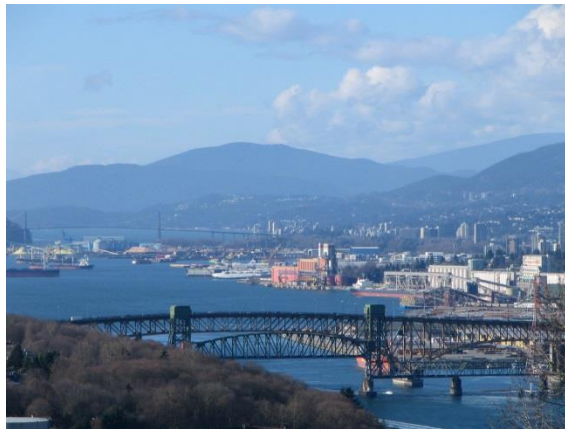


TWN Climate Change Resiliency Plan



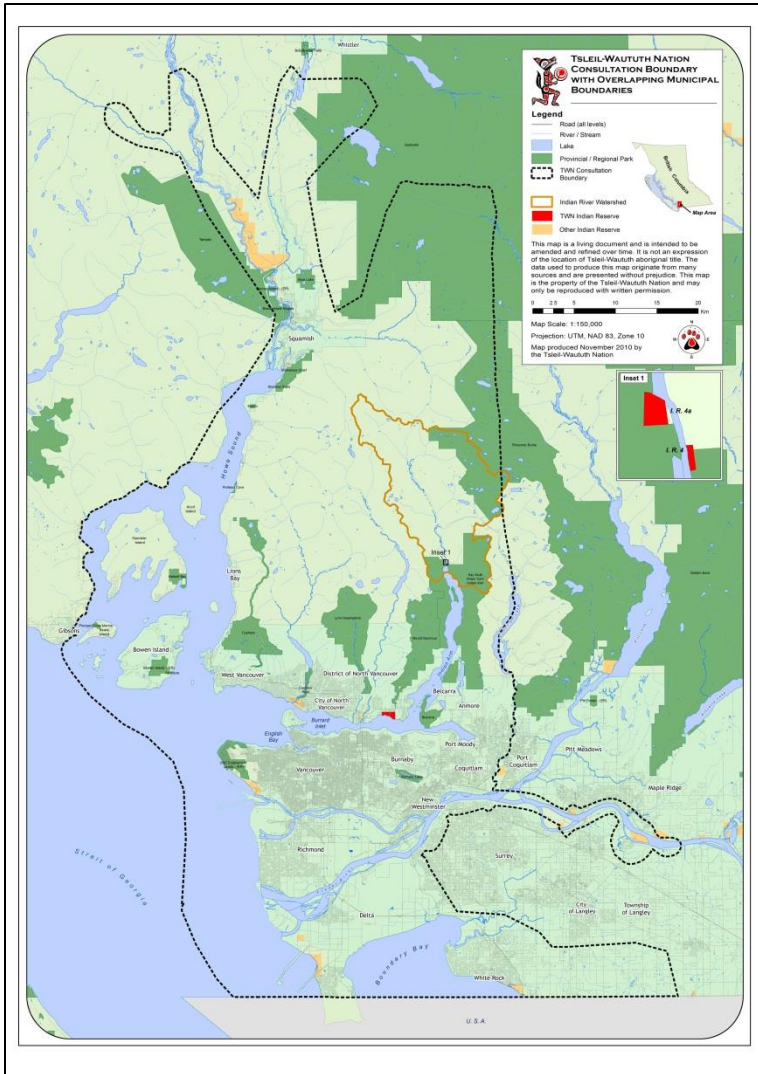
Bridget Doyle¹, Amir Taleghani²

¹Natural Resources Planner, Tsleil-Waututh Nation

²Water Resources Engineer, Kerr Wood Leidal

TWN Climate Summit, July 17 2018

TWN Climate Change Resiliency Plan

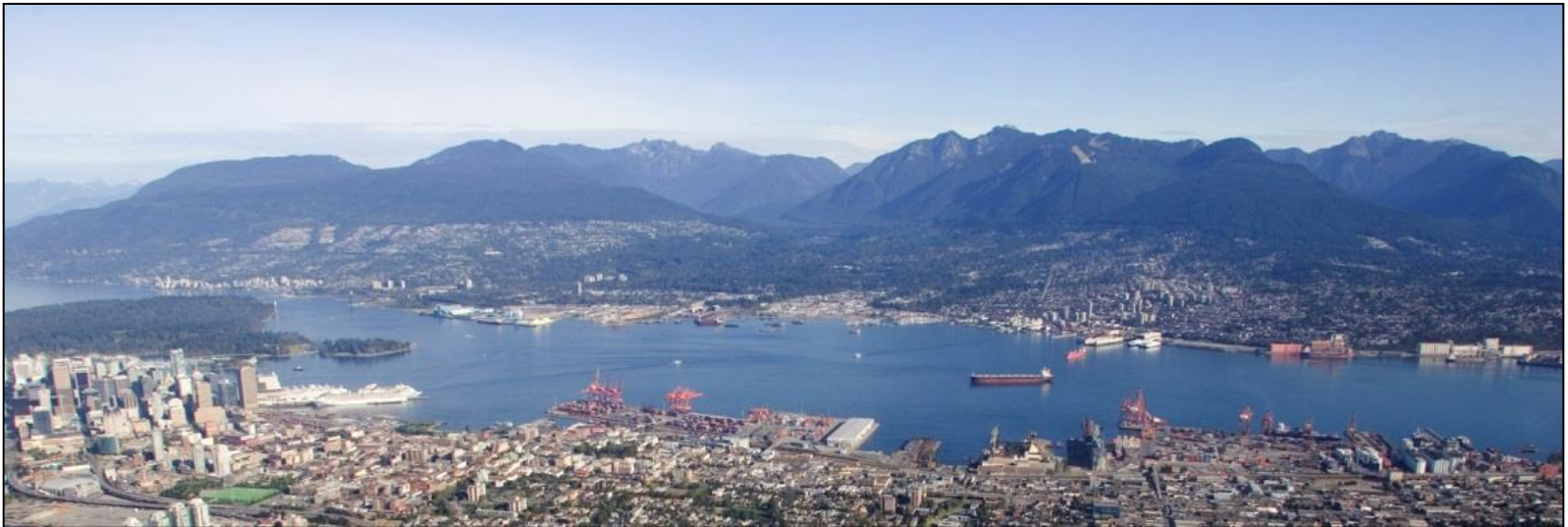


- Identified need based on existing observations, future projections, and community growth
- TWN government department collaboration (TLR & PW)
- Project components:
 - Resiliency Plan
 - Climate Action Intern
 - TWN Climate Summit
 - TWN community art project

TWN Climate Change Resiliency Plan

Purpose of the Plan:

- TWN community continues to thrive in a changing climate
- Institutionalize CC resiliency planning throughout TWN government
- Develop adaptation strategies for future prioritization and implementation



