

# Understanding Climate Change Risk and The Use of Information

OCC Training Session  
April 26, 2017



Laura Zizzo  
Founder and CEO

# Zizzo Strategy Inc.

- Climate change is re-defining risk management, legal liabilities and business imperatives
- We are a multi-disciplinary strategic consultancy firm
  - Drawing on law & policy, engineering, science, accounting
- We help to:
  - Understand critical issues
  - Create frameworks to enable better decision making
  - Implement effective and efficient solutions

## Client groups include:

- Asset owners, builders and operators
- Industry Associations & Not-for-profits
- National and regional governments
- Utilities
- Financial services & institutional investors

# Climate Change Trends and Opportunities

## Significant Economic Impacts of Climate Change Increasingly Recognized

- Bank of Canada warns that estimated cost of inaction could be \$21-43 billion/year by 2050
- Insurance sector feeling impacts
  - Extreme weather payouts rose to \$3.2 Billion in 2013
  - 2016 Fort McMurray Fire = \$3.58 billion alone
- “Trillions” at stake in move to low-carbon economy
  - Global low-carbon market of >\$5.8T and projected to grow at 3% per year
- World Economic Forum named climate change top trend in 2017 Global Risks Report
- Investors, stock exchanges, securities regulators, rating agencies pushing for enhanced climate-related disclosure
- Financial Stability Board – Task Force on Climate Related Financial Disclosures
  - Mandate to improve and standardize the integration of climate change in financial reporting

**Toronto**

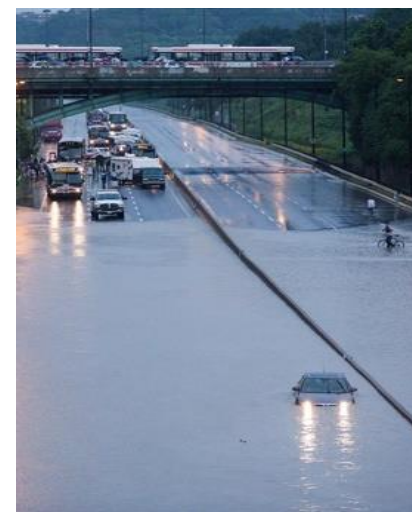
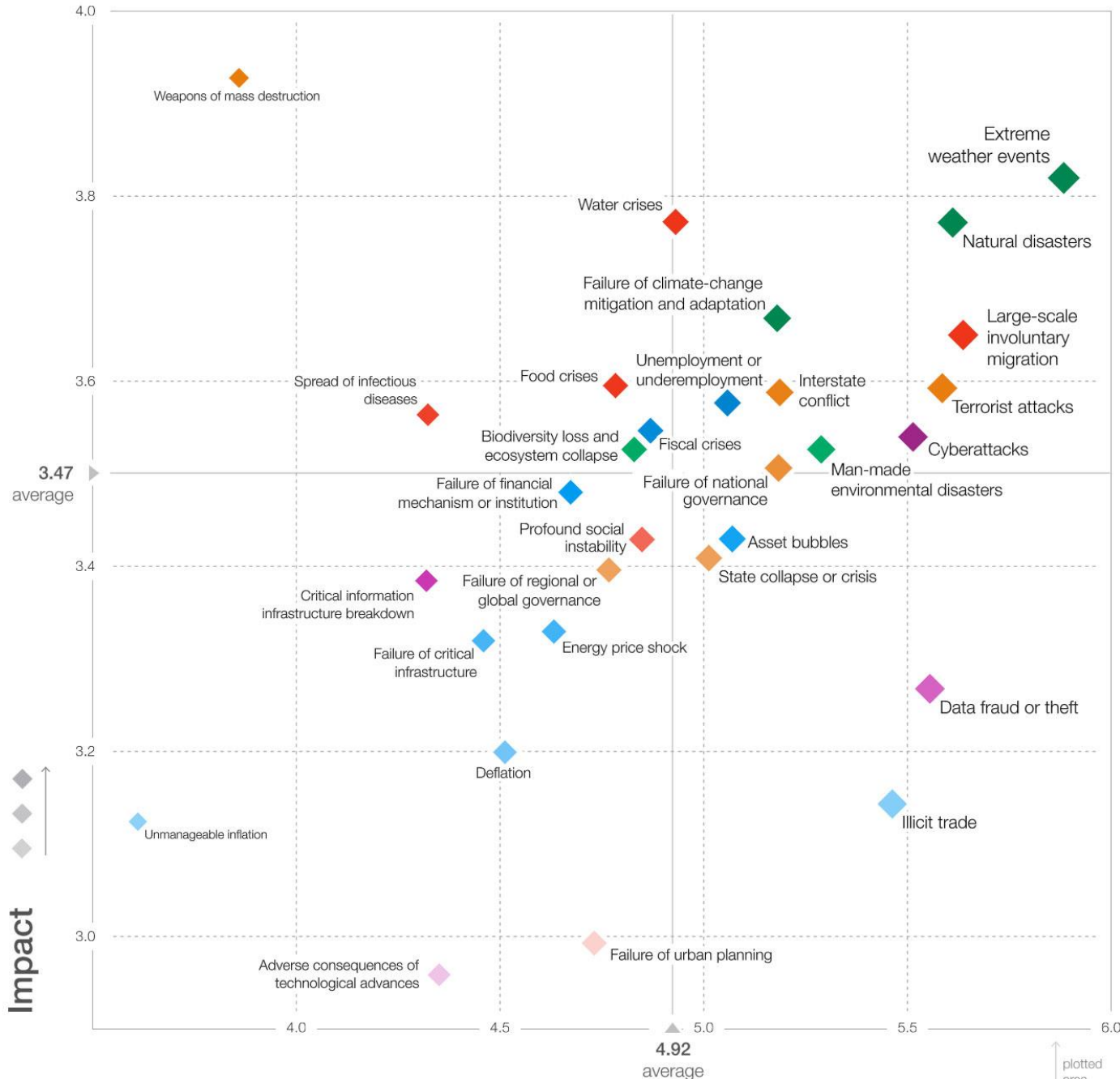


