



100 Voices, 1 Goal: A case study in multidisciplinary collaboration to create a climate adaptation plan

Ena Ristic, Climate Change Specialist
Disaster and Resilience 2021
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About Me

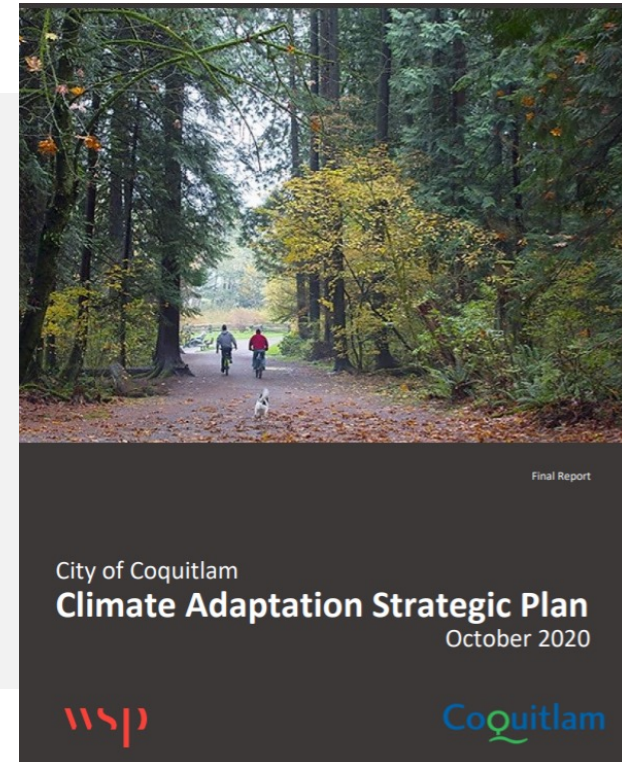



Ena Ristic, B.Sc., MCC

- University of Waterloo, Masters of Climate Change, 2018
- 3 years at WSP
- Climate Change Specialist focusing on resilience and adaptation
- Waterloo, ON

Today's Presentation.

- Case study context
- High level methodology overview
- Stakeholders
- Hurdles of collaboration
- Potential solutions and lessons learned
- Project summary
- Other examples

