



Itron CityEdge

Solving city challenges together for smarter, resilient cities.



BALANCING CHALLENGES AND OPPORTUNITIES

From large metropolitan areas to rural towns, cities of all sizes face significant and diverse challenges in today’s world. At Itron, we have worked with more than 8,000 city and utility customers around the globe, so we understand many of the common problems:

- » Deliver broader city services for expanding populations. Provide more engagement options for all citizens.
- » Increase public safety in the face of new threats.
- » Establish greater resilience in the face of social and environmental disruptions.
- » Minimize organizational silos for more efficient decision making.

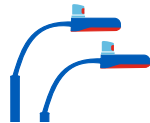
At Itron, we deeply understand the challenges cities are facing worldwide. We know it takes more than technology to balance competing economic, environmental and social priorities.

In 2024, [ThoughtLab](#) conducted a global survey of 250 cities around the world to produce a shared view of challenges they face.

Biggest challenges identified by cities globally (% selecting)	
Climate change	73%
Public health, including mental health, addiction, needs of disabled	45%
Affordable housing and homelessness	43%
High crime and low public safety	35%
Pollution	32%
Aging, inadequate infrastructure	28%
Weak economic, business, and employment conditions	27%
Inadequate transportation and mobility	25%
Funding shortages/budget deficits	24%
Data security and privacy	23%

Source: ThoughtLab, 2024

CITY CHALLENGES



Street lighting represent up to **40%** of the electricity bills at a municipal level.



The top cities globally lose almost 100 hours annually to **traffic congestion**.



Floods were among the most costly weather and climate-related disasters worldwide between 1970 and 2019.



18% of all global emissions come from just **100 cities**.



The five hottest years on **record** have been recorded in the last decade.



Globally, more than a third of clean water is **lost** before reaching homes.



INTRODUCING: CityEdge

Itron's CityEdge is an open innovation solution that brings together IoT technologies with the expertise and experience needed to solve real city challenges today while preparing for tomorrow.

At Itron, we believe that long-term value comes not only from the quality and interoperability of your hardware and software solution, but also from how your digital infrastructure enables you to generate and use data for current and future use cases. Your data is the key to process-automation and better decision making, and once you have established a flexible and robust system for your first use case, it can then be utilized to deliver additional use cases and city services. This magnifies the value of the original investment and allows you to achieve more results with fewer resources.

Regardless of your city's initial use case, the technology foundations of Itron CityEdge remain the same, allowing you to continue to build on the digital infrastructure indefinitely as new challenges and innovative solutions arise.

WHAT DOES CITYEDGE INCLUDE:



DEVICES AND SENSORS: A range of field devices, such as sensors, controllers, and meters—from Itron and a diverse ecosystem of partners. Data security is critical to the delivery of essential city services and Itron's solution allows all these devices to have the same end-to-end security.



BUSINESS INTELLIGENCE AND INSIGHTS: Itron CityEdge is an enterprise-level software platform that gives you data and insights for better decision making, task automation, and more efficient delivery of existing and new services. With purpose-built applications and role-based permissions, CityEdge gives the necessary data access to staff at their desks or out in the streets.



INTELLIGENT CONNECTIVITY: Itron is the market leader for intelligent connectivity. Our resilient networks leverage multiple communication technologies such as RF mesh and cellular to securely connect devices in the field, allowing you to balance cost and performance by use case.



PARTNER ECOSYSTEM: Itron knows that no single vendor can solve every challenge. So, we operate under Open Framework Principles and encourage a growing ecosystem of third-party device and application developers to deliver domain-specific innovations via the CityEdge platform.

ITRON OPEN FRAMEWORK PRINCIPLES

We believe collaboration is a key ingredient for long-term success, not only between technology providers, but also between the cities that are learning how to best achieve their objectives. The five key principles of our Open Framework approach ensure that your city can deploy solutions tailored to meet the specific challenges it faces today and those that will arise in the decades to come.

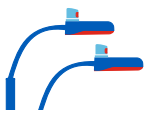
- » Adopt open standards
- » Embrace an open ecosystem mindset
- » Remove barriers to experimentation
- » Support architecture flexibility
- » Facilitate learning and knowledge



DELIVERING VALUE ACROSS KEY DOMAINS

With CityEdge as a unified platform to securely share access to data, your municipal departments can collaborate more efficiently to solve everyday problems, reach sustainability goals, create economic opportunities, engage citizens and enhance quality of life for all.

CityEdge supports five areas of municipal operations with an ever-expanding portfolio of purpose-built applications. Through our collaborative approach to developing tools and solutions, we can enable integration with an ecosystem of technology partners to address new or local challenges. Plus, we enable cities in one region to learn from and share the local solutions or other.



