

# Climate Change, Extreme Weather and Flooding: A Property & Casualty Perspective on De-Risking the Canadian Housing Market

**Evergreen Brick Works  
Urban Watershed Forum**  
March 20, 2015

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**“Weather Gone Wild”  
CBC Documentary**

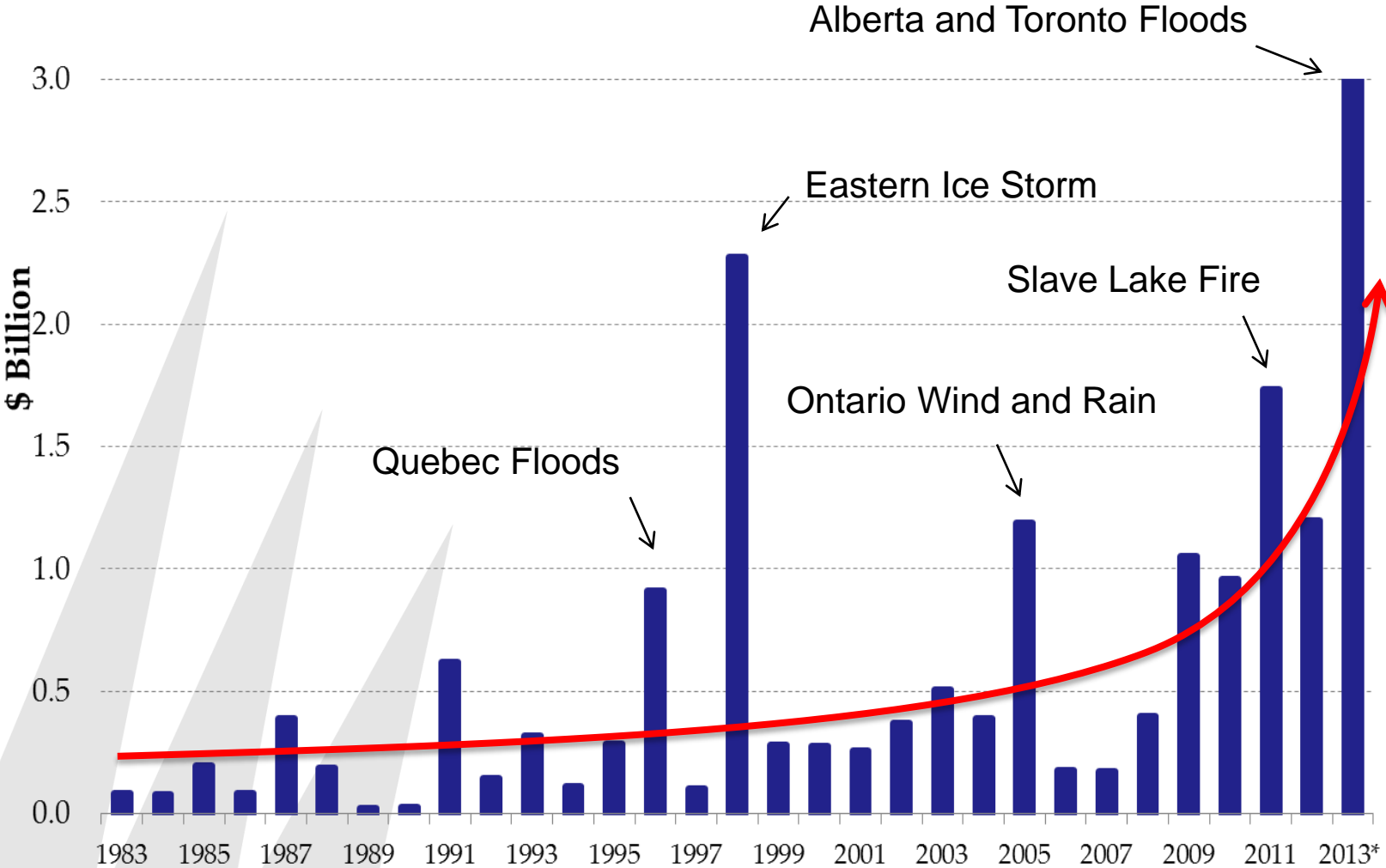
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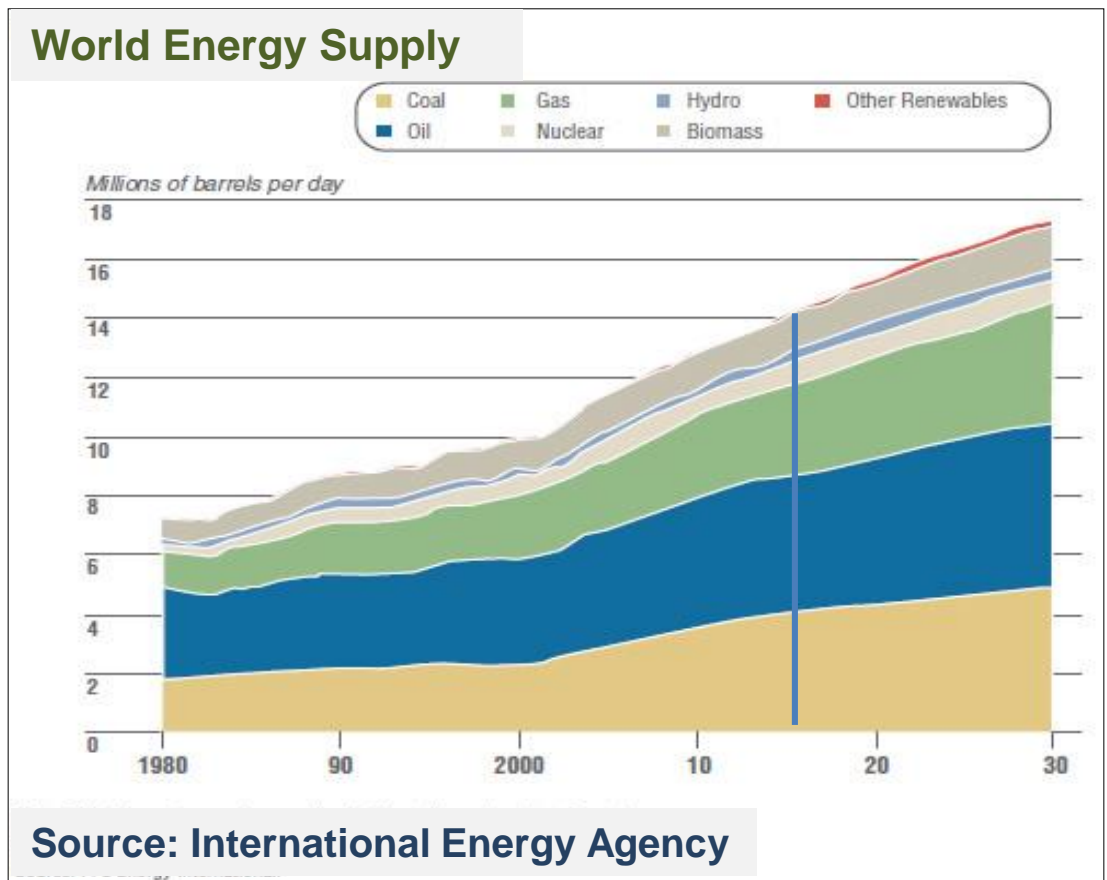
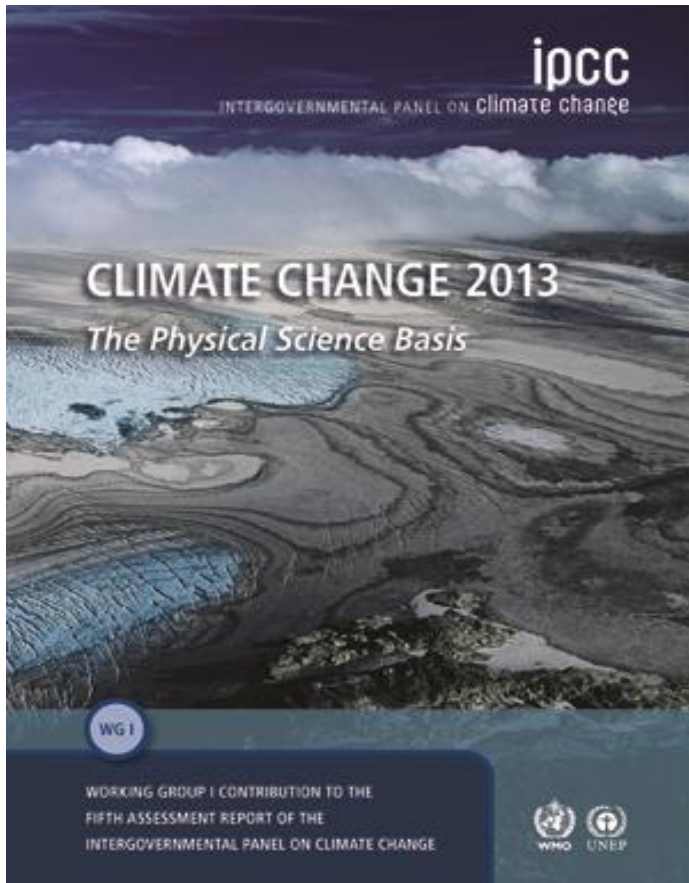
# Agenda

