



WATERFRONT IMPROVEMENT PLAN

May 25th, 2021- ELSI Presentation

Agenda

- 1. Planning Context – Colwood Waterfront Improvement Plan (WIP)**
- 2. Guiding Plans and Policies**
- 3. Multi-Disciplinary Shoreline Assessment**
- 4. Needs Assessment**
- 5. Conceptual Design Process**

Colwood WIP – Planning Context

- **Colwood Guidance Documents for the WIP:**

- OCP.
- Strategic Plan.
- Parks & Recreation Master Plan (Draft).
 - Waterfront-specific Engagement.
- Transportation Master Plan.
- WCPC Reference Documents (Many).



Colwood WIP – Planning Context

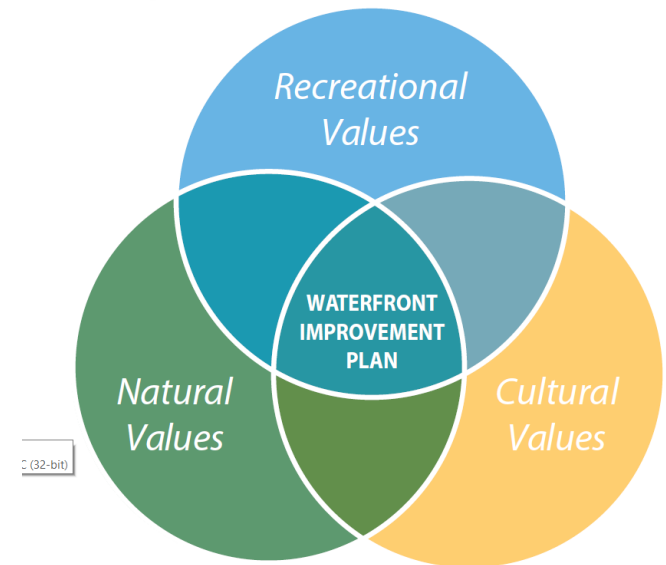
- **Where We Are In the Process:**



Colwood WIP – Planning Context

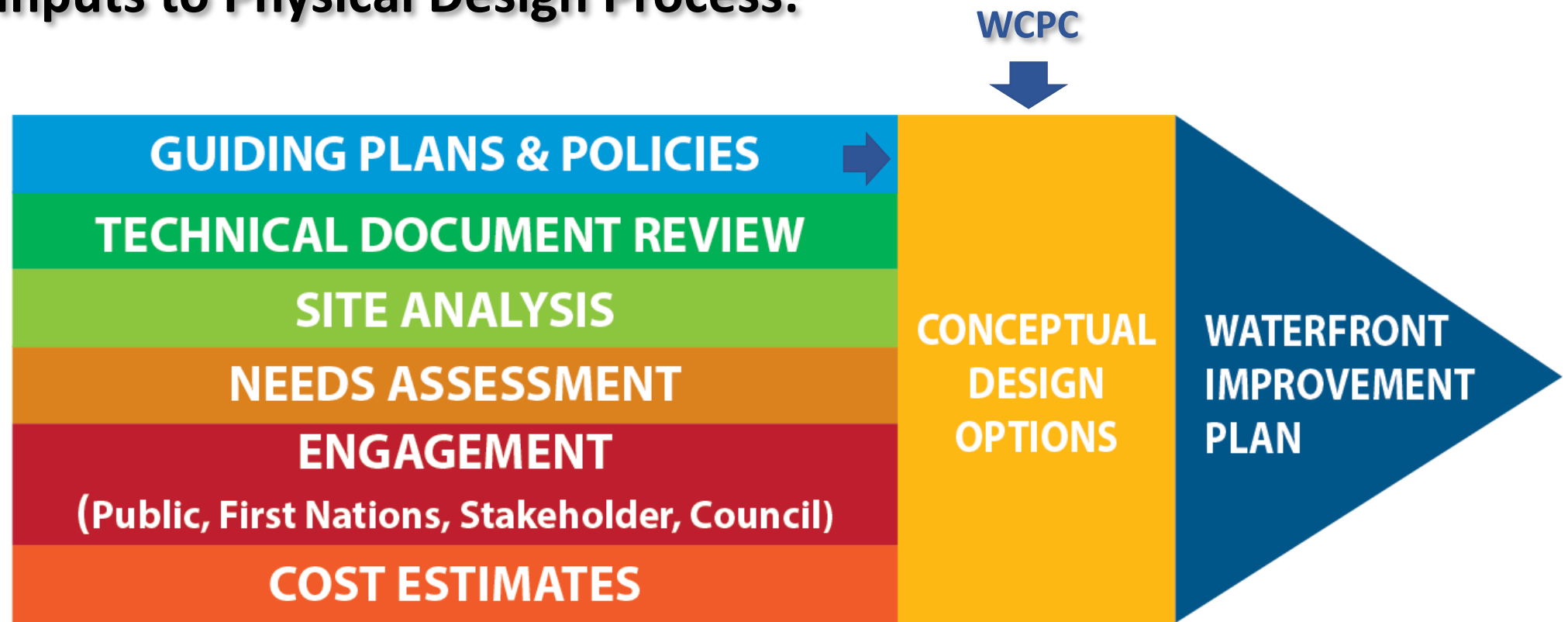
Consulting Team:

- **Design Lead** – Murdoch de Greeff Inc. Landscape Architects
- **Geomorphology/Coastal Engineering** – C.O.R.I. (Dr. John Harper)
- **Planning & Engagement** – Barefoot Planning
- **Archaeology** – Millennia Research
- **Environmental** – Current Environmental
- **Civil Engineering** – Herold (Al Herle, P.Eng.)



