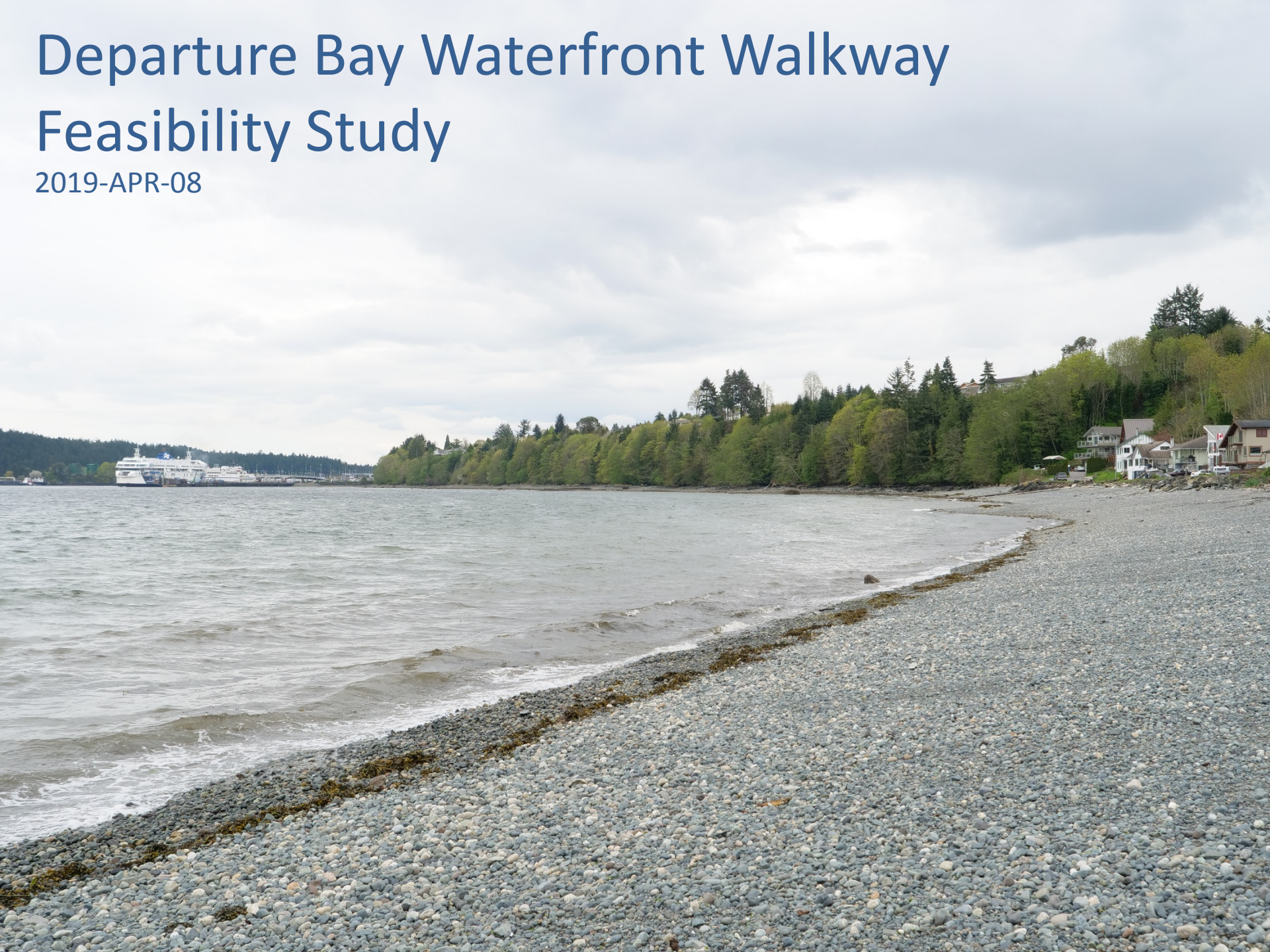
Departure Bay Waterfront Walkway Feasibility Study

2019-APR-08



Agenda

- Background
- Northfield Creek Section
- Value Engineering Findings
- Alternative Design Concepts
- Process

