Tacoma DeMolay Sandspit Nature Preserve Shoreline Restoration Study

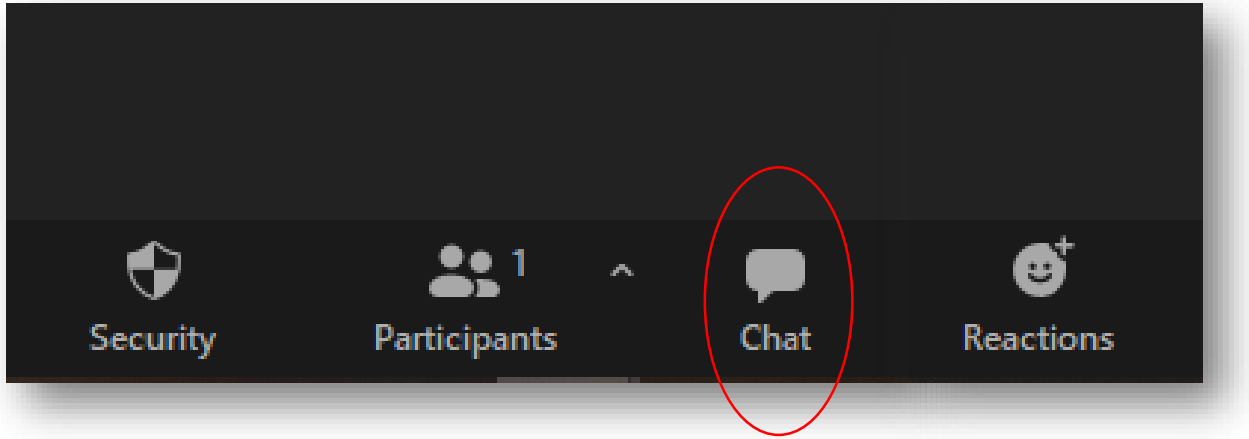
Community Meeting #2 – July 19, 2021

PIERCE CONSERVATION DISTRICT

Over 70 Years of Conservation

How to participate

- Post questions to the Chat feature
  - Questions will be answered between Agenda topics
- Answer Polls as they popup
- Opportunity for additional comments after tonight’s meeting



Agenda

1. Introductions to Speakers
2. Project Origins and Overview
3. Existing Conditions
4. Restoration Concepts
5. Gathering Public Input
6. Next Steps

Speakers

Mary Krauszer

Shorelines Program Manager

Pierce Conservation District

Jessica Coté, PE

Principal Engineer

Blue Coast Engineering

Greg Curtiss, PE

Senior Engineer

Blue Coast Engineering

Gisele Sassen, PLA, AICP

Principal Landscape Architect

Waterfront Environmental

PIERCE CONSERVATION DISTRICT

Over 70 Years of Conservation

Water Quality
Food Access
Urban Agriculture
Farm Planning
Habitat Improvement

Property purchased by PenMet Parks in 2011

"…to provide public shoreline access, habitat preservation, passive recreation" WWRP 2011


Disturbing habitat
Interrupting shoreline processes and access

Impacting access

May 2020


Jan. 2021

OPPORTUNITY: Restore natural shoreline to benefit habitat and human use.

Project Players

PIERCE CONSERVATION DISTRICT
Over 70 Years of Conservation

Project Sponsor

BLUE COAST ENGINEERING

Phase 1 Consultant

Letters of Support

PenMet Parks
Gig Harbor, Washington

Property Owner

HARBOR WILDWATCH

KGI WATERSHED COUNCIL

West Sound Partners for Ecosystem Recovery

Funders

Phase 1: Feasibility Study & Alternatives Analysis
Funding Secured (2021)