1. **Climate change & extreme weather – things will get worse**
2. **Costs of climate change & extreme weather – going up**
3. **De-Risking the System – P&C Perspective**
  1. **Flood plain maps**
  2. **Natural Infrastructure Adaptation Program (NIAP)**
  3. **Home Adaptation Audit Program (HAAP)**
4. **Conclusions**

# Large Catastrophic Losses

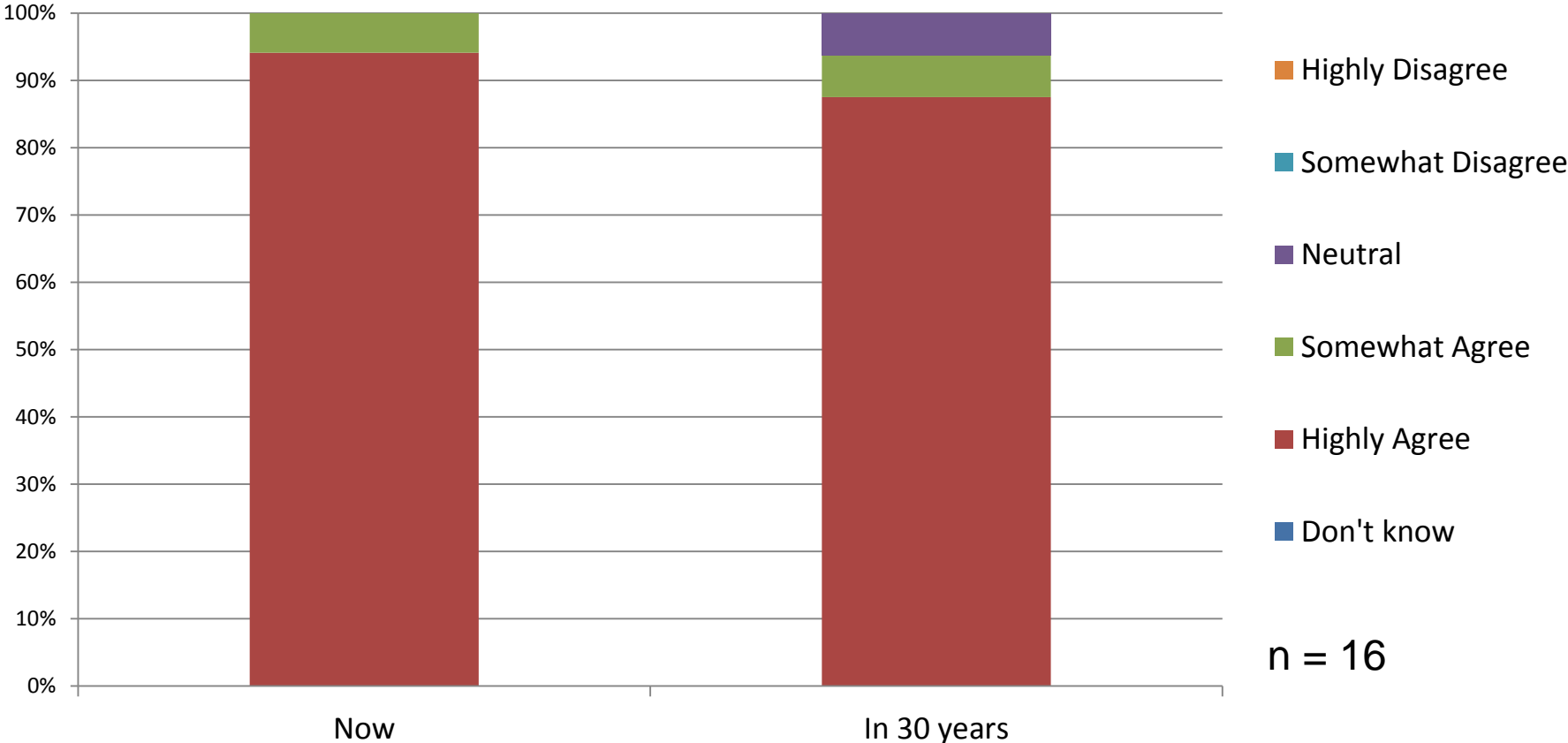


# WHAT SCIENCE TELLS US ABOUT CLIMATE CHANGE

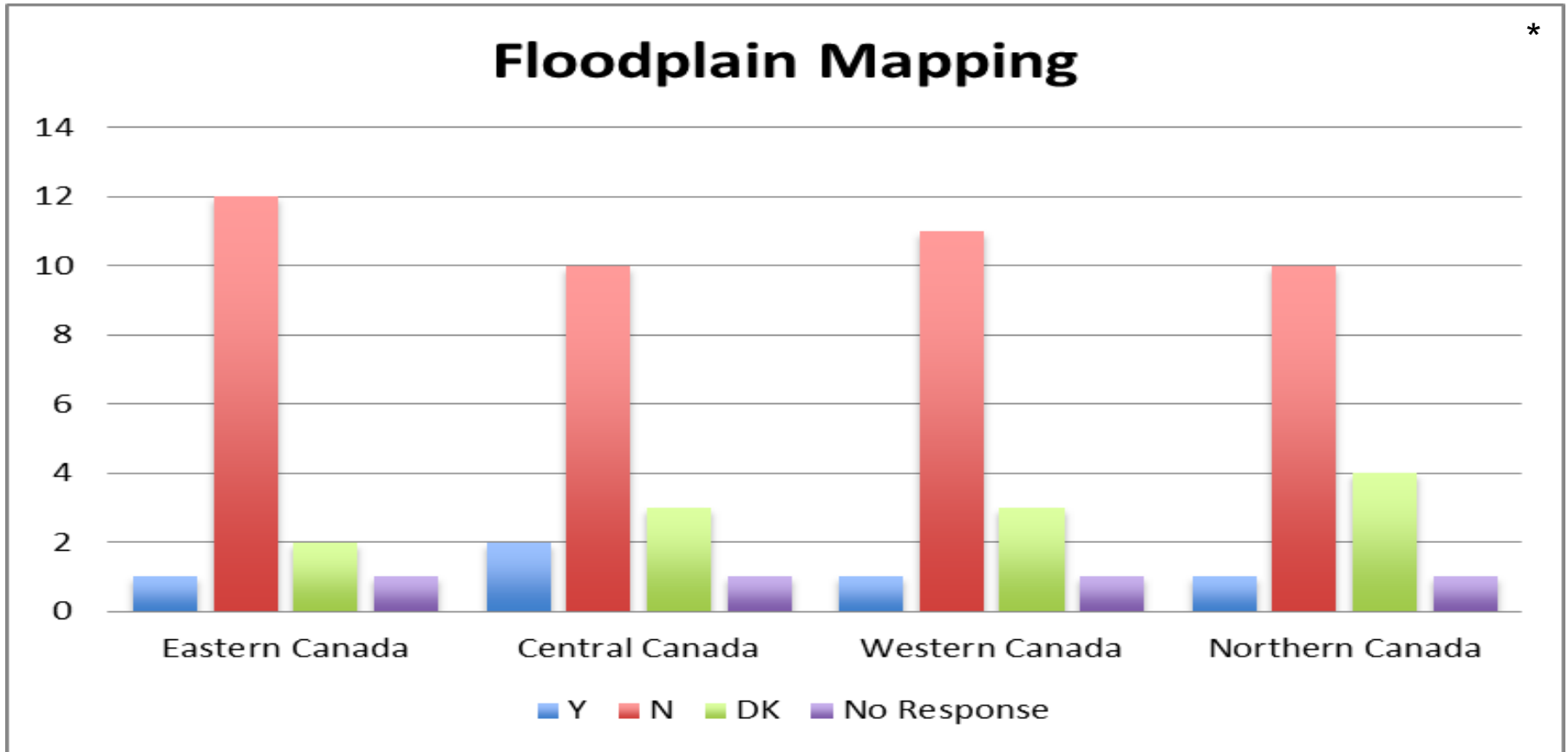


*It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century [0.08 °C/decade for past 100 years].*

