

*Alliance for Resilient Cities Webinar*  
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**Adapting to Climate Change:  
The role of codes and standards**

*Michael Mortimer*



**Milestones –  
modern codes and standards**

- Safety -1920s
- Harmonization – 1940s
- Quality Systems - 1950s
- Conservation – 1970s
- Environmental Systems - 1980s
- Performance-based – 1990s
- Risk management systems – 2000s
- Objectives-based - 2005

## Purpose - codes and standards

- Reduce non-value-added differences
- Eliminate duplication of effort
- Mainstream proven solutions
- Manage Risk
- Drive change into mainstream
- Inter-jurisdictional mobility



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## Consensus Process

### CSA example

- All interests at the table
- No single group dominates
- Alternative to unilateral process



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## Ice Storm '98 Case Study

Canada's most costly  
weather disaster

95 mm + of freezing rain  
accumulation in 6 days  
(80 hours)

Impacted 4 provinces, 7  
states

1 million households lost  
electrical power (2  
million Canadians)



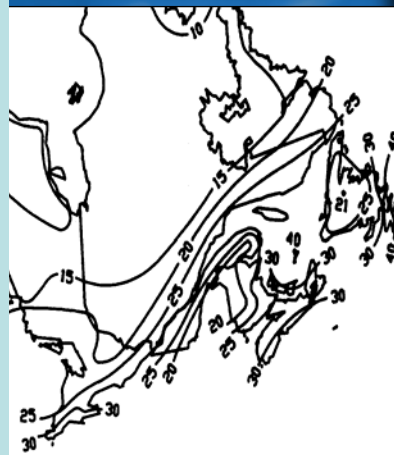
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## Electrical Line Design Criteria

CSA/CEA Freezing Rain  
criteria of 25-30 mm - Southern  
Ontario

Community disaster risk  
@ > 40mm

*Eastern Ontario* most at risk  
for transmission line failures,  
communication tower  
collapses

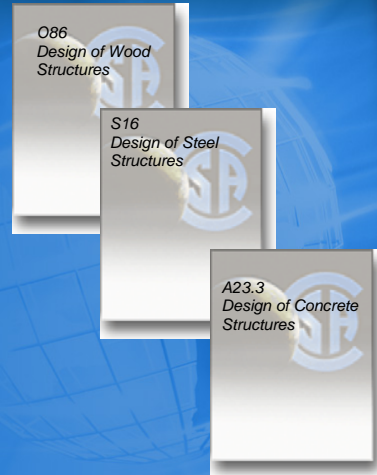


Courtesy Environment Canada - AIRG

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## Facilitating Future Change

- **Layout/format can facilitate or hinder timely change**
- **Provision of specific entry points for new data - easier to incorporate future change**



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## Building Codes & Standards

- **Prov/Terr Building Codes**
  - Based on NBCC
  - Source for load factors (& atmospheric/weather data)
  - Reference many standards
- **CSA structural standards**
  - Rely on & reference NBCC load factors
  - Specific calculations – concrete, steel, wood...
- **Specific materials handbooks**
  - Rely on & reference CSA structural standards
  - Specific guidance – concrete, steel, wood...



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## Summary

CC adaptation considerations evolving

Codes & Standards can help

More work to be done!

Future changes rely upon:

- New & evolving atmospheric research
- New findings related to 'as built' construction



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## Thank You!

### Questions & Discussion

[www.csa.ca/infrastructure](http://www.csa.ca/infrastructure)

[www.csa.ca/climatechange](http://www.csa.ca/climatechange)

[www.infraengineers.ca](http://www.infraengineers.ca)

[michael.mortimer@csa.ca](mailto:michael.mortimer@csa.ca)

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