

VISUALIZATION OF HOLISTIC LOCAL SCENARIOS:

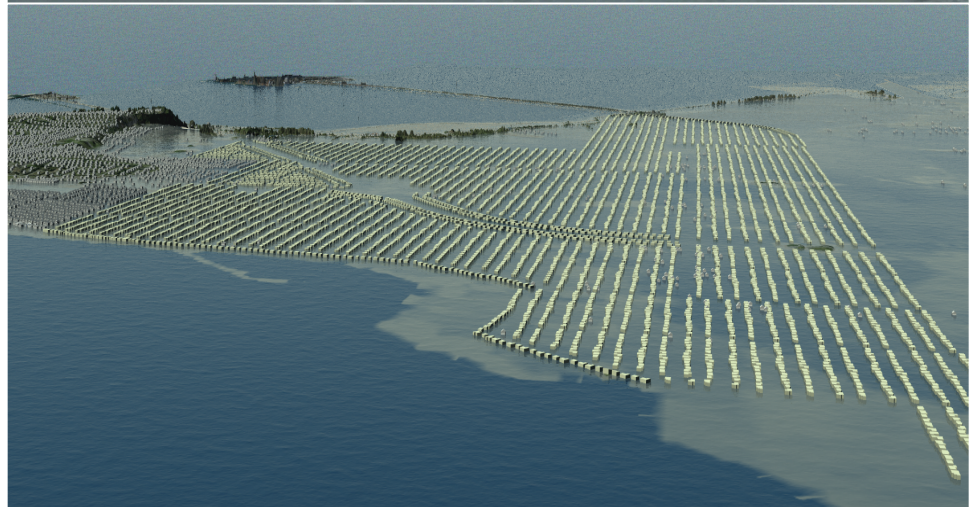
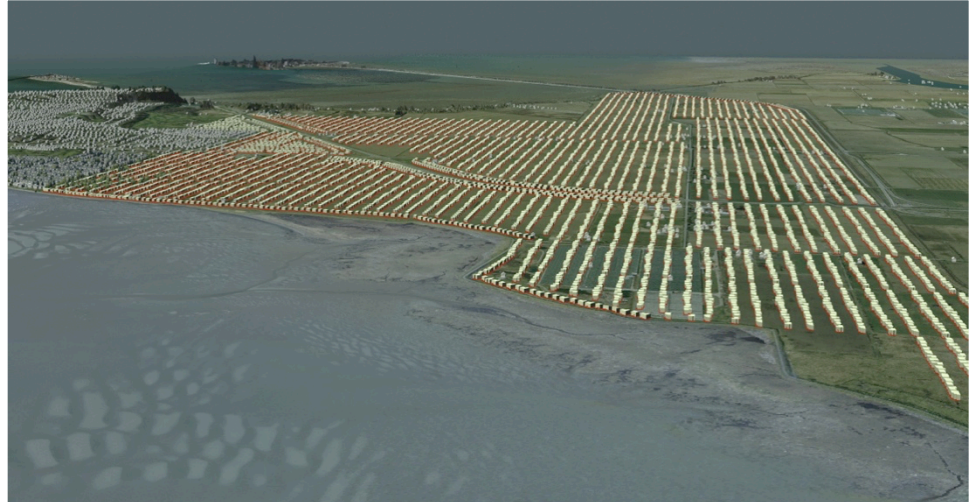
a Local Climate Change Visioning Process

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UBC, Vancouver, Canada

*Scenario Planning for Climate
Change Adaptation Decision-
making: the State of the Art
University of Arizona,
31 March 2015*



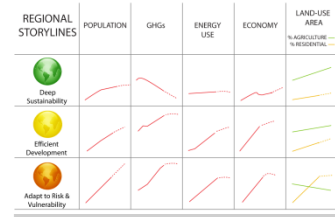
Components of Visioning Process

(Pond et al., 2010)

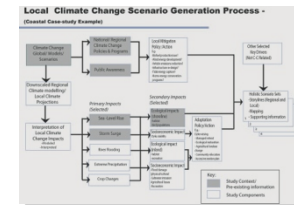
1. Participation



2. Scenario Building



3. Data / Modeling Integration

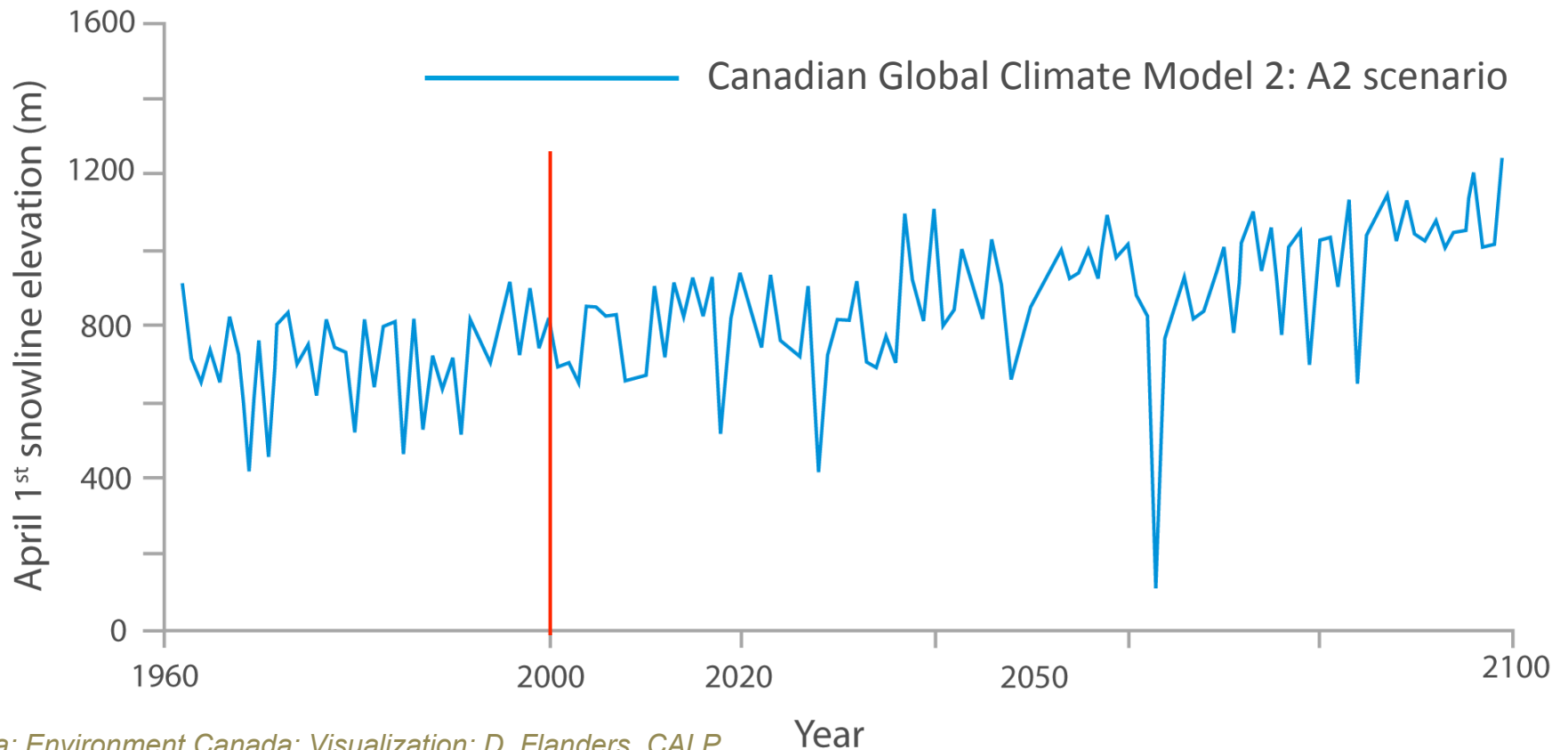
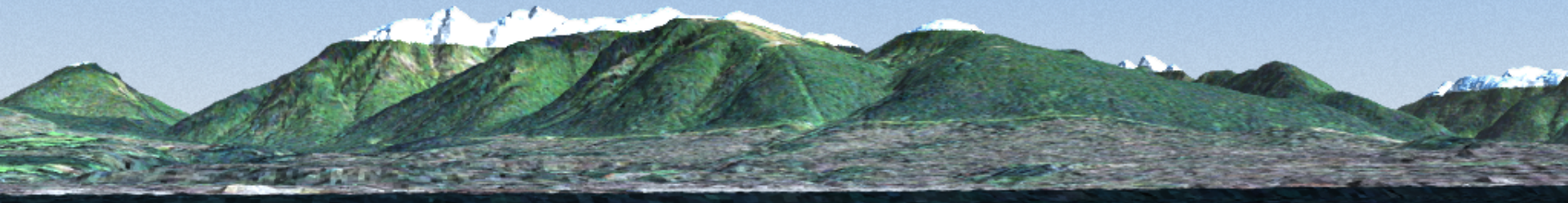


4. 3D and 4D Visualizations

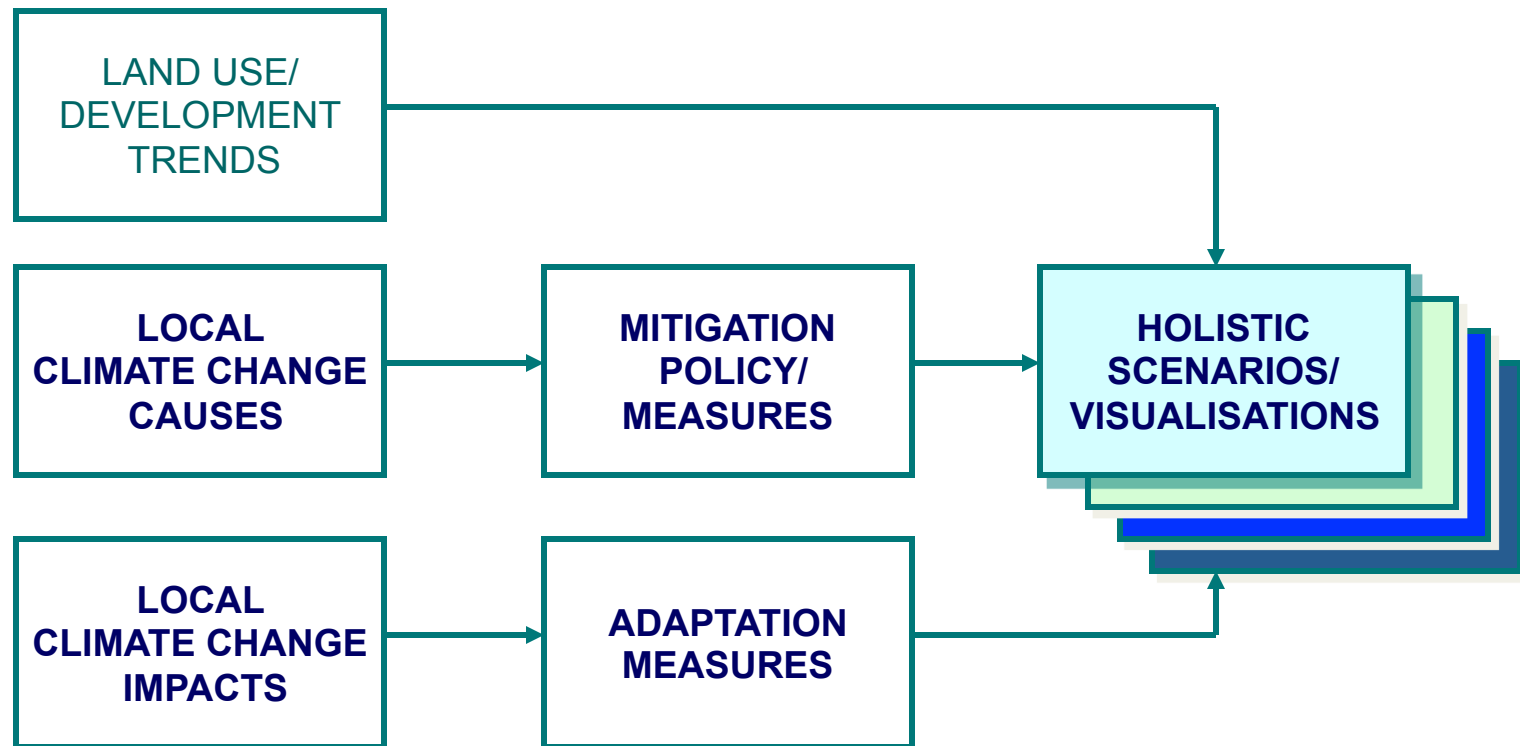


Snowpack example

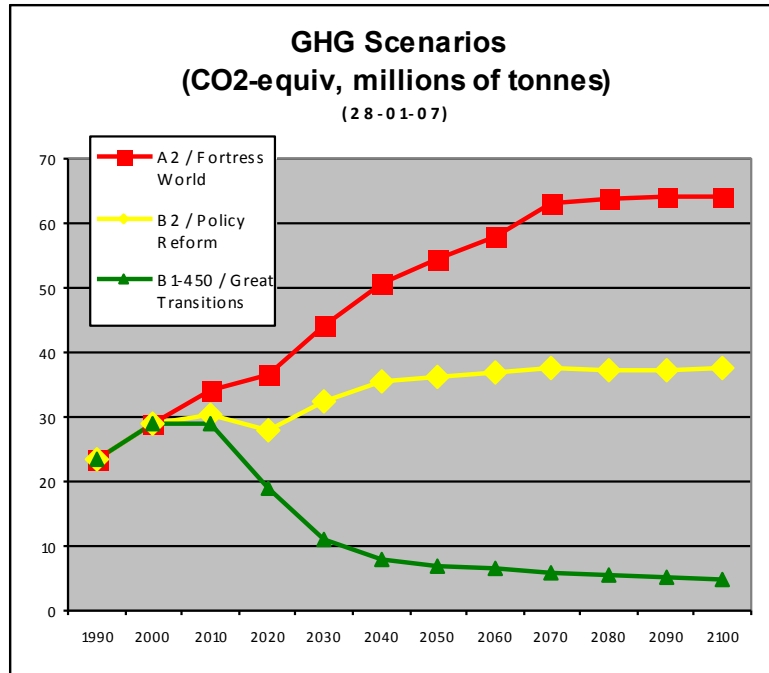
Average April 1st Snowline



Local Climate Change Scenario Framework: developing meaningful future stories



Visualizing future pathways (alternative land use plans)



GB-QUEST Modelling/ Tellus regional scenarios for Metro Vancouver (Carmichael)



Visualisation: D. Flanders, CALP



2050: Complete
resilient
neighbourhood



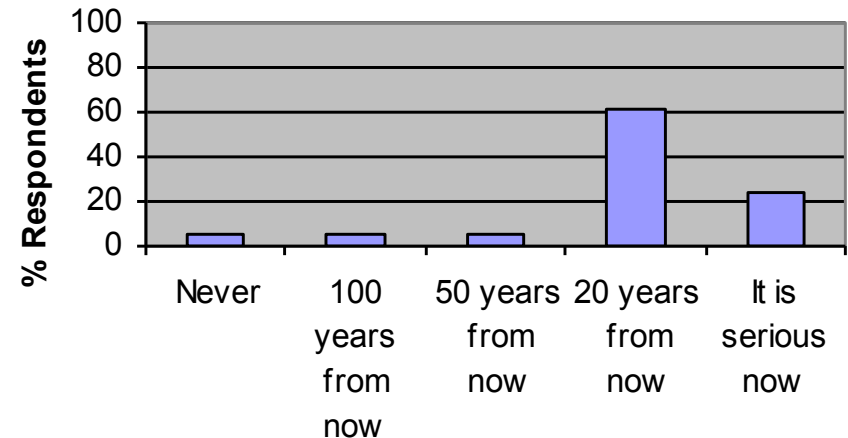
DELTA

Effects of Local Climate Change Visioning Process?

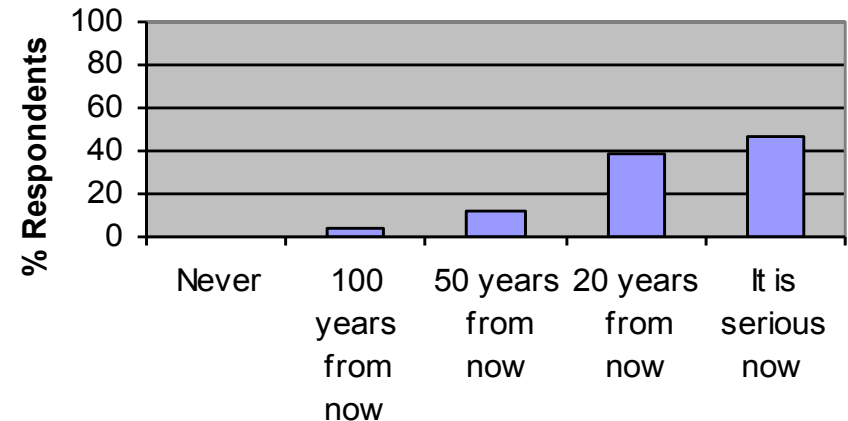
Change in Perceptions of Urgency:

- **Before:** 23% of practitioners felt that the impacts of climate change are serious now
- **After:** 46% felt that way

When impacts of climate change will become serious (Metro Van Practitioners; Before)



When impacts of climate change will become serious (Metro Van Practitioners; After)



Participant comments on the process (South Delta community):

- "I learned how climate change could affect my community in a very graphic way. **Numbers may not stay with me but visuals will**"
- "I was somewhat aware of global warming impacts on the Maldives and polar ice caps - **this presentation placed my own community in that context**"
- "Felt empowered"

Impacts of Local Climate Change Visioning Process



Delta 2007 public workshops with survey (Sheppard et al., 2011)

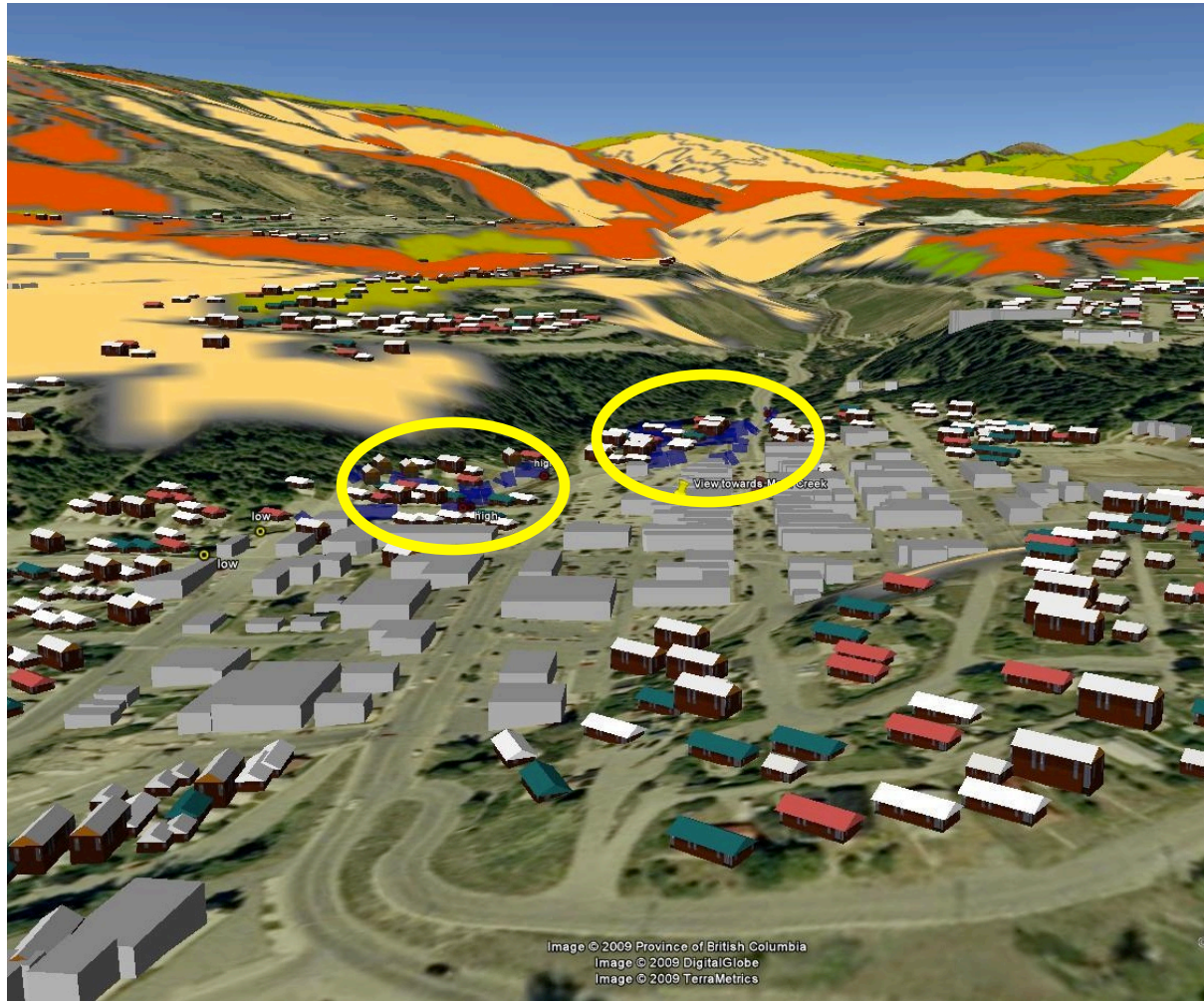
- Increased understanding of local impacts and solutions
- **Increased willingness (65-69%) to support local mitigation/adaptation measures**

Longterm impacts on decision-making: interviews 4 years later (Cornish, 2013)

- **Local government staff more willing to consider radical solutions to climate change**
- New studies on hazards (N. Vancouver) and adaptation scenarios (Delta)
- Widespread use of visual images in the community

KIMBERLEY VISIONING

Limited modelling and budget, embedded in planning



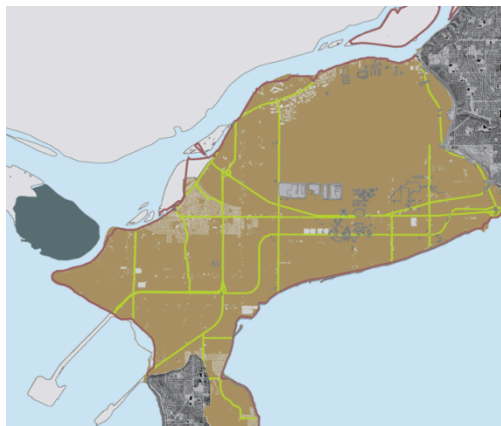
Mountain Pine Beetle and fire in the watershed could increase debris flows and accelerate run-off

Climate Change projected increase of winter precipitation, leading to likely flooding

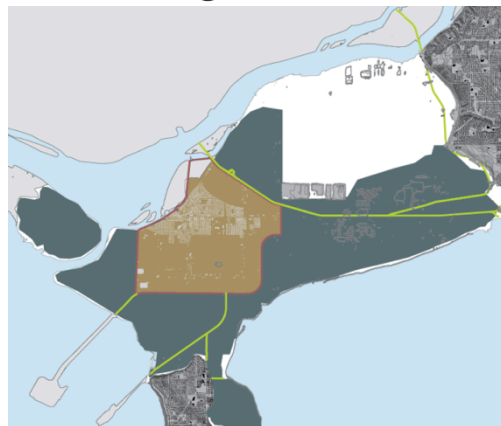
Over 30 adaptation measures adopted in the final plan

Delta Visioning Case Study (Regional Adaptation Collaborative)

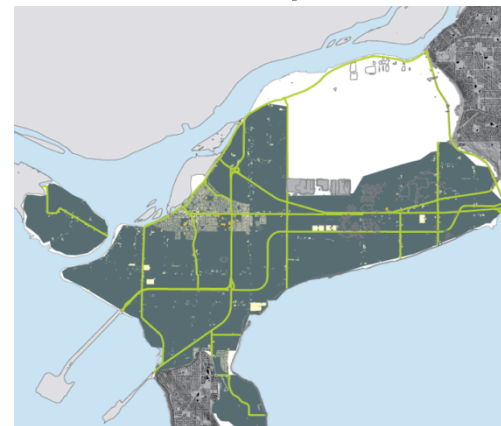
Hold the Line



Managed Retreat

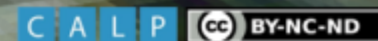


Build Up



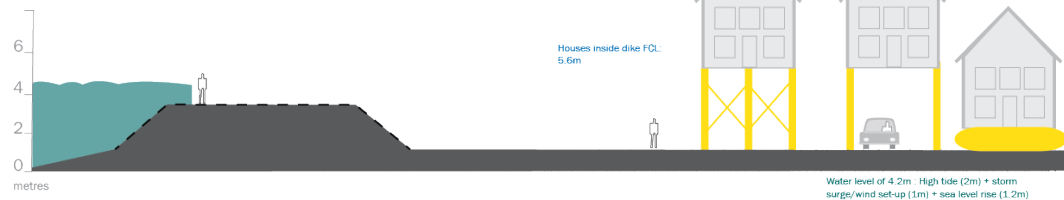
Ladner - Dike View

Build Up Scenario (hypothetical year 2100)