Photo courtesy of Tom Ryaboi

Federal and provincial policy developments responding to these trends and showing opportunity for Canadian leadership in the transition to a low-carbon and climate resilient economy

# World Economic Forum

## The Global Risks Report 2017 12th Edition



# Potential Climate Impacts



- Increasing precipitation & intensity of storms
- More frequent severe freezing/thawing cycles
- More frequent intense summer heat days
- Water level fluctuations
- Water quality and availability changes



- **Increased costs due to impacts on physical assets & potential legal liability**
- **Significant need to adapt**



# Climate Change Impacts Business

## INSURABLE?

Toronto



Photo courtesy of Tom Ryaboi

Calgary

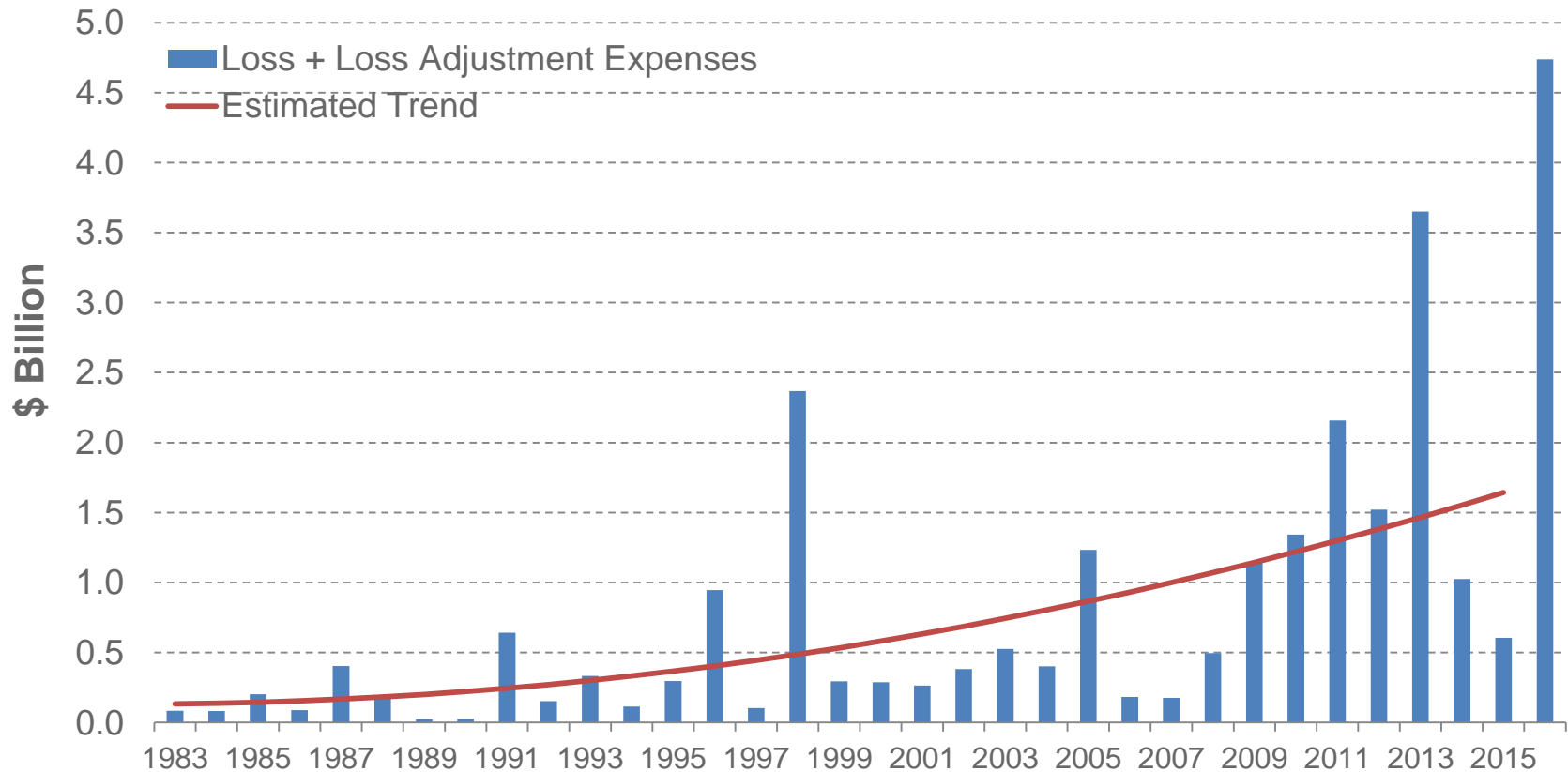


Photo courtesy of the Canadian Press

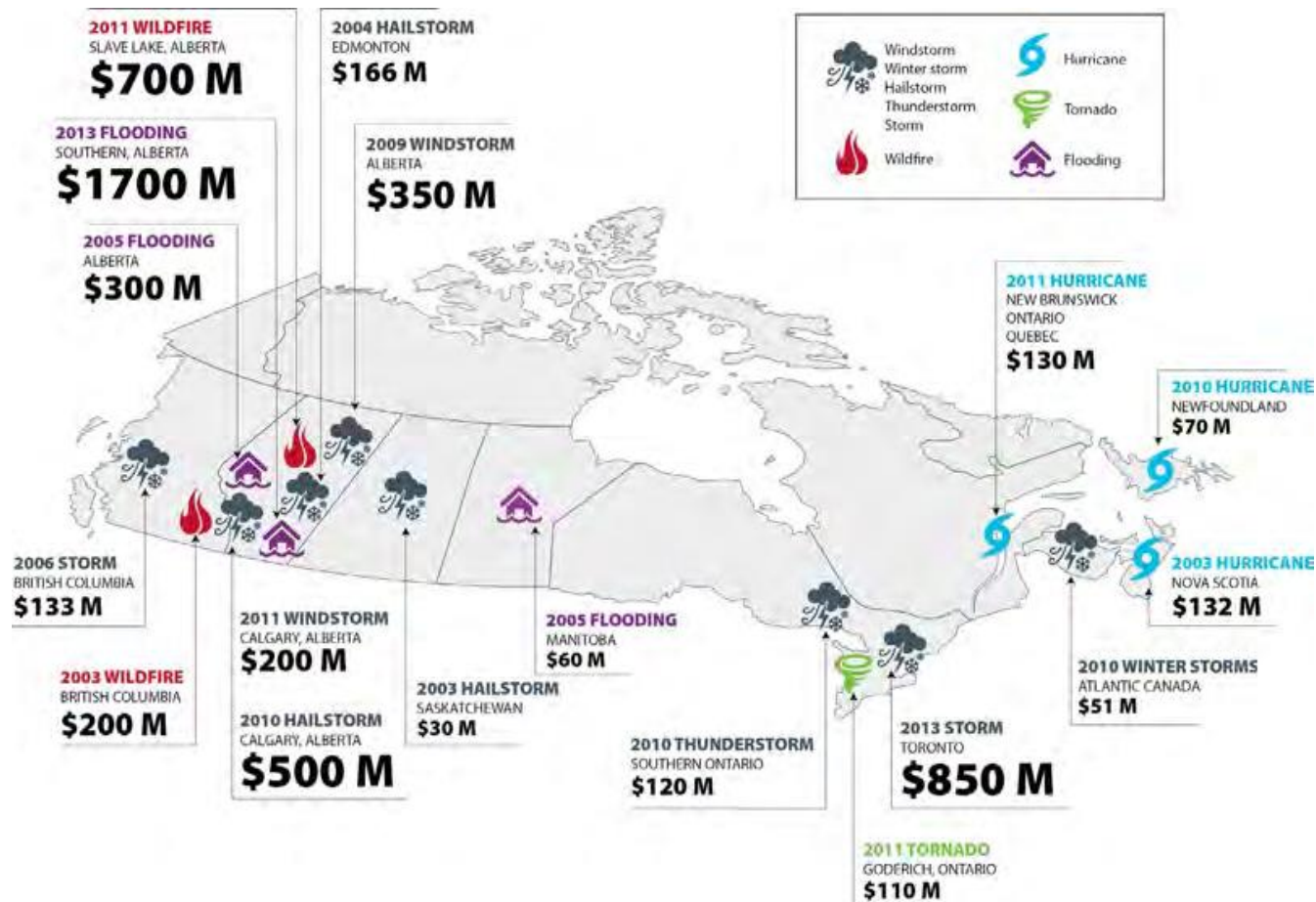
- Who's responsible?
- Developing adaptation strategies vital to safeguarding the economy
- Insurance availability in a climate adjusted future??