The vision is to create a

"Continuous Walkway from Departure Bay to the Estuary"

Departure Bay

NEWCASTLE ISLAND

Newcastle Channel

River

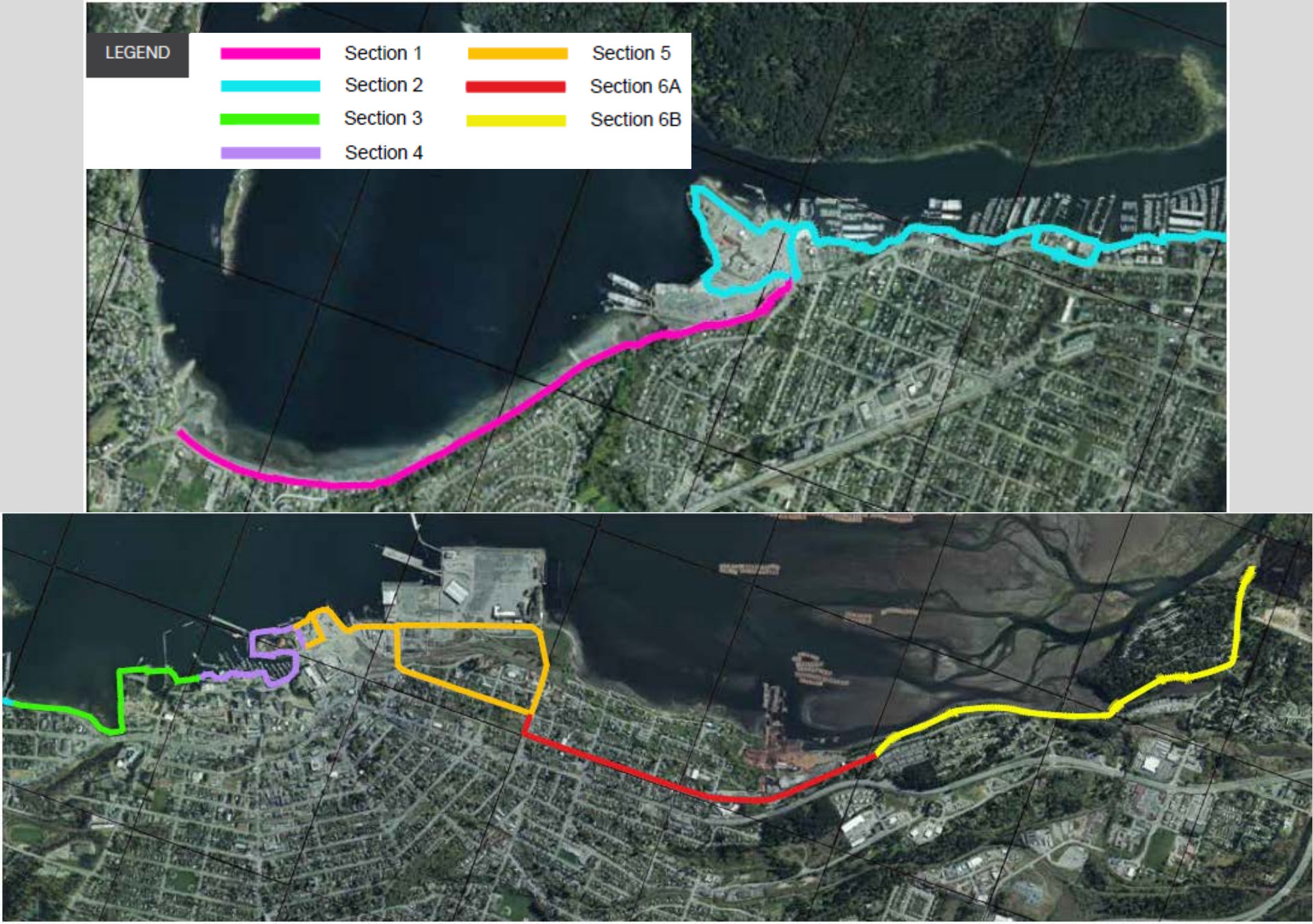
Downtown

SFN

Estuary

Background

- The waterfront walkway is one of the City's key recreational assets for both local residents and visitors.
- Council identified a vision for a 'continuous, uninterrupted and accessible trail from Departure Bay to the Nanaimo River Estuary'; a total distance of 13km.
- To date, 4.5km of the planned 13km has been built to varying standards and widths.
- The Waterfront Walkway Implementation Plan was endorsed by Council in December 2017.
- The plan was completed with significant input from the community and revealed a strong public support for the development of the waterfront walkway.


