



# Pacific Northwest Economic Region

Doug Smith  
Acting Director, Sustainability





**METROPOLITAN REGION:**  
Population 2,500,000  
Area 2,877 km<sup>2</sup>

**CITY OF VANCOUVER:**  
Population 603,500  
Area 115 km<sup>2</sup>

CANADA/US BORDER



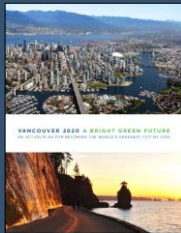


# VANCOUVER: GREENEST CITY IN THE WORLD BY 2020

# STRATEGY DEVELOPMENT TIMELINE

**Consultation:** public,  
internal and external  
Advisory Committees

Greenest  
City  
Action  
Team



Report: *A  
Bright  
Green Future*



Draft: *Greenest  
City Action  
Plan*

Public  
engagement



*Greenest City  
Action Plan*  
adopted  
July 2011

2009

2010

2011

# GREENEST CITY FRAMEWORK

3 HIGH-LEVEL OBJECTIVES

10 GOAL AREAS

ZERO CARBON	Green Buildings	Renewables	Climate & Renewables	Green Economy	Lighter Footprint
	Green Transportation				
ZERO WASTE	Zero Waste				
HEALTHY ECOSYSTEMS	Access to Nature				
	Clean Water				
	Local Food				
	Clean Air				



