



**2022**  
**Environmental, Social  
and Governance Report**

# ABOUT ESSENTIAL

**Essential Utilities Inc. is one of the largest publicly traded water, wastewater and natural gas providers in the U.S.**

We believe our nation's water and gas infrastructure need new thinking and new investments to overcome the challenges of a changing climate and years of neglect.

We are a champion of communities, people and the environment creating solutions to ensure we have clean and safe natural resources for life, to serve 5.5 million people across 10 states under the Aqua and Peoples brands. With each utility lending more than 130 years of experience, Essential is committed to proactive infrastructure investment, regulatory expertise, operational efficiency and environmental stewardship.

With a nation of crumbling water systems and aging pipelines in need of championing, we are passionate about investing in infrastructure and bringing new energy solutions to communities, while delivering continued return on investment to shareholders.

We are grounded in a deep-rooted purpose that empowers people to live better lives. Integrity, respect and excellence are the core values that guide us. We put the wellbeing of our customers and communities at the heart of all we do, while preserving the culture of trust and safety for our employees. We recognize the importance water and natural gas play in everyday life and are proud to deliver clean, safe, reliable services for the greater good of the communities we serve.

**We are Essential – providing natural resources for life.**



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## Mission

**To sustain life and improve economic prosperity by safely and reliably delivering Earth's most essential resources to our customers and communities.**

## Vision

**Safe and reliable access to natural resources sustains the lives of the people we serve.**

Essential Utilities is uniquely positioned to strengthen our communities by renewing and improving infrastructure, delivering excellent service, acting as stewards of the environment, enhancing economic development, and making charitable contributions. We are committed to attracting and nurturing a workforce that reflects the diversity of the communities we serve and to providing fair and equitable opportunities for all employees. We're dedicated to working safely and managing our operations sustainably to protect each other and our environment. We believe our efforts will bring value to our customers, employees and shareholders and enable us to continue to fulfill our mission. Together, we will make a difference for generations to come.

## Our Utilities



# Corporate Profile<sup>1</sup>

## ESSENTIAL

Revenue

\$2.29B

Employees (full-time)

3,200+

People Served

5.5M

Customer Connections

1.9M

## GAS

Gas Utility Customer Connections

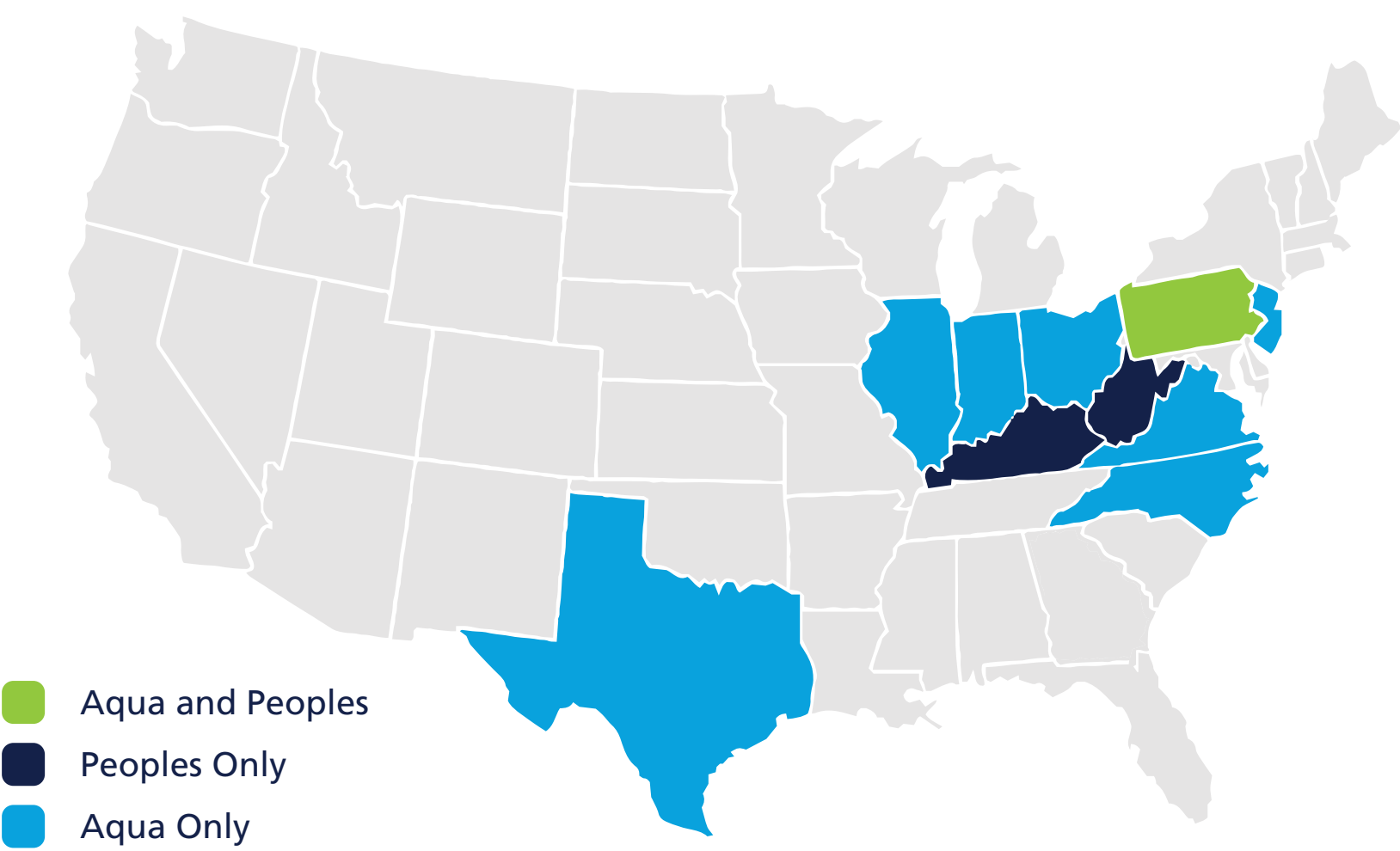
0.8M

Gas Delivered to Customers

155.6Bcf

States

- Illinois
- Indiana
- Kentucky
- New Jersey
- North Carolina
- Ohio
- Pennsylvania
- Texas
- Virginia
- West Virginia<sup>3</sup>



## WATER AND WASTEWATER

Gallons of Drinking Water Produced<sup>2</sup>

85.4B

Gallons of Wastewater Treated

11.2B

Water and Wastewater Utility Customer Connections

1.1M

Water Systems

1,512

Wastewater Systems

230

<sup>1</sup> Figures as of December 31, 2022

<sup>2</sup> It is important to distinguish between various volumetric measures of water reported by utilities like Essential. Water withdrawn is commonly defined as “water diverted or withdrawn from a surface water or groundwater source.” This is the raw input of our operations and thus has the largest volume of all figures we report. In 2022, Essential withdrew 88.3B gallons. Practically, a small percentage of this volume of surface water withdrawn is used for routine backwashing at our plants for preventative maintenance so the filter media can be reused. The remaining water volume enters the plant to be treated prior to being sent out through our distribution network to customers. This volume of treated water that was sent out from our plants in 2022, or produced, was 86.9B gallons. As water moves through our distribution network, a portion of the volume does not ultimately make it to the customer. This is considered non-revenue water loss and is comprised of both “real” loss (leakage from main) and “apparent” loss, (such as theft and meter inaccuracies) and other instances, such as water main flushing and water for emergency fire services. Across industry, and for Essential as well, these losses amount to roughly 20% of production volume. The remainder reaches the customer, is consumed and ultimately billed.

<sup>3</sup> On January 3rd, 2023, Essential [announced](#) its plans to sell its West Virginia natural gas utility assets, which has a customer base of approximately 13,000. As this report includes information as of December 31, 2022, unless otherwise noted, West Virginia operations are included within the scope of the report.

## A Message from the Chairman & CEO

Protecting the environment, creating approaches to business that are sustainable for our company and the communities we serve, and practicing good corporate governance have never been buzzwords for us. Here at Essential, it's just the way we do business.

When your business is providing clean, safe, reliable water and natural gas, as well as managing wastewater treatment and redistribution, being a great steward of the environment is a core requirement.

I invite you to learn more about our recent efforts by watching this video, reading our 2022 ESG Report, and keeping an eye on our ESG website for future updates.

We are proud of all that we've accomplished in these important areas, and what our plans are going forward.



## Christopher H. Franklin

Chairman and Chief Executive Officer

## CEO Video





## About this Report

This is Essential Utilities Inc.'s Environmental, Social and Governance (ESG) Report, for the calendar year 2022. Data in this report reflects the company as of Dec. 31, 2022, unless otherwise noted, and includes information for the entirety of 2022 for the water, wastewater, and natural gas utilities that comprise Essential.

This 2022 ESG Report integrates various reporting frameworks, including those put forth by the International Financial Reporting Standards Foundation (IFRS) Sustainability Accounting Standards Board (SASB) standards, and the Task Force on Climate-related Financial Disclosures (TCFD). For more information, please review our [SASB and ESG Metrics Index](#), [TCFD Report](#) and [CDP Report](#).

For more information on Essential's ESG initiatives, contact [ESG@Essential.co](mailto:ESG@Essential.co) with questions or comments.

## FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, which generally include words such as "believes," "expects," "intends," "anticipates," "estimates" and similar expressions. The company can give no assurance that any actual or future results or events discussed in these statements will be achieved. Any forward-looking statements represent its views only as of today and should not be relied upon as representing its views as of any subsequent date. Readers are cautioned that such forward-looking statements are subject to a variety of risks and uncertainties that could cause the company's actual results to differ materially from the statements contained in this report. Such forward-looking statements include, but are not limited to, statements relating to the capital to be invested by the water, wastewater, and gas distribution divisions of the company. There are important factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including the factors discussed in our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q, which is filed with the Securities and Exchange Commission. For more information regarding risks and uncertainties associated with the company's business, please refer to the company's annual, quarterly and other SEC filings. The company is not under any obligation — and expressly disclaims any such obligation — to update or alter its forward-looking statements whether as a result of new information, future events or otherwise.

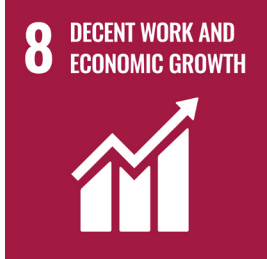

# Alignment with UN SDGs

Essential is committed to supporting the achievement of the United Nations’ Sustainable Development Goals (SDGs), which aim to address global challenges and achieve peace and prosperity for all.

Of the SDGs, our business most significantly positively impacts the following:

UN SDGs	Our Approach	Our Actions	Read More Here
<div><div><div>3</div><div>GOOD HEALTH AND WELL-BEING</div><div></div></div><div><div>6</div><div>CLEAN WATER AND SANITATION</div><div></div></div></div> <td><p>We must be ever-vigilant in the face of emerging contaminants from pollutive industries, threats of water-borne diseases, and storms or other events that can raise obstacles to treatment capacity. The well-being of our customers is our single greatest priority.</p></td> <td><ul style="list-style-type: none"><li>• State-of-the-art water analysis lab staffed with expert scientists</li><li>• Consistently fewer health-based system violations than national average</li><li>• Strong response to address PFAS in our communities</li><li>• Excellent employee safety performance</li></ul></td> <td><ul style="list-style-type: none"><li>• <a href="#">Managing Contaminants of Emerging Concern</a></li><li>• <a href="#">Compliance and Regulations (Water and Wastewater)</a></li><li>• <a href="#">Health and Safety</a></li><li>• <a href="#">Environmental and Sustainability Policy</a></li></ul></td>	<p>We must be ever-vigilant in the face of emerging contaminants from pollutive industries, threats of water-borne diseases, and storms or other events that can raise obstacles to treatment capacity. The well-being of our customers is our single greatest priority.</p>	<ul style="list-style-type: none"><li>• State-of-the-art water analysis lab staffed with expert scientists</li><li>• Consistently fewer health-based system violations than national average</li><li>• Strong response to address PFAS in our communities</li><li>• Excellent employee safety performance</li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Managing Contaminants of Emerging Concern</a></li><li>• <a href="#">Compliance and Regulations (Water and Wastewater)</a></li><li>• <a href="#">Health and Safety</a></li><li>• <a href="#">Environmental and Sustainability Policy</a></li></ul>
<div><div><div>5</div><div>GENDER EQUALITY</div><div></div></div><div><div>10</div><div>REDUCED INEQUALITIES</div><div></div></div></div> <td><p>We are rooted in a firm belief that our team members, our most valuable internal resource, should reflect the communities we live and serve each day. Our suppliers, many of which are locally based and small businesses, should have ownership reflective of the communities we live and serve each day.</p></td> <td><ul style="list-style-type: none"><li>• Achievement of our 15% supplier diversity commitment</li><li>• Close to achieving our 17% employee diversity commitment</li><li>• 55% board diversity</li><li>• Addition of diversity metrics in executive compensation</li><li>• Diverse recruitment tactics</li><li>• Education workshops and events for employees</li><li>• Several employee resource groups</li></ul></td> <td><ul style="list-style-type: none"><li>• <a href="#">Diversity, Equity, and Inclusion (DE&amp;I)</a></li><li>• <a href="#">Equal Employment Opportunity and Anti-Harassment Policy</a></li><li>• <a href="#">Human Rights Policy</a></li></ul></td>	<p>We are rooted in a firm belief that our team members, our most valuable internal resource, should reflect the communities we live and serve each day. Our suppliers, many of which are locally based and small businesses, should have ownership reflective of the communities we live and serve each day.</p>	<ul style="list-style-type: none"><li>• Achievement of our 15% supplier diversity commitment</li><li>• Close to achieving our 17% employee diversity commitment</li><li>• 55% board diversity</li><li>• Addition of diversity metrics in executive compensation</li><li>• Diverse recruitment tactics</li><li>• Education workshops and events for employees</li><li>• Several employee resource groups</li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Diversity, Equity, and Inclusion (DE&amp;I)</a></li><li>• <a href="#">Equal Employment Opportunity and Anti-Harassment Policy</a></li><li>• <a href="#">Human Rights Policy</a></li></ul>
<div><div><div>7</div><div>AFFORDABLE AND CLEAN ENERGY</div><div></div></div><div><div>13</div><div>CLIMATE ACTION</div><div></div></div></div> <td><p>We strive to deliver affordable, efficient, safe and plentiful energy to customers through resilient infrastructure and access to robust customer assistance programs. Essential is also innovating and imagining gas delivery for the future.</p></td> <td><ul style="list-style-type: none"><li>• An array of programs aimed at supporting those facing financial difficulties</li><li>• 60% greenhouse gas emissions reduction by 2035 from our 2019 baseline</li><li>• Research into potential low-carbon hydrogen gas blending</li><li>• Significant increase in renewable electricity procurement</li></ul></td> <td><ul style="list-style-type: none"><li>• <a href="#">TCFD Report</a></li><li>• <a href="#">CDP Report</a></li><li>• <a href="#">Affordability and Access</a></li><li>• <a href="#">Greenhouse Gas Emissions Reduction (Essential)</a></li><li>• <a href="#">Environmental and Sustainability Policy</a></li></ul></td>	<p>We strive to deliver affordable, efficient, safe and plentiful energy to customers through resilient infrastructure and access to robust customer assistance programs. Essential is also innovating and imagining gas delivery for the future.</p>	<ul style="list-style-type: none"><li>• An array of programs aimed at supporting those facing financial difficulties</li><li>• 60% greenhouse gas emissions reduction by 2035 from our 2019 baseline</li><li>• Research into potential low-carbon hydrogen gas blending</li><li>• Significant increase in renewable electricity procurement</li></ul>	<ul style="list-style-type: none"><li>• <a href="#">TCFD Report</a></li><li>• <a href="#">CDP Report</a></li><li>• <a href="#">Affordability and Access</a></li><li>• <a href="#">Greenhouse Gas Emissions Reduction (Essential)</a></li><li>• <a href="#">Environmental and Sustainability Policy</a></li></ul>

Alignment with UN SDGs (continued)

UN SDGs	Our Approach	Our Actions	Read More Here
	Although we operate in many municipalities across our footprint, the nature of our business is extremely local. Our employees are often our customers, and our customers are often our suppliers and business partners. These multifaceted and deep connections between Essential and our fellow community members enrich and strengthen neighborhoods, as well as develop a more resilient local economy.	<ul style="list-style-type: none"><li>• Nearly all employees eligible for full-time benefits</li><li>• Hourly wage is currently at least \$18 across our footprint</li><li>• Direct most of our controllable spend (roughly \$1 billion) to suppliers in the states we operate; most are small-to-medium-sized businesses</li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Supply Chain</a></li><li>• <a href="#">Benefits and Compensation</a></li><li>• <a href="#">Labor Rights</a></li><li>• <a href="#">Labor Rights Policy</a></li></ul>
	Essential does not just supply water, wastewater and gas services to our customers – we are builders that invest in communities and bolster their resiliency. We engineer solutions to infrastructure issues that have been unresolved for years under different management or ownership. We’re bringing ingenuity and operational excellence through our water and energy brands, and by applying our economies of scale, we deliver affordable, reliable, clean and safe natural resources.	<ul style="list-style-type: none"><li>• An investment of over \$3.5 billion in infrastructure improvements</li><li>• The replacement of more than 1,300 miles of aging water main since 2012</li><li>• Progress toward our 20-year plan, beginning in 2013, to replace and upgrade 3,000 miles of gas distribution main</li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Water Infrastructure and Resiliency</a></li><li>• <a href="#">Greenhouse Gas Emissions Reduction (Gas Operations)</a></li><li>• <a href="#">Environmental and Sustainability Policy</a></li></ul>

# ENVIRONMENT

## Environmental Management

Environmental Stewardship

Environmental Management System

Business Continuity and Emergency Preparedness

## Water and Wastewater Systems

Managing Water and Wastewater Systems

Compliance and Regulations- Water and Wastewater

Managing Contaminants of Emerging Concern

Helping Our Customers Conserve Water

Promoting Sustainable Water Sourcing

Water Infrastructure and Resiliency

Minimizing Untreated Wastewater Discharge

Reducing Water Loss

## Gas Infrastructure and Resiliency

## Waste and Non-GHG Air Emissions

## Energy and Greenhouse Gas Emissions

Energy Consumption

Energy Intensity and Reducing Energy Use

Climate Risk Management and Oversight

Greenhouse Gas Emissions Reduction (Essential)

Greenhouse Gas Emissions Reduction (Gas Operations)

Promoting Alternative and Innovative Energy

Strategic Partnerships on Energy Innovation

Helping Our Customers Conserve Gas

Greenhouse Gas Emissions Reduction (Water and Wastewater Operations)

Fleet Emissions

## Biodiversity and Ecosystem Health

## Environmental Stewardship

At Essential, our missions to sustain life and improve economic prosperity by safely and reliably delivering Earth's most essential resources to our customers and communities fuels everything we do. We have taken these commitments seriously for more than 135 years.

Fresh water is a limited resource on our planet, and we need to manage it responsibly.

Through conservation and stewardship, Essential helps to safeguard water security for future generations. Essential also strives to operate a safe, resilient gas distribution system that provides affordable and reliable energy to our customers. Across our operations, we have participated in environmental conservation and stewardship with many community partners to preserve and protect sensitive lands, plant thousands of trees, manage invasive species, reintroduce and reestablish native species and protect habitats. We have also released an ambitious emissions reduction target with concrete actions outlined to achieve this goal.

Our [Sustainability and Environmental Policy](#) outlines the ways we apply our mission throughout our environmental profile. Our actions reflect the values that permeate our team and operations around the country. We ensure environmental stewardship remains a priority for company management by factoring several benchmarks into executive compensation. This means water compliance, wastewater compliance, gas pipeline replacement and minimizing gas leaks all contribute an equal weighting to executive leadership.

In this report, we expand on our commitment to present our stakeholders with some of the most detailed and transparent disclosures in the utilities industry. Whether we are speaking about water quality, gas system reliability, greenhouse gas emissions or our waste program, we aim to provide rigor around both quantitative disclosure and qualitative explanations and context.

### RECENT ENVIRONMENTAL HIGHLIGHTS

**25%**

Cumulative achievement of our Scope 1 and 2 greenhouse gas emissions reduction target of 60% from our 2019 baseline

**Substantial increase in renewable electricity**

consumption, driven by a switch to nearly 100% renewable electricity procurement in PA, NJ, OH and IL

**Innovative energy research**

into emissions-reducing energy technologies like hydrogen blending

**Strong outperformance on water quality**

Compared to the U.S. average, as measured by quantity of health-based violations

**Progress towards our gas main replacement**

program's long-term goal of approximately 3,000 miles replaced

**Biodiversity and Conservation Commitments**

added to Essential's Sustainability and Environmental Policy

# Environmental Management System

As a large and diversified utility, Essential’s strong environmental management system is critical to our operations.

Our Environmental, Health and Safety management program identifies, prioritizes, communicates, addresses, mitigates and manages risks to ensure safe and reliable service for our customers. These areas are benchmarked through performance and risk reporting coordinated anywhere from the unit and state level up to the Chief Environmental, Safety and Sustainability Officer, the Chief Operating Officer and quarterly, the Board of Directors.

The Compliance Assurance Program (CAP) is Essential’s Environmental Management System (EMS). Each Essential company has designated personnel (environmental directors, environmental managers, environmental specialists, etc.) who are responsible for supporting the CAP while focusing on environmental compliance. As part of our alignment with the elements of ISO 14001, Essential’s CAP is founded on the concept of “Plan-Do-Check Act.”

In addition to routine communications and activities, special CAP meetings are held multiple times per year for each state and business and are attended by presidents, vice presidents, directors, managers and operations staff from corporate and state compliance, operations and engineering. Topics covered in these meetings include compliance metrics, water quality, environmental events, regulatory and company hot topics, and system/project review. Actions, events, activities, documents and records are tracked and managed in our Environmental Health and Safety Data Management System software.

Additionally, Essential is in the process of implementing a water quality data management system across its water and wastewater utilities. This will ultimately serve as the central repository for all water and wastewater quality data, providing company-wide access to trends and early identification of developing issues.

 <b>Plan</b>	 <b>Do</b>	 <b>Check</b>	 <b>Act</b>
Policy	Corporate Programs	Compliance Checking	Root Cause Analysis
Benchmarking	State SOPs	Water Quality Tracking	Corrective Actions
Target Setting	Communications	CAP Meetings	Programmatic Changes
Regulatory Register	Training	Auditing	External Support
Risk Analysis	Emergency Planning	Management Reviews	Peer Reviews



# Business Continuity and Emergency Preparedness

## BUSINESS CONTINUITY PLAN

### Water and Wastewater Operations

The purpose of our business continuity plan is to keep all our water and wastewater plants and operating facilities online and in compliance with applicable regulatory requirements. This plan also promotes appropriate maintenance of distribution systems, uninterrupted water supply and wastewater processing and the health and welfare of our employees, customers and their families.

Essential’s business continuity plan for water and wastewater operations covers the following key areas:

- Worker safety
- Permit compliance
- Sustainability of critical operations
- List of primary and back up operators (licenses) and information pertaining to who has been trained and prepared to step in during cases of emergency
- Modification to normal and routine business workflow
- List all facilities, along with their classifications and licenses
- Pandemic trigger points, assessed on a three-tier level system

## BUSINESS CONTINUITY PLAN

### Gas Operations

Similarly, Essential’s gas utility also has a detailed emergency response plan that outlines the procedures, guidelines, organizational support and communication to respond to natural gas emergencies on pipeline systems, customer service outages or other natural disasters that present potential hazards to the public, property or environment. The purpose of this emergency response plan is to keep all our gas facilities and systems online and in compliance with regulations and regulatory requirements. The plan is reviewed and updated annually with all operating personnel, and tabletop exercises and emergency simulations are conducted to provide the general knowledge and preparedness to respond to these types of events.

## EASTERN SEABOARD HURRICANE PLAN

Our Eastern Seaboard Hurricane Plan is applicable to New Jersey, North Carolina, Pennsylvania and Virginia water and wastewater operations. This plan is updated annually, and its purpose is to aid in the mitigation, preparedness, response and recovery from hurricane and severe storm conditions that threaten or impact Essential’s community water system facilities. It also includes intracompany mutual aid. A similar plan is used in Texas.

Once a hurricane’s path has been identified with a probability that it will affect any of our water systems, it is the responsibility of the state presidents, or their designees, to initiate interstate company communication and preparation for the impending hurricane or severe storm. We use an EPA Hurricane Incident Action Checklist for water utilities as a template to assist the states. It includes individual checklists which should be completed for the start of hurricane season, before an impending hurricane and after a hurricane.

Local and national contractors and vendors are listed to facilitate appropriate level of coordination prior to any event. Regions are required to contact their local contractors and vendors first, with national contractors and vendors to follow.

Operations teams work with communications managers when there is a need to release any type of public notification to Essential customers to ensure they are made aware of any potential disruptions to service.

## ESSENTIAL'S BUSINESS CONTINUITY JOURNEY

To help support our organization's business continuity, we have kicked off a multiyear effort to achieve the following:

### Increase

Essential's preparedness for high impact uncertainties and its response and recovery

1

The first portion of this work, completed in 2021, developed an integrated Incident Management Plan and a Crisis Communication Plan for Essential Utilities, embedding our existing business continuity plans as sub-plans. The Incident Management Plan memorializes the processes, procedures and protocol necessary for responding to a business interruption occurrence or any other high-level uncertainties. The plan concentrates on safety, including the protection of life, assets and environment. Due to a change in personnel, the plan is currently under review. When updated, we will develop and exercise complimentary training for the new plan to ensure effective execution.

Once developed, these corporate-level plans will be updated annually for content and contacts.

### Improve

upon Essential's prevention capabilities and its ability to achieve operational resiliency

2

The second portion of the work is a long-term initiative that will deliver new operation-specific Business Continuity Plans. These will be master plans for operational resiliency and recovery following a business interruption occurrence.

### Develop

Essential's proactiveness as it relates to mitigation and management measures taken to decrease impact

3

A complementary goal of this effort is to standardize the frequency and cadence of testing and simulation exercises across the organization. Today, these are performed throughout the organization but frequency and cadence varies across state operations.



## Managing Water and Wastewater Systems

Essential provides clean, safe, reliable water and wastewater services in the communities it operates.

As a publicly regulated utility, Essential must follow all federal and state water compliance regulations, including those from the Environmental Protection Agency (EPA). We work hard to meet our goal of operating with exceptional compliance with the Safe Drinking Water Act. Across the 1,500+ water systems we own and operate, this compliance allows us to provide safe and reliable drinking water for all customers.

We are committed to providing reliable and efficient wastewater treatment and strive to operate our 200+ wastewater systems in compliance with the Clean Water Act. Most wastewater ultimately ends up back in local rivers or streams, so it is vital that Essential treats all wastewater before it is discharged.