SMART LIGHTING

- Cabinet Control
- Individual Light Point Controls
- Dynamic Lighting
- Adaptive Lighting
- Lighting Asset Audit
- Maintenance and Operations

+++



TRAFFIC & HIGHWAYS

- Traffic Analytics
- Pedestrian & Bicycle Monitoring
- Road Condition Monitoring
- Noise Monitoring
- Sewer / Gully Monitoring
- EV Charging

+++



PUBLIC SAFETY

- Flood Monitoring
- Pole Tilt Monitoring
- Heat Island / Temperature Monitoring
- Gas Leak Detection
- Road Condition Monitoring
- Critical Asset Monitoring

+++



ENVIRONMENTAL & SUSTAINABILITY

- Carbon Tracking & Reporting
- Air Quality Monitoring
- Waste Management
- Dark Skies
- Heat Islands/ Temperature Monitoring
- Smart Irrigation

+++



ENERGY, WATER & UTILITY

- EV Charging
- Electric, Water, Gas Metering
- Smart Irrigation
- Water Telemetry
- Gas Leak Detection
- Sewage Flow Monitoring

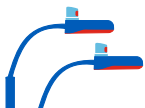
+++



SMART LIGHTING

For cities that rely on older lamp technology, streetlighting is a source of substantial energy and maintenance costs—not to mention carbon emissions. Failing to address the situation continues to drain resources and can lead to dark streets, decreased public safety and lost economic activity.

With streetlights representing roughly 40% of their energy bills, cities around the globe are saving approximately 50% in energy costs by upgrading to more efficient LED streetlights. Plus, with the addition of smart control solutions, like CityEdge Lighting, cities can realize up to 30% in additional operational and energy savings through reduced truck rolls, avoided customer calls, customized dimming schedules and other advanced features. Streetlighting is also an ideal initial use case for CityEdge, establishing city-wide connectivity while delivering a strong ROI.



Smart Lighting capabilities include:

- » **Fault identification and custom reporting:** Itron's fault identification and reporting solution enables cities to detect lighting issues in real-time, reducing downtime and enhancing public safety.
- » **Measuring energy consumption:** Itron's energy measurement capabilities provide accurate data on streetlight energy usage, allowing cities to optimize energy efficiency and reduce costs.
- » **CO2 emissions calculations and reporting:** Itron's emissions tracking tool helps cities calculate the carbon savings from LED lighting, contributing to sustainability and reporting goals.
- » **Real time and scheduled on/off dimming:** Itron's smart lighting systems offer real-time dimming options and scheduled adjustments, ensuring energy savings while maintaining appropriate lighting levels.
- » **Adaptive and dynamic lighting:** Itron's adaptive lighting solutions adjust brightness based on real-time conditions, such as traffic or pedestrian presence, enhancing energy efficiency and safety.
- » **Individual and cabinet controls:** providing the right fit for your city, Itron's solution includes individual networked lighting controllers (External: NEMA and Zhaga, Internal: Wired), and cabinet controllers for circuit-switched lights.

- » **Multi-tenancy:** Enable different departments to manage their lights (e.g. parks, parking lot, municipalities, councils, etc.)
- » **Standards:** Leveraging our TALQ Certified platform, Itron has integrated with several other lighting controls solutions, giving you choice and a resilient supply chain.



CITYEDGE ENABLES CHICAGO TO ACHIEVE ITS CARBON AND COST SAVING GOALS

LOCATION: Chicago, Illinois

POPULATION: ~2.75 million (3rd largest city in U.S.)

PROJECT SIZE: ~280,000 LED streetlights with smart controls

ANNUAL EMISSIONS SAVINGS: 134,600 metric tons (estimated)

ESTIMATED COST SAVINGS: \$100 million over the first decade

"The main reasons for this project were carbon reduction and a better quality of life for residents. It addresses climate change and air quality for future generations. Plus, the brightness of the LEDs has changed the perception of neighborhoods in a way that feels safer." - Art Roriguez, Deputy Commissioner, Chicago Department of Transportation

To read more about carbon reduction and operational benefits, read the white paper "[Why Smart LED Streetlights are the Gold Standard for Measurable Carbon Reduction.](#)"



TRAFFIC & HIGHWAYS

Road networks remain indispensable to the vital flow of urban life. But as cities expand and evolve, the management of traffic and highways becomes more complex and demanding. Cities and their service providers need actionable information for planning and maintenance. They also need modern tools for reducing congestion, promoting sustainable transport options, and improving public safety and disaster response.