Climate &  
Renewables

**-33%**  
community  
GHGs

*Baseline  
2007*

Green  
Buildings

**-20%**  
energy &  
GHGs

carbon  
neutral  
new  
construction

*2007*

Green  
Transport

**50%**  
trips by  
bike, foot,  
transit

**-20%**  
resident  
distance  
driven

*2007*

Zero  
Waste

**-50%**  
waste to  
landfill

*2008*

Green  
Economy

**2x**  
green  
jobs

**2x**  
green  
businesses

*2010*

15 TARGETS ACROSS 10 GOAL AREAS

Access to Nature

Clean Water

Clean Air

Local Food

Lighter Footprint

95%

land base  
5-min walk  
to green  
space

0

water quality  
exceedances

0

air quality  
exceedances

+50%

food assets

-33%

ecological  
footprint

150k

new trees

-33%

per-capita  
consumption

*Baseline*  
2010

2006

2008

2010

2006

15 TARGETS ACROSS 10 GOAL AREAS

# POSITIVE RESULTS SINCE 2011

*2020 targets achieved*

50%

Mode  
share

-27%

Vehicle km  
driven per  
capita

-15%

GHGs

23%

Waste to  
landfill or  
incinerator

+38%

Food  
assets

+19%

Green  
jobs

*Two-time winner of WWF  
Earth Hour City Challenge:*

Global Capital 2013  
Canadian Capital 2015

*Continuing areas of focus:*

- accelerating GHG reductions
- reducing water consumption
- greening businesses

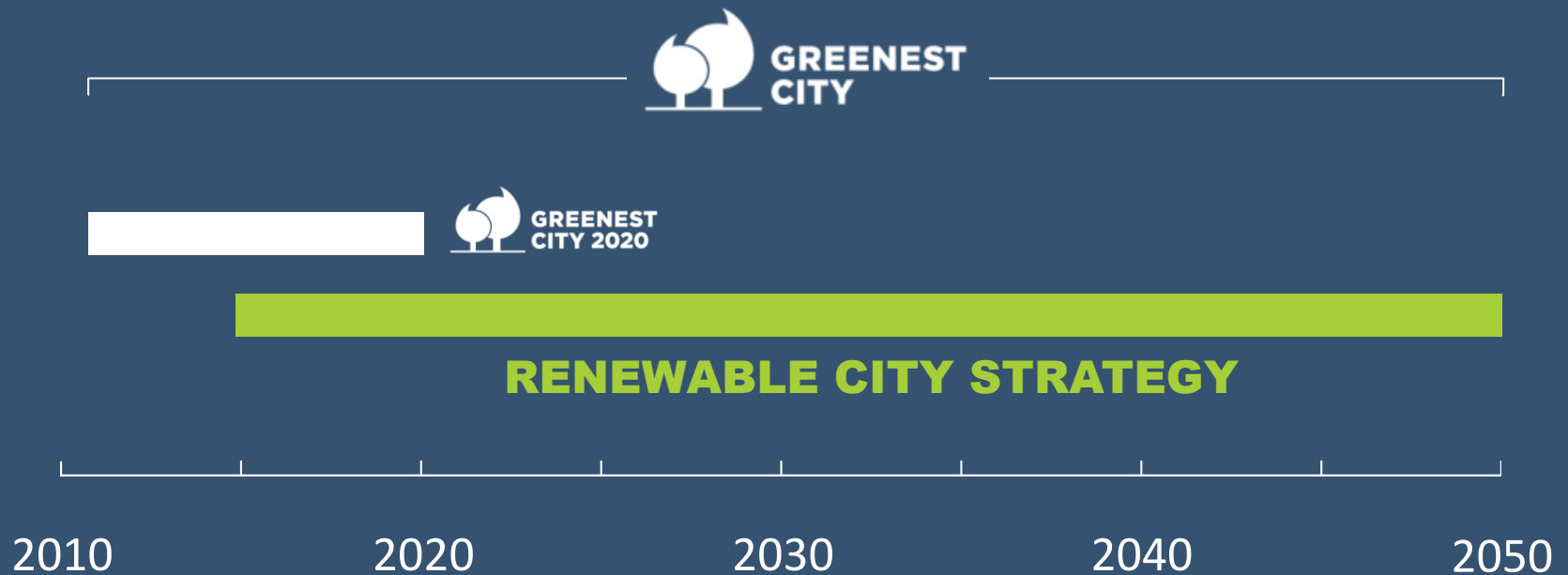


Imagine a city  
powered by  
renewable energy.



# 2020 AND BEYOND

In November 2015, City Council made its commitment beyond 2020 to a **renewable future**.



## GOAL

VANCOUVER IS A CITY THAT USES  
**ONLY RENEWABLE SOURCES OF ENERGY**

---

*renewable energy is*  
naturally replenished as it is used

## TARGETS

Derive 100% of the energy used  
in Vancouver from renewable  
sources before 2050

Reduce greenhouse gas  
emissions by 80% below 2007  
levels before 2050



# GREENEST CITY

2020 ACTION PLAN



## Vancouver is primed for success

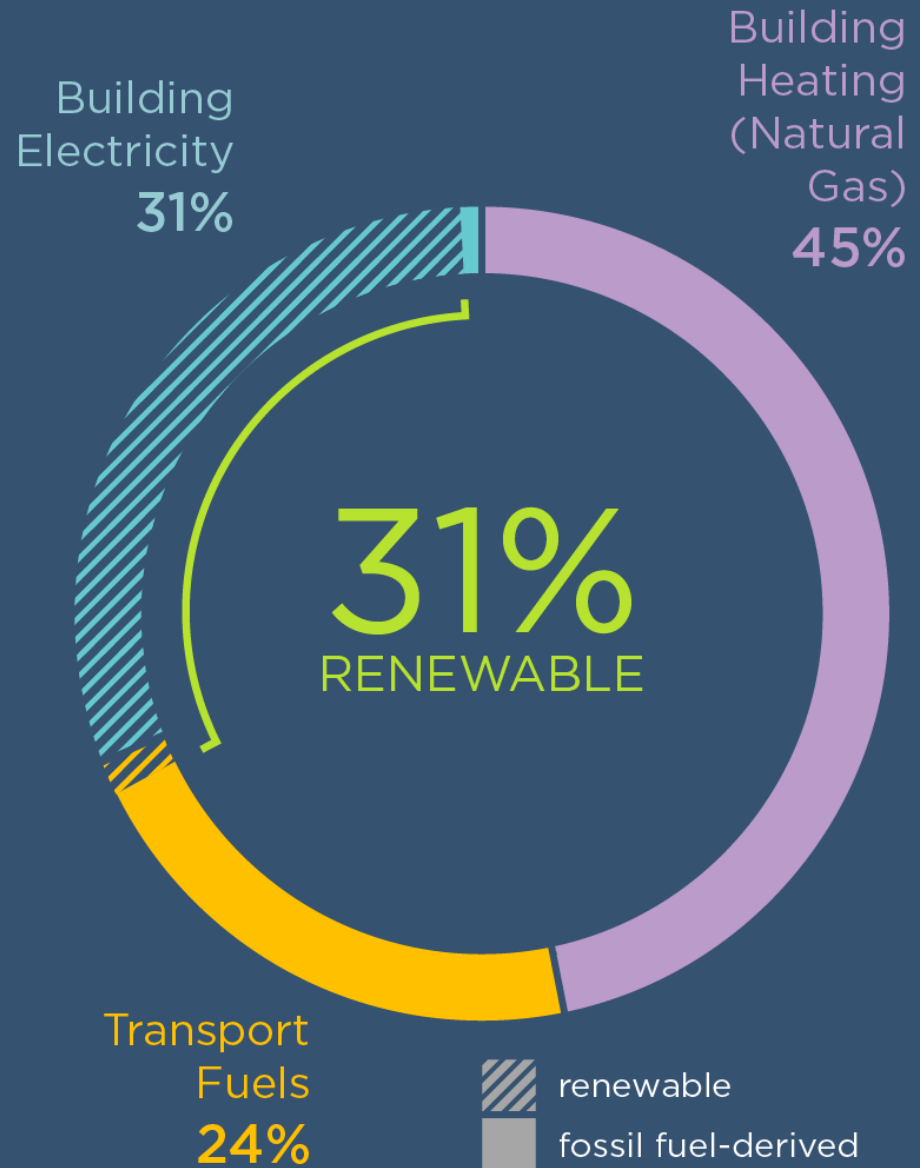
### GREENHOUSE GAS EMISSIONS PER-CAPITA (tonnes CO<sub>2</sub>e)

