

2022

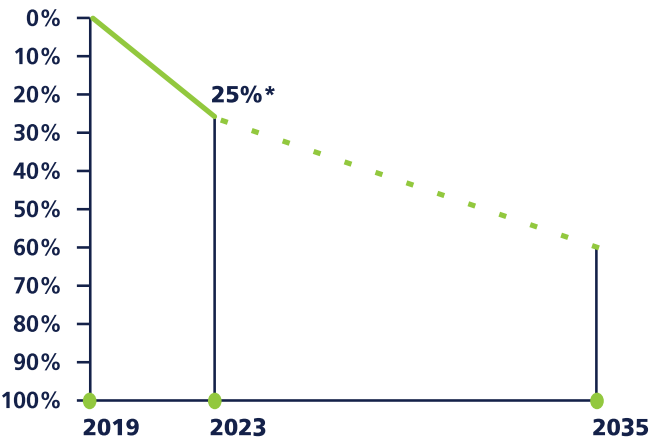
SASB AND ESG METRICS REPORT

2022 SASB AND ESG METRICS INDEX

This document contains disclosure of key relevant metrics to Essential’s operations, as well as those included in the International Financial Reporting Standards Foundation (IFRS) Sustainability Accounting Standards Board (SASB) standards for the Water Utilities & Services and Gas Utilities & Distribution industries. The document covers disclosures for the period Jan. 1, 2022 through Dec. 31, 2022, unless otherwise noted. For more detailed information about Essential’s ESG initiatives, strategy and additional data, see our [2022 ESG Report](#). Essential updates and publishes its full ESG Report every other year, providing key metrics between reporting cycles.

Recent Highlights

Essential has made significant progress towards its ESG commitments through June, 30, 2023.



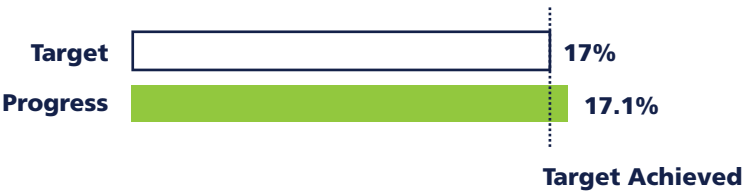
*Estimated Value

Climate Change

By 2035, the company will achieve a 60% Scope 1 and 2 greenhouse gas emissions reduction, from a 2019 baseline.

- Essential has achieved a 25% reduction from its 2019 baseline
- In 2022, Essential’s water and waster operations began procuring nearly 100% renewable energy for its Pennsylvania, Illinois, Ohio, and Pennsylvania utilities
- Essential’s gas operations continued main replacement activities to reduce fugitive methane emissions

Employee Diversity



- The company has a multi-year goal to reach 17% employees of color
- 16% of Essential employees are people of color

Supplier Diversity

The company has achieved its multi-year goal to increase diverse supplier spend to 15% of controllable spend. Essential now looks to build on its 18% supplier diversity.

- 3BL Media included Essential in its 100 Best Corporate Citizens list, recognizing the company's exemplary environmental, social, and governance practices. Essential was also included by Newsweek to its America's Most Responsible Companies list. These recognitions reflect Essential's commitment to progressing as a utility leader for sustainable and ethical practices.
- Essential co-hosted the H2 Summit in Pittsburgh. This annual gathering of clean energy experts focuses on hydrogen development and looks to secure Appalachia's position as a leader in the future of energy. Essential also continued work with University of Pittsburgh to explore and research the potential for hydrogen blending in its gas operations to further reduce greenhouse gas emissions.
- Essential's removal of two dams on the Perkiomen Creek in Pennsylvania has had significantly positive impacts on the local ecosystem, as documented in this [video](#). This initiative is consistent with new commitments around biodiversity and conservation added to our [Sustainability and Environmental Policy](#).
- Essential's charitable giving to 501(c)(3) organizations in 2022 totaled \$3.9 million, and, over the past three years, the company matched employee donations to contribute a combined \$2.3 million to the United Way. Essential employees tracked more than 3,850 of paid volunteer time in their local communities. Additionally impacting our local community and economy was the direction of more than half of our over \$1 billion in controllable spend to suppliers from within the states we operate. Much of this spend was with small-to-medium size businesses with which Essential has a long-standing relationship.

Alignment with UN Sustainable Development Goals

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. For more information about how Essential’s strategy and operations align with these goals, please visit our ESG microsite.