CityEdge enables real-time awareness of roadway conditions that need timely responses, as well as data gathering and analysis for strategic decision-making. The CityEdge platform supports dozens of traffic and highway use cases today, and the list continues to grow as cities, service providers and Itron partners develop and share new applications.



Traffic and Highways capabilities include:

- » **Air quality tracking:** Itron's platform monitors air quality, providing real-time pollution data to inform public health decisions and support clean air initiatives in urban environments.
 - » **Pole tilt monitoring:** Monitor utility pole stability with CityEdge sensors, preventing hazards and ensuring the structural integrity of critical infrastructure in the event of extreme weather or traffic accidents.
 - » **EV charging infrastructure:** Support and monitor electric vehicle charging stations, optimizing energy distribution and usage to meet the growing demand for sustainable transportation solutions.
-
- » **Traffic analytics and event detection:** Itron's CityEdge platform provides real-time traffic analysis and event detection using advanced sensors to optimize road safety, reduce congestion and improve decision-making.
 - » **Road condition monitoring:** The CityEdge platform continuously monitors road conditions, alerting municipalities of potential hazards, improving response times and ensuring safer roads for all.
 - » **Pedestrian and bicycle monitoring:** Itron's sensors monitor pedestrian and bicycle activity, supporting city efforts to enhance crosswalk safety and reduce accident risk in high-traffic areas.
 - » **Flood monitoring and alerts:** CityEdge monitors real-time flood risks, sending early warnings to municipalities to mitigate damage and ensure community safety during extreme weather conditions.
 - » **Sewer/gulley cleaning monitoring:** Itron's CityEdge tracks sewer and gulley blockages, enabling timely cleaning schedules, preventing floods and ensuring urban infrastructure operates smoothly.
 - » **Traffic-based adaptive lighting scenarios:** Adjust street lighting in real time based on traffic levels, optimizing energy usage and enhancing visibility in high-traffic areas for safer driving conditions
 - » **Noise detection and anti-social behavior monitoring:** Detect and respond to excessive noise levels, including before or after roadworks to determine noise level impacts on a neighborhood



FUENGIROLA ENHANCES THE TOURIST EXPERIENCE WITH CITYEDGE

LOCATION: Fuengirola, Andalusia, Spain

POPULATION: 75,000

PROJECT SIZE: 12,500

SOLUTIONS: CityEdge platform + adaptive lighting based on traffic and noise levels

RESULTS: Noise sensors are installed in touristic areas of the city to align lighting levels to tourist activity and improve visitor experience. Traffic sensors are installed on major roads to adjust lighting levels to real time traffic conditions to optimize energy consumption while ensuring road safety and regulatory compliance.



PUBLIC SAFETY

City governments and public safety departments are challenged to maintain the trust of citizens while implementing initiatives for addressing issues like crime, traffic and homelessness. Public outreach, transparency and social justice are necessary aspects of successful public safety campaigns, and failure can directly impact the local economy and quality of life.

New, community-first approaches to public safety are taking innovative steps to engage citizens and consider the effects of urban planning and design. CityEdge can support direct communication with members of the community and first responders, and it can provide the means for detecting, measuring and remediating locations of risk throughout the city environment.



Public Safety capabilities include:

- » **Flood monitoring:** Itron’s flood sensors provide real-time alerts for flood risks, helping cities respond quickly to mitigate damage and enhance public safety.
- » **Pole tilt monitoring:** Itron’s pole tilt monitoring solution detects leaning or damaged utility poles, enabling quick intervention to prevent accidents or service interruptions.
- » **Adaptive and dynamic lighting:** Utilize Itron’s adaptive lighting system to automatically adjust streetlight brightness based on real-time traffic conditions, improving energy efficiency and safety.
- » **Traffic event detection:** Leverage Itron’s advanced sensors to monitor and detect real-time traffic events, ensuring prompt responses and improved road safety in urban environments.
- » **Critical asset monitoring (life buoys, CPR equipment, etc):** Ensure safety critical assets, such as life buoys and CPR equipment, are operational and available with Itron’s real-time asset monitoring system.

- » **Noise level monitoring and anti-social behavior detection:** Monitor and detect excessive noise or anti-social behavior in public spaces with Itron’s advanced sound and behavioral monitoring technologies.
- » **Air quality and temperature monitoring:** Monitor air quality and temperature levels across cities with Itron’s environmental sensors, empowering data-driven decisions for healthier urban living.



