CITY OF VANCOUVER | GREENEST CITY 2020

City of Vancouver – Preparing for Climate Change

November 22nd, 2016

In 2012 Vancouver adopted a Climate Change Adaptation Strategy

Outline

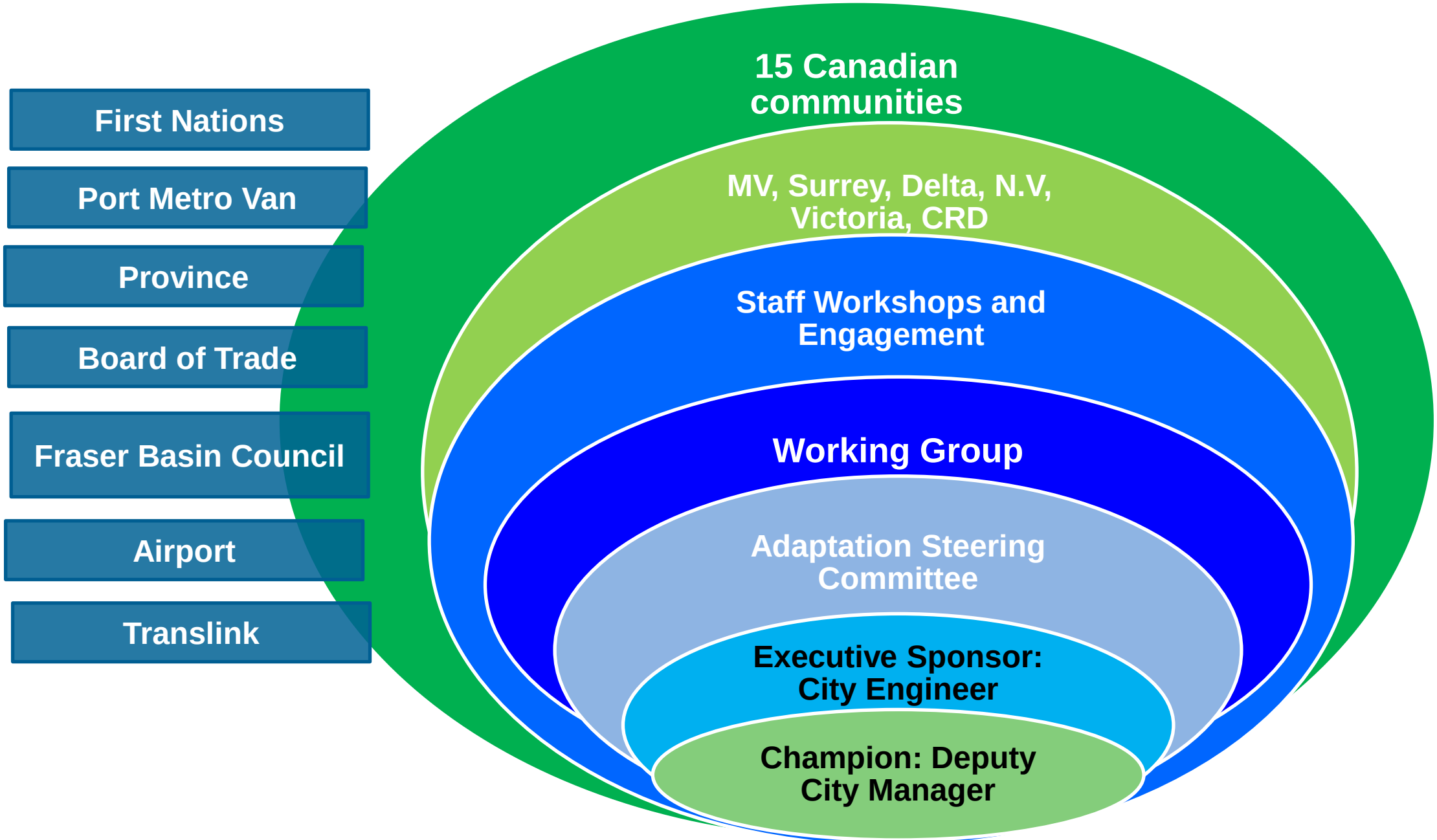
- Developing a Climate Adaptation Plan
- Implementing the Plan
- Lessons Learned

