



Essential™
Providing natural resources for life.

2021
**SASB AND
ESG METRICS
INDEX**

TICKER SYMBOL: WTRG

2021 SASB and ESG Metrics Index

This document contains disclosure of key relevant metrics to Essential's operations, as well as those included in the 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, 2021 through Dec. 31, 2021, unless otherwise noted. For more detailed information about Essential's ESG initiatives, strategy and additional data, see our [2020 ESG Report](#). Essential updates and publishes its full ESG Report every other year, providing key metrics between reporting cycles.



2021 Highlights

- Essential [announced](#) **three new enterprise-wide ESG commitments**, for which progress is updated semiannually on our [ESG microsite](#). These commitments are noted below, along with progress through Dec. 31, 2021:
 - **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 6% reduction from its 2019 baseline
 - **Employee Diversity: The company has a multi-year goal to reach 17% employees of color**
 - 15.0% of Essential employees are people of color
 - **Supplier Diversity: The company has a multi-year goal to increase diverse supplier spend to 15% of controllable spend**
 - 10.9% of Essential's controllable spend is with diverse suppliers
- Essential also began to include progress made on employee and supplier diversity as factors for the company's short-term incentive plan, with a combined 10% weighting. With the inclusion of diversity metrics, the **short-term incentive plan now has a 50% overall weighting on ESG-related performance measures**.
- Essential celebrated the opening of its **state-of-the-art laboratory** at its Bryn Mawr headquarters. Staffed by 13 expert chemists and microbiologists, as well as other professional support staff, the lab has the capacity to perform 90,000 water quality tests per year. This groundbreaking facility will support Essential's excellent track record in safeguarding customer access to safe and reliable drinking water. For more information, please see the associated [press release](#).
- The **Essential Pride Employee Resource Group** was launched 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. Serving employees with a broad range of identities, the group holds member meetings and develops programming and events to engage with team members across the company. It is open to all employees who support LGBTQ+ rights and equality, and any personal information shared by members is kept confidential.

- 3BL Media included Essential in its **100 Best Corporate Citizens** list, recognizing the company's exemplary environmental, social, and governance practices. In 2022, Essential was renamed to the list and was also included by Newsweek to **America's Most Responsible Companies** list. These recognitions reflect Essential's commitment to progressing as a utility leader for sustainable and ethical practices. For more information on the Newsweek recognition, please see the associated [press release](#).
- The company's **talent management and development program has seen several enhancements**. These include a new supervisor onboarding management process and monthly training, the deployment of an online learning platform, and a recruitment partnership with the Pittsburgh Energy Innovation Center.
- Essential introduced the **Work Location Flexibility Program**, allowing eligible employees to work remotely up to two scheduled days a week. The company recognizes a flexible work environment is critical in attracting, motivating, and retaining high-performing employees, particularly in the post-pandemic environment.
- Essential's charitable **giving to 501(c)(3) organizations totaled \$4.6 million**, and the company matched employee donations to contribute a combined **\$800,000 to the United Way**. Essential employees tracked **more than 1,800 of paid volunteer time** in their local communities. Additionally impacting our local community and economy was the direction of **more than half of our nearly \$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 Sanitation



Affordable and Clean Energy



Climate Action

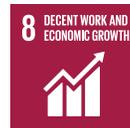
Among those remaining, our ESG program most directly supports:



Good Health and Well-Being



Gender Equality



Decent Work and Economic Growth



Industry, Innovation and Infrastructure



Reducing Inequalities

Corporate Profile*

\$1.88B

Revenue

84.6B

Gallons of drinking water produced

3,200+

Employees (full-time)

227

Wastewater systems

5.0M

Approximately 5 million people served from almost 1.8 million connections

0.2M

Wastewater connections

10

States (IL, IN, KY, NC, NJ, OH, PA, TX, VA, WV)

11.1B

Gallons of wastewater treated

1,518

Water systems

0.8M

Gas connections

0.9M

Water connections

147.6Bcf

Gas delivered to customers

*Figures are as of December 31, 2021

Conservation & Stewardship

Essential Utilities

Greenhouse Gas (GHG) Emissions*

	2021	2020	2019
Scope 1 emissions (metric tons CO ₂ e)	468,734	494,835	503,637
Scope 2 emissions (market-based; metric tons CO ₂ e)	117,723	111,262	117,393
Total Scope 1 and 2 emissions (metric tons CO ₂ e)	586,457	606,097	621,030
Total Scope 3 emissions	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.

Essential has recalculated its 2019 Scope 1 and 2 baseline from 616,652 metric tons CO₂e to 621,030 metric tons CO₂e, with all of the increase due to a corresponding change in Scope 1 emissions. The company has also recalculated its 2020 Scope 1 emissions from 483,214 metric tons CO₂e to 494,835 metric tons CO₂e. These decisions were driven by changes to methodology for the calculation of emissions relating to our gas utility and a more complete operational boundary. These changes have led to a more consistent and accurate representation of historical emissions.

