

Nanaimo Waterfront Walkway

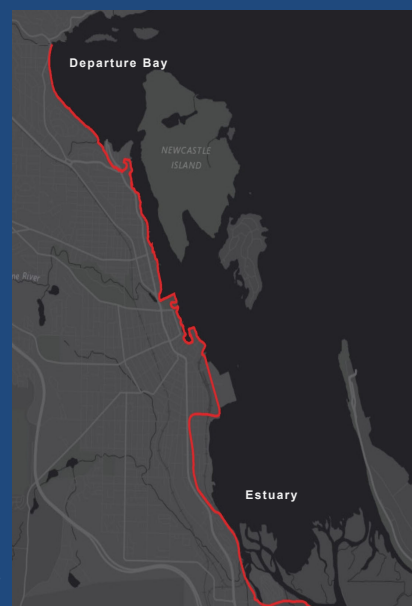
Departure Bay Update

2021-MAY-12



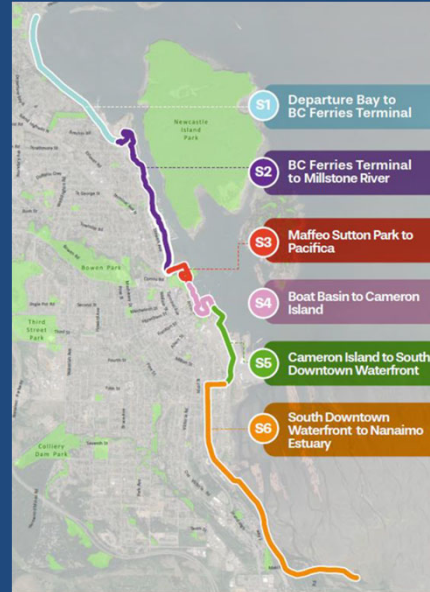
A Little Bit Of History

- The Waterfront Walkway project has been identified as a Council priority initiative in each of the last three Strategic Plans.
- In 2017, the City completed an overall Implementation Plan for the creation of a continuous walkway from Departure Bay to the Nanaimo River Estuary.
- The plan was completed with significant input from the community and revealed strong public support for the development of the waterfront walkway.
- The Waterfront Walkway Implementation Plan endorsed by Council in December 2017.



The Implementation Plan

- Walkway route broken up into segments.
- Provides a framework for each segment which includes:
 - Existing features
 - Recommended alignment and cross-sections
 - Issues and considerations for decision making
 - Amenities to consider



Framework for Departure Bay Segment



Figure 3. Section 1 map

Previous Design Work

- In 2018, a Functional Design was completed for an elevated walkway near the Ferry Terminal.
- Revealed construction costs far exceeded original estimates, in part due to increased costs of structural steel and other specialized construction requirements.
- A Value Engineering Assessment was completed and it was recommended that an on-beach option be considered to reduce projects costs.



Current Design Work

- On 2019-MAR-18 Council allocated \$400,000 from the 2018 general surplus to fund the Waterfront Walkway Feasibility Study and Functional Design
- Staff issued a Request for Statement of Qualifications to identify a multi-disciplinary team to deliver the project
- A team led by McElhanney Consultants was selected to undertake the project
- The project has two distinct phases:
 - Phase 1: Feasibility Study (Complete)
 - Phase 2: Functional Design



Feasibility Study and Functional Design



Phase 1: Feasibility Study

- Data collection and modelling to understand the challenges and design opportunities.
- The study area included both the foreshore and adjacent lands.
- 3 conceptual designs along the foreshore.
- Costs for the 3 conceptual designs are estimated to be between \$18-\$19M.
- Other Critical Design Direction included:
 - Flood Protection and Resiliency
 - Future Upgrade Allowance for Sea Level Rise
 - Structure Design for Minor Slide Events
 - Extreme Storm Event Risks
 - Works on Crown Land to avoid Impact on Private Property

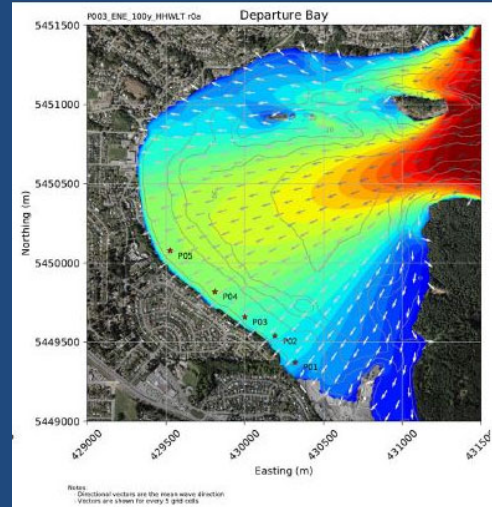
Challenge: Wind, Current and Wave Modelling

Issue:

- The project needs to account for storm surge, storm wave run up, and freeboard. Modelling of Departure Bay shows impacts during various weather events.