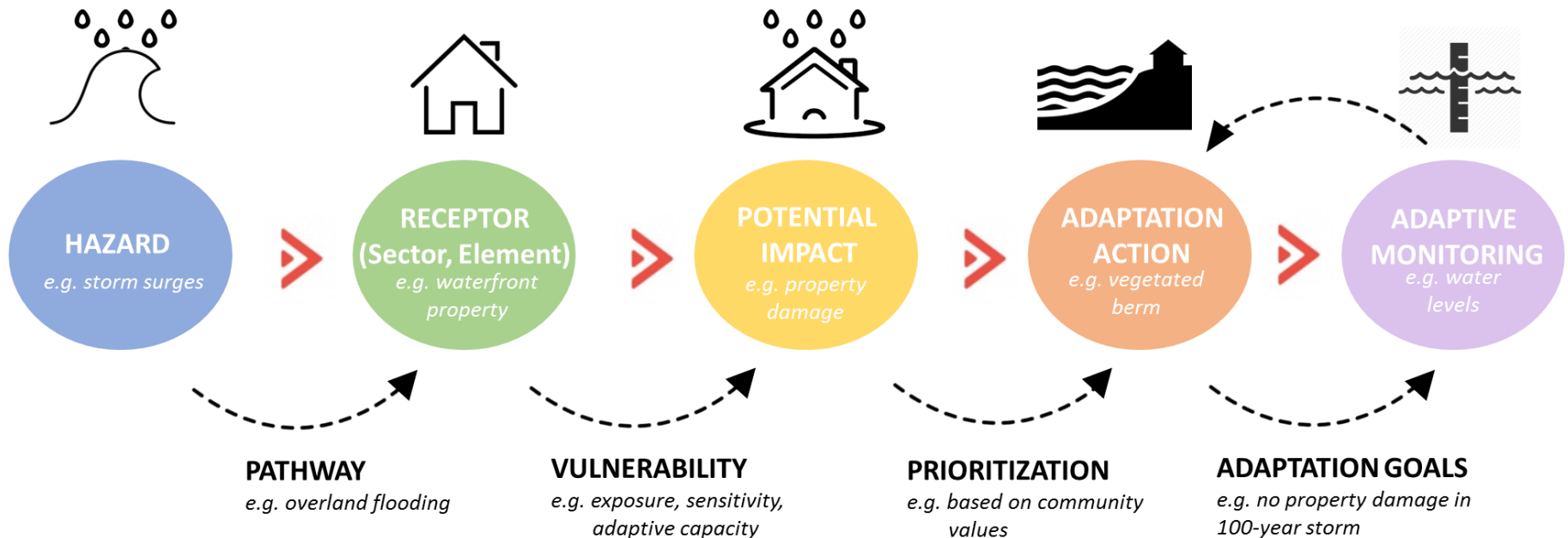
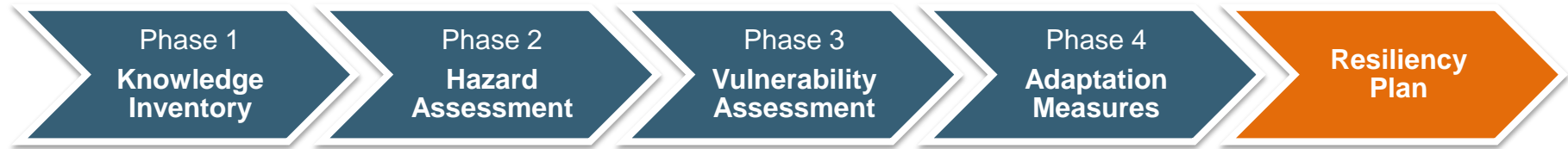
TWN Climate Change Resiliency Plan

How does this fit in with other TWN initiatives?

