



**BANYAN WATER**<sup>®</sup>

**The Banyan  
2021**

**W**

Water

**A**

Analysis

**T**

Trends &

**E**

Emerging

**R**

Risk

**Report**



# The State of Water Risk in 2021

Water, earth's most precious resource, is in jeopardy. Water reserves are threatened as historic and persistent droughts intensify due to climate change, global consumption increases and aging water infrastructures deteriorate. As water rates also surge, enterprise-level water conservation is at a pivotal moment and it's time to take action.



The Palmer Drought Index [estimated](#) 36% of the contiguous United States experienced severe to extreme drought conditions in June 2021.



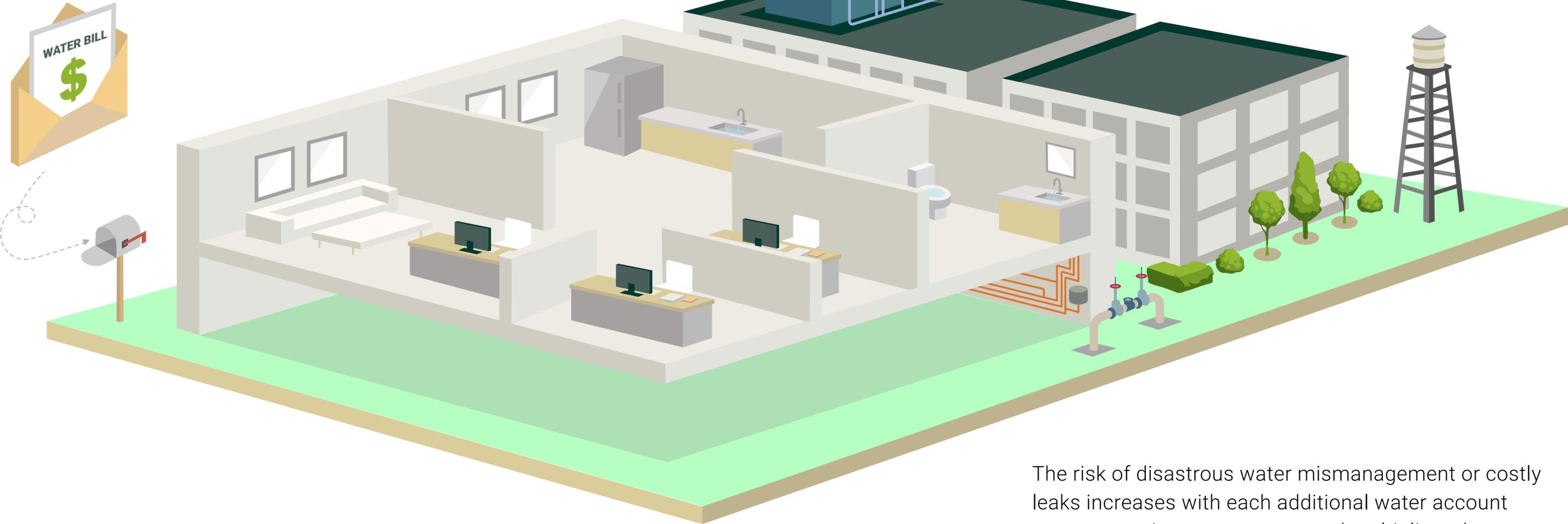
As America slowly improves its overall infrastructure, water sectors fall further behind. The American Society of Civil Engineers' 2021 Infrastructure Report Card gave America's collective infrastructure a C-, while water subgroups earned D-range grades.



The 2021 Infrastructure Report Card also states a water main break occurs every two minutes in the United States, wasting approximately 6 billion gallons of treated water each day. Avoidable water loss jeopardizes historically low water reserves as the U.S. Bureau of Reclamation [anticipates declaring](#) Colorado River's first water shortage if critical reservoirs continue to drop.

# Total Water Management: Water Usage On Your Property

Water use on a property often comes with an out-of-sight, out-of-mind mentality. Visualizing the extent of water activity can change perspective and offer understanding of the vast complexity of water systems in a single building, a collection of structures or across an entire portfolio of properties.



The risk of disastrous water mismanagement or costly leaks increases with each additional water account or access point on a property and multiplies when enterprises lack the predictive, intelligent technology to monitor water flow and use in real time.