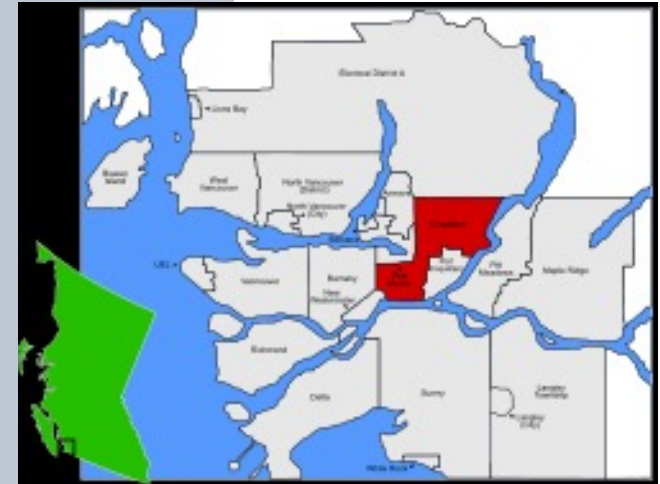




Case Study Context: City of Coquitlam

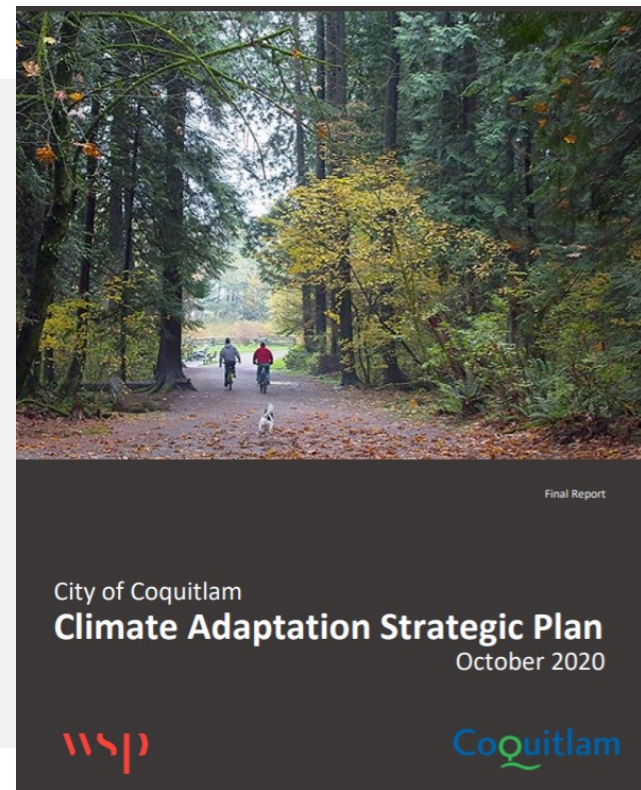
City of Coquitlam

- Metro Vancouver, British Columbia
- Population of 140,000
- Diverse population and economy
- 122 km²
- Located along the Fraser River
- 1000 m elevation difference
- Temperate costal climate



Climate Adaptation Strategic Plan

- Project: 2019-2020
- Included a holistic climate change resilience assessment and adaptation plan
- Federation of Canadian Municipalities Funding
- Worked in tandem with the City staff and departments

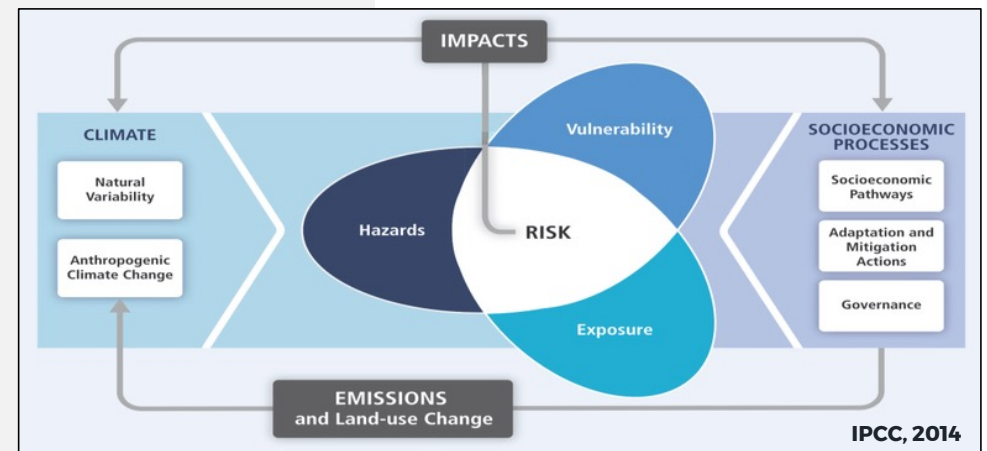


An aerial photograph of a city, likely Vancouver, showing a dense urban area with numerous high-rise buildings and residential areas. The city is nestled at the base of a range of large, rugged mountains with some snow-capped peaks. A forested hillside with a ski lift is visible on the left. The sky is clear and blue.

Methodology Overview

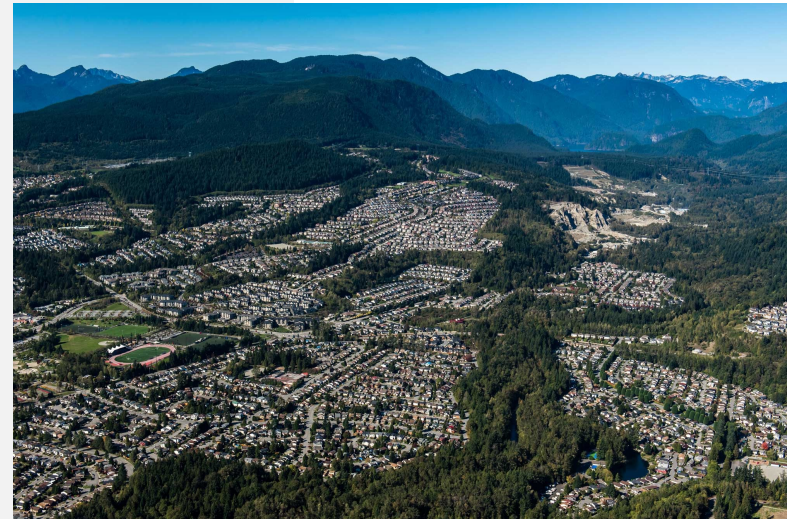
Methodology Overview

- IPCC AR5 Framework and ISO 31000 Risk Management Principles
 - Exposure
 - Vulnerability
 - Sensitivity
 - Adaptive Capacity
 - Hazards
- Likelihood X Consequence
- Triple bottom line evaluation



