimates of savings can be generated. The cost range to realize the opportunity is based on the project cost of rehabilitating nearly three miles of the sewer collection system in Fairview Township. The capital and operational expenditures will vary by case; however, for context, the cost of sewer collection system and treatment upgrades for the Fairview Township wastewater system were approximately \$1,300,000.

**Comment**

C3. Business Strategy

C3.1

**(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?**

Yes, and we have developed a low-carbon transition plan

C3.1a

**(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?**

Yes, qualitative and quantitative

C3.1b

**(C3.1b) Provide details of your organization’s use of climate-related scenario analysis.**

Climate-related scenarios and models applied	Details
RCP 6 RCP 8.5 Other, please specify (Army Corp of Engineers guidance document)	<p>American Water reviews current climate science and global models on an on-going basis as related to temperature, precipitation, and sea level rise. We continue to monitor the status of regional and downscaled global climate models. Where actionable forecasts are available, American Water will use this information in our Comprehensive Planning work. For example, we use readily available climate data to assess the extent of impacts to our facilities being targeted for any assessment. Our Master Plan development assesses system needs on at least a 15-year horizon. Some studies extend to a longer time. For a NJ sea level rise study, we used the years 2030 and 2070 for the two planning horizons selected: 2030 provided a nearer-term target that can easily be incorporated into existing planning horizons, while 2070 provides a longer-term vantage that aligns well with the life expectancy of built infrastructure and a longer-range forecast on shifts in climate. 2070 provides an upper bound of what might be expected by that time horizon. Situation: American Water performs Comprehensive Planning Studies with Risk and Resiliency assessments which incorporate climate-related scenario analysis. Task: Use information from climate model scenarios where applicable to identify and select facility upgrade projects. Action: American Water performed a sea level rise (SLR) impact study in NJ using available Light Detecting and Ranging (LiDAR) topographic data, created a GIS base map of the facility and superimposed the Federal Emergency Management Agency (FEMA) flood mapping data. This coastal facility was selected for the assessment due to its critical operation and vulnerability to flooding. Then, we compared the FEMA mapping with other inundation mapping layers that were available from National Oceanic and Atmospheric Administration (NOAA). This information was used to identify the extent of flooding under different scenarios (category 1 and 2 hurricanes plus SLR) and time horizons (2030 and 2070). Precipitation and temperature scenarios were based on the regional information gathered from the National Climate Assessment, as well as other climate variability planning studies that have been conducted on a state-wide scale in NJ. The National Weather Service Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model was also used to model storm surge. We also examined temperature increases projected under RCP 2.5, RCP 6 and RCP 8.5. In each component of the analysis, we bracketed the impact to low impact and high impact scenarios. Result: The SLR study in NJ was used to develop a long-term plan for the facility assessed. Immediate/short term improvements were identified, and a long-term strategy was developed. The long-term strategy includes expanding facilities outside of the area of concern to reduce the critical dependence on this facility. The Comprehensive Planning work identifies needed system improvements, which drive financial planning and business strategy. To date, we have examined the risk of sea level rise for one facility in NJ and use this methodology as an approach for future studies. The risk of flooding is routinely assessed for all facilities in FEMA flood zones during the Master Plan process. We continue to follow climate science modelling to develop better ways to model the impacts from increasing storm intensity. These studies will continue to influence where we build new facilities and how the facilities are designed.</p>

