Risk Reduction not risk transfer.
Insurance transfers RISK - not reduce.
North Van - existing homes?

Engagement

**Land Use**
- Land swapping
- Wild fires

**Transportation**
- Public
  - Highway/Bridges

**Social** (land use aspects)
- Poor elderly

**Mitigation**
- Risk reduction

**Existing Homes?**
- Strategy required

**New Structures**
- Revised Building Code
- Location

**Communication of Risk to Community**

**Enforcement Issues**
1. Regulations / Permits
2. Codes
3. Guidelines / Interpretations

**Tool Kits**
- Examples from different Risks / Hazards
- Transparent data on community
- "Land Use Guide"

Wayne G.
- Prioritize what needs to be protected
  - Identify strategies
    - Avoid
    - Reduce exposure
    - Transfer ($)

- Cost/Feasibility
- Consultation Process

- Planning (Ops + Maint/Capex)
  - Funding

- Zoning Policies
- Regulations
- Land swap plan
Flood

Issues that need to be addressed

- Impact on Agriculture
- Resilience
- Climate Change
- Water Sources
- Affected Communities

- General Scenario
- Current Data
- Cost/Benefit Analysis
- Conservation Measures
- Planning and Emergency Preparedness
Engagement

* measures
  - relying on DPZs
  - land swapping

* relocation of non-immigrants

Fundraising difficulties

checklist of recommendations
Engage

1. What guidance is needed regarding adoption of mitigation strategies?
   - Should be included in land use guide
   - Different for different types of development
   - Data available for residents
   - Education and awareness
   - Standards + codes
   - Discourage... from requiring education
   - Erosion negates

2. What types of best practices for adopting mitigation strategies?
   - Slope stabilization
   - Regeneration
   - Landscaping
   - Ponding
   - Erosion mitigation
   - Monitoring
   - Inspections

3. What best practices for adoption of mitigation strategies are aware of?
   - Bifurcation + monitoring
   - Gap between technical and physical social
   - Leadership
   - Bridges between technical
   - Physical
   - Insurance
   - Transfer and value
   - Education + community
   - Knowledge + community

- Stewardship of community
- Bifurcation + new development
- Bifurcation + old houses
- Infrastructure
- Personal responsibility
- V.S. vs. green
- Landscaping
Risk Assessment

- Passing on of knowledge
- How to call upon expertise
- Risks of getting people to respond & recover
- Risks of interconnectivity

\[ \text{multiply} \]

A) Hazard
B) Vulnerability - people/structure
C) Temporal & spatial probabilities
D) Vulnerability
E) Consequences

Social learning system.
Risk Assessment

- Review of the facility operations
- Verification of equipment performance
- Inspection of safety procedures
- Analysis of potential hazards
- Implementation of control measures
- Training of personnel
- Review of emergency procedures
- Evaluation of risk reduction strategies
Risk Assessment

PE, P5, P7, V

RISK

V.H

Low

V.L

L

6

5

4

3

no injury
6 mos recover
Consequence

many fatality
mortality: heads
Risk Assessment

[Diagram with handwritten notes]
Thoughts

- Tolerance depends on many factors.

Tolerance

Practices

1. Include flexibility for use at different scales.
   (more localized)

2. Should be geographically set.

3. Set tolerance levels, but recognize that they change spatially.

Summary vs. Usability
Thoughts

- What kind of losses? absorption
- by death? injury? absorption? risk?
- frequency of return to absorption?
- Insured vs. uninsured risk.
- Period of absorption.

- New vs. Old Structures:
  - Why so different?
  - Show "modified" structure be somewhere between?

Measuring acceptable risk.

- Quantifying:
  - Who sets the tolerance level?
  - Depends on event type (slow flood vs. IoS/WE).
    - exposed pop. (child vs. adult)

- Need to compare different risk of different activities.

Tolerance

Practices

- How to engage pop vs financial industry.

- Post information or claims others is state what the community has agreed to accept.

- Help prove understand risk levels.
  (be very clear!)? Descriptive?

- Provide a list some thresholds to guide.

  But problematic: be not objective
  w/ people is role
  w/

- Use of a matrix for sensory risk levels.