Methodology Overview

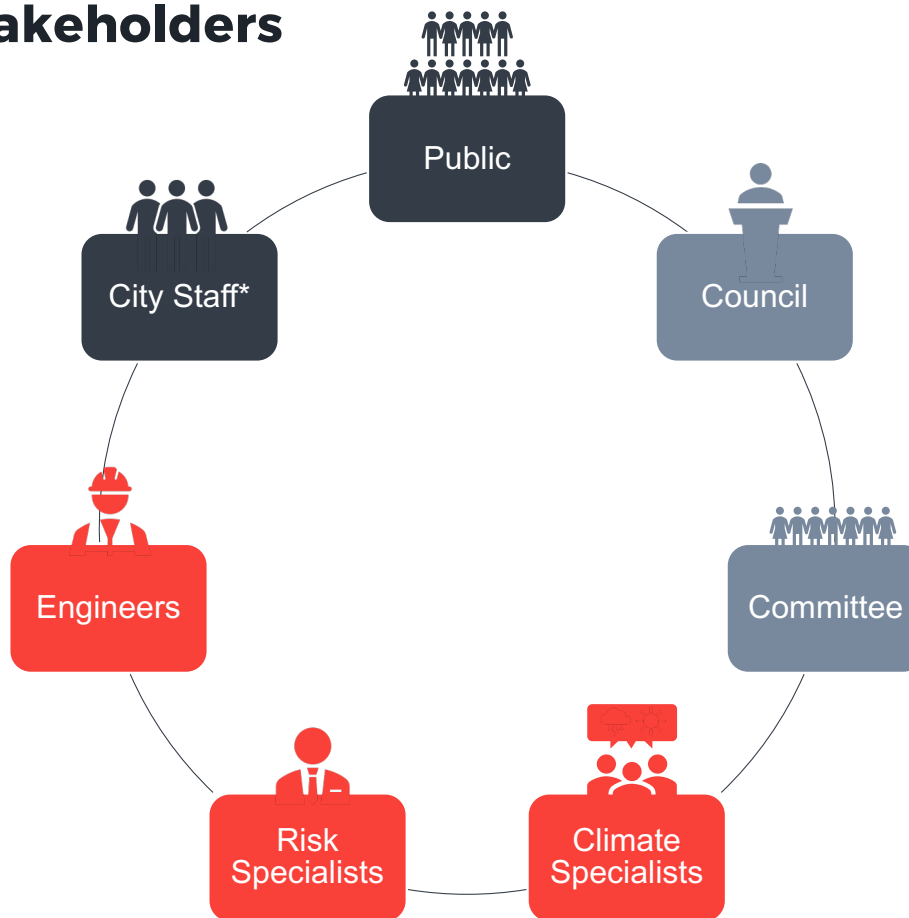
- RCP4.5 and RCP8.5
- 2050s and 2080s
- Process included:
 - Scope discussions with client
 - Documentation review
 - Interviews with City staff
 - Desktop research
 - Workshops
 - Public engagement* (delayed due to CoV19)



An aerial photograph of a city, likely Vancouver, showing a dense urban area with numerous high-rise buildings and residential areas. The city is nestled at the foot of a large, forested mountain range. In the background, a series of jagged, snow-capped mountain peaks rise against a clear blue sky. A railway line is visible on the left side of the image, running along the base of the mountains. The overall scene is a mix of urban development and natural beauty.

Stakeholders

Stakeholders



- *City Staff
 - Infrastructure
 - Risk and Emergency
 - Facilities
 - Public Works
 - Planning
 - Buildings
 - Transportation
 - Parks and Recreation
 - Fire Department
 - Environment

An aerial photograph of a city, likely Vancouver, showing a dense urban area with numerous high-rise buildings and parking lots. In the background, there are large, forested mountains under a clear blue sky. A semi-transparent white rectangle is overlaid on the center of the image, containing the text "Hurdles of Collaboration".