STEP 1: Getting started is the hardest part

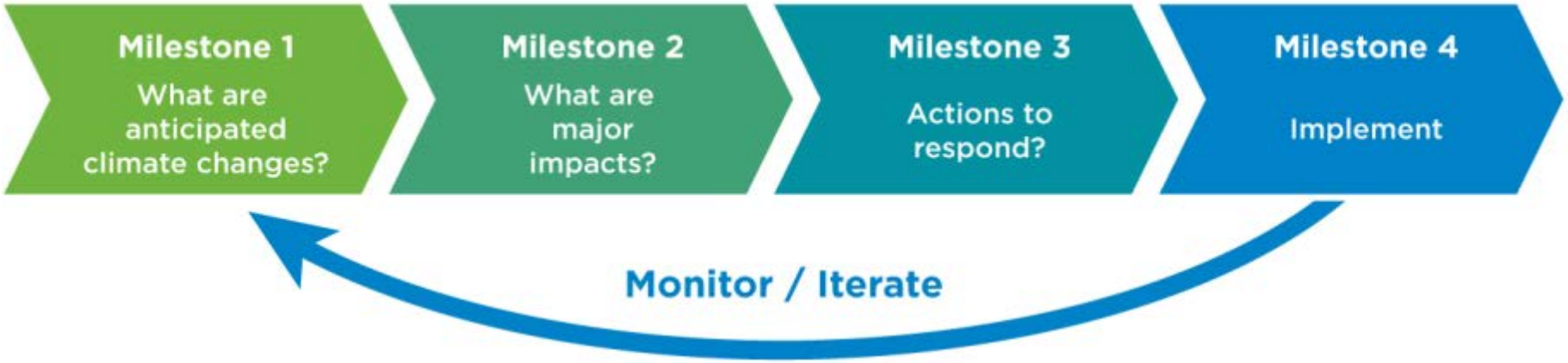
- Why do you want to adapt?
  - Know your drivers and message
- What will success look like?
  - What is a successfully resilient Vancouver?
- What plans exist that should be integrated?
- Do you have executive champions and senior management buy in?

Step 1:….PEOPLE

- Get a team together
  - Cross-departmental with Sr. Manager Buy-in
  - Get them excited
    - Local scientist speaker, video gulfport, Miss. Hancock Bank
- Guiding Principles
- Scan of actions ALREADY adaptation


First Nations
Port Metro Van
Province
Board of Trade
Fraser Basin Council
Airport
Translink
15 Canadian communities
MV, Surrey, Delta, N.V, Victoria, CRD
Staff Workshops and Engagement
Working Group
Adaptation Steering Committee
Executive Sponsor: City Engineer
Champion: Deputy City Manager

Rough Steps we followed



Climate Science

GM Interviews

Scan for existing adaptations

Impact Statements

Risk and Vulnerability Assessment

Action Workshops

Action Evaluation

Plan and Review

Project Management and Funding

PACIFIC CLIMATE IMPACTS CONSORTIUM

PLAN2ADAPT

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Summary
Region & Time
Temperature
Precipitation
Snowfall
Growing DD
Heating DD
Frost-Free Days
Impacts
Notes
References