Of the 17 SDGs, our business can most significantly positively impact:



Clean Water and
Affordable and
Sanitation



Affordable and
Clean Energy



Climate Action

Among those remaining, our ESG program most directly supports:



Good Health and
Well-Being



Gender Equality



Decent Work and
Economic Growth



Industry, Innovation
and Infrastructure



Reducing Inequalities

Corporate Profile*

ESSENTIAL

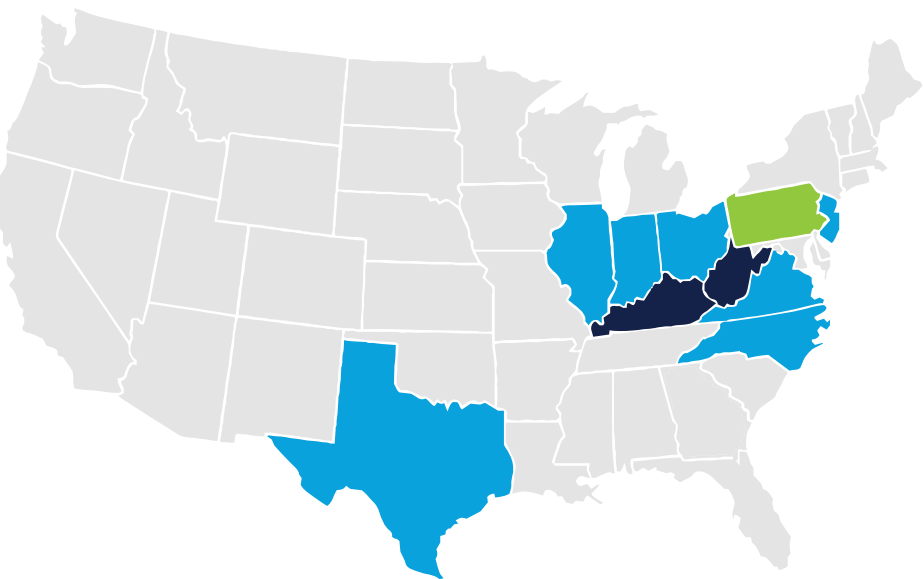
Revenue	Employees (full-time)
\$2.29B	3,200+
People Served	Customer Connections
5.5M	1.9M

GAS

Gas Utility Customer Connections	Gas Delivered to Customers
0.8M	155.6Bcf

WATER AND WASTEWATER

Water and Wastewater Utility Customer Connections	Gallons of Drinking Water Produced
1.1M	85.4B
Water Systems	Gallons of Wastewater Treated
1,512	11.2B
Wastewater Systems	
230	



States

- Illinois
- Indiana
- Kentucky
- New Jersey
- North Carolina
- Ohio
- Pennsylvania
- Texas
- Virginia
- West Virginia**

- Aqua and Peoples
- Peoples Only
- Aqua Only

*Please note that these figures are as of December 31, 2022

**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.

CONSERVATION & STEWARDSHIP

Essential Utilities

Greenhouse Gas (GHG) Emissions*

	2022	2021	2020	2019
Scope 1 emissions (metric tons CO ₂ e)	417,687	468,734	494,835	503,637
Scope 2 emissions (market-based; metric tons CO ₂ e)	51,009	117,723	111,262	117,393
Total Scope 1 and 2 emissions (metric tons CO ₂ e)	468,696	586,457	606,097	621,030
Total Scope 3 emissions	9,020,425	8,659,255	8,653,218	Not disclosed

*2019 was the first year for which Essential disclosed Scope 1 and 2 GHG emissions for its combined water, wastewater, and natural gas utilities. This served as the baseline for the company's emissions reduction target. 2020 is the first year for which Essential disclosed Scope 3 emissions for its combined water, wastewater and gas utilities.

Energy Management

SASB: IF-WU-130a.1

	2022	2021	2020
Total energy consumed (MWh)	763,277	762,373	747,018
Energy sourced from the grid (percentage grid electricity)	15%	39%	39%
Energy derived from renewables (percentage renewable)	30%	4%	4%

Energy Intensity*

	2022	2021	2020
Water (kWh/kgal)	3.3	3.1	3.1
Wastewater** (kWh/kgal)	7.6	6.3	5.4
Gas (kWh/Mcf)	1.8	2.0	1.9

*Energy intensity also includes other energy sources besides electricity. While Essential believes its calculation of energy intensity is the most holistic and informative measurement of resource efficiency, electricity intensity for 2022 is as follows: 3.0 kWh/kgal (water), 6.7 kWh/kgal (wastewater), and 0.1 kWh/Mcf (gas).

