



## Engaging critical infrastructure providers towards climate change adaptation

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Adaptation Futures 2016 Conference  
 Rotterdam  
 Session title: Resilient risk management strategies  
 Session number: SPB.7  
 Theme: Risk assessment, adaptation planning  
 Date: May 11, 2016 Time: 15:45  
 Room: Oscar Auditorium



## Agenda

### 1) Issue:

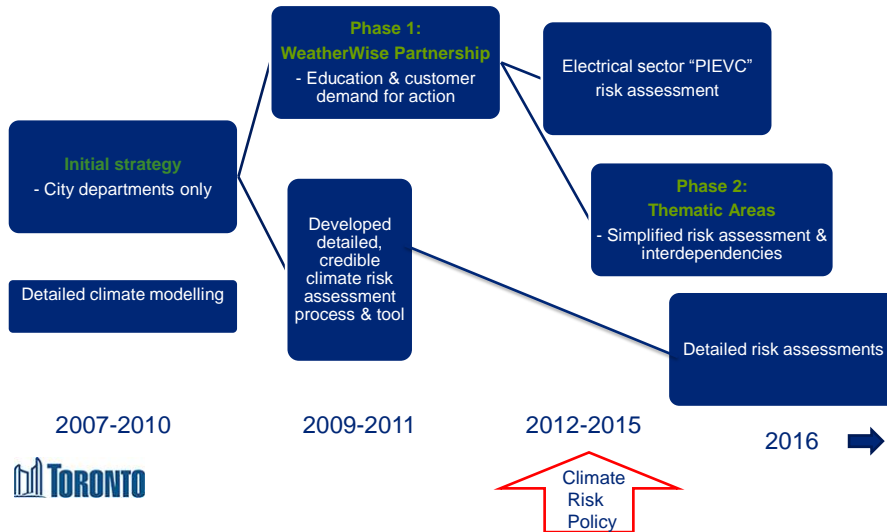
- Interdependent infrastructure sectors vulnerable to more frequent extreme weather
- Many sectors not controlled by City
- Limited upper level government regulatory drivers for climate adaptation
- City of Toronto taking leadership, within resource limitations

### 2) Strategies Used

### 3) Results & Lessons Learned



## Evolution of Multi-Sectoral Engagement



## Interdependencies





## PHASE 1: Collaboration through “WeatherWise Partnership”

### 60 Membership Organizations

- Insurance, Banking, Telecom, Transportation, Electrical, Real Estate, Water, 3 levels of gov’t

### Purpose

- ID & manage risks due to extreme weather in Toronto region

### Focus starting 2012

- Electrical system risk assessment

## WeatherWise Partnership

- Partnership with city-building NGO called “CivicAction”
  - Builds partners & takes action through multi-sector collaboration
  - Strong convening power
- Multiple briefings on risks hosted at prominent business venues
  - Informed vote on top priority: electricity
  - Cohesive voice of concern of customers

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## WeatherWise Partnership

- Invited by CivicAction & City staff
- Attendees represented 100s of billions in built assets & economic activity
  - Most infrastructure groups (public & private)
  - Banks
  - Insurance
  - Surrounding smaller cities
- Key members helped to maintain momentum during change of elected administration



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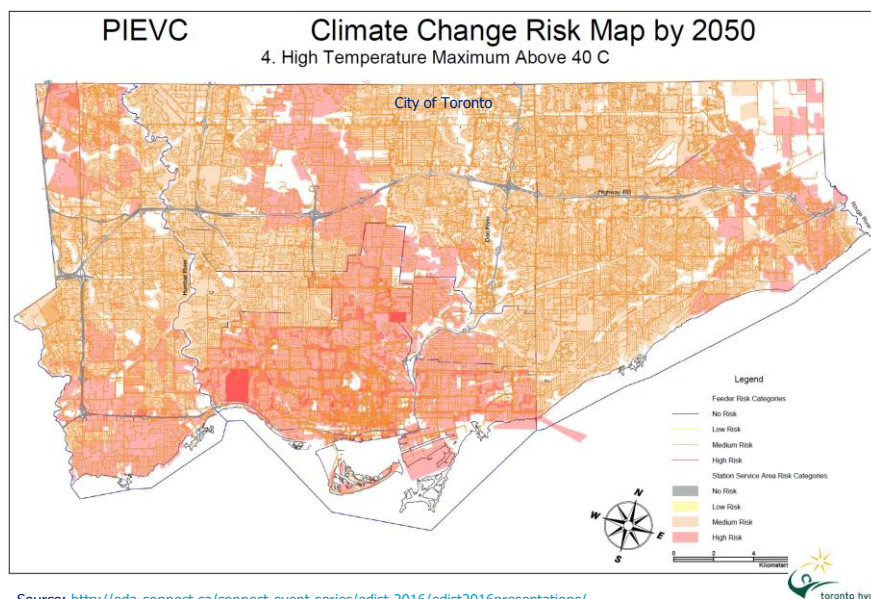
## Results

- Convened “Electrical Sector Project Team”
  - Global Electrical Adaptation Benchmarking Study
  - Survey of critical infrastructure groups’ ability to cope power disruption
  - Formalized climate risk assessment: “PIEVC Protocol”

