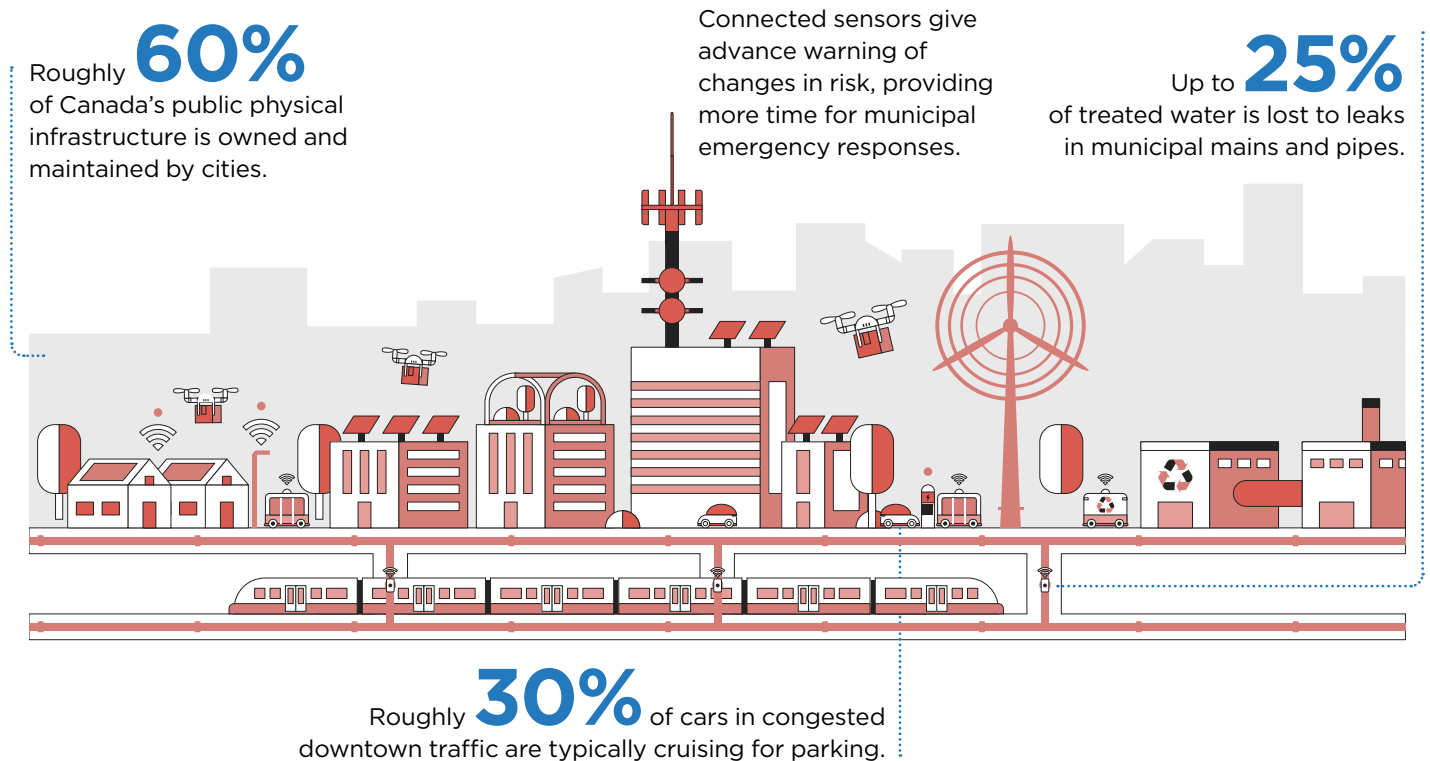


Smart Cities Are Resilient Communities

Community decision makers are faced with ongoing volatility, from COVID-19 to financial uncertainty to environmental crises. Cities that invest in digitalization, connected assets and solutions will be better prepared to respond to both current challenges and the ones yet to come.

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Municipalities rose to the challenge of the pandemic, showing strengths and unleashing pent-up innovation in a time of crisis. Local governments responded with new services, demonstrating agility and showing that digitalization and online tools work. IDC believes that the fiscal, environmental, and social challenges faced by cities will continue to be unstable, meaning that these new digital capabilities need to be expanded and strengthened.

The use of smart, connected Internet of things (IoT) solutions helps staff make better decisions faster, improves civic sustainability, and better serves local citizens. For example:

- Roughly 60% of Canada's public physical infrastructure is owned and maintained by cities — and large proportions of those assets are at risk due to climate change, whether through flooding, fire, freeze-thaw, droughts, or heat waves. Connected sensors give advance warning of changes in risk, providing more time for municipal emergency responses.
- Up to 25% of treated water is lost to leaks in municipal mains and pipes. Smart water solutions rapidly identify issues before they create a crisis, not just for the water department but also for the roads and public works teams.

- Civic infrastructure can be reinvented. While cities have embraced LED streetlights for efficiency gains, some have gone further: Barcelona not only connected its streetlights to an IP network but also augmented its luminaires with other sensors to monitor vehicle and pedestrian traffic, noise levels, and air pollution.
- IoT makes more efficient use of municipal assets. Roughly 30% of cars in congested downtown traffic are typically cruising for parking. Using smarter connected parking systems generates revenue for cities while also smoothing traffic patterns.
- Citizens expect their interactions with government to match their retail consumer experiences. Municipalities need to improve community engagement by offering self-service digital options, online reporting, and automated alerts — which also benefit staff by creating new data sets showing where experience is lagging.
- Municipal service routing can be optimized by using smart sensors to know which bins are full, reducing unnecessary travel, reducing carbon footprint, and improving civic ambiance.

Cities operate in a disruptive environment. Municipal government is the closest level to the people, and smart solutions start with people. It goes beyond just the installation of digital interfaces in traditional infrastructure or the streamlining of city operations. The purposeful use of technology and data informs better decision-making and delivers a better quality of life.



Investing in digital transformation should provide a return on investment, assisting civic decision makers in coping with traditional challenges such as revenue shortages by providing efficient and effective data to mitigate these issues.



IDC recommends that cities focus on connecting the workflows where data can make an immediate difference: those functions where staff can make significant improvements to service delivery or minimize risk and costs through automation (e.g., water leaks, parking).



IoT is not a standalone technology. It is the combination of physical sensors, gateways, networks, middleware, data management, applications, and analytics. Civic decision makers need to work with trusted partners to design, build, secure, and operate these digital solutions.



Adding digital sensors and workflows to traditional infrastructure and processes will open new vulnerabilities. IDC advises cities to work with trusted partners to secure endpoints, networks, data, and applications to avoid risk and ransomware.

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