Resilience + ICT4S
Opportunities and Challenges
What is Resilience?

Resilience is about making safe and livable cities for everyone.
Hotter, Wetter, Wilder

**Daily Temperature Maximum**
- 44° Celsius (2040-50)
- 37° Celsius (2000-09)

**Hot Days**
- 66 above 30° (2040-50)
- 20 (2000-09)

**Extended Heat Waves**
- 2.5 per year (2040-50)
- 0.6 (2000-09)

**Daily Rainfall Maximum**
- 166 millimetres (2040-50)
- 66 (2000-09)

City of Toronto, 2011
A Hotter, Wetter, Wilder 2017

+1.8°C above normal; 5% of days breaking heat, cold, or precipitation
Lake Level Rise 2017

Average Daily Water Levels; Port of Toronto

International Lake Ontario – St. Lawrence River Board
Growth and prosperity

Forecast Population Growth (%) 2017-2030

Commission for Sydney, 2017
But... prosperity is not shared by all
A Tale of Two Cities
The Original Resilience Strategy?
Hurricane Hazel

Conservation Authorities created by Ontario

CA’s propose a flood protection measures (which are rejected)

Hurricane Hazel

TRCA expropriates land, changes planning approvals
Public-Private Climate Modelling?

[Graph showing heavy precipitation days (20 mm) from 1950 to 2075, with lines indicating modelled historical values, observed historical values, and projection.]

Climate Atlas of Canada, 2018 (climateatlas.ca)
What are we building to?

Daily Rainfall Max, mm
(Storm Sewer System)

- Design
- May-00
- Aug-05
- Jul-13
Resilience + Towers
What Towers?

Pre-1985
>500,000 Residents
1189 Towers
45% of Rental
Tower Renewal Opportunity

Climate risk mitigation
40-80% Energy Savings
25-30% SWM + Water Savings
Housing quality and affordability
Smart Cities Challenge

The Digital Divide

Over 47,000 children are living below the poverty line in these high-rise towers.

Rising internet cost forces low-income households to forego other necessities such as food and rent.

27% of Toronto Public Library users do not have internet access at home.

Low income residents are forced to choose between cellular data or internet access at home due to cost.

“Lack of access to the Internet excludes low-income Canadians from equal opportunities to education, employment, government services and modern civic participation.”

– ACORN Canada
Data is an Enabler... not a Solution
In Toronto, you need to build consensus

**March Highlights**

**Transit Reliability**
- 85% of streetcars arriving within 4 minutes westbound during the morning commute.

**Transit Travel Times**
- Approx. 5 minute improvement on each direction during the PM commute for the slowest streetcar travel time.

**Car Travel Times & Volumes**
- Whole travel times in March, especially during the afternoon rush hour, have generally improved when compared to before the pilot.
- Drivers on King Street continue to access local businesses or residences, conduct loading and deliveries, and pick up/drop-off passengers. Traffic previously using King Street has generally shifted to alternative east and west routes.
- The downtown traffic network has been largely able to absorb and respond to the changes in routing that drivers have made.

**Pedestrian Volumes**
- Pedestrian volumes in March were generally similar to those from February.
- Changes in the number of pedestrians from November to March show similar trends on both King Street and Queen Street.
- On King Street...

**Cycling Volumes**
- Overall changes in the number of cyclists throughout the downtown are consistent with expected seasonal changes.

**Previous Highlights**

**Transit Ridership**
- 16% increase in all-day weekday ridership.
- 25% increase in AM commute ridership westbound at Spadina Ave.
- 27% increase in PM commute ridership eastbound at University Ave.

**Transit Capacity**
- To respond to this growth in ridership, the TTC has increased the capacity of streetcar service on routes that serve the pilot area.

**Economic Point-of-Sale Data**
- No change
- Customer spending since the pilot began is in line with seasonal spending patterns over the past three years.
Connect with #ResilientTO

@ellcappell and @resilientto
resilientto@toronto.ca