FLOOD ADAPTATION IN VANCOUVER:

A Regional Adaptation Collaborative

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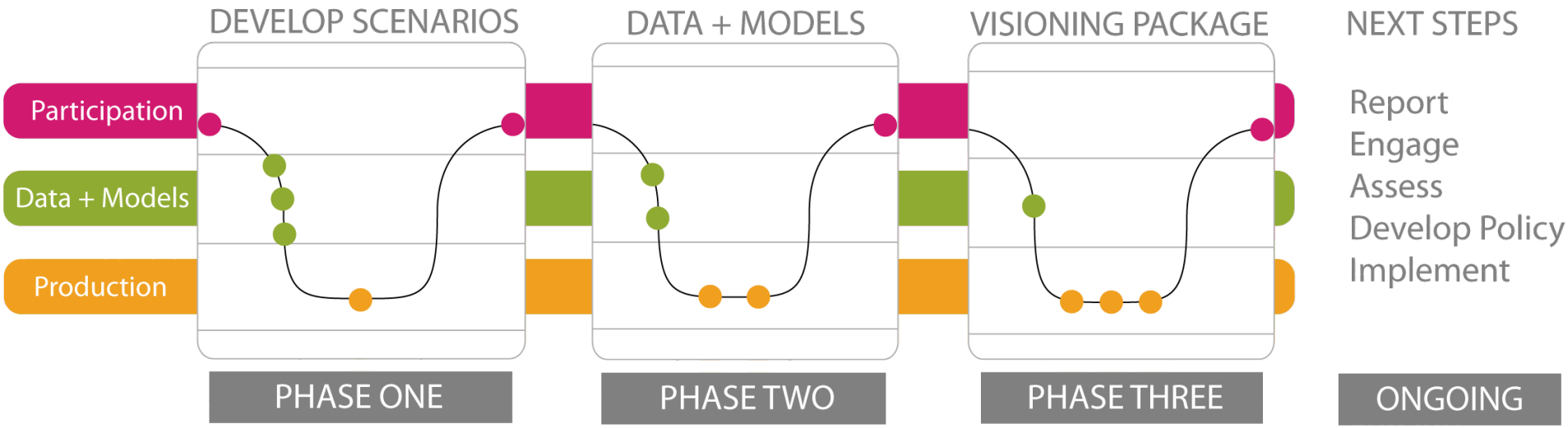
Regional Adaptation Collaborative Project
February 19th, 2012

Collaborative for Advanced Landscape Planning

The Community Visioning Process:



Source: Visioning Guidance Manual (Ellen Pond)


Delta, BC
North Vancouver
Vancouver
New Westminster
Fraser River
Ladner
Boundary Bay
South
Delta
Strait of Georgia

Climate change impacts

In Delta: 1.2 meters of sea level rise by 2100 (BC Sea Dike Guidelines, 2011)

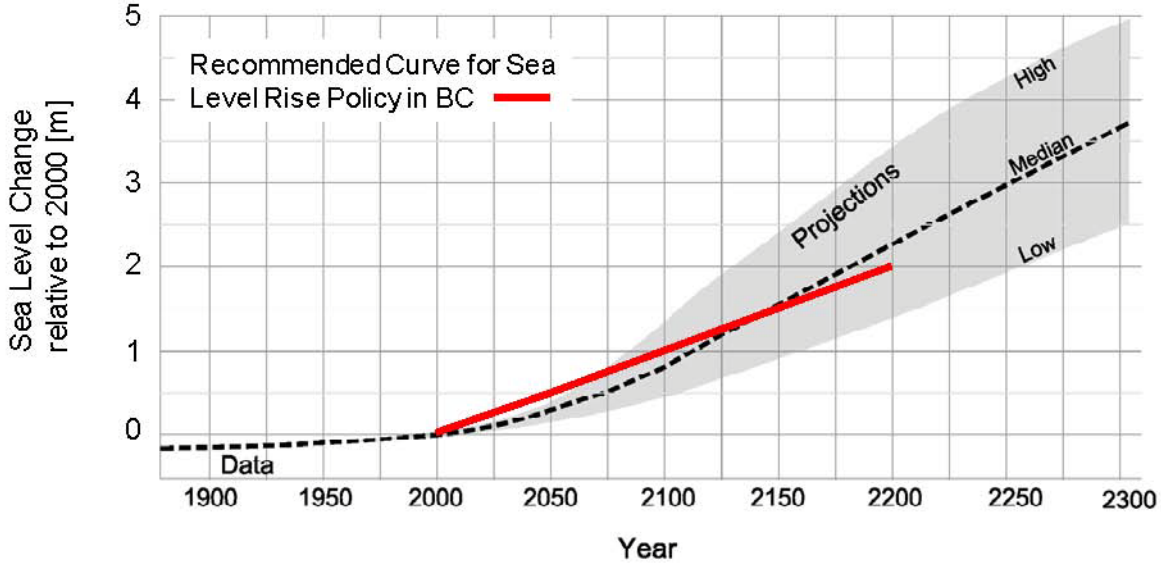
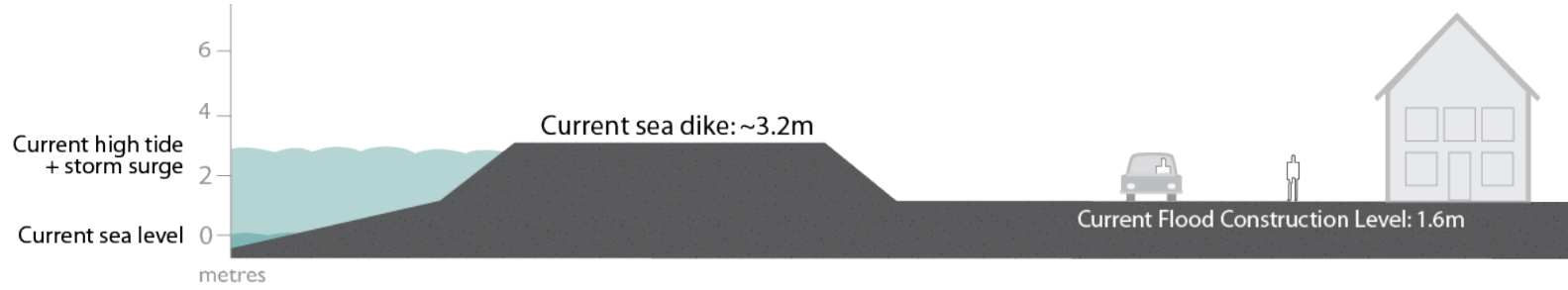