At Essential, we have the technical expertise and experience to offer superior wastewater services that meet all environmental and public health standards. We are continuously modernizing wastewater treatment methods, ensuring our systems protect the surrounding environment and adhere to current standards. Our goal is to return water to our streams and rivers cleaner than when we took it – after a thorough treatment process that includes screening, primary clarification and biological treatment. Beyond returning water to the source, we operate several plants that feature a wastewater reuse program that provides safe and treated irrigation water to local businesses, such as golf courses. This prevents discharge to streams and efficiently reduces demand for freshwater supply. We continue to proactively identify opportunities for wastewater reuse.

### DRINKING WATER

Water Systems

**1,512**

Gallons of Total Water Production<sup>1</sup>

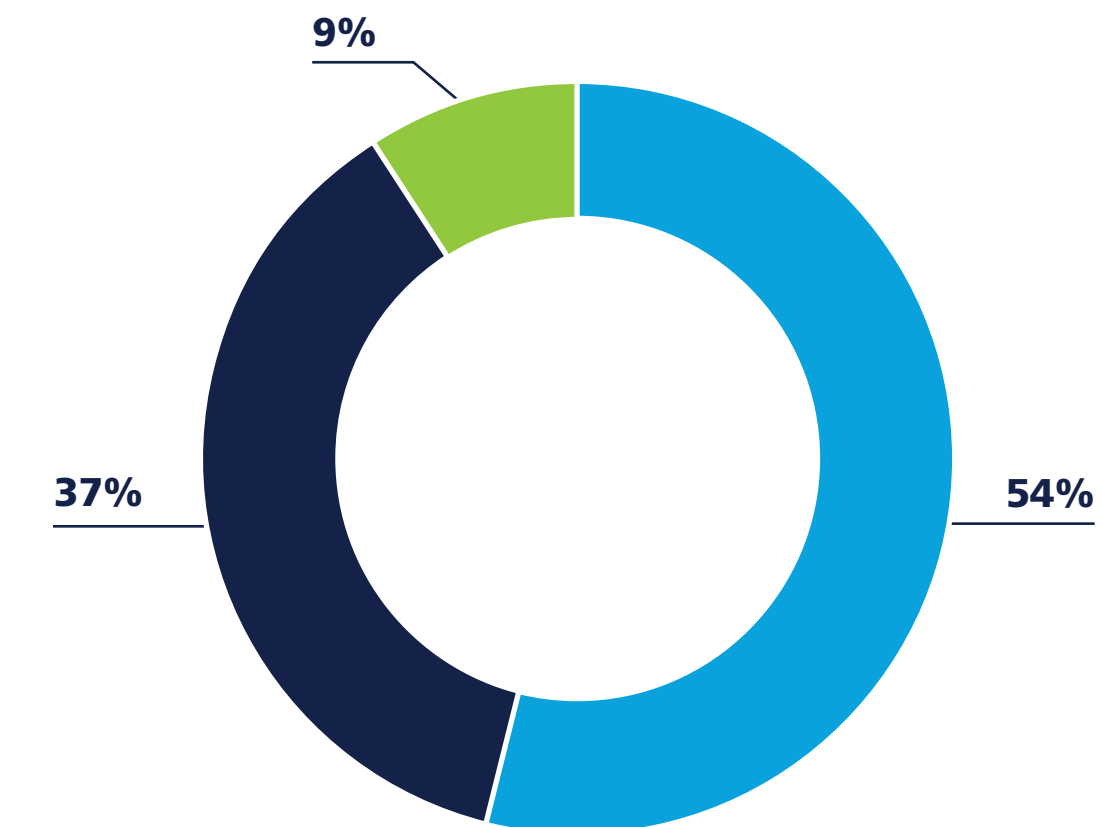
**86.9 Billion**

Connections

**~0.9 Million**

### WATER SOURCES

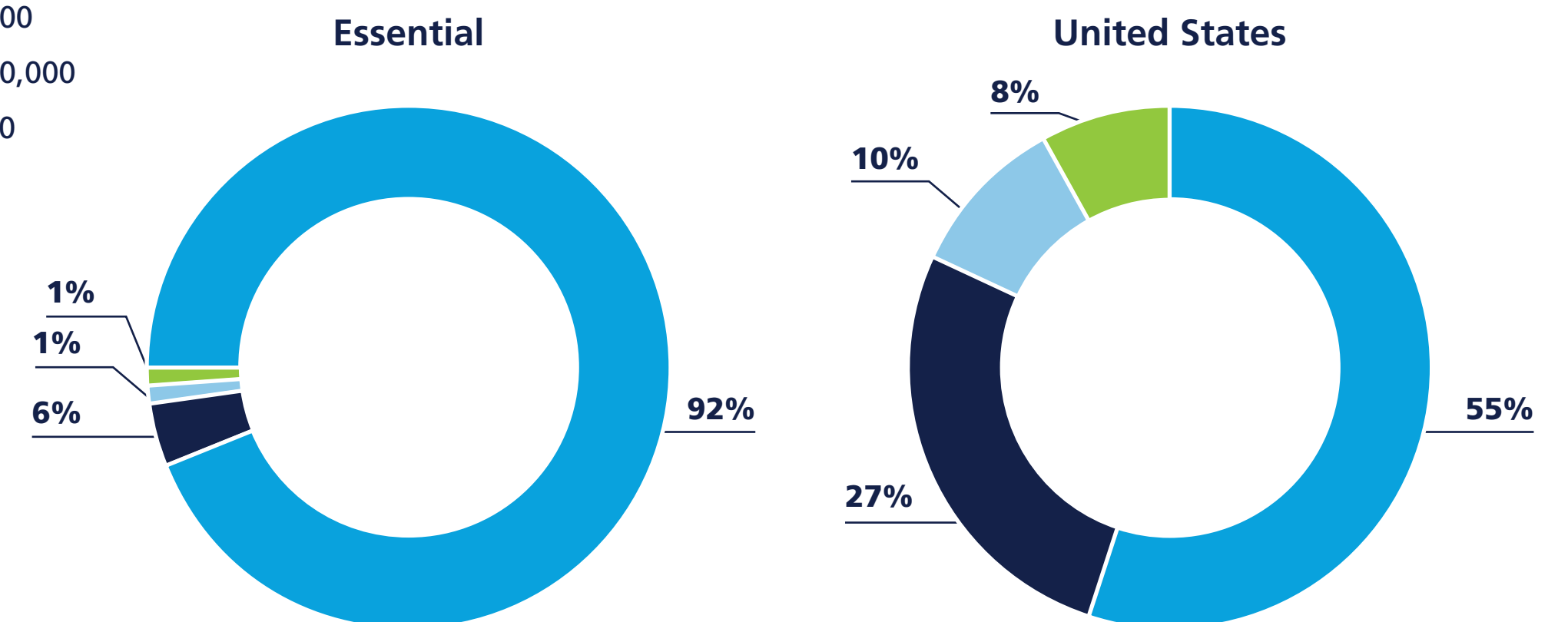
- Surface
- Ground
- Purchased from other systems



### SIZE OF DRINKING WATER SYSTEMS

(Measured by number of connections and presented as percent of water systems)

- < 500
- 501-3,300
- 3,301-10,000
- > 10,000



## WASTEWATER

Wastewater Systems

**230**

Gallons Treated

**11.2 Billion**

Connections

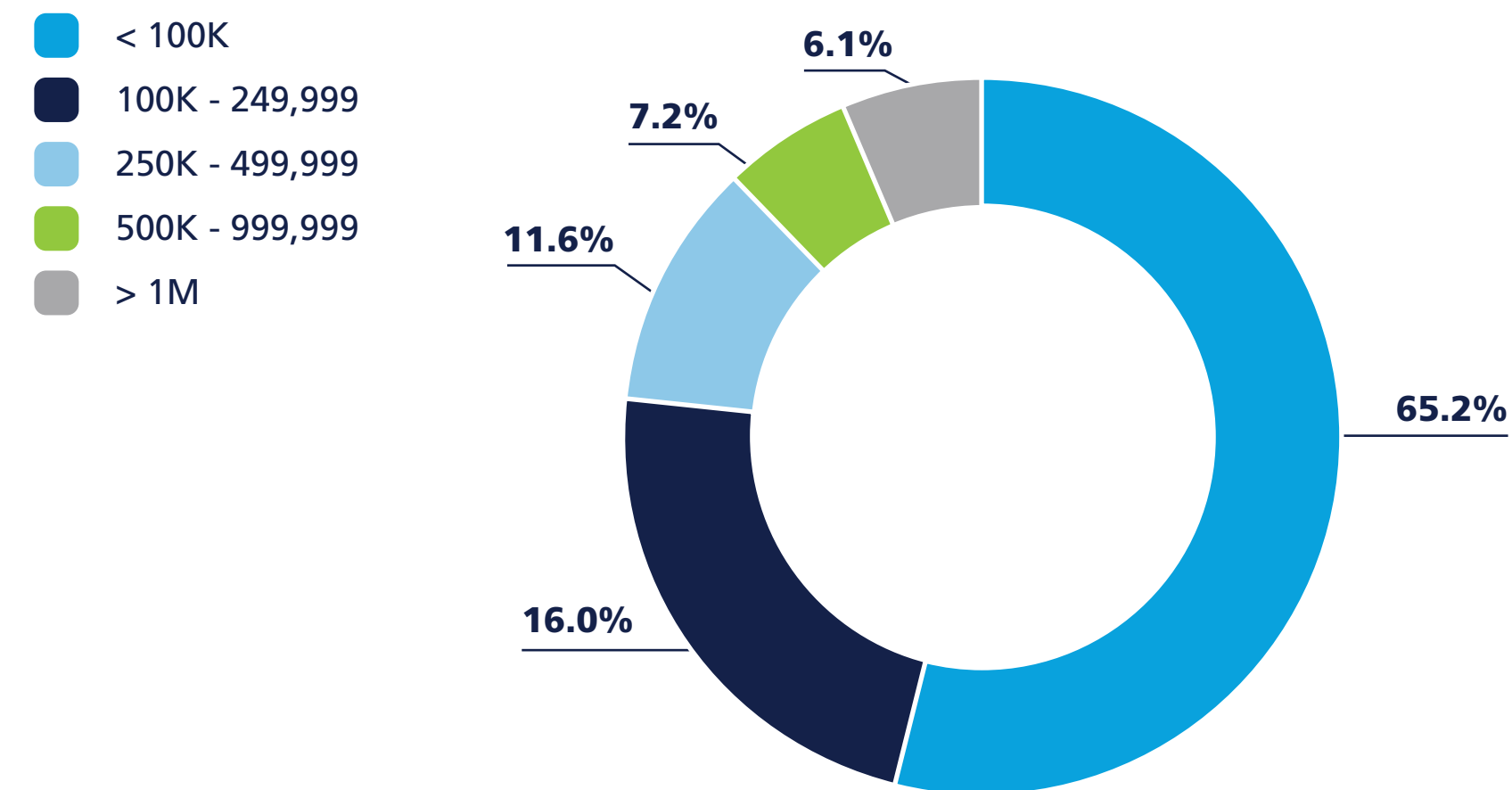
**~0.2 Million**

Gallons Treated Relative to Total Capacity<sup>1</sup>

**64.7%**

## SIZE OF ESSENTIAL'S WASTEWATER TREATMENT PLANTS

(Measured by gallons of permitted capacity and displayed as percent of wastewater treatment plants)





# Compliance and Regulations

## Water and Wastewater

Essential’s rigorous compliance program ensures we meet all the local, state and federal regulations across our eight-state water and wastewater utility footprint, including requirements for permits for air, water, wastewater and related materials stored or disposed of as the result of our operational activities. Our [Environmental Management System](#) and related governance process also support our compliance efforts.

We rigorously track and measure our compliance performance, including the number of days Essential operates in compliance with given permits and regulations for both water and wastewater operations.

### WATER AND WASTEWATER PERCENTAGE OF DAYS IN COMPLIANCE<sup>1</sup>

	Water	Target
2013	99.28%	N/A
2014	99.21%	99.50%
2015	99.53%	99.50%
2016	99.48%	99.50%
2017	99.61%	99.50%
2018	99.74%	99.50%
2019	99.68%	99.50%
2020	99.62%	99.55%
2021	99.63%	99.70%
2022	99.79%	99.70%

	Wastewater	Target
2013	91.7%	N/A
2014	92.5%	90.0%
2015	93.9%	90.0%
2016	93.5%	90.0%
2017	95.0%	93.0%
2018	94.3%	94.0%
2019	95.5%	94.5%
2020	95.2%	94.5%
2021	96.5%	95.5%
2022	97.7%	95.5%

<sup>1</sup>To calculate the percentage of days in compliance, we utilize the AWWA benchmarking method, in which the number of days out of compliance, tallied for all our systems, is divided by the product of number of days in the year and the quantity of systems we operate. We compare this resulting figure against internal targets we had set.

## WATER COMPLIANCE

According to the EPA, about 1 in 15 U.S. community water systems have health-based violations<sup>1</sup>.

Fewer than 1 in 50 Essential community water systems have had health-based violations in any given year. We are proud of our track record of outperforming the U.S. average at-large by, typically, at least four times and are consistently working toward improving that figure through investments in our water treatment and infrastructure.

## WATER COMPLIANCE METRICS

	2022	2021	2020
Systems with Tier 1 violation	13	6	4
Systems with Tier 2 violation	8	11	16
Systems with Tier 3 violation	39	88	73
<b>Total tier violations</b>	<b>59</b>	<b>101</b>	<b>93</b>
% of systems with tiered violations	3.9%	6.7%	5.7%
% of systems with tier 1 + tier 2	1.4%	1.1%	1.3%
% of systems with tier 3 only	2.6%	5.8%	4.8%
<b>Total # of systems</b>	<b>1,512</b>	<b>1,518</b>	<b>1,522</b>

Tiers as defined as per EPA regulations. <https://www.epa.gov/dwreginfo/public-notification-rule>

**Tier 1 violations** are defined as those violations of the National Primary Drinking Water Regulations (NPDWR) that require public notice and have significant potential to have serious adverse effects on human health as a result of short-term exposure.

These include very short term (1 day to 7 days) boil water notices and can be required due to loss of pressure from a water main break or due to the effects from a major storm. In Essential’s assessment, the year-on-year increases noted are not material in terms of the overall risk to our systems.

**Tier 2 violations** are defined as violations of the NPDWR that require public notice and have potential to have serious adverse effects on human health.

**Tier 3 violations** are defined as violations of the NPDWR not included in Tier 1 and Tier 2 that require public notice but are not considered to have a direct impact on human health (such as violations of monitoring and reporting).

Some prior year data, especially Tier 3 violations, may shift versus prior reporting. This is driven by timing differences related to the regulatory review process and this report preparation.

<sup>1</sup> There are 50,076 community water systems in America. Of those, 18,282 had a violation and 3,348 had health-based violations according to [EPA's ECHO Database](#).

WATER COMPLIANCE VS. US AVERAGES

(Measured as percentage of community water systems with health-based violations. U.S. averages compiled from the [EPA’s ECHO Database](#))

	Essential	U.S.	Outperformance
2022	1.4%	6.7%	4.8x
2021	1.1%	6.3%	5.7x
2020	1.3%	6.6%	5.1x

Some prior year data may shift versus prior reporting. This is driven by timing differences related to the regulatory review process, time it takes for EPA to provide country wide data and this report preparation.



About 92% of our water systems are comprised of fewer than 500 connections. Even when Essential’s very small water systems are compared with U.S. averages for their size bracket, the trend still holds:

We greatly outperform the U.S. average at-large for water quality.

Essential annually publishes water quality reports, or Consumer Confidence Reports (CCRs), on its website. CCRs summarize the quality of water Essential provides for each water system, including information about its water sources, what its drinking water contains and how it compares to standards established by the EPA. Please visit our [website](#) for more information and to access these reports. We also encourage our customers to [contact](#) our customer service center with any questions or concerns about their water quality and service.

More than 90 contaminants are regulated in drinking water. They require testing at varying frequencies and locations within a system, depending on several factors. These required monitoring results are published in our CCRs. Beyond this mandated testing, we conduct operational monitoring to optimize our processes and source water monitoring to understand if water quality is changing over time in our systems. This data enables proactive improvements to treatment and investigation of better water sources we can develop and use.

In March 2021, we opened a brand new, state-of-the-art environmental laboratory at our Bryn Mawr headquarters. The exciting new lab is just one example of our commitment to operational excellence and our mission to protect the public health and ensure clean, safe, reliable water.

The new two-story building more than doubles the size of the previous laboratory that served the company for more than 70 years. This space allows us to adapt to the dynamic regulatory environment that will require additional sampling and equipment necessary for water and wastewater operations. It also accommodates our increasing footprint as we acquire additional customers and systems.

The lab employs 20 professional staff members, including microbiologists and chemists who perform approximately 300,000 tests on 30,000 water samples each year. These scientists use 50 various analytical methods for roughly 240 water quality parameters. The laboratory is certified by the Pennsylvania Department of Environmental Protection and four other state environmental or health regulatory agencies. And as we’ve transitioned from measuring in parts per million to parts per trillion, a million-fold increase in detection levels, we feel confident that we will be able to deliver water that is safe and that the wastewater we treat and return to our rivers, lakes and streams is cleaner than it is when we remove it to treat it for drinking water.

The following [video](#) offers a glimpse into our state-of-the-art lab and the role it plays in our operations.



WASTEWATER COMPLIANCE

Essential’s primary duty is to meet the requirements of all local, state and federal regulations for its wastewater treatment plants. This means our wastewater systems must achieve greater than 90% removal of regulated elements during the treatment process.

**In 2022, more than 99.98% of the wastewater volume we treated achieved this high level of compliance**

through our use of secondary treatment processes to remove organics and solid materials. However, in many sensitive areas – such as the Chesapeake Bay area – we used tertiary treatment processes to remove nutrients such as nitrogen and phosphorus as required by regulations.

WASTEWATER OPERATIONS COMPLIANCE SUMMARY

	2022	2021	2020
Events	148	253	334
Days in Compliance	97.7%	96.5%	95.2%

*We attribute our trend of improvement to a combination of operational initiatives and capital projects, particularly in Texas.*

## Managing Contaminants of Emerging Concern

Managing emerging contaminants in drinking water is a continuous process as science improves our ability to detect and understand the impacts and evolving nature of contaminants in water.

**We consider the latest science and research to identify potential contaminants of concern for further review, evaluation or action.** We consider the prevalence and levels of these chemicals and their potential to cause human health or environmental harm. We also are involved in industry research, committees and organizations that track and study the latest in emerging contaminants to help us prepare for future needs. For example, Essential is participating in research studies with the Water Research Foundation on Legionella in distribution systems, corrosion control inhibitors and lead service line material identification.

Based on this information, we may choose to look at specific geographic locations or types of systems to further understand how these compounds occur and behave in the environment. If the levels warrant action, then we first prefer remediating the source of the chemical to avoid removal in the water or wastewater process. If the source is too diverse or not easily identifiable, we then evaluate treatment technologies for installation to protect our customers.

With this knowledge, we work with environmental regulators and with public utility commissions to gain the necessary acceptance and permissions we need to implement treatment solutions. During this process, we develop systems to communicate our findings with various agencies, organizations and customers. Finally, we review all the impacts from our activity footprint as we consider the long-term sustainability impacts on activities like material disposal.

Essential continuously reviews chemicals such as pesticides, pharmaceuticals and personal care products. We are currently conducting and monitoring scientific activities for per and poly-fluoro alkyl substances (PFAS – PFOA, PFOS, etc.), cyanotoxins, lead and manganese.

**In February 2020, we announced that we will, over several years, install treatment technology at water treatment facilities where source water exceeds 13 parts per trillion (ppt) for three PFAS substances, individually: PFOA, PFOS, and PFNA.**

PFAS is a concern in communities across the country where groundwater is believed to have been contaminated by nearby military bases or other causes. Since setting a company-wide standard of 13 ppt in 2020, EPA has proposed new drinking water regulations for PFAS with limits of 4 ppt for PFOA and PFOS respectively. The EPA is also proposing to regulate the other PFAS constituents of PFNA, PFBS, PFHxS, and GenX. **Essential will comply with the EPA regulations once finalized in the coming years.**



KEY EMERGING CONTAMINANTS

	What is it?	What are the risks?	How does Essential manage this contaminant?
Cyanotoxins	Blue-green algae source, called by specific sub-names of microcystin, saxitoxin and cylindrospermospin.	Found in surface waters due to harmful algae blooms (sometimes referred to as HABs). If levels are not removed during treatment, very low levels of cyanotoxins can trigger health advisory levels leading to “do not drink” or “do not use” orders for customers.	We implement source water protection practices, monitoring, removal technologies, and the latest software that uses learning based on data to develop algorithms to predict cyanotoxin levels and optimize treatment of cyanotoxins to safe levels.
Lead	Source is lead solder, lead pipes and lead in older fixtures.	If corrosion control is not properly maintained or the material is physically disturbed, dissolved and particulate lead can be released. <b>Lead is toxic and can potentially impact children’s development.</b>	Our lead efforts focus on water quality optimization to prevent lead release, customer education to raise awareness of how to minimize lead exposure, monitoring to identify sources and confirm water quality is optimized, and removal of lead service lines. We are currently inventorying all our water service line materials and replacing any lead service lines that we identify. We inform customers about how to minimize lead exposure both before and after the service line replacement by flushing and using pitcher filters that we supply for six months.
PFAS	Per or poly-fluoro alkyl substances, called PFAS, is a family of almost 5,000 constituents that have been used in common household items, military applications and manufacturing since the 1940s, including the more well-known sub-species of PFOS and PFOA. PFOS was primarily used in firefighting foams while PFOA was used in most non-stick materials including common household items, clothing, office supplies and even food containers.	Some PFAS sub-species have been linked to cancer and non-cancer health impacts at very low levels of exposure. The ubiquitous presence in the environment and requirements to remove to very low levels require expensive treatment systems. States regulations differ on the safe levels and standards, while a federal standard has not yet been finalized.	Essential has surveyed all its systems for PFAS and has the capability to conduct the analysis at its lab. We have adopted a policy to treat any system with a level of PFOA, PFOS or PFNA of 13 ppt or greater individually. Essential has installed treatment systems on several systems with elevated PFAS levels and continues to participate in studies and research to proactively manage PFAS. Essential also is reviewing the EPA’s proposed drinking water regulations for PFAS constituents and will comply with them once finalized.

# Helping Our Customers Conserve Water

Essential’s water and wastewater footprint provides necessary drinking and wastewater treatment services to thousands of customers across our multi-state footprint.

Our customers can play a significant role in the promotion of water efficiency. Essential tracks the water consumption trends of our customers to better manage water resources and to help safeguard sustainable sources of water for future generations. One of the most impactful findings has been a steady decline in water consumption by our customers over the past several decades – largely driven by improvements in the water efficiency of home appliances.

Essential proactively shares information through mailers and social media with our customers to enhance their experience and provide additional information on topics that help them save money and conserve water.

We also provide WaterSmart alerts, an automated customer notification designed for quick, reliable communications on a customer’s water safety and service in case of disruption.

The EPA’s Fix a Leak Week, which serves as an annual reminder for households to check their fixtures for leaks, also provides an opportunity to engage customers via social media and on our [website](#).

We join our customers in pursuing opportunities for efficiency and strive to model environmentally friendly practices. Across our corporate office and facilities footprint, Essential seeks to use efficient appliances, fixtures and building systems where feasible. In various locations, we have implemented low-flow water faucets, water-saving toilets, LED lighting systems and have evaluated solar and energy savings opportunities across the company where possible.

# Promoting Sustainable Water Sourcing

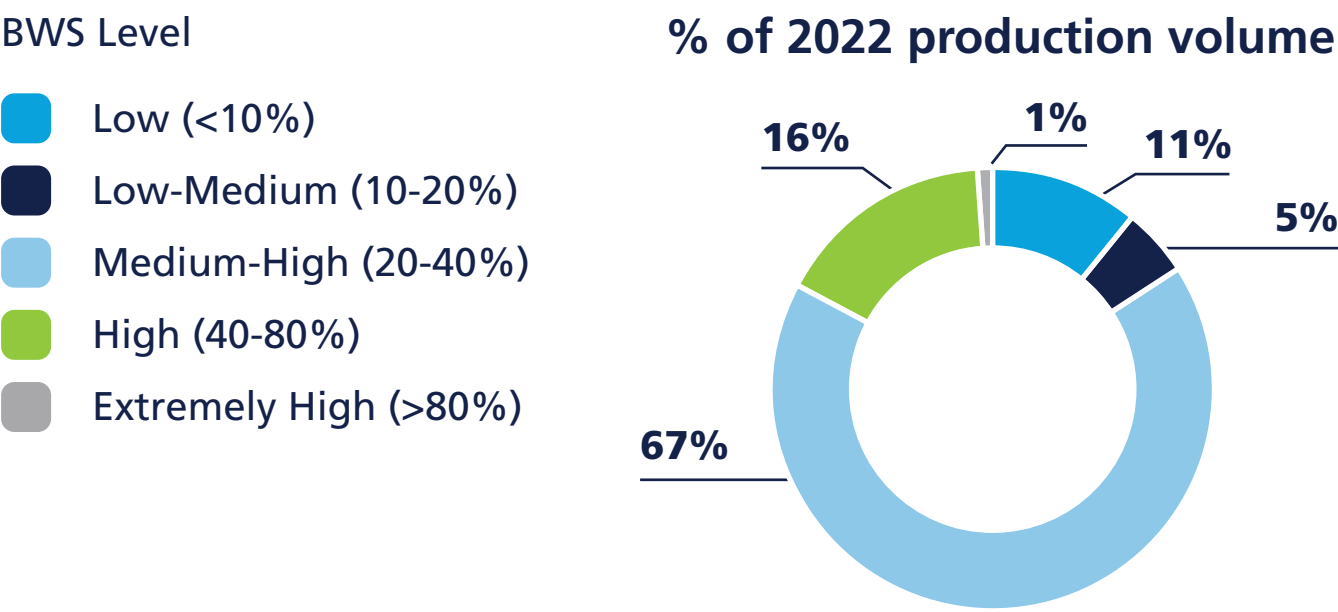
We routinely conduct efforts to responsibly manage Essential’s water sources against situations that could stress those sources, including drought planning and future demands from growth.

To help inform these efforts, we had an analysis conducted using the WRI Aqueduct tool to look at our systems and production by WRI’s Aqueduct Baseline Water Stress (BWS).<sup>1</sup>

This analysis is considered a broad, high-level regional analysis and may not represent the true level of stress on a source locally, nor does it consider management of sources by groundwater conservation districts, river basin commissions or other local, state and federal agencies. Regardless, we conducted the exercise to understand the potential regional water stress in Essential’s service areas. The analysis compared the location of Essential systems to the BWS coverage provided by WRI Aqueduct in a Geographical Information System (GIS). The system’s representative annual production in 2022 was then sorted to the BWS categories of low, low-medium, medium-high, high or extremely high as indicated by WRI. As shown in the table below, roughly 17% of Essential’s water produced in 2022 was sourced from regions with baseline water stress identified as high or extremely high. However, it is important to note that several large systems make up significant portions of our water production and thus can significantly influence these results. For example, the Essential main system serving a large region of Southeastern Pennsylvania is in the Delaware River basin. The entire Delaware River basin baseline water stress is labeled as medium-high in the WRI Aqueduct tool, but this does not factor in the significant regulation and careful management of the entire basin’s water resources by the Delaware River Basin Commission and surrounding states since the 1960s.