# Risks Related to Climate Impacts

Catastrophic Insurable Losses in Canada (in billions of 2016 dollars)



# Economic Impacts





# Increasing Impacts

- Are we ready?

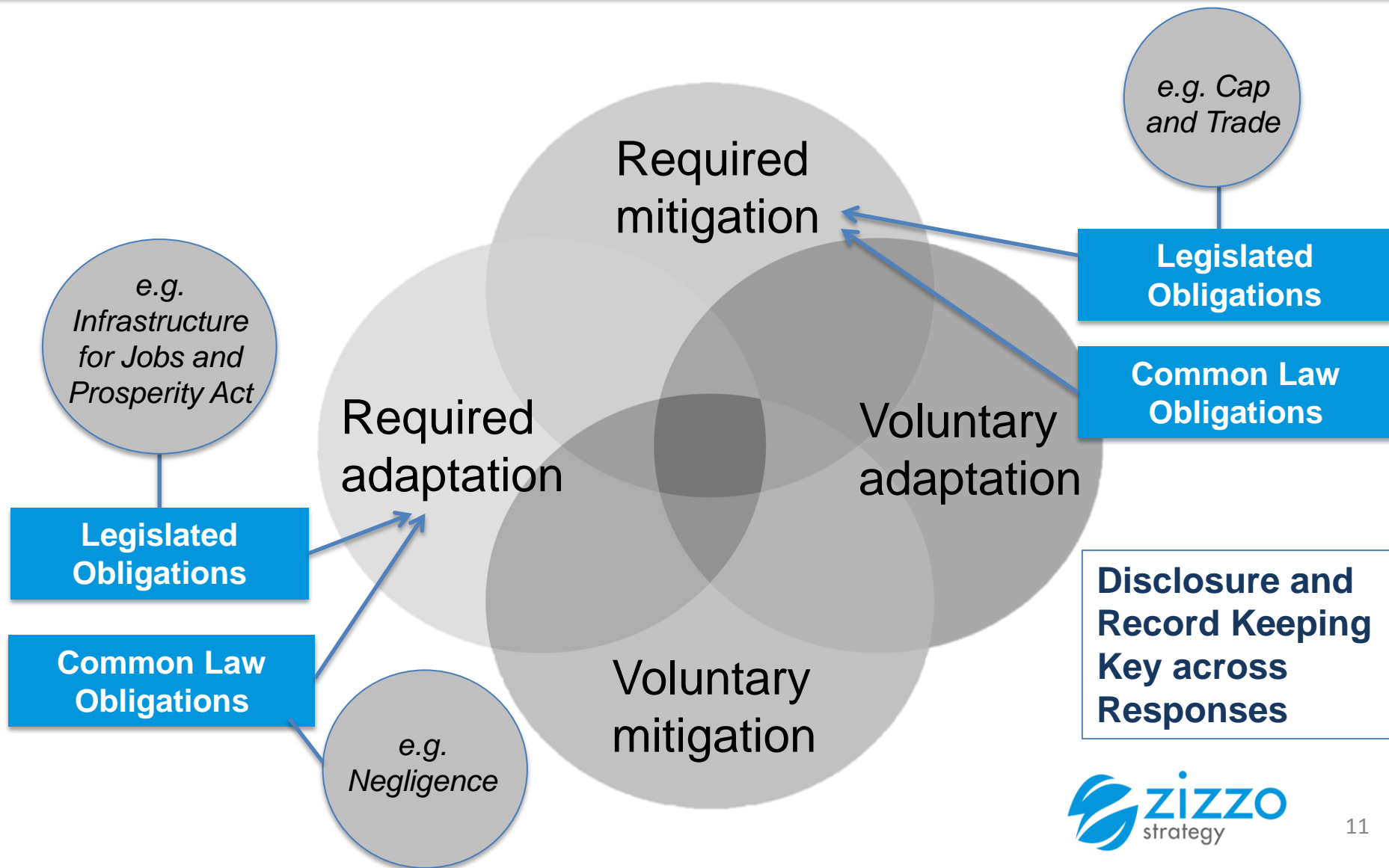


# More to Come

2013 IPCC\* Report  
indicated an increase  
in extreme weather  
and heavy precipitation  
throughout the century.



# Response to Climate Change



# Jurisdictional Context



# COP 22 in Marrakech

## From Agreement to Implementation

- Pairs Agreement formally ratified
  - Enforced November 4<sup>th</sup>, 2016
  - Goal: limit warming to well below 2°C above pre-industrial levels and pursue efforts to limit increase to 1.5°C
  - Decarbonization of economy in second half of century
  - 5 year global stock takes, national determined contributions
- Dealt with problems of transparency, next steps towards implementation
- Role of sub-nationals front and centre!
- Action from NGOs and private sector
- Despite Trump election, momentum is unstoppable