CITYEDGE HELPS CITY OF LONDON SAVE LIVES

LOCATION: City Of London, UK

POPULATION: Greater London 8.9M, CoL district 9k

PROJECT: City of London – River Safety

SOLUTIONS: CityEdge, smart lighting, lifebuoy monitoring, air quality, humidity, temperature sensors

RESULTS: On average, about 30 bodies are recovered from the River Thames in London each year, and City of London aims to get this to zero. A specific concern was the vandalism or removal of lifebuoys, meaning they are not available to first responders when needed. City of London uses CityEdge to deploy battery operated sensors which notify the city immediately upon removal of critical assets along the Thames River.

Pedestrian Safety at Intersections

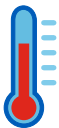
Each year, it is estimated that over [300,000](#) pedestrians die globally due to traffic crashes, which represents roughly 22% of all global road deaths. Many of these fatalities occur at intersections, where pedestrians are at [greater risk](#) due to crossing paths with vehicles.” In the U.S., for instance, about one-quarter of all traffic [fatalities](#) are related to intersections



ENVIRONMENT AND SUSTAINABILITY

Political policies and economic realities are shifting in response to the effects of climate change and other sustainability imperatives. At the same time, the growth of urban centers and their increasing demand for electricity, transportation and other resources makes it more difficult for cities to meet environmental and social goals.

Cities and their partners need solutions that allow them to accurately set, measure and manage programs for emissions reductions and resource conservation. Plus, they need systems that can improve the resiliency of their urban communities in the face of extreme climate events. CityEdge provides data and applications needed to support carbon reduction roadmaps, economic growth, environmental protection and resiliency plans.



Environment and Sustainability capabilities include:

- » **Carbon tracking and reporting:** Itron CityEdge enables cities to track and report emissions in real-time, providing essential data for achieving sustainability goals and improving urban resilience.
- » **Waste management:** Optimize waste collection and reduce environmental impact with Itron's smart waste management solutions, providing data-driven insights for efficient urban sanitation.
- » **Air quality monitoring:** Monitor and manage urban air quality with Itron's sensors, providing actionable insights to improve public health and ensure environmental compliance.
- » **Temperature monitoring, including heat islands:** Track temperature fluctuations and heat islands with Itron's sensors, helping cities mitigate climate impacts and enhance community resilience.
- » **Gas leak detection:** Real-time monitoring of gases, like methane, and others important to your city
- » **Smart irrigation:** Conserve water and optimize landscape health with Itron's smart irrigation, delivering precise water usage based on real-time weather and soil conditions.
- » **Flood monitoring:** Monitor water levels and predict flooding events with Itron's flood monitoring solutions, providing critical data to protect urban areas from climate impacts.
- » **Dark skies:** Monitor conditions for spontaneous darkness to align with your city's wildlife protection goals.



WITH CITYEDGE, CHRISTCHURCH PRESERVES WATER AND REDISCOVERS THE NIGHT SKY

LOCATION: City of Christchurch, New Zealand

POPULATION: 407k

PROJECT: City of Christchurch – Ōtautahi Climate Resilience Strategy and Te Wai Ora o Tāne Integrated Water Strategy

SOLUTIONS: Itron CityEdge smart lighting, Water AMI

RESULTS: Starting with a full, controlled LED lighting replacement program, Christchurch achieved carbon savings of 1,150 tons per year. The city is also leveraging CityEdge to enable it to achieve water strategy goals, water conservation, and create a sustainable long term solution to deliver the city's vision of "Water for Life."

Heat Islands

Day-time temperatures in poorer urban neighborhoods are often hotter than more affluent areas of a city, according to the U.S. Environmental Protection Agency (EPA). In addition to health impacts, residents of these areas suffer financially because of the heat island effect, and the impacts will continue to worsen, if left unaddressed. **About 30% of all U.S. households report difficulty paying their energy bills** or cooling their homes, which is more difficult in hotter neighborhoods and in less energy-efficient buildings.



ENERGY, WATER & UTILITY

The changing energy landscape, technological advancements and increasing demands for sustainability and resilience are drawing cities and their utilities closer together. Greater collaboration and information-sharing is needed for successful community engagement and decarbonization goals. Plus, greater operational efficiency is imperative to control costs while addressing aging infrastructure.

CityEdge simplifies data-sharing and governance between cities and utilities as they work together to prioritize capital investments and reduce operating costs. Plus, it establishes the technological foundation needed for the integration of smart devices, EVs and other distributed energy resources (DERs).