Summary of Climate Change for British Columbia in the 2050s

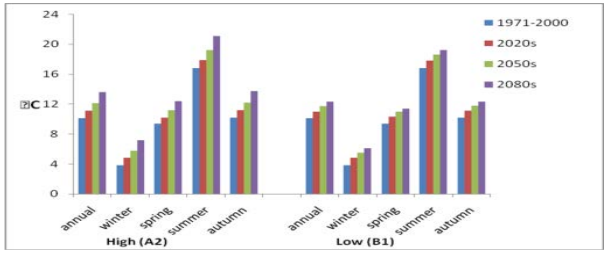
Climate Variable	Season	Projected Change from 1961-1990 Baseline	
		Ensemble Median	Range (10th to 90th percentile)
Mean Temperature (°C)	Annual	+1.8 °C	+1.3 °C to +2.7 °C
Precipitation (%)	Annual	+6%	+2% to +12%
	Summer	-1%	-8% to +6%
	Winter	+8%	-2% to +15%
Snowfall* (%)	Winter	-10%	-17% to +2%
	Spring	-58%	-71% to -14%
Growing Degree Days* (degree days)	Annual	+283 degree days	+179 to +429 degree days
Heating Degree Days* (degree days)	Annual	-648 degree days	-952 to -459 degree days
Frost-Free Days* (days)	Annual	+20 days	+12 to +29 days

The table above shows projected changes in average (mean) temperature, precipitation and several derived climate variables from the baseline historical period (1961-1990) to the **2050s** for the **British Columbia** region. The ensemble median is a mid-point value, chosen from a PCIC standard set of Global Climate Model (GCM) projections (see the 'Notes' tab for more information). The range values represent the lowest and highest results within the set. Please note that this summary table does not reflect the 'Season' choice made under the 'Region & Time' tab. However, this setting does affect results obtained under each variable tab.

* These values are derived from temperature and precipitation. Please select the appropriate variable tab for more information.