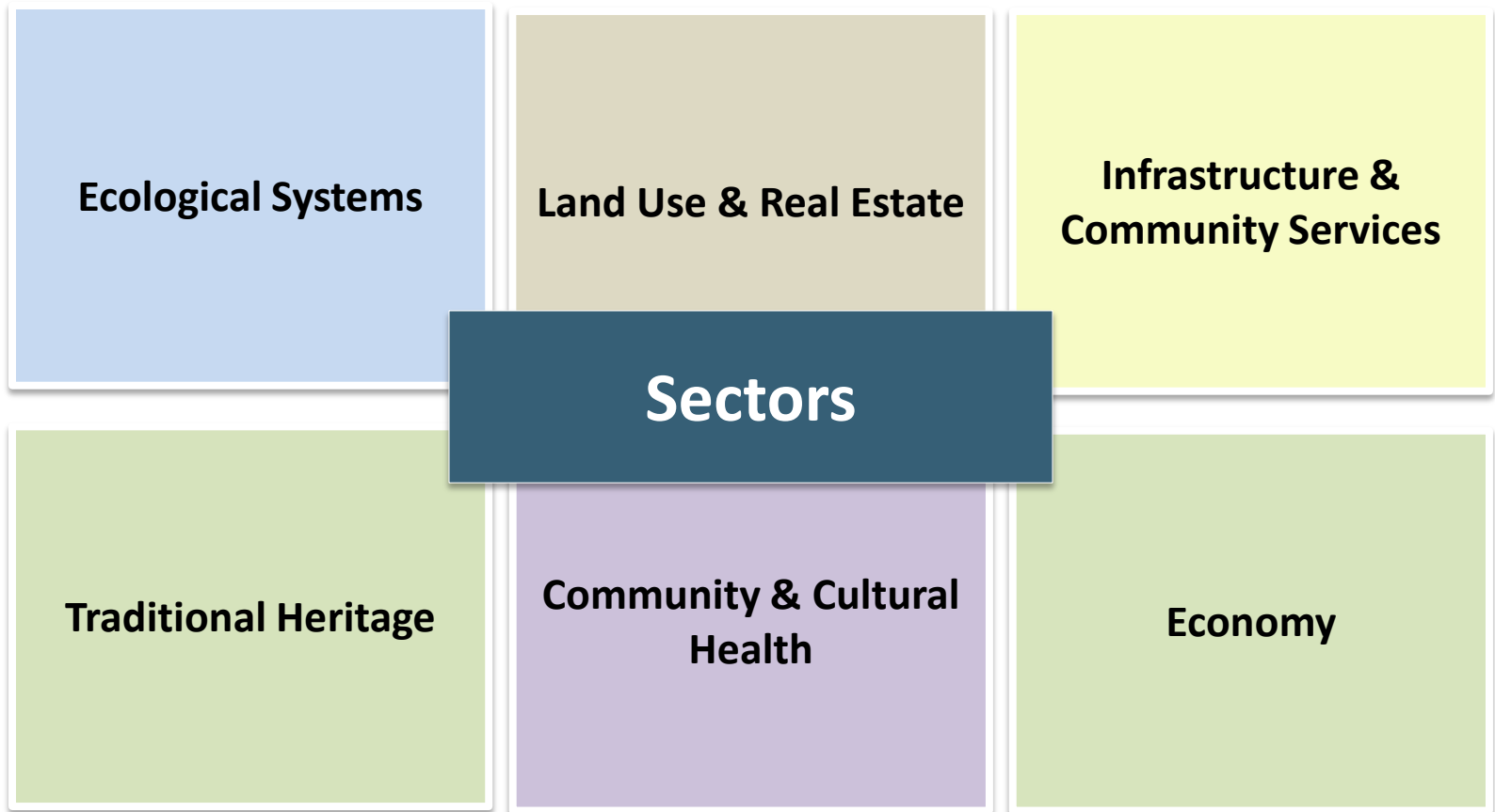
- TWN Land Use Plan and future developments
- Environmental stewardship initiatives
- Consultation requests
- International Alliance to Combat Ocean Acidification