**Energy intensity values for wastewater treatment are highly dependent on physical factors, especially relating to interannual rainfall fluctuations. This makes year-on-year trend comparison difficult

Waste Generation (dry metric tons)

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*
Treatment of WW	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	491.2 (Fuel Blending)	N/A	N/A	491.2
Hazardous Waste	2.0	N/A	10.1	12.1

*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.

Air Emissions (dry metric tons)*

	2022	2021	2020
Nitrogen Oxides (NOx)**	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

*Emission data from sources within the scope of our required regulatory air emissions reporting. These include facilities with compressor stations or multiple large emergency generators. The data above does not include air emissions generated from vehicles and permit-exempt emergency generators.

**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 NO_x emissions.

WATER AND WASTEWATER BUSINESS

Distribution Network Frequency*

	2022	2021	2020
Water main replacement (miles of main replaced)	There are many factors that can affect year-on-year main replacement. To stabilize these and provide a more consistent view of our replacement rate, we have elected to disclose the average for the past five years. See table below for our 2022 rolling averages.		
SASB: IF-WU-140a.1			
Volume of non-revenue water losses (billions of gallons)	17.8	17.2	17.8
SASB: IF-WU-140a.2			
Percent of total production (%)	20.5%	20.3%	20.9%

*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. For more information, refer to the Reducing Water Loss section of our [2022 ESG Report](#).

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.

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

158

5-Year rolling average¹ of annual main replacement rate

1.1%

Effluent Quality Management

	2022	2021	2020
Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	148 events, 97.7% days in compliance	53 events, 96.5% days in compliance	34 events, 95.2% days in compliance
SASB: IF-WU-140b.1			

Water Affordability and Access*

	2022	2021	2020
Number of residential customer water disconnections for non-payment, percentage reconnected within 30 days**	20,577	22,147	16,437
SASB: IF-WU-240a.3	51.9%	55.2%	43.0%

*We do not believe SASB's other water utility standards on affordability [IF-WU-240a.1 and IF-WU-240a.2] reflect the differences in water rates (as opposed to electric and gas) that exist. Given Essential's wide geographic footprint across 8 states and operation of over 1,500 systems of varying size, the complexity of our operations and the necessary volume in tariffs and rate structures make calculation of materially accurate average and typical rates not representative. We will continue to support efforts to further develop and refine SASB's industry guidance so that it better allows transparency into this issue. We also continue to interface with state public utility commissions to approve rate structures that are both affordable for customers and necessary to adequately maintain infrastructure and promote safety of this critical resource.

**Given the unique circumstances surrounding the COVID-19 pandemic, 2020/2021 residential customer water disconnection data is not comparable to other years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.

Drinking Water Quality*

	2022	2021	2020
Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	13	6	4
SASB: IF-WU-250a.1	8	12	16
	39	81	73
Total tier violations	59	99	93
Percent of systems with tiered violations	3.9%	6.3%	5.7%
Percent of systems with tier 1 + tier 2	1.4%	1.2%	1.3%
Percent of systems with tier 3 only	2.6%	5.3%	4.8%
Total # of systems	1,512	1,518	1,522

*Counts for prior year events may shift slightly, as they have for 2020 data, due to timing differences between event discovery, regulatory rescissions, and external ESG reporting.

End-Use Efficiency

2022

2021

2020

Percentage of water utility revenues from rate structures that are designed to promote conservation and revenue resilience

About 4%*

About 4%*

About 4%*

SASB: IF-WU-420a.1

Customer water savings from efficiency measures, by market

SASB: IF-WU-420a.2

Across our footprint, our tariffs are designed so that a larger percentage of the total bill is recovered through a volumetric charge thereby incentivizing customers to conserve both water and wastewater use on a monthly basis. In addition, our customers' average consumption has fallen significantly over time, largely driven by more efficient appliances. We also have efforts in place to educate customers on this issue and raise awareness of water-saving practices. It is difficult to ascertain the volumetric water savings directly attributable to Essential's efforts because this depends on many variables and factors, but we will continue to educate customers and encourage them to use water efficiently as we all share the responsibility of caring for natural resources.

For additional information, see the Helping Our Customers Conserve Water section of the [2022 ESG Report](#).

*In Illinois, a volume balancing adjustment (VBA) was introduced and covers the volumetric revenues of our water and wastewater operations, which comprises roughly half of the state utility's total revenues. As Aqua Illinois, in 2022, comprised about 8% of the revenue of Essential's regulated water segment, roughly half of this comes from the VBA rate structure. The VBA tracks actual volumetric revenue and compares against what is allowed in the regulatory rate case. The difference becomes the "rider" or financial adjustment. Essential began tracking this in April of 2018 and the first rider calculated 12 months later. It did not result in a financially material adjustment.