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>American Water is committed to providing safe and affordable water and wastewater solutions to customers. New initiatives and opportunities are developed to provide customers with access to safe and affordable water supply even in anticipation of climate variability and related impacts. For example, we develop additional water supply in areas impacted by climate-related issues such as droughts, and we expanded our laboratory capabilities for cyanobacteria which we anticipate to increase due to warmer temperatures. Situation: The Monterey area of California has limited water resources. Task: American Water is tasked with providing safe and adequate water supplies to the growing community. Action: The Monterey Peninsula Water Supply Project is a critical water supply solution for more than 40,000 customer connections. Result: American Water continues a multiyear project to develop a desalination water supply to this region. Situation: Warmer temperature can lead to algal growth in open water reservoirs. Task: American Water's Central Lab in Belleville, IL offers state-of-the-art drinking water analytical services that are available to both American Water and external customers. Action: The increased activity around sampling related to emerging contaminants, such as cyanobacteria, has increased the number of required samples nationwide, thus increased our testing capabilities and capacity. Result: American Water purchased new lab instruments directly related to Cyanotoxins. The magnitude of these impacts is relatively low due to our existing capabilities.</p>
Supply chain and/or value chain	Yes	<p>The mission of the American Water supply chain is to help the Company's operating units achieve improved total value from purchased goods and services. We partner with suppliers with specific goals in mind, such as: (1) Enabling Innovation, (2) Reducing Costs, (3) Promoting Sustainability, and (4) Supporting Diversity. Climate variability directly impacts operations, due to the increased frequency and intensity of weather events, particularly operations adjacent to waterways and oceans. Situation: Significant events exacerbated by acute physical climate-related risks have influenced American Water's operations and value chain in the past, namely Superstorm Sandy. These events are also becoming more frequent and are anticipated to potentially impact American Water's business into the future. Task: Given American Water's role as a provider of essential water and wastewater services, it is vital that American Water maintains electricity and power to continue to provide services to its customers during these times of need. Action: As a result, America Water has established agreements with some of its national and regional fuel suppliers to be identified as a priority customer during such natural disasters. Result: Due to these agreements, American Water is now able to more reliably provide its services when impacted by natural disasters in the future.</p>
Investment in R&D	Yes	<p>Investment in research and development (R&amp;D), as it relates to Technology and Innovation, American Water is developing tools to allow for utilization of data and artificial intelligence (AI) to streamline customer driven work activities in an efficient manner to reduce the amount of drive time or the need to "roll" a truck thereby reducing our vehicle carbon footprint. Additionally, our R&amp;D group is also looking to leverage AI and the various sources of data, both internal and external to assist in identifying changes in raw water quality impacted by large rainfall and flooding events to alert operating personnel of changes in order to make appropriate operational changes. The development of AI and tied to real time data will also allow for predicative analysis of future climate variability events and operate equipment and facilities in a manner more efficiently. Investment in R&amp;D as it relates to water quality, our expansive R&amp;D team is dedicated to researching water quality and technology, water source monitoring, and collaborating with water research foundations. We continually investigate new substances to identify water supply threats, act on emerging regulations and new health advisories, and evaluate the benefits of alternative/advanced treatment technologies. Some of these threats are related to climate variability. Situation: Increased temperatures and precipitation frequency and duration can impact water quality in rivers, streams and reservoirs. Task: American Water utilized surface waters and reservoirs for many community water supplies. Monitoring our sources of supply for potential contaminants is a core activity. Action: To better understand emerging contaminants, we equip our labs with state-of-the-art technologies for measuring water quality constituents. We strive to identify and control new contaminants of concern before regulations go into effect. Result: Our research lab differentiates us from our peers, with in-house experts who hold relationships with governmental, industry, and environmental groups. We also adopted an innovative method to compile and update contaminant information for drinking water sources. The GIS map-based tool, WaterSuite, collects information about potential sources of contamination from various data sources and pulls it into a single database.</p>
Operations	Yes	<p>Replacing inefficient equipment improves our overall efficiency and creates an opportunity to reduce GHG emissions. A major focus for our operations is the planned maintenance and replacement of large pumps. 90% of our own electricity consumption is from pumping water. As the pumps age, they become less efficient, requiring more energy to move the same amount of water. In addition to pump efficiency, the following activities lower the amount of non-revenue water loss: advanced metering infrastructure, a smarter water grid, better pipes, increased focus on leak detection programs, and improved pressure management. Situation: As mechanical equipment ages, the level of needed maintenance increases and the equipment can become less efficient. Similarly, as buried infrastructure ages proactive, preventative maintenance programs become increasingly important for minimizing non-revenue water volumes. Task: Strategically mitigate the risk of increased cost of raw materials by continuing to make needed infrastructure investments while implementing operational efficiency improvements, to minimize resource input demands and keep customer bills affordable. Action: American Water has multiple ongoing programs to improve water and energy efficiency. These programs include pump rehabilitation/replacement, generator replacement, water and sewer main replacements, and the construction of new water storage tanks. Example case studies include Kentucky American Water's large pump replacement project and New Jersey American Water's proactive leak detection program. Result: Efficiency gains are achieved in each program. Old pumps are replaced with new more efficient motors and pumping units. Our Kentucky operations have replaced four 1950s vintage large pumps, improving efficiency, per pump by 10-35%. Operations have adjusted their practices to rely more heavily on the newer pumps. Kentucky operations continues evaluate pump efficiency to prioritize future pump replacement. New Jersey operates 8,250 leak detection nodes, including hydrant-mounted leak detection caps that listen for water leaks and help proactively identify leaks. One operational area achieved a decrease in non-revenue water losses of 10% between 2015 and 2018. New Jersey's leak detection efforts are a continuous preventative maintenance program.</p>

