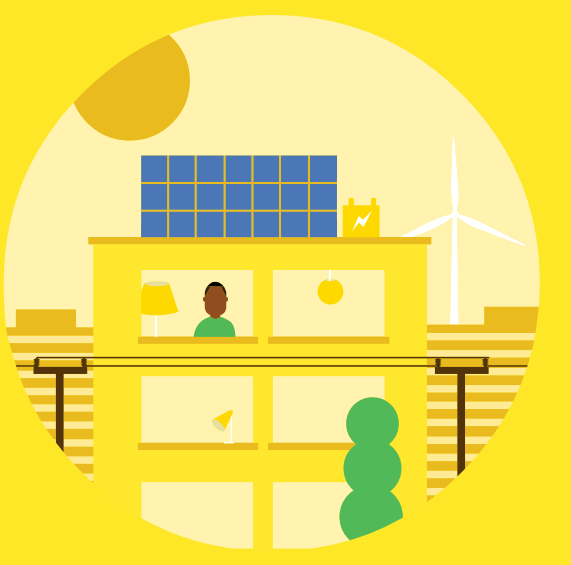




TOWARDS A RESILIENT DOWNTOWN



CHALLENGES

The **Downtown Energy Strategy** addresses challenges associated with a growing Downtown, including:

- Increasing Demand on Electricity Infrastructure
- Increasing Energy Consumption and Greenhouse Gas Emissions
- Area-Wide Power Outages

The **Downtown Water Strategy** addresses challenges associated with a growing Downtown, including:

- Identification of capacity constraints within existing infrastructure.
- Determination of solutions to resolve capacity constraints, not just for future growth but for other factors that may affect the capacity of infrastructure.
- Implementation of solutions in the form of infrastructure projects that need to consider prioritization, coordination, and funding.

GOALS

3.1

Growth will be accompanied by the physical and social infrastructure required to support *complete communities* and the health of residents, workers and visitors.

3.12

Downtown will be stronger and healthier, leveraging green infrastructure opportunities to improve air quality, absorb stormwater, minimize the urban heat island and expand biodiversity.

3.13

Downtown will be more resilient to changing weather patterns, with improved back-up power systems in tall residential buildings helping residents withstand extreme weather events and area-wide power outages.

3.14

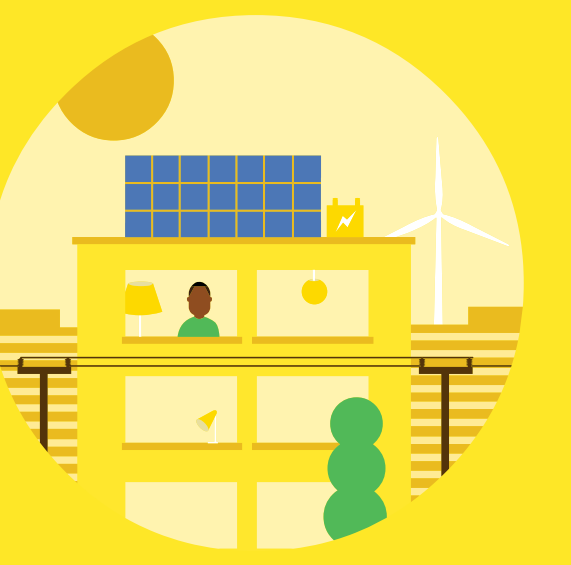
Downtown will contribute to the achievement of the City's energy and emissions targets through development that is zero-emission ready and minimizes electricity demand by connecting to the deep lake water cooling system and new low-carbon thermal energy networks.

3.15

The quality of water along the shoreline will be improved through reductions of direct and indirect wastewater and storm water discharges to the lake.



TOWARDS A RESILIENT DOWNTOWN



13 PROPOSED POLICIES

HAVE YOUR SAY

13.1 Development and streetscape improvements will integrate storm water capture, trees and other herbaceous plantings, where appropriate, informed by the Green Streets Technical Guidelines.

13.2 Development will be encouraged to provide additional back-up power informed by the Minimum Back-up Power Guidelines for Multi-Unit Residential Buildings in order to improve resilience to area-wide power outages.

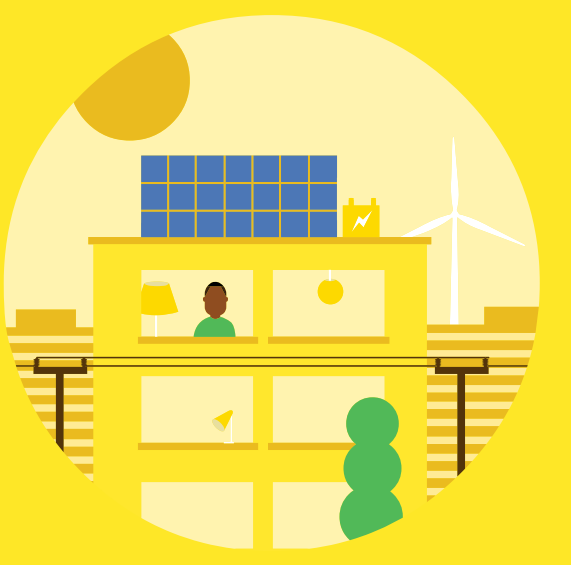
13.3 Development will be encouraged to incorporate biodiversity by:
13.3.1. creating habitats;
13.3.2. planting varieties of species that are pollinator-friendly; and
13.3.3. designing green roofs, informed by the City's Guidelines for Biodiverse Green Roofs.