Stockholm 2012	3.0
Copenhagen 2011	3.9
<b>Vancouver 2014</b>	<b>4.2</b>
Tokyo 2010	4.7
Seattle 2012	5.9
San Francisco 2012	6.6



We can do this.

31% is Vancouver's energy is already renewable.



ENERGY USED IN VANCOUVER IN 2014

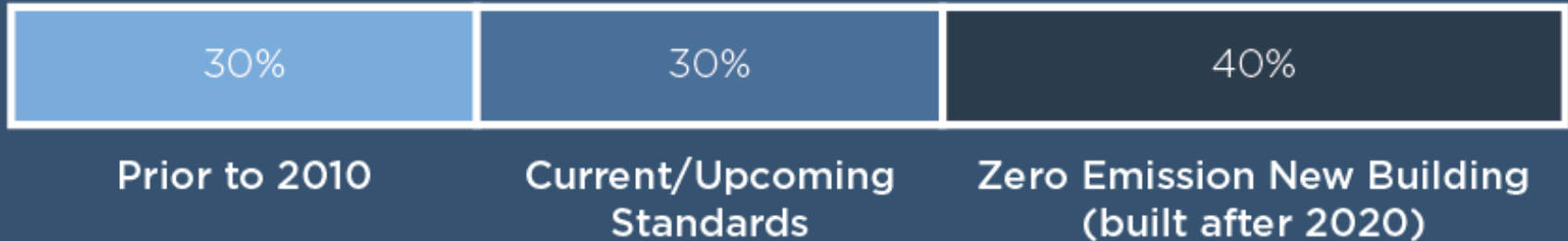




THE RENEWABLE CITY IN 2050 WILL HAVE  
ZERO EMISSION BUILDINGS  
THAT EMIT **NO GREENHOUSE GASES**  
FROM THEIR USE OF ENERGY



## VANCOUVER'S BUILDING STOCK IN 2050



### REDUCE ENERGY USE

- » Passive House & ultra high efficiency
- » Equipment improvements

### INCREASE USE AND SUPPLY OF RENEWABLE ENERGY

- » On-site renewable power
- » Grid-supplied electricity
- » Neighbourhood renewable energy systems

The background of the slide shows an outdoor electric vehicle charging station. A red car is partially visible on the left side. The charging station is a ChargePoint model, with a charging cable plugged into it. The station has a sign that says "EV ONLY" and "chargepoint". The scene is set outdoors with trees and a building in the background.