© 2012 Pacific Climate Impacts Consortium

From Impacts to Actions



80 Impacts

Risk and Vulnerability Assessment

20 Impacts

Brainstorm Actions
100s

Evaluate Actions

9 Primary Actions
50+ Supporting Actions

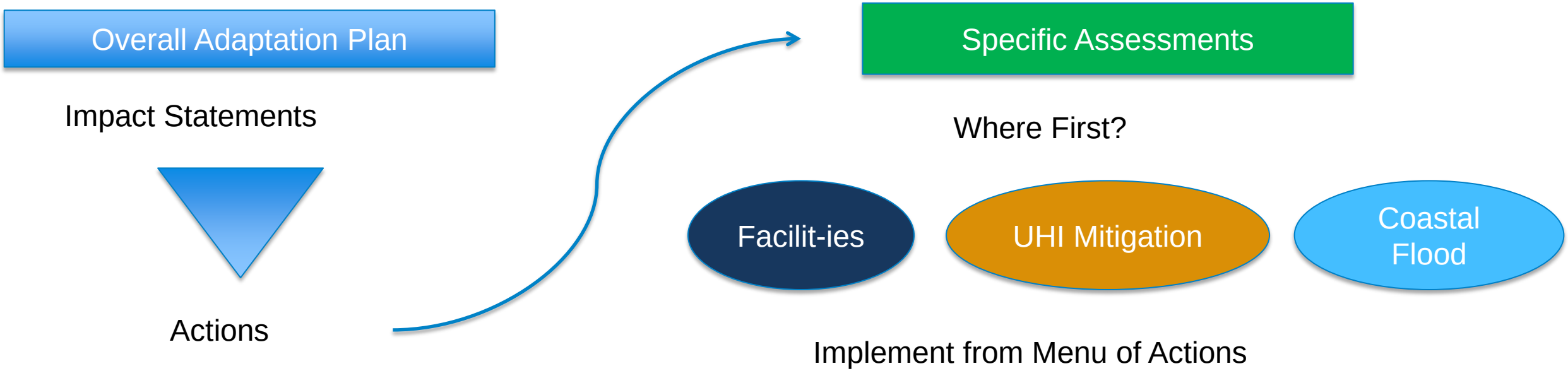
Must Do

Monitor

Investigate Further

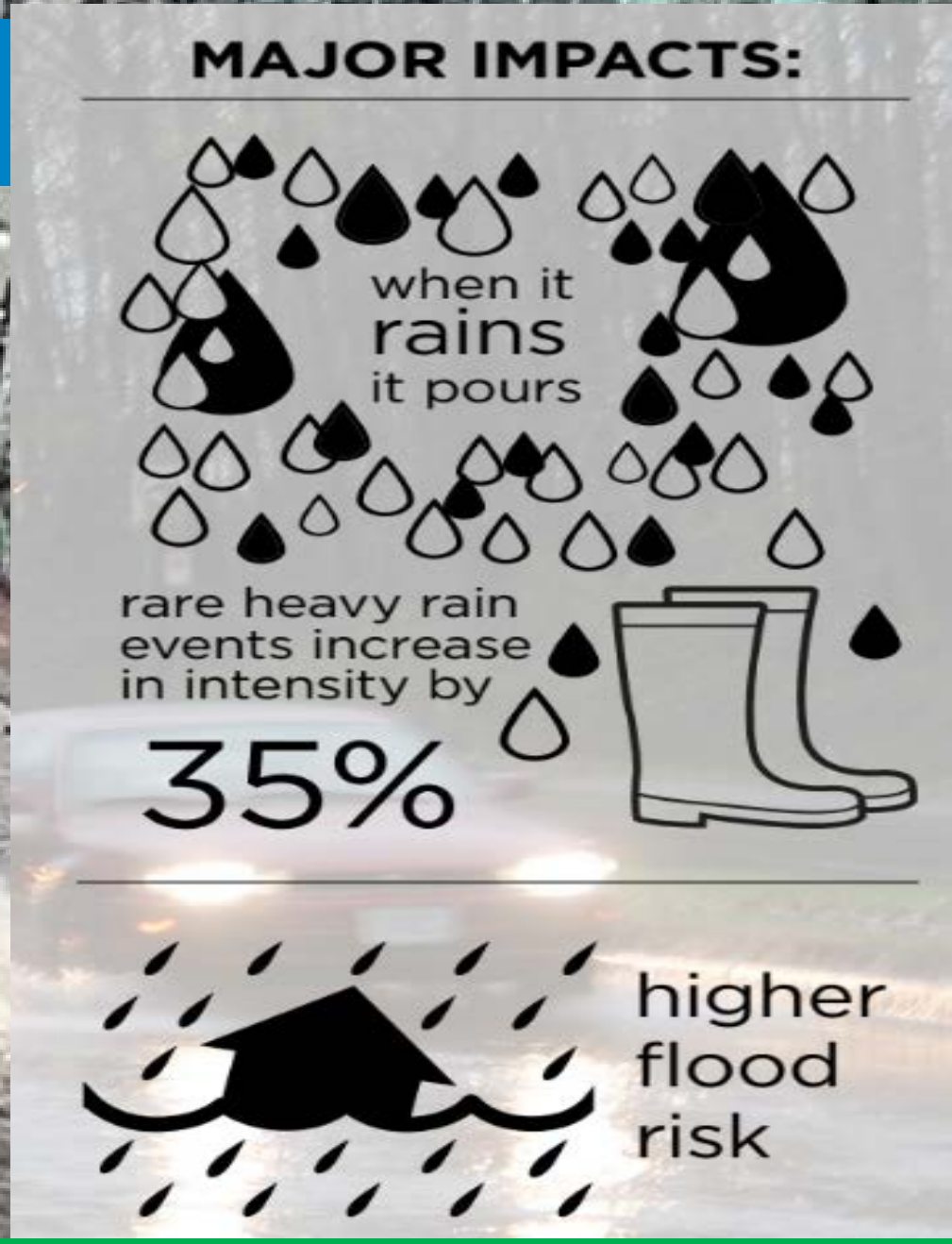
Risk and Vulnerability: Prioritize Action