LEGEND
Section 1
Section 2
Section 3
Section 4
Section 5
Section 6A
Section 6B

Progress Update

- Living Forest – 500m+ upgraded by BC Hydro to an interim standard. Still need to secure right-of-way for public use.
- South Downtown Waterfront – 1,000m (to be complete Summer 2019)
- Nautical's (Newcastle Channel) – 150m (to be complete Summer 2019)
- Shipyard Detour (Newcastle Channel) – 200m (summer 2020)
- Nanaimo Yacht Club Upgrade (Newcastle Channel) – 150m (summer 2020)

SECTION 1

Departure Bay BC Ferries Terminal to Cilaire

2019 Elevated Walkway Project

7.2m Wide Elevated Walkway Concept

Archaeological

Archaeologist has completed an assessment for project area with First Nations.

Low potential for archaeological impact because project is located within foreshore.

During construction, project will be monitored by an archaeologist to minimize any impacts.

Geotechnical

Slope reviewed, walkway has been placed away from the bluff in case of slope failure

Borehole drilling and soil testing has been completed to aid in foundation design.

Potential liquefiable natural soils in foreshore.

Various depths to bedrock or dense soils suitable to support piles.

Environmental

Project reduces impact on foreshore through use of piles rather than fill.

An Aquatic Effects and Serious Harm assessment is in progress for project area to support approval applications including,

- A background review of environmental features (fish, wildlife and habitats),
- An assessment of fish and wildlife habitat,
- An outline of project features that may affect the environment,
- Specific mitigation measures to minimize or eliminate potential environmental effects, and
- An assessment of residual serious harm (Fisheries Act).