C3.1e

**(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets Liabilities	<p>Revenues: American Water compiled revenue for our inclining block states (CA and NY), combined that with our Revenue Stabilizing Mechanism states (NY, CA, and IL) and added in the fixed meter charges from our other regulated states, which resulted in approximately 45% of our customers having adaptive rates - related to the risks and opportunities provided. Situation: New York American Water utilizes groundwater for its source of supply. Groundwater resources in the region are limited. Task: The Company is tasked with the responsibility continuing to provide safe and reliable water to customers as communities continue to grow and redevelop. Action: Our New York operation designed and instituted a water conservation program and modified tariff structure to encourage customer water conservation. Result: The conservation plan enabled a peak season water production decrease of 6.5% compared 2018. Capital Expenditures: Situation: Acute physical climate risks such as extreme weather events have the potential to impact American Water's ability to provide safe and reliable water to its customers. Flooding, power outages and other climate-related events are increasing in frequency, and posing a risk to American Water. Task: American Water is tasked with the responsibility to address potential risks posed by aging infrastructure and the increasing impacts of climate variability to continue providing safe and reliable water and wastewater services to customers. Action: American Water expects to spend between \$20 billion and \$22 billion on capital investments from 2020 to 2029 to address issues, including climate-related risk. A specific example of an action taken includes an investment of \$14 million on 14 generator projects across 6 states in 2019. In addition, as the need for standby generators is crucial during power loss events due to increased storms, we have entered into agreements to help make certain that fuel deliveries are made for emergency use. Result: The result of these projects, and the other capital investments made by American Water is improving the reliability of water service to customers during an emergency, These actions will also result in increased resilience of American Water's assets and improve the Company's ability to provide its services to customers. We anticipate our investment budget will continue to rise as infrastructure ages, climate-related risks are realized (e.g., more intense storms require greater system resiliency), new regulations are promulgated, and growth continues. Direct Costs: Climate variability has impacted certain treatment facilities that are located in areas prone to flooding. As the need for standby generators is crucial during power loss events, we have entered into agreements to facilitate fuel delivery for emergency use. Additionally, to prepare for such events American Water maintains Emergency Response Plans. Indirect Costs: The increased cost of treatment and pumping due to changes in input pricing and loading from other external factors presents financial and strategic risk. The cost of electric energy for water treatment, wastewater treatment, and pumping operations (about 1 million MWh/yr) represents a significant portion of our annual operations budget. Increased fuel and power costs will cause changes to the operational efficiency profile by limiting financial resources available. Capital Allocation: Asset replacement to improve efficiency, meet regulations, provide supplies and reduce the loss of "High Risk Assets" are core drivers for capital allocation and investment. Each of these core drivers can be impacted by climate variability such as water supply quantity, impacts to water quality, or the need to harden assets due to increased storm activity and severity. Examples of capital allocated for improved resiliency include increased flood wall protection, reservoir projects in Maryland and Missouri, increased installation of standby power systems, redundancy and interconnections with adjacent water purveyors to help make minimize impact to systems and our customers during severe storm events through enhanced system reliability. Acquisitions and divestments: A component of looking at potential acquisitions is the ability to integrate adjacent systems and assets into our current infrastructure. Additionally, most systems that are acquired are typically systems under distress that have not been maintained. Identifying efficiencies early on through due diligence review, many with a direct impact on GHG emissions, such as aged leaking water mains and inefficient assets (e.g., pumps) are factored into our acquisition strategy. These approaches not only allow for a reduction in the existing carbon footprint through more efficient operations, but also improve customer service and satisfaction. Situation: With increased storm intensity and frequency from climate variability comes an increased risk of infrastructure failures. With more stringent regulations, emerging contaminants, and the need for increased infrastructure investment, many community water and wastewater systems are strained to meet the increasing standards of operation. Task: American Water considers the impacts of climate-related risks during system upgrade and project designs, and business development opportunities. Action: American Water has a robust process to enhance resiliency for its operations and a robust business development process. 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 services. We believe we are positioned to realize these opportunities as they arise. An example of one such acquisition is Illinois American Water's acquisition of the Village of Glasford water and wastewater systems in 2019. Result: Planned capital projects will integrate the Glasford water system into the larger Illinois American Water central Illinois operations through the installation of a transmission water main. This will allow the Glasford water system to benefit from existing operational efficiency and economy of scale present in this region. Access to Capital: Traditional means of access to capital are currently not impacted. American Water has sufficient access to capital for the anticipated risk mitigation activities and capital improvement plan. Liabilities: Our capital program planning process examines and includes projects such as flood walls that mitigate related liabilities due to climate related risk. The planning process integrates several scoring factors included identification of those high-risk assets that can be impacted by several factors, including climate related risk. Reduction of risk and hardening of high-risk assets reduces liabilities.</p>

**C3.1f**

**(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).**

Nothing additional to include or report.

**C4. Targets and performance**

**C4.1**

**(C4.1) Did you have an emissions target that was active in the reporting year?**

Absolute target

**C4.1a**

**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

**Target reference number**

Abs 1

**Year target was set**

2007

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 1+2 (location-based)

**Base year**

2007

**Covered emissions in base year (metric tons CO2e)**

853676

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

**Target year**

2025

**Targeted reduction from base year (%)**

40

**Covered emissions in target year (metric tons CO2e) [auto-calculated]**

512205.6

**Covered emissions in reporting year (metric tons CO2e)**

583360

**% of target achieved [auto-calculated]**

79.1623519930278

**Target status in reporting year**

Underway

**Is this a science-based target?**

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

**Please explain (including target coverage)**

American Water has committed to reducing our GHG emissions by 40% from our base year of 2007 by 2025. Our GHG emissions as of 2019 were 583,360, meaning we achieved approximately a 32% reduction from our base year, and are 79.2% of the way toward our goal.

**C4.2**

**(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

No other climate-related targets

**C4.3**

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

**C4.3a**

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	2	0
To be implemented*	0	0
Implementation commenced*	1	415
Implemented*	7	8500
Not to be implemented	0	0

**C4.3b**

**(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.**

**Initiative category & Initiative type**

Energy efficiency in production processes	Other, please specify (Investment in drinking water infrastructure)
---	---

**Estimated annual CO2e savings (metric tonnes CO2e)**

7800

**Scope(s)**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

830000

**Investment required (unit currency – as specified in C0.4)**

59000000

**Payback period**

11-15 years

**Estimated lifetime of the initiative**

&gt;30 years

**Comment**

We implemented 5 major projects and various programs in 2019. The projects included 4 pump upgrades at water facilities and 1 wastewater facility upgrade. We also continue our ongoing annual programs that contribute to reducing emissions. These programs include pump, generator, and water/sewer main replacement, as well as construction of new water storage tanks, replacement of fleet vehicles, and water efficiency programs. Efficiency gains are achieved in each program. Aged generators are replaced with more efficient units. Water main replacement results in improved hydraulic efficiency and reduced leakage. Replacement of sewer mains reduces storm water infiltration and in-flow, thereby reducing treatment volume. The construction of new water storage tanks reduces peak hourly pumpage. Replacing fleet vehicles improves fuel efficiency and allows for consideration alternative fuel vehicles. The savings listed are based on the five projects listed above plus the estimated savings for fleet, water conservation, and small pump replacement programs. Savings for the pipeline programs are not available at this time. Our new corporate office, occupied for the first full year in 2019, utilizes a sustainable site approach, effective roofing strategies, water use reduction, and energy/atmosphere strategies to reduce energy consumption to meet double (interior/exterior) Platinum LEED certification. Note: payback period for some projects may exceed 11-15 year timeframe.