Design Opportunity:

- Construct the walkway to account for wave action. Use a gradual slope to reduce wave action. Use headlands/reefs to break wave action.



Challenge: Sea Level Rise

Issue:

- Local sea level rise is predicted to be 0.60m in 50 years. Sea level rise was incorporated into the wave modelling.

Design Opportunity:

- Incorporate sea level rise into project for 50-year horizon. Design with ability to adjust the height when trail needs to be resurfaced.



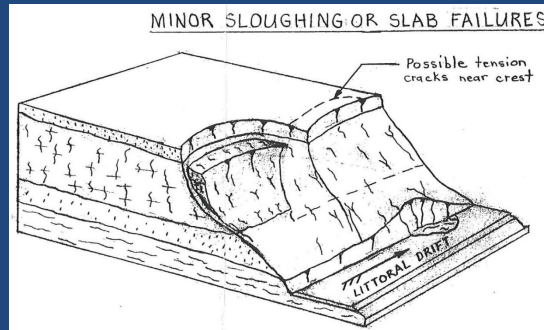
Challenge: Geotechnical Concern with Cilaire Bluff

Issue:

- There is slope instability in certain areas along the Cilaire Bluff that could result in slumping and vegetation falling

Design Opportunity:

- Mitigate the erosion of the toe of slope and adjust the alignment to minimize the risk of debris from slope failure in select locations



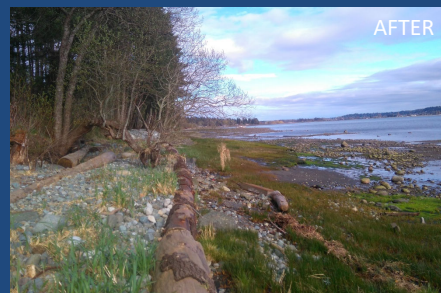
Challenge: Environmental Values of Shoreline

Issue:

- Work on the foreshore will impact existing habitat. Most of foreshore is considered low-value habitat.

Design Opportunity:

- The project must be designed to meet "No-Net-Loss" Principle
- Principle is intended to conserve productivity of aquatic habitats
- The project should be designed to ensure a "Net Gain" of habitat



Challenge: Archaeological

Issue:

- Departure Bay lies within the traditional territory of the Snuneymuxw First Nation
- Registered archaeological site within project area is a shell midden near Northfield Creek and has been disturbed
- Remainder of project area considered to have low archaeological potential

Design Opportunity:

- Ensure early involvement with Snuneymuxw First Nation
- A permit under the Heritage Conservation Act may be required



Challenge: Permitting

Issue:

- Will require permits from DFO and a Lease License or Right-of-Way from the Province (can take upwards of 18 months)
- DFO requires bonding for environmental work
- Approvals required from BC Ferries, Transport Canada, and the Regional District of Nanaimo

Design Opportunity:

- Permitting requires detailed design work to be completed
- Both DFO and the Province will require consultation with local first nations



Challenge: Riparian Rights

Issue:

- 30 private property owners along the Cilaire Bluff have riparian rights
- Construction of walkway will require each homeowner to provide consent for the project

Design Opportunity:

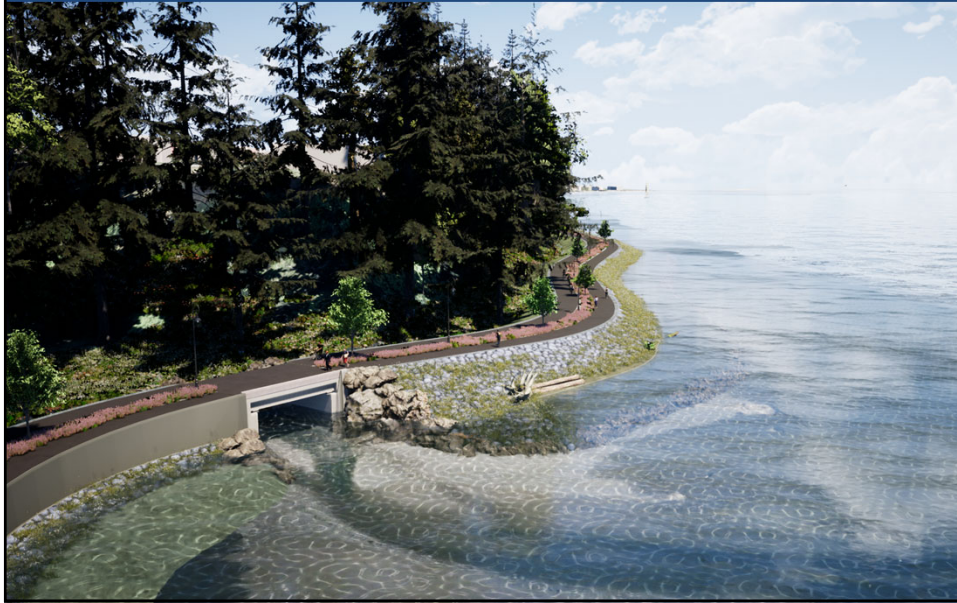
- An acquisition program should be started to acquire the riparian rights in advance of permitting



Conceptual Renderings



Conceptual Renderings



Conceptual Renderings



Conceptual Renderings



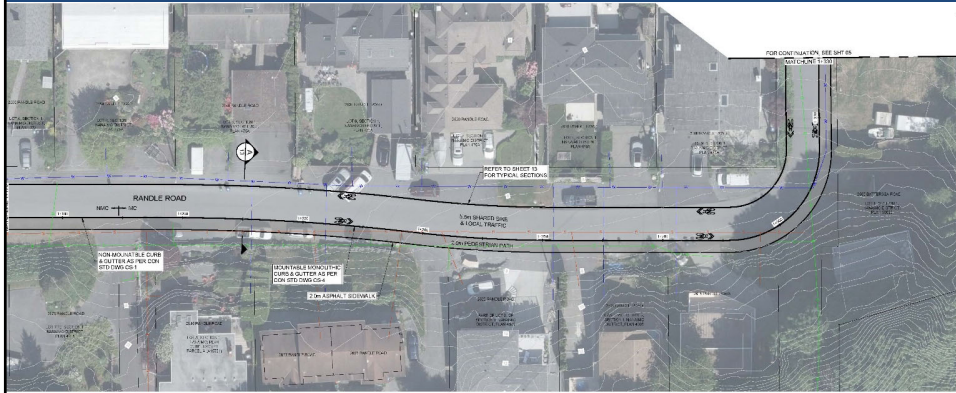
Conceptual Renderings



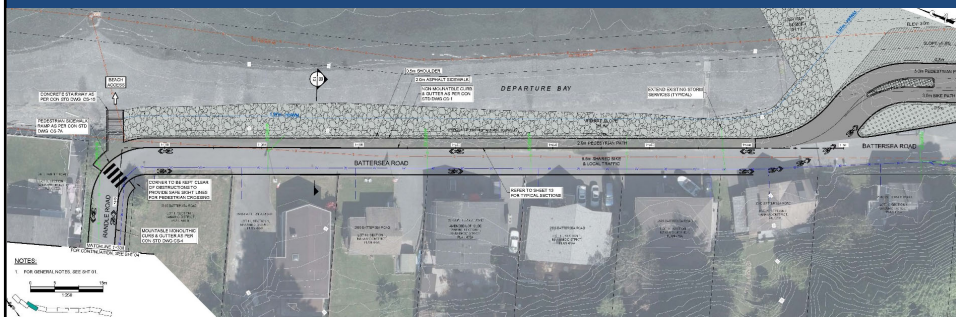
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- An aerial photograph of a coastal town. A large blue and white ferry is docked at a pier in the foreground. The town is built along the coast, with a road and a line of trees separating the buildings from the water. In the background, there are hills and more buildings.

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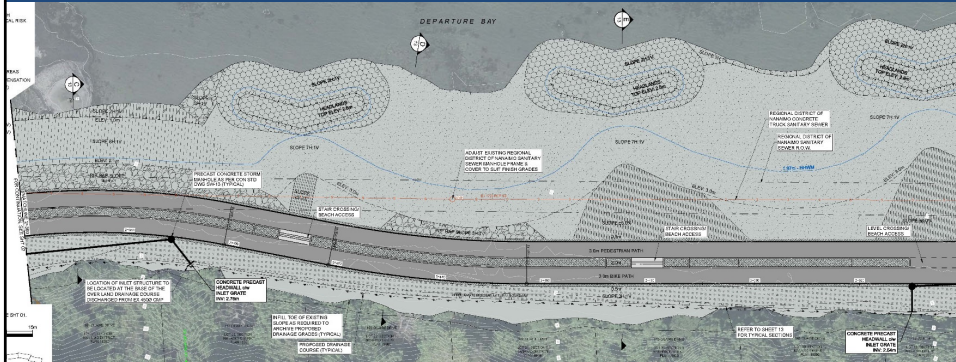
Draft Functional Design



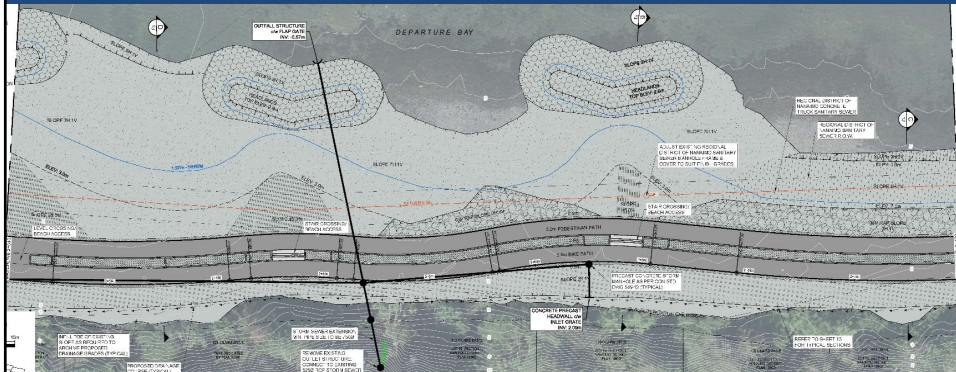
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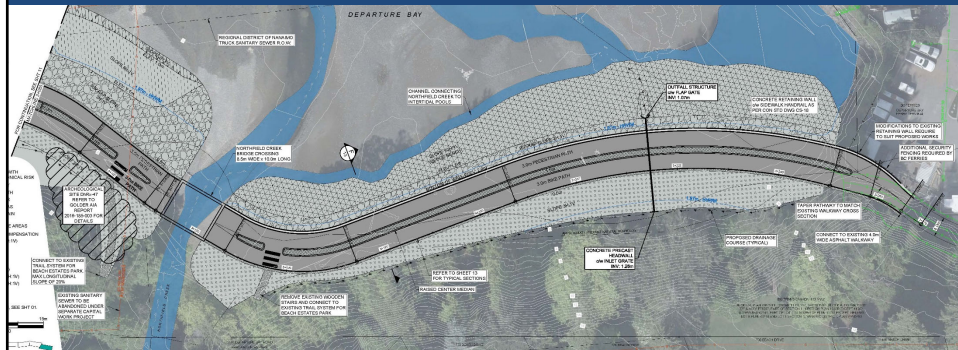
Draft Functional Design



Draft Functional Design



Draft Functional Design



Next Steps

- Present the initial Functional Design findings to Snuneymuxw First Nation
- Additional public consultation using the City's online platform with a survey to capture feedback and gauge support for continuing the project
- Coordinate a meeting with the RDN to obtain approval in principle for the Functional Design and to discuss rights-of-way details
- Coordinate a meeting with BC Ferries to review their letter of support based on the Functional Design and legal agreements that might be needed to secure access in perpetuity
- Coordinate a meeting with the Department of Fisheries and Oceans to present initial Functional Design findings, review foreshore restoration concepts, and define bonding requirements to meet their obligations
- Review internal City funding mechanisms
- Undertake detailed design of the project in stages

Recommendation

- That the Environment Committee endorse the Departure Bay Waterfront Walkway Project as a flagship environmental restoration project.