1.2 metres sea level rise
D. Flanders, CALP

Build Up Scenario



Ladner - Dike View

Build Up Scenario (hypothetical year 2100)



1.2 metres sea level rise

Future Delta 2.0 educational climate change videogame



Student testing sessions:

- Game play experience
- Pre-/post-questionnaires

(Dulic et al., 2012)

Evaluation: huge enthusiasm & critical co-design

FUTURE DELTA 2.0
Meta-Narrative

END STATE: 2100

ACT 1: 2075

PLAYER: Elderly Man/Woman

CC EVENT: Sea Level Rise

ACT 1: 2050

PLAYER: Professional (Scientist/Inventor)

CC EVENT: Drought/Heat Wave

ACT 2: 2020

PLAYER: University Student/Activist

CC EVENT: Winter Rains/Floods

ACT 1: 2015

PLAYER: High School Student

CC EVENT: The "Black-Out"

(Game PLAY Starts Here)



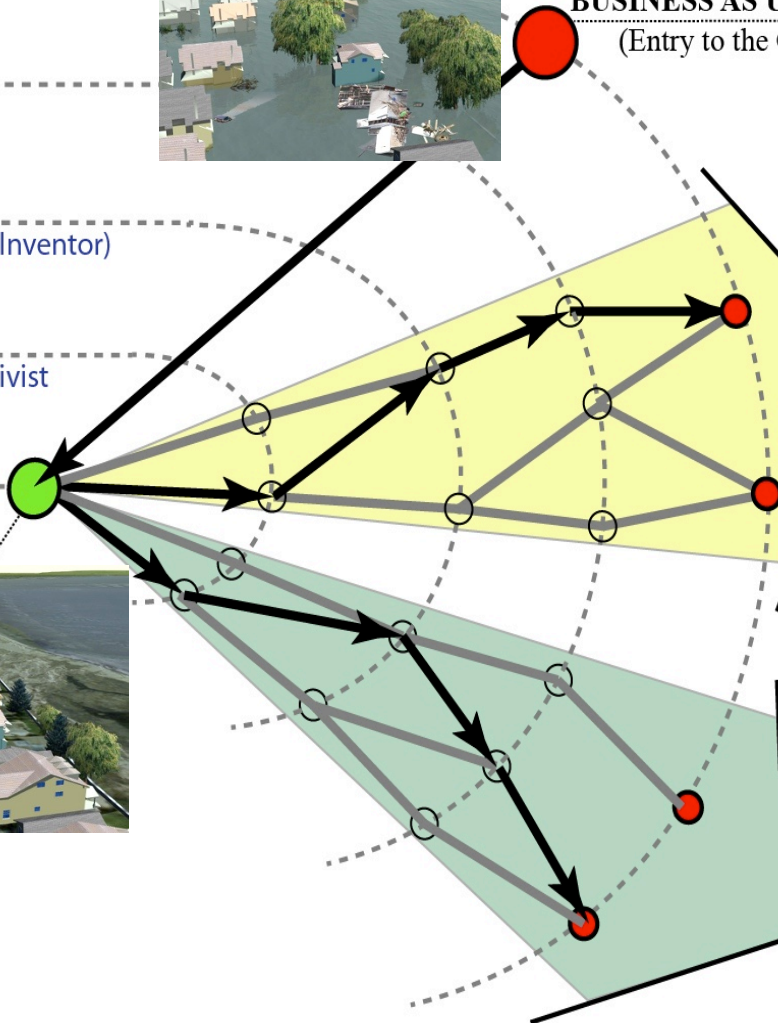
BUSINESS AS USUAL
(Entry to the Game)