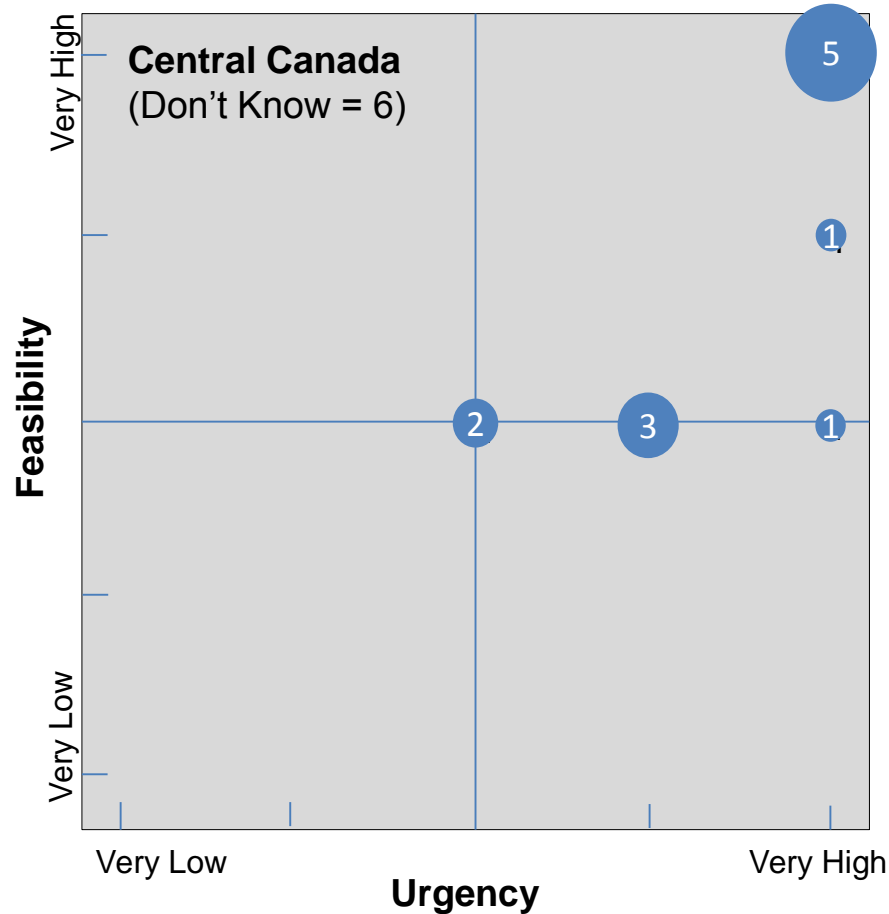
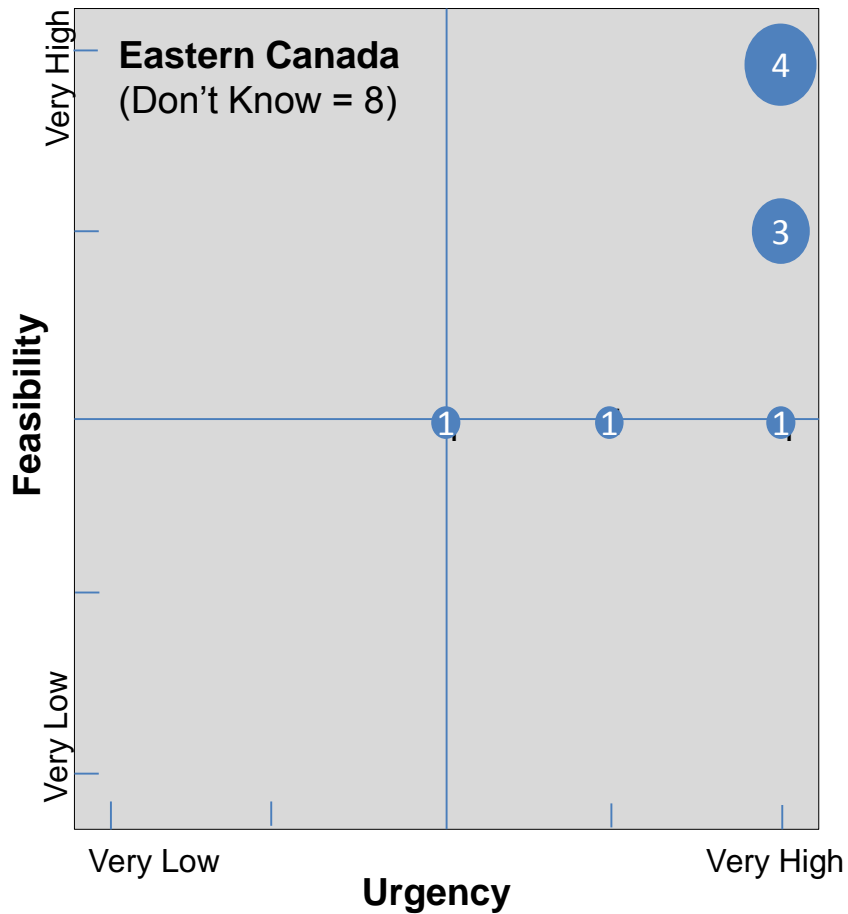
# Extreme weather is a serious problem for major Canadian cities to address from the perspective of adaptation – now and 30 years from now.



Is floodplain mapping sufficiently understood in the regions identified that underwriting (risk exposure) due to flooding can be adequately calculated?  
(Y = Yes, N = No, DK = Don't Know)