*Canadian Minister of the Environment and Climate Change, Honorable Catherine McKenna (middle) speaking at the conference*

**“Global Momentum is Unstoppable”**



# The Pan-Canadian Framework on Clean Growth and Climate Change

## 11 of 13 provinces & territories signed The Framework

**SK** opposed the Framework

**MB** supported principles of Framework but did not sign due to healthcare-related hold out

**BC** implemented carbon tax in 2008 at \$10/tonne capped at \$30/tonne in 2012 and remains. Raised concerns about other provinces “catching up” and future equivalency among provinces

**AB**’s cap on oil sands emissions and related pipeline approval was key to Framework agreement. AB’s carbon levy begins at \$20/tonne in 2017 and rises to \$30/tonne in 2018.

**MB, ON, QB** looking forward to opportunities related to interprovincial transmission of clean electricity

All members of WCI and have or plan to implement a cap and trade system

Released December 9, 2016

### PAN-CANADIAN FRAMEWORK



### on Clean Growth and Climate Change

Canada's Plan to Address Climate Change and Grow the Economy



# Framework includes high-level strategies, concrete actions and spending commitments

- Framework organized around Working Group pillars
  1. Carbon pricing
  2. Other emissions reduction measures
  3. Adapting to climate change and building resilience
  4. Accelerating innovation, clean tech and job creation
- Each pillar includes discussion of:
  - High-level strategic priorities
  - Relevant case studies and successful project examples
  - New actions federal and/or provincial and territorial governments will take
- “Actions” range from concrete (e.g. develop model building code by 2030) to vague (e.g. explore ways to collaborate)
- Commits to reporting on progress in transparent way, details not yet developed

Opportunity for private organizations to convene and mobilize for additional emissions reductions to reach targets

# Provincial Patchwork

- Cap and Trade
- Baseline Credit
- Carbon Tax
- Adaptation and resiliency initiatives
- Municipal leadership



# Legislative Requirements



# Legislative/Regulatory Liability Overview

- Greater adaptation requirements in legislation
  - Direct incorporation of climate change considerations
  - Indirect incorporation of climate change considerations
- Additional liability for decision makers
- Standards developing (some by design, some reactively)





# Legislative Requirements

- Ontario *Infrastructure for Jobs and Prosperity Act, 2015*
  - Infrastructure should be designed to be resilient to the effects of climate change
- Ontario *Water Opportunities and Water Conservation Act* (2010)
  - May require assessment of climate risks
- British Columbia *Living Water Smart* strategy
  - Outlines new approaches to water management that “will address the impacts from a changing water cycle, increased drought risk and other impacts on water caused by climate change.”
  - Promises to link climate change consideration to provincial funding

# Negligence





# Negligence

- Injury to person(s) or property because another failed to take reasonable care
  - Duty
  - Standard of Care
  - Causation, Foreseeability, Damages
- Policy decisions may be exempt
- Possible Defendants:
  - Owner or occupier (including government)
  - Government entities
  - Engineers, architects and other design professionals
  - Contractors

# Standard of Care

- Relying on outdated standards/processes can be negligent if new info suggests they should be reconsidered
- Factors to determine standard of care:
  - Industry standard of practice is key (encourages coordination)
  - Statutory requirements considered, not determinative
  - Standard “at the time” of act that is being claimed as negligent
  - Guided by reasonableness in the circumstances

# Evolving Standards

- Historical data can no longer adequately predict the future
- Need for better vulnerability assessment tools:
  - Examples:
    - PIEVC
    - Green Building Standards/Building Code Evolution
    - New standards of care
    - Application of climate models
    - Risk management frameworks

# Class Actions

- A real and present threat – currently at least two major cases regarding flooding with municipal defendants:
  - City of Thunder Bay (\$300M)
  - City of Mississauga (\$200M) (withdrawn)
  - City of Stratford (settled for \$7.7M)
  - Chicago Farmers Insurance (referenced climate change, withdrawn)
- Uses traditional causes of action (e.g. negligence)
- Efficient and improved access to justice
- Representative plaintiff for similarly situated, defined class
- Common issues decided together

# 2016 Muskoka Class-Action

- \$900M lawsuit launched by Muskoka residents
- Damage caused by flooding due to high water levels and abnormal spring runoff
- Allegations that Ministry of Natural Resources was negligent for failing to control water levels



