



- The status quo is not acceptable.
- The MIABC can effectively address some critical aspects of the problem, by creating an Earthquake Recovery Fund.
- This can be accomplished in a measured way at a relatively modest cost.

We Know For Certain:

- There is 12% chance of a catastrophic earthquake affecting BC in the next 50 years.
- The resulting devastation will involve local governments' linear assets.
- These assets will not be insured – local governments will be relying on senior governments to finance the repair and recovery of impacted infrastructure (*Disaster Financial Assistance*).

Reliance on the DFA leaves local governments exposed to significant unfunded liabilities, because:

- The DFA is an discretionary compensation scheme, not a grant program.
- It only indemnifies 80% of costs incurred.
- It does not reimburse "betterment."

Priorities? Where is local government compared to...

- Schools
- Hospitals
- Transportation infrastructure
- Housing

What changes are coming to the DFA?

- Federal government has changed its 90% funding commitment.
- How would a restructuring affect the program relied on by B.C. local governments.



Christchurch's earthquakes left 30% of its underground infrastructure inoperable.



- Insurance Bureau of Canada model – A catastrophic earthquake could cause \$75 billion in damage to BC.
- If only 10% of this is borne by uninsured municipal infrastructure –local governments will be looking to the DFA for \$7 billion.
- The DFA program will leave the local governments needing to pay \$1.5 billion.



- Best estimates are that the total value of uninsured linear assets in the lower mainland is \$110 billion.
- A catastrophe damaging 10%, would leave lower mainland local governments with \$2.2 billion in unfunded liability.



The Pooling Effect

A risk pool, such as the MIABC, can provide effective solutions to some of these problems.

Governmental Risk Pools

- Public Entity Risk Pooling is the single most successful example of inter-local cooperation in North America and beyond, saving billions of taxpayer dollars and thousands of lives.

Governmental Risk Pools

- 100,000 public entities in North America
 - 85% get some form of coverage from a pool
- \$13-17 billion in premium

In North America

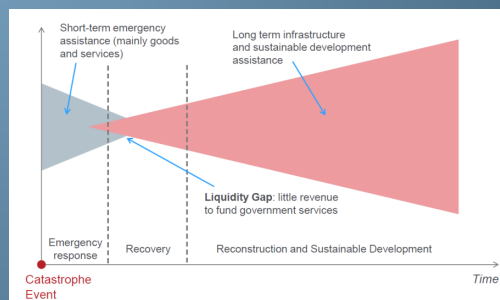
500 Pools

- Liability
- Property
- Auto
- Worker's Compensation
- Specialty Lines

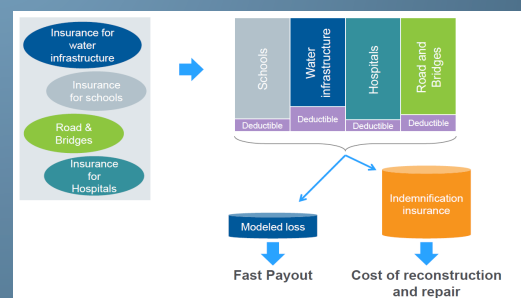
Governmental Risk Pools

“The smallest local government has access to resources usually available only to the largest.”

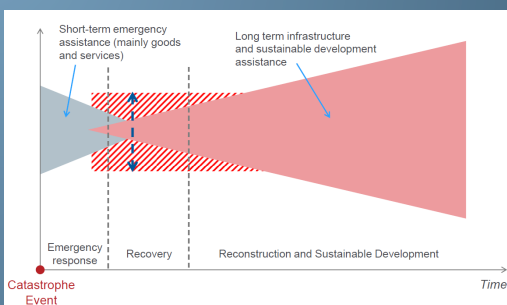
Post Disaster Liquidity Crunch



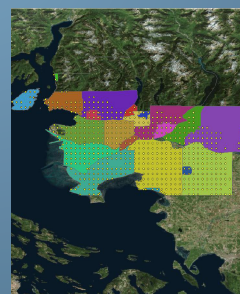
Heterogenic Risks Require Unique Solutions: The Two Pillar Solution



Two Pillar Solution Expands Financial Liquidity



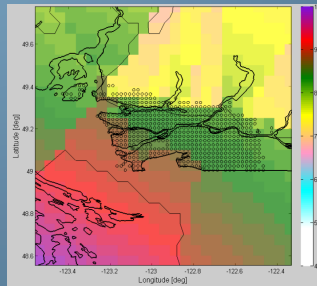
Trigger Definition on the Example of Vancouver



Index Points

- Liability distributions of the Municipalities are based on population density
- Areas with < 50 people/km² are not considered
- 571 liability points
- Weight of each point represents percentage of population within the Municipality

Scenario – Ground Motion Intensity



Scenario Plot

- Cascadia 1700
- M = 9.0
- With soil-conditions
- Ground Motion: Mercalli Intensity
- MR-EQ-Model for CAN

Simulation of Past Events (Example: Cascadia / Vancouver)

Assumption: 100,000 USD per Person

Loss per Municipality	Total Values	Total Loss	Loss Percent
Municipality			
North Vancouver District	8,441,200,000	298,782,805	3.54%
Port Moody	3,297,600,000	111,300,536	3.36%
Annmore	209,200,000	3,527,701	1.69%
Burnaby	22,321,800,000	1,492,217,936	6.69%
Port Coquitlam	5,634,200,000	322,065,900	5.72%
Richmond	19,047,200,000	1,625,942,167	8.54%
New Westminster	6,597,600,000	454,730,248	6.89%
Surrey	46,825,100,000	3,119,146,788	6.66%
Langley Township	10,417,700,000	619,292,468	5.94%
Delta	9,986,300,000	831,840,950	8.33%
Langley City	2,508,100,000	147,774,025	5.93%
White Rock	1,933,900,000	151,623,579	7.84%
Vancouver	60,350,200,000	4,559,616,271	7.56%
Electoral Area A	1,303,500,000	100,386,154	7.69%
West Vancouver	4,269,400,000	173,856,936	4.07%
Brown Island	340,200,000	21,025,316	6.18%
Balcarra	64,400,000	2,522,190	3.92%
Pitt Meadows	1,773,600,000	100,787,864	5.68%
Maple Ridge	7,600,200,000	413,227,719	5.43%
Coquitlam	12,645,600,000	719,992,028	5.69%
North Vancouver City	4,819,400,000	217,043,691	4.50%
Lions Bay	131,800,000	7,744,914	5.88%
Total	230,523,400,000	15,496,508,242	6.72%

Scenario Loss

- Cascadia 1700
- M = 9.0
- With soil-conditions
- MR-EQ-Trigger-Tool

Additional Services

- Local Government Planning
- Hazard Risk and Vulnerability Analysis
- Logistics



Additional Services

The need for each of these services has been documented in the Auditor General's Report.



The Cost?

- Really a matter of what is affordable.
- Benefits are dictated by the annual contribution.

\$15 million initially

- \$1 million for administration and additional services.
- \$4 million for reinsurance (\$70 million).
- \$10 million capital contribution.
- \$80 million limits in first year.

Subsequent Years Increase Capacity

- Increase contributions by 1.5% p.a.
- Investment returns of 4%.
- Prorate reinsurance and administration expenses.

Benefit Accrual

- Five years \$43 million capital and \$130 million benefit.
- Ten years \$107 million capital and \$203 million benefit.
- 15 years \$185 million capital and \$290 million benefit.
- 20 years \$280 million capital and \$397 million benefit.

Funding?

All levels of government have an interest in this.

Next steps?

Elected officials must make this a priority.

Questions?

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