Water Supply Resilience

2022

Total water sourced from regions with high or extremely high baseline water stress, percentage purchased from a third party

SASB: IF-WU-440a.1

In 2022, 17% of water was sourced from High or Extremely High Baseline Water Stress regions.

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 take into account management of sources by groundwater conservation districts, river basin commissions, or other local, state, and federal agencies. Sites that are more prone to water scarcity are monitored and addressed on an individual basis. For more information on how we conducted this analysis and what comprises this figure, see the Promoting Sustainable Water Sourcing section of the [2022 ESG Report](#).

Volume of recycled water delivered to customers

SASB: IF-WU-440a.2

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

Network Resiliency & Impacts of Climate Change

	2022	2021	2020
Wastewater treatment capacity located in 100-year flood zones SASB: IF-WU-450a.1	See Wastewater-Related Discharge Event table below.		
	See Wastewater-Related Discharge Event table below.	124	118
1) Number and (2) volume of sanitary sewer overflows (SSO)* (gallons), (3) percentage of volume recovered** SASB: IF-WU-450a.2	See Wastewater-Related Discharge Event table below.	225,050	511,945
	See Wastewater-Related Discharge Event table below.	99.997%	99.998%
1) Number of unplanned service disruptions, and (2) customers affected, each by duration category (normalized by 100 miles)***	2,624	3,135	1,805
	18.4	19.0	13.2
SASB: IF-WU-450a.3			

*Precipitation events are associated with almost all the SSO volume. At Essential, we capture and treat >99.99% of the wastewater from our customers despite challenges arising from heavy storms, hurricanes, clogs, and blocks.

**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.

***These year-on-year changes are 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 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. These efforts include the implementation of a new internal reporting system that Essential believes, in future years, will contribute to reported figures being more consistent and comparable year-on-year.

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	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

*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.

GAS DISTRIBUTION BUSINESS

Energy Affordability and Access*

	2022	2021	2020
	\$14.49	\$10.41	48.03
Average retail gas rate per MMBtu for (1) residential, (2) commercial, (3) industrial customers, and (4) transportation services only	\$12.16	\$8.55	\$6.55
SASB: IF-GU-240a.1	\$11.96	\$8.37	\$6.23
	\$1.87	\$1.74	\$1.62
Typical monthly water bill for (1) 50 MMBtu and (2) 100 MMBtu of gas delivered per year	\$72.32	\$57.35	\$48.34
SASB: IF-GU-240a.2	\$131.17	\$101.22	\$82.19
Number of residential customer gas disconnections for non-payment, percentage reconnected within 30 days**	18,827	27,583	23,528
SASB: IF-GU-240a.3	57.4%	63.2%	60.9%

*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.

**Given the unique circumstances surrounding the COVID-19 pandemic, 2020 and 2021 residential customer gas disconnection data is not comparable to prior years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.

End-Use Efficiency

	2022	2021	2020
Percentage of gas utility revenues from rate structures that (1) are decoupled or (2) contain a lost revenue adjustment mechanism (LRAM)	28%	29%	44.4%
SASB: IF-GU-420a.1	0.0%	0.0%	0.0%
Typical monthly water bill for (1) 50 MMBtu and (2) 100 MMBtu of gas delivered per year	Across our state operations, rate structures are designed to promote efficiency through the use of a fixed cost customer charge and a volumetric charge which varies every month based on usage. While there is not a formal customer efficiency and conservation program and this precludes a calculation of gas savings by market, Essential proactively educates our customers on the importance of energy efficiency. For more information, see the Helping Our Customers Conserve Gas section of the 2022 ESG Report .		
SASB: IF-GU-240a.2			

Integrity of Gas Delivery Infrastructure

	2022	2021	2020
Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)	3	2	2
SASB: IF-GU-540a.1	0	0	0
Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel	0.45%	0.48%	0.51%
SASB: IF-GU-540a.2	17.8%	18.6%	21.3%
Percentage of gas (1) transmission and (2) distribution pipelines inspected	100%	100%	100%
SASB: IF-GU-540a.3	42.9%	40.3%	38.4%

EMPLOYEES

Essential Utilities

Health and Safety*

	2022	2021	2020
Lost Time/Restricted Time Rate (per 200,000 hours worked) (also regarded as DART Rate)	1.2	1.2	1.2
Employee-Responsible Motor Vehicle Accident (RVA) Rate**	2.2	2.9	2.5
Fatalities	0	0	0