**Initiative category & Initiative type**

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--

**Estimated annual CO2e savings (metric tonnes CO2e)**

145

**Scope(s)**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

35000

**Investment required (unit currency – as specified in C0.4)**

2200000

**Payback period**

&gt;25 years

**Estimated lifetime of the initiative**

21-30 years

**Comment**

American Water implemented a project at one water treatment plant in New Jersey to replace and upgrade the HVAC system. Reductions in electricity and natural gas usage are expected.

**Initiative category & Initiative type**

Other, please specify	Other, please specify (Process emissions reductions)
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**Estimated annual CO2e savings (metric tonnes CO2e)**

200

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

159000

**Investment required (unit currency – as specified in C0.4)**

1800000

**Payback period**

11-15 years

**Estimated lifetime of the initiative**

&gt;30 years

**Comment**

American Water implemented water efficiency programs in California and New York. These programs are estimated to save 1,000,000 kwh of electricity use per year in 2019.

## C4.3c

**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Internal incentives/recognition programs	All American Water employees must complete an annual performance review where they must describe how they demonstrated American Water's values during the review period. One of these five core values is "Environmental Leadership." One way employees can validate their demonstration of the Environmental Leadership value by describing how they participated in a variety of projects that contribute to the management of climate variability. A supervisor's rating of individual employee performance in this area can impact an employee's Annual Performance Plan (APP) pay. The APP is designed to promote all employees in achieving annual business objectives by providing an opportunity to earn performance-based compensation tied to corporate and individual performance. All employees', from executive leadership to front line represented employees, goals are aligned.
Internal finance mechanisms	Capital projects that target reducing emissions (e.g., solar installations, etc.) and those that can leverage state or federal incentive programs are considered as they align with our corporate value of Environmental Leadership. Electrical supply agreements and net metering rules are evaluated during project scope development.
Internal finance mechanisms	Upgrades to newer equipment and facilities provide an opportunity to improve efficiency in energy use and drive emissions reductions. Aged pipelines are often replaced with larger diameter pipes, improving hydraulic capacity of the piping grid and reducing energy loss due to friction within the pipe. New pumps, motors, building systems and mechanical equipment are generally more efficient and the new design is better suited for current and future operating conditions.

## C4.5

**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?**

No

## C5. Emissions methodology

## C5.1

**(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).****Scope 1****Base year start**

January 1 2007

**Base year end**

December 31 2007

**Base year emissions (metric tons CO2e)**

63977

**Comment****Scope 2 (location-based)****Base year start**

January 1 2007

**Base year end**

December 31 2007

**Base year emissions (metric tons CO2e)**

789699

**Comment****Scope 2 (market-based)****Base year start****Base year end****Base year emissions (metric tons CO2e)****Comment**

Not applicable

## C5.2

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**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

## C6. Emissions data

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### C6.1

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**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?**

**Reporting year**

**Gross global Scope 1 emissions (metric tons CO2e)**

75906

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

### C6.2

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**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

**Comment**

American Water will be investigating how to capture and incorporate electricity supplier emission factors into future reporting.

### C6.3

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**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

**Scope 2, location-based**

507454

**Scope 2, market-based (if applicable)**

<Not Applicable>

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

### C6.4

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**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**

No

### C6.5

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**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**

## Purchased goods and services

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Capital goods

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Upstream transportation and distribution

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Waste generated in operations

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Business travel

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Employee commuting

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Upstream leased assets

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

We have no upstream leased assets and therefore GHG emissions associated with this category for American Water are zero (0 mt CO2e).

## Downstream transportation and distribution

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As described in 12.1a, American Water is developing a climate-related supplier engagement strategy that starts with suppliers with larger carbon footprints with which we have the highest spend (as that increases our ability to leverage the suppliers' practices).

## Processing of sold products

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

Not relevant to the water/wastewater industry as we have no sale of products outside of water/wastewater services. As there are no sold products, then the emissions resulting from the processing of sold products that may be attributed to this category are zero (0 mt CO2e).

## Use of sold products

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

Not relevant to the water/wastewater industry as we have no sale of products outside of water/wastewater services. As there are no sold products, then the emissions resulting from the use of sold products that may be attributed to this category are zero (0 mt CO2e).

## End of life treatment of sold products

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

No products sold outside of water/wastewater services. As there are no sold product, then the emissions resulting from the end of life treatment of sold products that may be attributed to this category are zero (0 mt CO2e).

## Downstream leased assets

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

We have no downstream leased assets and therefore GHG emissions associated with this category for American Water are zero (0 mt CO2e).

## Franchises

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

We have no franchises and therefore GHG emissions relevant to this category for American Water are zero (0 mt CO2e).

## Investments

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

We have no investments in this area and therefore GHG emission relevant to this category for American Water are zero (0 mt CO2e).

**Other (upstream)**

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes CO2e**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

Not applicable.

**Other (downstream)**

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes CO2e**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

Not applicable.

C6.7

**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

Yes

C6.7a

**(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.**

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	16.27	

C6.10

**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

**Intensity figure**

0.000189

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

583360

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

3094000000

**Scope 2 figure used**

Location-based

**% change from previous year**

5.5

**Direction of change**

Decreased

**Reason for change**

2019's intensity figure decreased 5.5% from the 2018 value due to decreased Scope 1 and 2 emissions and increased total revenue. The emissions decrease was driven by a number of emissions reduction initiatives, including pump upgrades at four of our water facilities and an upgrade at one of our wastewater facilities, which reduced Scope 2 (location-based) emissions, as disclosed in C4.3b.