Hurdles of Collaboration

1. Terminology

- Inconsistent within project team (engineers vs climate vs risk staff)
- Technical vs colloquial ('mitigation')
- Public perception
- Difficulty communicating certain concepts to stakeholders



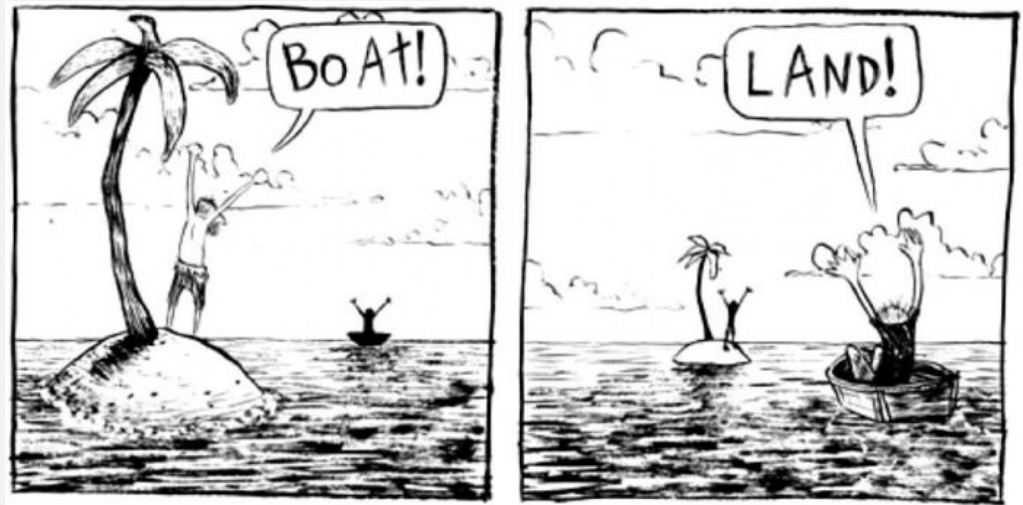
2. Different Goalposts

- Different perceptions of final product
 - Does it need to go through council?
 - Specific actions or broad goals?
 - Integrated into other plans?
 - Organized by risk? By department?
- CoQ had a large portion of the effort allocated for document review and less focus on engagement and risk assessment