# Total Water Management: Water Usage On Your Property

## APPLIANCES AND FIXTURES

Indoor appliances and fixtures yield different flow rates and increase the risk of leaks (Sinks, toilets, kitchen, etc.)

## CLIMATE

Variations in climate impact available water on a property

## WATER ACCOUNTS AND SOURCES

Properties leveraging multiple water sources (e.g. city water, groundwater, water reuse, etc.) in numerous locations with varied rate structures and price points must monitor and optimize each asset



## BILLING CYCLE

Without real-time visibility into water consumption, facility managers must wait a minimum of 30 days—and sometimes up to 90—to review water usage on their properties via their standard water bill

## INFRASTRUCTURE

A property's water usage integrity is dependent on its local water infrastructure, which may be aged, at risk of leaks or subjected to reconstruction (Piping within the walls, cracking foundation, leaky pipes, etc.)

## PLANT DIVERSIFICATION

Diverse landscapes demand different amounts of water and irrigation methods (Landscaping, trees on properties, sprinkler systems, etc.)

# 2020 Water Risk Report & Analysis

Banyan Water conducted an analysis across its portfolio of properties throughout 2020 to identify the hidden costs of water mismanagement and to illustrate water's risk potential due to the interconnectedness of numerous water variables on a property. Combined with market data on water usage and climate in the U.S., the analysis explores:



The impact of critical water leaks



Variations in average daily rainfall across regions



Changes in water rates by region



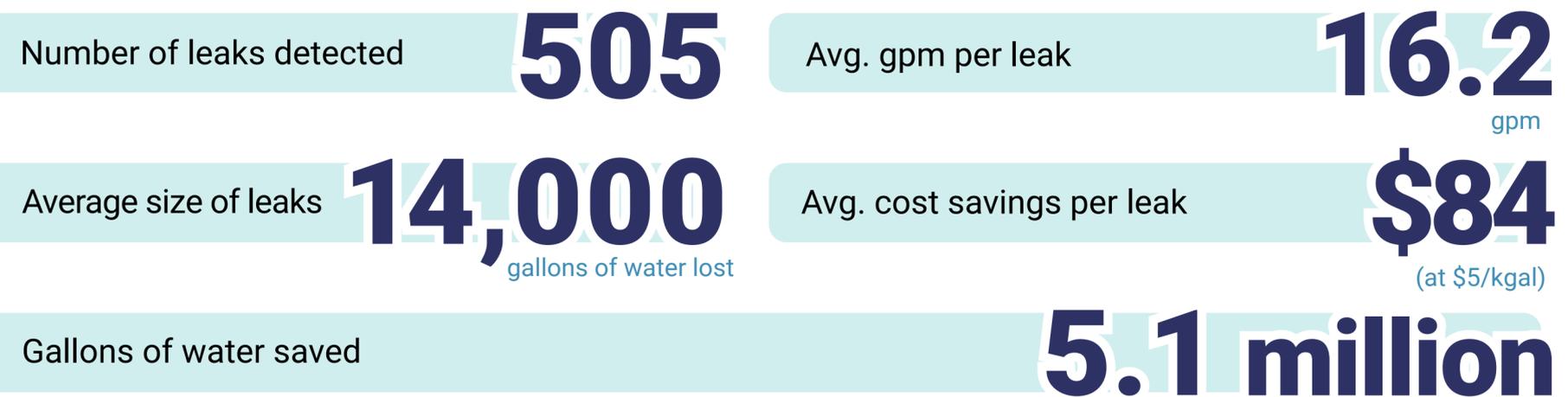
Flow rate comparisons in appliances and fixtures