Source: <http://rsmuskoka.com/muskoka-flood-2016-causing-significant-damage-lakeside-properties/>

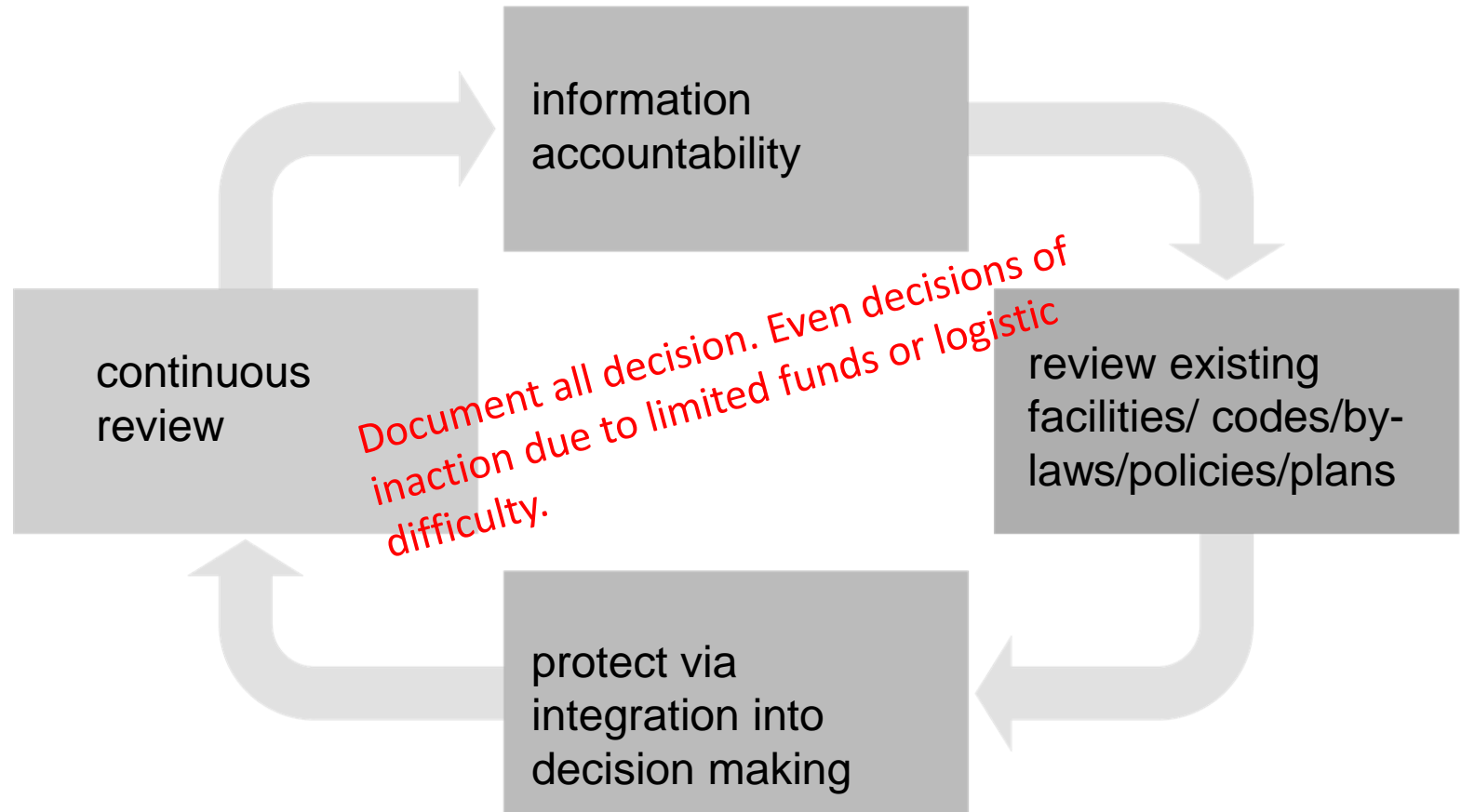
# Special Issues

- Inspection schemes can be both policy or operational based on facts of the case
  - Inspections must be carried out non-negligently
  - Negligent conduct of owner/occupier doesn't absolve municipality
- Permitting could be negligent
  - Little case law, but some guidance that if authority knew or should have known there was a risk before issuing permit could be negligent
- Enforcement could be negligent
  - Decision not to enforce a by-law could be negligent



# Risk minimization

Put your mind to issues – not willfully blind



# What Can You Do?



- Identify problem
- Policy solution
- Implement consistently and with due diligence
- Role for standards, education, all in context of what is “reasonable”, and “should be known”

# Securities Disclosure & Investor Trends



*Mark Carney - Governor of the Bank of England, Chair of the Financial Stability Board*