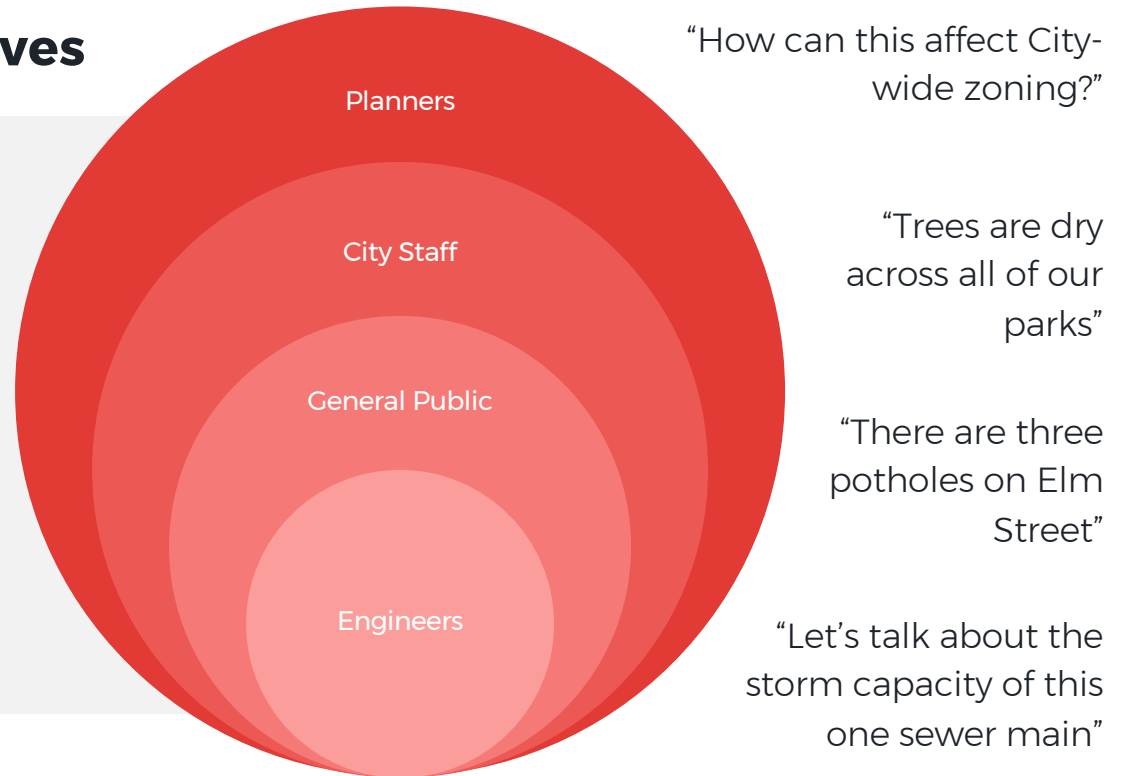
3. Different Perspectives

- Focus
- Time horizon
- Budget
- Level of scientific robustness
- Viewpoints



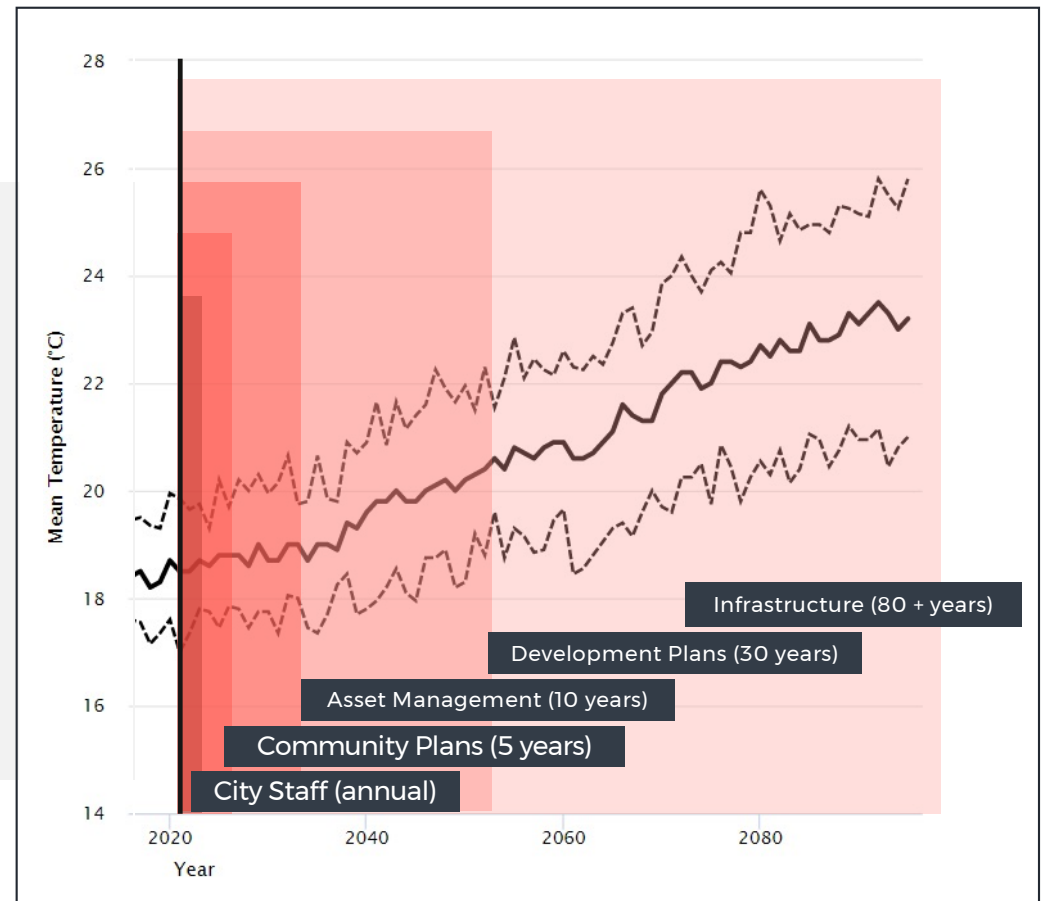
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3. Different Perspectives

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- **Viewpoints**

"I want to go back to my safe space with standards and safety factors and actual numbers. None of this scary probability stuff"

-Structural Engineer

4. The Right People

- Operators
- Managers
- Corporate
- Policy makers
- Public
 - Diverse representation
 - Privilege
 - Age