Essential will continue to evaluate and examine potential opportunities and technologies to recycle water and reuse wastewater. We monitor and address sites that are more prone to water scarcity individually. In 2022, we recycled approximately 628.7 million gallons of treated wastewater to the groundwater recharge via spray irrigation, drip irrigation and subsurface infiltration approximately. This is 5% of the total wastewater treated in 2022, with the remainder safely discharged to streams, rivers or lakes.

## ESTIMATED WATER PRODUCTION FROM REGIONS OF BASELINE WATER STRESS



## RECYCLED WATER VOLUME

	2022	2021	2020
Total recycled water (million gallons)	628.7	629.9	493.9
% Total Water Production	0.7%	0.7%	0.6%
% Total Wastewater Treated	5.6%	5.7%	4.3%

<sup>1</sup> As defined by WRI Aqueduct, Baseline Water Stress measures the ratio of total water withdrawals to available renewable surface and ground-water supplies. Water withdrawals include domestic, industrial, irrigation and livestock consumptive and non-consumptive uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability. Higher values indicate more competition among users (\*Hofste, R., S. Kuzma, S. Walker, E.H. Sutanudjaja, et. al. 2019. “Aqueduct 3.0: Updated Decision- Relevant Global Water Risk Indicators.” Technical Note. Washington, DC: World Resources Institute. Available online at: <https://www.wri.org/publication/aqueduct-30>.)

# Water Infrastructure and Resiliency

## INVESTING IN OUR NATION’S INFRASTRUCTURE

The U.S. has a very fragmented network of aging water systems, with more than 150,000 water systems serving nearly 320 million people. Most Americans receive their drinking water from community water systems, which are primarily run by local municipalities. Unfortunately, maintenance on these systems can be expensive, and costs are rising fast – from stricter regulations to the rising costs of labor and materials, to the additional expertise needed to handle modern challenges – it’s getting harder for municipalities to effectively run their water and wastewater systems.

As a result, many municipalities have and are deferring maintenance – which is a risky decision that can have serious consequences on the safety and reliability of a water system over time. We are proud to work with municipalities and play a leading role in providing solutions for communities that are struggling to keep up with these challenges.

Essential recognizes the construction activity in the communities we serve can cause disruption. We work alongside community leaders to minimize impact. Coordinating with communities on paving schedules, aligning schedules with other public works projects, and ensuring our projects address any community expectations. We work hard to leave a street in better condition than when we found it and to minimize disruptions during the construction process by keeping our customers informed through communications and often personal knocks on their door to discuss the impact and identify ways to mitigate it.

**By leveraging our compliance expertise, purchasing power and operational efficiencies, we have infused needed capital and resources into the systems we own and acquire to rehabilitate the infrastructure required for reliable water and efficient wastewater services.**

This commitment is illustrated, for example, through our partnership with Bourbonnais, Illinois. Check out this [video](#) for a profile on our service in this community.

5-Year rolling average of annual miles of water main replacement

158

5-Year rolling average<sup>1</sup> of annual main replacement rate

1.1%

The capital planning programs utilize several strategies to evaluate both the short-term and long-term infrastructure needs across the footprint. Our processes evaluate the water and wastewater capacity, condition and operational performance of our systems. The capital planning program includes master planning to determine supply against projected customer growth, treatment performance evaluations for current and future contaminants, asset condition assessments for efficiency, compliance management, and safety requirements. Essential conducts a rotational facility audits of our surface water plants to ensure timely assessment of our infrastructure investment requirements. Our asset management program relies on concepts of likelihood and consequence of failure to drive decision-making on which infrastructure to prioritize for repair or replacement.

## UNPLANNED SERVICE DISRUPTIONS

When an unplanned event occurs in one of our systems, Essential utilizes a customer disruption map to keep our customers informed of planned and unplanned occurrences. This data is used to help inform our asset management and capital planning efforts to reduce these occurrences in the future through investment or operational changes.

	2022	2021	2020
Number of unplanned service disruptions	2,634	3,135	1,805

Number of unplanned service disruptions (normalized per 100 miles)	18.4	19.0	13.2
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*Note: These year-on-year changes are likely primarily driven by better data collection and data quality that we have been working towards in recent years, across each of our states. The company is focusing efforts on more comprehensive disruption tracking and training which may increase our tracking numbers in the near term while providing us the opportunity in the long term to focus attention and remediation measures to reduce this impact to our customers.*

# Minimizing Untreated Wastewater Discharge

There are several ways that untreated or partially treated wastewater can make its way into the environment, creating negative health and safety impacts for humans and the greater ecosystem. This can even occur before wastewater arrives at a treatment plant, especially during periods of severe storms and flooding. This can cause inflow and infiltration, overwhelming the ability of main infrastructure to accommodate volumes of flow. Essential takes numerous steps to minimize all discharge occurrences and volumes through operational excellence and proactive capital investment. It is critical to note that Essential treats more than 99.9% of wastewater volume to achieve regulatory compliance. However, in 2022, we experienced 149 wastewater-related discharge events that led to a collective 9.2 million gallons of untreated or partially treated wastewater that regrettably ended up in the environment. More than two-thirds of these occurrences were related to precipitation events.

Much of this volume of wastewater-related discharge events (77.3%) is attributed to unanticipated plant bypass events. This occurs when wastewater arrives at a treatment plant but is unable to be fully treated. This can be due to unmanageably high flows during storm events or due to accidents or failures in infrastructure. We continually work to improve the capacity of our wastewater treatment facilities to handle peak flows and mitigate risk of unanticipated plant bypass.

Nearly all the remaining wastewater-related discharge events by volume (22.3%) are attributed to sanitary sewer overflow (SSO) events. SSOs occur when untreated sewage is discharged from a sanitary sewer into the environment prior to reaching one of our wastewater treatment facilities. An SSO can be caused by a variety of things, including pipe clogging and equipment failures at pump stations. Most frequently, however, SSOs are caused during wet weather periods when the sewer system capacity is exceeded by infiltration and groundwater seeps through cracks in the pipe system. In 2022, we observed 86 SSO events that led to about 2 million gallons of discharge into the environment.

We work to reduce SSOs and sewage related events by regularly inspecting and cleaning sewer pipes, replacing aging sewer pipes to reduce inflow and infiltration, maintaining and upgrading our pump stations, educating customers about what not to put down the drain and monitoring for fats, oils and grease disposed of by businesses.

## WASTEWATER-RELATED DISCHARGE EVENT DATA

	2022	2021	2020
# Wastewater-related discharge events	149	183	198
# SSO Events	86	124	118
Total volume of wastewater treated (gallons)	11.2 billion	11.1 billion	11.5 billion
Wastewater-related event volume (gallons)	9.2 million	5.7 million	6.8 million
SSO Volume (gallons)	2.0 million <sup>1</sup>	0.4 million	0.2 million
% Volume of wastewater-related discharge events related to precipitation	68.2%	76.9%	97.7%
% Unanticipated plant bypass by volume	77.3%	92.3%	93.9%
% SSO by volume	22.2%	6.8%	3.3%
% Plant spill	0.5%	0.9%	2.7%
% Wastewater volume that is fully treated	99.92%	99.95%	99.94%
Miles of system	2,678	2,552	2,506
# SSO/100 miles of system	3.2	4.9	4.7

<sup>1</sup> In 2022, we experienced a significant increase in SSO volume. This was driven by one location where we observed 1.5-million-gallons spread out across three successive events driven by unusual weather patterns. We are undertaking capital upgrades to address this issue and mitigate further risk of SSOs.

## FLOOD RESILIENCY

Extreme flooding can also pose a risk to the integrity of operations at wastewater treatment plants, presenting a situation where a sanitary sewer overflow, as Essential more broadly defines this, can develop as untreated wastewater escapes into the surrounding environment. In the past year, we have performed a detailed analysis of how much of our wastewater capacity falls within 100-year flood zones (1% annual chance of flooding) by comparing the location of each plant to the FEMA National Flood Hazard Layer. Essential operates 203 wastewater treatment plants (WWTPs) across its footprint, and we determined 78 Essential WWTPs (38%) fall within a 100-year flood zone and 111 fall within a 500-year flood zone (55%). This represents 49% and 47% of Essential's permitted wastewater capacity, respectively. Note that this analysis only considered whether the WWTP was located within the flood zones and did not account for any flood prevention measures that might already be in place at those WWTPs. Essential carefully plans for flooding events and has implemented considerable mitigation efforts and processes to substantially reduce associated risks. Essential has taken this analysis further looking at the topography of each site to determine risk of flooding and is making investments to reduce it.

We conducted a similar analysis for our water production infrastructure and note that 95% of 2022 water production volume fell within a 500-year flood zone, 4% fell within a 100-year flood zone, and 1% of water production occurred outside of these flood zones. With recent storm flooding events at one of our major plants occurring, Essential is acutely aware of the impact of climate change flooding. Essential is utilizing the American Water Infrastructure Act (AWIA) requirements to conduct risk and resiliency studies at each of our large facilities and then cascading down through our system based on size to look risks posed by flooding and other events. Results from these analyses are used to inform our capital and operational planning efforts.

## Reducing Water Loss

One of Essential's primary responsibilities is to manage water resources carefully. We do this in part by identifying ways to reduce water loss – ways we do that include:

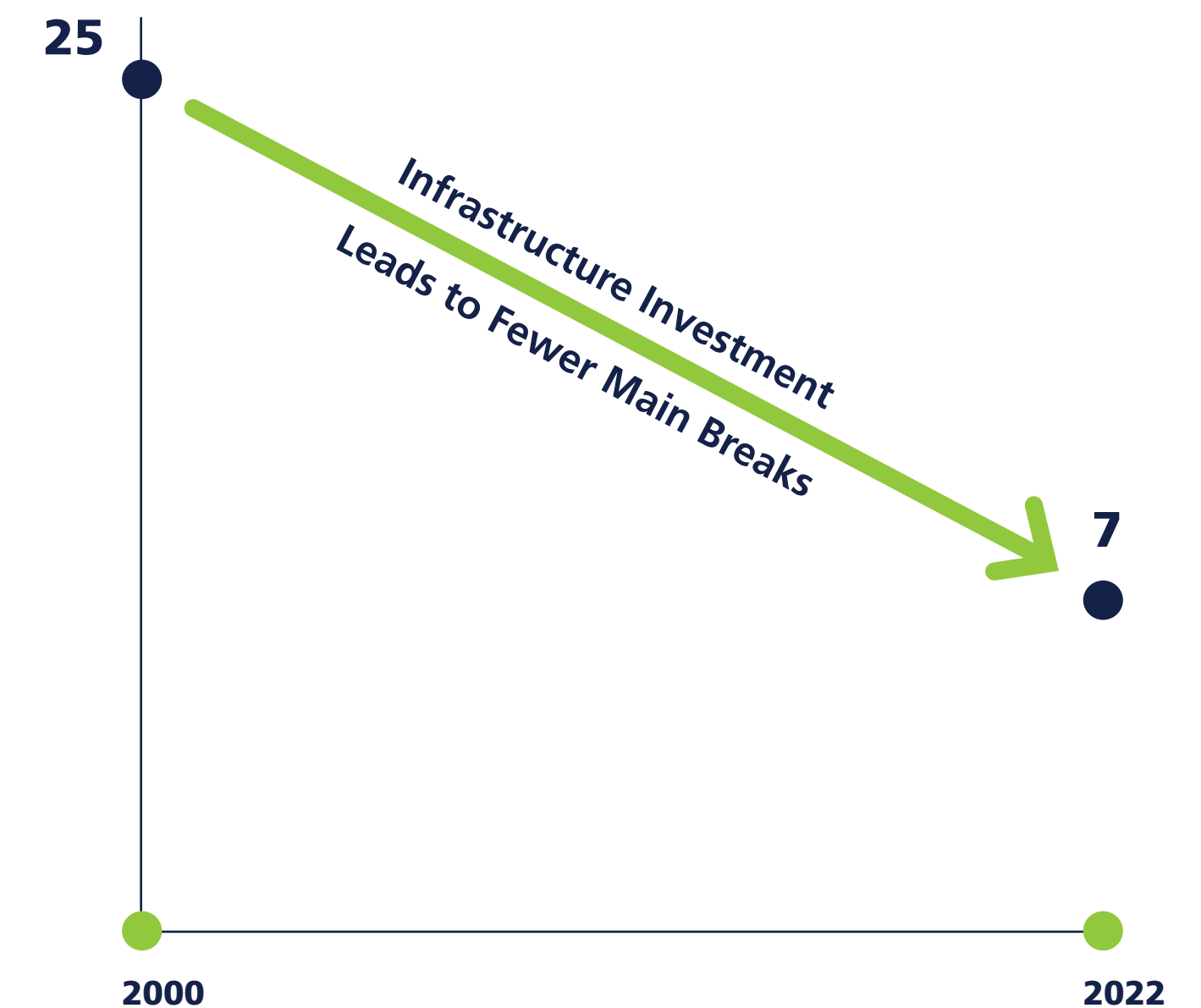
- Replacing aging pipes and water mains before they leak or break
- Updating water meters to more accurately measure water consumption in real time and identify possible leaks in our distribution system or our customers' service lines or homes
- Reusing water as possible at our water and wastewater treatment plants.

Our significant investment in water infrastructure has proven to be a very successful way to reduce water main breaks and water loss. For example, in 2000, Essential experienced nearly 25 main breaks per 100 miles on the pipe we own in southeastern Pennsylvania. In 2022, we experienced fewer than 7 main breaks per 100 miles on that system. This not only reduced water loss, but reduced the volume and cost of emergency repairs, reduced service interruptions and improved water service for customers.

**Keeping to this commitment, Essential replaced more than 125 miles of water main in 2022 and plans on replacing 176 miles of water main in 2023 to continue to address water loss and improve water quality and reliability for customers.**

## MAIN BREAKS PER 100 MILES

Southeastern Pennsylvania



## Reducing Water Loss (continued)

Essential has implemented innovative tools to advise our teams of potential sources of contamination from various sources under a Geographic Information System (GIS), mapping tool. GIS mapping software combined with satellite imagery have proven to be effective tools for locating leaks and reducing water loss.

Essential has launched a strategic transient pressure monitoring program to look at main break trends and deploys cellular based internet of thing devices to monitor pressures in an area. These devices measure pressure thousands of times per second and when the data from the different sites is correlated, we can target the source of the issue. Recent examples have identified booster pumps in systems with faulty starting devices causing excessive pressure spikes on the system which would have gone undetected without this technology deployment. Those repairs have shown a direct correlation to reduced water loss, main breaks, and improvements to water quality.

	2022	2021	2020
Main Breaks per 100 Miles	37.6	30.3	22.9

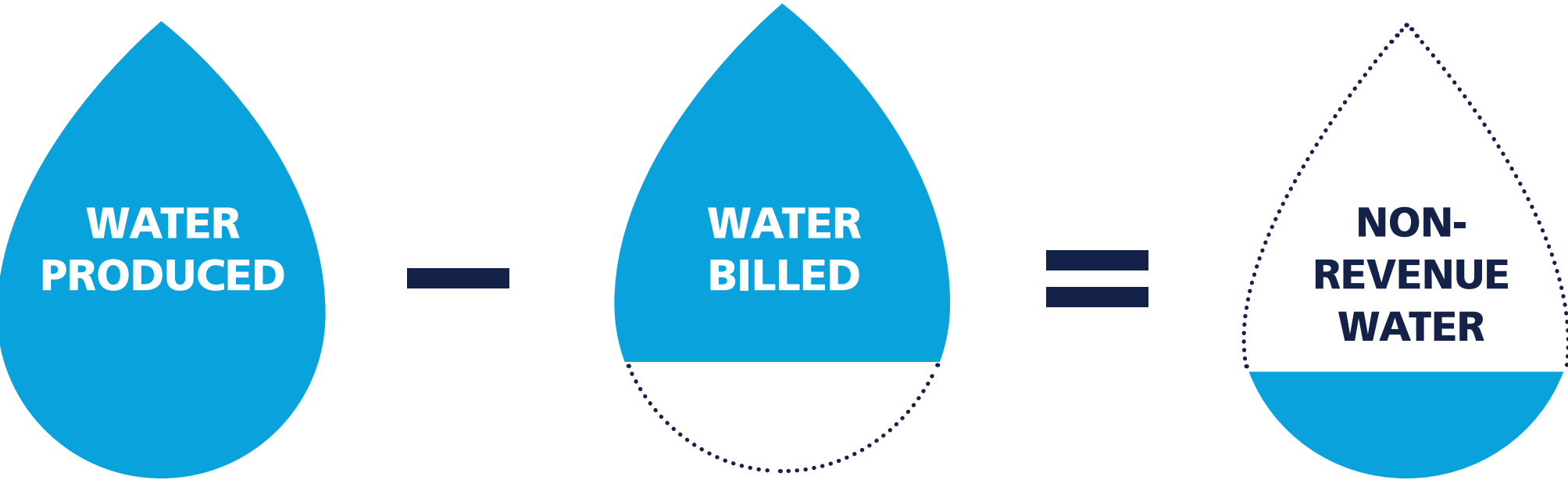
*Note: We believe much of the year-on-year variability is the result of better data collection and data quality that we have been working towards in recent years across each of our states. We believe that, in actuality, there has been a decrease in main breaks across the company and this is true when we look at certain individual state operations, such as our largest state of Pennsylvania. We hope these data improvements will allow for more direct year-on-year comparisons in the future. We believe it is likely that these figures are artificially inflated due to a different definition of “main break” used in some of our operations. The company implemented new standardized processes and applications to consistently track information in 2022.*

## NON-REVENUE WATER LOSS

	2022	2021	2020
Volume (billions of gallons)	17.8	17.2	17.8
% of total production	20.5%	20.3%	20.9%

*Note: Data is displayed here in both the absolute value of volume as well as a percentage of total production. This normalizes the data and accounts for changes in total water production, or send out, across years. We believe that, due to our acquisition of new water systems over time, and the practical margin of error with measurement equipment in the field, our levels of non-revenue real water loss have remained materially consistent over the past three years.*

*Non-revenue water losses represented here include leakage (real losses), apparent losses, (such as theft and meter inaccuracies) and other instances, such as water main flushing and water for emergency fire services. These values are determined based on the difference between water production and water ultimately delivered to customers and billed.*



# Gas Infrastructure and Resiliency

Essential’s gas utility operation serves customers in southwestern Pennsylvania, northern West Virginia and eastern Kentucky. We operate more than 15,400 miles of distribution and transmission pipelines in these areas. Essential also owns and operates more than 2,000 miles of gathering pipelines, 29 compressor stations and seven underground storage fields.

## BREAKDOWN OF MATERIAL COMPOSITION

Of our 15,400 miles of distribution and transmission pipelines, approximately 18% is made of older vintage (prior to 1970) bare steel or cast/wrought iron and has been identified as aging infrastructure in the company’s Long-Term Infrastructure Replacement Program (LTIIP). This modernization program targets replacement of all aging infrastructure by 2034. Our Distribution Integrity Management Program (DIMP) and Transmission Integrity Management Program (TRIMP) formally operate and maintain these facilities thorough asset management processes and procedures. **We integrate newer pipeline materials, most notably plastic, into our system that are more environmentally friendly over their lifetime than the materials commonly used previously. These materials are more durable, safer and more resistant to corrosion and leaks, reducing methane emissions.**

## LEAK-PRONE DISTRIBUTION PIPE

(Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel)

	2022	2021	2020
Cast or Wrought Iron	0.45%	0.48%	0.51%
Bare Steel	17.8%	19.4%	21.3%

## INSPECTIONS AND PIPELINE INTEGRITY

Our robust inspection and maintenance activities, which are aligned with state regulations that outline the use of various leak detection technologies and methods, mitigate significant pipeline incidents. The Pennsylvania Public Utility Commission (PA PUC) annually reviews and audits our plans for their compliance with all requirements and regulations.

## MINIMIZING THIRD-PARTY DAMAGE

Essential has an aggressive Damage Prevention program to minimize third party excavation damages. **Over the three-year period from 2020 to 2022, we experienced a 6% reduction of damages per 1,000 tickets received.** Additionally, we have been installing excess flow valves (EFVs) for new services that operate above 10psi to automatically stop the flow of natural gas if the service line is damaged.



COMPLIANCE WITH REGULATIONS

Gas

Essential has developed standard operating procedures that detail the requirements and inspection intervals for all operations and maintenance activities to comply with codes and regulations that govern pipeline safety. A dedicated team of engineers serve as the primary liaisons with the state regulatory bodies that audit and inspect these activities. **In 2023, the PA PUC conducted 153 audits of field operations and associated records, finding no violations, fines or citations.** The Pipeline Safety Division of the PA PUC issued three letters of potential Non-Compliance (NC letters) that recommended minor revisions to procedures and policies to enhance the pipeline safety performance.

GAS SAFETY COMPLIANCE

Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)<sup>1</sup>

	2022	2021	2020
Reportable Incidents	3	2	3
CAO	0	0	0
NOPV	0	0	0
NC	9	3	5

Percentage of gas (1) transmission and (2) distribution pipelines inspected

	2022	2021	2020
Transmission	100%	100%	100%
Distribution	42.9%	40.3%	35.5%

CUSTOMER AND PIPELINE SAFETY

Providing safe and reliable service is the foremost priority for Essential’s operations. Our pipeline integrity programs focus on meeting all regulatory requirements and inspections associated with pipeline safety. The Peoples Gas website has a section dedicated to safety for customers and the public. In addition, our safety and training team conducts natural gas emergency response sessions for municipalities and fire departments, reaching more than 600 emergency responders. We share various communications (such as emails, bill inserts and mailings) to customers, school districts and rural property owners to alert them of the potential hazards of natural gas and their proximity to facilities. We are proud of our pipeline safety record and will continue to improve and innovate our community outreach and coordination efforts. Our [website](#) for first responders, as well as various in-person trainings and events, provides resources and information that promotes safety in various emergency situations.

The PA PUC and the American Gas Association (AGA) annually benchmark average response time and percentage of issues responded to within 60 minutes as two critical emergency response metrics during emergency events involving natural gas. In 2022, Essential achieved an average response time of 24.2 minutes (with an internal goal of 27.5 minutes). In total, Essential responded to 98.6% of emergency situations within 60 minutes (with an internal goal of 98.8%). These times place Essential in the top performing quartile of regional peer gas operators. Over the past three years, we have steadily improved our strong performance. In 2021, the most recent year for which we have data from AGA, Essential outperformed the industry average. We participate in several AGA committees to discuss industry best practices on pipeline safety.

AVERAGE RESPONSE TIME TO POTENTIAL GAS EMERGENCIES

	2022	2021	2020
Average minutes to respond	24.2	24.3	25.0
% Response within 60 minutes	98.6	98.7	98.3

<sup>1</sup> In the interest of transparency, Essential also discloses non-compliance letters received (NC), which do not rise to the level of an NOPV and which we generally categorize as relatively minor.

## Waste and Non-GHG Air Emissions

At Essential, we are committed to minimizing the amount of waste produced at our treatment facilities and corporate offices and ensuring that any waste created is handled responsibly.

Because the waste produced at our treatment facilities is organic matter, in many cases, it can be beneficially reused in farming and land application. The nutrients in the organic solid waste are valuable to crops and can help replenish soil and therefore can be applied to the land in the place of fertilizer or manure. When it cannot be reused, the waste is sent to a landfill or to be further processed at another facility.

Most of our waste is organic residual from our treatment processes. As stated, a significant majority is beneficially reused.

Because there is a very limited generation of hazardous waste as part of our operations, we do not have an active hazardous waste management program at an enterprise level. We are, however, building better waste management manifests for each of our states and creating a contractor database to promote tracking on the vendor level. Any accidental chemical spills or fuel waste from vehicles and generators are remediated following all local, state and federal environmental rules by certified contractors.

The air emission data presented below represents non-GHG gas emission data that has been reported to state agencies for the Essential footprint. These include facilities with compressor stations or multiple large emergency generators. The data below does not include air emissions generated from vehicles and permit exempt emergency generators.

### SOLID WASTE

Description	Beneficial Reuse / Recycled	Landfill	Incineration	2022 Total
Treatment of Water	47,894 (Land Application)	5,327 (100% in company owned landfills)	N/A	53,221 <sup>1</sup>
Treatment of Wastewater	2,194 (Land Application)	4,282	721	7,196
Office Waste / Miscellaneous Non-Hazardous Waste	347 (Recycled)	2,368	N/A	2,714
Natural Gas Liquids	491 (Fuel Blending)	N/A	N/A	491
Hazardous Waste	2.0	N/A	10	12
Total	50,928	11,977	731	63,624

### AIR EMISSIONS<sup>2</sup>

Emission Type	2022 (Dry metric tons)	2021 (Dry metric tons)	2020 (Dry metric tons)
Nitrogen Oxides (NOx) <sup>3</sup>	211.0	237.9	264.2
Particulate Matter (PM10)	<10	<10	<10
Sulfur Oxides (SOx)	<1	<1	<1
Volatile Organic Compounds (VOCs)	45.8	187.0	201.3
Hazardous Air Pollutants (HAPs)	23.2	41.9	45.2

<sup>1</sup> We record waste volumes upon removal from our site, consistent with regulatory reporting requirements. We may temporarily store waste on site in significant volumes and ship in a different year than when generated. Therefore, year over year, this data will vary.