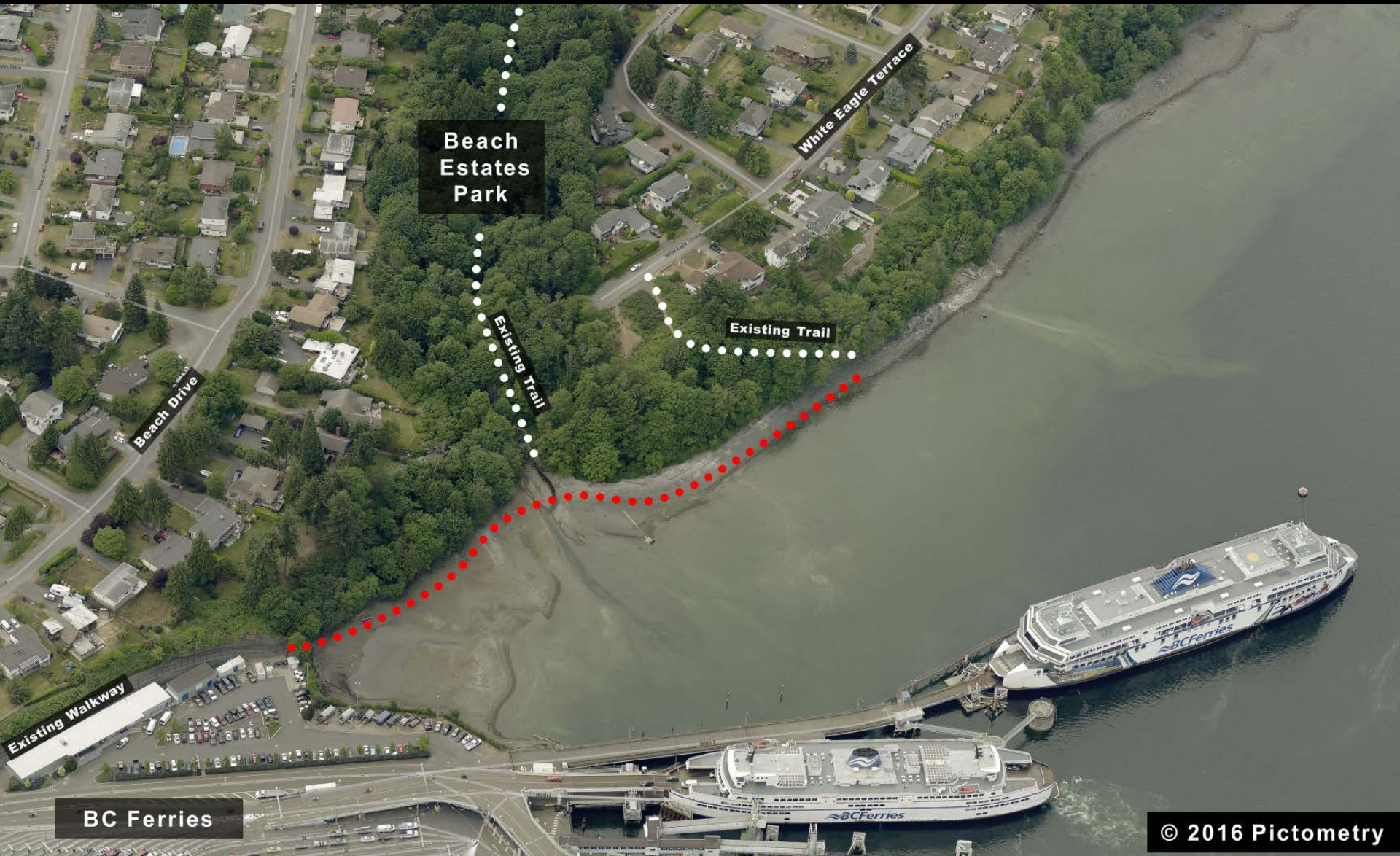
CITY OF NANAIMO
THE HARBOUR CITY

Learn more at:
www.nanaimo.ca/goto/WaterfrontWalkway

Nanaimo Waterfront Walkway
Priority Project – Northfield Creek

Length = 350m

CITY OF NANAIMO
THE HARBOUR CITY

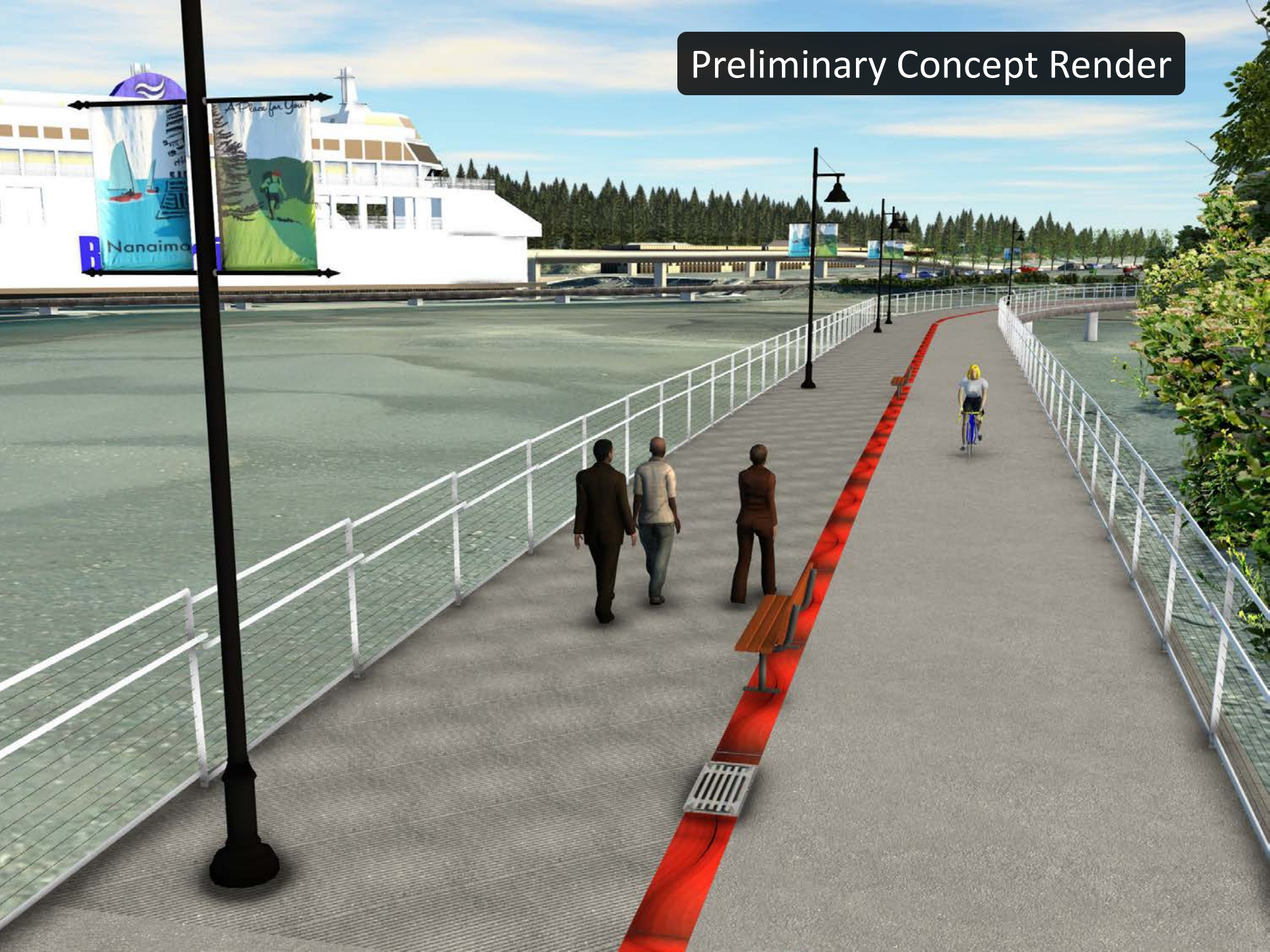


Northfield Creek Section - Proposed Design

The Northfield Creek section of the walkway was set up to include the following design elements:

- 350m of elevated concrete walkway;
- steel pile foundations to minimize disturbance to the marine environment, shoreline vegetation, and steep slopes;
- a width of 7.2m wide to allow safe use by pedestrians and cyclists of all ages and abilities;
- appropriate safety features such as LED lighting and cycling-height railings;
- amenities such as benches and waste receptacles and a viewing platform;
- connections to Beach Estate Park and White Eagle Terrace; and
- safety improvements to the existing White Eagle Terrace Trail.


Preliminary Concept Render


Preliminary Concept Render

Preliminary Concept Render

Preliminary Concept Render

Value Engineering Consultants – Key Findings

To better understand costs, risks and feasibility of the project, City Staff undertook a value engineering study of the functional design. A team of value engineering consultants was engaged in the fall of 2018. The key findings included:

- **Cost Savings** – ideas were generated from the elevated walkway that could reduce project costs by up to $2m.

- **Constructability** – the project as envisioned is very difficult to build due to the sensitive nature of the foreshore and the lack of access points. Construction access risks could subject the project to additional costs of at least $4.1m.

- **Rise of Further Price Escalation** – a key component of the project is the use of steel piles. The cost of steel has risen sharply due to tariffs introduced by Canada and the United States. It is difficult to predict the cost of steel in six months and this poses a significant financial risk.