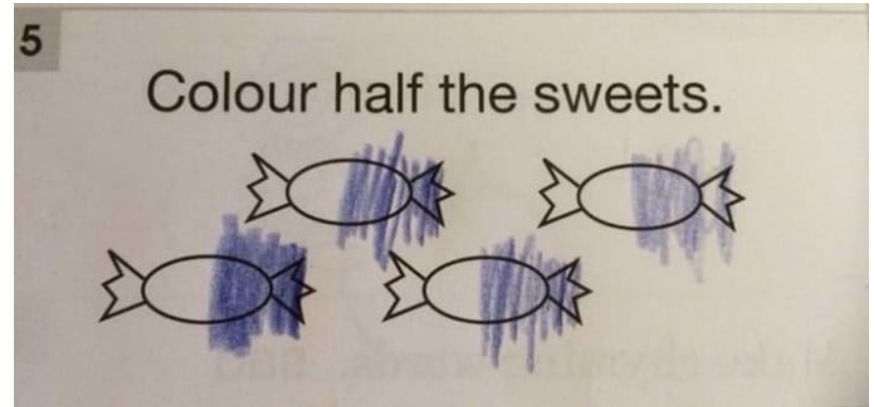


An aerial photograph of a city, likely Vancouver, showing a dense urban area with numerous high-rise buildings and residential neighborhoods. The city is nestled at the base of a massive, forested mountain range. In the far distance, more rugged mountain peaks are visible under a clear blue sky. A semi-transparent white rectangular box is centered over the middle of the image, containing the title text.

Potential Solutions and Lessons Learned

1. Create an equal base of knowledge

- Early and consistent education
- Primers before workshops and engagement
- Explain where stakeholder's contributions fit within the risk and adaptation process



- Do not assume any prior understanding of the process or the subject material
- Bring forward examples early where possible

2. Tailored Engagement

How will increasing precipitation impact storm water systems?

Have you ever had to deal with street flooding?

After a big storm what is your main concern?

Have there been any storm grate overflows?

Plans to upgrade any of the systems?



City Staff

What type of storm system is this?
Combined? Separated?

Is it designed to handle an increase of 15% precipitation during a 15-minute 10-year storm event?

What conditions would lead to flooding?



Engineers

Has flood damage been a budgetary concern in the last 5/10/30 years?

How do you see our City leading on climate change in this space?

Have your constituents brought forward any flooding concerns?



Council

3. Clear Scope and Metrics

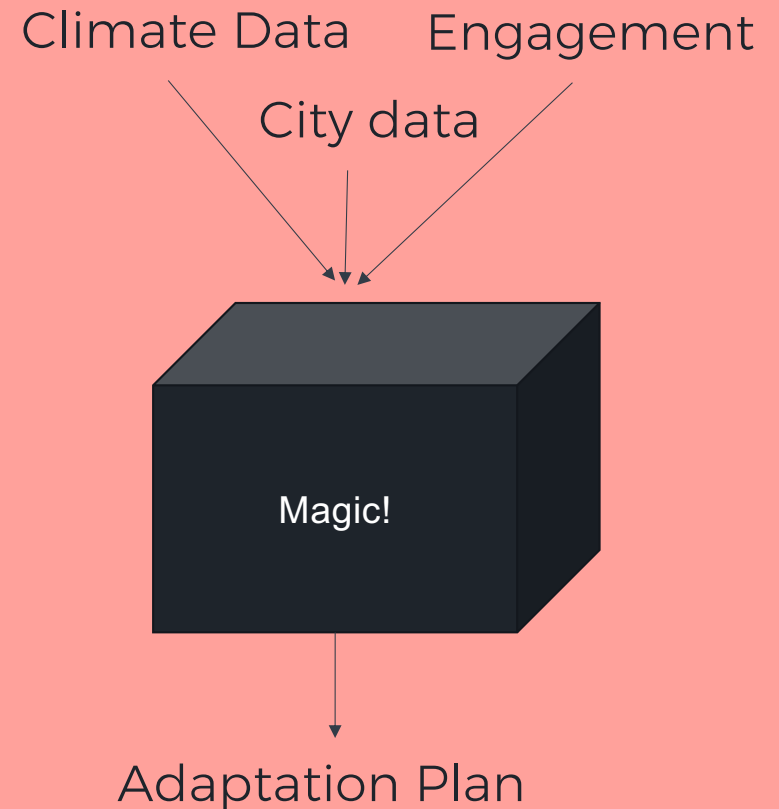
- Is a risk level relative to the individual? The department? The city?
- What is the purpose of the plan? To inform policy? To guide departments? Who is the audience?
- Whose jurisdiction is this under?
- What is a high consequence? Major economic loss? Operations constraints?