## C7. Emissions breakdowns

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### C7.1

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**(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

Yes

### C7.1a

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**(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	75302	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	527	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	76	IPCC Fifth Assessment Report (AR5 – 100 year)

### C7.2

---

**(C7.2) Break down your total gross global Scope 1 emissions by country/region.**

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	75906

### C7.3

---

**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By activity

### C7.3c

---

**(C7.3c) Break down your total gross global Scope 1 emissions by business activity.**

Activity	Scope 1 emissions (metric tons CO2e)
Stationary Combustion	31021
Mobile Sources	37441
Refrigerant	7445

### C7.5

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**(C7.5) Break down your total gross global Scope 2 emissions by country/region.**

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America	507454	0	1027159	0

### C7.6

---

**(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.**

By activity

### C7.6c

---

**(C7.6c) Break down your total gross global Scope 2 emissions by business activity.**

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Electricity Usage	507454	0

**C7.9**

**(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?**

Decreased

**C7.9a**

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.**

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	American Water did not change the amount of renewable energy consumed in 2019.
Other emissions reduction activities	8500	Decreased	1.4	As explained in C4.3a, American Water has implemented initiatives that will result in a total annual estimated reduction of 8,500 metric tons in 2019. Last year's Scope 1 and 2 emissions were 608,409 mt CO2e, so these activities resulted in a 1.4% decrease of Scope 1 and 2 emissions: $(8,500/608,409) \times 100 = 1.4$ . This refers to changes in emissions that have occurred because of proactive emissions reduction initiatives or activities, for example those listed in question C4.3b, other than those caused by a change in renewable energy consumption.
Divestment	0	No change	0	American Water did not calculate change in emissions specifically attributed to divestitures in 2019.
Acquisitions	0	No change	0	American Water did not calculate change in emissions specifically attributed to acquisitions in 2019.
Mergers	0	No change	0	American Water did not calculate change in emissions specifically attributed to mergers in 2019.
Change in output	0	No change	0	American Water did not calculate change in emissions specifically attributed to change in output in 2019.
Change in methodology	0	No change	0	American Water did not make any changes to its methodology in 2019.
Change in boundary	0	No change	0	American Water did not calculate change in emissions specifically attributed to change in boundary in 2019.
Change in physical operating conditions	0	No change	0	American Water did not change its physical operating conditions in 2019.
Unidentified		<Not Applicable >		American Water did not have any unidentified changes in 2019.
Other	9385	Decreased	1.5	In addition to the reductions experienced through our emission reduction activities described above, American Water decreased our emissions by another 9,385 metric tons, which when compared to last year's total Scope 1 + 2 emissions of 608,409 mt CO2e, represents a 1.5% of our overall GHG emissions as $(9,385/608,409) \times 100 = 1.5$ . This reduction was due to resiliency efforts, conservation, and infrastructure improvements.

**C7.9b**

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Location-based

**C8. Energy**

**C8.1**

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 5% but less than or equal to 10%

**C8.2**

**(C8.2) Select which energy-related activities your organization has undertaken.**

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

**C8.2a**

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value	0	321100	321100
Consumption of purchased or acquired electricity	<Not Applicable>	0	1027159	1027159
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	3540	<Not Applicable>	3540
Total energy consumption	<Not Applicable>	3540	1348259	1351799

**C8.2b**

**(C8.2b) Select the applications of your organization's consumption of fuel.**

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

**C8.2c**

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Fuels (excluding feedstocks)**

Diesel

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

55698

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Emission factor**

22.55

**Unit**

lb CO2e per gallon

**Emissions factor source**

2019 Climate Registry Default Emission Factors (May 2019)

**Comment**

Diesel is primarily used for emergency generators.

---

**Fuels (excluding feedstocks)**

Motor Gasoline

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

106545

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Emission factor**

19.63

**Unit**

lb CO2e per gallon

**Emissions factor source**

2019 Climate Registry Default Emission Factors (May 2019)

**Comment**

Motor gasoline is primarily used to fuel vehicles.

---

**Fuels (excluding feedstocks)**

Natural Gas

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

155144

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Emission factor**

15.04

**Unit**

lb CO2e per gallon

**Emissions factor source**

2019 Climate Registry Default Emission Factors (May 2019)

**Comment**

Natural gas is predominantly used for emergency generators and heating

---

**Fuels (excluding feedstocks)**

Propane Liquid

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

3617

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

---

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Emission factor**

12.69

**Unit**

lb CO2e per gallon

**Emissions factor source**

2019 Climate Registry Default Emission Factors (May 2019)

**Comment**

Propane is used in our operations.

---

**Fuels (excluding feedstocks)**

Biodiesel

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

64.7

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Emission factor**

22.43

**Unit**

lb CO2e per gallon

**Emissions factor source**

2019 Climate Registry Default Emission Factors (May 2019)

**Comment**

B5 (Biodiesel fuel) is used in our operations.

---

**Fuels (excluding feedstocks)**

Bioethanol

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

29.9

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Emission factor**

13.87

**Unit**

lb CO2e per gallon

**Emissions factor source**

2019 Climate Registry Default Emission Factors (May 2019)

**Comment**

E85 (Ethanol fuel) is used in our operations.