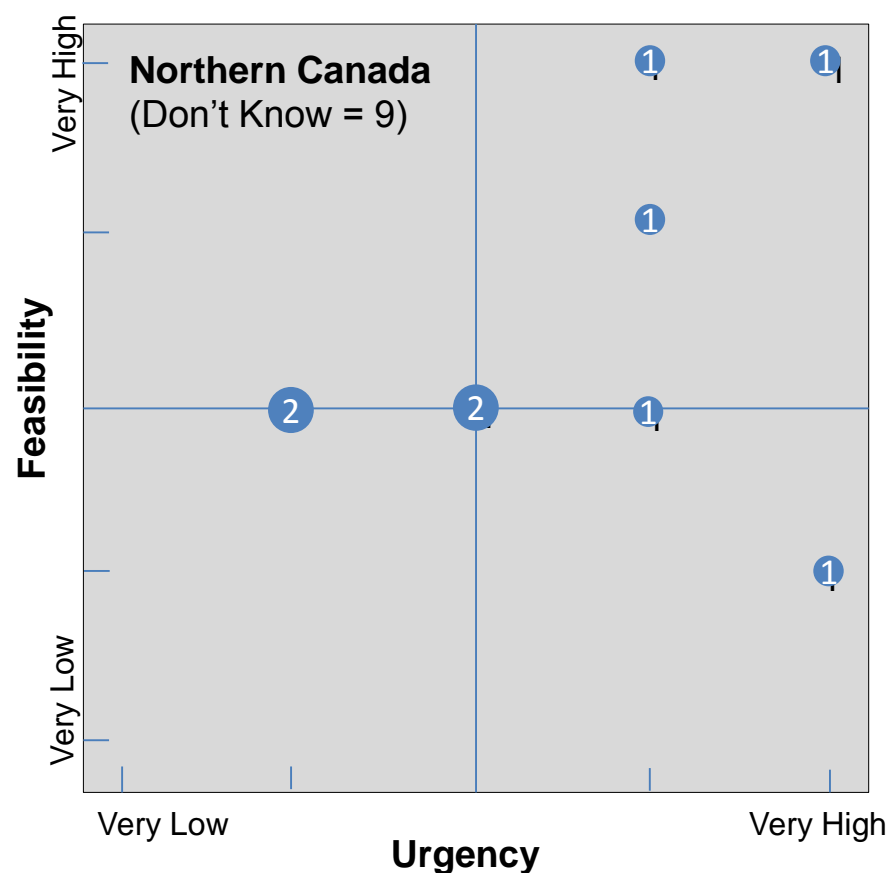
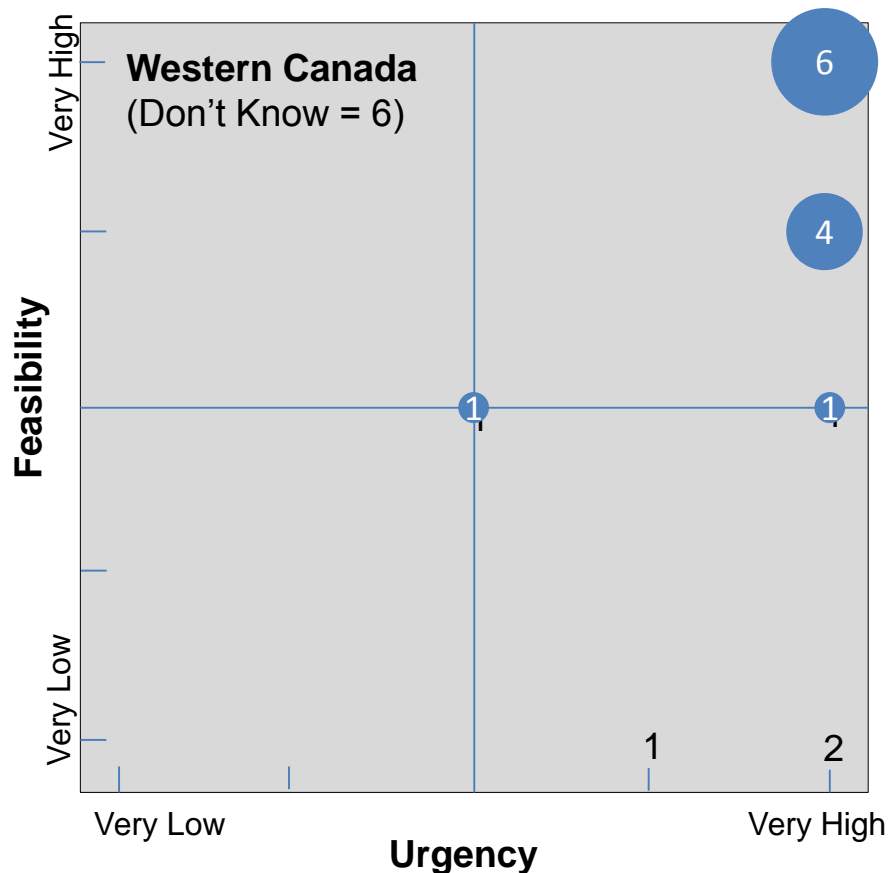


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\*consistent with  
P&C executives