13.4 Development will be encouraged to:
13.4.1. incorporate recovery of low-carbon energy from infrastructure sources such as sewers and transit power stations to reduce emissions;
13.4.2. develop or incorporate a connection to an existing or planned thermal energy network as informed by the Design Guideline for District Energy-Ready Buildings;
13.4.3. integrate on-site electricity production to reduce electricity demand;
13.4.4. limit the loss of embodied energy contained within existing building stock; and
13.4.5. target net-zero energy use and emissions.

13.5 Downtown's water, wastewater and stormwater management infrastructure will be maintained and developed by keeping infrastructure in a state of good repair and providing required new infrastructure concurrent with growth.

13.6 Development will reduce the negative impacts of inflow and infiltration on the capacity of the sanitary and combined sewer systems.

13.7 Development will identify improvements to water and sewer infrastructure, and where the infrastructure is insufficient to serve the proposed population a Holding By-law will be utilized to ensure that the infrastructure is provided before or concurrently with growth.



ADDRESSING CHALLENGES

A

Aggressive Energy Conservation: Local energy solutions start with energy conservation. This includes retrofits to existing buildings, such as equipment replacement or envelope upgrades, as well as designing new buildings with a focus on passive solutions.

B

Integrating Low-Carbon Thermal Energy Sources: In dense areas with substantial energy needs, which includes large parts of Downtown, low-carbon thermal energy networks (LCTEN) are the most flexible and cost-effective way to meet these targets. LCTENs, as a platform, create the economies of scale required to integrate large low-carbon thermal energy sources over time.

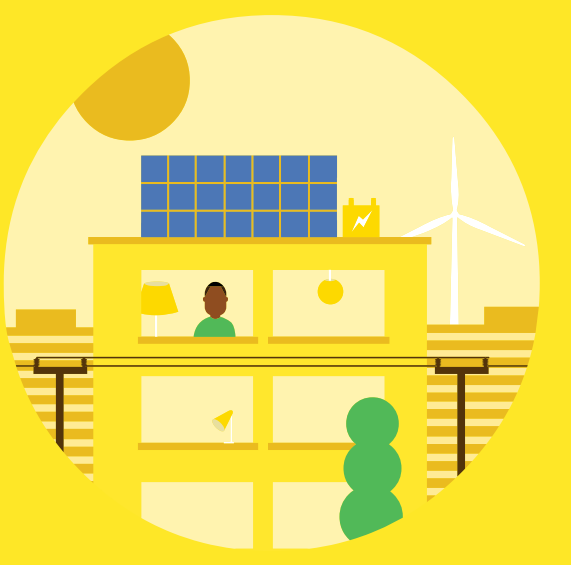
Strengthening Resilience to Power Outages: With increasing frequency and intensity of extreme weather, it is essential to prepare for sustained, area-wide power outages. Residents of MURBs are particularly vulnerable given their reliance on electricity for most basic services.

ACTIONS

- Focus enhanced Better Building Partnership conservation efforts on existing buildings Downtown
- Target Toronto Green Standard Version 3 Tier 4 (near zero emissions) for all new buildings

- Support existing Deep Lake Water Cooling (DLWC) system expansion
- Develop new DLWC system east of Yonge Street
- Co-locate combined heat and power plants with new transit stations
- Co-locate heat pumps with new sewer infrastructure
- Support expansion and decarbonization of existing thermal energy networks
- Develop new thermal networks connected to low-carbon thermal energy sources
- Provide guidance to developers on designing buildings mechanical systems to use low-temperature thermal energy sources

- Support provision of backup power in multi-unit residential buildings by encouraging developers to apply the "Minimum Backup Power Guideline"
- Provide backup power to community & recreation centres



ADDRESSING CHALLENGES

A

Identifying Capacity Constraints: A Water Distribution Study for Pressure Districts 1, 1W, and 2 and the Waterfront Sanitary Servicing Master Plan Environmental Assessment Update were both completed to determine capacity in the existing water and wastewater systems to accommodate future growth in the Downtown.

B

Determining Infrastructure Solutions: The existing local water distribution system is able to accommodate future growth in the Downtown based on domestic demand (e.g. drinking water and wash water uses). However, some aspects of the water and wastewater systems need to be upgraded to support growth.

C

Implement Infrastructure Solutions: Toronto Water and City Planning will work together to prioritize infrastructure projects (related to future growth) that would be planned for inclusion to the implementation process.

ACTIONS

- Find and fix undesirable infiltration and inflow (I/I) into the wastewater system

- Potential upsizing of parts of the water system to handle fire suppression demand
- Increase capacity of the Scott Street Sewage Pumping Station and specific tributary sewers

- Implement State-Of-Good-Repair process for all watermains and sewers
- Deliver Service Level Enhancement projects (e.g. reduction of basement flooding)
- Enhanced project coordination with other utilities through the City's Major Capital Infrastructure Coordination Office to provide infrastructure to support growth
- Secure funding for growth-related infrastructure through Development Charges. The City's Development Charges Bylaw is currently under review.