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# **Toronto Hydro Response to December 2013 Ice Storm Independent Review Panel Report**

**Executive Committee**

**Toronto, ON**

**July 2, 2014**

# Part 1: Introduction

- David McFadden
- Chair, Independent Review Panel

# Independent Review Panel

Steering Committee Chair  
**David J. McFadden, QC**



## Members

**Joseph Pennachetti**  
(City of Toronto)



**Sean Conway**  
(Centre for Urban Energy- Ryerson University)



**Carlos D. Torres**  
(Consolidated Edison of New York, Inc.)



Davies  
Consulting  
(Miki Deric)

— **Grid Response & Design**

— **Customer Communication**

— **Forestry**

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# Davies Consulting Background

Davies Consulting, an international management consulting firm founded in 1991, provides a full range of management consulting services supporting key aspects of the utility business, including system resilience and emergency management



## Emergency Management focus areas:

- ❑ Strategy and guiding principles
- ❑ All-hazards response plan development and process improvement
- ❑ After-action review & cost recovery
- ❑ Storm hardening analysis and optimization
- ❑ Exercise design and execution

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# Part 2

# Process, Findings and Recommendations

- Davies Consulting, Inc.
- Miki Deric

# Process overview

***Assess Toronto Hydro emergency response plans***

***Interview a cross section of key stakeholders***

- Utility response personnel
- Vendors and mutual assistance providers
- Elected officials and city professional staff

***Analyze response data***

***Review the use of technology to support response activities***

***Evaluate historical investment in distribution infrastructure and maintenance programs***

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# Extent of the Review

Toronto Hydro and City staff have been responsive and candid in sharing their experiences, insights and lessons learned from the ice storm response

Review Steps	Progress
Stakeholder Interviews/Feedback	<ul style="list-style-type: none"> <li>▪ More than 80 people interviewed               <ul style="list-style-type: none"> <li>- Toronto Hydro personnel</li> <li>- Union leadership</li> <li>- Contractors and mutual assistance providers</li> <li>- Toronto City employees</li> <li>- Toronto elected leaders (Executive Committee)</li> </ul> </li> <li>▪ Three public town halls held (March 6)</li> <li>▪ Panel web page available through City of Toronto</li> <li>▪ Over 80 public comments received via E-mail</li> </ul>
Storm Data Analysis	<ul style="list-style-type: none"> <li>▪ Made and addressed more than 50 data requests</li> <li>▪ Conducted benchmarking analysis</li> </ul>
Documentation Review	<ul style="list-style-type: none"> <li>▪ Reviewed Internal plans and related documents</li> <li>▪ Reviewed relevant research studies and public opinion surveys</li> </ul>

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# Areas of Focus



Emergency Management Life Cycle	Toronto Hydro Review Scope
Prepare	<ul style="list-style-type: none"> <li>▪ Emergency Planning and Preparedness</li> </ul>
Respond and Recover (Restore)	<ul style="list-style-type: none"> <li>▪ Resource Acquisition and Allocation</li> <li>▪ Damage Assessment and Restoration Planning</li> <li>▪ Restoration Execution</li> <li>▪ Information Systems and Technologies</li> <li>▪ Toronto Hydro – City Coordination</li> </ul>
Mitigate	<ul style="list-style-type: none"> <li>▪ Vegetation Management and System Hardening/Resilience</li> </ul>
Incident Communications	<ul style="list-style-type: none"> <li>▪ Communications – Customer Contact</li> <li>▪ Communications – Other Stakeholders</li> </ul>