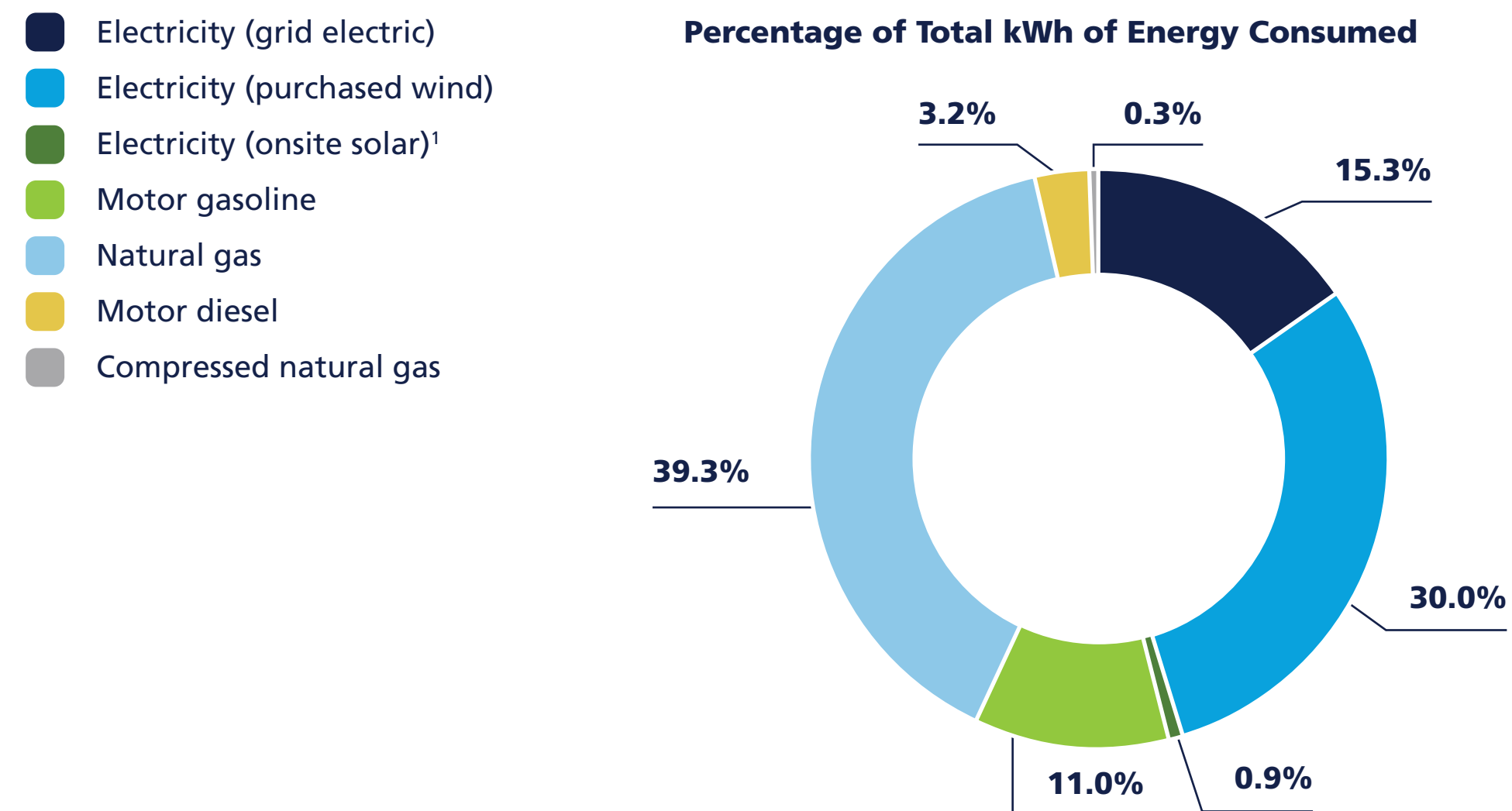
<sup>2</sup> Emission data from sources within the scope of our required regulatory air emissions reporting. VOC and HAP emissions decreased from previous reporting in part due to alterations to regulatory methodology

<sup>3</sup> Nitrous oxide (N2O) is a greenhouse gas, but we have included it in this section summed with other nitrogen oxides for completeness and because it constitutes a small amount of our total NOx emissions

# Energy Consumption

## ESSENTIAL UTILITIES

### Energy Consumption by Source Type



Renewable Energy	2022	2021	2020
Total energy consumed (MWh)	763,277	762,373	747,018
Energy derived from renewables	30%	4%	4%



<sup>1</sup> While Essential consumes the energy generated from onsite solar installations, we sell the associated renewable energy credits (RECs) in the marketplace.

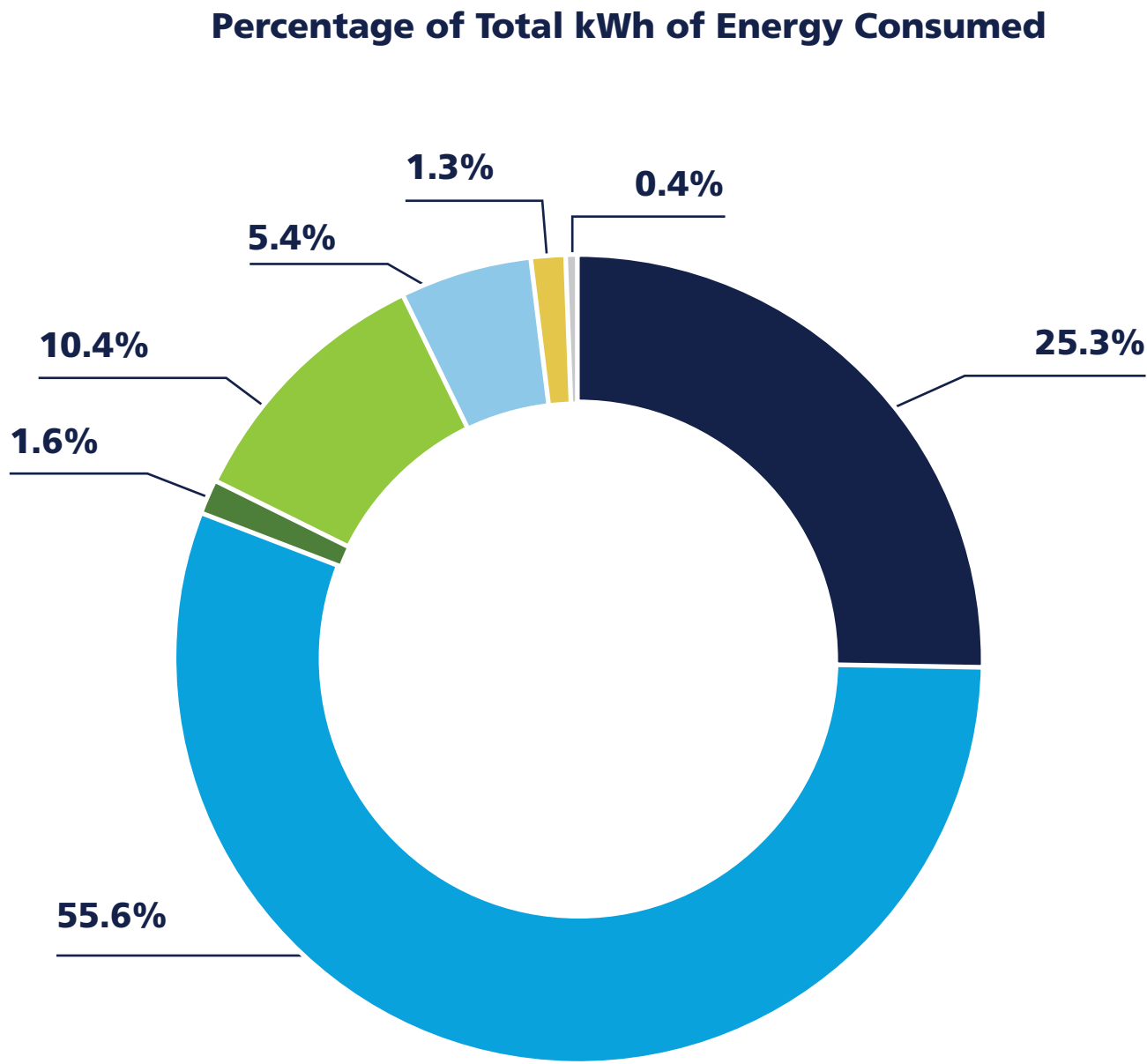
WATER AND WASTEWATER OPERATIONS

The physics of moving vast amounts of water and wastewater through networks of pipes to and from Essential’s plants requires extensive amounts of energy; about 80% of the total energy consumption required across our operations is related to water operations and about 20% is related to wastewater services. We rely on several different sources of energy for various business activities.

Electricity is our most consumed form of energy and nearly all of the electricity we use is needed to operate pumps and treatment equipment at our plants, with the small remainder used in our offices. Vehicle fuel is the second largest source of energy for Essential, as we operate a fleet of vehicles for regular physical monitoring of our infrastructure. Natural gas is used to heat our facilities and is our third largest energy source.

Energy Consumption by Source Type

- Electricity (grid electric)
- Electricity (purchased wind)
- Electricity (onsite solar)<sup>11</sup>
- Motor gasoline
- Natural gas
- Motor diesel
- Compressed natural gas



The physics of moving vast amounts of water and wastewater through networks of pipes to and from Essential’s plants requires extensive amounts of energy. Our total energy consumption in this area of our operations has been relatively consistent over the last three years with increases attributed to acquisitions and the organic growth of our business.

In 2022, Essential began procuring nearly 100% renewable electric power for its water and wastewater utilities in Illinois, New Jersey, Ohio, and Pennsylvania.

Essential has also contracted to source 25% of its electricity in Aqua Texas through an offsite solar power purchase agreement (PPA), which started in June 2020. These states feature deregulated energy markets which allow for this arrangement.

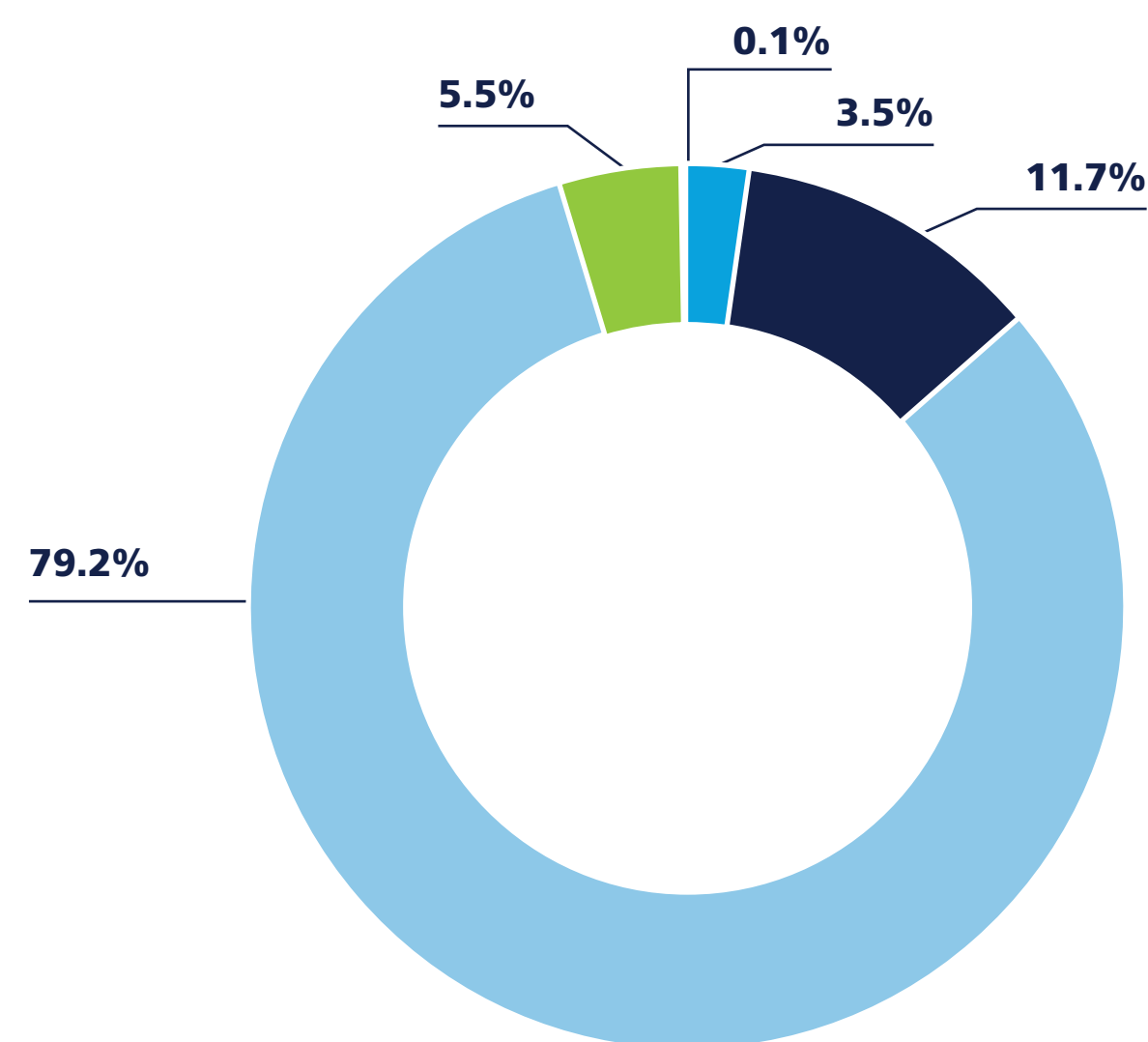
Renewable Energy	2022	2021	2020
Total energy consumed (MWh)	412,067	394,371	390,831
Energy derived from renewables	56%	7%	8%

# GAS OPERATIONS

Energy Consumption by Source Type

- Electricity (grid electric)
- Motor gasoline
- Natural gas
- Motor diesel
- Compressed natural gas

Percentage of Total kWh of Energy Consumed



Renewable Energy	2022	2021	2020
Total energy consumed (MWh)	351,210	368,002	356,187
Energy derived from renewables	0%	0%	0%



# Energy Intensity and Reducing Energy Use

## WATER AND WASTEWATER OPERATIONS

Tracking energy intensity, or measuring energy efficiency from an economical perspective, allows Essential to benchmark operations across our regions and states and compare them to each other and against national metrics. Intensity tracking takes on additional importance with our very diverse network of water systems across eight states. While our median water system is 64 connections and economies of scale favors larger systems for single efficiency opportunities, our large number of nearly identical smaller systems provides an opportunity to replicate energy efficient methods across many similar systems.

For water, energy intensity is expressed as kilowatt hours (kWh) of energy usage per 1,000 gallons of water (kgal) produced. These energy intensity values are highly dependent on physical factors, which vary not only state to state, but by region and location. Changes in regulations may also lead to more energy-intensive practices over time, making long-term trend analysis difficult. The depth and lift required to gather water and the pressure required to pump water across distance and elevation are the most significant factors in energy intensity. Because of our large number of smaller systems, heating pump stations during the winter can often cause the intensity factor to double during the colder months. For wastewater, energy intensity is expressed as kWh of energy usage per kgal of wastewater treated. For gas, energy intensity is expressed as kWh of energy usage per MMcf of gas delivered to customers.

It is important to note is that Essential’s disclosure of energy intensity includes electricity consumption in addition to other forms of energy as outlined in the [Energy Consumption](#) section. We also disclose intensity metrics inclusive solely of electricity.

## ENERGY INTENSITY BY BUSINESS

	2022	2021	2020
Water (kWh/gal)	3.3	3.1	3.1
Wastewater (kWh/gal)	7.6	5.4	5.4
Gas (kWh/MMcf)	1.8	2.0	1.9

## ELECTRICITY INTENSITY BY BUSINESS<sup>1</sup>

	2022	2021
Water (kWh/gal)	3.0	2.9
Wastewater (kWh/gal)	6.7	6.1
Gas (kWh/MMcf)	0.1	0.1

## Climate Risk Management and Oversight

Essential understands the urgency of the Paris Agreement and the UN Intergovernmental Panel on Climate Change's science-based target of limiting the global temperature increase to well below 2 degrees Celsius. Addressing climate change requires a holistic management approach and tracking of our Scope 1, 2 and 3 greenhouse gas (GHG) emissions. Our executive and management teams understand there are two distinct elements of climate change: adaptation and mitigation. Essential is addressing both items and has implemented a robust management system to identify associated risks and opportunities.

Essential defines its climate-related impacts through a model which weighs likelihood, cost, magnitude of impact and time horizon. The process also allows for implications to be updated and easily re-evaluated annually. This reevaluation takes into consideration updates to climate models and the addition of new topics and implications as the businesses and business locations change. Essential manages climate change matters through significant board-level oversight of climate-related issues. It uses various channels and reporting paths to review the risks facing the organization and evaluate operational risk factors associated with climate change. At the management level, Essential's ESG Oversight Committee, a group of about a dozen of the company's senior leaders from across the organization and the CEO, meet at least once each quarter to discuss these topics. Various members of senior management have numerous additional opportunities each month to engage on climate change matters.

We provide much more information on Essential's climate scenario analysis, board and executive oversight, risks and opportunities in our [CDP](#) and [TCFD](#) reports.



## Greenhouse Gas Emissions Reduction

### ESSENTIAL

In January of 2021, Essential announced a commitment to substantially reduce Scope 1 and 2 greenhouse gas emissions.

**By 2035, Essential will reduce its emissions by 60% from its 2019 baseline, an uncommonly recent baseline within the utilities space.**

This will be achieved by extensive gas pipeline replacement, renewable energy purchasing, accelerated methane leak detection and repair and various other planned initiatives that are highly feasible with proven technology. This science-based commitment is consistent with the rate of reduction necessary through 2035 to keep on track with the Paris Agreement, which aims to limit the global temperature increase to well below 2 degrees Celsius. All our utilities – gas, water and wastewater – across all our states will be contributing to this enterprise-wide target by building on important work and progress in recent years. Each Essential Utilities operation will individually contribute an approximate 60% Scope 1 and 2 emissions reduction.

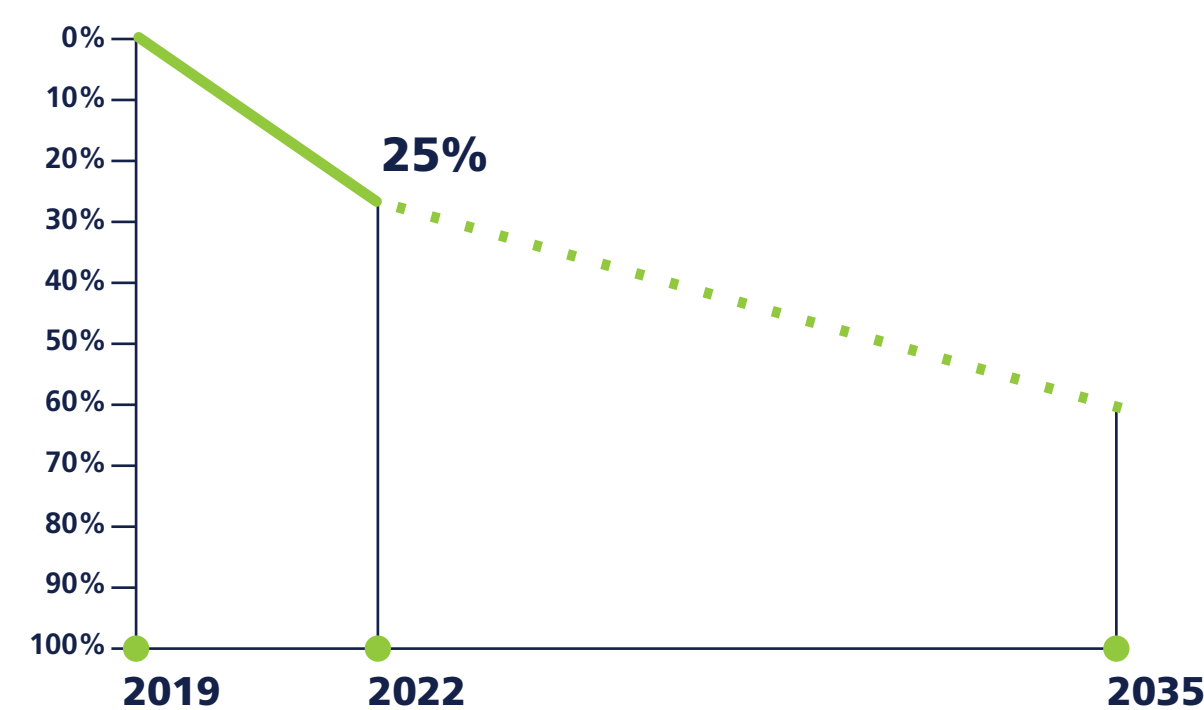
Transparency is at the center of our ESG program and is a core value of our company. We will report on our progress toward this goal twice a year until we meet our target. This is a strong first step toward an ultimate aspiration of net zero emissions, which we acknowledge will only be possible with further technological and engineering innovation. While we're optimistic and excited about the pace of technological advancement, this initial 60% Scope 1 and 2 emissions reduction will come from projects and initiatives we have already planned or put into place. These projects utilize existing and proven technology and methods and are real and tangible.

### ESSENTIAL'S PROGRESS TOWARDS ITS COMMITMENT

Essential's current progress toward its greenhouse gas emissions reduction target is reported [here](#) and will be updated at least annually following the publication of this 2022 ESG Report.

**Through 2022, Essential achieved a 25% reduction in its Scope 1 and 2 emissions versus its 2019 baseline, representing rapid and substantial progress toward its 60% target.**

Essentials Progress Towards Its Commitment



Two initiatives made this reduction possible:

#### Water and Wastewater Operations

Procurement of nearly 100% renewable electricity for PA, NJ, OH and IL, plus about one-quarter renewable electricity procurement for TX

#### Gas Operations

Continual replacement of older gas main, which reduces fugitive methane leakage

Moving forward, Essential's remaining progress toward its greenhouse gas emissions reduction commitment of 60% will be primarily driven by its gas operations. We expect a steady incremental reduction each year, reflective of continuing replacement of gas main.

WHAT ARE SCOPE 1 AND 2 EMISSIONS?

Scope 1 Emissions

Direct GHG emissions occur from sources that are owned or controlled by our company, for example, emissions from combustion in owned or controlled boilers, furnaces and vehicles. Most notably, these include methane emissions from our gas pipelines.

Scope 2 Emissions

GHG emissions from the generation of purchased electricity consumed by Essential. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of our company. Scope 2 emissions physically occur at the facility where electricity is generated.

Below are Essential’s 2022 GHG emissions by scope. For historical and more detailed disclosure, please refer to the Gas Operations and Water and Wastewater Operations subsections.

Below are Essential’s 2022 GHG emissions by scope. For historical and more detailed disclosure, please refer to the Gas Operations and Water and Wastewater Operations subsections. Further, for the first time, Essential engaged a third party, Keramida, to conduct a limited assurance audit of 2022 Scope 1 and 2 greenhouse gas emissions in accordance with ISO 14064-3: 2019 *Specification with guidance for the validation and verification of greenhouse gas assertion*, which is an approved verification standard accepted by CDP. Keramida is a gold accredited service provider to CDP for verification services.

CHARTING A COURSE FOR AGGRESSIVE EMISSIONS REDUCTION

	2019 Baseline	2035 Target	% Reduction
Essential	621,030	248,412	60.0%
Gas Distribution	489,849	198,331	59.5%
Water and Wastewater	131,181	50,081	61.8%

Values shown in metric tons CO<sub>2</sub>e

GREENHOUSE GAS EMISSIONS (METRIC TONS CO<sub>2</sub>e)

	2022	2021	2020
Scope 1 emissions	417,687	468,734	494,835
Scope 2 emissions (market-based)	51,009	117,723	111,262
Scope 1 and 2 emissions (market-based)	468,696	586,457	606,097
Scope 3 emissions	9,020,425	8,659,255	8,653,218

# Greenhouse Gas Emissions Reduction

## GAS OPERATIONS

Almost all of Essential’s Scope 1 emissions are emitted by our gas operations. Of this, the large majority of emissions relate to fugitive methane from pipeline leaks. As natural gas, which is primarily methane, travels through our network of underground pipes on its way to the customer, a very small portion of this volume leaks out and escapes into the atmosphere, often due to corrosion leaks, material defects or excavation damages. Our Long-Term Infrastructure Improvement Plan seeks to, over time, systematically replace older and more vulnerable sections of pipe made of leak-prone materials. Additionally, as is common across our industry and consistent with regulations, we utilize various leak detection technologies to proactively identify sources of fugitive methane and repair leaks as quickly as possible.

Our gas operations contribute a relatively very small amount of Essential’s Scope 2 emissions. Gas distribution is not an electricity-intensive operation. Even so, we continue to assess ways to increase energy efficiency and reduce consumption.

Materially all of Essential’s Scope 3 emissions are driven by our gas operations through carbon dioxide emitted by customers upon combustion of natural gas in their home or business. We continue to assess opportunities and initiatives to reduce these emissions and are aware that Scope 3 emissions are more challenging to address directly than Scope 1 and 2 emissions across industries. Like most of our peer gas utilities, we are examining exciting opportunities for alternative fuels, such as renewable natural gas or hydrogen, which also serve to reduce Scope 3 emissions.

## GREENHOUSE GAS EMISSIONS (METRIC TONS CO<sub>2</sub>e)

	2022	2021	2020
Scope 1 emissions	401,363	452,740	478,684
Scope 2 emissions (market-based)	5,199	4,502	3,156
<b>Scope 1 and 2 emissions (market-based)</b>	<b>406,562</b>	<b>457,242</b>	<b>481,840</b>
Scope 3 emissions <sup>1</sup>	8,911,126	8,534,299	8,533,075

*Note: Essential chooses to present Scope 2 emissions using the market-based method, as this approach incorporates the impact of various sourcing decisions, such as our procurement of renewable energy. In contrast, the location-based method reflects the average emissions intensity of grids on which energy consumption occurs. We wish to footnote Essential’s gas operations’ location-based Scope 2 emissions: 4,576 (2022), 4,332 (2021), 3,951 (2020).*



<sup>1</sup> Scope 3 emissions for our gas operations relate entirely to downstream emissions from customer combustion of natural gas we deliver. This is the only material source of Scope 3 emissions for our gas operations.

### GHG EMISSIONS REDUCTION OVERVIEW

Of Essential’s Scope 1 and 2 emissions, nearly 90% is driven by the gas distribution business. As such, almost all our future emissions reduction efforts will be driven by the company’s aggressive Long-Term Infrastructure Improvement Plan (LTIIP), which has a stated goal to replace 3,000 miles of bare steel and cast-iron pipe. In addition to the LTIIP, Essential is currently working on other initiatives to reduce emissions. This includes implementing a gathering system repair program, which allows for accelerated detection and leak repair; employing construction techniques that minimize methane emissions during replacement and repair activity; and using new equipment that captures gas used during construction and reinjects it into the system.

### DISTRIBUTION SYSTEM MAIN REPLACEMENT

In 2013 we launched our LTIIP, an aggressive 20-year effort to replace and upgrade more than 3,000 miles of natural gas pipelines with new plastic pipelines that will not corrode. These lines are also flexible and can withstand the region’s seasonal freeze and thaw cycle. To date, Essential has replaced more than 800 miles of pipeline, and we anticipate completing this project by 2033. Pipelines selected for replacement are based on operating history and location. We assess about 450,000 segments of pipe and assign a relative risk ranking based on probability of failure and consequence of failure to help us prioritize action.

LTIIP is currently the most significant of our Scope 1 and 2 greenhouse gas emissions reduction efforts and is an excellent example of how operational efficiency, reliability, safety and mitigation of climate change can mutually reinforce each other for the benefit of all our stakeholders.