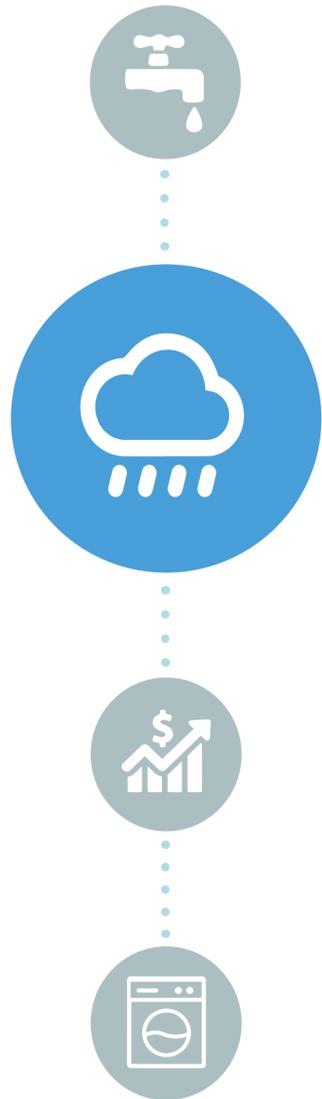


If left unchecked, leaks are perhaps the greatest source of water risk for enterprises and can lead to massive resource loss with severe impact on profitability.

### 2020 LEAK DETECTION ANALYSIS\*



\*Data reported by Banyan Water.



Enterprises can't control external factors related to climate change, but they can adapt to it. Its consequences—including enduring drought, rising temperatures, new precipitation patterns and increased strain on infrastructure—create fluctuations in water supply and demand that make property management more difficult and prone to loss.

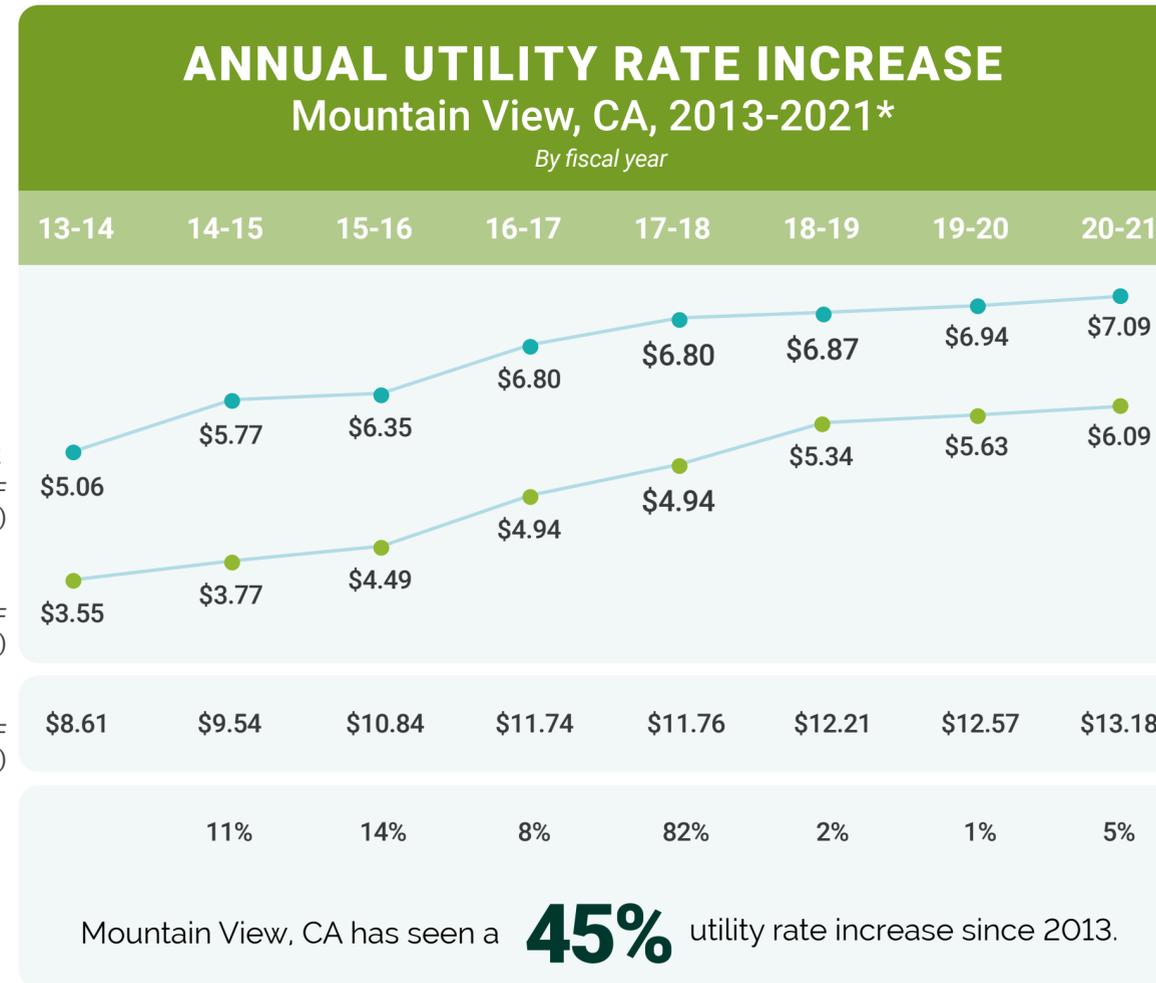
According to The New York Times, today's megadrought is the driest **20-year** period since the late 1500s. But ancient megadroughts occurred before industrialization began changing the climate, and global warming accounts for about half of the severity of the current Southwestern drought.