Figure 3-1: Projections of Sea Level Rise
source: Policy Discussion Paper (2010)

Climate change impacts

LADNER dike view

Current dike height, water level of 2.9m: 2m high tide, 0.9m storm surge



Climate change impacts

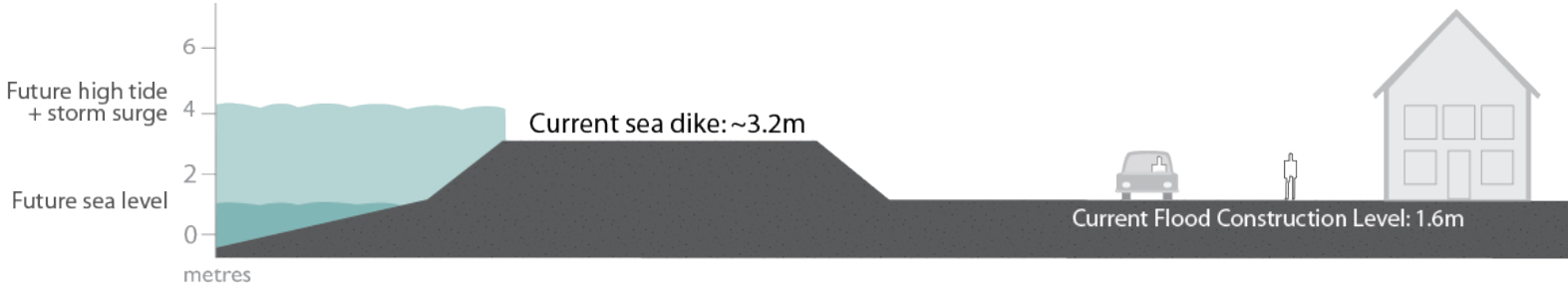
LADNER dike view

Current dike height, water level of 4.2m: 2m high tide, 1m storm surge 1.2m sea level rise

Ladner - Dike View

Baseline scenario, breach condition (hypothetical year 2100)

1.2 metres of sea level rise

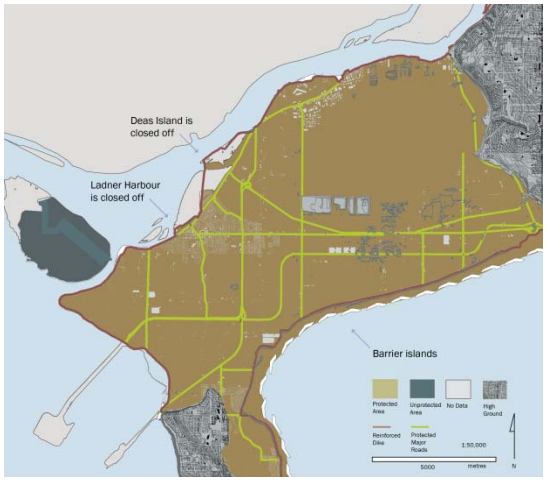


How to Adapt? Four Scenarios:

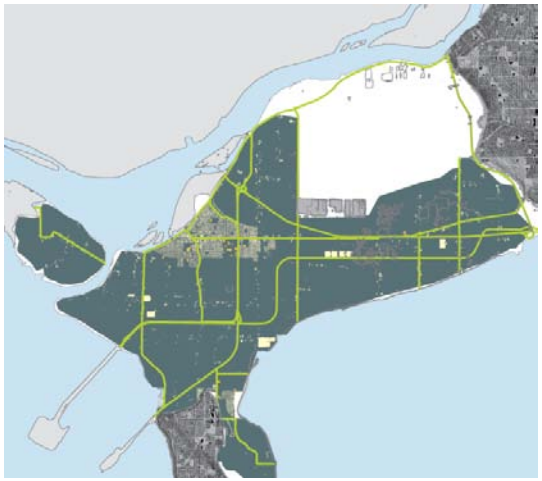
Hold the Line

Managed Retreat

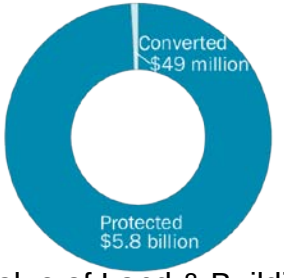
Reinforce and Reclaim



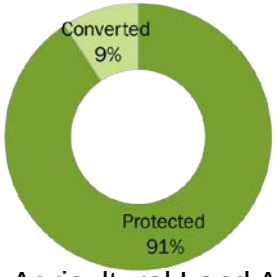
Build Up



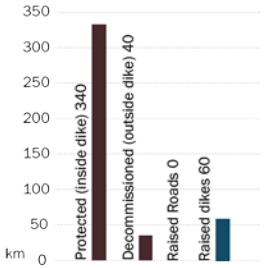
Hold the Line



Value of Land & Buildings



Agricultural Land Area



Road & Dike Length

Ladner - Aerial View

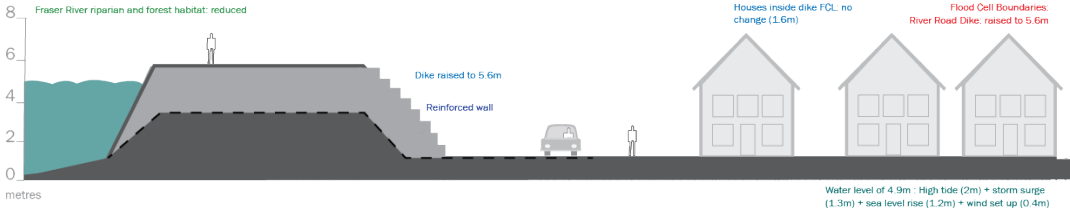
Hold the Line Scenario (hypothetical year 2100)

1.2 metres sea level rise

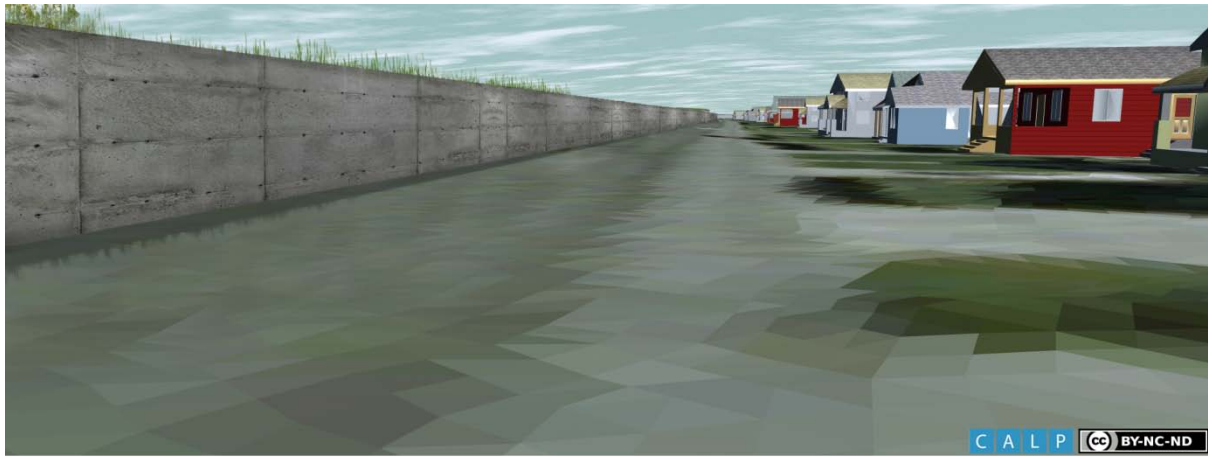
UBC

C A L P

Hold the Line

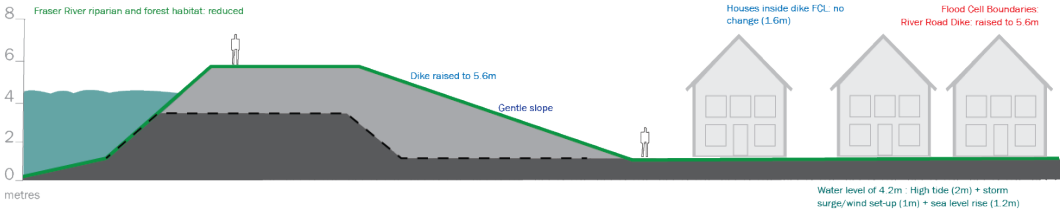


Ladner - Dike View | Hold the Line Scenario (hypothetical year 2100) | 1.2 metres sea level rise



Ladner - Street View | Hold the Line Scenario (hypothetical year 2100) | 1.2 metres sea level rise

Hold the Line



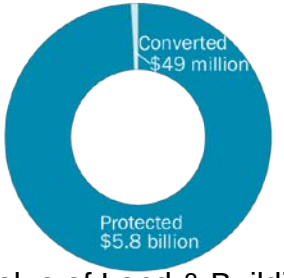
Ladner - Dike View | Hold the Line Scenario (hypothetical year 2100) | 1.2 metres sea level rise

Ladner - Street View | Hold the Line Scenario (hypothetical year 2100) | 1.2 metres sea level rise

UBC

C A L P

Hold the Line



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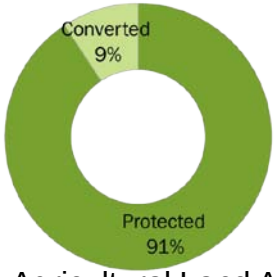
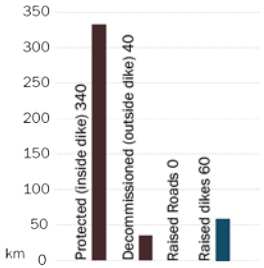


Agricultural Land Area



Road & Dike Length

South Delta - Sea Wall View

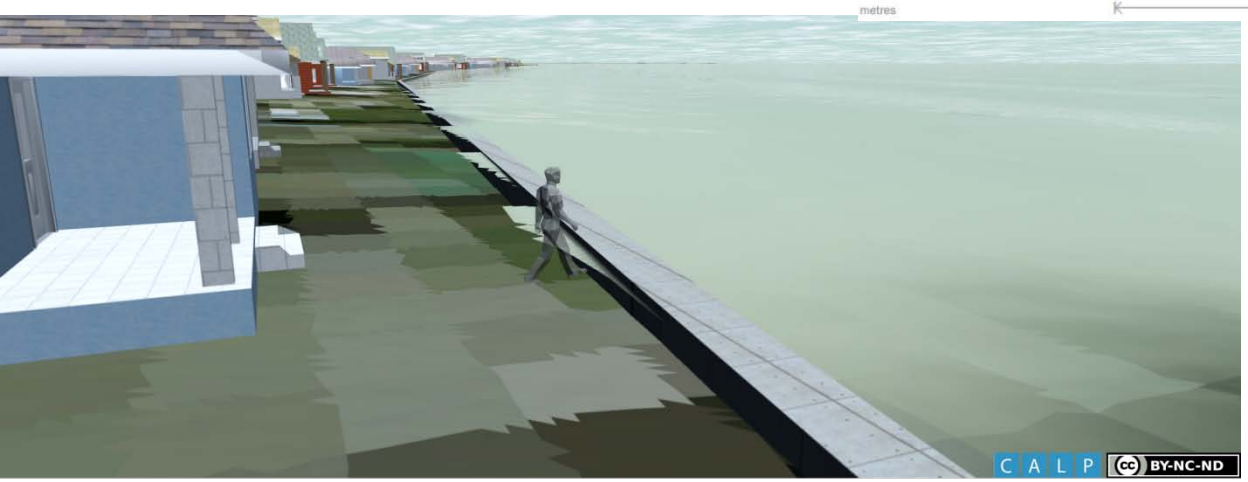
Hold the Line Scenario (Hypothetical year 2100)

1.2 metres of sea level rise

UBC

C A L P

Hold the Line



South Delta - Backyard View

Hold the Line Scenario (year 2010)

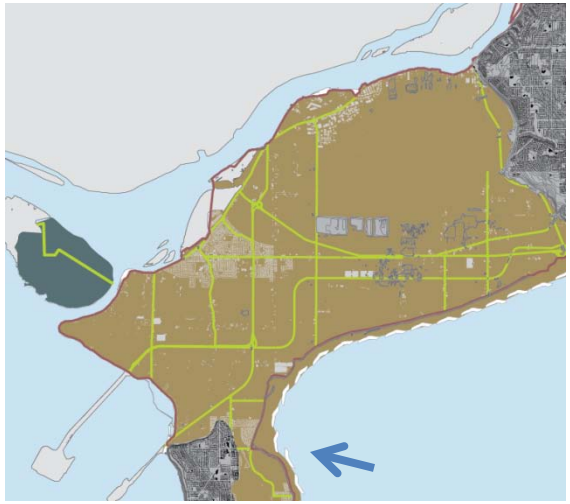
South Delta - Backyard View

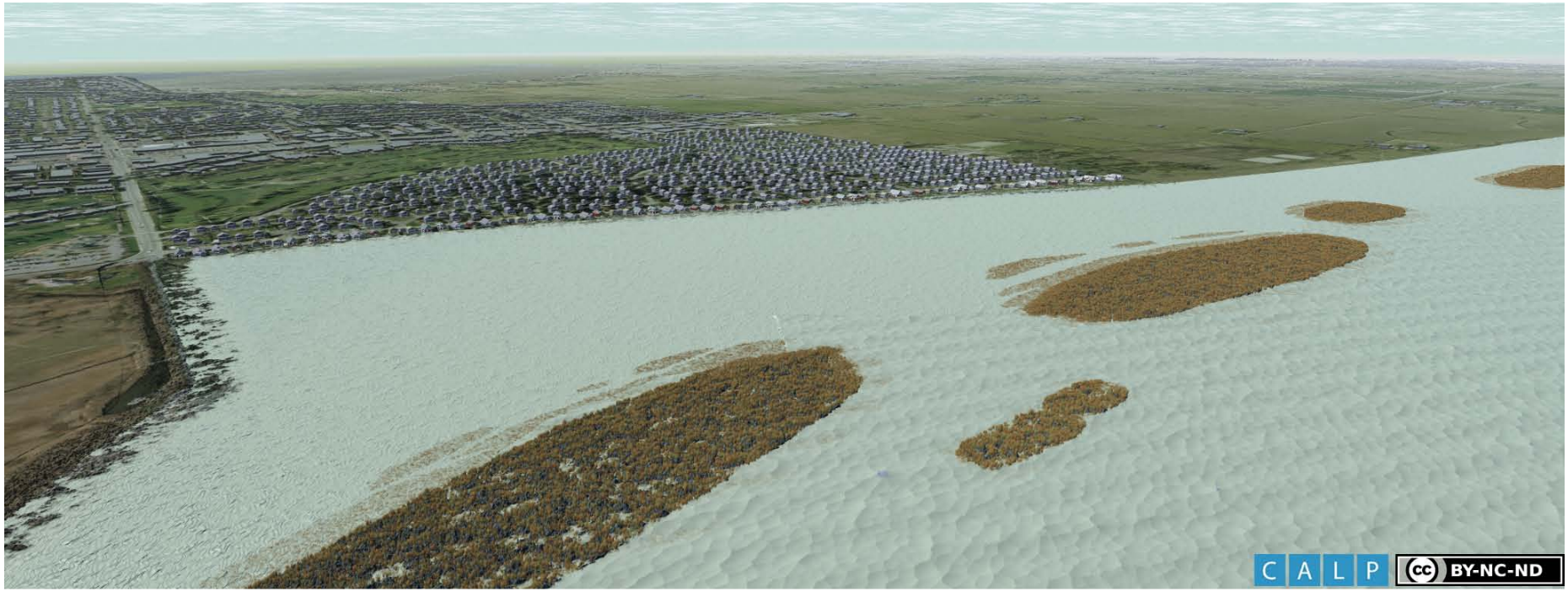
Hold the Line Scenario (Hypothetical year 2100)

1.2 metres of sea level rise

C A L P

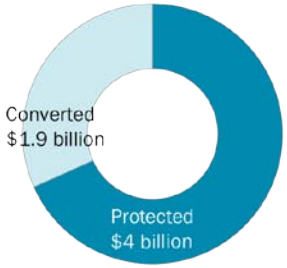
Hold the Line – Reinforce and Reclaim



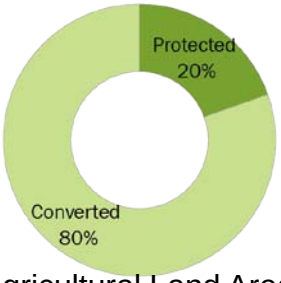


South Delta - Aerial View | Reinforce and Reclaim Scenario (hypothetical year 2100) | 1.2 metres of sea level rise

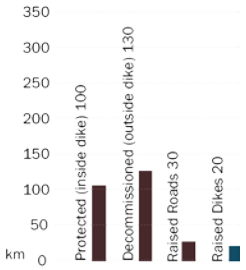
Managed Retreat



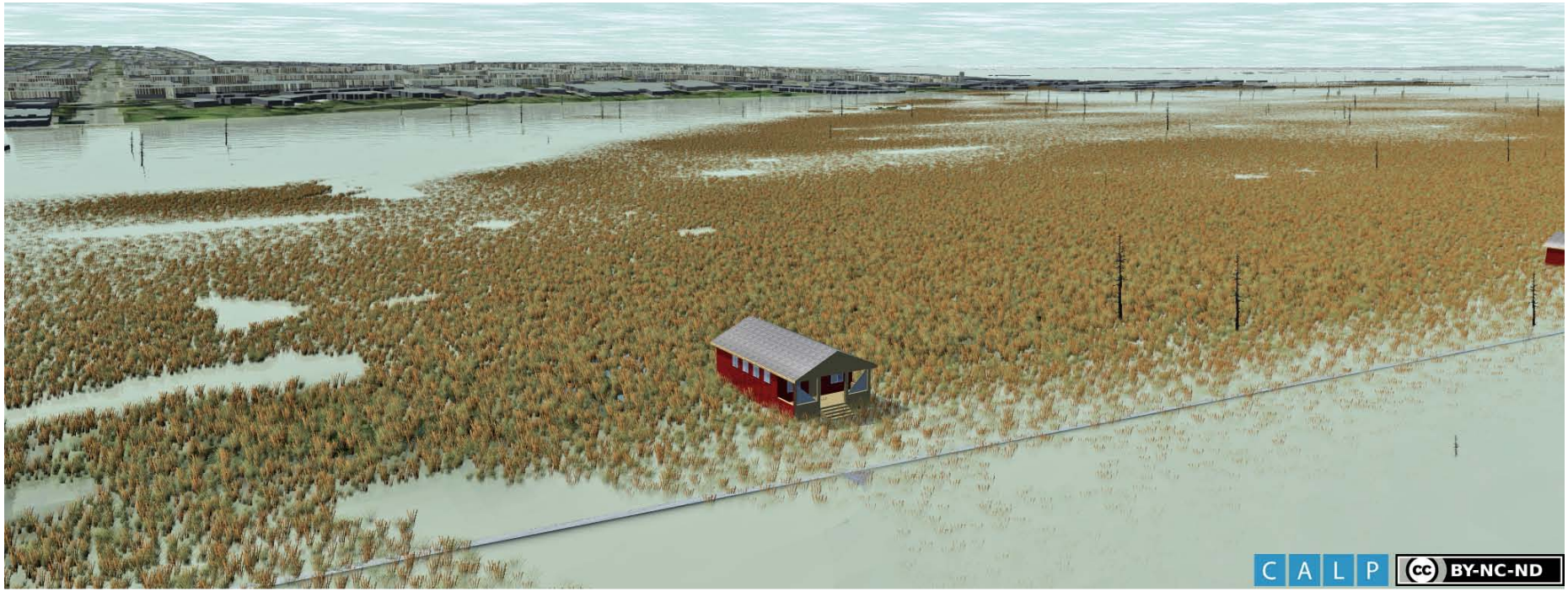
Value of Land & Buildings



Agricultural Land Area



Road & Dike Length



South Delta - Sea Wall View

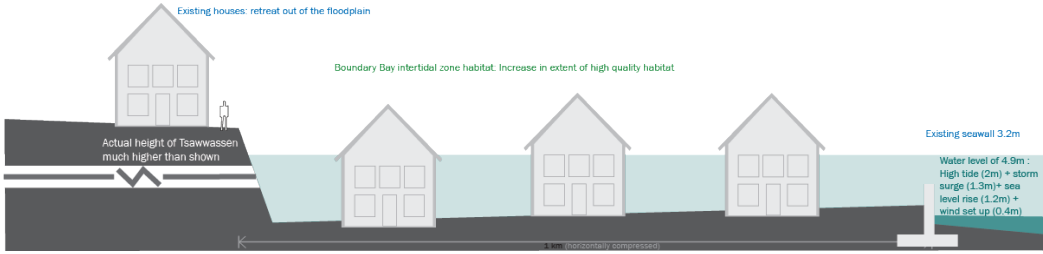
Managed Retreat Scenario (hypothetical year 2100)

1.2 metres of sea level rise

UBC

C A L P

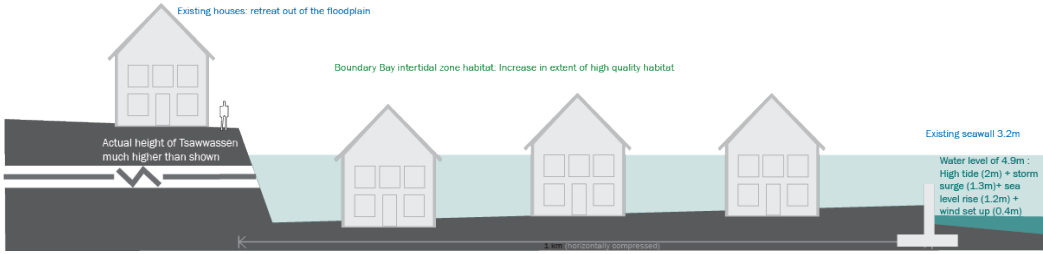
Managed Retreat



South Delta - Sea Wall View

Managed Retreat Scenario (hypothetical year 2020)

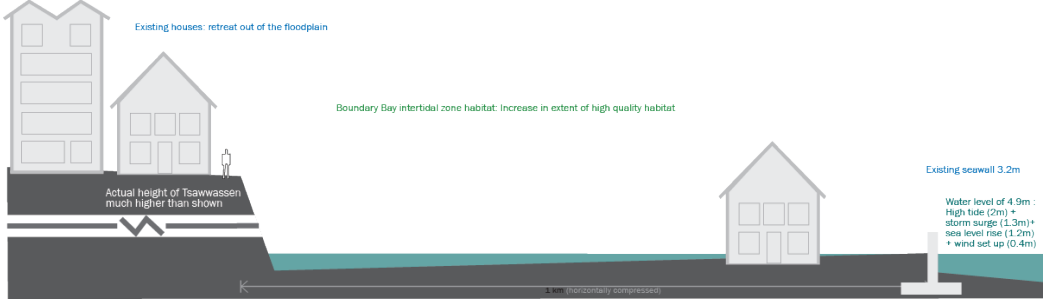
Managed Retreat



South Delta - Sea Wall View

Managed Retreat Scenario (hypothetical year 2030)

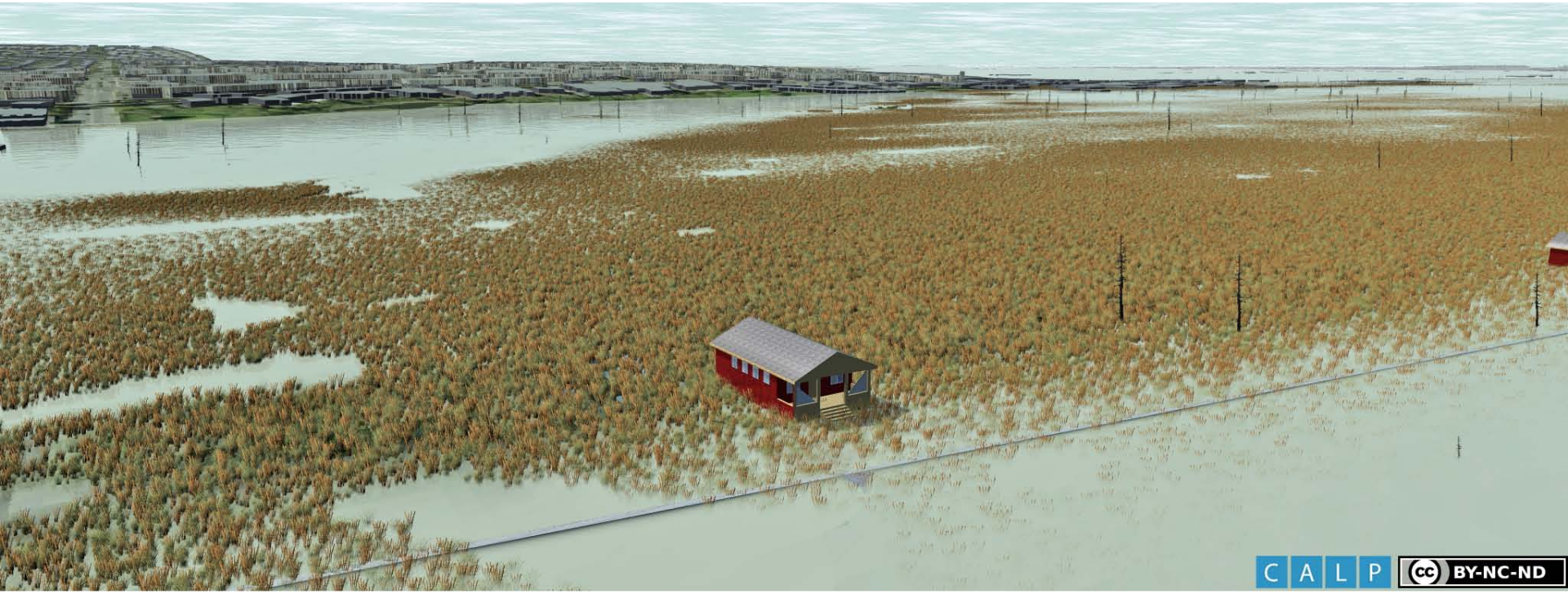
Managed Retreat



South Delta - Sea Wall View

Managed Retreat Scenario (hypothetical year 2040)

Managed Retreat

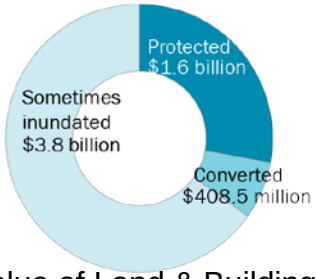


South Delta - Sea Wall View

Managed Retreat Scenario (hypothetical year 2100)

1.2 metres of sea level rise

Build Up



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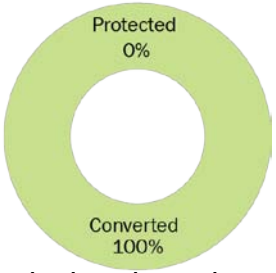

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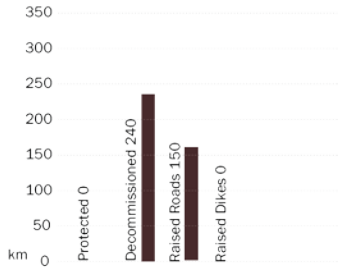
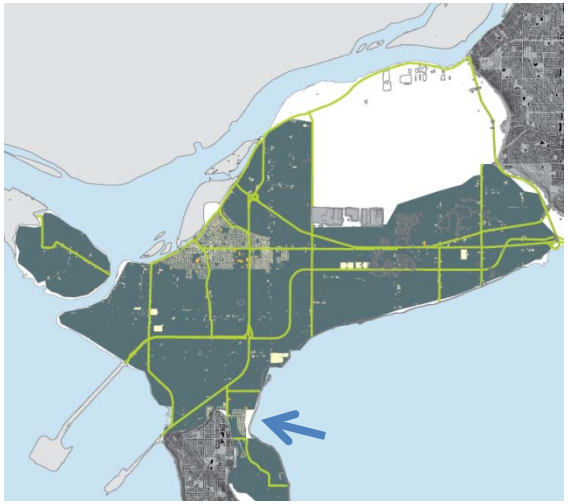


Road & Dike Length



Ladner - Dike View

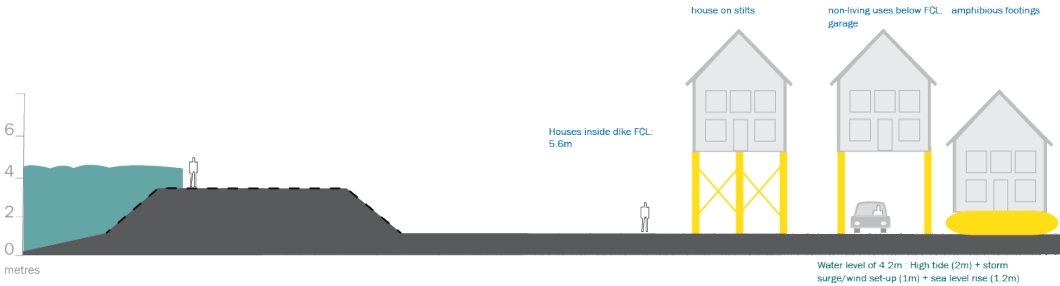
Build Up Scenario (hypothetical year 2100)

1.2 metres sea level rise

UBC

C A L P

Build Up



Ladner - Dike View | Build Up Scenario (hypothetical year 2100) | 1.2 metres sea level rise

Initial feedback from working group:

Hold the Line:

- Earthen dike more suitable in Ladner, but need right-of-way
- Implications for current policies eg. allowing homes on the dike
- Decrease probability, not vulnerability

Reinforce & Reclaim:

- A “win-win” for South Delta (habitat + protection)
- Only suitable for South Delta

Initial feedback from working group:

Managed Retreat:

- Cost to buy land vs. cost to raise dikes
- Sacrificing agriculture vs. suburban areas

Build Up

- Public costs vs. private costs
- Side-effect: incentive for densification to alleviate costs
- Build on existing incentives for float homes
- Decreases vulnerability, not probability

South Delta - Aerial View | Managed Retreat Scenario (hypothetical year 2100) | 1.2 metres of sea level rise

THERE IS NO SILVER BULLET

But the process has been effective at **understanding** options, **where** they are suitable, **how** to get there and assessing **trade-offs**