### DISTRIBUTION SYSTEM MAIN REPLACEMENT PROGRESS



### GATHERING SYSTEM REPAIR PROGRAM

Due to the on-system gas production in our service territory, Essential has a considerable gathering line system that is used to transport natural gas from the wellhead to the distribution system. A separate replacement plan addresses the replacement of gathering assets. The original four-year plan began in 2017 and focused on removal or replacement of over 135 miles of gathering line. As of year-end 2022, Essential’s gas utility extended the plan’s efforts and has removed or replaced a total of 184 miles of gathering lines from the system.

### IDENTIFIED LEAKS PER MILE OF PIPE SURVEYED

As a result of main replacement activities, Essential has reduced identified leaks per mile of utility pipe surveyed (inclusive of distribution and gathering pipe but excludes that of the Goodwin-Tombaugh system) by 23%, from 1.72 in 2015 to 1.33 in 2022. This metric has remained consistent over the past three years. We are surveying gathering pipe more often and have chosen to normalize this by disclosing leaks in relation to miles of pipe we surveyed in the given year.



## Promoting Alternative and Innovative Energy

### WATT FUEL CELL PROGRAM

Essential has partnered with WATT Fuel Cell Corp., a company based in Mt. Pleasant Township, Pennsylvania, to launch a pilot program aimed at offering the manufacturer's Solid Oxide Fuel Cell (SOFC) system throughout our gas service territory.

WATT developed a hybrid SOFC power management system that creates small-scale power, 500W to 1.5kW, from natural gas or hydrogen. Through an electrochemical reaction, the fuel cell transforms the energy in gas or hydrogen to electricity with low direct emissions.

The company already sells fuel cells using propane for RVs and small watercrafts and is scaling its operations through this partnership with Essential's natural gas utility. To do this, WATT has developed a proprietary manufacturing technique that creates an entire fuel cell tube using an additive manufacturing process. Additive manufacturing, or 3-D printing, uses plastics, resins and metals to print a product by adding layers, different from traditional manufacturing methods that cuts out raw material to create parts.



### RENEWABLE NATURAL GAS

Renewable natural gas (RNG), or biomethane, comes from the anaerobic digestion of organic matter, such as manure, agricultural waste, food waste or landfill. The carbon dioxide emissions produced when RNG is used as a fuel are substantially or completely offset by methane captured during the formation of the source feeds. RNG combines low or zero full-cycle carbon emissions with the high energy density and transportability of natural gas. After suitable treatment, the RNG can be injected directly into the natural gas pipeline network, allowing it to use the extensive existing natural gas infrastructure when installed base of customer natural gas equipment. RNG has the potential to reduce Scope 3 emissions when the utility owns the associated renewable credits.

**Currently, Essential interconnects with six landfills that deliver RNG gas directly into our pipeline system. In 2022, this measured to more than 1.4 Bcf, or about 1% of our total gas throughput. About 56% of this RNG is transported by Essential into an interstate pipeline or to a third-party pool operator. The remaining 44% is directly purchased by Essential, blended with our traditional natural gas supply and delivered directly to our customers.**

Essential does not currently purchase renewable credits associated with the physical supply of RNG due largely to least-cost gas procurement guidelines set by regulators. Thus, we cannot apply this emissions reduction to our greenhouse gas inventory. However, we believe we play a constructive and positive role in the development and function of the RNG market across our footprint by facilitating trade and transport of this environmentally friendly energy source. Essential is also working with other companies on developing potential additional RNG interconnections in our service territory, and we look forward to expanding the number of partnerships with producers in the region.

## HYDROGEN

Hydrogen is a promising alternative fuel that may be efficiently blended with natural gas in energy supply to customers in future years. It can be used as a feedstock, a fuel, an energy carrier or an energy storage medium. Hydrogen emits no end-use carbon emissions and creates minimal air pollution. There are several “types” of hydrogen, classified based on their production method and resulting lifecycle emissions profile. The gas industry is currently examining the feasibility to blend hydrogen within pipelines at scale and examining how this would be efficiently produced at necessary volumes.

Hydrogen-blending targets for existing natural gas infrastructure do not exist today, but there is increasing demand for the alternative fuel. The U.S. National Renewable Energy Laboratory and other researchers have reported that there are current projects across the world that blend up to 20% hydrogen without requiring end-use customers to upgrade boilers and burners.

Essential and the University of Pittsburgh’s Swanson School of Engineering have entered a partnership to explore the use of hydrogen as a future energy source. Together, the organizations will study the potential of safely and securely transporting hydrogen through Essential’s natural gas delivery systems. The partnership will consist of two phases. The first phase will conduct benchmarking and research focusing on the existing infrastructure, concentrating on technical issues involved with using natural gas pipelines to transport hydrogen or a hydrogen and natural gas blend. The second phase will be the implementation of a pilot project that will test the injection of hydrogen blend in real-world applications, including pipeline material degradation and the impact of hydrogen blend on end-users’ natural gas fueled equipment.

Additionally, in both 2022 and 2023, Essential co-hosted energy industry leaders, investors, innovators, regulators and top practitioners at the H2 Conference in Pittsburgh. This event has positioned Appalachia and the Pittsburgh region as leaders in global energy innovation. Discussion topics and presentations have revolved around the region’s role in large-scale hydrogen hubs being proposed by the U.S. Department of Energy. Additional central themes include the latest research, progress and best practices in commercializing this technology.



## Strategic Partnerships on Energy Innovation

At Essential, we strongly support UN Sustainable Development Goal 17, which calls for partnership. We work closely with various academic, nonprofit and industry organizations to discuss and collaborate on opportunities to innovate on energy and greenhouse gas emissions reductions.

### SOUTHWESTERN PENNSYLVANIA ENERGY EFFICIENCY ROUNDTABLE

Essential is a founding member of the Pennsylvania Department of Environmental Protection's Southwestern Pennsylvania Energy Efficiency Roundtable. This group is a consortium of energy efficiency stakeholders, and its primary mission is to help business and industry in Southwestern Pennsylvania reduce energy costs through improved energy management, energy efficiency and cutting-edge technology.

### UNIVERSITY OF PITTSBURGH'S CENTER FOR SUSTAINABLE BUSINESS

Essential is a founding sponsor of the University of Pittsburgh's Center for Sustainable Business at the Joseph M. Katz Graduate School of Business. The Center's mission is to maximize the value of investments in sustainable business strategies for all stakeholders.

### UNIVERSITY OF PITTSBURGH'S SWANSON SCHOOL OF ENGINEERING

Essential and the University of Pittsburgh's Swanson School of Engineering have entered a partnership to explore the use of hydrogen as a future energy source. Together, the organizations will study the potential of safely and securely transporting hydrogen through Essential's natural gas delivery systems.

### PITTSBURGH REGION CLEAN CITIES

Essential is a long-time member of the Pittsburgh Region Clean Cities (PRCC). PRCC advances the energy, economic and environmental security of the United States by supporting local actions to reduce petroleum use in transportation.

### ENERGY INNOVATION CENTER

Essential has been a sponsor of the Energy Innovation Center (EIC) for several years. The Energy Innovation Center is a Pittsburgh based, not-for-profit organization with a mission to engage corporate and community leaders, align workforce development and education, develop and demonstrate technology and incubate businesses to support emerging clean and sustainable energy markets. Essential is a key stakeholder and has been instrumental in the adoption of two microturbine-CHP systems that provide the LEED Platinum Certified facility with resilient and efficient heat and power.





## Helping Our Customers Conserve Gas

Essential works to continuously educate our customers on conservation and energy efficiency opportunities. Some of our key customer conservation messages for Peoples customers include:

- [Energy-saving and winter safety tips](#)
- e-Billing options available in the Peoples e-Account customer portal and through Google Pay and Apple Wallet
- Customer gas usage information available in Peoples e-Account
- [Customer assistance programs](#) like the weatherization program and the Emergency Furnace and Service Line Repair Program for qualified low-income customers to help increase energy efficiency and prevent the loss of heat through implementation of home improvements and replacement of inefficient heating systems.

By using a variety of channels, our goal is to establish multiple customer touchpoints for these key conservation messages. We use tools like digital marketing, traditional advertising opportunities, bill inserts, and community partnership activation to share this information and drive customers to our website as a central education hub. Some recent examples of how we promoted these messages to Peoples customers include:

- Paid social media and digital marketing campaigns to share energy-saving tips, including promotion of the [“Gas Guys” YouTube series](#), highlighting at-home energy conservation efforts
- Facebook Live panel with customer assistance experts, spotlighting our home weatherization program and Emergency Furnace and Service Line Repair Program
- Email marketing communications to over 410,000 customers, promoting energy-saving tips
- Cold weather-triggered radio spots advertising customer assistance programs
- Bill inserts spotlighting customer assistance programs and winter safety tips, including ways to avoid freezing pipes and prevent water line leaks

# Greenhouse Gas Emissions Reduction

## WATER AND WASTEWATER OPERATIONS

Scope 2 emissions are most significant for Essential’s water and wastewater operations. It takes considerable electrical energy to treat water and wastewater as well as to pump water through our distribution network of pipes. Year-to-year fluctuations in energy use may be driven by weather events and changes in customer demand for water. We predicate our Scope 2 emissions reduction on three primary strategies, among others. First, we have made strides in making our operations as energy efficient as possible (see [Energy Intensity and Reducing Energy Use](#)). We also take care to minimize water loss through leaks (see [Reducing Water Loss](#)). By minimizing water loss, we reduce the volume of water that must be treated and moved through our system, thereby reducing energy use.

Finally, and most notably, we have made headway in using as much renewable electricity as we can while balancing affordability for customers.

**Notably in 2022, our water and wastewater operations in Pennsylvania, Ohio, Illinois and New Jersey switched to nearly 100% renewable electricity procurement.**

Our Texas operations has also recently increased renewable electricity procurement to about 25%. This major uptick in renewable electricity consumption has dramatically diminished Essential’s Scope 2 emissions in short order.

Scope 1 emissions have historically been a smaller component of Essential’s water operations’ emissions and are primarily driven by gas consumption for heating facilities and powering vehicles and some equipment.

The impact of indirect emissions, Scope 3, is also notable. Tracking and reducing those emissions comprise an important component of our overall carbon reduction strategy.

Pipe replacement activities, which are necessary to address aging infrastructure, are the largest contributor to Scope 3 emissions. The methods and materials used today extend the serviceable usefulness up to 100 years compared to piping installed just 30 years ago, which translates to reduced frequency of pipe replacement over time. Pipe replacement activities also offer an ancillary benefit to our Scope 2 emissions as better and newer piping means less lost water through leaks and main breaks, resulting in a reduction of water that needs to be produced.

Although chemicals are required for water safety and quality, their purchase is Essential’s second largest source of Scope 3 emissions. We acknowledge that warmer water temperatures brought on by climate change will require Essential to use more chemicals to produce safe drinking water. By tracking GHG impacts from chemical purchases, we are able to better understand the impact of climate change on treatment operations.

Additionally, the upstream impacts and energy-related activities of the fuel we need to generate electricity significantly contribute to our Scope 3 emissions. By reducing the amount of electricity consumed and increasing our use of renewables, we can reduce this impact. Other Scope 3 contributors are not as material, but we maintain awareness of these items nonetheless.

## GREENHOUSE GAS EMISSIONS (METRIC TONS CO<sub>2</sub>e)

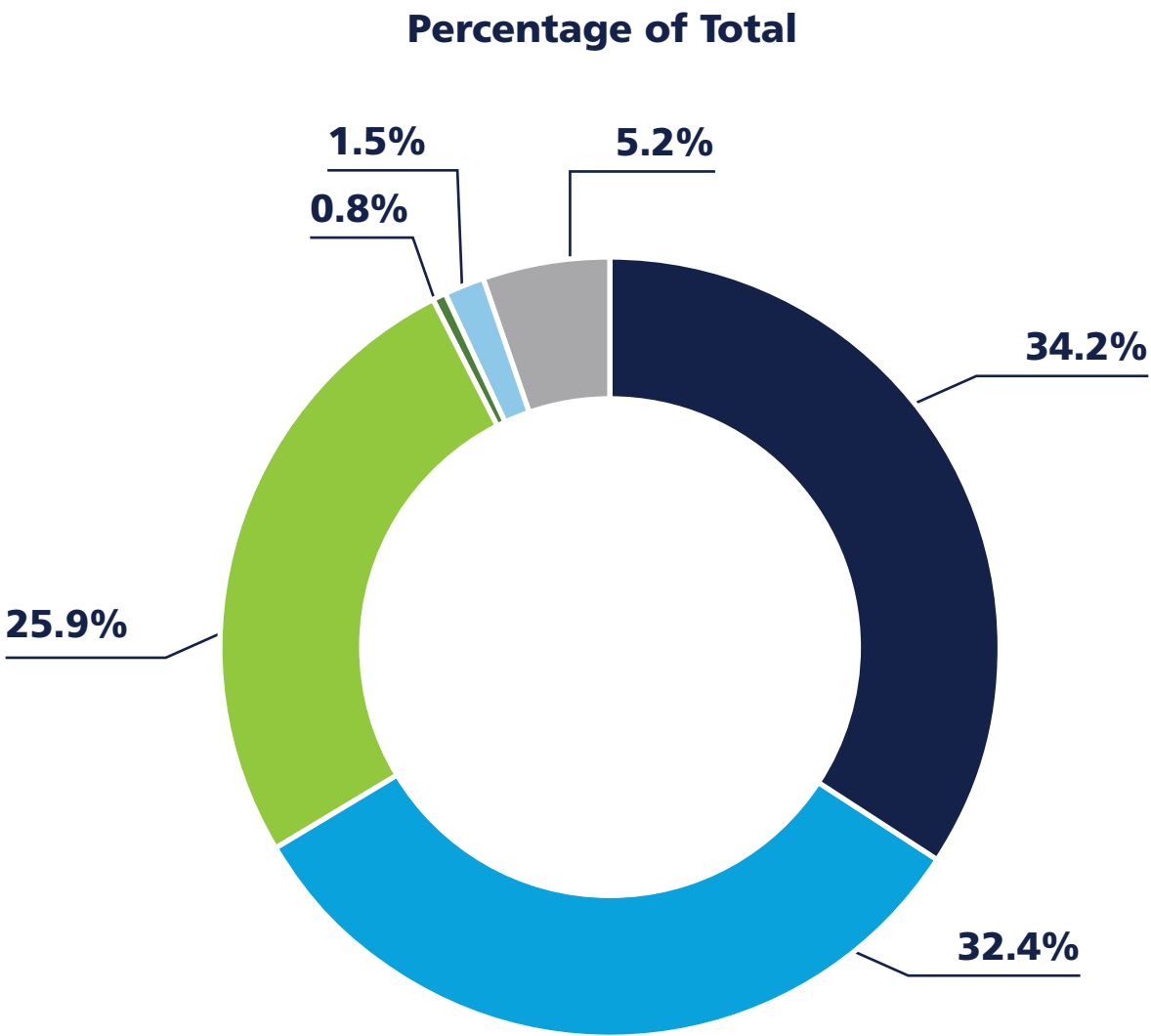
	2022	2021	2020
Scope 1 emissions	16,324	15,994	16,057
Scope 2 emissions (market-based)	45,810	113,221	115,124
Scope 1 and 2 emissions (market-based)	62,134	129,215	131,181
Scope 3 emissions	109,299	124,596	110,675

*Note: Essential chooses to present Scope 2 emissions using the market-based method, as this approach incorporates the impact of various sourcing decisions, such as our procurement of renewable energy. In contrast, the location-based method reflects the average emissions intensity of grids on which energy consumption occurs. We wish to footnote Essential’s location-based Scope 2 emissions for its water and wastewater business as follows: 121,190 (2022), 110,970 (2021) and 120,776 (2020). The overall reduction of our location-based emissions is largely a reflection of the energy grid’s mix transitioning away from coal to natural gas and renewables and we expect this trend to continue.*

BREAKDOWN OF SCOPE 3 EMISSIONS

Topic	Metric Tons CO <sub>2</sub> e
Purchased goods and services	37,359
Capital goods	35,404
Fuel-and-energy-related activities	28,319
Waste Generated in Operations	826
Employee Commuting	1,682
Other (Upstream)	5,710
Total Scope 3 emissions	109,299

- Purchased goods and services
- Capital goods
- Fuel-and-energy-related activities
- Waste Generated in Operations
- Employee Commuting
- Other (Upstream)



Fleet Emissions

Reducing our fleet footprint is an important and effective aspect of our GHG emissions reduction efforts.

Essential’s gas, water and wastewater utilities have a diverse geographical footprint across ten states, covering thousands of square miles of service area and almost 2,000 individual locations. Many of the locations require visits from employees daily or several times a week, resulting in frequent vehicle usage.

Fleet currently accounts for about 7% of Essential’s Scope 1 and 2 emissions.



There are 2,664 vehicles in Essential’s fleet. Of these vehicles, 2,009 units (75%) are cars, pickups, small utilities and vans (our light-duty fleet). The remaining 655 units (25%) consist of our large utility trucks, dump trucks, tank trucks, stake bodies and backhoes. We currently have 69 vehicles in our alternative energy vehicle fleet, accounting for 2.6% of our total fleet. These alternative vehicles include five electric and 64 compressed natural gas (CNG) vehicles. Since our strategic partner, General Motors, has put an emphasis on the light-duty market, we will first focus on expanding the electrification of the light-duty segment of our fleet.

## Biodiversity and Ecosystem Health

**“Biodiversity – the diversity within and between species and ecosystems – offers a huge and critical array of ecosystem services on which people and nature co-depend and is fundamental to the resilience of our planet.”**

*- Stephenson, P.J. and Carbone, G. (2021). Guidelines for planning and monitoring corporate biodiversity performance. Gland, Switzerland: IUCN*

As a water, wastewater, and gas utility, biodiversity and ecosystem health are critical in the sustainability of our organization and fidelity to our mission. While climate change and biodiversity are strongly linked, there are critical distinctions and independent dynamics between them that play a role and have different consequences. However, in each case, Essential acknowledges and is optimistic about the positive impacts we can have as an experienced environmental steward endowed with trust by our local community.

When we consider biodiversity and ecosystem impacts material to our industry, it is important to note their bidirectional nature: there are impacts from our business operations and to the environment as well as from the environment and to our business operations. As frameworks for corporate reporting in this area continue to develop, Essential will continue to analyze and consider risks and opportunities that are particularly material. For now, we note our awareness of general risks to and from operations typical of our industry and not Essential specifically:

Industry’s risks *to* biodiversity and ecosystems

### Rights of way and construction activities

Can disturb local ecosystems (via noise, leak impacts, dams, activity in sensitive wetlands, and other impacts)

### Wastewater effluent

Temperature and chemistry can impact aquatic life

### Water withdrawal

Unsustainable water withdrawal from sensitive areas or scarce sources put wildlife in danger, reducing the health and resilience of their habitats

### Greenhouse gas emissions

Contribution to climate change, which has many environmental impacts

### Non-greenhouse gas air emissions and sanitary sewer overflows

Pollution can harm local ecosystems

Industry’s risks *from* degradation of biodiversity and ecosystems

### Natural filtration processes

Many different types of bacteria, protozoa, insects, marine animals, and plants play a role in water source quality

### Stable water temperature

Forested areas can provide shade and keep temperatures low

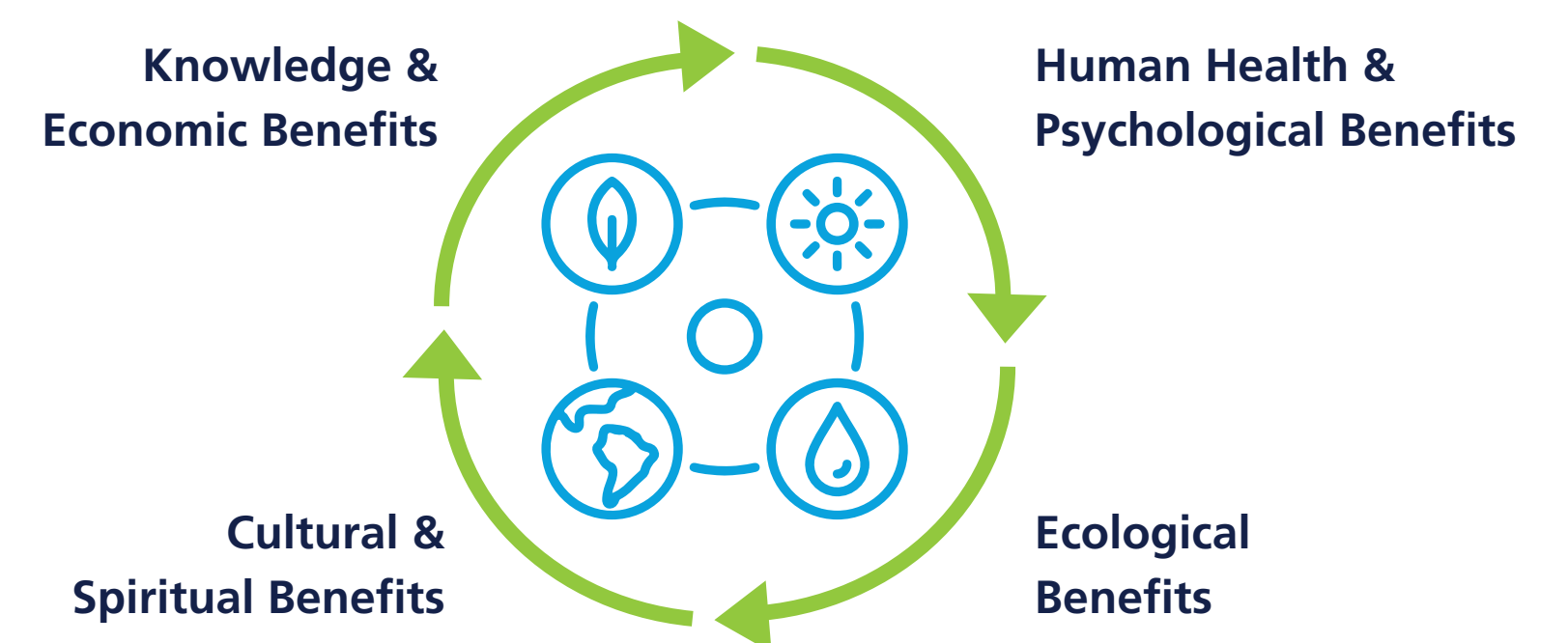
### Protection of assets

Mangves, reefs, trees, and other life protect against erosion, storm damage, and flooding

### Water supply

Wetlands store vast amounts of water, but are under threat from climate change and development

## THE IMPORTANCE OF BIODIVERSITY



# Biodiversity and Ecosystem Health (continued)

In line with this understanding, Essential’s board has recently approved an expansion of the company’s [Sustainability and Environmental Policy](#). While these stated commitments reflect past efforts and guiding principles we have held for generations, we believe memorializing these in a formal policy offers deeper assurance to our stakeholders and promotes greater awareness for our team.

**We strive to:**

- Comply with environmental regulations and manage our lands to protect and preserve sensitive habitats and species
- Support efforts to combat invasive species and restore native species
- Avoid sensitive waterways, wetlands, and encounters with endangered species when proposing new pipeline routes and project locations
- Apply mitigation hierarchy (avoid, minimize, rehabilitate, offset, and compensate) through all the processes of new construction or modifications that can impact biodiversity
- Examine ways to monitor impacts and biodiversity on our lands

Essential takes numerous actions across its footprint to promote biodiversity and ecosystem health. As a highly regulated utility, many of these are required or prescribed by authorities. For example, in Pennsylvania, we must abide by Pennsylvania Natural Diversity Inventory (PNDI) requirements. Essential is currently undertaking a Geographic Information Systems-aided biodiversity assessment of our 10,000 acres under our protection across our footprint. Understanding and mapping the richness of life on our lands is a necessary precursor to broader actions or additional enterprise-level commitments we may make moving forward. Further, our Earth Day volunteerism activities across the company, detailed [here](#), educate employees on the vital role we can all play in conservation.

Essential has expanded its reporting and policy language for biodiversity and ecosystems with the awareness that there are international efforts currently underway to develop common frameworks and raise the level of ambition in the business community around these principles. We welcome these proceedings and will be assessing these, particularly the recommendations of the Task Force on Nature-Related Financial Disclosures (TNFD), in the future for possible alignment. We also continue to assess new opportunities within our operations to promote biodiversity and strengthen our current initiatives in this area.

**While we believe many of our activities and operations promote positive ecological impacts, there are some instances and circumstances in which there arises a conflict in need of a solution. In these cases, we strive to act in accordance with a mitigation hierarchy:**

## Avoidance

Measures taken to avoid creating impacts from the outset (including direct, indirect and cumulative impacts), such as careful spatial or temporal placement of elements of infrastructure, to completely avoid impacts on certain components of biodiversity.

## Minimization

Measures taken to reduce the duration, intensity and/or extent of impacts (including direct, indirect and cumulative impacts) that cannot be completely avoided, as far as is practically feasible.

## Rehabilitation and restoration

Measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided or minimized.

## Offset

Measures taken to compensate for any significant residual, adverse impacts that cannot be avoided, minimized and/or rehabilitated or restored, in order to achieve no net loss or preferably a net gain of biodiversity. Offsets can take the form of positive management interventions such as restoration of degraded habitat, arrested degradation or averted risk, or protecting areas where there is imminent or projected loss of biodiversity.

## Compensation

Measures to recompense, make good or pay damages for loss of biodiversity caused by a project that can fall short of achieving no net loss or a net gain.

## Biodiversity and Ecosystem Health (continued)

### SPOTLIGHT

#### Perkiomen Dam Removal

In 2022, Essential completed a project to remove two outdated and unnecessary dams in Pennsylvania. While dams can serve a vital purpose in storing water and controlling the flow of waterways, they can also have environmental costs like disrupting flora and fauna as well as the exchange and flow of nutrients. When dams outlive their intended use, they may be identified for removal to return a water source to its natural conditions. The dams we removed had been in place since the 1950s, impacting the flow of Perkiomen Creek, which feeds Essential's Green Lane Reservoir. The reservoir is not only a significant source for our main southeastern Pennsylvania drinking water system, but a critical habitat area for a variety of species. The reservoir is also host to a bird sanctuary to protect resident and migrating waterfowl in an area deemed rich in avian biodiversity by the National Audubon Society. Further, Essential and its community partners have maintained it as a rearing site for native freshwater mussels, an invaluable filter feeder that improves water quality. The removal of two dams upstream of this precious resource was identified as having positive impacts to water quality, community recreation, and the local ecosystem, and the project was honored with an environmental award from the local county. We continue to partner with the local chapter of Trout Unlimited on habitat restoration and stocking efforts to enhance the habitat and recreational value.

This [video profile](#) explains in further detail the environmental impacts of this dam removal and the steps Essential took to return this waterway to nature.