Coquitlam Action Plan:

- Department-level actions
- Baseline assessment to guide future policy and work endorsed by the City
- Used a triple-bottom line consequence scale confirmed by the City and historic thresholds for the likelihood

4. Clear and Transparent Methodology

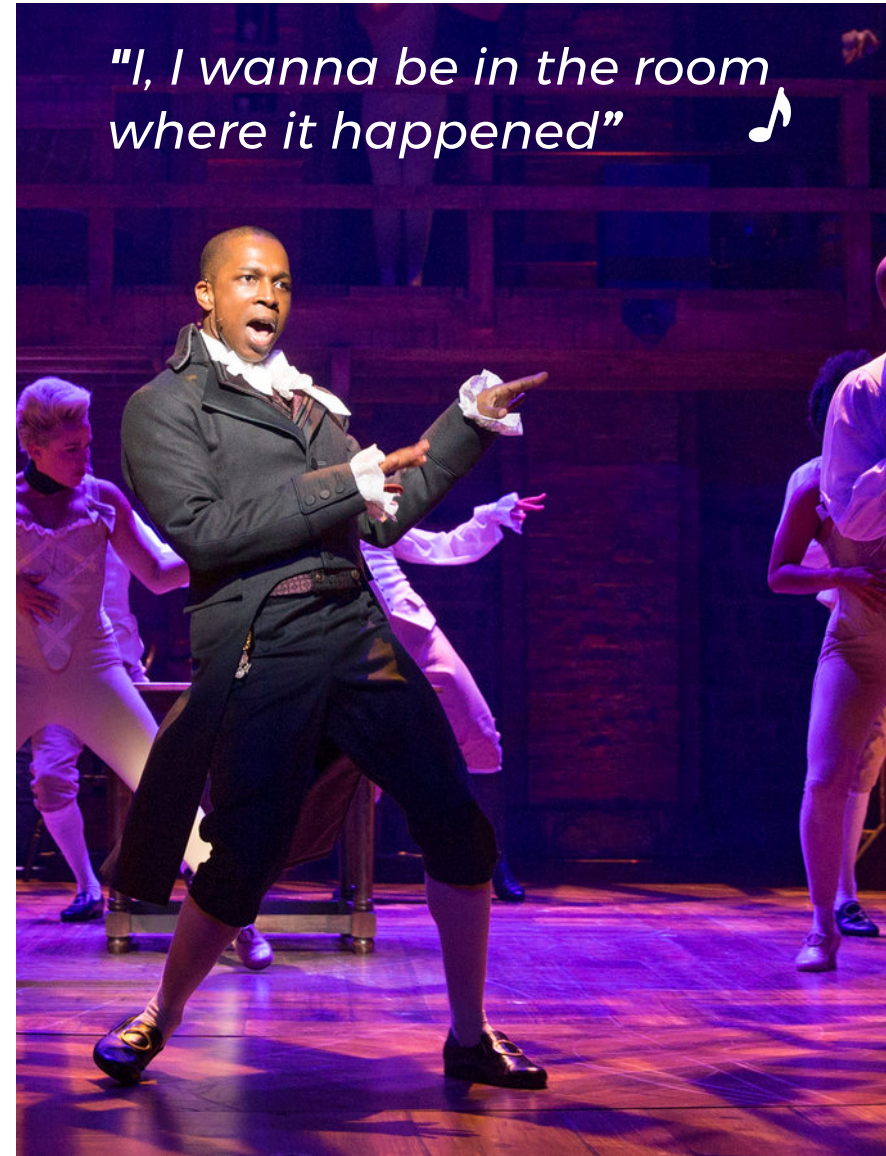
- Everyone should understand the process and where they fit in
- Try avoiding use of buzzwords like 'PIEVC' or 'Net-Zero' if those things aren't being followed



5. Make Sure the Right People Are in the Room

- Operators and managers
- Corporate and operations side
- Holistic representation
 - Different departments
 - Special interest groups
 - Diverse public
- Experienced representatives