Energy, Water and Utility capabilities include:

- » **EV charging infrastructure:** Itron's EV Charging Optimizer provides real-time visibility and control of electric vehicle charging infrastructure to support equitable expansion and safe charging.
- » **Electric, gas, water advanced metering infrastructure:** Itron's AMI solution offers real-time monitoring of electricity, gas, and water usage, improving resource management for cities and communities and lowering operational costs for utilities.
- » **Gas leak detection:** Real-time monitoring of gases, like methane, and others important to your city
- » **Water telemetry:** Itron's water telemetry system provides continuous tracking of water usage, flow, and pressure to prevent leaks and ensure efficient water management.
- » **Smart irrigation and monitoring:** Itron's smart irrigation system leverages data-driven insights to optimize water usage for landscaping, minimizing waste and improving sustainability.
- » **Sewage flow monitoring:** Itron's sewage-flow monitoring solution detects and reports real-time flow data, ensuring prompt action to prevent blockages and maintain operational efficiency.

- » **Sewage over flow monitoring:** Itron's sewage-overflow monitoring solution identifies overflow risks, allowing cities to act quickly and prevent environmental contamination.
- » **Utility-city relationships:** Itron's platform strengthens the partnership between cities and utilities, enabling data sharing to improve infrastructure planning and operational efficiency.



CPS ENERGY, SAWS, CITY OF SAN ANTONIO - A COMMUNITY IN PARTNERSHIP

CPS Energy, the nation's largest municipally owned electric and natural gas utility, is supporting multi-commodity AMI, Distribution Automation, Smart Streetlighting, Smart City Sensors, and the largest ultrasonic water meter deployment in the nation—all on Itron's single network platform.

"Our smart city pilot is a great example of how collaboration can help the City of San Antonio become a smart city," said Frank Almaraz, Chief Power, Sustainability & Business Development Officer for CPS Energy. "With our customers top of mind, the collaboration with San Antonio Water Systems (SAWS) and Itron allows us to see the potential of how a smart and more resilient city can preserve precious resources while working to maintain excellent customer satisfaction."

Itron smart fleet EV solution allows school districts and city transportation agencies to plug into the existing grid without expensive and time-consuming utility infrastructure upgrades. Further, Itron distributed Grid Edge Intelligence solutions enable the addition of entirely new electrified neighbourhoods (EVs, heat pumps, solar panels) while keeping loads within grid operational constraints and renewable power budgets.



WHY ITRON

A Flexible, Multi-Purpose Investment in Your Community's Future

Despite similar challenges, all cities have unique circumstances. For instance, pre-existing technology investments must be utilized and integrated, and local political priorities will shape the agenda, as will the age and condition of existing infrastructure and services.

At Itron, we believe that long-term value comes not only from the quality and interoperability of your hardware and software solution, but also from how your digital infrastructure enables you to generate and use data for current and future use cases. Your data is the key to process-automation and better decision-making, and once you have established a flexible and robust system for your first use-case, it can then be utilized to deliver additional use-cases and city services. This magnifies the value of the original investment and allows you to achieve more results with fewer resources.

Regardless of your city's initial use case, the technology foundations of Itron CityEdge remain the same, allowing you to continue to build on the digital infrastructure indefinitely as new challenges and innovative solutions arise.

With over **270 million devices/sensors connected** across 8,000 customers globally, Itron delivers data for better decision making. **Itron's CityEdge** is a flexible, multipurpose investment in your community's future

YOUR STRATEGIC PARTNER

Now is a pivotal time in the history of your city—and all cities. Technological advances in real-time data management, analytics and automation hold tremendous promise to help you overcome pressing challenges through the digital transformation of public services. But to reach this brighter future, you need trusted collaboration and knowledgeable advice.

With decades of industry experience and successful deployments at scale, Itron is much more than just a technology vendor and a pioneer of smart streetlighting controls. We have worked with cities and their utility partners around the globe to tackle broader challenges like sustainability, disaster preparedness, budget deficits, data security, inadequate infrastructure, public safety and a lot more. With this understanding, we can enable next-generation user experiences for you and your citizens.

Learn more at itron.com/smart-cities

To learn more visit itron.com

While Itron strives to make the content of its marketing materials as timely and accurate as possible, Itron makes no claims, promises, or guarantees about the accuracy, completeness, or adequacy of, and expressly disclaims liability for errors and omissions in, such materials. No warranty of any kind, implied, expressed, or statutory, including but not limited to the warranties of non-infringement of third party rights, title, merchantability, and fitness for a particular purpose, is given with respect to the content of these marketing materials. © Copyright 2024 Itron. All rights reserved. 102068BR-01 9.24

We create a more resourceful world

Itron

2111 North Molter Road
Liberty Lake, WA 99019 USA