### SPOTLIGHT

#### Restoration Projects

Across our states and utilities, Essential works with community partners to complete on-the-ground restoration projects including tree plantings, stream channel restorations, stormwater management, and agricultural improvement projects. For nearly twenty years, we have worked with nonprofit and governmental partners in Pennsylvania on a grant program called TreeVitalize Watersheds. With Essential's support, our partnership has restored over 1,000 acres with native species and volunteers have planted about 200,000 trees. Essential also partners with Tree Pittsburgh in support of its mission to restore and protect the urban forest. In addition to financial support, Essential volunteers have also worked with the group. There are many other examples of active employee engagement across our footprint, including Ohio team members planting hundreds of trees in a wetland to restore a bare canopy.

**Essential funds the Summer Tree Care Training Program, which provides job training opportunities for individuals interested in horticulture and urban forestry, and the Forest Steward Volunteer Program, an initiative that is designed to engage volunteers in tree care and reforestation in parks and other publicly owned forested areas around Philadelphia.**

All of these initiatives have had profound ecosystem benefits, such as reducing air pollution, enhancing open space, and improving wildlife habitats. Additionally, it has improved water quality through the stream bank stabilization, temperature cooling, soaking up of contaminated runoff, and recharging groundwater.



# EMPLOYEES

**Human Capital Management**

**Board Oversight of Human Capital Management**

**Health and Safety**

**Engaging Our Employees**

**Benefits and Compensation**

**Employee Development and Training**

**Diversity, Equity and Inclusion (DE&I)**



## Human Capital Management

As a premier infrastructure company, Essential offers a wide array of exciting and challenging opportunities for careers that support our mission to provide natural resources for life.

We recognize our 3,000+ employees are our greatest asset in delivering life's most essential resources, and we seek to build a talented, skilled and diverse workforce that values teamwork as well as a steadfast commitment to our customers and environment. The Essential companies, including our Aqua and Peoples utilities, are committed to providing professional opportunities for career growth, competitive benefits packages and a respectful workplace for every employee across the states we serve. We're dedicated to creating a culture that empowers employees, where all people feel welcomed, respected and recognized for their contributions. At our core, our team is about respect, integrity and the pursuit of excellence.

## Board Oversight of Human Capital Management

Essential's board of directors takes a keen interest in all aspects of human capital management and recognizes that our ability to attract, retain, and develop exceptional talent is a key strategic driver for our organization. The Chief Human Resources Officer regularly presents updates to the board, engaging in strategic discussion with the group regarding various topics as outlined below.

### HUMAN CAPITAL MANAGEMENT IN THE BOARDROOM

- |   |  |
|---|--|
| Talent strategy that supports business strategy | Executive and employee compensation                            |
|   | Corporate culture  |
| Performance incentive structure                 | Workplace diversity and inclusion, including diversity targets |
| Pay and promotion equality                      | Succession planning  |
| Employee engagement                             |  |
| Workplace safety                                |  |





## Health and Safety

### SAFETY AS A PRIORITY

Safety is one of Essential's primary commitments. Through continuous improvement efforts, we are establishing a high performing and cohesive safety program across our gas and water businesses. With this program, we proactively manage employee safety risks, support a healthy safety culture and position Essential as a leader among peers through safety prioritization and encouragement of safety ownership at all levels. Our commitment to safety is highlighted through the firm implementation of our safety program, which is flexible and adaptive in order to meet the varying needs of our complex businesses. The core components of this program include:

#### Management Commitment

Essential's leaders are dedicated to supporting safety by incorporating it into corporate targets and goals, such as Essential's short-term incentive plan (20% weighting). Focusing on these goals not only helps us compare ourselves to industry peers but also helps us to evaluate ourselves with an eye toward our own past performance. With this commitment, we emphasize the outcomes of our safety efforts, which concentrate on striving towards zero injuries and accidents. Senior leadership and safety staff receive weekly reports of both the current week's incidents and totals for the year.

In 2023, our water and wastewater operations joined our gas operations in implementing a Senior Leadership Safety Council, Safety Steering Committee, and individual state safety committees. By the end of 2023, we are further implementing division or facility safety committees. The regular meetings focus on specific topics to the group as well as communicating between the committees to ensure that front line safety concerns are raised to the appropriate level, even senior leadership, to address.

#### Employee Engagement

The basis of our safety culture is an engaged workforce, which is nurtured through positive reinforcement of safety program participation, establishing mechanisms for employees to raise safety concerns, rigorously addressing hazards and thoroughly investigating incidents. Not only have our employees internalized their authority to stop work but are also actively involved in identifying safety solutions. In this way, we promote a speak-up culture and work to proactively address the safety hazards our employees may face. For those hazards, we work to communicate to all levels of our workforce to share lessons learned through safety briefs, newsletters, internal website publications and all-employee video events.

## Health and Safety (continued)

### Hazard Identification and Mitigation

Identifying the hazards that our employees face is paramount to maintaining our safety culture, and mitigating these hazards is key to protecting our work family. Therefore, safety hazard analysis is one of the most critical aspects of our safety program and is a focus of our safety program auditing program.

Hazard recognition and control are also integral to our incident investigation processes and emergency response plans. Essential employees have access to an anonymous helpline and website, which is available 24/7/365 to confidentially report concerns regarding ethics, compliance Or safety issues. We also have a 24/7/365 nurse care line used on all calls other than emergencies that require an immediate emergency room visit. There is a concurrent process to engage our worker’s compensation carrier and an occupational clinic. Through these hazard identification efforts, we work to control our risks, with management and employees working together to either eliminate hazards or control the threats to employee safety. The effectiveness of the controls is reviewed and improved during root cause analyses of incidents and near misses. We actively participate in industry safety efforts through the American Gas Association (AGA) and the National Association of Water Companies (NAWC).

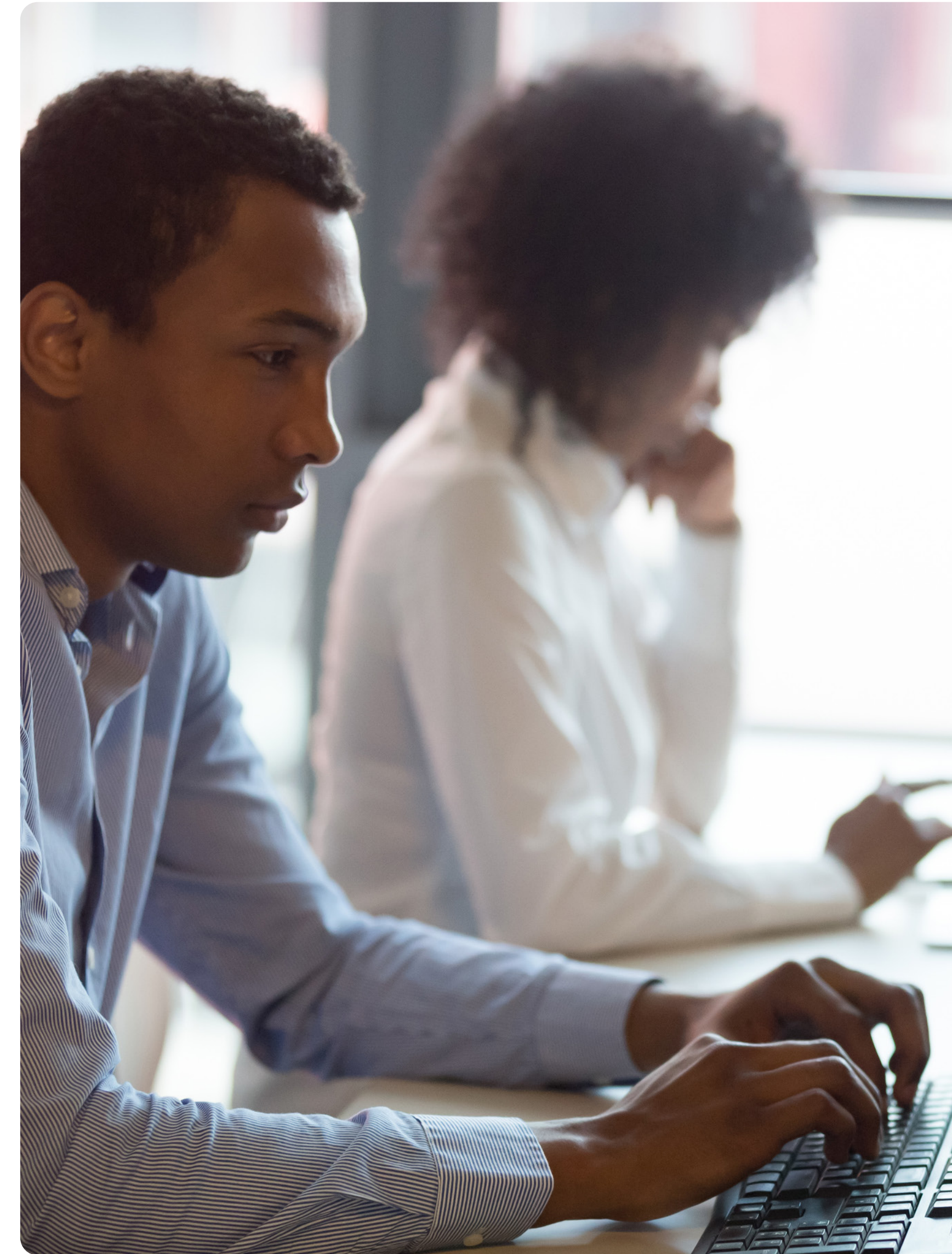
A near miss program, named Safety Learning Opportunity internally, has been in place for Essential’s gas operations for many years and was implemented in 2022 for its water and wastewater operations. This program spans from the traditional reporting of behavioral near misses to reporting of unsafe conditions, environmental potential, potential property damage and last barrier challenged incidents. We have empowered our employees with “stop work authority” to shut down work to reassess any dangers. A safety alert is issued within one week of any injury and this is followed by a more in-depth investigation. These findings are then shared with leadership and presented to all managers and supervisors on weekly calls throughout the company.

### Safety Training

Another important tool to reduce safety risks in the workplace is through effective safety training. Training is vital for employees to understand the safety practices and expectations that are part of their jobs. Training also empowers employees to recognize safety hazards in the moment and take steps to correct them to prevent a potential injury. Essential provides safety-related training through multiple methods, from in-person courses to on-the-job training, to computer-based lessons, and informal safety discussions and meetings. In this way, Essential’s leadership and management team continues to support and strengthen safety in our workplaces.

### Contractor Safety

Across much of our operations, contractors must provide their OSHA 300 log of the previous year’s injury data and their experience modification insurance rating (EMR). Most states hold contractor meetings at least annually to discuss changes, feedback and project information. Our gas operations utilize a contractor safety program, and we are assessing opportunities for expansion to our water and wastewater operations.



## MEASURING SAFETY<sup>1</sup>

No program is complete without effective ways to measure safety performance and make improvements based on these metrics. To accomplish this, Essential monitors safety through a variety of mechanisms. As noted in the table below, safety performance has improved over the past three years across the organization.

## LOST TIME AND RESTRICTED TIME INJURIES (LT/RT)<sup>2</sup>

		2022	2021	2020	Industry Group Average 2022
Rate	Essential	1.2	1.2	1.2	N/A
	Water and Wastewater	1.5	1.2	1.5	3.1 <sup>3</sup>
	Gas	1.0	1.2	0.9	1.4 <sup>4</sup>
Count	Essential	39	40	36	N/A
	Water and Wastewater	24	21	23	N/A
	Gas	15	19	13	N/A

## EMPLOYEE-RESPONSIBLE MOTOR VEHICLE ACCIDENTS (RVA)

		2022	2021	2020
Rate <sup>5</sup>	Essential	2.2	2.9	2.5
	Water and Wastewater	2.5	3.3	2.9
	Gas	1.8	2.4	2.1
Count	Essential	68	78	79
	Water and Wastewater	42	42	49
	Gas	26	36	30

## FATALITIES

2022	2021	2020
0	0	0

## NEAR MISSES REPORTED

	2022
Essential	93
Aqua	39
Peoples	54

<sup>1</sup> This data only pertains to full-time Essential employees.

<sup>2</sup> Employee injuries resulting in days away from work, job restriction, or transfer

<sup>3</sup> According to the Bureau of Labor Statistics

<sup>4</sup> According to the American Gas Association: Rate = Number of Lost Time and Restricted Duty Injuries \* 200,000 / Hours Worked. Same as DART rate.

<sup>5</sup> Rate = # RVAs/miles driven\*1,000,000

# Engaging Our Employees

We believe that our success depends on employees’ understanding how their work contributes to Essential’s overall strategy.

We use a variety of communication channels to facilitate open and direct dialogue, including open forums with our executives, monthly town halls, regular engagement surveys, and employee resource groups and regular performance feedback sessions between employees and their supervisors.

## ENGAGEMENT SURVEYS

Essential’s workforce is surveyed semi-annually to gauge employees’ perspective on key drivers of engagement. Consistent with pandemic era benchmarking available through our survey vendor, workers at Essential reported a reduction in satisfaction with many of the factors contributing to engagement, and overall satisfaction declined between Spring 2021 to Spring 2022. In addition to the challenges of the pandemic, the workforce also navigated the integration of new policies, programs, systems and organizational changes. Based on a combination of these factors, we determined it was helpful to return office employees to the workplace. Leadership recognized employees’ desire to maintain the flexibility that contributed to work-life balance, so we offered hybrid work arrangements to many office employees. Stabilization of systems, organizations and employment related policies and programs led to a gradual increase in employee satisfaction in late 2022.

We have also implemented efforts targeted at building a culture of engagement, including increased communication that provides necessary context for changes in a timely manner, introduction of leadership development programs and localized employee participation in post survey action planning.

# NOVEMBER 2022 CULTURE SURVEY RESULTS

Dimensions	Essential December 2022	U.S. Benchmark as of November 2022 <sup>1</sup>
Percentage of employees who responded to the survey	59%	75%
Employee Satisfaction (happiness)	70	74
Purpose (meaningful work)	80	80
Respectful Treatment (treated with respect)	75	81
Feedback (managers provides feedback for improvement)	74	78
Communication – Team (open communication between team members)	70	77
Empowerment (decisions regarding work)	69	76
Customer Needs (consider their needs)	69	N/A
Resources (needed to do job well)	68	71
Inclusion (diverse perspectives are valued)	68	75
Work Life Balance (balance work and personal life)	67	70
Recommend (great place to work)	67	81
Career Goals (can be met)	66	71

NOVEMBER 2022 CULTURE SURVEY RESULTS (CONTINUED)

Dimensions	Essential December 2022	U.S. Benchmark as of November 2022 <sup>1</sup>
Growth (learn and grow at Essential)	65	71
Compensation and Benefits (understand the competitive value)	65	N/A
Recognition (satisfied with the recognition and praise)	64	70
Demonstrate Culture (demonstrate the stated culture and values)	64	72
Belonging (belong at Essential)	64	72
Purpose – Mission Driven – Culture (makes decisions that align with the mission)	62	71
Procedures (the work is well organized)	62	64
Future Success – Culture (right culture to be successful in the future)	60	71
Collaboration (collaborate effectively to get things done)	59	68
Continuous Improvement (continuously improves the way work gets done)	56	67
Decision Making (satisfied with decisions made)	54	64
Action Taking (meaningful action will be taken)	50	65
Change Communication (changes made)	47	62

Key insights and action items from this survey include the following:

- Communication within departments and teams continues to be strong, however employees noted a challenge with cross department collaboration. Leadership at all levels recognizes this opportunity and is committed to identifying stakeholders and working together to manage expectations for involvement outside of their department.
- The need for information delivered in an engaging, timely manner that is focused on cascading relevant updates on strategies, programs and processes to the workforce led to partnerships between all departments and corporate communications.
- Participation in leadership development programs is strongly encouraged to provide management with insight to demonstrating the skills needed to engage employees.
- The need for communication, training and performance coaching through periods of technological and procedural changes was a key driver of the expansion of the performance management program to the hourly union workforce within our water and wastewater operations.

TURNOVER RATES

	Retirements	Voluntary Turnover (Excluding Retirements)	Involuntary Turnover
Executive/Sr. Manager Turnover	1%	0%	0%
Mid-level Manager	1%	1%	1%
Professional	1%	1%	1%
All Others	3%	7%	3%
Total	4.6%	9.7%	3.2%

# Benefits and Compensation

## COMPENSATION PRACTICES

**We work best together under a single compensation program designed to reward employees similarly who have an equivalent impact on company results.**

We also believe in treating employees who joined the Essential team through acquisitions in a fair and equitable manner, therefore we have focused on harmonizing all employee compensation packages to one Essential program. This ensures that total employee compensation will remain at comparable levels aligned with market medians.

**Essential believes the following:**

- It is critical to pay market-competitive wages targeting pay around the industry market median in the locations in which we operate.
- Individual performance matters. Our goal is to attract, motivate and retain high performing employees at all levels with the highest rewards provided to the top performing employees.
- Organizational performance is a key component of the variable pay programs such as achievement awards, short-term incentives and long-term incentives.
- Detailed market research, peer group benchmarking, and market surveys are to be used to promote a high degree of accuracy in our compensation program.

## LABOR RIGHTS

Because 48% of our employees represented by a labor union, Essential leverages an interest-based approach rooted in partnership between the company and union to achieve goals that are important to both our employees and our other stakeholders. We strive to promote a safe, engaging, inclusive and respectful workplace for all union and non-union employees alike.

**Using this critical approach, we published a board-approved [Labor Rights Policy](#). This framework mutually reinforces our [Human Rights Policy](#) and [Code of Ethical Business Conduct](#).**

**We outline commitments and principles related to the following:**

- Workplace safety
  - Prevention of human trafficking, forced labor, and child labor
  - Standards for working hours and compensation
  - Freedom of association and collective bargaining
- Employee engagement
  - Vendor responsibility
  - Communication and improvement

The company’s hiring model is to hire and employ directly. However, during peak periods, for high volume positions or for special projects and in a limited capacity, temporary or contract workers are used. It is common for these temporary workers to be subsequently hired on as a regular, full-time employee.

**Lowest Entry Level  
Hourly Wage in 2022**

**\$18**

## BENEFITS

Essential recognizes how important benefits are to our employees. That's why we're committed to helping our employees enjoy the best possible physical, financial, and emotional well-being. It's also why we provide a comprehensive, highly competitive benefits package, with the flexibility to make the choices that best meets our employees' needs.

**Employees who average 30 hours or more per week receive full-time benefits. Thus, over 99% of our total employees are offered the following benefits:**

- Medical Plans (PPO, POS & HDHP) with Prescription Drug Coverage
- Dental
- Vision
- Health Savings Account (HSA)
- Health Care Flexible Spending Account (FSA)
- Dependent Care Flexible Spending Account (FSA)
- Voluntary Benefits
- Critical Illness
- Hospital Indemnity
- Accident Insurance
- Legal Services
- Disability (Short-Term and Long-Term)
- Complementary Employer Paid Programs
- Telemedicine
- Diabetes Management
- Hypertension Management
- Employee Assistance Program
- Wellness Program
- Commuter Benefits
- Life Insurance
- 401(k) Savings Plans with Roth and After-tax Options
- Tuition Reimbursement Program
- Employer Non-Elective Contribution
- Employee Stock Purchase Plan
- Work Location Flexibility Program for eligible employees
- One Week of Parental Leave

## WELLNESS PROGRAM

Employee wellness is critical to the success of our business. Studies have shown wellness programs help reduce absenteeism, health care costs and employee turnover, while improving employee morale, strengthening recruitment efforts and enhancing the quality of life for employees. At Essential, we don't only focus on physical health but also financial and mental well-being with our education and benefits offerings.

We work with our employees to fully understand all proactive wellness benefits available to them through our insurance, including smoking cessation, nutrition services and gym memberships. In addition, we offer onsite gyms and cafeterias with healthy meal choices at several of our facilities.

Through our wellness administration and services vendor, employees have access to an interactive website that helps them to reach their wellness goals including eating better, getting fit, reducing stress and managing certain health conditions. Through this website, employees can develop confidential personal health profiles, use online progress trackers and to-do lists to meet their health goals, access self-guided online workshops, participate in interactive competitions and campaigns and access educational tip sheets and recipes.

All employees are also provided regular meetings with a nutritionist as part of their health insurance plan. We have a recommended list of local nutrition resources at various locations across our operations footprint.





## Employee Development and Training

### TRAINING AND DEVELOPMENT

Corporate goals, mission and values drive talent management strategies, so Essential evaluates its talent management programs annually to ensure alignment. The following goals serve as the guiding objectives of talent management programs and services:

- Essential retains employees who are skilled and capable of high performance
- Employees have the ability to grow their career and stay with Essential
- Leaders are well prepared to take on new roles with increasing responsibilities
- Managers lead the culture of engagement and creating a positive work environment where employees want to stay
- Essential reinforces commitments to employee groups by supporting labor relations & diversity and inclusion strategies

Essential's talent management and development model reflects the lifecycle of the employee experience including:

**Selection and onboarding** to ensure the organization has skilled, talented people in the right positions to leverage their capabilities. Through the use of behavioral based interviewing, assessments for leadership roles, and objective selection criteria, the process for identifying people for jobs provides both the organization and the candidate with the ability to mutually determine fit.

**Foundational skills and capability programs** are designed to ensure expectations are clearly understood and that employees have the skills necessary to adapt to changes in technology, procedures and goals. These include structured corporate and job specific orientation, procedure training and assimilation programs for all employees. A formal leadership curriculum for supervisors and managers ensures they have the necessary skills to manage and lead employees in an engaging, objective manner.

**Performance management and development programs** provide the necessary feedback mechanisms to ensure employee efforts are meeting expectations. Employees have the support they need to be successful in the organization through coaching and training. All employees receive goals and feedback through the annual performance management program consisting of both a mid- and year-end performance feedback sessions.

TRAINING AND DEVELOPMENT (CONTINUED)

Using the best practice 70-20-10 approach to development, Essential recognizes 10% of acquiring new knowledge occurs through a formal learning experience, 20% of development occurs through feedback from assessment and coaching and 70% of development occurs when an employee applies the formal learning and feedback in on the job and related scenarios. Formal training sessions reflect this approach as well by introducing skills, practicing the techniques and receiving feedback in a supportive environment.



Essential contributes to personal and professional growth by providing several learning opportunities through partnerships with one of the leading online learning providers, business school certificate programs, tuition reimbursement for post-secondary degree granting programs and individual career coaching. Ninety-three percent of eligible employees utilize professional development courses offered by Essential. In addition, recognition programs are in place to support retention and acknowledge employees’ contributions.

Essential has organizational workforce planning programs to ensure the company has the talent it needs for the future. We have designed workforce analysis and succession planning programs to identify future staffing and skills needs. By conducting stay interviews with key performers, Essential learns where talent risks may arise. Leadership development partnerships with Drexel University and the university-based business school certificate programs through ExecOnline are available to help develop leaders for advanced roles in the organization. In addition, Essential forms partnerships with community-based organizations to provide subject matter expertise and labor market career development programs to serve as a source for developing candidate pools. Employees’ career goals are supported by offering them growth and development opportunities; they are encouraged to actively participate in development discussions with their supervisors and the talent management team.

Percent of eligible employees who utilize professional development courses offered by Essential in 2022



Internal hiring rate in 2022



## Diversity, Equity and Inclusion (DE&I)

Our teams work diligently, day in and day out, to provide the natural resources our customers need to run their homes and businesses.

It is Essential's responsibility to support them by creating an environment where people of all backgrounds, ages, races, abilities and sexual orientations can collaborate, learn from each other and thrive. We believe we can build an even stronger company the more we focus on growing an equitable and inclusive workforce – one where all employees know they are valued and respected for who they are and for the contributions they make.

We have multi-objective approach to transition toward a more diverse and inclusive company. Our strategies include:



**Driving leadership commitment and accountability to an inclusive, equitable and diverse workforce**

**Fostering an inclusive culture**

**Building and retaining diverse workforce**

**Our goal is to reach 17% employees of color, up from about 16% as of year-end 2022.**

In 2021, we also added our new diversity goal (5% weighting) to our short-term incentive plan. By tying our diversity targets directly to executive compensation, we are encouraging our management team to prioritize and further building diversity in our operations.

**We have already seen success in our efforts. In 2022, our diversity hiring for the organization grew by more than 16% from 2021.**

Twenty-two percent of the management team comprised is of women and 11% are leaders of color. More than 55% of the board of directors is diverse, including 33% female directors.

We are proud of the progress we have made in diversity, but we believe we can improve, particularly when engaging our customers, partners and peers in our DE&I efforts. We have a range of diverse recruitment tactics, many of which are supported through diversity associations and job boards for minorities, veterans and women engineers. We also recruit new talent from local community colleges and city-based universities.

**Diversity of backgrounds, ideas and experiences is essential to our culture and the way we do business. Creating an environment where our differences are valued and where every person feels a sense of belonging and engagement supports a thriving organization that cares about our customers.** Essential regularly conducts education and unconscious bias workshops to foster better understanding of points of view and how pre-conceived notions impact relationships at work. We also want to ensure employees of color experience equity and inclusion at Essential. Essential hosts Diversity, Black and Women's Employee Resource Groups to help ensure our employees feel supported in their professional growth at all levels.

AFFINITY-BASED EMPLOYEE RESOURCE GROUPS (ERGs)

ERGs are voluntary, employee-led groups of coworkers with shared characteristics or life experiences that foster a diverse, inclusive workplace aligned with organizational mission, values, goals, business practices and objectives. Benefits of ERGs include the development of future leaders, increased employee engagement and a strong culture of inclusion, which creates fertile conditions for diversity to thrive. We have listed, below, the affinity-based ERGs that are currently active at Essential, but we encourage and support formation of new groups, which we anticipate we will have in the near future.

<div>  </div> <div>Employee Resource Group</div>	<div>  </div> <div>Goal</div>
<div> <b>Diversity and Inclusion Council</b>            (Currently open to employees of our gas operations)         </div>	To create an environment that is inclusive, drawing upon the strength of our diverse workforce to exceed the expectation of our customer, business partners, and shareholders
<div> <b>Veterans and Military Resources Committee</b> </div>	To provide an active community for all veteran and military members and the individuals who support them
<div> <b>Pride Resource Group</b> </div>	To create a more inclusive company that promotes cultural awareness and employee wellness to ensure LGBTQ+ employees feel a sense of belonging at Essential and in their communities
<div> <b>Black Resource Group</b>            (Currently open to employees of our water and wastewater operations)         </div>	To support Essential’s diversity, equity, and inclusion initiatives and are focused on breaking down societal norms that divide us and sharing information about Black experiences, challenges, opportunities, and achievements.
<div> <b>Women’s and Women in Energy Resource Groups</b> </div>	To create a culture where women can thrive, succeed and have a voice.