---

## C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	3540	3540	3540	3540
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

## C9. Additional metrics

### C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

**Description**

Please select

**Metric value**

**Metric numerator**

**Metric denominator (intensity metric only)**

**% change from previous year**

**Direction of change**

<Not Applicable>

**Please explain**

## C10. Verification

### C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	No third-party verification or assurance
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

### C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, but we are actively considering verifying within the next two years

## C11. Carbon pricing

### C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

### C11.2

**(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?**

No

### C11.3

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**(C11.3) Does your organization use an internal price on carbon?**

No, but we anticipate doing so in the next two years

## C12. Engagement

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### C12.1

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**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

### C12.1a

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**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

**Type of engagement**

Information collection (understanding supplier behavior)

**Details of engagement**

Other, please specify (Measurement of Environmental, Social, and Governance (ESG) factors included within our supplier base. )

**% of suppliers by number**

2.5

**% total procurement spend (direct and indirect)**

53

**% of supplier-related Scope 3 emissions as reported in C6.5**

0

**Rationale for the coverage of your engagement**

American Water has developed a program that starts with the suppliers of which we have the highest spend (as that increases our ability to leverage the suppliers' practices). This specifically targets suppliers that represent the top ≥50% of our FY2019 sourceable spend.

**Impact of engagement, including measures of success**

Through a supplier survey, we target suppliers that represent the top ≥50% of our FY2019 sourceable spend ranked with ESG framework before the end FY2020. 2019 is the baseline year to begin measuring ESG factors within our supplier base. We are early in our journey, but have surpassed our target for suppliers responding to our sustainability survey. Our goals are progressive, first to understand suppliers' behaviour by learning about the climate related strategies and effort of our top suppliers. Our longer-term strategy is to incorporate this information into our sourcing process as a factor in the supplier selection decision-making process.

**Comment**

American Water has started collecting information from the suppliers with whom we have the highest amount of spend.

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### C12.1b

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**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

**Type of engagement**

Education/information sharing

**Details of engagement**

Run an engagement campaign to education customers about your climate change performance and strategy

**% of customers by number**

100

**% of customer - related Scope 3 emissions as reported in C6.5**

0

**Portfolio coverage (total or outstanding)**

<Not Applicable>

**Please explain the rationale for selecting this group of customers and scope of engagement**

There are many challenges facing water systems today: aging infrastructure, emerging water contaminants, and increasing threats and impacts from climate variability and natural disasters. American Water was at the forefront of environmental leadership when, in 2006, it became the first U.S. water or wastewater utility to join the Environmental Protection Agency's (EPA) Climate Leaders program and CDP. On both a corporate and state level, American Water is consistently communicating with customers. General messaging points from the corporate level mainly leverages digital communications that include the corporate website, social media, standard media and state specific customer portals. Our Regulated Businesses, as defined in C0.1, also communicate to customers via direct mail, bill inserts, as well as electronically through our customer portals. Our education and information-sharing engagements target 100% of our customers as nearly everyone seeks ways to cut costs and therefore conserve resources. There are many challenges facing water systems today. An example of general corporate messaging conveyed throughout the year on a consistent basis includes: American Water expects to invest \$20 billion and \$22 billion in regulated capital expenditures from 2020 to 2029 to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security, and increase resiliency of critical assets to address climate variability.

**Impact of engagement, including measures of success**

As we confront the challenges posed by climate variability, persistent droughts, and high-energy prices across the country, nearly everyone is looking for ways to conserve resources and cut costs. We inform and educate customers on simple techniques they can employ to use water more efficiently and conserve energy, thus preserving our nation's resources for future generations. These solutions not only make environmental sense, they make economic sense as well:

- Check for and repair leaks throughout your home or business.
- Install a U.S. EPA EnergyStar-rated demand hot water system.
- Install U.S.EPA WaterSense-rated low flow shower heads, faucet aerators, and High Efficiency Toilets (HETs). HETs use just 1.28 gallons per flush (gpf) or less as compared to the 3.5 gpf or more for toilets sold prior to 1994.
- Lower your water heater thermostat to 120 degrees. Some manufacturers set water heater thermostats at 140 degrees. Lowering the temperature would reduce water heating costs by 6 - 10%.
- Wrap pipes that are not insulated, or that pass through unheated spaces such as crawlspaces, basements or garages, with pre-molded foam rubber sleeves or fiberglass insulation.
- Use energy and water efficient appliances (e.g., U.S. EPA EnergyStar and WaterSense rated dishwashers and clothes washers).
- Use drip irrigation systems in gardens and landscaping rather than hose sprayers or sprinklers.
- Wrap your water heater in an insulation blanket to help reduce heat loss. Nearly 20% of an average home energy bill goes to heating water.

We inform and educate all our customers on simple techniques to use water more efficiently and conserve energy, thus preserving our planet's resources for future generations. The measure of success for this engagement is the amount of water saved through conservation and efficiency measures. Our residential customers have saved about 1,100 gallons per customer per year – or 3.2 billion gallons annually – through conservation and efficiency measures in recent years. American Water also produces a Sustainability Report biannually that details our climate strategy and GHG emissions reduction performance. This information is made available to our customers.

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**C12.1d**

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**(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.**

This past year American Water played a supportive role in the Swatara Creek Watershed (PA) receiving funding through the National Water Quality Initiative (NWQI) Source Water Protection program. The Swatara Creek Watershed conservation project is one of 16 projects which received funding by the United States Department of Agriculture (USDA). NWQI is a partnership between the USDA National Resources Conservation Services, and US Environmental Protection Agency, and state water quality agencies. The NRCS provides funding for financial and technical assistance in watersheds where voluntary landowner conservation practices may have beneficial impacts on surface water quality. Pennsylvania American Water worked with the NRCS in 2019 to identify priority watersheds, including the Swatara Creek for study under the NWQI.