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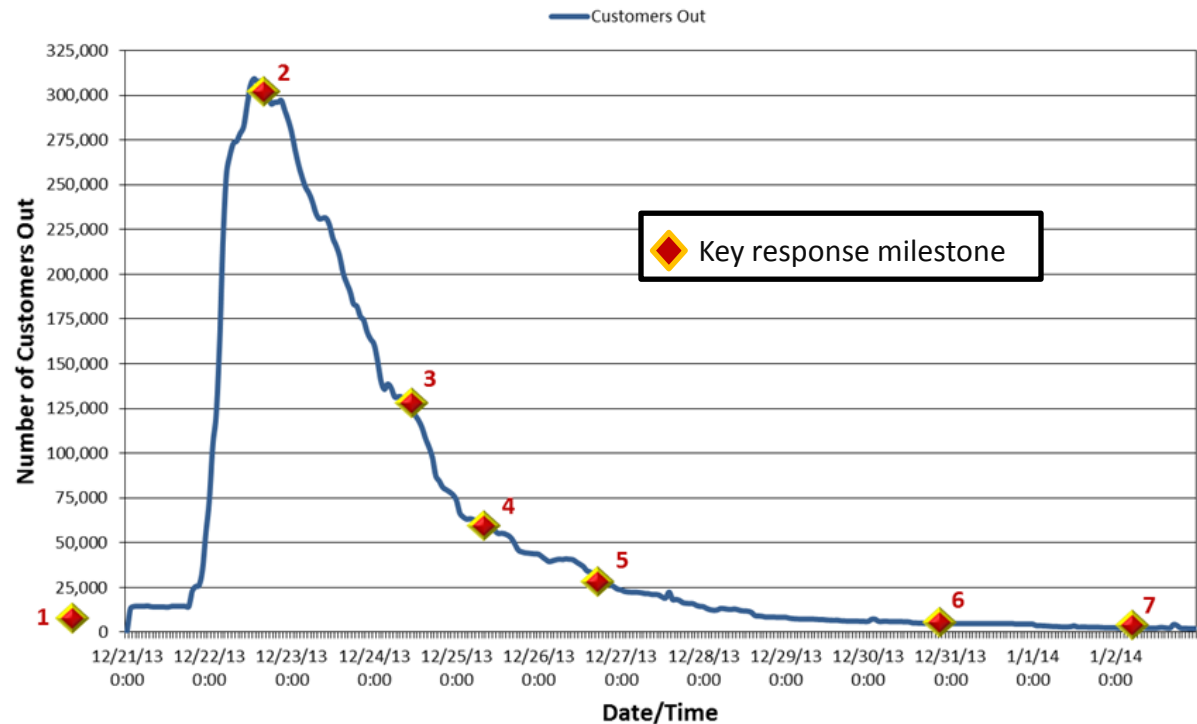


# 2013 Ice Storm Restoration Timeline

The slope of Toronto Hydro's restoration curve is in line with industry experience in similar events

## Key Milestones:

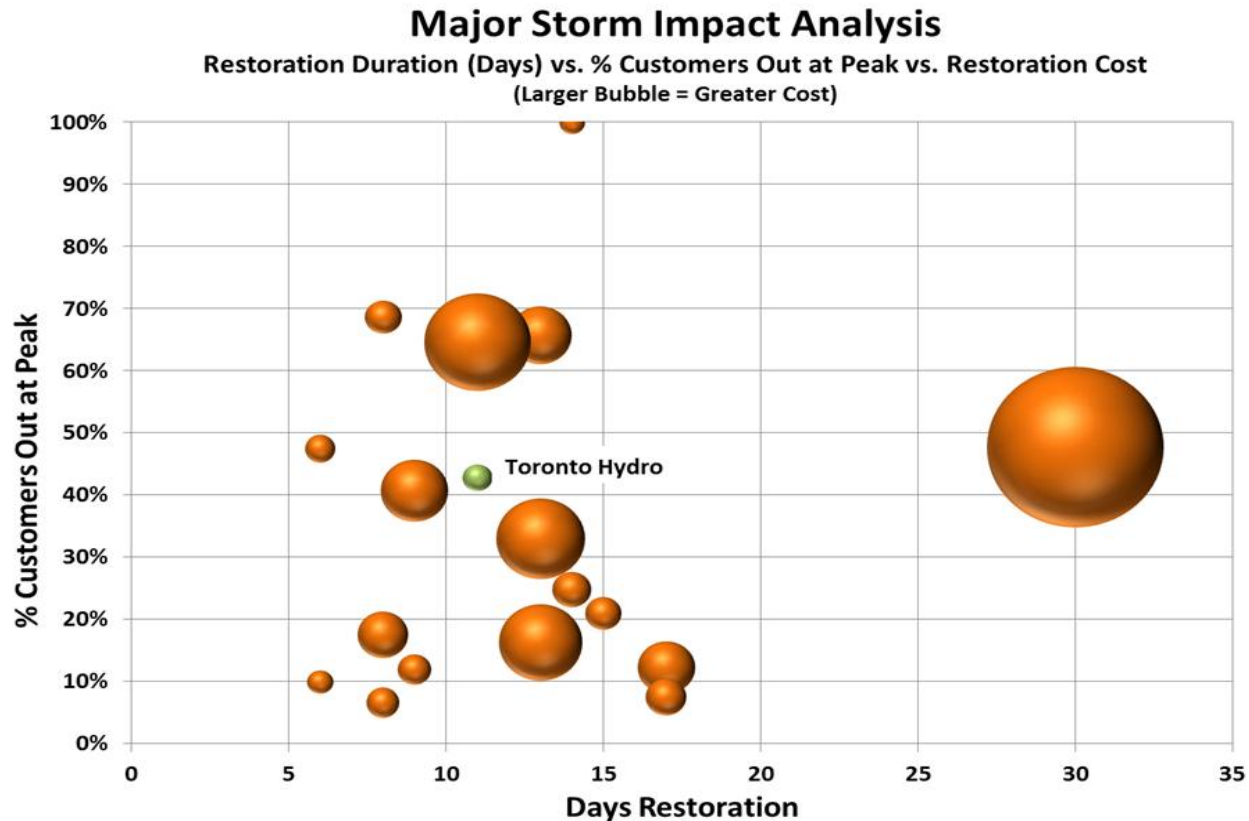
1. Initial weather statements warning of ice event
2. Initial request for Mutual Assistance issued
3. All City EOC priority load restored
4. 72 hours from the start of restoration (restored approximately 86% of all customers affected)
5. Approximately 90% of customers out at peak restored
6. Approximately 99% of customers out at peak restored
7. All customers who can accept service restored