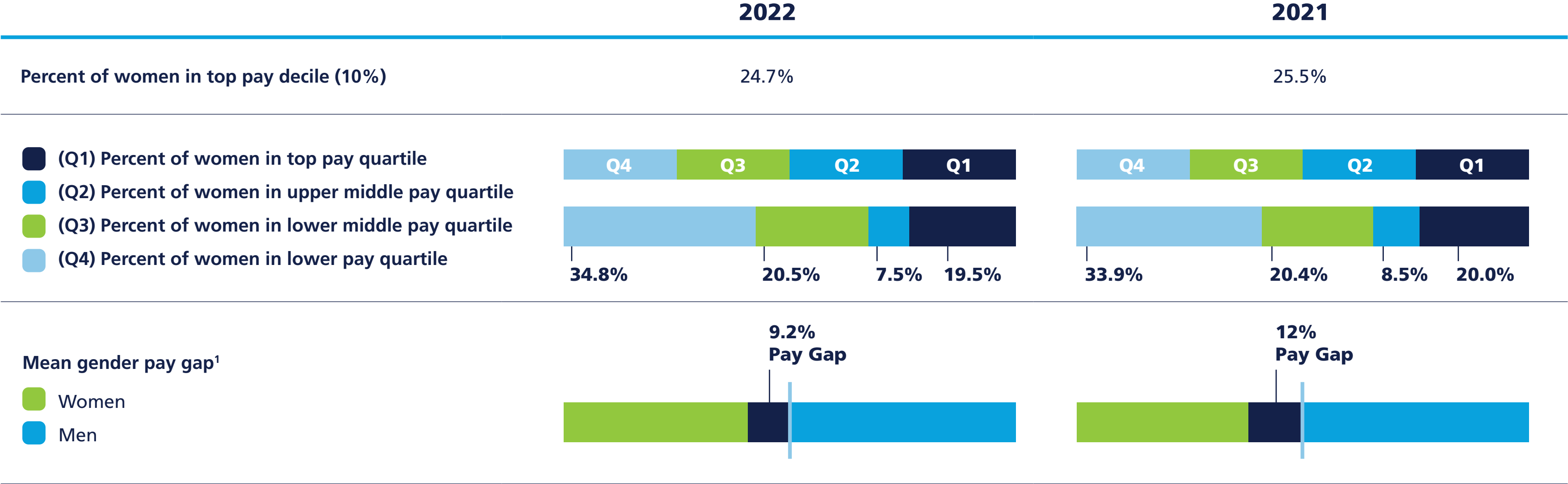
SPOTLIGHT

Pride Resource Group

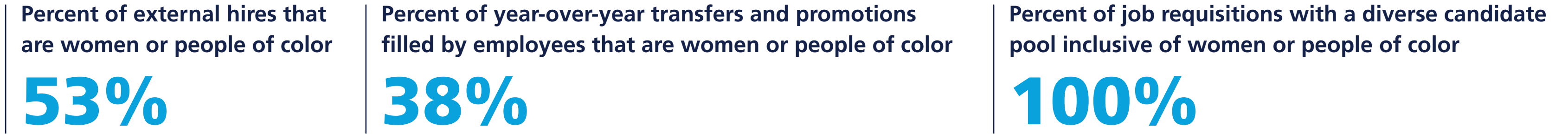
Essential’s Pride Resource Group was founded in 2021 to create a safe place for LGBTQ+ employees to meet with their allies, be heard and work together to make positive change for workplace inclusivity. The group's executive sponsor is Essential's Chief Human Resources Officer. Serving employees with a broad range of identities, the group is open to all employees who support LGBTQ+ rights and equality. While discriminating against workers for their gender identity or sexual orientation is illegal and prohibited as per Essential’s [Equal Employment Opportunity and Anti-Harassment Policy](#), there is still much work to be done for all LGBTQ+ employees to feel comfortable in many workplaces. The Pride Resource Group works to combat such challenges to improve the experience of LGBTQ+ employees at Essential.

Since its founding, the Pride ERG has had many accomplishments, including growing its membership, hosting educational programs, discussing opportunities to improve employee experience at Essential, organizing social events, raising awareness of LGBTQ+ issues, supporting local philanthropies and events and facilitating dialogue among its members in a safe and caring space.

COMPENSATION EQUITY FOR WOMEN



HIRING AND ADVANCEMENT

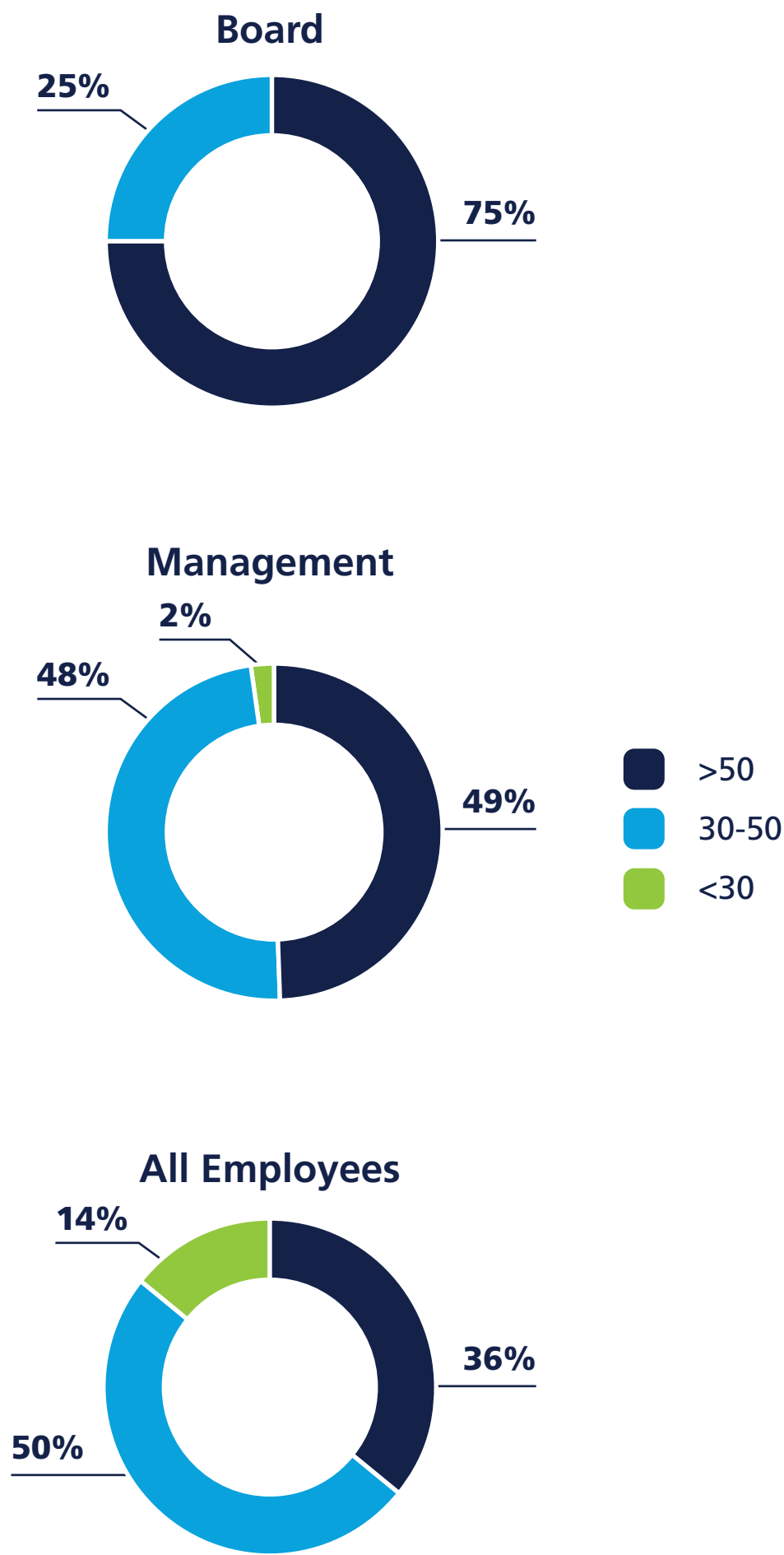


GENDER AND RACIAL DIVERSITY<sup>2</sup>

Essential has published its full, unmodified EEO-1 summary table as of 12/31/21 [here](#). The EEO-1 Summary Table is the current benchmark for companies to disclose gender and racial diversity data. With a format and methodology set by the federal government, this table is directly comparable to the same disclosure made by other companies. Essential has not modified the established categories and the only changes are related to formatting for ease of review. Further, our EEO-1 Summary Table is inclusive of all Essential operations.

Our Equal Employment Opportunity and Anti-Harassment Policy is located [here](#).

AGE DIVERSITY



# CUSTOMERS

**Affordability and Access**  
**Customer Experience**

Customers

Our customers are our neighbors, our friends our families, and a deep commitment to our customers and communities is embedded in every fiber of our company.

We strongly feel that each and every customer deserves safe and affordable access to water, their local streams and habitats should sustainably receive safely treated effluent, and their gas service should be reliable and low-cost. Our responsibility to do right by our customers is foundational to delivering essential resources for life.

Affordability and Access

WATER AND WASTEWATER OPERATIONS

Essential recognizes that providing clean, safe, reliable water and wastewater service at reasonable rates is a fundamental tenant of our mission and expressed clearly in the [Human Right to Water Policy](#). To do this, we strive every day to operate efficiently, encourage water conservation and prudently invest in aging infrastructure. This [video](#) sheds light on how customer rates are prudently reinvested into modernized infrastructure and efficient operations, using our Pennsylvania utility as an illustrative example that can be applied across our footprint.

However, even with planning and conservation practices, there are low-income customers in our communities who have difficulty paying their bills. These issues occur in any area, regardless of the location, demographic or income distribution. In addition, a variety of issues can impact customer bills, including the condition of the infrastructure and work that has been done in the system, ability to utilize single tariff pricing, weather, irrigation, household usage or the potential of a leak. Generally, the cost of providing water service is a main driving factor behind water rates which, in turn, impact customer bills.

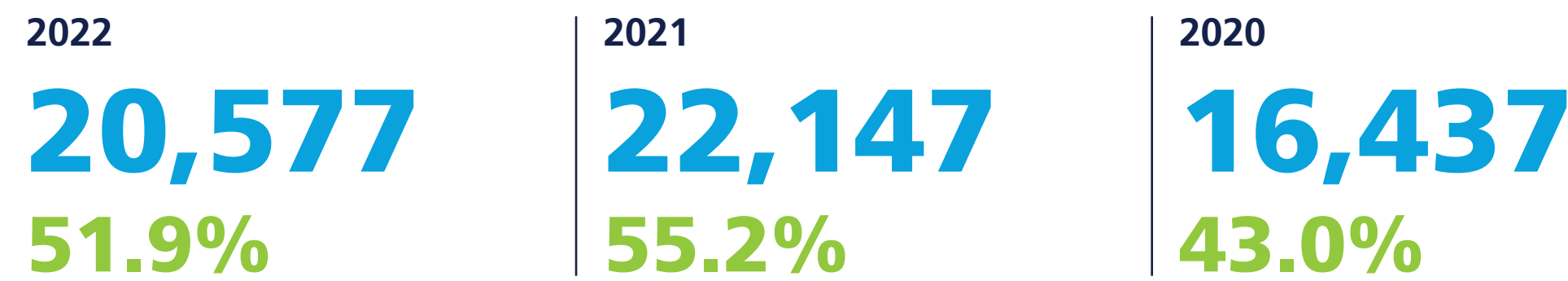
Essential works proactively with customers who have difficulty paying their bills, including offering payment plans and recommending conservation tips. In several states, we locally operate low-income assistance programs. For example, in Pennsylvania, Essential has launched an assistance program for limited income households designed to both reduce current monthly bills through discounts and to assist in eliminating prior arrearages through monthly bill credits for timely payments made. The program also offers water conservation kits that provide information and tools for how to use less water. In 2023, Essential implemented a water repair program, designed to assist limited income homeowners with unexpected water repairs.

Aqua Aid is a customer assistance program operated in Illinois and New Jersey through partnership with Salvation Army and NJ SHARES. Essential has actively participated in the implementation of the federally administered Low Income Household Water Assistance Program (LIHWAP) that was initiated in December 2020 and received additional funding through the American Rescue Plan of 2021. LIHWAP programs, offered in all of Essential’s 10 states, provided an important resource to low-income customers seeking assistance with their water bills.

Customers are encouraged to visit our newly updated Aqua website for a lookup tool to download a report detailing their specific rate information. Our Customer Service Center also includes helpful information on how to read your bill and how to contact us if you have any questions.

RESIDENTIAL WATER DISCONNECTIONS

Number of residential customer water disconnections for nonpayment, percentage reconnected within 30 days



*Note: Given the unique circumstances surrounding the COVID-19 pandemic, 2020 residential customer water disconnection data is not comparable to subsequent years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.*

GAS OPERATIONS

Providing gas service at reasonable rates is critical for Essential and our customers.

Pennsylvania customers may be eligible for the Customer Assistance Program, which provides monthly payments based on household income while also offering additional credits toward arrearages as each monthly payment is made. Lower income customers in Kentucky can also receive assistance with their winter heating bills through the Delta Energy Assistance Program. Pennsylvania and West Virginia customers may also be eligible for assistance through Essential’s Hardship Fund, administered by Dollar Energy Fund. The Hardship Fund brings together shareholder dollars and customer donations to provide support to those who are unable to pay their utility bill.

Essential offers the Pennsylvania Low-Income Usage Reduction Program (LIURP) to qualified residential customers. This program implements energy efficiency measures in low-income households in order to help them reduce their energy consumption. Measures include heating system improvements and replacements, insulation, caulking, weatherstripping and tank improvements and replacements. LIURP targets customers with high energy usage and accepts enrollment in a bill assistance program as a form of income qualification. The program is implemented in collaboration with Together Pittsburgh, Re-Energize Pittsburgh, the Weatherization Assistance Program and the local electric utilities. Essential partners with local nonprofits in community assistance agencies to educate them on LIURP and encourage referral of eligible customers. While the LIURP program is targeted to those living at 150% of Federal Poverty Level, we are authorized to provide services to customers up to 200% of Federal Poverty Level if there are special needs. Essential also offers emergency furnace and gas line repair and/or replacement to income-eligible customers that own their home in Pennsylvania. This program extends to some eligible renters as well.

We also encourage customers in need to apply for the Low-Income Home Energy Assistance Program, a federally funded assistance program designed to help customers with their home heating needs. States administer the program, typically through the Department of Human Services, and eligibility varies across Essential’s footprint in Pennsylvania, Kentucky and West Virginia.

Our online [Program Finder](#) guides gas customers through the process of identifying and applying for assistance. Promotion of available resources and programs is a key component of our customer communication strategy which includes using multiple channels from traditional bill inserts to email and social media. Essential has developed a comprehensive consumer education and outreach plan and partners with local social service agencies to ensure its customers are aware of these resources.

GAS AFFORDABILITY METRICS<sup>1</sup>

	2022	2021	2020
Average retail gas rate per MMBtu for (1) residential, (2) commercial, (3) industrial customers, and (4) transportation services only	\$14.49	\$10.41	\$8.03
	\$12.16	\$8.55	\$6.55
	\$11.96	\$8.37	\$6.23
	\$1.87	\$1.74	\$1.62
Typical monthly gas bill for residential customers for (1) 50 MMBtu and (2) 100 MMBtu of gas delivered per year	\$72.32	\$57.35	\$48.34
	\$131.17	\$101.22	\$82.19
Number of residential customer gas disconnections for non-payment, percentage reconnected within 30 days <sup>2</sup>	18,827	27,583	1,131
	57.4%	63.2%	60.9%

<sup>1</sup> Gas rate data disclosed pertains only to Peoples Natural Gas Division of Peoples Natural Gas Company LLC and excludes Peoples Gas Division of Peoples Natural Gas Company LLC, as well as the legal entities of Delta Natural Gas and Peoples Gas West Virginia. Peoples Natural Gas Division represents over 85% of all gas customers and is deemed materially representative for disclosure purposes.

<sup>2</sup> Given the unique circumstances surrounding the COVID-19 pandemic, 2020 residential customer gas disconnection data is not comparable to subsequent years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.

## Customer Experience

Essential is consistently focused on improving the customer experience through our capital investments that impact the reliability of the services we provide; the interactions customers have with our company.

We have the resources and channels in place to respond to reports of emergencies 24/7, and we utilize social media to keep customers informed geographically. Our customer-facing websites allow for self-service options to assist customers quickly. Our water, wastewater, and gas utilities are equipped to handle calls from people who speak a language other than English. Metrics related to customer experience comprise 10% of Essential's short-term incentive plan, to further ensure this remains as a top priority for our company's management.

Our goal is to drive improvement in overall satisfaction, customer effort, field service experience, and first contact resolution.

**Essential's water and wastewater operations scored #1 in customer satisfaction with midsize water utilities in the Midwest region in the J.D. Power 2023 U.S. Water Utility Residential Customer Satisfaction Study. In 2022, Essential's gas operations scored #1 in the overall quality of service, according to the Pennsylvania Public Utility Commission Customer Service Performance Report.**

We are committed to efficient processes, technology, customer engagement and supplier partnerships across our Essential footprint.

- We **standardized contact center technology** for our water, wastewater, and gas utilities. The technology includes an Integrated Voice Response (IVR) system, workforce management, call recording, a quality management system, and improved reporting. This suite of enhancements allows us to better serve our customers.
- Our **Voice of the Customer survey** is sent to customers who had a recent interaction with the company (in the field, through our contact center, online or via any of our self-serve options). Through this, we gather feedback from customers regarding their overall experience with us and individual interactions with our contact center and field services.
- In 2023, Essential launched the Customer Tangible program. Over the next three years, we will create a **more robust omnichannel experience**, giving the customer the option to connect by phone, email, chat, and social media. Additional technology such as a refreshed customer portal, will provide our customers the ability to self-serve for activities such as moving, appointment scheduling, payment arrangements and setting up recurring credit card payments.



# COMMUNITY

**Charitable Giving and Essential Foundation  
Employee Volunteerism**



## Community

While Essential operates in several states across America, our impact is felt locally because we are an integral part of each community we serve.

We primarily source water and gas nearby our customers, we do business with many local suppliers and our employees often live in the communities they serve. We have team members in our treatment plants, offices and facilities all across our footprint working to provide reliable, essential services to their families and neighbors. Our water, wastewater and gas utility services make houses into homes, protect public health, support commerce and enable communities to flourish.

**We understand that we thrive when our communities thrive.** Our culture of giving back is felt at every level of the organization, whether it is through donations from our Essential Foundation and employee giving campaign or volunteer time put in by our dedicated team members. As a utility, we make a long-term investment in the well-being of the areas we serve, and we partner with other organizations who do the same.

## Community Engagement

As a public utility, we believe it is critical to transparently engage with our community stakeholders through constructive dialogue. Each state where we operate sets regulations that govern public participation hearings. This is an opportunity for Essential's customers and neighbors to learn about and provide input regarding company plans and projects that will affect their community or utility service. With official recordkeeping and facilitation of these events, we consider such public hearings a core element of our stakeholder engagement activities. Feedback from this dialogue is reported to senior management and the board of directors.

We encourage our customers and community to visit the website of their state's public utility commission, or equivalent regulatory body, to learn more about the specific processes, procedures and regulations that govern this engagement.

## Charitable Giving and Essential Foundation

**In 2022, Essential's charitable giving to 501(c)(3) organizations totaled \$3.9 million, supporting the mission work of more than 400 nonprofits.**

Our philanthropic efforts are led by the Essential Foundation, which seeks to enhance the quality of life for our customers by engaging in collaborations that result in measurable success for the communities we serve and support the mission, vision and values of Essential Utilities.

Primary areas of giving include environmental initiatives, direct human services, emergency services, community economic growth, education, and employee support, including our matching gift program. A particular focus is given to projects that help a diverse customer base and further goals of equity and inclusion.



## SPOTLIGHT

### Employee Giving Campaign

Essential invites all its employees to take advantage of a gift-matching program. Essential matches 100%, up to a maximum of \$500 per calendar year per employee, for personal contributions made by an employee or their spouse or domestic partner to qualifying nonprofit organizations.

For more than two decades, Essential's partnership with the United Way has instilled a culture of giving among team members. Through its annual workplace giving campaigns, Essential builds collective impact while encouraging employees to donate in a way that is meaningful to them. Each year, Essential team members give to a variety of initiatives, including health and human services, education, housing and hunger relief, the environment and animal welfare. Each dollar raised through the United Way campaigns is matched by the Essential Foundation to maximize impact for each nonprofit.

**During Essential's 2022-2023 campaign, United for Our Communities, more than 1,860 employees pledged \$362,985 to support nearly 500 community organizations across the company's footprint. From 2020-2022, Essential and its employees raised more than \$2.3 million through these campaigns and the company's match.**



## SPOTLIGHT

### Eat, Drink, Help

Since 2016, Essential Utilities, through our gas operations, has organized a dynamic and innovative program called [Eat, Drink, Help](#) to engage local businesses and support the community. Through this program, we partner with a local business and let that business choose a local charity to receive a donation from Essential for every customer purchase. By directly pairing up local businesses with local charities, our Eat, Drink, Help Program supports neighborhood small businesses, empowers charities and helps to build stronger communities. Over the years, dozens of businesses have been able to pay it forward to more local charities of their choosing. This type of personal, "local to local" partnership gives us a chance to get to know the businesses that make our neighborhood so special.



## Employee Volunteerism

We recognize that volunteer service can be as meaningful to our employees as it is to the community organizations we serve. As a mission-based organization, volunteerism allows us to expand corporate social responsibility activities by enabling employees to attend company-sponsored volunteer events at local community organizations. It is an opportunity for employees from different sectors of the company to engage with one another and encourage conversation and dialogue. The ripple effect of volunteerism within our culture cultivates and encourages collaboration and teamwork and fosters an environment where employees feel inspired to play an integral role in making a positive impact in their region. Essential's paid volunteer time supports food banks, shelters, environmental projects, youth mentoring programs, health-based initiatives and critical resources for low-income families. Employees report volunteer hours for tracking purposes throughout the organization.

In 2022, hundreds of Essential employees across corporate, water, wastewater and gas operations tracked more than 3,850 hours of paid volunteer time. Our employees came together to volunteer their time on a number of projects impacting their local communities.

**We packed 2,500+ backpacks with school supplies for children in need, outfitted low-income individuals with warm clothes for winter, fed 3,000 families by supporting local food banks, collected vital items for refugee families, mentored dozens of students through our partnerships with schools and nonprofits, built infrastructure in developing countries through humanitarian programs and much more!**

### SPOTLIGHT

#### Essential Earth Day

In 2022, out of our deep commitment to natural resources, we created Essential Earth Day to support environmental initiatives and engage our employees in the effort. Throughout April, Essential team members participated in dozens of volunteer events across our footprint in partnership with local environmental organizations. The activities included cleaning up litter from streams, planting trees and gardens, marking storm drains and enhancing outdoor recreation sites.

In its first year, Essential Earth Day saw close to 400 volunteers participate to clean up more than 150 bags of litter and plant more than 1,000 trees and other greenery in our communities. In addition to volunteering, hundreds of team members attended educational presentations to learn about environmental topics and how to live more sustainably. Additionally, the Essential Foundation announced more than \$500,000 in nonprofit grants for environmental causes.

Essential Earth Day has easily become a favorite for our team and our community partners, so we have made this an annual celebration with the goal of growing our impact each year.

### SPOTLIGHT

#### Partnership with Villanova University

Since 2016, Essential Utilities, through our water and wastewater operations, has proudly partnered with Villanova University's Center for Humanitarian Engineering and International Development. Essential employees have joined Villanova students to provide expertise, resources and hands-on support in international projects to address water supply issues in developing nations across South America and Africa. In 2019, the partnership-driven team traveled to Wacuco, Panama, in 2019 to work on several projects, including water quality testing, rehabbing water tanks and upgrading a steel bridge in the community. Although COVID-19 disrupted plans in 2020 to perform service work in Ghana, coordination between Essential and Villanova on other elements of the project continued weekly. In 2022, Essential and Villanova organized a trip to Madagascar, and the partnership seeks further opportunities to take part in projects abroad. Water security and safe access are very personal issues for our team and critical for every human being. We are proud to support communities both inside and outside our operational footprint while supporting the next generation of engineers and scientists.

# GOVERNANCE

**Governance and Ethics**

**Corporate Governance**

**Commitment to Human Rights**

**Governance of ESG**

**ESG Metrics in Executive Compensation**

**Code of Conduct**

**Public Policy Participation**

**Data Security and Privacy**

**Supply Chain**

## Governance and Ethics

An organization is only able to fulfill its responsibilities to its many stakeholders through strong governance and a culture of ethics consistently embodied at all levels of the company. Some issues generally related to governance include the role of the board of directors and how the code of ethics drives the way a company operates. For Essential, we ensure this consistency through how we provide adequate oversight of our ESG activities and strategy, including how we keep the board of directors and leadership abreast of trends. Essential has carefully considered its structure to maximize its ability to carry out its significant responsibilities as a utility with the utmost integrity and ethical foundation.

Essential’s corporate governance [website](#) includes the following governance policies for download:

- Sustainability and Environmental Policy
- Human Rights Policy
- Human Rights to Water Policy
- Political Spending Policy
- Code of Ethical Business Conduct
- Conflict of Interest Policy
- Equal Employment Opportunity and Anti-Harassment Policy
- Labor Rights Policy
- Corporate Governance Guidelines

**These policies comprise a critical complement to this ESG Report and our data disclosures.** As board-approved documents, they represent the most formal articulation of Essential’s ESG commitments to our stakeholders. The performance and achievements noted in our ESG Report are consistent with the directives and bedrock principles the board has explicitly outlined for the organization in these approved policies.

## Corporate Governance

Our Chief Executive Officer is also chairman of the board. The board of directors deliberately determined that this structure of the combined chairman and CEO, along with the position of a strong lead independent director and independent committee chairs, is the most appropriate and efficient approach to managing the company. This provides clear accountability to the execution of Essential’s strategy and results. The lead independent director is elected annually and maintains special responsibilities and authorities to share leadership of the board with the chairman. These are listed in our [Proxy Statement](#).