Situation: Increasing precipitation in agricultural watersheds can impact stream water quality and impact the cost of water treatment. Some farms struggle to keep nutrients used in their operations out of nearby waterways due to soil erosion in cropland, poor management of manure, or unstable stream banks and buffers. Pennsylvania American utilizes the Swatara Creek as a drinking water supply for the Hershey Water Treatment Plant. This watershed is characterized by significant agricultural activity. The negative impact of nutrient and sediment loading will likely worsen due to climate-related risks, such as increased precipitation and runoff.

Task: The Company utilizes the Swatara Creek for a source of supply and has had a source water protection plan in place since 2012. PA American Water worked with the Natural Resources Conservation Service (NRCS) in 2019 to identify priority watersheds, including the Swatara Creek for study under the NWQI initiative. The NWQI is a partnership among the NRCS, state water quality agencies, and the US Environmental Protection Agency (EPA) to identify and address impaired water bodies through voluntary conservation. Conservation systems that avoid, control, and trap nutrients and sediments are crucial to keeping these pollutants out of our surface and ground water.

Action: Over 215 of the 350 miles of the Swatara stream was selected to be included in this NWQI project area as it is designated as impaired due to agriculture. Swatara Creek was chosen for a source water protection pilot project focused on protecting water that will be used as a source of public drinking water. Nitrates and turbidity (sediment) are common concerns for drinking water. Preventing nitrate and sediment from exiting our farm land is important for drinking water quality, including clarity, taste, and toxicity. Removing excess amounts also makes the water less costly to treat to make it suitable for human consumption.

Result: The Company is supporting the local NRCS staff on implementation including: provided copies of our Source Water Protection Plan; shared data and reviewed watershed assessment plan; supported and presented at stakeholder engagement events; and increased nitrate monitoring at the Hershey plant to support project metrics. The NRCS is undertaking the pilot project which was approved for the Readiness Phase of the work in 2019. As a stakeholder in the watershed, the Company is taking positive steps as an opportunity to improve the water quality of the stream.

**C12.3**

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**(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?**

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

**C12.3a**

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**(C12.3a) On what issues have you been engaging directly with policy makers?**

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Infrastructure Replacement, Lead Service Line Replacement) <i>American Water's direct engagement with policy makers (individual meetings as well as participation and attendance, on a year-round basis at scheduled NARUC, NCSL, USCM, NAWC and NMSU events) includes but is not limited to: • Infrastructure Replacement • Lead Service Line Replacement • Water Quality Accountability Act • Emerging Contaminants/Treatment and Monitoring • Supplier and Workforce Diversity • Cybersecurity • Fair Market Value • Water/Wastewater Revenue Requirement Consolidation • Affordability Programs • Capital Recovery Mechanisms • Stabilization Mechanisms • Distressed Utility Expansion • State Revolving Fund American Water Infrastructure Investment: American Water expects to spend between \$20 billion and \$22 billion from 2020 to 2029 on capital investments to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security, and to increase resiliency of critical assets against the impacts of climate variability.</i>	Support	American Water Infrastructure Investment: American Water expects to spend between \$20 billion and \$22 billion from 2020 to 2029 to address aging infrastructure, reduce/eliminate leaks, improve cyber/physical security, and to increase resiliency of critical assets against the impacts of climate variability.	We support this legislation with no exceptions
Other, please specify (Emerging Contaminants/Treatment and Monitoring)	Support with minor exceptions	Direct engagement with policy makers through individual meetings as well as participation and attendance, on a year-round basis at scheduled National Association of Regulatory Utility Commissioners (NARUC), National Conference of State Legislatures (NCSL), U.S. Conference of Mayors (USCM), National Association of Water Companies (NAWC), and New Mexico State University (NMSU) events.	•Water Quality • Accountability Act • Fair Market Value • Water/Wastewater Revenue Requirement Consolidation • Affordability Programs • Capital Recovery Mechanisms • Stabilization Mechanisms • Distressed Utility Expansion • State Revolving Fund
Other, please specify (Revenue Stabilization Mechanism)	Support	A Revenue Stabilization Mechanism (RSM) is an innovative regulatory tool we are allowed to use in Missouri, California, Illinois and New York. Rather than implicitly encouraging water use and penalizing a water utility for encouraging conservation, an RSM adjusts rates periodically to help make certain that a utility's revenue will be sufficient to cover its fixed costs regardless of throughput, while providing an incentive for customers to use water more efficiently. American Water is supportive of this ratemaking policy, speaks to the benefits of RSMs at external stakeholder events and encourages the use of RSMs across the states where we operate.	We support this legislation with no exceptions
Please select	Please select		

**C12.3b**

**(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?**

Yes

**C12.3c**

**(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**

**Trade association**

National Association of Water Companies (NAWC)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

From <http://www.nawc.org/water-challenges/climate-change.aspx> Our climate is changing and with it our world. And while many of the ramifications of climate change — including its scope and speed — remain the subject of much discussion, there is no doubt that the world of future generations will be different than this one. Changes in climate, including changes in temperature, precipitation and other environmental variables, can greatly affect the quality and quantity of available resources, including water. Moving water greater distances consumes more energy and the economic impact of more costly water can negatively impact communities and businesses. In California, regions dependent on winter snowpack in the Sierras for water supply during warmer months will continue to experience challenges depending on winter precipitation. As temperatures rise, the situation becomes more critical. Climate change presents challenges, but there are solutions to be harnessed in the form of wise water use, conservation education and the efficient management of resources through innovative technology. Private water companies are helping to lead the way on water conservation with green, energy saving initiatives that will make a difference for the communities they serve. From Connecticut to California, our members are engaging customers from every generation about the importance of protecting natural resources and the environment.