*PIEVC =  
Public Infrastructure Engineering Vulnerability Committee*

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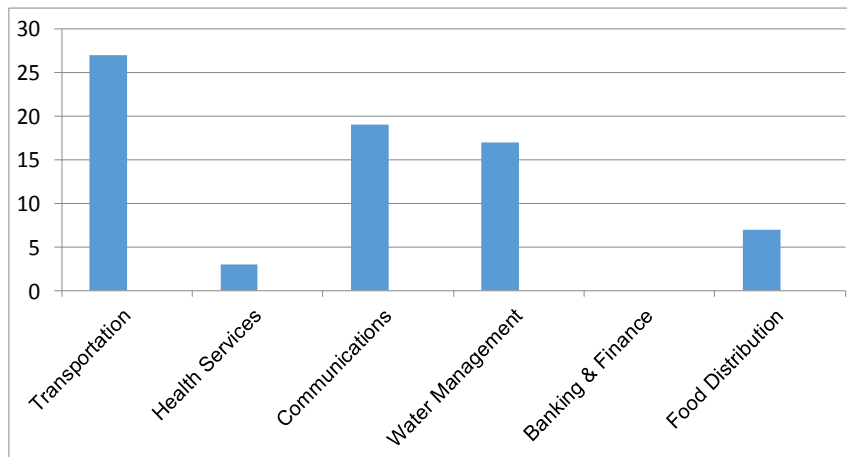
## PIEVC Study



Source: <http://eda-connect.ca/connect-event-series/edist-2016/edist2016presentations/>

## WeatherWise Partnership's next priorities after electrical

- 73 Votes, 66 Organizations represented

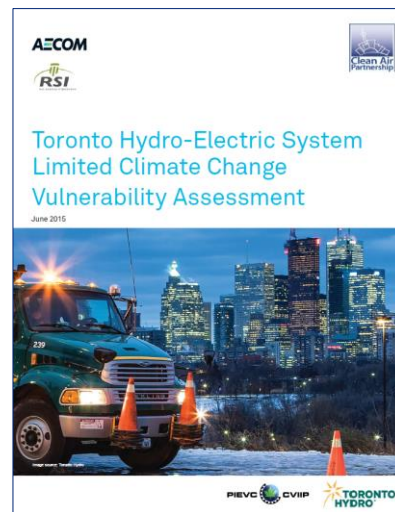


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## PIEVC Study

- Entire distribution system
- 2010-2050
- 20 climate parameters

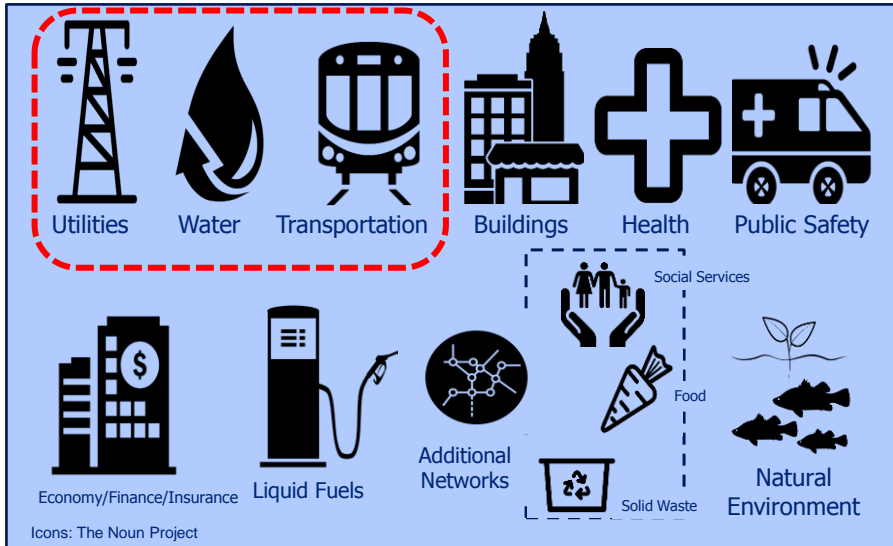
For detail see [www.pievc.ca](http://www.pievc.ca)



Source: <http://eda-connect.ca/connect-event-series/edist-2016/edist2016presentations/>



## Phase 2 : Work in Thematic Areas



## Work prioritized in 3 thematic areas:



**Water,  
Wastewater  
&  
Stormwater**



**Utilities**

Electrical  
Steam &  
Cooling  
Natural Gas  
Telecom



**Transportation**

Roads dept.  
Local transit  
Regional transit





## Outputs & Outcomes

A structured process for ongoing evaluation & reporting to enhance city resilience

1. High level risk & dependency listing to support multi-sectoral collaboration
2. Listing of actions & costs identified to address & mitigate risks



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## Conclusions: What worked well

- Benchmarking / networking with other cities → credibility
- Support from insurance & engineering sectors → helpful backing
- Educating major customers → demand for improvement
- Help infra. groups with climate risk assessments → risk understanding
- Interdependencies managed → risk reduction



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