PIERCE COUNTY FLOOD CONTROL ZONE DISTRICT

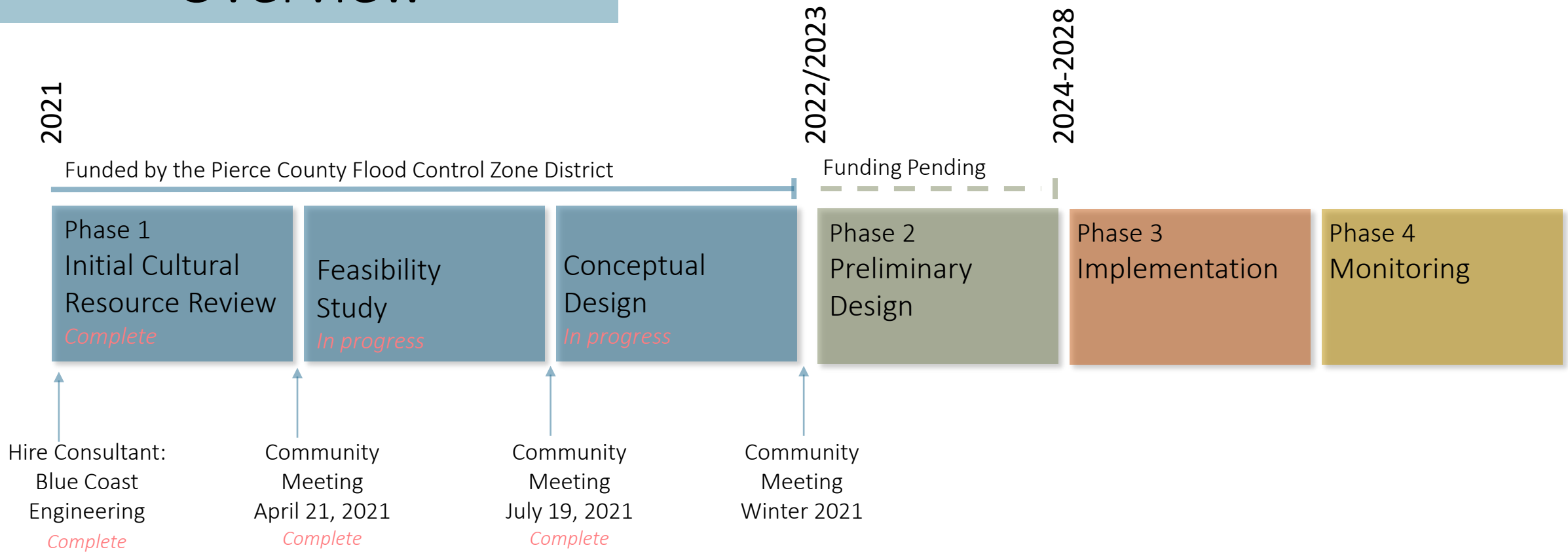
Phase 2: Preliminary Design & Permitting
Funding Pending (2022)

ESTUARY & SALMON RESTORATION PROGRAM

Washington Department of FISH and WILDLIFE

WASHINGTON STATE RECREATION AND CONSERVATION OFFICE
Salmon Recovery Funding Board

Overview



Current Status: *Phase 1 is underway and will produce a conceptual design by winter 2021.*

Phase 2 is approved for funding from WDFW ESRP and contract negotiations are underway.

Next Steps

- Community Meeting #3
  - Winter 2021/Spring 2022
- Watch for project updates:
  - Signup to receive email updates in the Google Form (link in chat)
- Harbor WildWatch beach monitoring program