**How have you influenced, or are you attempting to influence their position?**

American Water supports this position.

**C12.3d**

**(C12.3d) Do you publicly disclose a list of all research organizations that you fund?**

Yes

## C12.3e

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### **(C12.3e) Provide details of the other engagement activities that you undertake.**

American Water provides support to a variety of agencies and organizations on climate-related issues via private meetings, attendance at conferences, summits and participation on subject specific panels. We routinely engage with National Association of Regulatory Utility Commissioners, a non-profit organization dedicated to representing the State public service commissions. They regulate the utilities that provide essential services such as energy, telecommunications, power, water, and transportation as well as on infrastructure resiliency in the face of climate change. We have also provided similar support to the US Environmental Protection Agency on this topic.

We also engage with the following organizations in a similar fashion: National Conference of State Legislatures, U.S. Conference of Mayors, National Association of Water Companies, and New Mexico State University Center for Public Utilities.

Refer to: <https://amwater.com/corp/about-us/ethics-responsibility/political-contributions>

## C12.3f

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### **(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

Throughout the American Water footprint, consistency in messaging, strategy and corporate values, across the corporation is held paramount. We completed a Materiality Assessment in 2019 that was used to create the 2017-2018 Sustainability Report and focus on business strategy. The Materiality Assessment included both internal subject matter experts (SME) and external stakeholders to help make certain that overall strategy aligned with materiality and stakeholder input and was approved as business strategy by the Company's Executive Leadership. Several of the material topics identified overlap and align with climate variability, energy and emissions, water infrastructure, and water use and efficiency. To provide consistency, our SMEs have been trained and drilled on conveying specific climate variability messaging related to their areas of expertise. Messaging is extended to a variety of audiences including elected officials, policy makers and regulators. Using the material topics as guidelines, in 2020, we completed an ESG Goal Setting process where our SMEs have been critical in the incorporation of new goals for the Company which overlap with our climate strategy and overall ESG strategy. Public goals are incorporated into public disclosures, as is progress against such targets and goals.

We communicate regularly with external stakeholders including elected officials, regulators, policy makers, trade associations, and other external organizations. An example of an executive and SME that contributes to the consistency of our messaging to stakeholders is our senior vice president, Chief Environmental Officer who addresses topics such as, but not limited to, the sustainability of water supply and infrastructure. Consistent communications messaging includes risk and resiliency, climate variability, and other topics associated with the Company's climate strategy and ensuring that operations continues to align with the overall business strategy. As a regulated utility we are required to operate in the best interest of our customers, improving their communities because we are there, with a concentrated focus on risk and resiliency.

At the Board level, the American Water Board approves the detailed budget annually which includes a breakdown of resiliency directed expenditures. The Safety, Environmental, Technology & Operations Committee of the Board directly oversees ESG matters and maintains alignment with overall operations. The committee is informed on ESG and climate variability related targets, goals, and progress.

An additional measure to maintain messaging consistency, only SMEs and those authorized by the American Water Communications Department, are permitted to engage with and respond to elected officials, policy makers and regulators to help make certain that all public engagement messaging is consistent with the corporate position and strategy.

## C12.4

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**(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

10-K\_2020-02-18.pdf

**Page/Section reference**

10k - Environmental, Social Responsibility, and Governance: pages 15-17

**Content elements**

Emissions figures

Emission targets

Other metrics

**Comment**

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**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

2020+Proxy+Statement (4).pdf

**Page/Section reference**

Proxy Statement - Our Commitment to Environmental and Social Responsibility, pages ii-iii

**Content elements**

Emissions figures

Emission targets

Other metrics

**Comment**

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**Publication**

In voluntary sustainability report

**Status**

Underway – previous year attached

**Attach the document**

AmericanWater\_SustainabilityReport\_LowRes\_110519.pdf

**Page/Section reference**

2017-2018 Sustainability Report, pages 68-83, 84-95, and 102-105

**Content elements**

Governance

Strategy

Other metrics

**Comment**

The 2017-2018 Sustainability Report explains business strategy around the material topics related to climate variability such as: Water Infrastructure, Climate Variability and Water Supply Resilience. Material topics in the Sustainability Report related to GHG emissions include: Water Use and Efficiency and Energy and Emissions. In each of these sections goals, targets, and performance metrics are provided with additional metrics provided in the Content Indices. We produce a biannual Sustainability Report and are currently drafting and interim update for 2019 to be released later in 2020 that will disclose 2019 emissions data.

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## C15. Signoff

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### C-FI

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**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

Nothing additional to include or report.

### C15.1

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(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	President and CEO	Chief Executive Officer (CEO)

## SC. Supply chain module

### SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

### SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	3610000000

### SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

### SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	US	0304201033

### SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

### SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

Information is not available.

### SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Customer base is too large and diverse to accurately track emissions to the customer level	As a water and wastewater utility company this allocation breakdown is not available.

### SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

No

SC1.4b

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(SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

As a Water and Wastewater Utility company this allocation breakdown is not available.

SC2.1

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(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

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(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

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(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?

No

SC3.2

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(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?

No

SC4.1

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(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

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In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors Customers	Public	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms