Climate Change Adaptation Strategy
BY 2050, IN METRO VANCOUVER

1. Hotter average annual air temperatures
2. Changing precipitation
3. Higher sea level
4. More frequent extreme weather events

>> Although these changes are predicted to occur by 2050s, some are already happening
CLIMATE CHANGE IN THE DISTRICT

A LOCAL PERSPECTIVE (2014 – 2015)

- Record-setting summer temperatures
- Windstorms
- Drought
- Forest fires
- Heavy rainfall events
- Limited snow
**CLIMATE CHANGE IMPACTS**

- Personal health and safety concerns
- Water systems affected
- Property and public amenities damaged
- Recreation areas damaged
- Quality of life reduced

**RESIDENTS**

>> What we value is vulnerable to a changing climate
CLIMATE CHANGE IMPACTS

- Natural hazards more challenging to manage
- Increased spending to maintain public assets
- Staff priorities redirected to deal with emergency response
- Reduced capacity to maintain current operations

>> Municipal services and public infrastructure will be affected by climate change

THE DISTRICT
CLIMATE CHANGE IMPACTS

Loss or reduction of:

- Native biodiversity
- Ecosystem services
- Foreshore areas

THE ENVIRONMENT

>> The environment is invaluable and irreplaceable, and climate change is a major threat.
Two ways to address climate change:

1. **Mitigate**: prevent future climate change from happening by reducing GHG emissions

2. **Adapt**: become more resilient by preparing and responding to climate change

>> To become resilient to climate change, both mitigation and adaptation are needed
ADAPTATION IS NOT NEW

- Risk assessments for natural hazards
- Natural hazard management plans and implementation strategies
- Hazard and environment development permit areas
- Development standards for buildings, infrastructure, and utilities
- Long-term (40–50 years) asset management framework

The District needs a strategy to coordinate and integrate actions and identify gaps

ONGOING WORK AT THE DISTRICT

Andrew Kolper, Kerr Wood Leidal
AN OVERARCHING STRATEGY

- Identifies policy and program gaps and new actions
- Supports and informs other programs and plans
- Key to OCP implementation
- Coordinates work

>> The strategy will integrate adaptation into District programs and policies
GUIDED BY BEST PRACTICES

ICLEI CANADA PROGRAM

• National program focused on community resilience and adaptation
• Supports communities to prepare for climate change
• Tools to help build internal capacity
• A growing community network

>> The planning process will be guided by a regional best practice, tailored to the District

ICLEI Canada

Municipalities using the same program

- Vancouver
- City of North Van
- District of North Van
- Delta
- Surrey
- Metro Van
- Victoria
- Capital Regional District
A FIVE-STEP PROCESS

1. Initiate adaptation planning
2. Identify priority climate change impacts
3. Create a Climate Change Adaptation Strategy
4. Implement the strategy
5. Monitor progress and review actions

>> This is an iterative process—the strategy will be updated as new science becomes available
PROGRESS TO DATE

• Built an interdepartmental adaptation team
• Identified key stakeholders
• Reviewed current science
• Identified existing plans and policies already working towards adaptation

STEP 1: INITIATE ADAPTATION PLANNING
**PROGRESS TO DATE**

- Research climate changes
- Identify climate change impacts
- Conduct risk assessment to prioritize impacts for action planning

>> The risk assessment helps prioritize climate change impacts for action planning

**STEP 2: IDENTIFY PRIORITY CLIMATE CHANGE IMPACTS**

- **Climate Research**
- **Impacts to the District**
- **Risk Assessment**

**Priority Climate Change Impacts**
PRIORITY CLIMATE CHANGE IMPACTS

- Consequence categories:
  1. Public health & safety
  2. Local economy & growth
  3. Community & lifestyle
  4. Environment & sustainability
  5. Public administration & governance

>> Climate change outcomes can be gradual long-term changes and short intense events

Climate Change Adaptation Strategy  Fall 2015
Climate Change Adaptation Strategy  
Fall 2015

**PRIORITY CLIMATE CHANGE IMPACTS**

- Longer and drier summers
- Wildfires
- Invasive organisms
- Soil and sediment erosion
- Overland floods
- Urban floods
- Coastal floods and erosion
- Storm surges
- Droughts
- Heatwaves
- Windstorms

**RISK ASSESSMENT EXAMPLES**

- Structural damage
- Displaced residents
- Reduced access to recreational areas
- Psychosocial impacts to staff
- Reduced air quality

- Injury as a result of under-cutting
- Damage to park trails
- Decreased quality of freshwater ecosystems

- Water and salt damage
- Reduced access to coastal recreational areas
- Loss of critical foreshore habitat

- Injury
- Structural damage
- Damage to trees
- Delayed delivery of important municipal services
- Power outages

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Climate Change Adaptation Strategy  
Fall 2015
For each climate change outcome, we assessed:
1. Likelihood
2. Consequence

Risk = Likelihood x Consequences

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Consequence</th>
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<tbody>
<tr>
<td>Rare (L1)</td>
<td>More than 20 years</td>
</tr>
<tr>
<td>Unlikely (L2)</td>
<td>Within 10-20 years</td>
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<tr>
<td>Possible (L3)</td>
<td>Within 3-5 years</td>
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<td>Likely (L4)</td>
<td>Within 2 years</td>
</tr>
<tr>
<td>Almost Certain (L5)</td>
<td>Within 1 year</td>
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<table>
<thead>
<tr>
<th>Consequences</th>
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<tbody>
<tr>
<td>Public Health &amp; Safety</td>
</tr>
<tr>
<td>Local Economy &amp; Growth</td>
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<td>Environment &amp; Sustainability</td>
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<td>Public Administration &amp; Governance</td>
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<td>Minor (C2)</td>
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<td>Moderate (C3)</td>
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<td>Major (C4)</td>
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<tr>
<td>Catastrophic (C5)</td>
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- Climate Change Adaptation Strategy Fall 2015
**PRIORITY CLIMATE CHANGE IMPACTS**

**PRELIMINARY RISK ASSESSMENT RESULTS**

- **Higher risk**
  - Wildfires
  - Windstorms
  - Overland floods
  - Landslides and debris flows
  - Coastal floods, erosion, and saltwater intrusion

- **Lower risk**
  - Droughts
  - Heatwaves
  - Invasive organisms
  - Soil and sediment erosion
  - Urban floods
  - Storm surges
  - Longer and drier summers

>> These results will help focus action planning
WHAT’S NEXT?

• Develop actions and goals to address priority climate change impacts

• Develop actions specific to our needs

• Integrate actions into current operations and day-to-day work plans

• Prepare for ongoing review and refinement

>> The strategy will be comprehensive, specific, integrative, and a “living plan”

STEP 3: CREATE A CLIMATE CHANGE ADAPTATION STRATEGY

1 INITIATE

2 RESEARCH

3 PLAN

4 IMPLEMENT

5 MONITOR/REVIEW
CLIMATE ACTION

• Actions must address all aspects of the community
  – Social
  – Economic
  – Environment

• Strategic actions will be successful
  – Win-win
  – Co-benefit
  – No-regret

>> What we value is vulnerable. We must act now for a more resilient future.
QUESTIONS?
ASK OUR PROJECT COORDINATORS

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