

# INFRASTRUCTURE

## Climate Change and Infrastructure

Infrastructure refers to the physical structures that support a society, such as roads, bridges, water supply, sewers, electrical grids and telecommunications. The City of Hamilton owns and operates over \$14.4 billion (value to replace infrastructure) in core Public Works infrastructure which services the needs of residents, local businesses and visitors to the City (Asset Management Plan, 2014). This is in addition to the billions of dollars' worth of assets owned by the private sector. More frequent and intense storm activity is expected in Ontario as a result of climate change, placing more stress on public and private infrastructure. Infrastructure is highly vulnerable to extreme weather events; roads will be more prone to potholes, sewers more likely to overflow and power grids more likely to fail.

### Insights

- The City Of Hamilton facility portfolio consists of approximately 280 structures totaling 4.8 million square feet.
- There are 6,326 paved lane kilometers in the City and 53 unpaved lane kilometers.
- The City of Hamilton maintains the second largest number of Municipal bridges in southern Ontario, accounting for 192,241 square metres of surface area.
- The City of Hamilton currently owns and operates two wastewater treatment plants.
- There are 1,763 kilometers of wastewater mains in the City and in 2012, 107,156 megalitres of wastewater was treated.
- The City of Hamilton owns and operates over 2,500 kilometers of sewers dating back to the mid-1800s.
- There are 1,332 kilometers of storm water pipes in the City.
- Drinking water for the City of Hamilton is taken from Lake Ontario and undergoes a series of water treatment processes before ingestion. A lot of energy is needed to treat the water and therefore the more water we waste, the more demand there is and more amount of water needs to be treated. A lot of water is expended when treated water is pumped from the treatment plant to the consumer. This wastage of energy is linked to global warming.
- On average (2008-2012), 85,846 megalitres of drinking water is treated annually.
- The City of Hamilton currently spends about \$40 million annually on its energy and water utilities.
- More than half (57%) of the City's total energy costs is associated with electricity, with the remainder going to fuel costs (33%) and natural gas costs (10%).

### Existing Infrastructure Plans and Policies

- ✓ Transportation Master Plan, 2007
- ✓ Water and Wastewater Master Plan
- ✓ Stormwater Master Plan, 2007
- ✓ City of Hamilton Public Works Asset Management Plan, 2014
- ✓ Corporate Energy Policy, 2014
- ✓ City of Hamilton Integrated Energy Mapping Strategy, 2011

### Discussion Questions

- What impacts or risks from climate change do we face in relation to infrastructure?
- Who or what is most vulnerable to the impacts of climate change from an infrastructure perspective?
- What opportunities present themselves from an infrastructure perspective from climate change?