**REDUCED VEHICLE USAGE**  
THROUGH **ACTIVE TRANSPORTATION**

**RENEWABLY POWERED TRANSPORTATION**  
THROUGH **ELECTRIC VEHICLES, SUSTAINABLE-  
BIOFUEL HYBRIDS, AND OTHER RENEWABLE FUELS**

Vancouver ranked the 10<sup>th</sup> most vulnerable coastal city in the world in a recent study- this is based on the potential value of losses resulting from flooding





A photograph showing a flooded area. In the foreground, a row of yellow bollards is partially submerged in water. To the right, there is a blue building with a flat roof and some greenery. The water is calm and reflects the sky. In the background, a city skyline is visible under a cloudy sky.

Climate models predict Vancouver will have hotter, drier summers and more extreme rainfall events in winter

The sea level surrounding Vancouver is expected to rise by 1m by 2100



# Vancouver adopted its Climate Adaptation Strategy in 2012



Climate Adaptation

## CLIMATE CHANGE ADAPTATION STRATEGY



# Sea Level Rise is the largest risk due to climate change





- ↘ Use the best available science and practice adaptive management
- ↘ Seek adaptable, green and robust solutions that can be phased over time
- ↘ Seek “no regret” actions with co-benefits
- ↘ Pursue funding strategies based on value and equity
- ↘ Take a risk-based approach
- ↘ Be resilient by providing redundancy