ADAPT



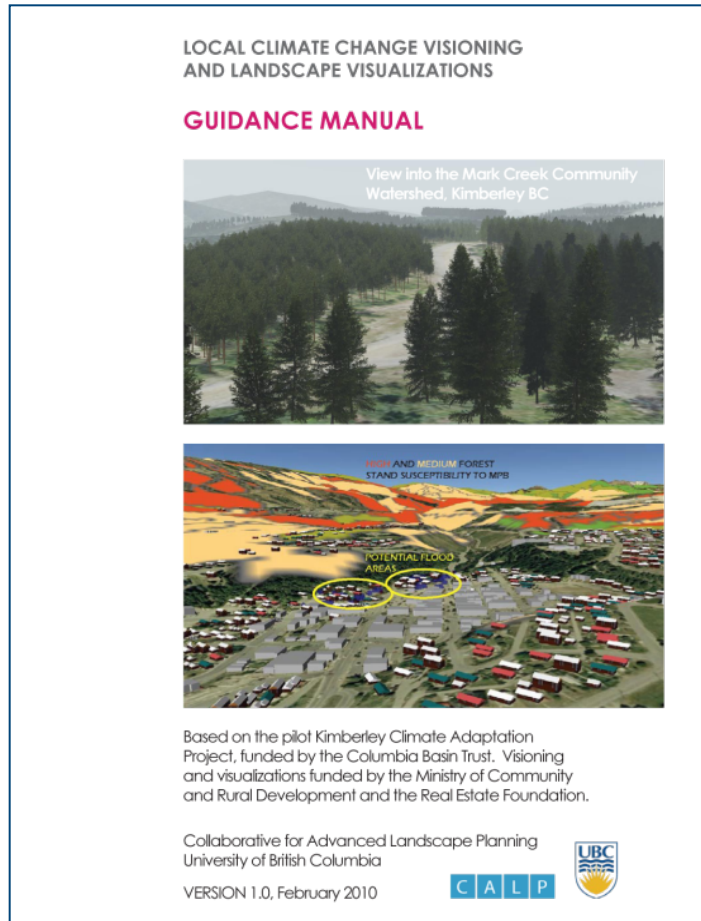
ADAPT & MITIGATE



Resources: Delta RAC website: <http://www.delta-adaptation-bc.ca>

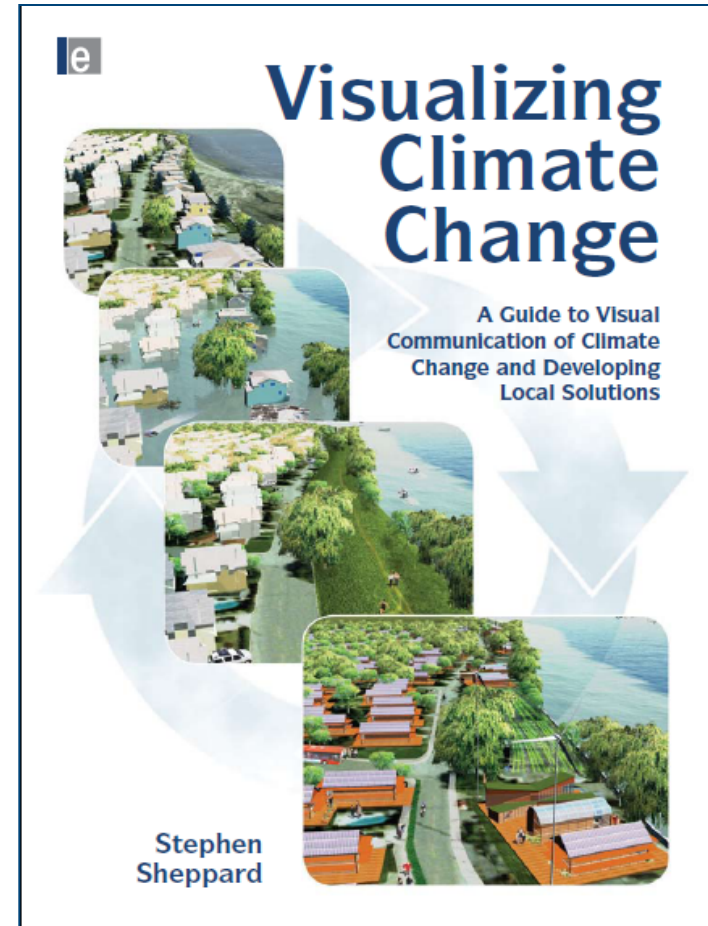
Visualization Training Modules:

<http://www.delta-adaptation-bc.ca/category/training-modules/>



Visioning Guidance Manual
(Pond et al, 2010)

www.calp.forestry.ubc.ca/publications



Earthscan/Routledge book
www.visualizingclimatechange.ca

Visualizing your future neighbourhood and lifestyles



Visualizing your future neighbourhood and lifestyles

Local food market

Live / work development

Stormwater drainage swale

Smaller, efficient cars

60% reduction in home energy consumption

Passive solar conservatory

Community gardening

Multifamily suites

Increased public transit

Electric commuter vehicles