Colwood WIP – Planning Process

- **WIP Inputs to Physical Design Process:**



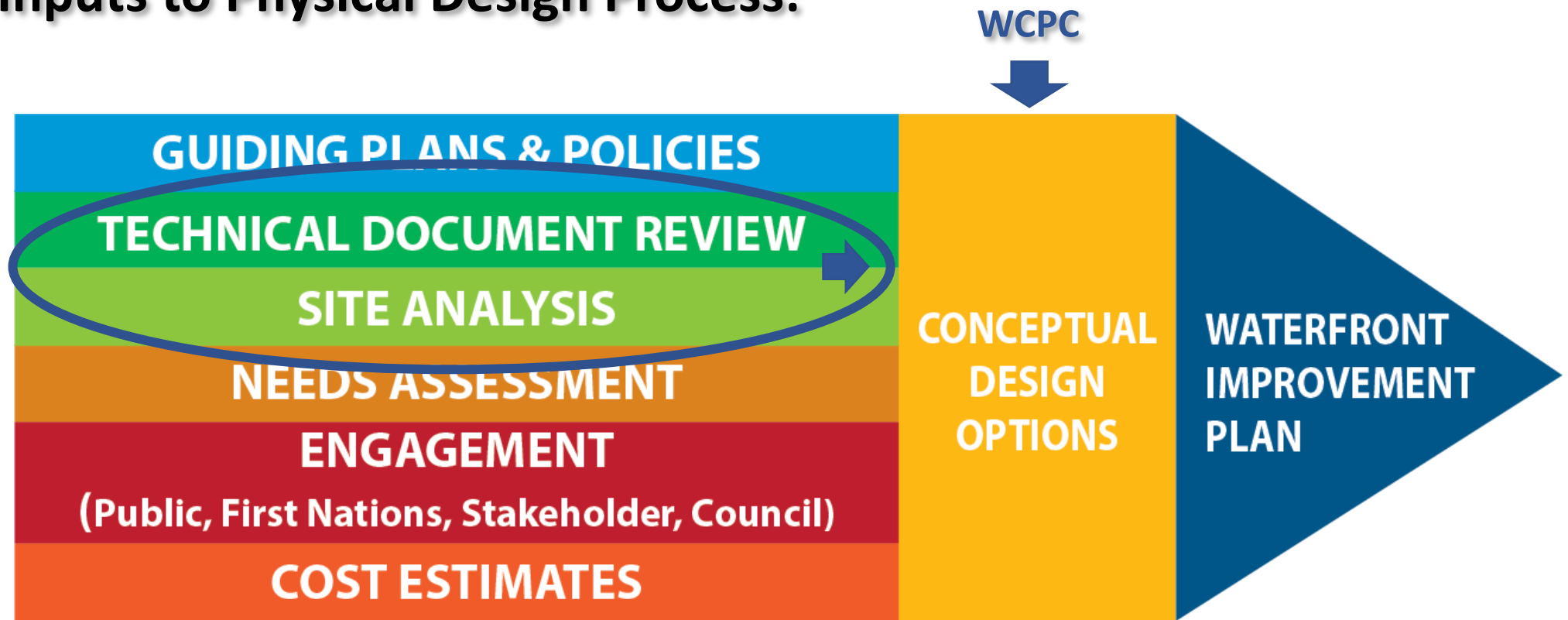
Colwood WIP – Planning Context

- **Guiding Policy Language and Consultation Feedback:**

- OCP: “Build understanding and seek partnerships with First Nations.”
- OCP: “The waterfront is a stewarded, **world-class** destination for residents and visitors alike.”
- OCP: “People and nature are exceptionally well connected.”
- OCP: “Colwood is prepared to adapt to a changing world.”
- OCP: “Maintain and regenerate the ecological functions of Colwood’s diverse shoreline.”
- Draft PRMP: Continuous multi-use pathway from Lagoon Beach to Royal Beach.
- Draft PRMP: Improved waterfront amenities (ie: washrooms, parking, bike racks, bird blinds, etc).
- Ongoing Community Engagement...

Colwood WIP – Planning Process

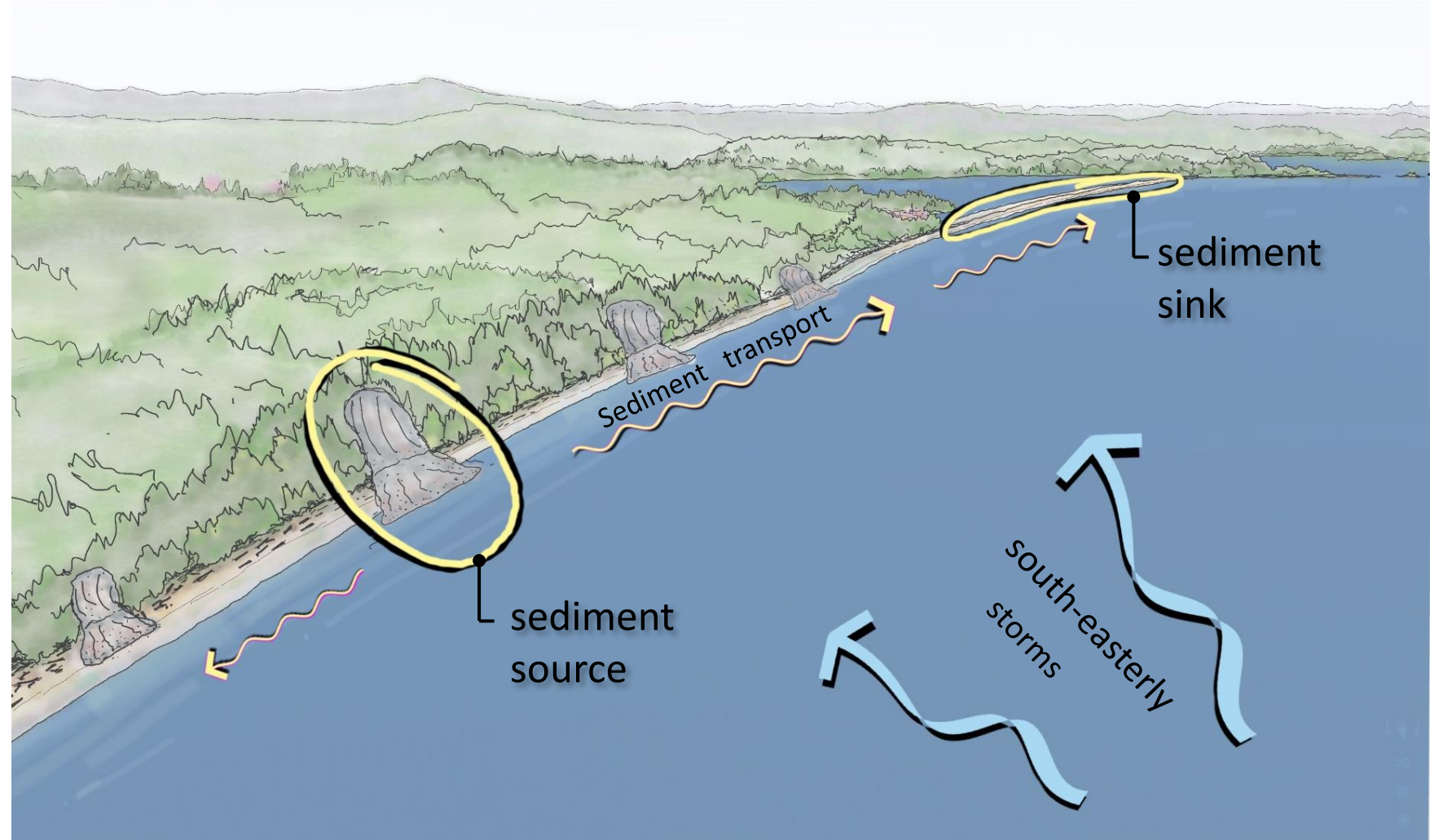
- **WIP Inputs to Physical Design Process:**