# 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

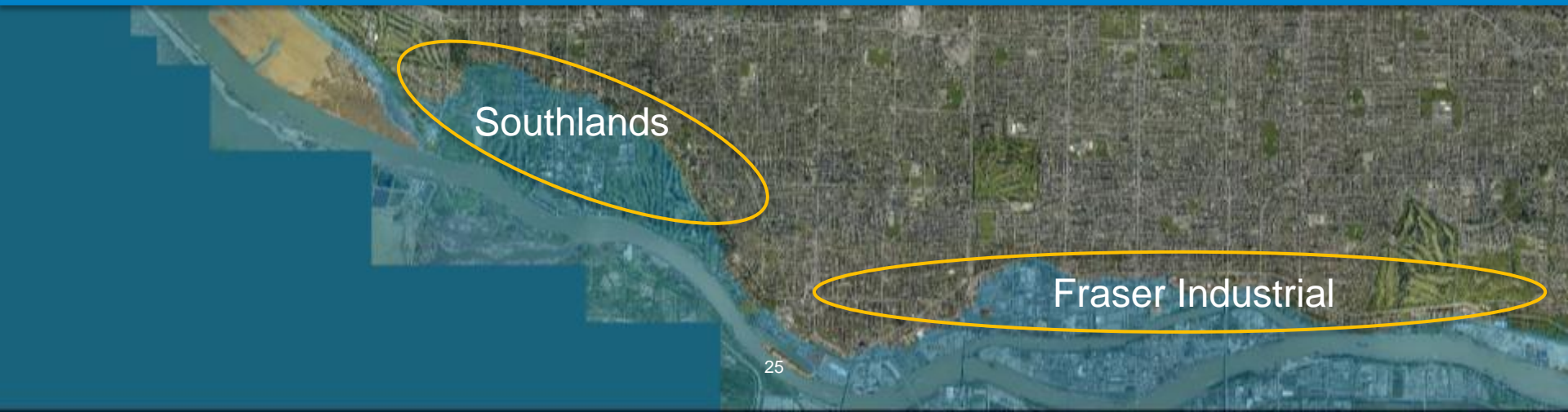
2

Develop response options for 11 areas  
and compare options

2015

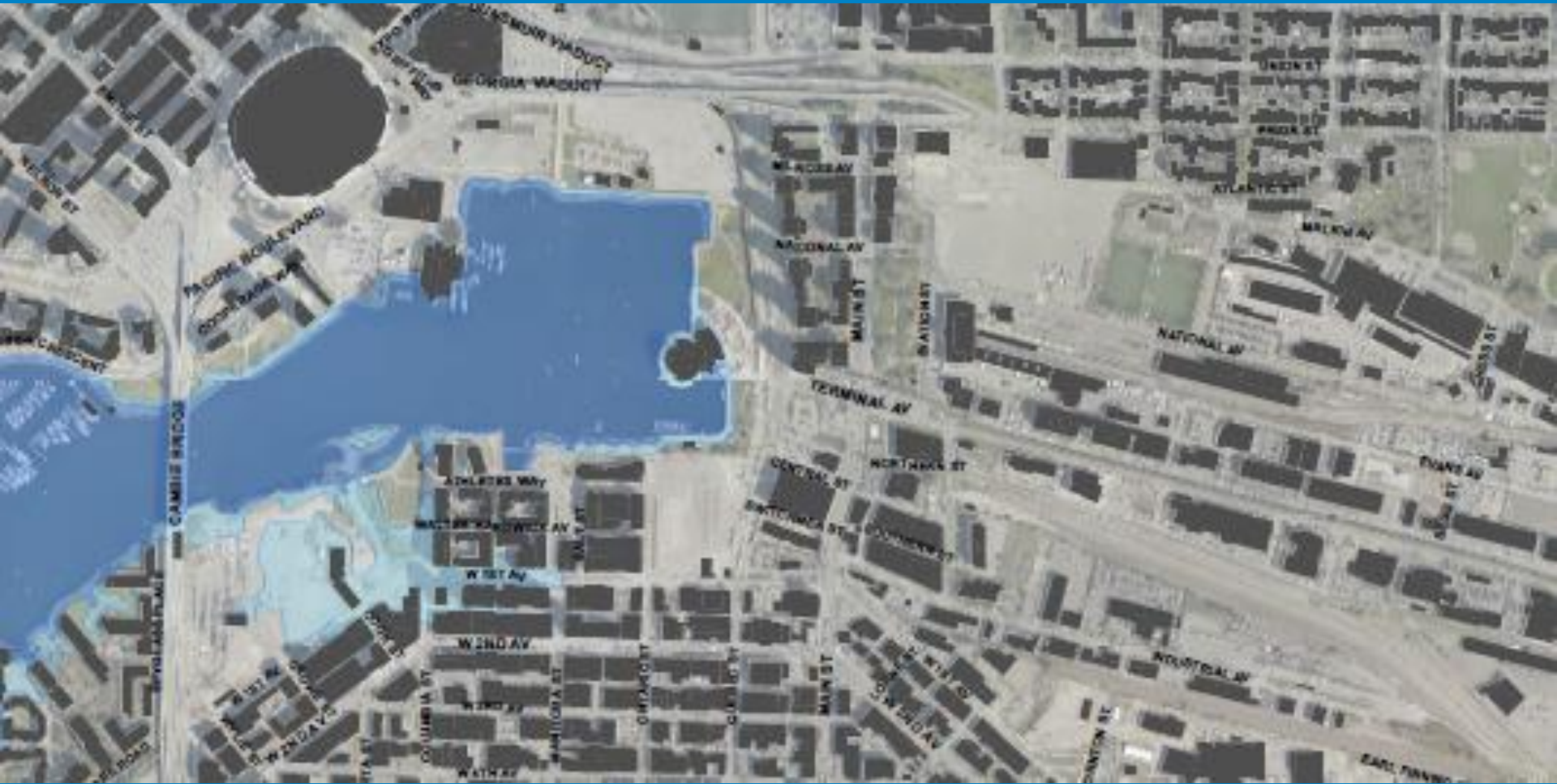


# CFRA – Phase 1 Current and Future flood hazard



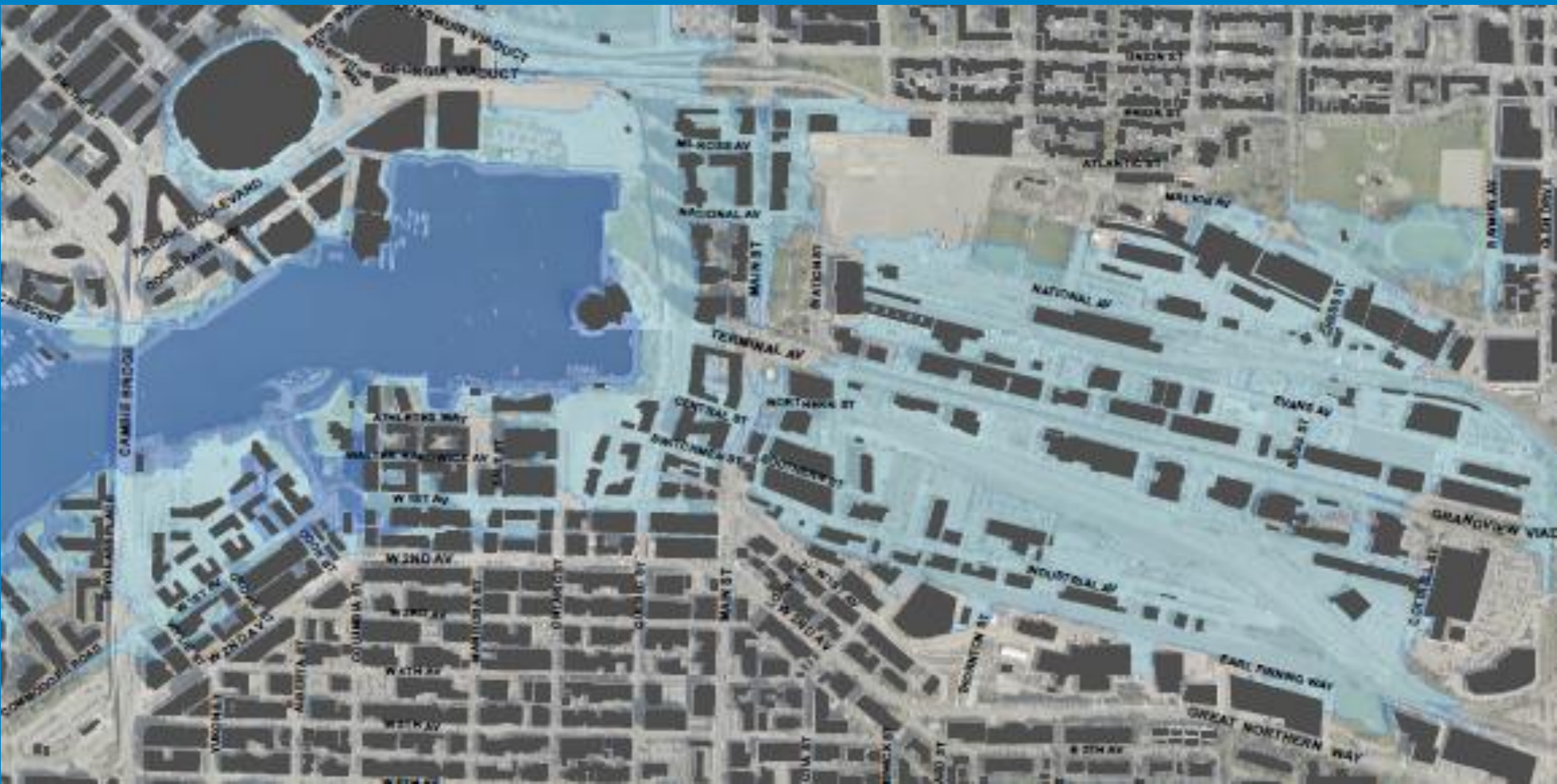


With increasing sea level rise our risk grows significantly



Extreme Storm Event, High Tide 2020

# Future Flood Hazard Mapping



Extreme Storm Event, High Tide 2100



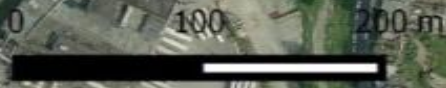
# EXAMPLE: False Creek

# PROTECT with sea barrier

### Legend

- Option Alignment
- Protected Floodplain: 0m SLR, 1:500 Storm AND 1m SLR, High Tide
- Protected Floodplain: 1 m SLR, 1:500 Storm
- Floodplain: 0m SLR, 1:500 Storm AND 1m SLR, High Tide
- Floodplain: 1 m SLR, 1:500 Storm