Alternative Design Concepts

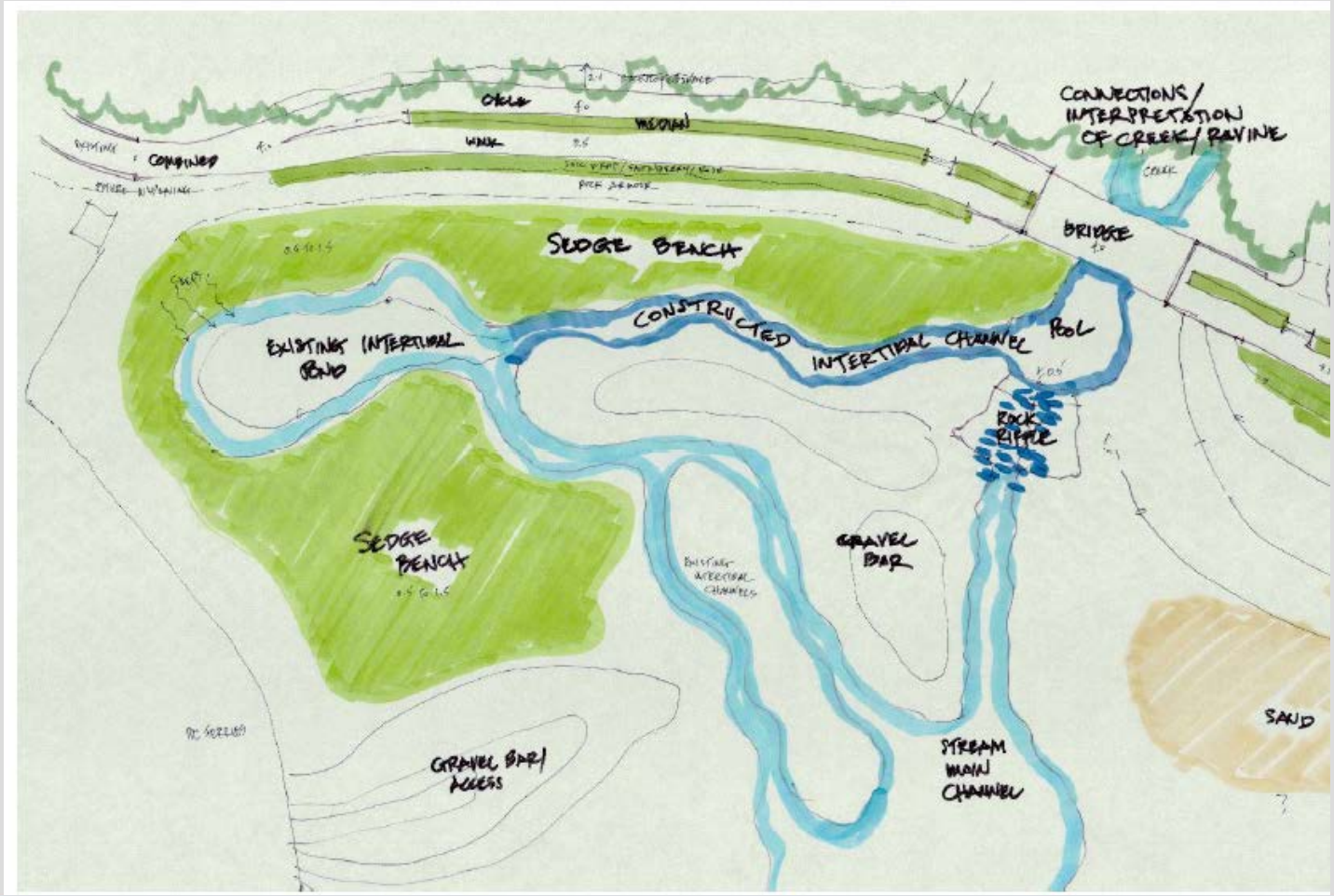
- Alternative walkway design concepts and order-of-magnitude cost estimates were presented including:
  - An on-beach walkway along the existing toe of the slope ($4.8M)
  - An on-beach green shores walkway with headland pocket beach ($5.4M)
  - A shoreline boardwalk structure along the existing toe of slope ($6.3M)
- Staff believe it would be prudent to explore the Northfield Creek walkway alternatives presented in the Value Engineering study and investigate the feasibility of extending these alternative designs beyond White Eagle Terrace to Battersea Road to ensure future phases can also be constructed with the same alternative approach.