Questions

Mary Krauszer
Pierce Conservation District
Shorelines Program Manager
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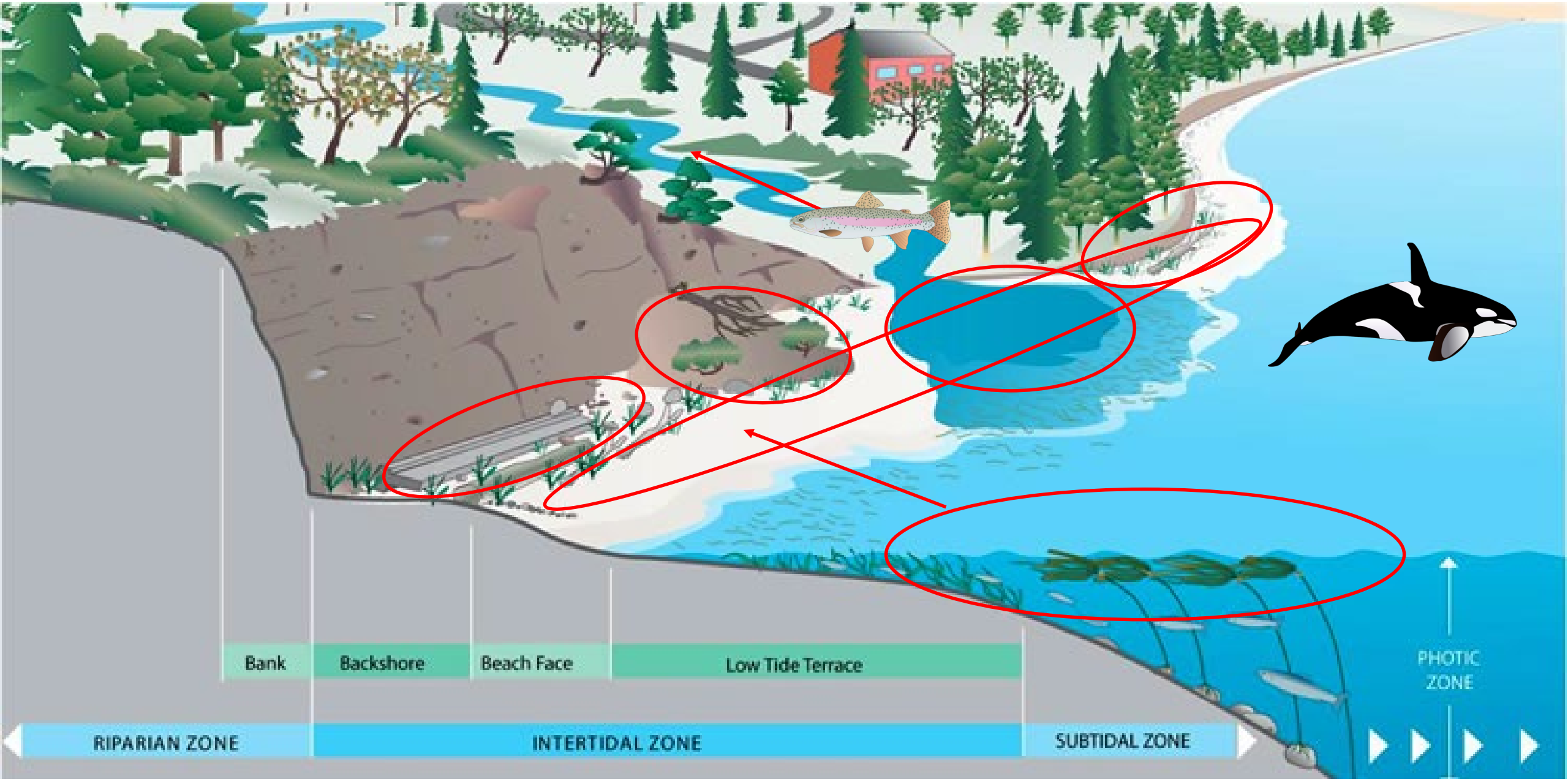
(253) 845-9770 x113

TACOMA DEMOLAY SANDSPIT NATURE PRESERVE – SHORELINE RESTORATION CONCEPTUAL DESIGN OPTIONS

JULY 2021

BLUE COAST ENGINEERING

Coastal Processes



Nearshore Habitat Zones

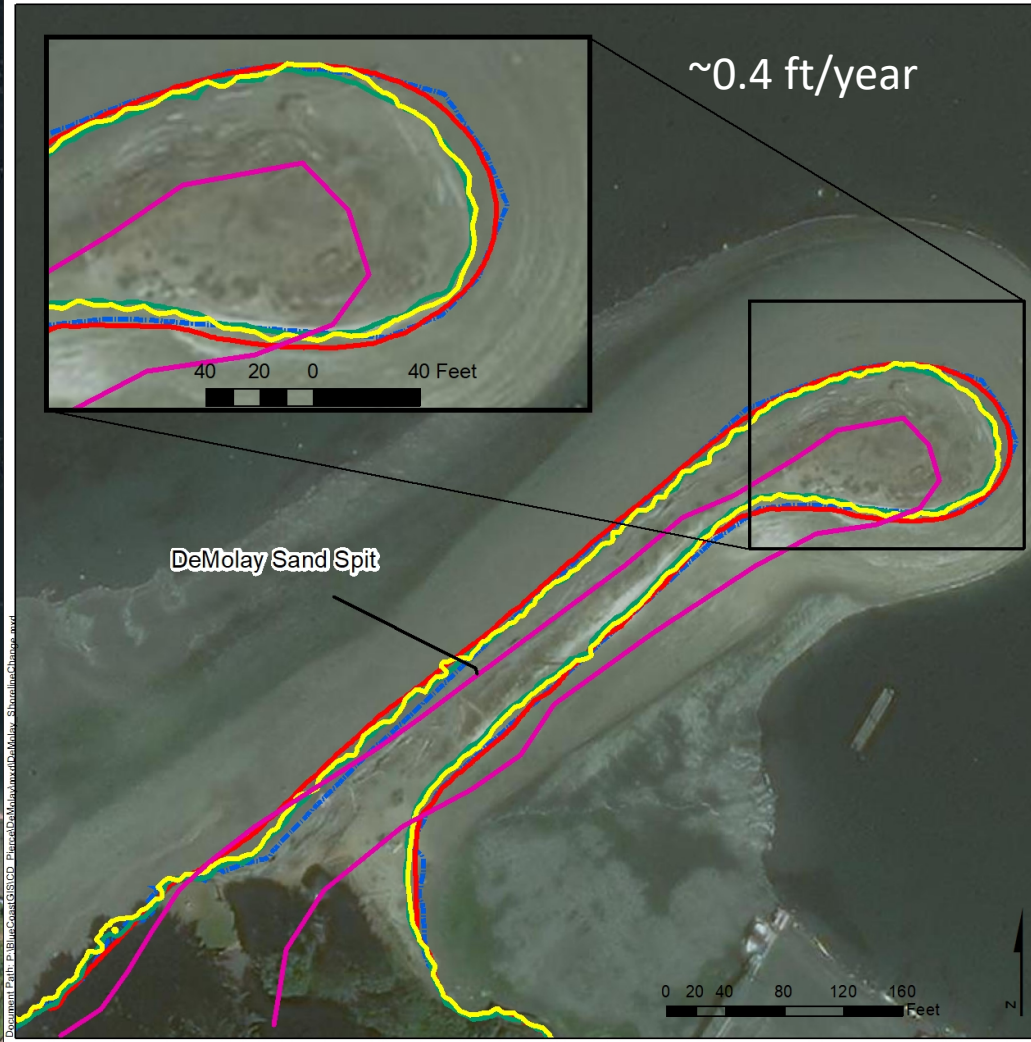
Source: Puget Sound Nearshore Ecosystem Restoration Project