### VARIATIONS IN DAILY RAINFALL BY REGION 2017-2020\* In inches



\*Data reported by Banyan Water.

Unpredictable rates across regions only exacerbate water scarcity issues and pose a new challenge for portfolio managers, who will bear the responsibility of mitigating water risk at individual sites.



\*Data reported by Banyan Water.



## ANNUAL UTILITY RATE INCREASE

Houston, TX, 2002-2009, 2017-2021\*

By fiscal year



\*Data reported by Banyan Water.



## ANNUAL UTILITY RATE INCREASE

Houston, TX, 2002-2009, 2017-2021\*

By fiscal year



\*Data reported by Banyan Water and Houston Public Works

\*\*Reflects 2009-2016 cumulative rate increase



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## PROJECTED ANNUAL UTILITY RATE INCREASE

Houston, TX, 2022- 2026\*

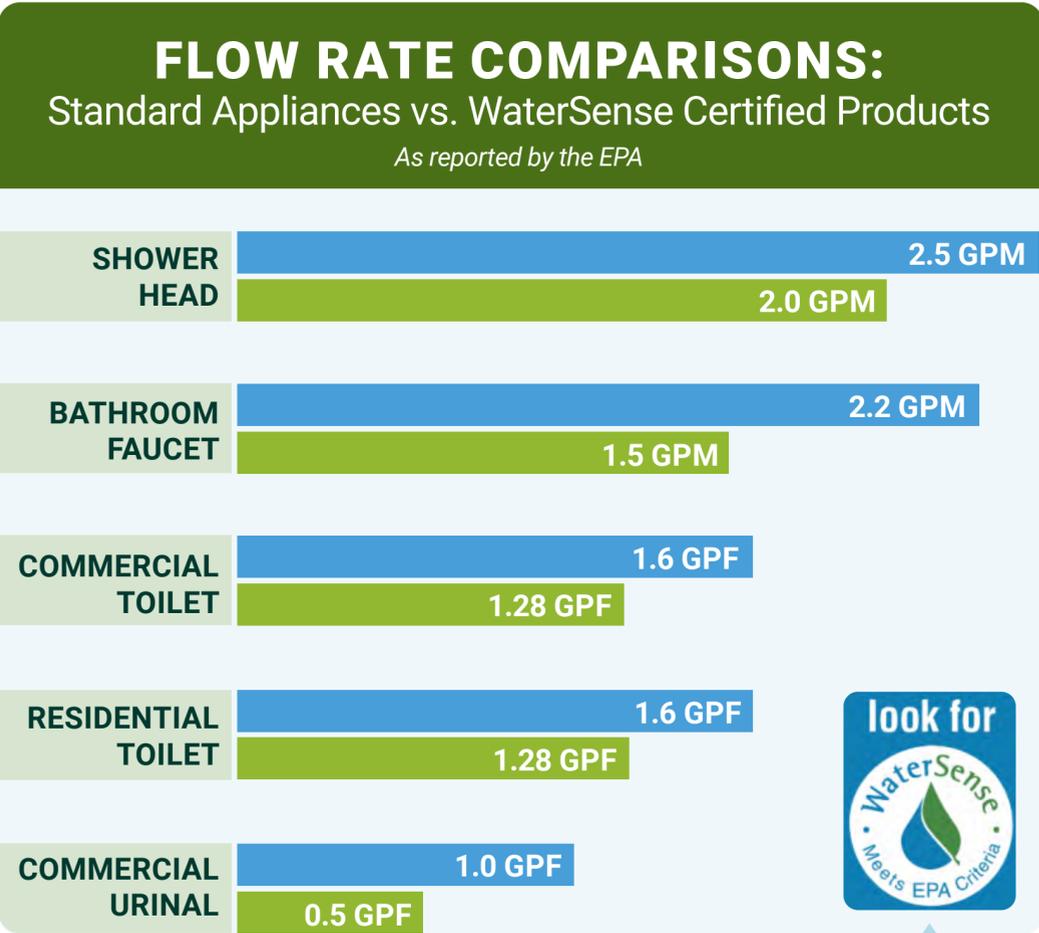
By fiscal year

	21-22	22-23	23-24	24-25	25-26
<b>WATER MULTIFAMILY</b> (per kgal of water)	\$6.15	\$6.80	\$7.30	\$7.80	\$8.20
<b>SEWER MULTIFAMILY</b> (per kgal of water)	\$8.80	\$9.15	\$9.50	\$10.15	\$10.70
<b>TOTAL MULTIFAMILY RATE</b> (per kgal of water)	\$14.95	\$15.95	\$16.80	\$17.95	\$18.90
<b>YEAR OVER YEAR % INCREASE</b>	31%**	7%	5%	7%	5%
<b>WATER COMMERCIAL</b> (per kgal of water)	\$6.35	\$7.05	\$7.50	\$8.00	\$8.40
<b>SEWER COMMERCIAL</b> (per kgal of water)	\$8.80	\$9.15	\$9.50	\$10.15	\$10.70
<b>TOTAL COMMERCIAL RATE</b> (per kgal of water)	\$15.15	\$16.20	\$17.00	\$18.15	\$19.10
<b>YEAR OVER YEAR % INCREASE</b>	31%**	7%	5%	7%	5%
<b>LAWN/OUTDOOR IRRIGATION ALL USAGE</b> (per kgal of water)	\$10.70	\$11.35	\$11.70	\$12.10	\$12.50
<b>YEAR OVER YEAR % INCREASE</b>	205.7%**	6.1%	3.1%	3.4%	3.3%

\*Data reported by [Houston Public Works](#)

\*\*Compared to 2021 rate

Existing buildings and local infrastructure are not standardized across the United States. Population, local rates based on infrastructure integrity, funding, improvement timelines, local contextual factors and evolving water sources make it difficult to anticipate water-related expenses throughout a property's lifetime.



■ Standard flow rates (gallons of water per minute/flush)
 ■ WaterSense products flow rates (gallons of water per minute/flush)