- Not bury proscription leads to creativity
- Risk tolerance often conditioned by past exposure
- Personal psychology conditions risk tolerance (e.g. skydiving → "risk-seeking" personality)
A Sequent (deriving from Rest Position (dp approach - verbatim) approach)
Risk Tolerance Criteria

- Level 1: Time (sudden vs. gradual)
  - Economic
    - Loss of lives
    - Assumption of loss by greater community
    - Implementation of limited assistance from Federal Planning Assistance
  - Types of events
    - Should risk tolerance be tied to x % deaths?
      - Other measures?
    - Frequency of tolerance levels to work!
New Westminster does some costs. benefits
analysis of building dislikes.

More than one benefit, i.e. not just return
on your money, improve future construc-
tion.

Delta is conducting a study on how to
prioritize investments.

Tangible capital is a great source of
money. Board of benefits of trade.

Vancouver cost. benefit.

New West. value.

Full cost accounting.

#8
- How do you draw the boundaries of what you want to quantify?
- How much time & money have we invested in:
  mitigation & recovery
  - Enlarge the emergency management to larger communities.
- Most money get allocated to programs mostly related to response & planning.
  Need more involvement from EM in strategic thinking.
  Budget allocations?

Local govt are not responsible for mitigation & recovery
Regional -> Debris removal
Water communication system
  Responsible to provide service and they need to have systems in place to recover these services.

Sea level change, climate change. Many years down the road.

Summarize research.
Failed safe planning. US resilience.
for the determination of serum glucose.

After the sample has been processed, the results are reported.

Student overdose many of the

Furthermore, the concentration of phthalate 

products, and the presence of

isomers of the parent compound 

is also detected. The samples are then 

analyzed to determine the levels of phthalate.

Supporting these findings are the evidence that 

phthalates are not only harmful but also accumulate in 

lipid and adipose tissue.
- Floods - Upgraded design can be negotiated through the zoning process.

- Critical Infrastructure - Could be negotiated at time of rezoning (municipal emergency response equipment room in high rise).

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**Zoning**

- Pre-zoning (or existing rezoning) may remove ability to include hazard mitigation elements.

- Zoning must be subject to local enforcement so enforcement must be considered in creating zoning regulations. (e.g., construction in flood plain level)

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- May want to seek comments from leading solicitors (e.g., Buholzer) (Dr.)
0. Applicability checklists

1. Preliminary Application
   - Identify "showstoppers"
   - Hazard potential
   - Application
   - Site requirements

0. Zoning/Recommendations

0. Geotechnical Assessment
   - Flood hazard report / soil condition
   - Slope condition levels
   - Detailed topographic survey
   - Steep slopes
   - Top/bottom of banks

0. Arborist report / tree survey

0. Stormwater management plans
   - Pre/post development plans

0. Wildfire assessment

0. Development Permit Areas
   - Guidelines
Zoning Recommendations

- Overall process triggers sitewide studies - risk
- Locate density to mitigate hazard risk
- Include ecosystem, geology, coast, and
  surface flow
- Include hazard factors for safety
- Locate development in areas of
  site disturbance, use, and
  community patterns
- Zoning issues/jurisdiction
  - Site layout (subdivision) + open space
  - Land use type / location / density

-Floodplains + design + standards
  - Site disturbance + impermeability
  - Risk response standards, for roads, water
  - Formulators, etc...

- Phased development agreement
  + Community amenity / contributions

- Restrictive covenants = parallel to
  zoning to put risk response against
  at time of the land

- Include risk assessment + mitigation requirements in
  overall county plan
  - Applies to all zoning applications
  - Zoning is less relevant now
  - These Risk Consideration so help regennent in federal +
    source EIA process

- "If these"
Sample diagram with handwritten notes.
Zoning

- Generally speaking, tailor zoning restrictiveness to level of hazard (but recognize that expensive mitigation might change everything)

  (Restrictive zoning for high hazard zones)

- Collaborate and harmonize beyond the region, very planned

- Build in a learning component or process into zoning decisions (e.g., hazard increases due to climate change, what response zoning?)
Monitoring use of built environment:

- Natural events:
  - Rain / Snow
  - Wind
  - Temperature
  - Earthquakes
  - Floods
  - Fires / Interface

Scale of monitoring: City / Region?

The line