- Vulnerability: Function of Exposure, Sensitivity, Adaptive Capacity
- Risk: Function of Likelihood and Consequence



Implementation

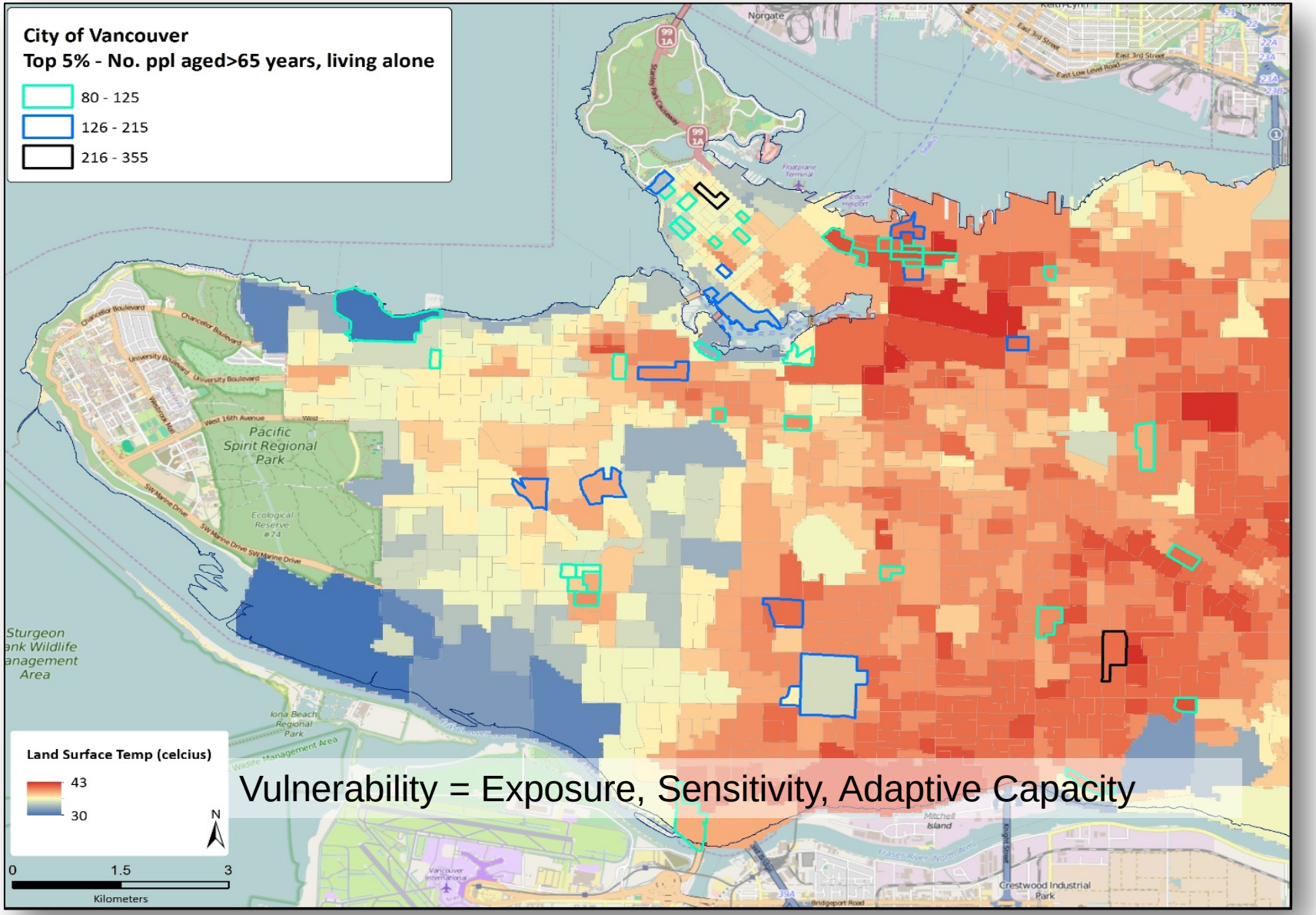
Wetter Vancouver



Wetter Vancouver

- Green Infrastructure Strategy
- Future-cast Sewer Sizing
- Separating Sanitary and Storm Sewer
- Public Communication