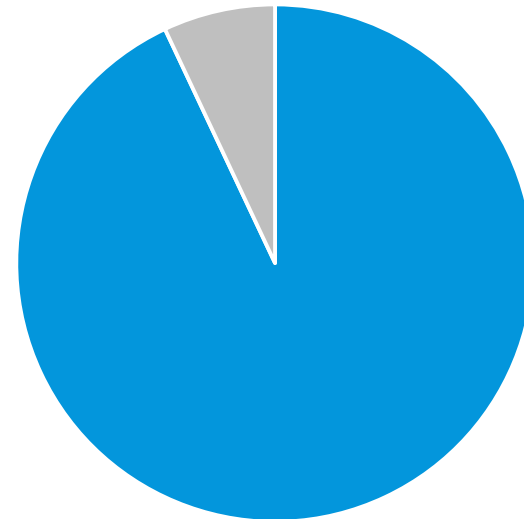
# Climate Change: Ubiquitous but Differentiated

Majority of capital markets affected, but industry impacts are unique

## CLIMATE CHANGE

Impacts 72 of 79 industries

- *Event readiness* in Health Care Delivery
- *Carbon intensity of reserves* in Oil & Gas – Exploration & Production
- *Emissions from refining* in Oil & Gas – Refining & Marketing
- *Vulnerability of real estate* in Insurance
- *Impact on crop yields* in Agricultural Products
- *Financed emissions* in Commercial Banks



93%

Percentage of  
U.S. equity  
market  
impacted

\$33.8T

Market cap of  
companies  
affected

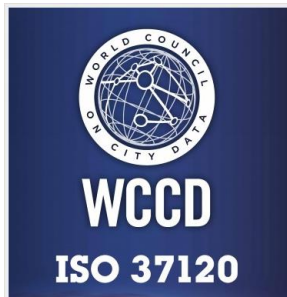


**PARTNER**  
ADVISORY

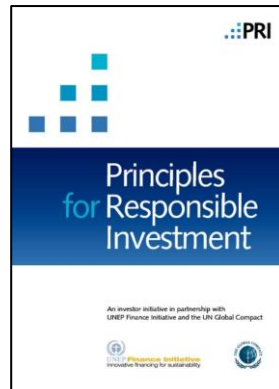


# Material Climate Change Risks Emerging

- Investors seeking climate-related information
- Need to identify operational impacts
- Unclear / inconsistent metrics



Moody's



# Climate Disclosure Developments

- Industry-led Task Force on Climate-related Financial Disclosures (TCFD)
- SASB published sector specific guidance for climate-related risks exposure - *Technical Bulletin – Climate Risk*, October 2016
- BlackRock Chairman & CEO's 2016 Corporate Governance Letter to CEOs
- International Movement