Energy Management*

SASB: IF-WU-130a.1

	2021	2020
Total energy consumed (MWh)	762,373	747,018
Energy sourced from the grid (percentage grid electricity)	39.4%	39.4%
Energy derived from renewables (percentage renewable)	4%	4%

*2020 was the first year for which Essential disclosed energy consumption for its combined water, wastewater and gas utilities.

Energy Intensity*

	2021	2020	2019
Water (kWh/kgal)	3.1	3.1	3.2
Wastewater** (kWh/kgal)	6.3	5.4	4.8
Gas (kWh/Mcf)	2.0	1.9	Not disclosed

*2020 was the first year for which Essential disclosed energy intensity for its gas utility, although it is now restated methodological consistency, which excludes energy in gasoline to power fleet vehicles. This presentation is intended as a measure of energy intensity for core water production, wastewater treatment, and gas distribution activities at operating plants. 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 2021 is as follows: 2.9 kWh/kgal (water), 6.1 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	Method	2021	2020
Treatment of water	Beneficial reuse/ recycled – land application	26,839	26,469
	Landfill	6,010	6,764 (88% in company owned landfills)
	Incineration	0	0
	Total	32,849	33,233
Treatment of wastewater	Beneficial reuse/ recycled – land application	1,890	2,535
	Landfill	3,228	3,099
	Incineration	778	527
	Total	5,986	6,161
Office waste / miscellaneous non-hazardous waste	Recycled	298	402
	Landfill	1,875	2,156
	Incineration	0	0
	Total	2,174	2,558
Natural gas liquids	Beneficial reuse/ recycled – fuel blending	533	498
	Landfill	0	0
	Incineration	0	0
	Total	533	498
Hazardous waste	Beneficial reuse/ recycled	0	0
	Landfill	0	0
	Incineration	3.1	8
	Total	3.1	8
Total waste	Beneficial reuse/ recycled	27,850	29,904
	Landfill	11,113	12,019
	Incineration	778	535
	Total	39,741	42,458

*2020 was the first year for which Essential disclosed detailed figures for waste for its combined water, wastewater, and gas utilities.

Air Emissions (dry metric tons)*

Emission Type	2021	2020
Nitrogen Oxides (NOx)**	237.9	264.2
Particulate Matter (PM10)	<10	<10
Sulfur Oxides (SOx)	<1	<1
Volatile Organic Compounds (VOCs)	187	201.3
Hazardous Air Pollutants (HAPs)	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*

	2021	2020	2019
Water main replacement (miles of main replaced)	175	178	130
SASB: IF-WU-140a.1			
Volume of non-revenue water losses (billions of gallons)	17.2	17.8	16.8
SASB: IF-WU-140a.2			
Percent of total production (%)	20.3%	20.9%	20.0%

*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 [2020 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.

Effluent Quality Management

	2021	2020	2019
Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	253 events, 96.5% days in compliance	334 events, 95.2% days in compliance	290 events, 95.5% of days in compliance
SASB: IF-WU-140b.1			

Water Affordability and Access*

	2021	2020	2019
Number of residential customer water disconnections for non-payment,	22,147	16,437	31,078
percentage reconnected within 30 days**	55.2%	43.0%	60.0%
SASB: IF-WU-240a.3			

*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 prior years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.

Drinking Water Quality*

	2021	2020	2019
Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	6	4	12
SASB: IF-WU-250a.1	12	16	8
	81	73	63
Total tier violations	99	93	83
Percent of systems with tiered violations	6.3%	5.7%	5.5%
Percent of systems with tier 1 + tier 2	1.2%	1.3%	1.3%
Percent of systems with tier 3 only	5.3%	4.8%	4.2%
Total # of systems	1,518	1,522	1,497

*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

	2021	2020	2019
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	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.		
SASB: IF-WU-420a.2	For additional information, see the Helping Our Customers Conserve section of the 2020 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 2020, comprised 8.3% of the revenue of Essential's regulated water segment, roughly half of this comes from the VBA rate structure. Customer water consumption in the state has declined roughly 1.6%, on average, per year over the past 15 years. 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

2021

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 2020, 11% of water was sourced from High or Extremely High Baseline Water Stress regions. This figure will be reassessed and disclosed when Essential publishes its ESG Report for the 2022 reporting year.

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 [2020 ESG Report](#).

Volume of recycled water delivered to customers

SASB: IF-WU-440a.2

In 2021, we recycled to the groundwater recharge via spray irrigation, drip irrigation and subsurface infiltration approximately 513 million gallons of treated wastewater. This is 5% of the total wastewater treated in 2021, with the remainder safely discharged to streams, rivers, or lakes. In the prior year, 2020, which represented the first time Essential disclosed this, the proportion was the same. Essential will continue to evaluate and examine potential opportunities and technologies to recycle water and reuse wastewater.