BLUE COAST ENGINEERING

Coastal Processes

- Wind-waves
- Water levels
  - Tides
  - Sea level rise
- Currents
- Geology and geomorphology

Photo: Hugh Shipman



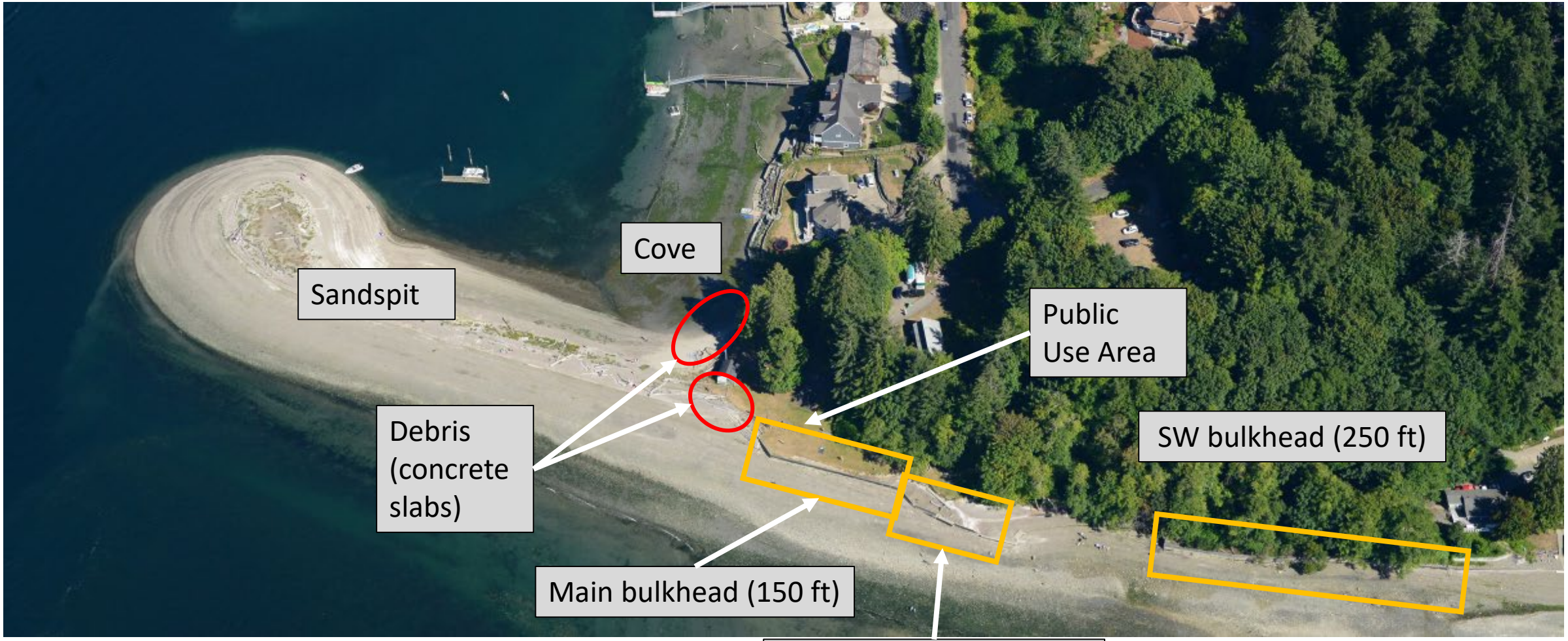
T-sheet_1878_HTL
LIDAR_2002_MHHW
LIDAR_2005_MHHW
LIDAR_2011_MHHW
BCE_Survey_2021_MHHW