*"I, I wanna be in the room
where it happened"* 🎵

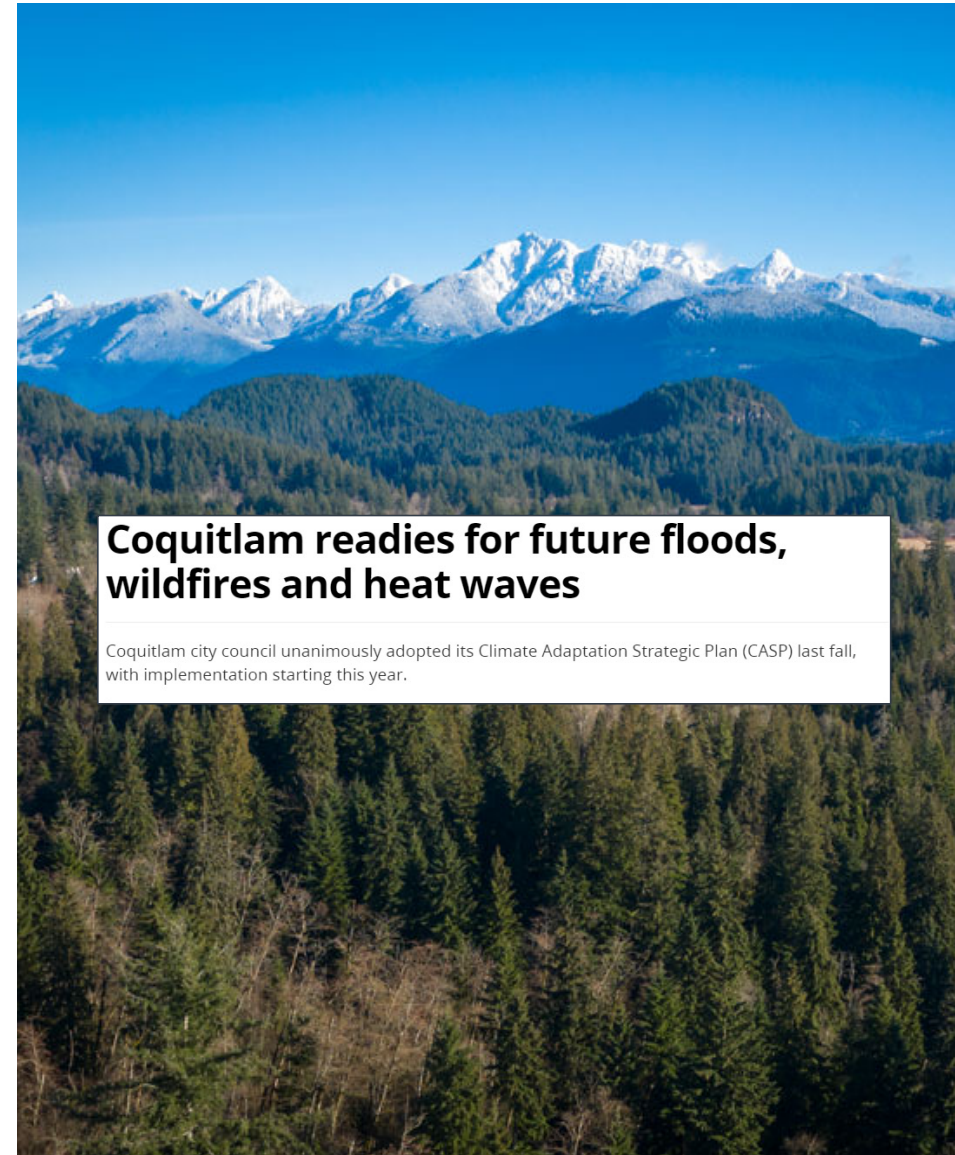


An aerial photograph of a city, likely Vancouver, showing a dense urban area with numerous high-rise buildings and residential developments. The city is nestled at the base of a massive, forested mountain range. In the background, several sharp, rocky mountain peaks are visible, some with patches of snow or light-colored rock. A railway line runs along the left side of the image, following the contour of the mountains. The sky is a clear, pale blue. A semi-transparent white rectangular box is overlaid on the center of the image, containing the text "Project Summary" in a large, black, sans-serif font.

Project Summary

Project Summary

- Unanimously adopted by Council in Fall 2020
- 29 risks related to drought, wildfire, heat waves, water shortages, coastal and inland flooding, and storm events
- 50 suggested adaptation measures



An aerial photograph of a city, likely Vancouver, showing a mix of urban development and natural landscape. In the foreground, there are large parking lots filled with cars, some commercial buildings, and a multi-lane highway with traffic. The middle ground features a dense residential area with numerous high-rise apartment buildings. In the background, there are forested mountains under a blue sky with light clouds. A semi-transparent rectangular box is centered over the middle ground, containing the text "Thank you!" in a large, black, sans-serif font.

Thank you!

An aerial photograph of a city, likely Vancouver, showing a mix of urban development and green spaces. In the foreground, there are large parking lots, commercial buildings, and a multi-lane highway. The middle ground features a dense residential area with numerous high-rise apartment buildings. The background is dominated by a range of mountains under a clear blue sky with some light clouds. A semi-transparent white rectangular box is centered over the image, containing the word "Questions?" in a large, black, sans-serif font.

Questions?

Ena.Ristic@wsp.com