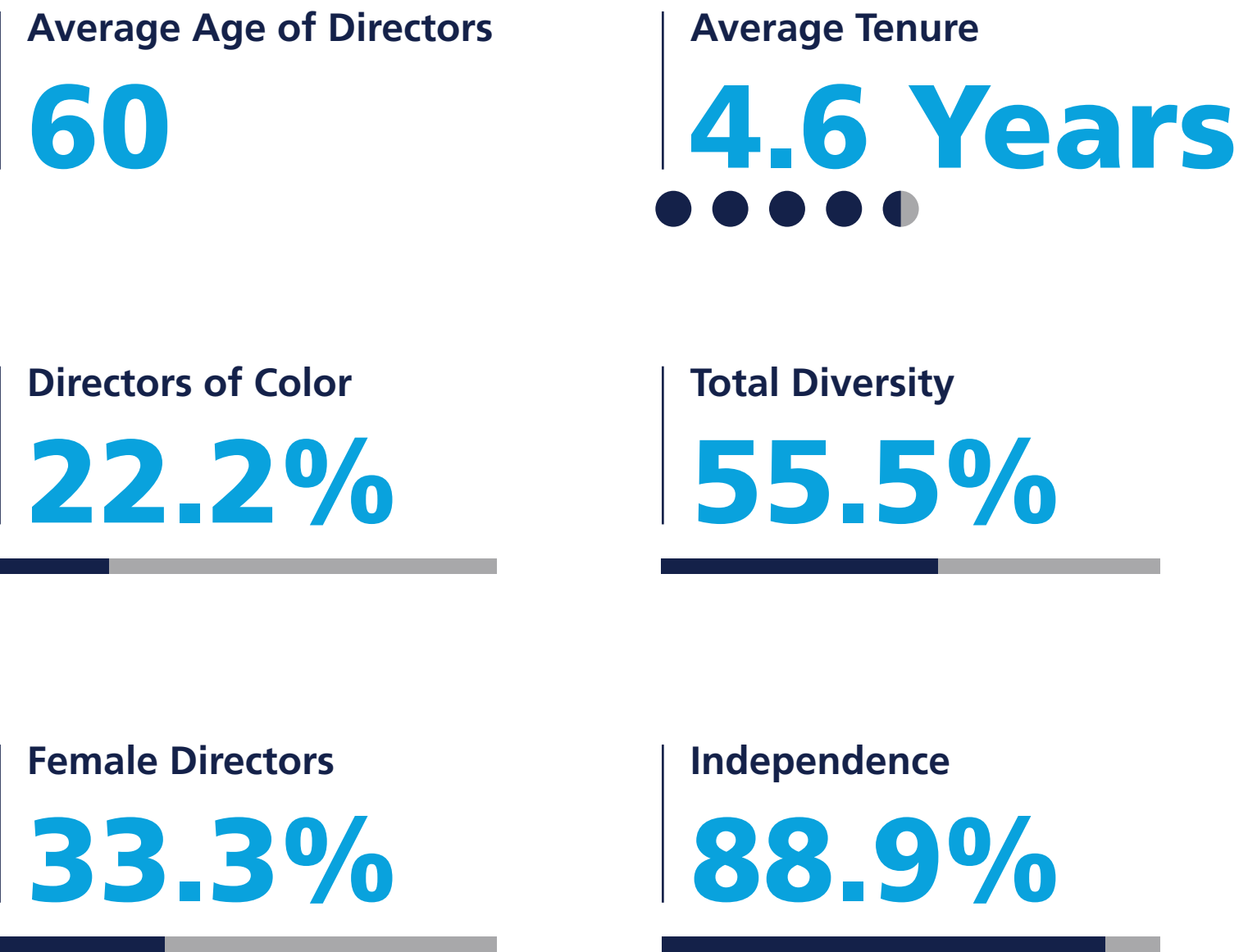
Under our bylaws, the board of directors may designate an executive committee and one or more other committees, with each committee consisting of two or more directors, except for the audit committee and executive compensation committee, which each must have at least three members. The board of directors annually elects from its members the executive, audit, executive compensation, risk mitigation and investment policy and corporate governance committees. The board may also appoint ad hoc committees. The retirement and employee benefits committee, which is comprised of senior management from Essential, reports periodically to the board of directors.

**Fostering board diversity is a tenant of Essential’s corporate governance practice.** When assessing a candidate, consideration will be given to the effect such candidate will have on the diversity of the board. Diversity of the board is evaluated by considering a broad range of attributes, including, without limitation, race, gender and national origin, background, demographics, expertise and experience. Each year, the directors complete a targeted questionnaire that is administered by a neutral, non-affiliated entity to assess the performance of the board and each of the standing committees. Every second year, directors complete a targeted questionnaire to assess the performance of the directors individually.

Both questionnaires elicit quantitative and qualitative ratings in key areas of board operation and function. Each committee member completes questions to evaluate how well the committees on which he or she serves are functioning and to provide suggestions for improvement. In 2022, the lead independent director and the chairman met with each director, provided results to the evaluation to each individual and discussed and discussed the director’s participation, preparation, and performance.

In 2015, the board of directors undertook a multi-year program aimed at refreshing the board to encourage new ideas, expertise and oversight, while maintaining the institutional experience of the then-current directors. As a result, the board of directors, as of year-end 2022, consisted of nine directors, with eight of those directors having joined since 2015. Each of these directors brings his or her own level of expertise and experience. The board of directors is responsible for determining whether each of the directors is independent. The board has adopted corporate governance guidelines that contain categorical standards of director independence that are consistent with the listing standards of the NYSE. Eight of the nine directors meet this definition of independence.

BOARD COMPOSITION



More information about our board of directors can be found in our [proxy statement](#). The board composition noted above is as of 12/31/2022.



Enterprise Risk Management

The primary objective for Essential’s formalized Enterprise Risk Management (ERM) Program is to develop a center of excellence for effective awareness, understanding and management of emerging and existing enterprise-wide uncertainties of every type and every function that can affect the organization, along with the achievement of its strategic business objectives and goals.

Sustainability, when it optimizes costs and resources, drives risk mitigation and decision-making, increases organizational preparedness and affords an ongoing, holistic review of risk across the organization and its individual business functions, is another program objective.

The program’s framework eliminates silos, fosters cross-functional investments into risk understanding and emphasizes the interconnectedness of effective risk management and the organization’s achievement of its strategic business objectives and goals. ERM governance is centrally coordinated and monitored by the Risk Management Department via automated ERM process model facilitation and an electronic risk repository, which yields taxonomies, sophistication and informed decision-making. There is active participation in this process at the highest levels of the organization and across all areas of the business as well.

## Commitment to Human Rights

Essential Utilities is deeply committed to human rights; this care spans across our operations and through all our activities. We recognize the influence and importance our business has on many stakeholders, and we strive to consider and address the impacts our operations have on each of these groups and promote universal human rights in all our practices. Our board of directors is responsible for overseeing human rights risk management and our management team is accountable to the board for ensuring our [Human Rights Policy](#) is effectively implemented. All employees are urged to consider promotion of human rights in their roles and are expected to be strong and ethical community partners. Further, our commitment applies to all suppliers and vendors without exception and is independent of what governments may or may not require.

**As our policy states, we make the following commitments to minimize risk and adverse effects of our operations:**

- Make efforts to avoid causing or contributing to human rights violations
- Mitigate and/or remediate adverse human rights impacts of our operations where possible
- Treat all with equal respect, regardless of their background
- Pursue protections of the rights of all people, including women and minorities
- Prohibit the use of child labor, forced labor, and human trafficking
- Be transparent in our efforts, successes, and challenges

While minimizing and mitigating risk is vitally important, we also believe our operations play a constructive role in both safeguarding and expanding opportunity for human rights development. This is an inherent responsibility of Essential as a supplier of water for our communities and is directly connected to UN Sustainable Development Goal 6, which calls for the “availability and sustainable management of water and sanitation for all.” Our [Human Right to Water Policy](#) makes clear our commitment to providing an affordable and accessible supply of clean, safe, reliable water in accordance with regulations at rates established by governing public utility commissions.

We acknowledge our responsibility to customers while also fulfilling our responsibility to sustainable and resilient communities by investing in our nation’s water infrastructure and protecting water sources and local environments. Coordination of all these activities helps safeguard every human’s right to water. We agree with the November 2002 resolution of the United Nations Committee on Economic, Social and Cultural Rights which both calls for a human right to water and acknowledges this as a “prerequisite for the realization of other rights.”

**We can never take the human right to water for granted and must continually invest in our water infrastructure for future generations.**



## Governance of ESG

### BOARD OVERSIGHT OF ESG

The board of directors is briefed on ESG matters in its regularly scheduled meetings and through various channels and reporting paths. **The corporate governance committee takes primary responsibility for providing board oversight for the company's ESG profile, strategy and activities.** At least quarterly, senior management presents an update to the corporate governance committee of the board on notable ESG matters related both to the company and to the broader industry or ESG landscape. Each meeting also features a deep-dive discussion based on a set theme as outlined in an annual calendar. Various leaders from across the organization are invited to speak to the meeting's theme. For example, the company's Senior Vice President of Human Resources will prepare a special and extensive presentation once per year on the company's human capital management profile. However, should an urgent or important related matter arise in the interim, the corporate governance committee would not need to wait until the themed meeting to discuss the matter.

Related risks are covered under the enterprise risk management (ERM) review conducted by the risk mitigation and investment policy committee of the board and reported to the full board at each of its regularly scheduled meetings. Our general counsel regularly provides the board a report on the progress of the ERM program. Also, the audit committee, informed about ESG-related risks through the compliance and disclosure committees, provides additional oversight. These committees are comprised of the Essential's management. Written reports are provided to the full board at each meeting and, for certain ESG matters, presentations are made to the full board.

The CEO is a member of the risk mitigation and investment policy committee and the executive committee. As such, the CEO provides a valuable voice and perspective to board discussions on ESG matters, as he is separately tasked with the responsibility for the overall direction and strategy related to ESG for operations and aligning corporate growth with consideration of these issues. This arrangement serves as a crucial bridge between the board and our company's management with respect to ESG.



*Note: This image of Essential's board members does not include Mr. Christopher C. Womack, who is included in our presentation of board of directors composition data as of December 31, 2022 but has since departed the Essential board.*

## EXECUTIVE TEAM ROLE IN MANAGING ESG

Flowing from governance of ESG by the board of directors, the management of Essential Utilities is responsible for designing, implementing, reporting and executing a strong and comprehensive program. Every member of the executive team is expected to understand the principles and importance of ESG, be aware of latest developments and trends in their area, identify relevant risks and opportunities and continually seek creative means to foster innovation and contribute to the overall development of the Essential ESG profile. Further, this orientation and focus is disseminated through the organization, and we seek to build company culture around an inherent regard for our communities and environment, in line with our corporate mission and purpose.

**Our CEO is responsible for the overall direction and strategy related to ESG issues for operations and aligning corporate growth with consideration of such issues.** Further, the CEO is the most direct interface with current and future investors in addressing our company's alignment with ESG goals. As such, the CEO provides a valuable voice and perspective and serves as a crucial bridge between the board and our management to facilitate alignment.

In May 2020, Essential Utilities hired an ESG manager, a new full-time role that reports to the chief of staff and is completely dedicated to further developing and maturing the ESG profile of our company. This reflects a larger effort to re-commit our focus to ESG and accelerate efforts to expand and strengthen our program. The ESG manager oversees the reporting process, works toward increasing our level of disclosure, monitors latest trends and emerging best practices, supports existing projects and helps develop new initiatives so that we can continue to grow as a recognized ESG leader within the utilities industry.

**Additional management oversight of ESG is provided by the ESG Oversight Committee, which was formalized in 2020. Members of this group include over a dozen senior leaders from across the organization, each lending a unique and valued perspective.** This group meets at least once per quarter to discuss recent progress with ESG initiatives, industry news and trends, strategic short and long-term planning, approval of various initiatives and policies and to recommend matters to be presented to the CEO and the board.

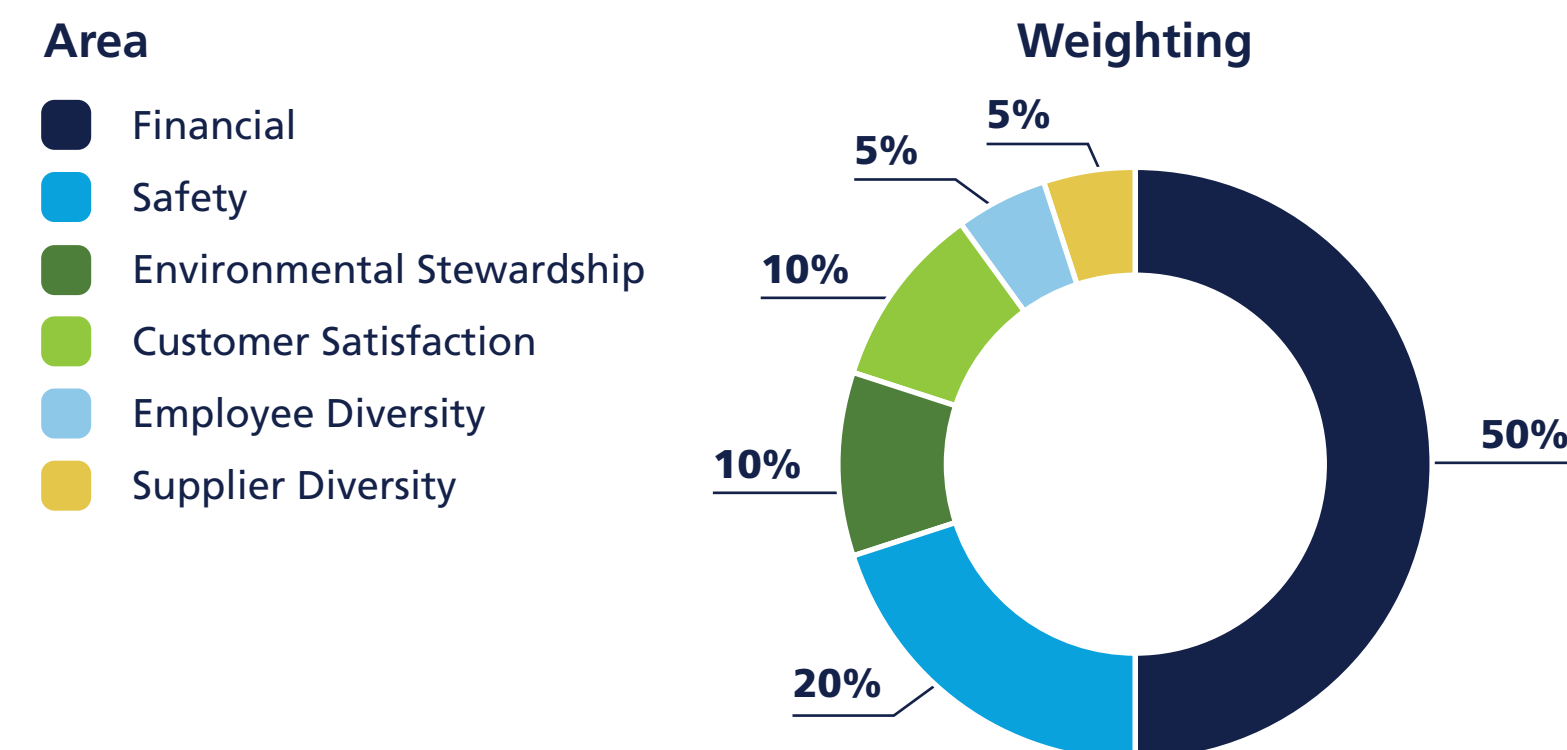
Many leaders and team members across the organization contribute to Essential's ESG profile and program. We encourage our entire leadership team to remain aware of the sustainability trends and issues within their areas and the industries in which Essential operates. We also expect our leadership to engage employees on these matters and infuse the principles and mission of our company within the daily work and priorities of the team.

## ESG Metrics in Executive Compensation

Essential incentivizes its leadership team, as well as eligible employees across the organization, through a short-term incentive compensation plan. This is based on a balanced scorecard approach that promotes our team working in the best interests of all of our stakeholders, from investors to customers to employees and other critical groups. This updated incentive program builds on and supports an already strong foundation of management oversight of these issues. **Notably, half of the weighting of this compensation plan is based on ESG-related metrics, demonstrating the seriousness and attention with which Essential's leadership and board view our broad responsibilities as a utility.**

While further details and illustrations, as well as performance, are provided in our [proxy statement](#), the 2022 short-term incentive plan elements are listed below at a high level:

### 2022 SHORT-TERM INCENTIVE PLAN COMPONENTS



As noted in the [Supply Chain](#) and [Diversity, Equity, and Inclusion](#) sections of this report, in 2021, we added new diversity metrics (10% combined weighting) to our short-term incentive plan in place of individual performance metrics. The goal is to further encourage our leadership to focus on building diversity in our operations and fostering an environment where all feel belonging and support.

# Code of Conduct

Essential’s Code of Ethical Business Conduct reinforces the company’s longstanding tenet for doing business with integrity and in accordance with its core values and ethical standards. The Code emphasizes that maintaining this level of integrity depends upon the conduct of all employees, adherence to our core values and commitment to acting in a safe, legal and ethical manner at all times.

The Code provides specific rules and concrete examples concerning ethical business conduct, but also emphasizes these should be viewed expansively and be broadly applied to business conduct. It encourages employees to discuss potential ethical issues with their supervisors and prohibits any retaliation for raising good faith questions about ethical conduct. Employees may raise ethical issues with the company’s chief compliance officer, any manager or members of the board of directors or the board’s audit committee. A process for making an anonymous report is also provided, with options to file by phone or online through a third-party site. Confidential and anonymous reporting is available 24 hours a day, seven days a week.

While the board of directors has overall responsibility for ensuring ethical business conduct, the chief compliance officer is charged with implementing and enforcing the Code. However, all officers and managers accept responsibility for enforcing and communicating about the Code and are subject to disciplinary action for violations either personally or by employees under their management. Reports are investigated by the chief compliance officer, the audit committee or the full board of directors depending upon the nature of the matter.

Every Essential employee is required to complete annual training about the Code via interactive web programming. Upon completion of the training, each employee must demonstrate a proficiency level by answering a series of questions about the Code’s requirements and their applications to business situations.

## The Code specifically addresses the following topics regarding conduct within the company:

- Recognizing conflicts of interest and their prohibition within the company
- Limiting gifts and gratuities from contractors, vendors and suppliers to nominal value
- Prohibiting corruption and bribery (additional language added to policy in 2022)
- Standards for maintaining accurate records
- Limiting the use of company resources to business purposes
- Restricting personal benefit from business opportunities arising from company business
- Safeguarding confidential information and restricting its use within the company
- Appropriate, safe and secure use of computers and technology
- Guidelines on public communications about business activity and the company
- Activity by the company’s political action committee and political activity by employees
- Respect in the workplace, including issues involving discrimination and harassment
- Maintaining a healthy and safe environment for employees, customers and the public
- Complying with applicable laws and regulations and reporting criminal conduct
- Purchasing and selling company stock and prohibitions on insider trading

## Public Policy Participation

We take our role in the public policy process seriously. We have various outlets to participate in public policy at our disposal. Essential engages with government and trade associations in order to educate and address issues impacting our service. It is important to engage in this activity to support future and current candidates who want to maintain our mission by providing a strong water, wastewater and natural gas distribution infrastructure for the next generation, protect the environment and allow our company to remain financially viable. In addition, our management team can participate in the Essential Political Action Committee (PAC). Transparency is critical to building trust in political activities and the activities of the PAC are overseen by a board that meets on a quarterly basis. All PAC and lobbying expenditures are reported in accordance with federal, state and local laws. For further information, please refer to our [Political Spending Policy](#).

An illustrative example of Essential's leadership and advocacy role for improving the health and safety of its customers was the support and implementation of Act 120 of 2018 (Act 120) by **addressing the replacement of lead service lines (LSLs)**. Lead poisoning is a preventable environmental health hazard and, if not addressed, affects customers regardless of race, ethnicity or socioeconomic status. On October 24, 2018, Governor Wolf signed Act 120 into law, thereby amending the Public Utility Code at 66 Pa. C.S. § 1311(b) to address the accelerated replacement of customer-owned LSLs. Given the health hazards associated with lead, Essential actively supported this legislation and supported similar legislation in New Jersey and is actively replacing LSLs in the state as well.

More recently, Essential has been in close collaboration with industry associations to advocate for both state and federal-level **funding for customer assistance in affording water and wastewater services**. Essential, and the Pennsylvania chapter of the National Association of Water Companies (NAWC), have urged the Pennsylvania state legislature to continue and expand a support program that was put in place during the COVID-19 pandemic. Pennsylvania's Low-Income Household Water Assistance Program (LIHWAP) has supported tens of thousands of customers in the state, and we hope that it continues to do so. On a federal level, Essential supported industry efforts to formally study the issue of water affordability and advocate for the creation of a permanent national assistance program.





## Data Security and Privacy

Essential is committed to the safe, secure and reliable operation of its information technology and operations technology systems. Essential has a robust and longstanding cybersecurity program, which is aligned to the National Institute of Standards and Technology (NIST) Cybersecurity Framework.

**As cybersecurity threats continue to evolve and increase in both sophistication as well as complexity, the Essential strategy has been to operate utilizing a risk-based approach and continuous improvement through the following methods:**

### GOVERNANCE

The information security and cybersecurity program is overseen by a diverse and cross-functional committee of senior business leaders. This committee meets bimonthly and is charged with ensuring that cyber risk is managed and that the program is aligned to business goals and objectives. Updates are also provided to the board's risk committee quarterly and the full board once a year.

### RISK MANAGEMENT

The information security organization is responsible for ongoing vulnerability assessments and threat analysis to essential assets such as customer and employee data, critical business systems and industrial control environments. Risk assessments are executed quarterly in conjunction with a third party to promote objectivity. Information security and cybersecurity risk management functions are also integrated into the enterprise risk management program. There have been no security breaches in the past year across our enterprise and Essential maintains a cybersecurity insurance policy to promote resiliency and reduce risk.

### CONTROLS, POLICY & COMPLIANCE

Essential has implemented enterprise-wide security policies, standards and controls that incorporate best practices in security engineering, technology architecture and data protection, which support regulatory compliance. The information security controls framework has been developed around the NIST Cybersecurity Framework but also incorporates best practices from ISO 27001 Information Security Management Systems, CIS Critical Security Controls and ISA 99 Industrial Automation and Control Systems Security. An annual review of Essential's security framework controls is conducted in conjunction with a third party to promote objectivity.

### AWARENESS, TRAINING & ASSESSMENT

Essential has created a corporate culture that is conscious of cybersecurity, with a focus on continual assessment, development and improvement. Essential has implemented specialized programs, such as enterprise-wide communications, presentations, phishing simulations and focused training for specific roles. We have developed and implemented a general cybersecurity training program required for all employees.

## Supply Chain

**In 2022, Essential made over **\$1 billion** in controllable spend purchases related to our gas, water, and wastewater businesses. We are proud to say that more than half of this spend was with suppliers from within the states we operate.**

Being good stewards of community natural resources aligns with being good community partners, because we provide gas, water and wastewater treatment locally. We recognize that, in many cases, our customers are also our suppliers and vendors. We recognize the importance to use suppliers who work and live in a community within the footprint of our infrastructure. These deep, multifaceted connections between Essential and our fellow community members enrich and strengthen neighborhoods, as well as develop a more resilient local economy.

### SUPPLIER CODE OF CONDUCT

Essential has established a [Supplier Code of Conduct](#) to define the basic requirements for suppliers of goods and services and their responsibilities to the environment and their stakeholders. We are committed to purchasing from suppliers that strive to improve the environmental quality of our water, wastewater, and gas operations, and that use reasonable efforts to minimize pollution and improve environmental protection and sustainability. Our suppliers are also responsible for the health and safety of their employees, which includes controlling exposure to hazards, taking reasonable efforts and precautionary measures against accidents and occupational hazards, providing education and training in health and safety issues and having reasonable health and safety management systems. We also expect suppliers to subscribe to the principles of nondiscrimination, follow high standards of business ethics and professional conduct and adhere to our [Human Rights Policy](#).

### SUPPLIER DIVERSITY

In addition to our efforts to maximize business with vendors local to the communities we serve, Essential is committed to increasing our work with qualified and certified diverse suppliers, which are measured by majority of ownership and control, and include one or more of the following classifications:

- **Minority-owned Business Enterprise (MBE)**
- **Women-owned Business Enterprise (WBE)**
- **Veteran-owned Business Enterprise (VBE)**
- **Lesbian, Gay, Bisexual, Transgender-owned Business Enterprise (LGBT)**

To be certified as diverse, the supplier must have a valid and current certification from one of the following:

- **State or local government certifying agencies**
- **National Minority Supplier Development Council (NMSDC)**
- **Women's Business Enterprise National Council (WBENC)**
- **National Veteran Business Development Certification (NVBDC)**
- **National Veteran Owned Business Association (NaVOBA)**
- **The National Lesbian, Gay, Bisexual, Transgender Chamber of Commerce (NGLCC)**

## SUPPLIER DIVERSITY (CONTINUED)

Essential believes that supplier diversity is critical for our communities as well as for our business. We want to source from and partner with businesses owned by individuals representative of the diverse communities and neighborhoods where we live, work, and operate each day. This also enriches local economies, increases sourcing options, and fosters collaboration and innovation. As such, **we announced a multi-year plan to increase diverse supplier spend to 15% of controllable spend**, which excludes spend where there is no opportunity to include diverse suppliers or spend that cannot be sourced from a diverse supplier due to a policy or law (items like power, purchased water and some one-time payments). In 2021, we also added a supplier diversity component (5% weighting) to our short-term incentive plan.

**In 2022, Essential spent \$156 million with diverse suppliers, representing 15.1% of our controllable spend. This proudly marks the achievement of our commitment in less than two years since its announcement.**

We have initiated new partnerships with diverse suppliers, resulting in millions of dollars of spend being directed towards strengthening our communities. Additionally, we have worked with current diverse suppliers as they initiated a path towards formal certification. Moving forward, Essential will continue to build on this achievement and sustain our momentum.

We have taken various steps internally to increase our work with diverse suppliers in the procurement process, including regular review of purchase requisitions to expand the use of diverse vendors, updating our internal purchasing website to encourage greater use of qualified diverse suppliers, working with a leading provider of supplier diversity data and enhancing reporting to better recognize our work with such suppliers.

Externally, we encourage diverse vendors to register and become certified in their state to apply for every applicable opportunity, and we reference a commitment to diversity in our supplier code of conduct. The Essential purchasing department is a member of the National Minority Supplier Development Council, Eastern Minority Supplier Development Council, Women's Business Enterprise National Council, Women's Business Enterprise Center East, and Women's Business Development Center. We regularly participate in networking events and follow-up meetings to learn from companies with mature supplier diversity programs.

Essential has a Tier 2 diverse spend reporting program for its major suppliers. Our Tier 2 supplier diversity program aims to grow and sustain diverse suppliers beyond Tier 1 direct supplier relationships. Our program tracks the certified diverse spend of minority, women, veteran, or LGBT-owned businesses that are the subcontractors to our prime suppliers. We collaborated with key prime suppliers to identify and account for certified diverse subcontractor spend on a quarterly basis.

In 2020, Essential implemented an automated Tier 2 validation process using Supplier IO's UniTier platform. An Essential-specific website was created for our prime suppliers to enter their Tier 2 supplier spend in support of Essential. These submissions of subcontractor spend are validated by the UniTier platform as certified diverse subcontractors by using the Supplier IO database. Upon completion, Supplier IO generates a report that details verified certified diverse Tier 2 suppliers and unverified diverse suppliers. Only those verified as certified diverse Tier 2 suppliers are used for reporting purposes.





# Essential™

Providing natural resources for life.

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