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# Event Benchmark Comparison

The duration of Toronto Hydro's restoration during the 2013 ice storm is within industry norm, when compared to the responses of other North American utilities to ice/snow events in Davies Consulting benchmark database



Source: Davies Consulting Benchmark Database

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# Emergency Planning and Preparedness

## Finding

Generally followed an Incident Command System-based approach, but had not fully developed, trained and exercised the approach across the Company

## Recommendation

- Reaffirm Emergency Management (EM) visions and strategy
- Inculcate Incident Command System
- Enhance central EM organization
- Formalize grid operations EM organization, roles and responsibilities
- Update and maintain the grid operations EM plan

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# Resource Acquisition and Allocation

## Finding

Secured and deployed mutual assistance resources early in the restoration and executed the overall mutual assistance process generally well

## Recommendation

- Establish a more comprehensive resource management strategy
- Create an all-encompassing, scalable logistics plan
- Develop a mutual assistance plan

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# Damage Assessment and Restoration Planning

## Finding

Restoration priorities were in line with industry practices; however, the damage assessment process was not fully executed

## Recommendation

- Enhance the existing damage assessment process
- Stipulate standard work planning processes and procedures
- Create a process for developing accurate and timely restoration estimates

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# Restoration Execution

## Finding

While the restoration approach varied among the Local Command Centres, the overall restoration duration was in line with similar events in the industry

## Recommendation

- Pre-define the restoration approach for each incident level
- Establish and define a full-scale event for grid operations emergencies, including the resource requirements and trigger points

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# Information Systems and Technologies

## Finding

Toronto Hydro has implemented some advanced operational and information technology systems, but has not fully integrated them to provide adequate restoration support and situational awareness

## Recommendation

- Incorporate emergency response system requirements into the technology roadmap

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# Toronto Hydro – City Coordination

## Finding

Toronto Hydro and the City recognized this was a community and a customer restoration effort. They were able to accomplish both through effective collaboration of restoration priorities, public communication, forestry efforts and outreach.

## Recommendation

- Incorporate analysis/feedback from Toronto Hydro into urban forestation plans
- Strengthen emergency management coordination
- Work with the City of Toronto, Provincial Government and community organizations to meet the potential issues /threats faced by vulnerable populations during widespread extensive power outages

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# Vegetation Management and System Hardening/Resilience

## Finding

The vegetation management (tree trimming) preventive program is on a 3-year cycle which is in line with industry practices and follows industry pruning standards and City of Toronto by-laws

## Recommendation

- Evaluate, using consistent methodology, all viable options to storm harden the distribution system with the City of Toronto

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# Communications: Customers Contact

## Finding

Customers could not obtain timely and accurate information about their outage status, including estimated time of restoration (ETOR) during the event

## Recommendation

- Secure capacity to support timely customer contact during high call volume situations
- Improve accuracy and uniformity of outage status messages
- Employ outbound calling/texting to customers
- Evaluate City of Toronto's 311 Call Centre use for Toronto Hydro customer call overflow

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# Communications: Other Stakeholders

## Finding

The incident communication process, with a defined media strategy and unity of message was in line with industry leading practices

## Recommendation

- Create a process to communicate timely, accurate restoration estimates
- Expand liaison role
- Improve stakeholder emergency preparedness literacy
- Formalize key message process

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# In conclusion...

- When compared to other North American ice and snow storm responses, Toronto Hydro efforts during the 2013 Ice Storm are in line with or in some cases better than other utilities
- The recommendations presented focus on the improvements that Toronto Hydro can make to further enhance its ability to respond to future events
- This report is a starting point for a more sustained, coordinated effort with the City of Toronto and the Province to achieve meaningful improvement in emergency response

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**THANK YOU**