Hotter, Drier Summers



Knudby and Aminipouri, SFU (2015)

Hotter, Drier Summers

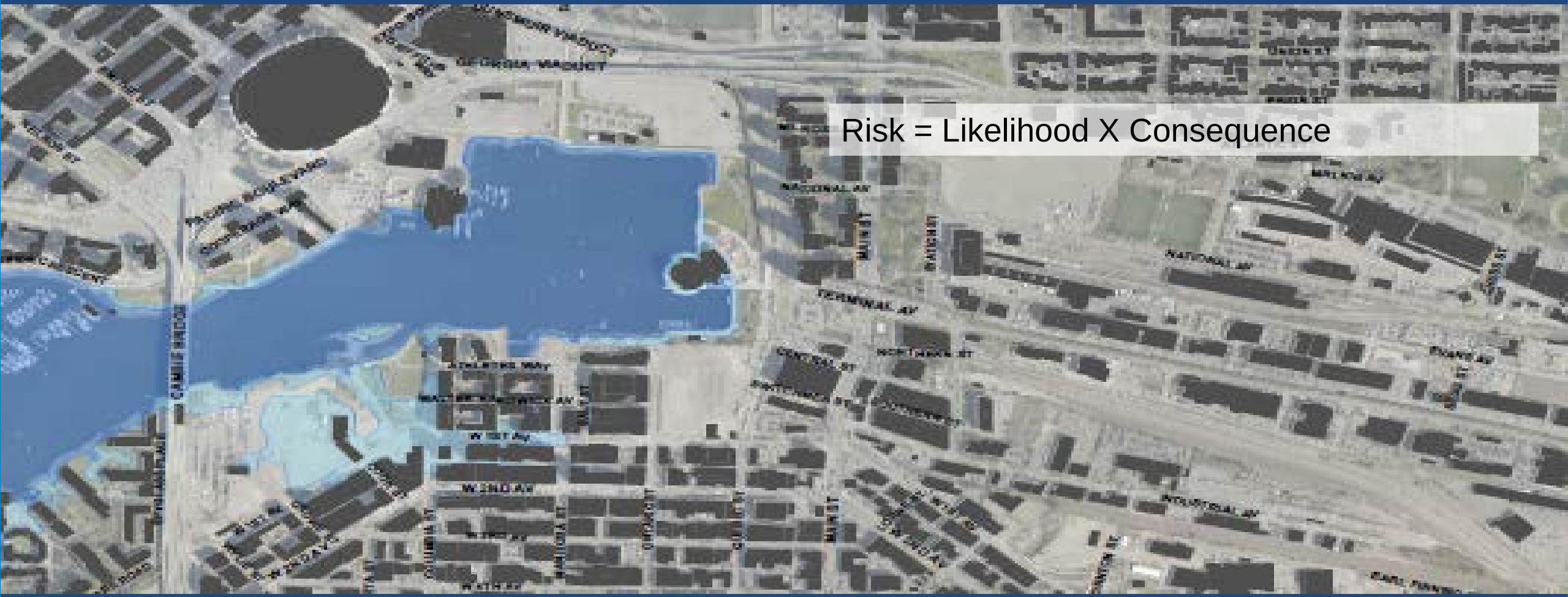
- Cooling Networks and Stations
- Planting gaps in canopy cover
- Cooling Buildings
- Adding Water Fountains
- Heat Response Guidelines