Colwood's Sediment Shoreline System – Overview

Pre-Disturbance Shoreline (Pre-1890's):

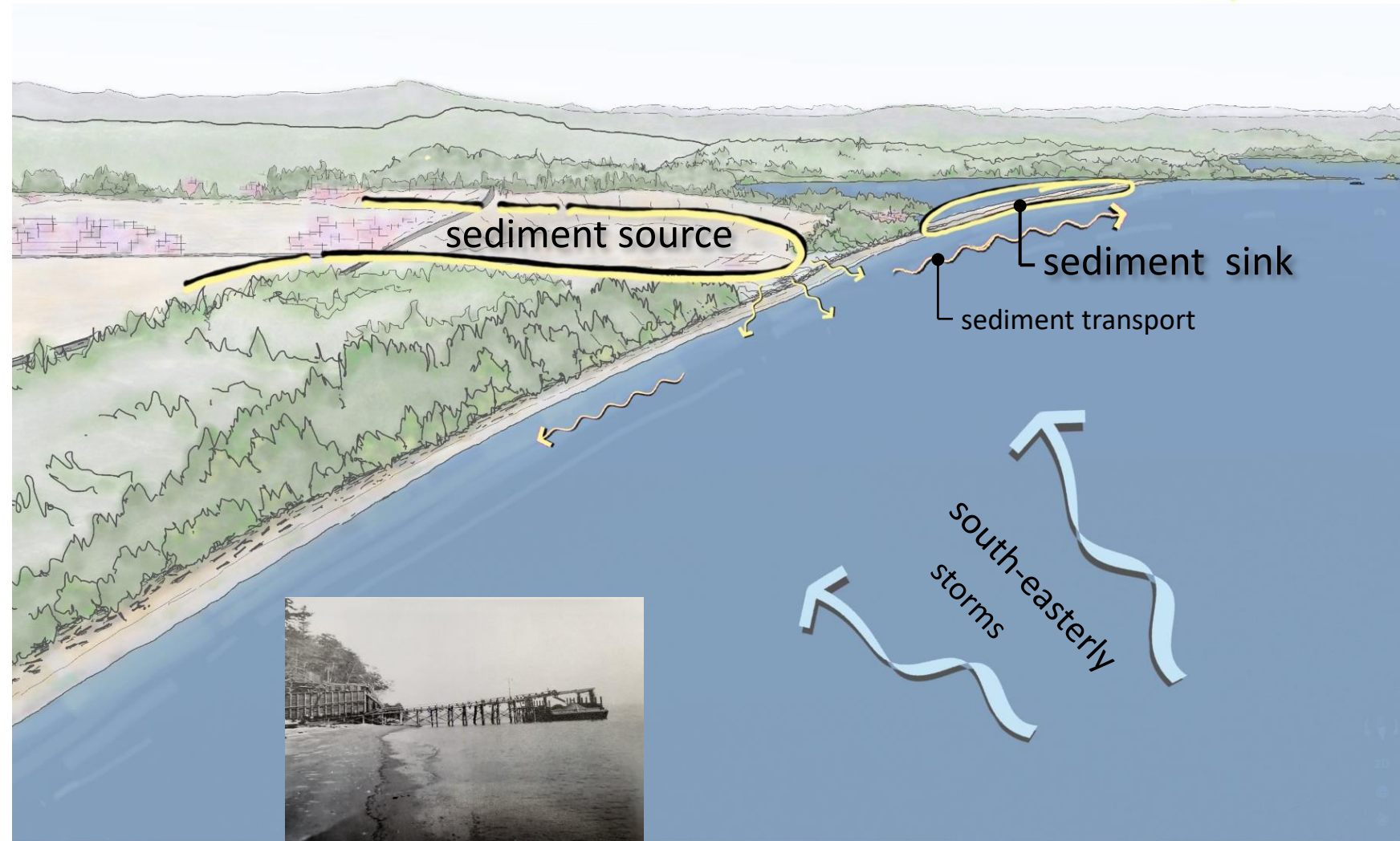
Prior to the start of gravel pit operations at Producer's Pit, the sediment system was fed by active bluffs south of the lagoon. Waves from south-easterly storms pushed sediment predominantly northward. The spit represents the key depositional feature in the system.



Colwood's Sediment Shoreline System – Overview

Post-Disturbance Shoreline (1890-1950):

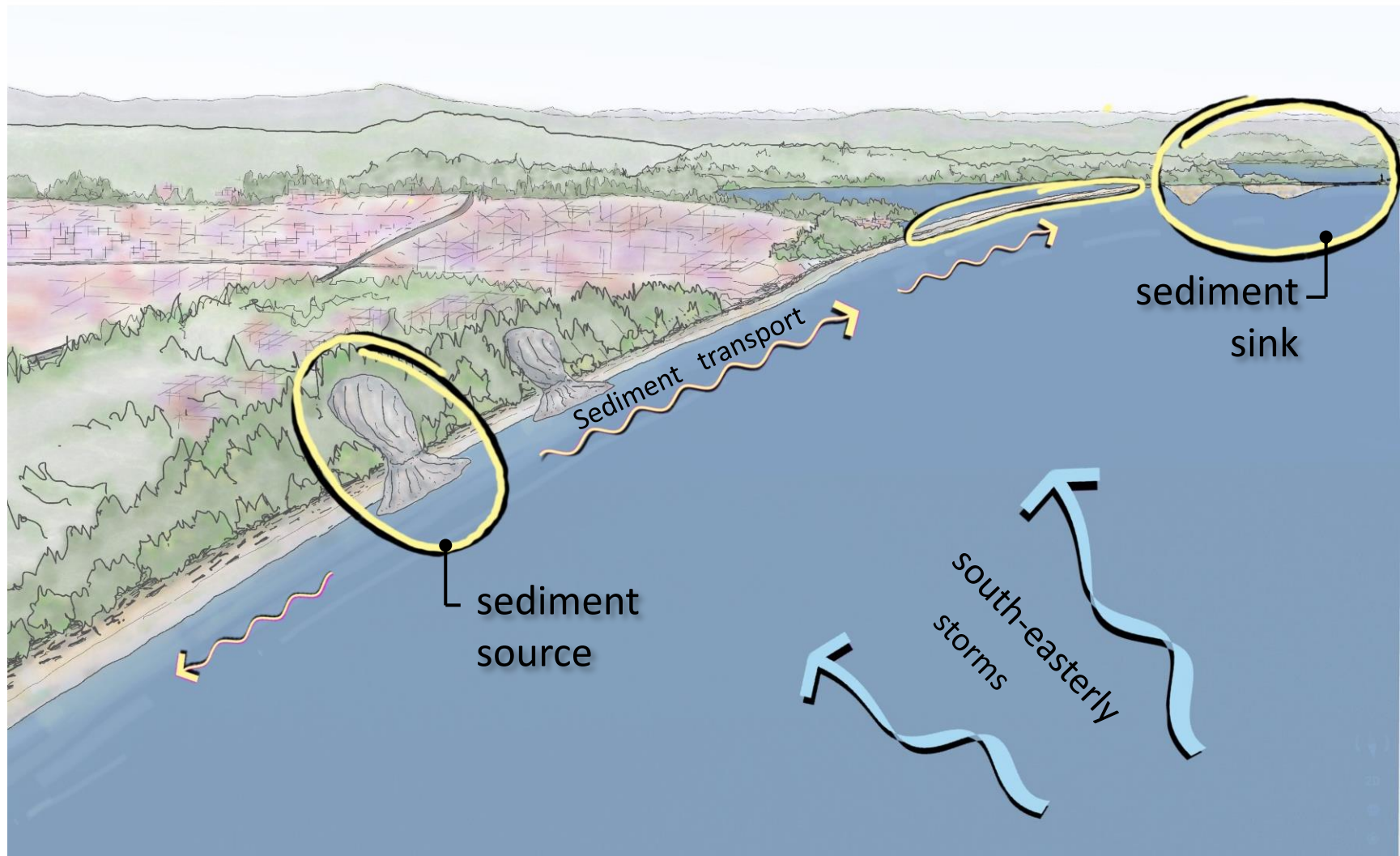
During gravel pit operations, the sediment system was artificially nourished by an over-abundance of sediment 'leaking' from Producer's Pit. Vegetation stabilized bluffs either side of the pit during this time. The Spit remained the primary depositional feature, with excess sediment continuing northward past Fort Rodd Hill.