closed 3-4 days/yr; increasing over time  
~10m high  
360m wide

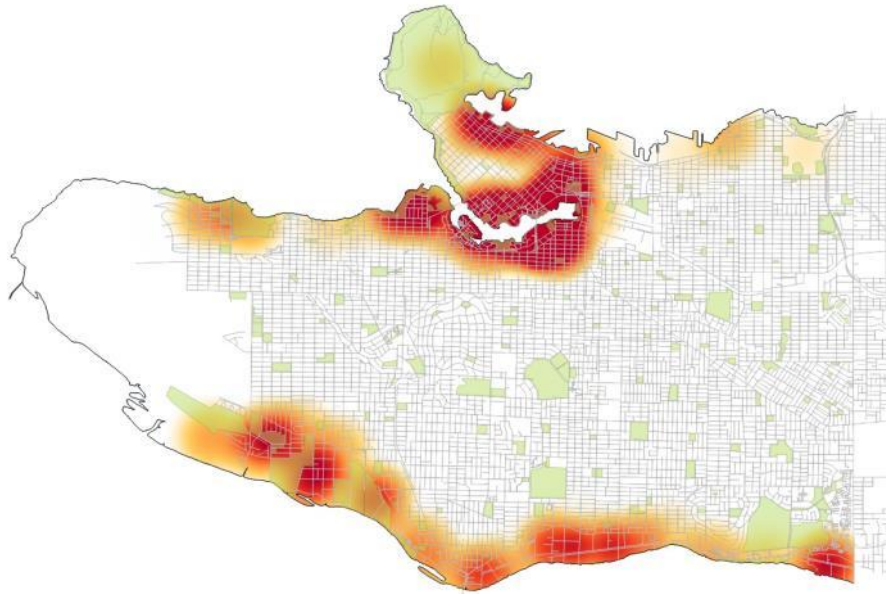




EXAMPLE: False Creek

PROTECT with sea barrier



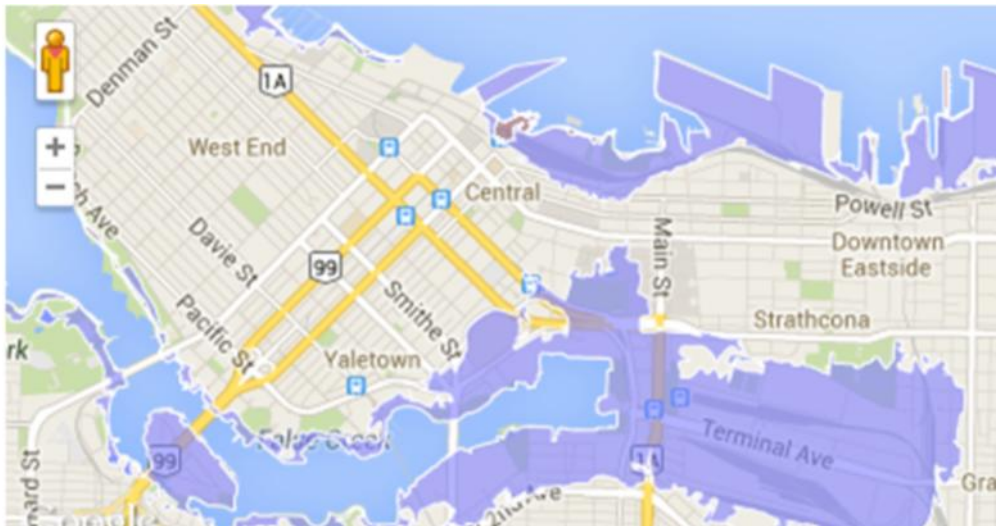


## WHAT WE'VE DONE

Completed Coastal Flood Risk Assessments Phase 1 and 2

Updated the Designated Flood Plain

Increased Flood Construction Levels



---

## WHAT'S NEXT

Develop Coastal Flood Response Strategy

Begin public consultation for adaptation projects



# What other adaptation actions is the City taking?

- Separating storm and sanitary sewers across the City
- Updating Rainfall Data for Sewer Design
- Planting 150,000 trees by 2020
- Developing a back-up power plan for facilities and infrastructure
- Implementing green stormwater infrastructure



Thank you