Preparing for Sea Level Rise

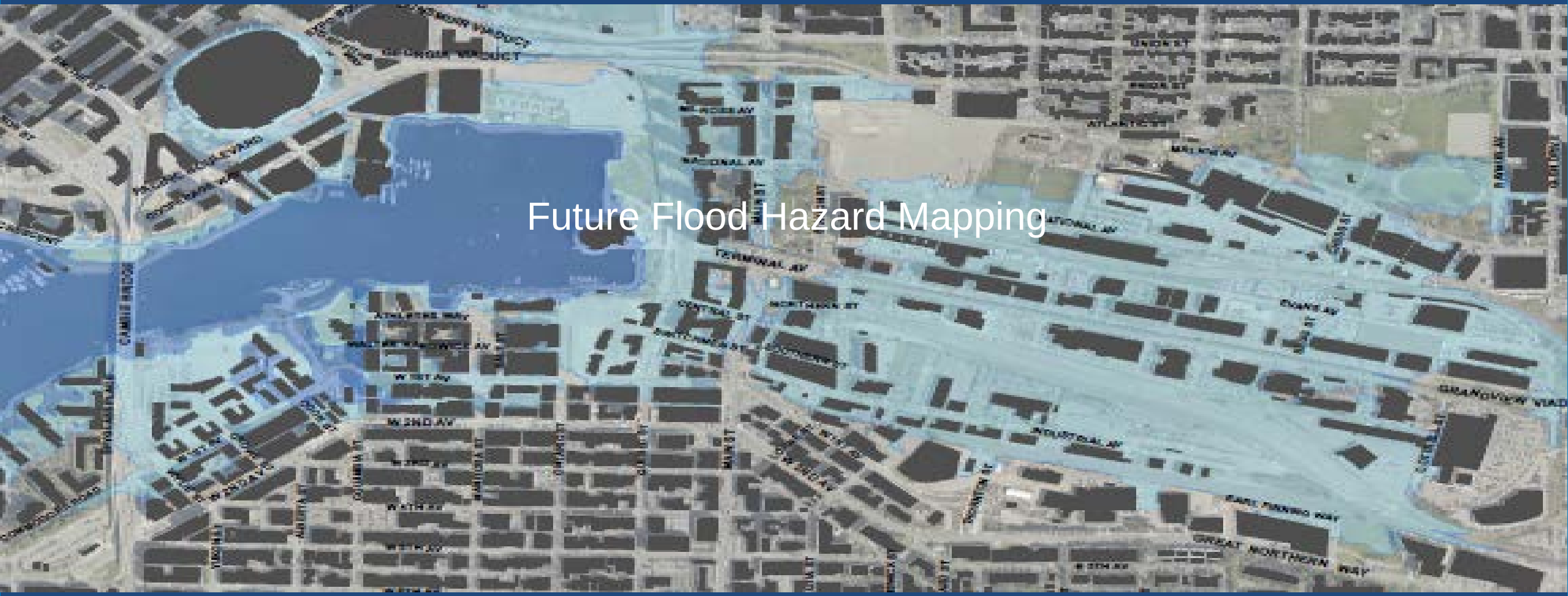
Coastal Flood Risk Assessment (CFRA) Overview

PHASE 1	Flood hazard today and in 2100 What is at risk and potential losses	2012
VBBL	Flood Construction Level from 3.5m to 4.6m	2014
PHASE 2	Develop response options for 11 areas and compare options	2015

With increasing sea level rise our risk grows significantly



Extreme Storm Event, High Tide 2020



Extreme Storm Event, High Tide 2100

nhc
northwest hydraulic consultants
water resource specialists

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Lessons

Challenges and Lessons

Challenges:

- Business Case
- Financial Tools
- Mainstreaming
- Sophisticated hazard information

Lessons:

- Integration: Co-benefits
- No regret actions
- Priority setting
- Action while planning

Lessons Continued

- Keep adaptation potential high – adaptive management
- Examples from elsewhere
- Best process not just best practice
- Collaboration and partnerships
- Champions and sponsors

QUESTIONS?

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