TWN Climate Change Resiliency Plan



TWN Climate Change Resiliency Plan

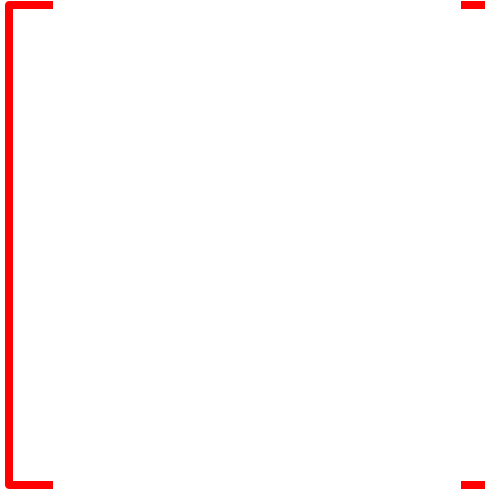


TWN Climate Change Resiliency Plan

Hazard Assessment Components

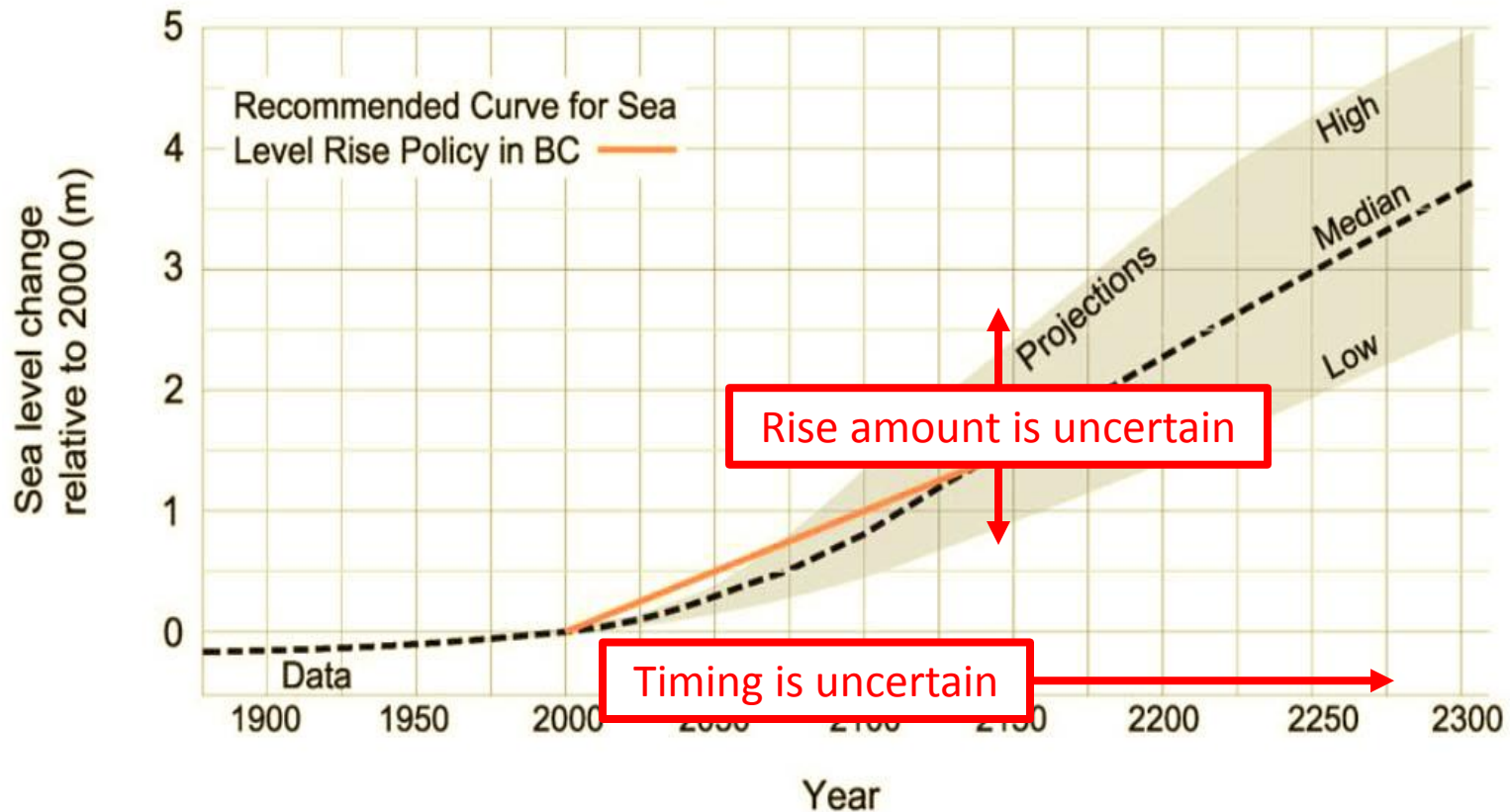
Sea Level Rise

- Storm surge flooding



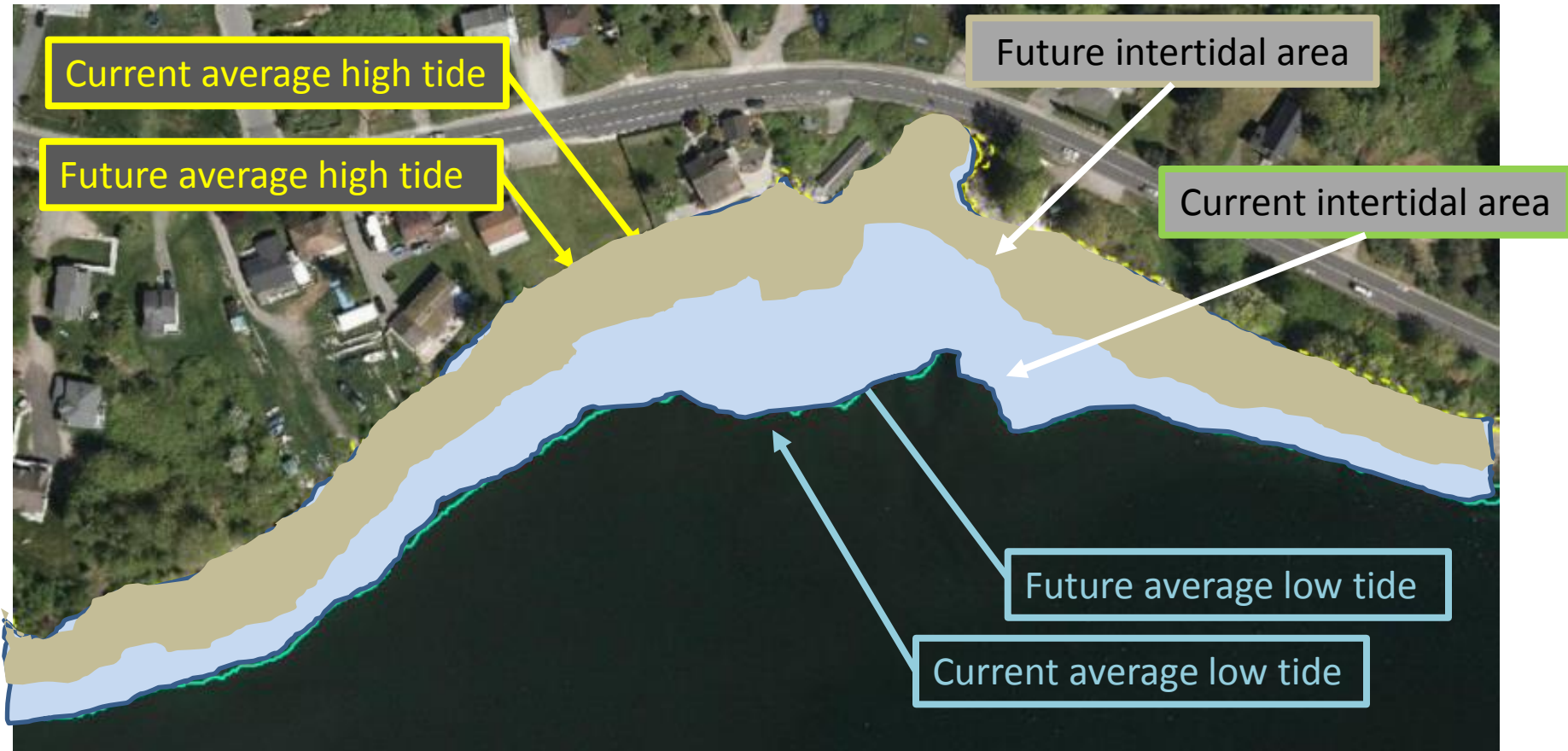
TWN Climate Change Resiliency Plan

Sea Level Rise Hazards – how much sea level rise?



TWN Climate Change Resiliency Plan

Sea Level Rise Hazards – coastal squeeze



TWN Climate Change Resiliency Plan

Sea Level Rise Hazards – coastal squeeze



TWN Climate Change Resiliency Plan

Sea Level Rise Hazards – shoreline erosion (vegetation change)

Existing shoreline vegetation:

- Deciduous forest in the western study area:
 - Trees: Red alder, black cottonwood, Pacific crab apple, bigleaf maple trees