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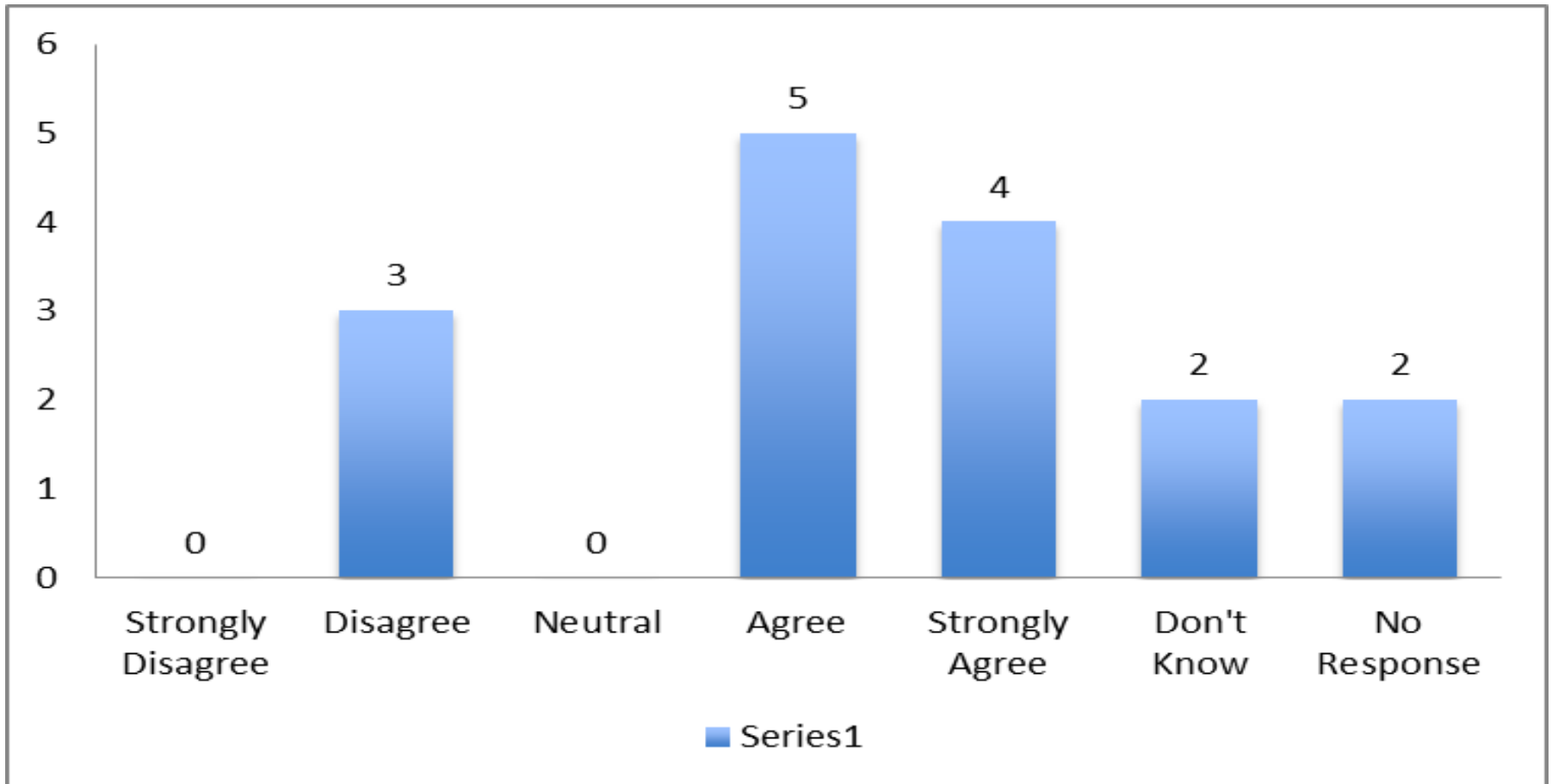