*Data pertains only to full-time Essential employees

**Number of RVAs per one million miles driven

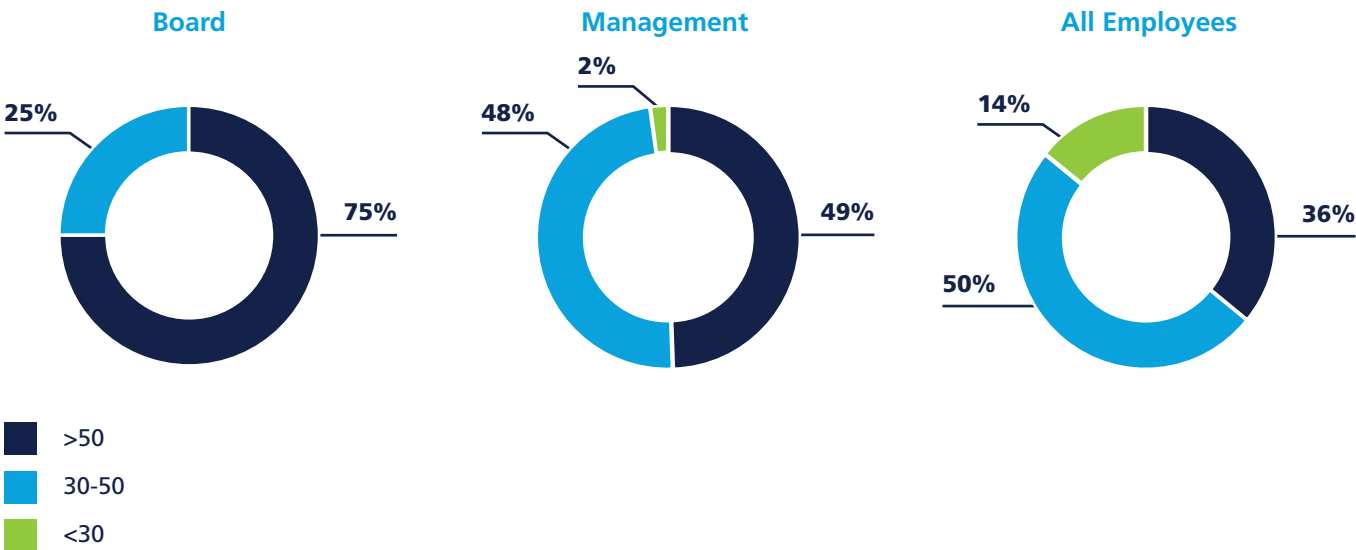
Human Capital Management

	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%

EEO-1 Summary Table*

Essential has published its full, unmodified EEO-1 summary table [here](#). In January of 2021, Essential announced a multiyear plan to reach 17% employees of color, up from about 15% as of 12/31/2022. See the Diversity, Equity and Inclusion section of the [2022 ESG Report](#) for more information on both this goal and our program’s tenets and strategies. We also have committed to providing a transparent [progress tracker](#) on our ESG website.

2022 Age Diversity



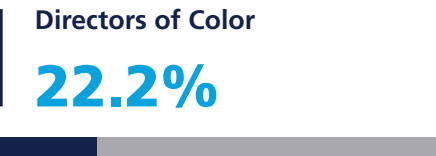
* Gender and racial diversity data included in this report is as of 12/31/22. Essential's [EEO-1 Report](#), included in this report is as of 12/31/22.

GOVERNANCE

Polices

- [Code of Ethical Business Conduct](#)
- [Human Rights Policy](#)
- [Human Right to Water Policy](#)
- [Labor Rights Policy](#)
- [Political Spending Policy](#)
- [Equal Employment Opportunity & Anti-Harassment](#)
- [Conflict of Interest Policy](#)
- [Sustainability and Environmental Policy](#)
- [Supplier Code of Conduct](#)

Board Composition



Best Practices

- Shareholder engagement program
- Diverse board
- Board oversight of ESG
- Stock ownership guidelines for executive officers and directors
- Continuing education for directors and orienting for new directors
- 15 year term limit for directors elected after 2015

Independence

- Lead Independent Director with delineated responsibilities
- 100% standing Board Committee membership independence

Accountability

- All directors elected annually
- Annual Board and Committee self-evaluation
- Annual evaluation of CEO by independent directors Clawback policy
- Resignation policy

Shareholder Rights

- No poison pill
- One-share, one-vote
- No dual-class common stock
- Right to call special meeting
- No cumulative voting

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.



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