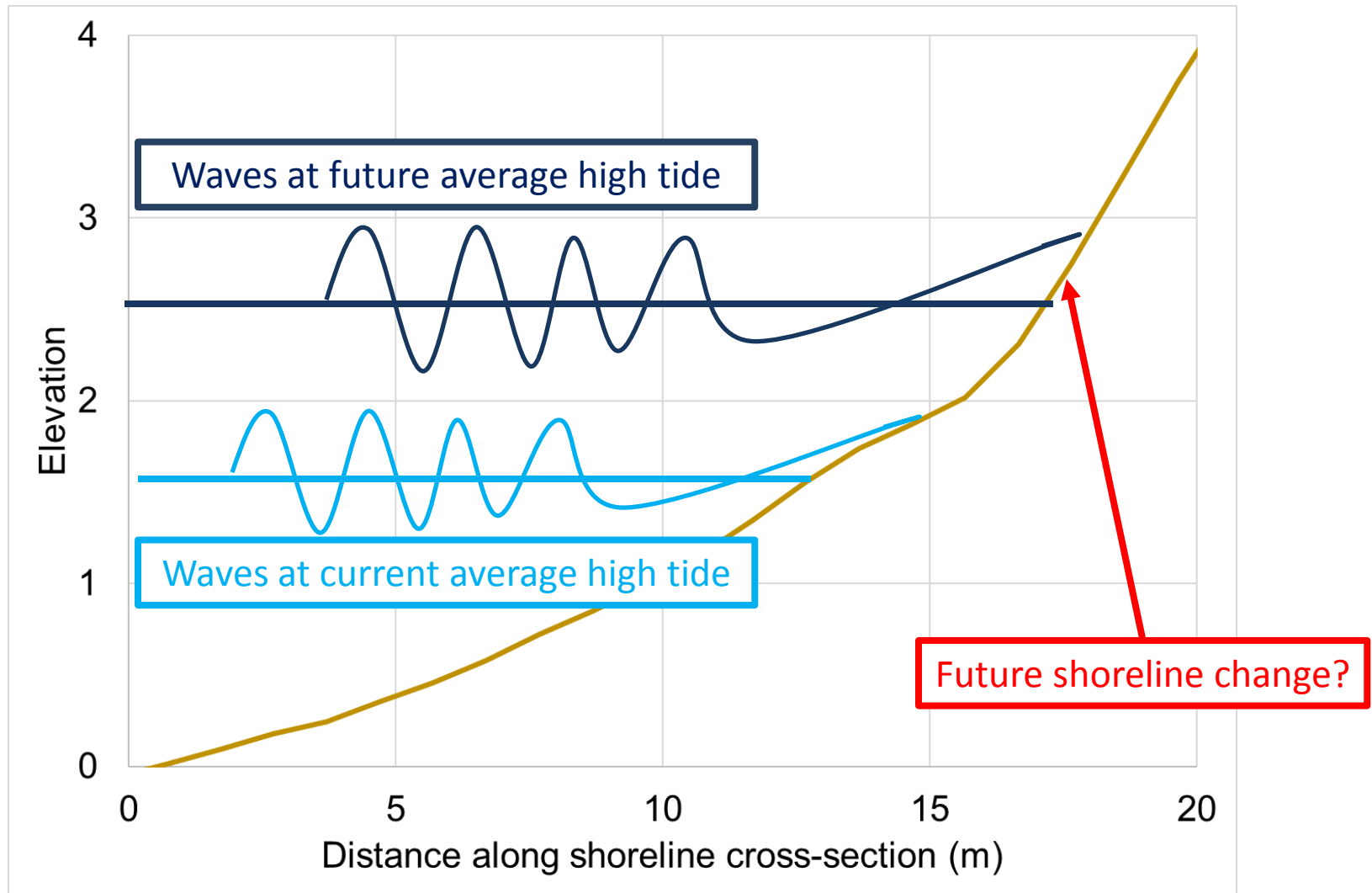


- Mixed forest in the eastern study area:
 - Trees: western redcedar, bigleaf maple, red alder, and Pacific crab apple