Colwood's Sediment Shoreline System – Overview

Expected Future Shoreline Condition:

Starting around 1950, the Causeway to Fisgard Lighthouse began trapping sediment at the north end of the Lagoon. In 2007, Producer's Pit ceased operation. Since then, waves continue to move sediment predominantly northward. Sediment supply to the system is likely to come from beach over-steepening and subsequent re-activation of bluffs.



Colwood's Sediment Shoreline System – Overview

Beach Accretion at Fisgard Lighthouse:

A comparison between 1942 aerial photography and current high water mark estimations show substantial accumulation of sediment west of the Fisgard Lighthouse causeway. Construction of the causeway has prevented sediment from moving northward into deeper water.

The estimated volume of sediment accumulated on the two beaches shown at right is approximately **+60,000 cubic meters**.



Colwood's Sediment Shoreline System – Overview

Sediment Movement is Inevitable:

- Whether a shoreline is hardened or is nourished with sediment, wave energy will continue to move sediment along the shoreline.
- If a sediment shoreline is hardened with seawalls (ie: to protect property values), waves will continue to move beach materials, eventually depleting the beach.
- Local examples of beach degradation include Goose Spit (Comox) and Pat Bay (Sidney).



Colwood's Sediment Shoreline System – Overview

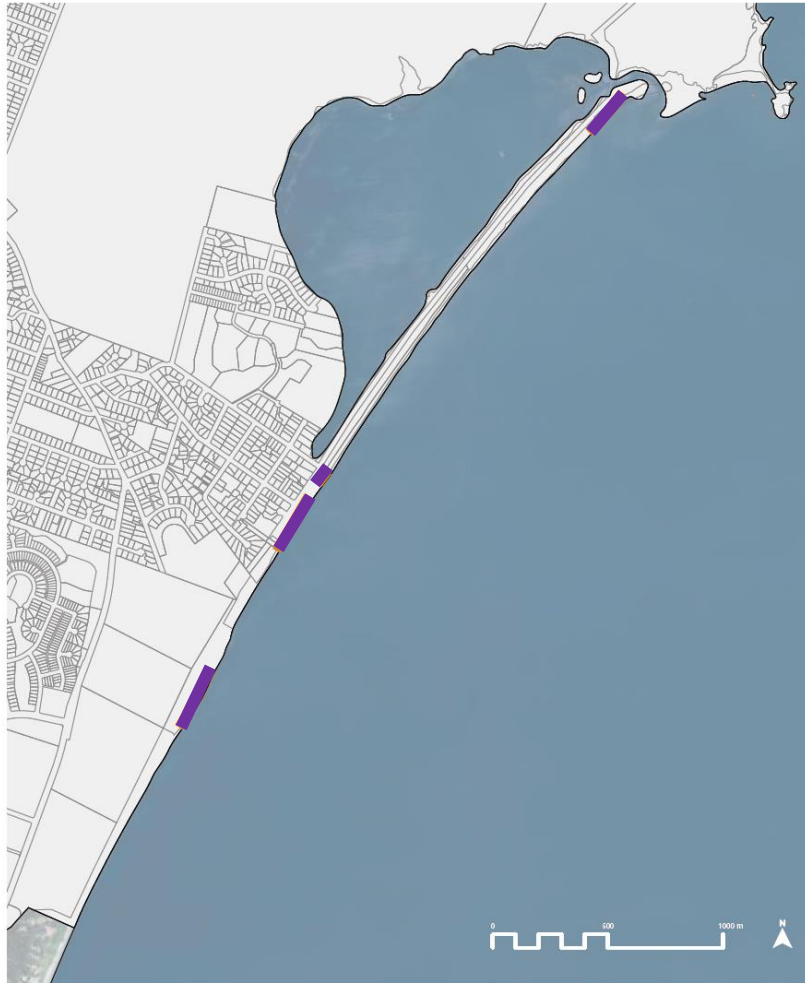
Existing Beach Armor:

19% of Outer Shoreline

Extent of Shoreline Armoring

Source: MDI

Shoreline Armoring



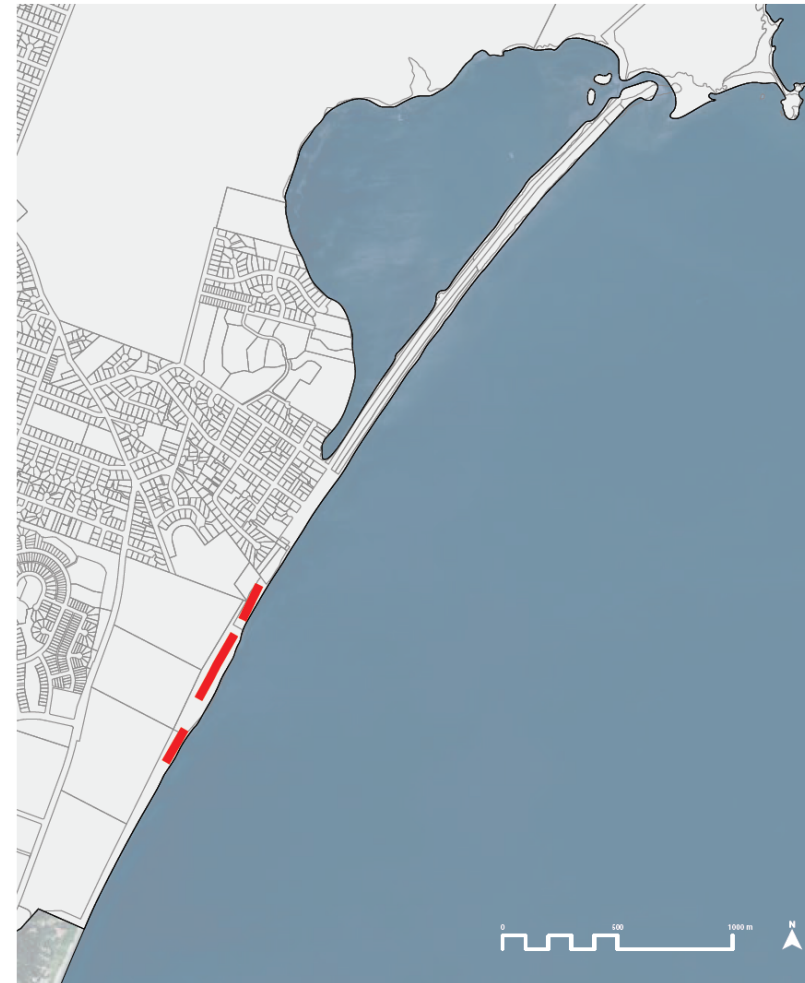
Existing Active Scarp:

15% of Outer Shoreline

Extent of Active Scarp (Shoreline Erosion)

Source: MDI

Active Scarp



Colwood's Sediment Shoreline System – Overview

Describing the Shoreline:

Special management
for low-lying areas

Special management
for bluffs



Slope Classification Study
Source: MDI



Environmental, Archaeological and Infrastructure Considerations

Key Opportunities & Constraints:

Infrastructure:

1. Pump Station – Sea Level Rise Adaptation.
2. Bridge – Programming & Long-term Plan.
3. Ocean Boulevard – Road Surface Integrity.
4. New Infrastructure – Adaptive Design.

Environmental:

1. Lagoon Ecological Integrity – Increasing Pressure:
 - Forage Fish Habitat – Seasonal Protections.
 - Riparian Vegetation – Enhancement Opportunities.
 - Birds & People (+ Dogs) – Management & Design.
 - Lagoon Water Quality – Connection to Watersheds.

Archaeological:

1. Intensive Historical Use – Sensitivity.
2. Engagement & Partnership – Opportunities.



Colwood WIP – Planning Process

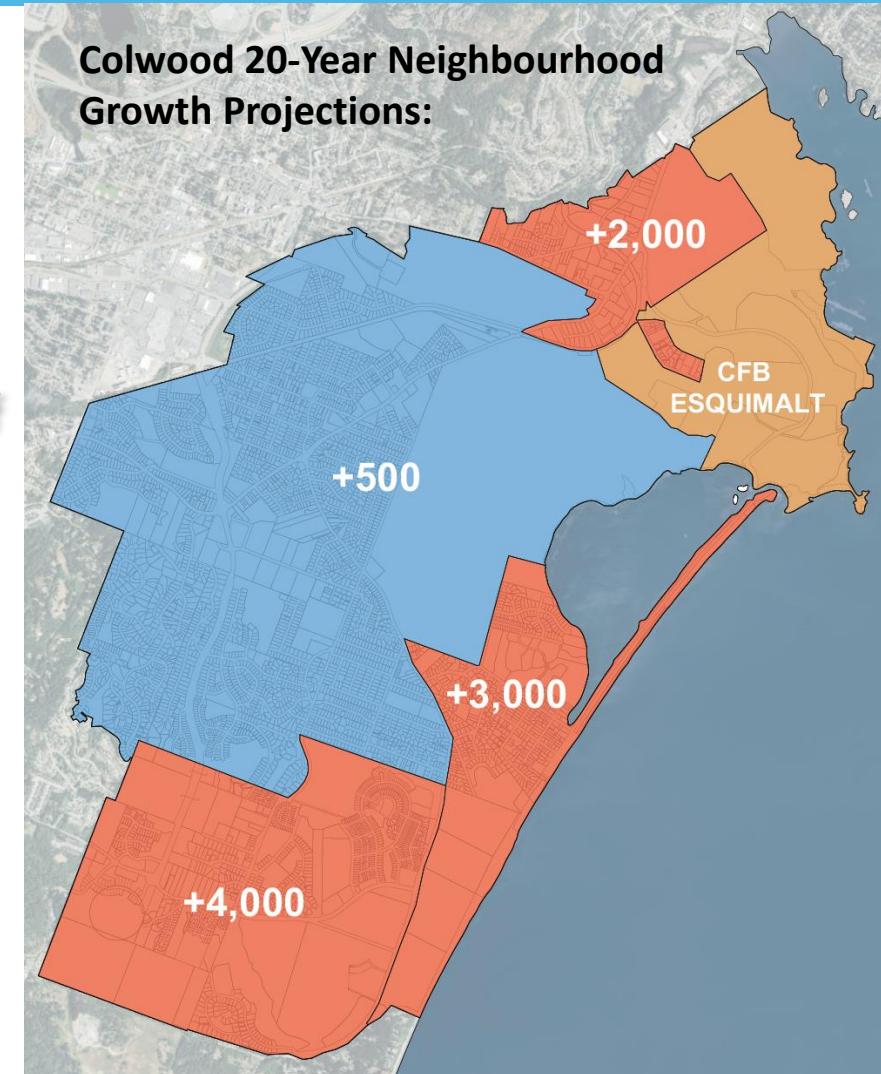
- **WIP Inputs to Physical Design Process:**



Needs Assessment – Overview

Future Demands on Colwood's Waterfront:

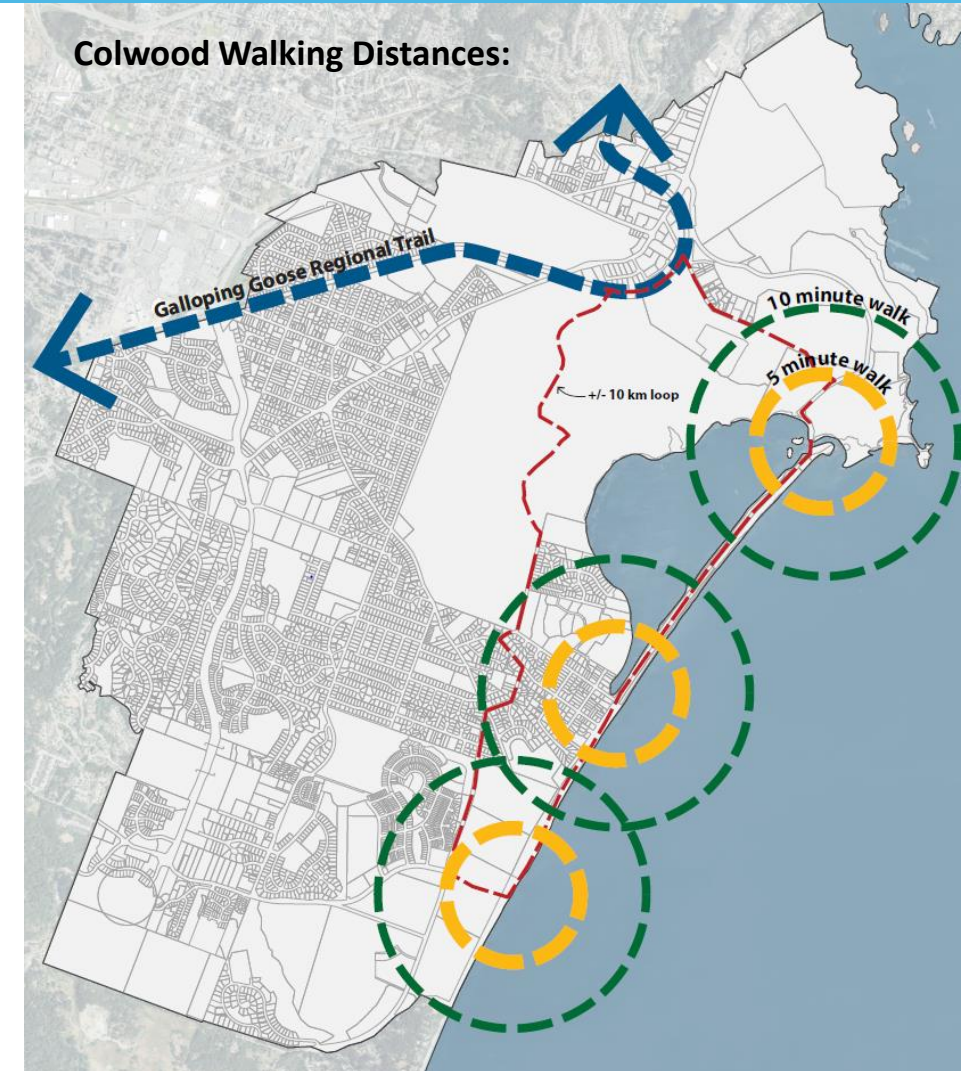
- + 10,000 new Colwood residents in next 20 years.
- Capital Region will add over 80,000 new residents in next 20 years, half of this in the Western Communities
- Waterfront improvements will attract new visitors/tourists.
- Implication for Colwood WIP:
 - Designs will need to accommodate considerable growth/demand.
 - Amenities & services should be balanced with protection of natural values.



Needs Assessment – Overview

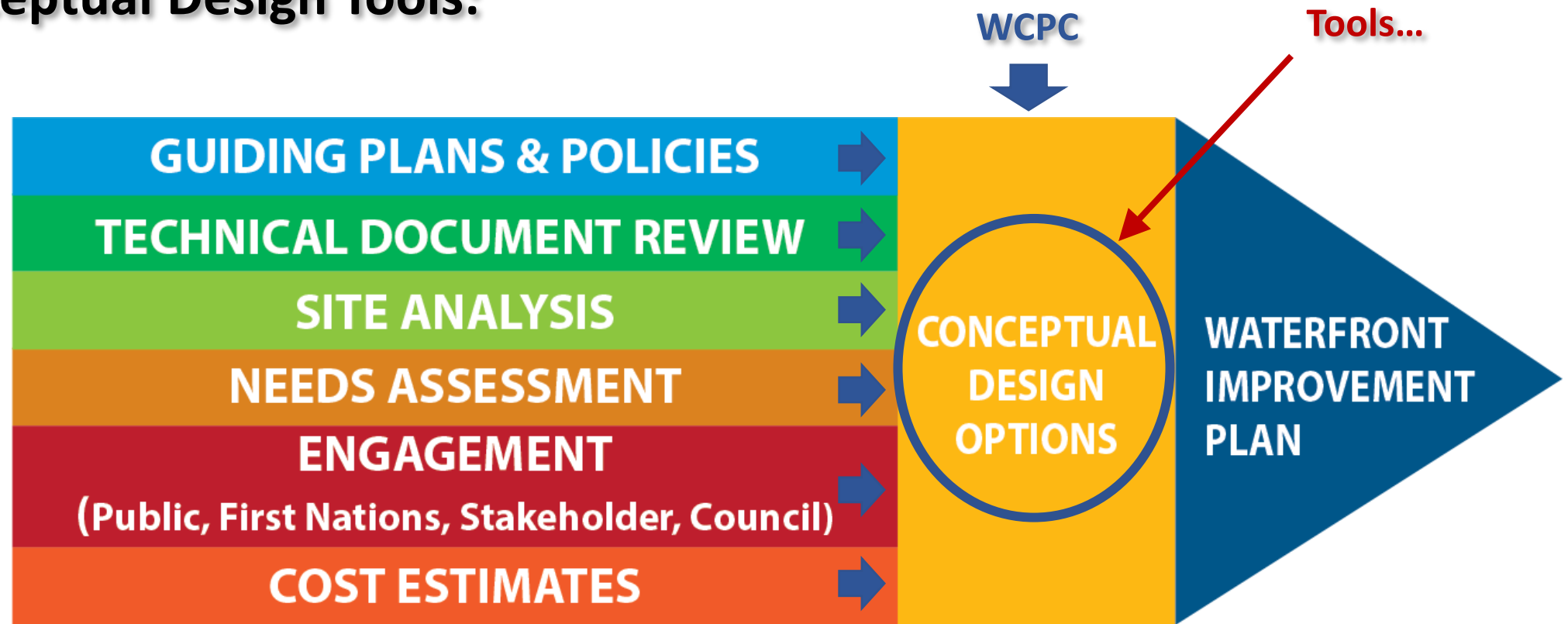
Amenities & Services – Programming Possibilities:

- **Parking** – Current: +/- 400
Future: Increase or decrease? Private or public?
- **Public Washrooms** – Current: 1 (at pump station)
Future: 3 + Commercial?
- **Waterfront M.U.T.** – Current: 0 KM
Future: Min. 4 KM, with loops to 10 KM?
- **Beach Volleyball Courts** – Current: 2 permanent
Future: Addition of temporary courts?
- **Ecological Restorations** – Current: Smaller projects
Future: Strategic distribution?