Network Resiliency & Impacts of Climate Change

	2021	2020	2019
Wastewater treatment capacity located in 100-year flood zones SASB: IF-WU-450a.1	In the past year, we have performed a detailed analysis of how much of our wastewater capacity falls within 100-year flood zones. We determined that this proportion is 19% and the capacity volume is estimated to be 8.8 million gallons per day. In the prior year, 2020, which represented the first year Essential made this disclosure, the figures were 22% and 8.6 million gallons, respectively. Essential carefully plans for such events and has implemented considerable mitigation efforts and processes to substantially reduce such a risk. Further, this analysis only considered whether the treatment plant was located within the 100-year flood zone and did not account for any flood prevention measures that might already be in place. For more information on the detailed analysis we performed, see the Minimizing Sanitary Sewer Overflow section of our 2020 ESG Report .		
(1) Number and (2) volume of sanitary sewer overflows (SSO)* (gallons), (3) percentage of volume recovered**	124	118	118
	338,156	226,050	511,945
SASB: IF-WU-450a.2	99.997%	99.998%	99.996%
(1) Number of unplanned service disruptions, and (2) customers affected, each by duration category (normalized by 100 miles)***	3,135	1,805	2,486
	19.0	13.2	18.2
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.

**Percent reflects annual wastewater volume that is treated without an SSO. While this deviates from SASB methodology centered on SSO recovery, which is difficult to assess and measure, Essential believes this metric is a better indicator of the company's performance in this area.

***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.

Gas Distribution Business

Energy Affordability and Access

	2021	2020	2019
Average retail gas rate per MMBtu for (1) residential, (2) commercial, (3) industrial customers, and (4) transportation services only	\$10.41	\$8.03	\$8.50
	\$8.55	\$6.55	\$6.89
SASB: IF-GU-240a.1	\$8.37	\$6.23	\$6.67
	\$1.74	\$1.62	\$1.47
Typical monthly water bill for (1) 50 MMBtu and (2) 100 MMBtu of gas delivered per year	\$57.35	\$48.34	\$50.28
	\$101.22	\$82.19	\$86.06
SASB: IF-GU-240a.2			
Number of residential customer gas disconnections for non-payment, percentage reconnected within 30 days*	27,583 63.2%	1,131 60.9%	23,528 49.6%
SASB: IF-GU-240a.3			

*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

	2021	2020	2019
Percentage of gas utility revenues from rate structures that (1) are decoupled or (2) contain a lost revenue adjustment mechanism (LRAM)	29%	44.4%	42.1%
	0.0%	0.0%	0.0%
SASB: IF-GU-420a.1			
Customer gas savings from efficiency measures by market	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 2020 ESG Report .		
SASB: IF-GU-420a.2			

Integrity of Gas Delivery Infrastructure

	2021	2020	2019
Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)	2	2	1
	0	0	0
SASB: IF-GU-540a.1	0	0	3
Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel	0.48%	0.51%	0.54%
	18.6%	21.3%	22.2%
SASB: IF-GU-540a.2			
Percentage of gas (1) transmission and (2) distribution pipelines inspected	100%	100%	100%
	40.3%	38.4%	35.5%
SASB: IF-GU-540a.3			

Employees

Essential Utilities

Health and Safety*

	2021	2020	2019
Lost Time/Restricted Time Rate (per 200,000 hours worked) (also regarded as DART Rate)	1.2	1.2	1.9
Employee-Responsible Motor Vehicle Accident (RVA) Rate**	2.9	2.5	2.9
Fatalities	0	0	0

*Data pertains only to full-time Essential employees

**Number of RVAs per one million miles driven

Human Capital Management*

Employee Turnover Rates	2021		2020	
	Voluntary	Involuntary	Voluntary	Involuntary
Executive/Sr. manager	2%	0%	0%	5%
Mid-level manager	4%	2%	2%	2%
Professional	10%	1%	4%	2%
All others	6%	2%	4%	2%

*2020 was the first year Essential disclosed these turnover metrics, inclusive of water, wastewater, and natural gas operations. Voluntary turnover figures exclude retirements. We believe issues related to the COVID-19 pandemic and the large national increase in employee retirements and attrition impacted us as well as other companies. We are working to develop programs focused on retaining our workforce.

Diversity, Equity and Inclusion

EEO-1 Summary Table

Essential has published its full, unmodified EEO-1 summary table for the first time [here](#). In January of 2021, Essential announced a multiyear plan to reach 17% employees of color, up from about 14% today. See the Diversity, Equity and Inclusion section of the [2020 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.

	2021 Age Diversity		
	>50	30-50	<30
Board	78%	22%	0%
Management	56%	43%	1%
All employees	38%	48%	13%

Governance

Policies

[Code of Ethical Business Conduct](#)

[Human Rights Policy](#)

[Human Right to Water Policy](#)

[Political Spending Policy](#)

[Equal Employment Opportunity & Anti-Harassment](#)

[Conflict of Interest Policy](#)

[Sustainability and Environmental Policy](#)

[Supplier Code of Conduct](#)

Corporate Governance Highlights

Board Composition	Metric
Age of Directors	58.9
Female Directors	33.3%
Directors of Color	22.2%
Total Diversity (% diverse)	55.5%
Average tenure (years)	4.6
Independence (% independent)	88.9%

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 the company’s 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 document. 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 are filed with the Securities and Exchange Commission. For more information regarding risks and uncertainties associated with the company’s business, 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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