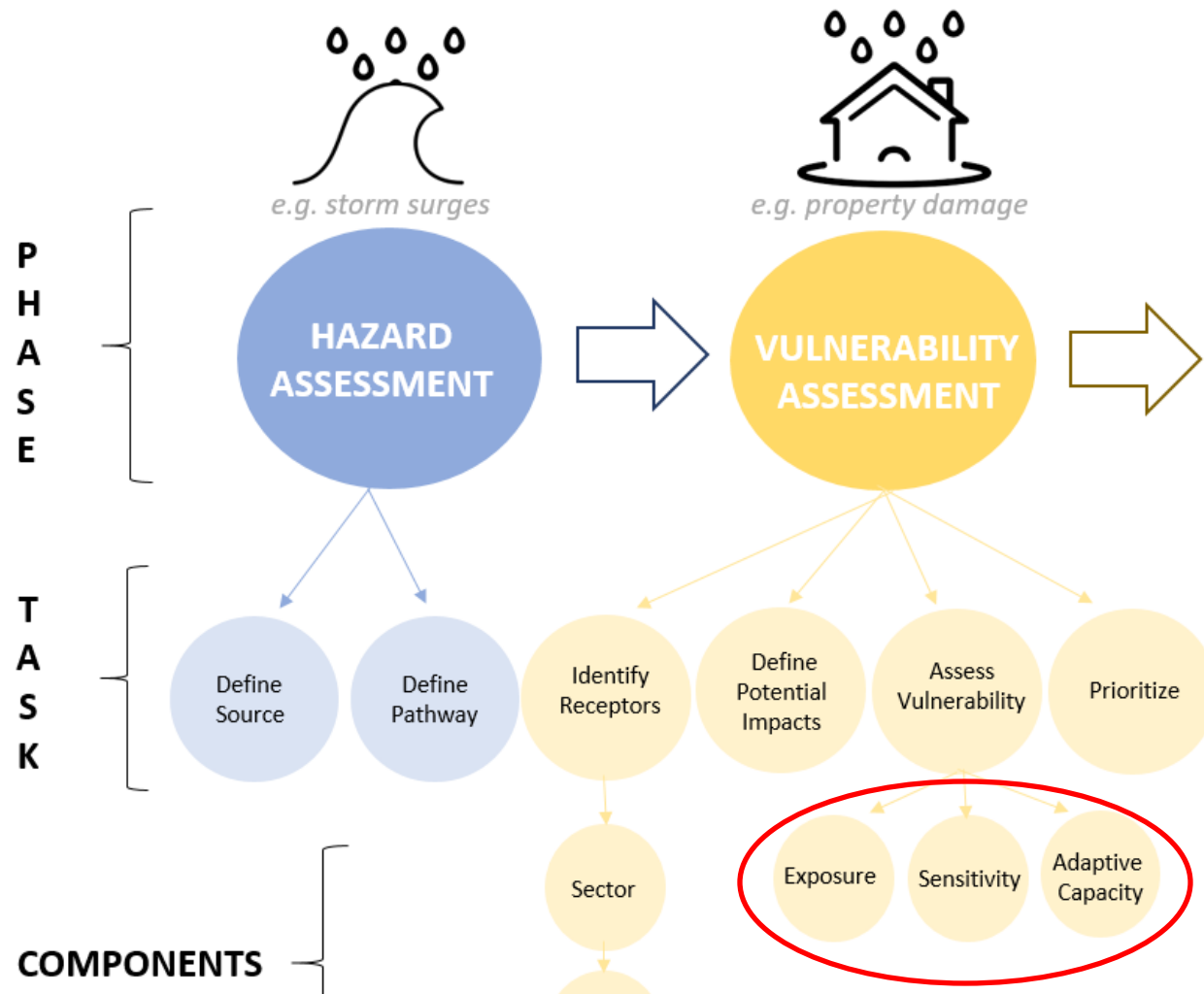
Shoreline vegetation response to sea level rise?

TWN Climate Change Resiliency Plan

Sea Level Rise Hazards – shoreline erosion (higher waves)



TWN Climate Change Resiliency Plan



$$\text{Vulnerability} = \text{Exposure} \times \text{Sensitivity} - \text{Adaptive Capacity}$$

TWN Climate Change Resiliency Plan

Archaeology and Cultural heritage

- Shoreline survey
 - Horizontal and vertical site boundaries
 - Estimate historic sea levels from existing erosion
- Creek bank deposits and intangible cultural sites
 - Inventory of what may be impacted by floods
- Isotope analysis
 - Determine past sea temperatures from archaeological deposits



TWN Climate Change Resiliency Plan

Next Steps:

- Review hazard assessment results against traditional knowledge
- Vulnerability assessment (each element for each hazard)
- Develop adaptation measures
- Form the resiliency plan



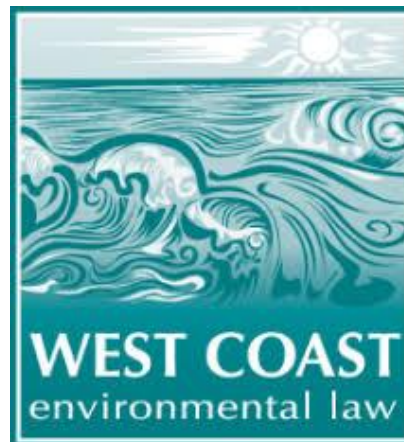
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Thank You

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