Alternative Design Concepts – Toe of Slope Example

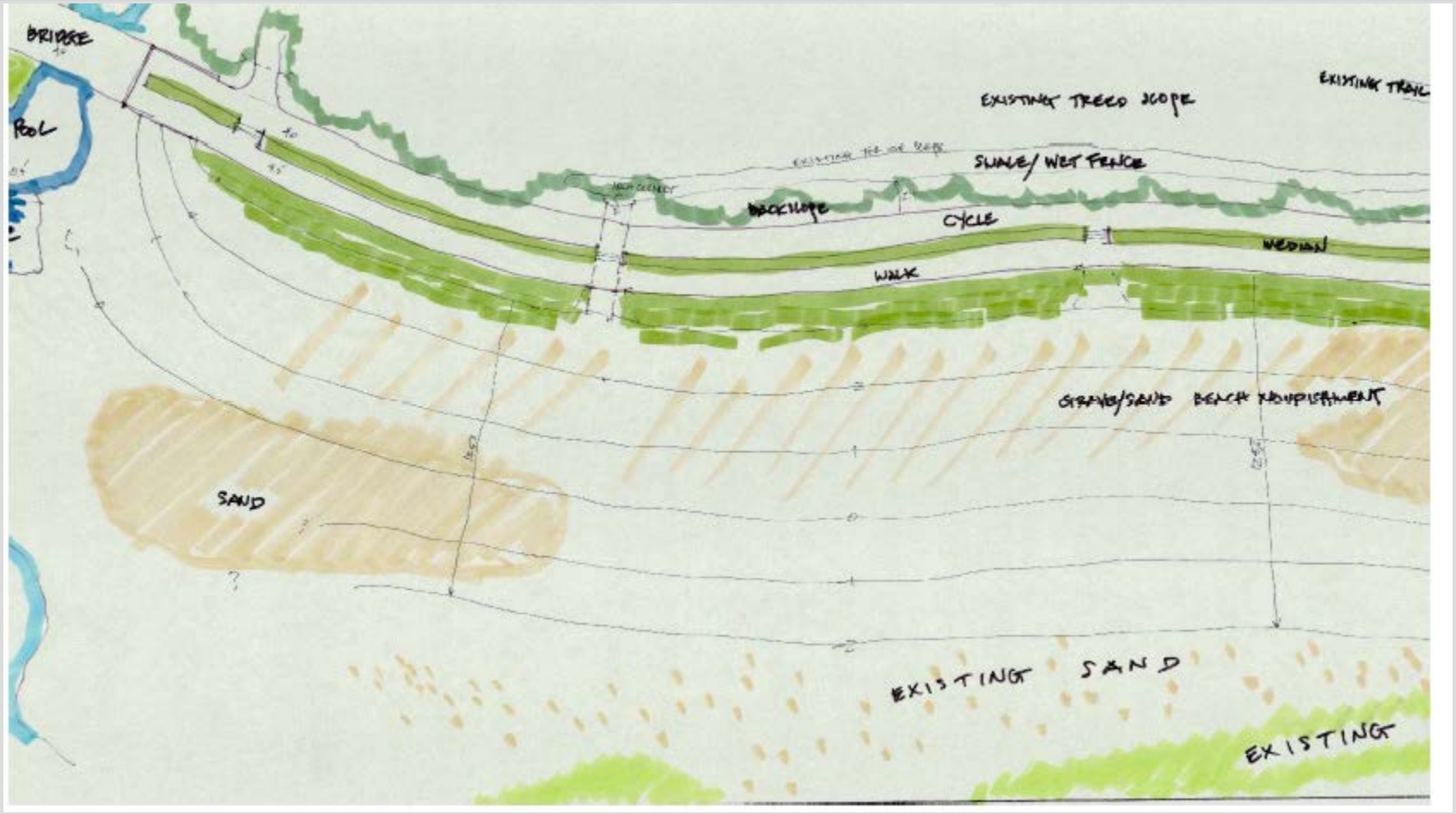
Alternative Design Concepts – Toe of Slope Example