Need for consistency and accuracy across required and voluntary disclosures



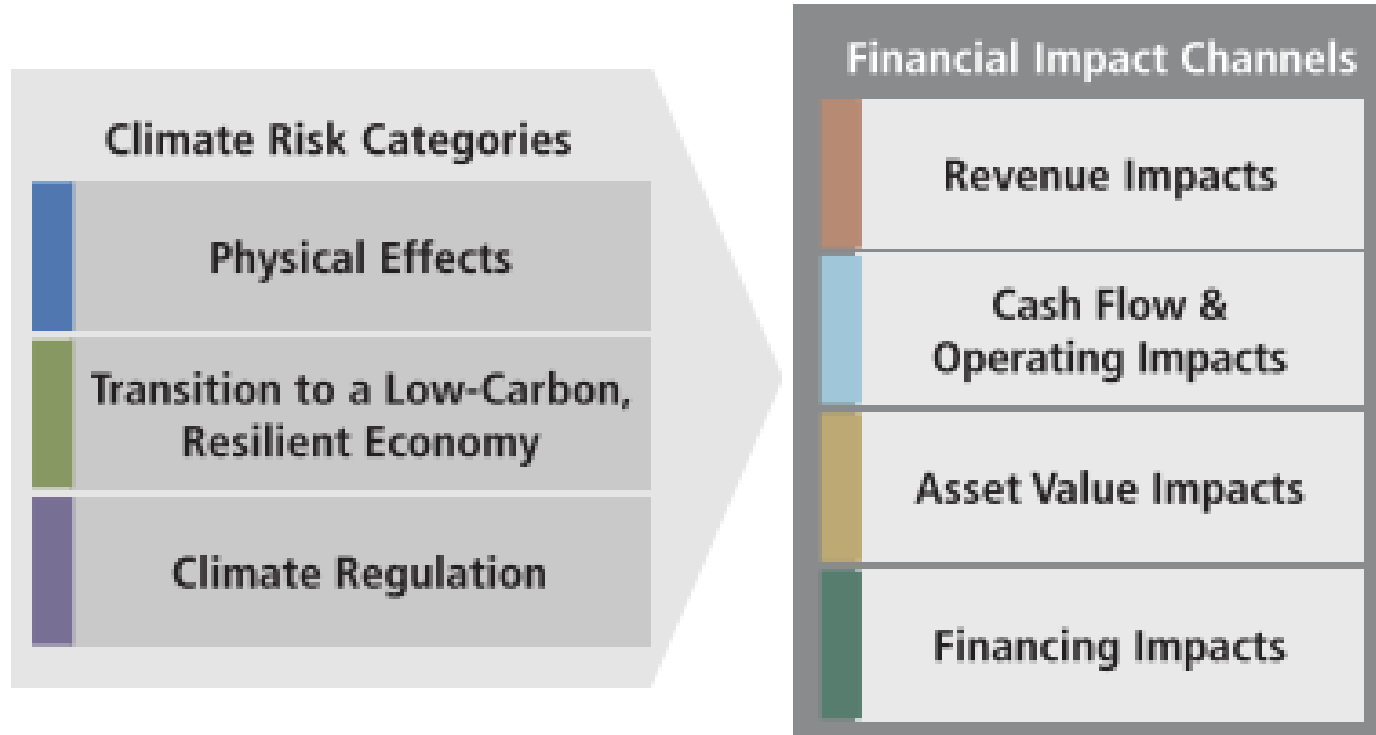
# Roadmap for Canada



- Regulatory Action
  - All Canadian pension plans should be required to disclose ESG impacts
- Stewardship
  - Asset owners should engage with their investee companies on ESG issues
- Corporate Reporting
  - CSA should review and develop reporting framework and guidance for material ESG factors
  - TSX should consider introducing mandatory ESG disclosure as a listing requirement
- Investor Education
  - Boards should incorporate ESG considerations in training materials for new and existing trustees

# SASB's Climate Risk Framework

SASB frames the impacts of climate change in a way that is relevant to investors



*Predicting rain doesn't count; building arks does*  
- Warren Buffet

# SASB's Climate Risk Framework

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SASB's climate-relevant topics and risks for *Real Estate Owners, Developers and Investment Trusts*:

- Energy Management
  - *Energy consumption by portfolio, change in energy consumption, energy rating, how building energy management considerations are integrated into property investment analysis and operational strategy*
- Water Management
  - *Total water withdraw by portfolio, change in water withdrawn, water management risks, strategies and practices*
- Climate Change Adaptation
  - *Assets located in flood hazard areas, climate change exposure analysis, degree of systemic portfolio exposure, and strategies for mitigating risks*
- Management of Tenant Sustainability Impacts

# Types of Climate Risk Across Industries

SASB has mapped climate risk for all industries of the economy

## ISSUES

### Environment

GHG emissions  
Air quality  
Energy management  
Fuel management  
Water and wastewater management  
Waste and hazardous materials management  
Biodiversity impacts

### Social Capital

Human rights and community relations  
Access and affordability  
Customer welfare  
Data security and customer privacy  
Fair disclosure and labeling  
Fair marketing and advertising

### Human Capital

Labor relations  
Fair labor practices  
Employee health, safety and wellbeing  
Diversity and inclusion  
Compensation and benefits  
Recruitment, development and retention

### Business Model and Innovation

Lifecycle impacts of products and services  
Environmental, social impacts on assets & operations  
Product packaging  
Product quality and safety

### Leadership and Governance

Systemic risk management  
Accident and safety management  
Business ethics and transparency of payments  
Competitive behavior  
Regulatory capture and political influence  
Materials sourcing  
Supply chain management

## Transportation

Automobiles

Auto Parts

Car Rentals & Leasing

Airlines

Air Freight & Logistics

Marine Transportation

Rail Transportation

Road Transportation

### Rail Transportation

Prev | Next

4 of 5

GHG emissions

Prev | Next

1 of 6

Disclosure Topic: **Environmental Footprint of Fuel Use**

#### Evidence of Materiality

Interest - High

HM Score: 60

IWG Score: 91%

Financial Impact - High

☒ Revenue/Cost

☐ Asset / Liabilities

☒ Cost of Capital

Forward Impact - Yes

☒ Probability / Magnitude

☒ Externalities

#### Accounting Metrics

- TR0401-01: Gross global Scope 1 emissions
- TR0401-02: Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets

# Risk Management Strategies

- Decision-makers must keep pace with projected climate impacts and associated changes in expectations
- Consider current levels of climate change preparedness
- Make conscious policy decisions
- Use tools like SASB to challenge risk-identification and management
- DOCUMENT processes and information considered
- Identify your top 3-5 top climate risks and start developing strategies to address them

# Comments and Discussion

## Thank You



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