Water optimization strategies enable property managers to monitor water usage throughout a property's multiple water sources. By implementing Banyan Water's total water management software, HP Inc. saved more than 3 million gallons of irrigation water on its Palo Alto, California campus, a 42% reduction compared to prior usage. Banyan's real-time leak detection capabilities also prevented millions of gallons of additional water waste and contributed to HP reaching 40% of its global potable water consumption reduction goal in 2018.

With the right technology that properly monitors water use at scale, learns and adapts to an individual water system, and ultimately visualizes a property's water data to provide actionable insights on water-related decisions, facility managers can mitigate water risk throughout their portfolios.

Advances in data collection and predictive analytics, automation and machine learning afford decision-makers the power to eliminate guesswork that could lead to millions of gallons of water waste and ultimately convert what were once areas of emerging risk into crucial cost-saving opportunities.

# Ready to reduce your water risk?

**CONTACT BANYAN WATER TODAY.**



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## ABOUT BANYAN WATER

Founded in 2011, Banyan Water is the leading provider of data-driven water conservation software for the built environment. Using smart devices and real-time monitoring and analytics, Banyan protects Earth's most precious resource while generating untapped revenue for clients. Since the company's inception, Banyan has saved more than 4 billion gallons of water—enough to supply Cape Town, South Africa for a month during the height of its 2018 water crisis—secured the esteemed EPA WaterSense label on select products, and, in 2020, increased customer asset value by \$36 million. For more information, visit [www.banyanwater.com](http://www.banyanwater.com).

## METHODOLOGY

Banyan Water's flagship software platform, Banyan Water Central, gathers data from a variety of sources throughout a company's properties under management, encompassing thousands of flow sources throughout the United States. Onsite flow monitors are tracked 24/7, sending alerts in real time when leaks occur.