Alternative Design Concepts – Greenshore Example

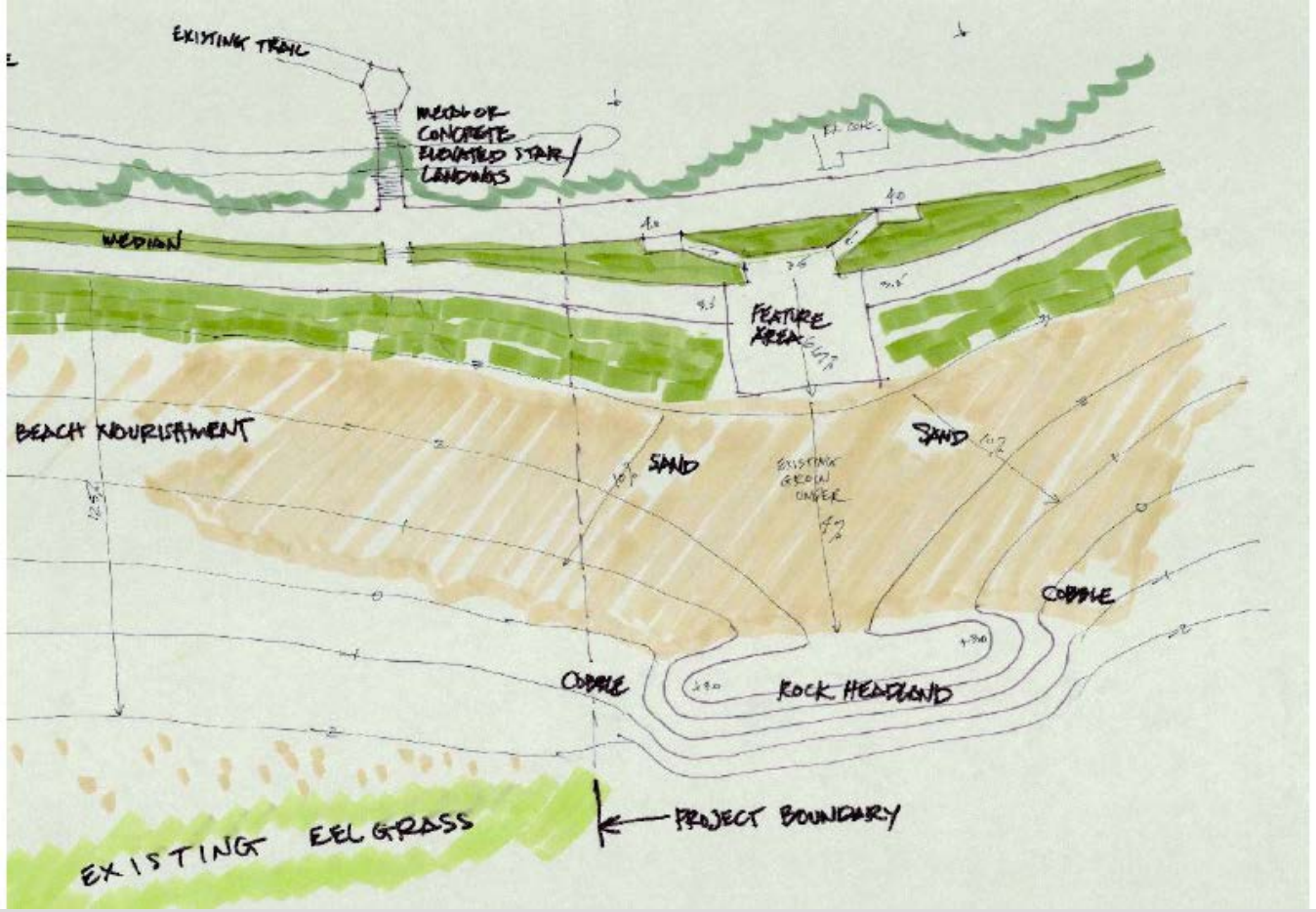
Alternative Design Concepts



Alternative Design Concepts



Alternative Design Concepts



Process

- Issue RFSOQ to select Consultant Team
- Feasibility Study - (Survey Work, Coastal Engineering & Environmental Assessment)
- Functional Design – (Alignment, cost estimate, constructability)
- Assent of the Electors – (Referendum or AAP to seek permission to borrow money for project)
- RFP Detailed Design – All or Part of Departure Bay Walkway
- Construction