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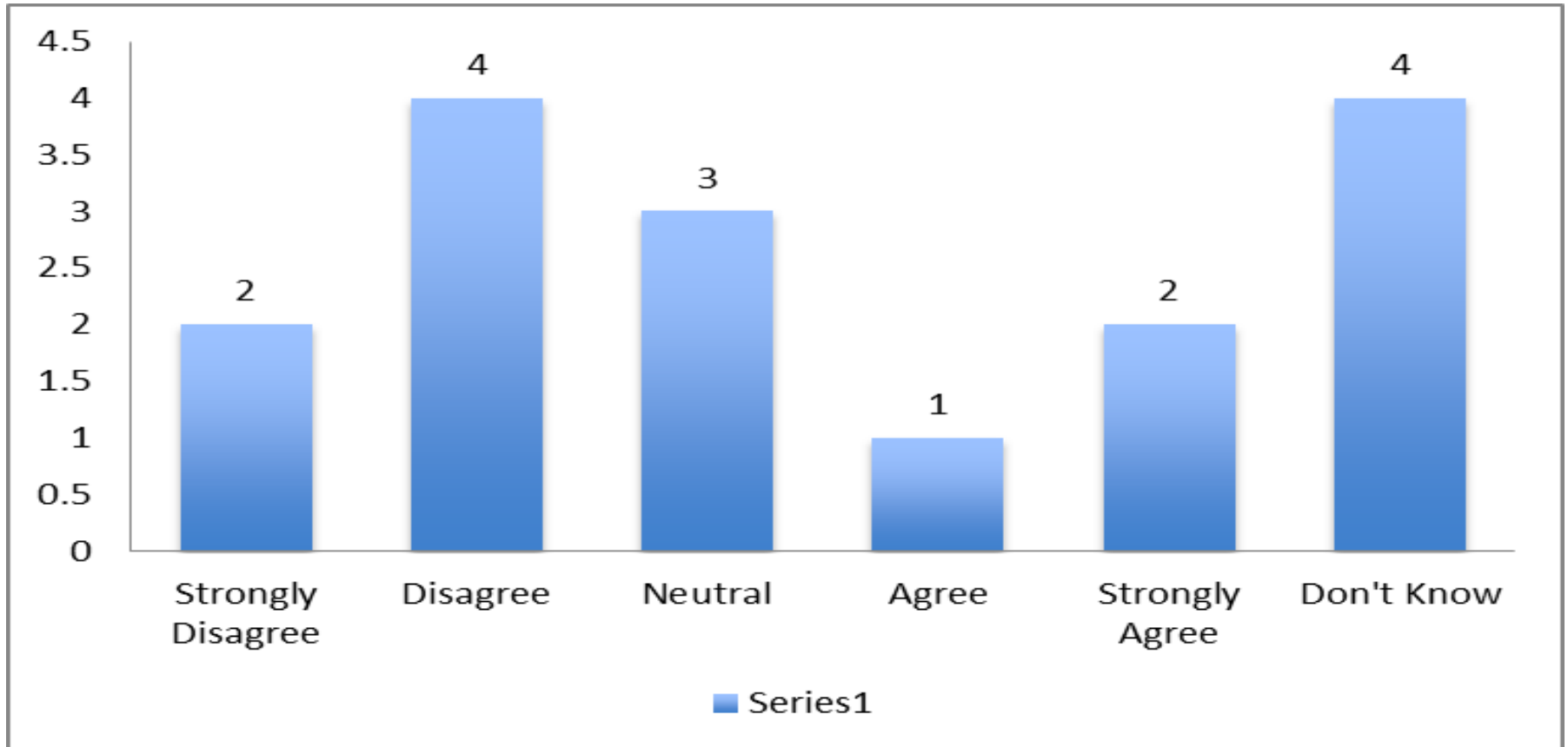
For flood insurance to be profitable for your company, infrastructure (natural and built) under the direction of government control would have to be substantially “flood hardened” relative to its current condition.

### Natural Infrastructure Adaptation Program - NIAP



If provided with overland flood insurance, the average homeowner will initiate and maintain action(s) to limit the probability of flooding around his/her home (e.g., moving downspouts away from house, ensuring outside sewer grates are clear, elevating electrical equipment off basement floor, etc.).

### Home Adaptation Audit Program – HAAP



# HOME ADAPTATION AUDIT PROGRAM (HAAP)

**Home Adaptation Audit Program** – well received by (e.g.):

- Federal Government
  - Environment, Finance, NRCan, Public Safety
- Provincial Governments (Ontario, Alberta, Quebec)
  - Ministers, DMs, ADMs, DGs
- Federation of Canadian Municipalities
- Association of Municipalities of Ontario
- Conservation Authorities



## Program Focuses on 100 Points of Audit Reference

- e.g., eaves & downspouts, window wells, sump pumps/power supply
- 2-3 audits/day/auditor
- ROI – preventing 3 flooded basements/auditor/year pays for the program

## Going Forward

- develop training material
- Administered by whom? – role of Feds (NRC), provinces, private organization(s)?
- Who pays? -- homeowner, municipality, provincial subsidy?
- Role of insurers? Risk adjusted premium? Lower deductible? Higher Cap. Limit?
- Role of Banks? Inclusion in mortgage home inspections (No UFFI)

# Conclusion

- 1) Develop up-to-date flood plain maps that anticipate the future
- 2) Weather harden municipal and sub-urban infrastructure (physical and natural) – launch a national “*Natural Infrastructure Adaptation Program*”
- 3) Launch a “***Home Adaptation Audit Program***”

**Not adapting to climate change/extreme weather is a “bet we cannot afford to lose”**