Colwood WIP – Planning Process

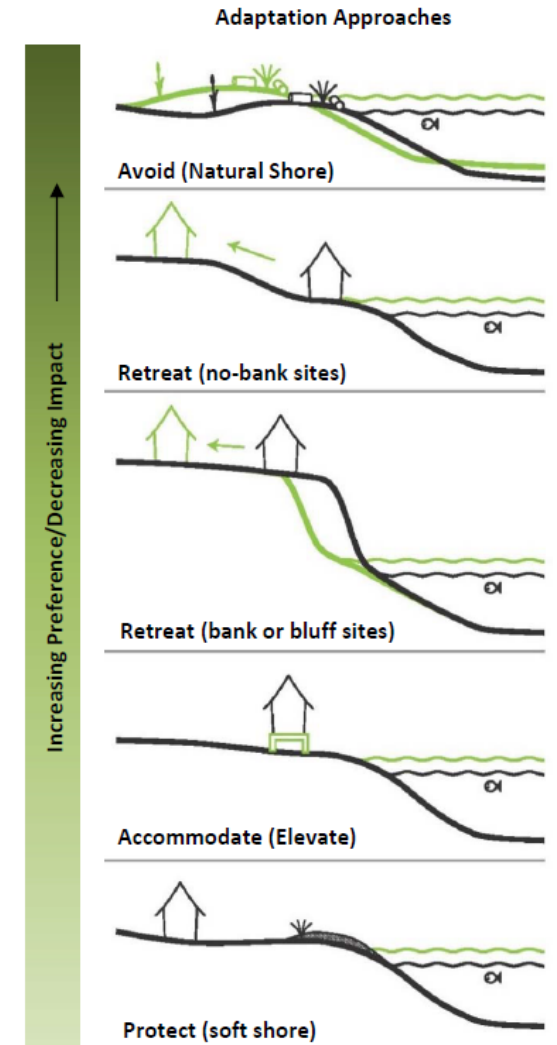
- **Conceptual Design Tools:**



Planning Tools – Green Shores

Green Shores and the Colwood WIP:

- **Alternative solutions that aim to preserve a range of values:**
 - Protect – Accommodate – Retreat - Avoid
- **Evaluation of proposed designs against objective criteria:**
 - Green Shores for Homes
 - Green Shores for Shoreline Development
 - Local Government Working Group
- **Opportunities for community engagement support**



Planning Tools – Green Shores

Shoreline Management Options for Adaptation (from Green Shores)

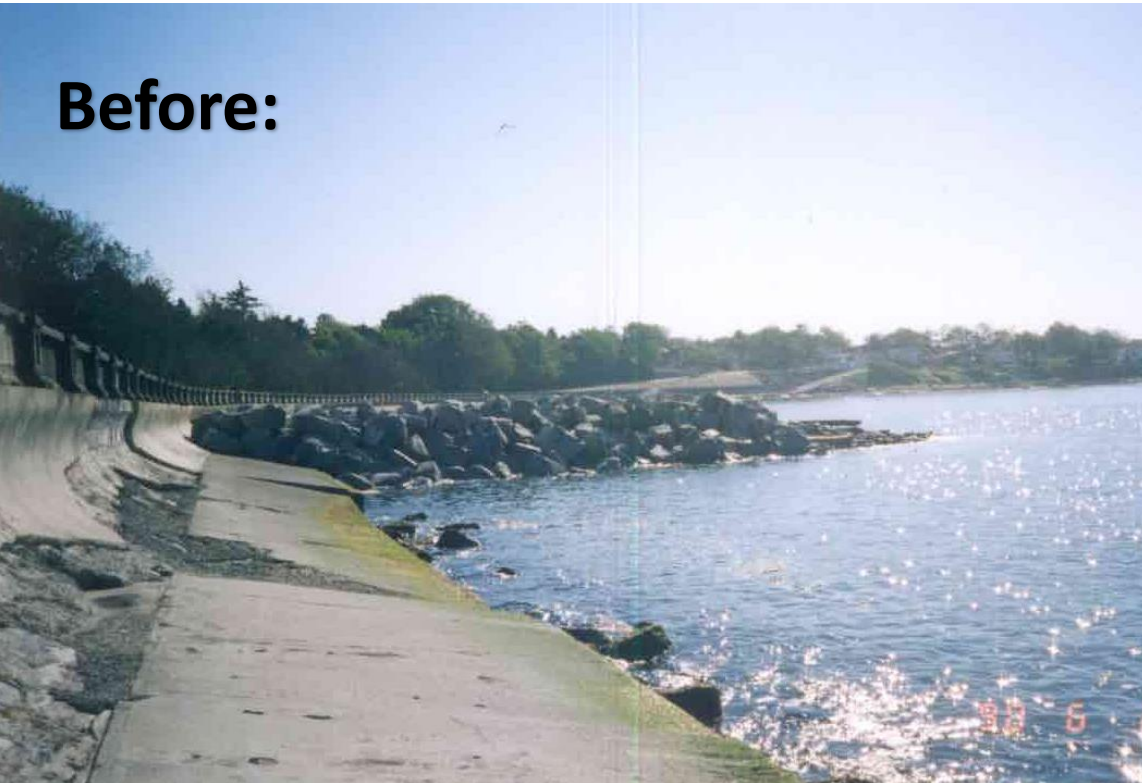
<p><u>Protect</u></p> <ul style="list-style-type: none"> • Raise existing seawalls • Build new seawalls • Build marshes (soft-shore) • Build beaches (nourishment) 	<p><u>Accommodate</u></p> <ul style="list-style-type: none"> • Floodproof existing structures (Wet or dry floodproofing) • Elevate new structures • Use Adaptive-design in low areas
<p><u>Avoid</u></p> <p>Generally, not an option</p>	<p><u>Retreat</u></p> <ul style="list-style-type: none"> • Setback new structures • Change or trade land use • Re-purpose lowest land areas (Generally, not popular)

Planning Tools – Green Shores

Protect:

Ross Bay Beach Nourishment Project Example

Before:



After:



Green Shores - Approaches

Protect:

Lagoon Backshore... Protection & Restoration Opportunities

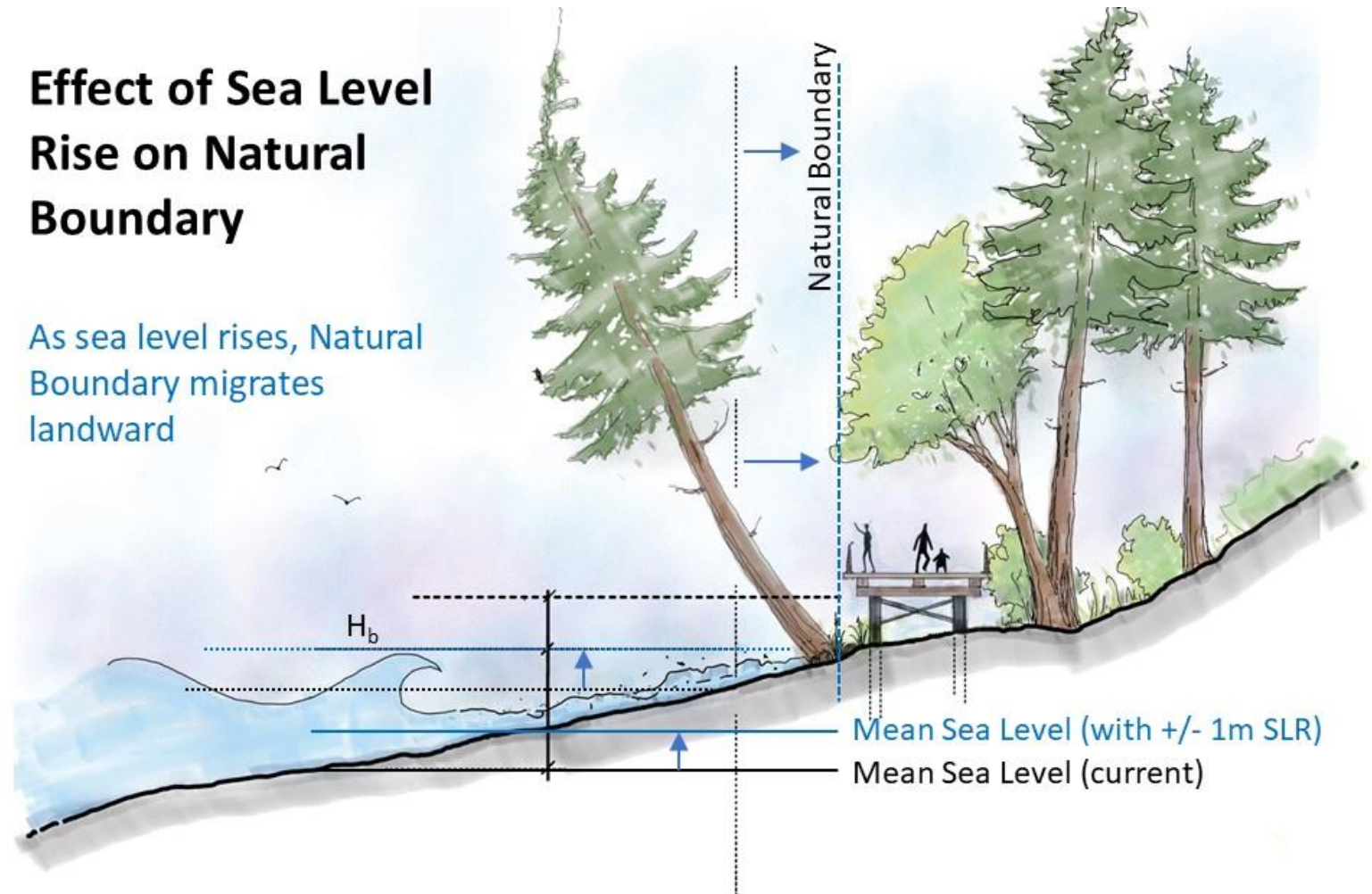


Green Shores - Approaches

Accommodate + Retreat:

Effect of Sea Level Rise on Natural Boundary

As sea level rises, Natural Boundary migrates landward

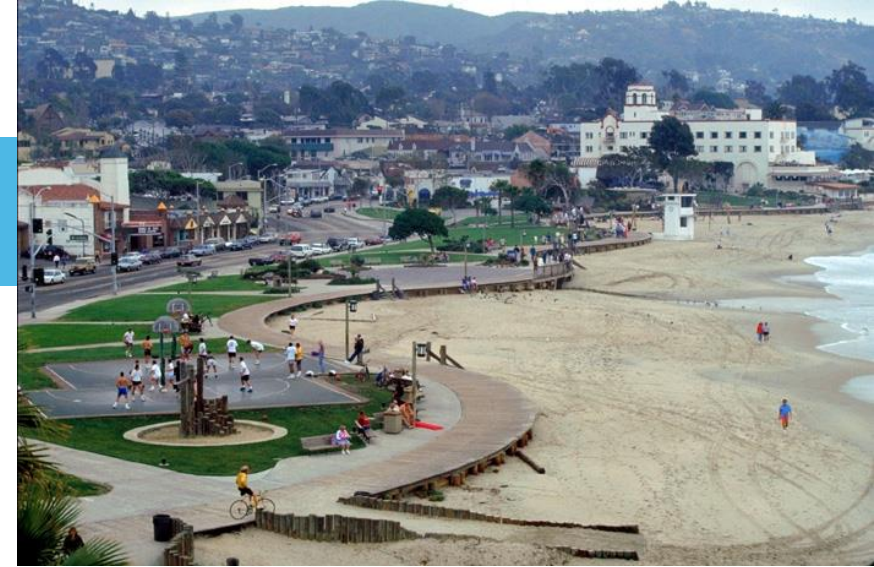


Planning Tools – Power of 10

- **The Power of 10** (Project for Public Spaces)
 - “A park is good. A park with a fountain, playground, and popcorn vendor is better. A library across the street is even better. If there’s a sidewalk café nearby, a bus stop, a bike trail, and an ice cream parlor, then you have what most people would consider a great place.

What if a neighborhood had 10 places that were that good?
The area would then achieve a critical mass...”

(from pps.org)



Main Beach Park, Laguna Beach, California



Helsinki, Finland

Planning Tools – Waterfront Project Precedents

White Rock Waterfront Enhancement Strategy:

- Community planning process started in 2018 (to present)
- Key considerations – business district improvements; parking; public amenities.
- Implication for Colwood WIP:
 - Visual Concepts.
 - Inspirational (Big).
 - Creative Ideas.



Planning Tools – Waterfront Project Precedents

City of North Vancouver - North Shore Spirit Trail (+6km M.U.T.):

- One Component of a larger Strategy, converting an industrial waterfront to Various urban uses with major Public Amenities (Shipyard Commons, Burrard Pier, Lonsdale Quay, etc).
- Key consideration – multi-modal connectivity; neighbourhood connectivity.
- Implication for Colwood WIP:
 - Physical Links into Community.
 - Power of 10.
 - Community Transformation.



Planning Tools – Waterfront Project Precedents

City of Campbell River – Waterfront Task Force:

- Initiative to create a vision for a 3.5 acre publicly owned waterfront site.
- Key considerations – Partnerships; Cultural & Social Benefits.
- Implication for Colwood WIP:
 - Maintenance of Public Access.
 - First Nation's Engagement & Partnership.
 - Interpretation.



Colwood WIP: Next Steps

- **Next Steps:**



Colwood WIP: Next Steps

Proposed Schedule:

- Submission of Needs Assessment & Multi-Disciplinary Shoreline Analysis Summary Reports – **Complete.**
- Public, Council & First Nation's Engagement – **Underway.**
- Begin Conceptual Design Process – **May/June.**
- Project Completion – **September.**



Questions / Discussion