Notes:
Coast & Geodetic Survey Topographic Sheet T-167
2002 PSLC LIDAR, 2005 Puget Lowlands LIDAR,
2011 USGS ARRA LIDAR, BCE March 2021 Survey
2020 Bing Aerial Imagery

DeMolay Shoreline Change Analysis

Existing Conditions

Existing Condition



Existing Conditions Map

Restoration Design Concepts

Concept 1/2/3 SW bulkhead

Restoration goals:

- Remove most of bulkhead; leave 45’ in place at SW boundary
- Soften end transition with nourishment and wood
- Restore natural sediment processes that feed the beach and support the sandspit
- Reconnect riparian vegetation

Expected adjustment:

- Trees will fall onto beach over time, adding habitat complexity
- Shoreline will adjust back to align with unarmored shoreline
- Most adjustment will occur in first 1-2 years

Example of natural shoreline (reference site)

Natural Beach

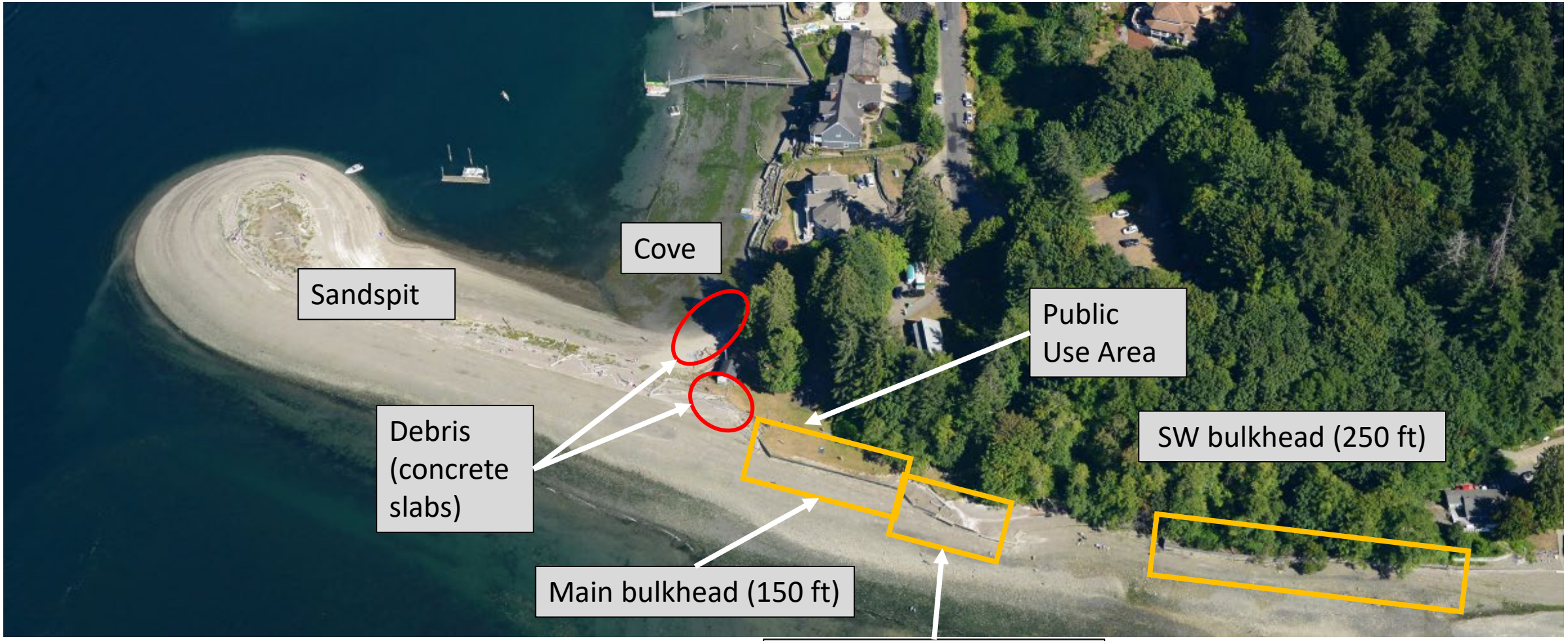
Bulkheaded Beach

Concept 1/2/3 – Spit

Restoration goals:

- Wood and vegetation to help stabilize sediment and improve sea level rise resiliency
- Improve upon diverse vegetation and habitat
- Maintain and improve aesthetics

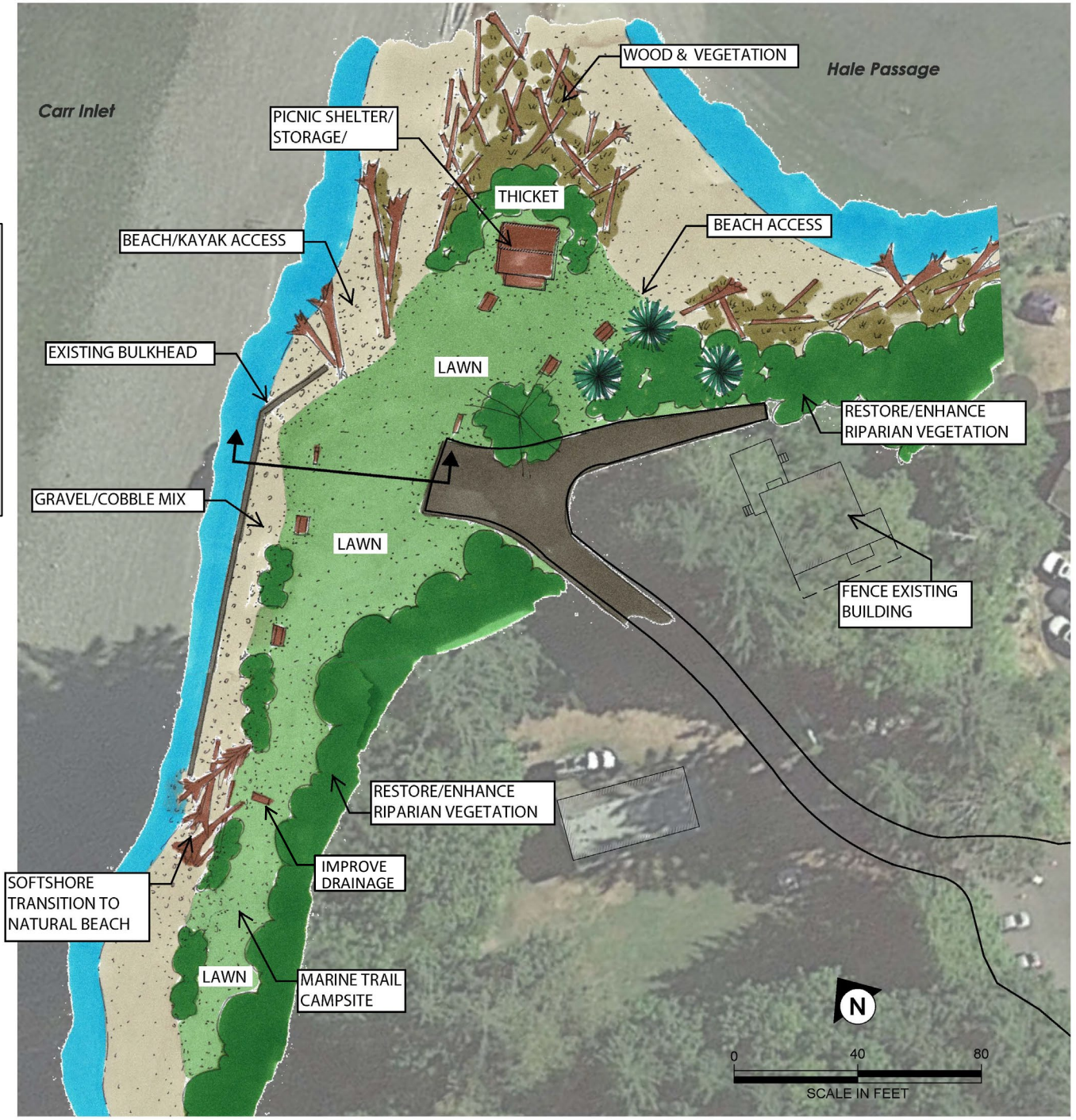
Existing Condition

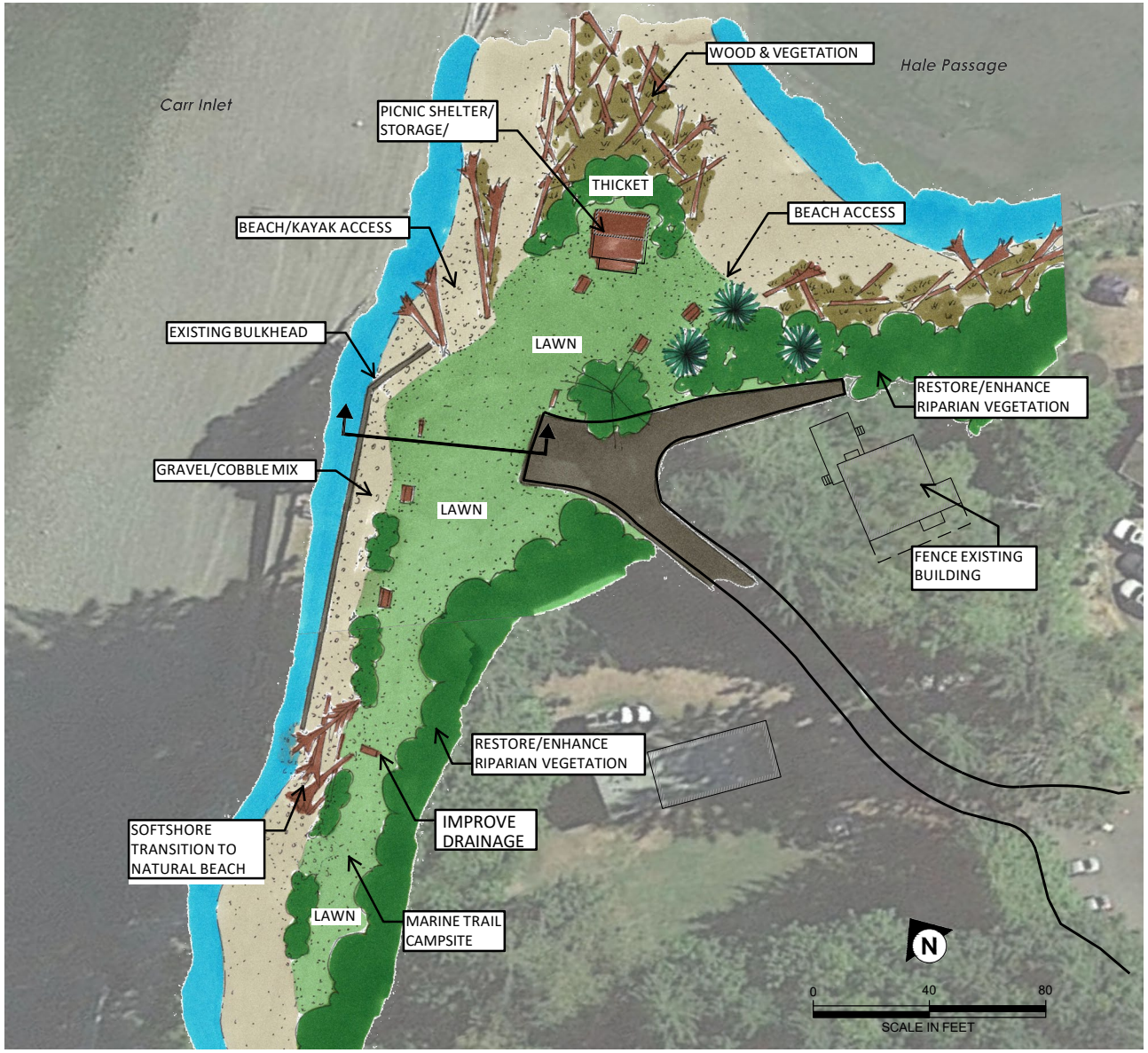


Concept 1

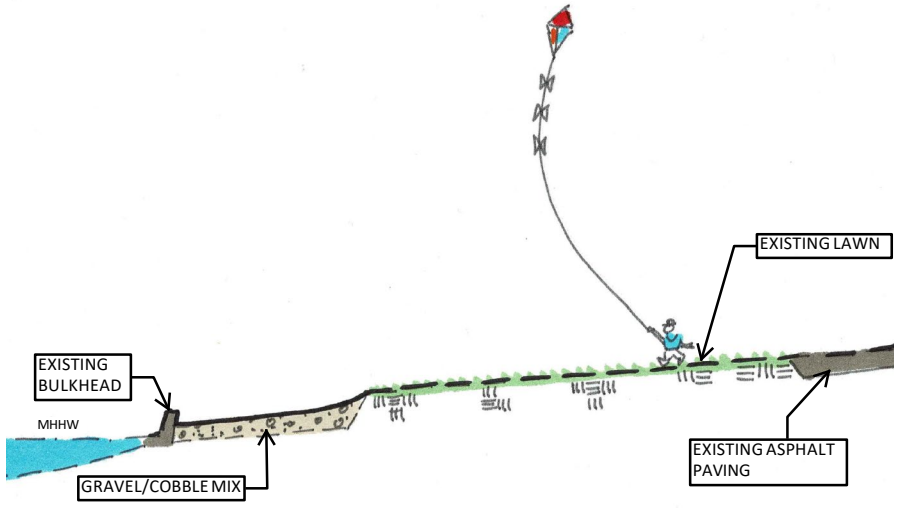
Restoration goals:

- Partial bulkhead removal for limited restoration benefit
- Limited access improvement





EXISTING CONDITIONS AT MAIN BULKHEAD



SECTION - OPTION 1

SCALE: Not to Scale

WATERFRONT ENVIRONMENTAL

BLUE COAST ENGINEERING

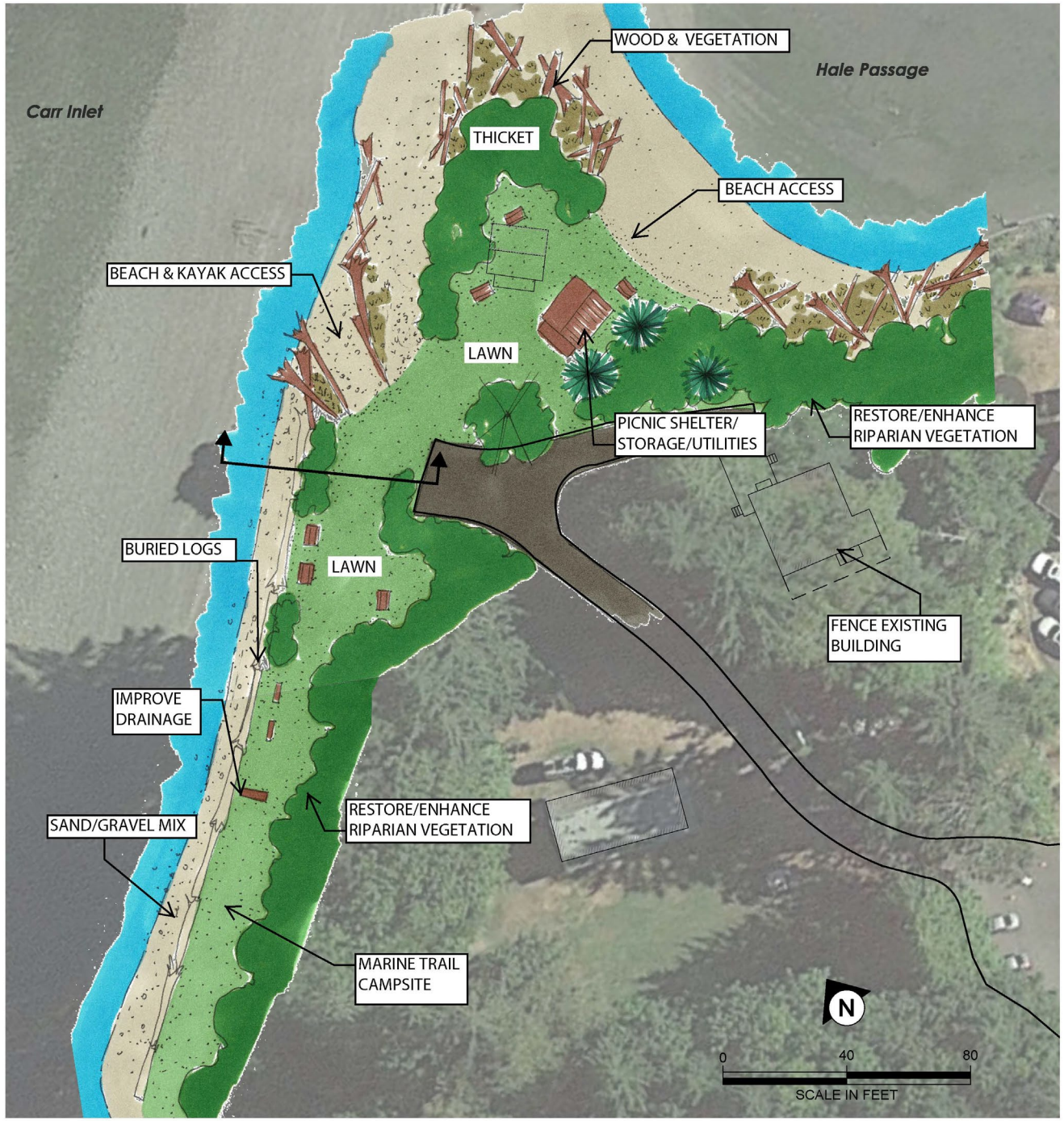
Public Use/Picnic Area Concept 1

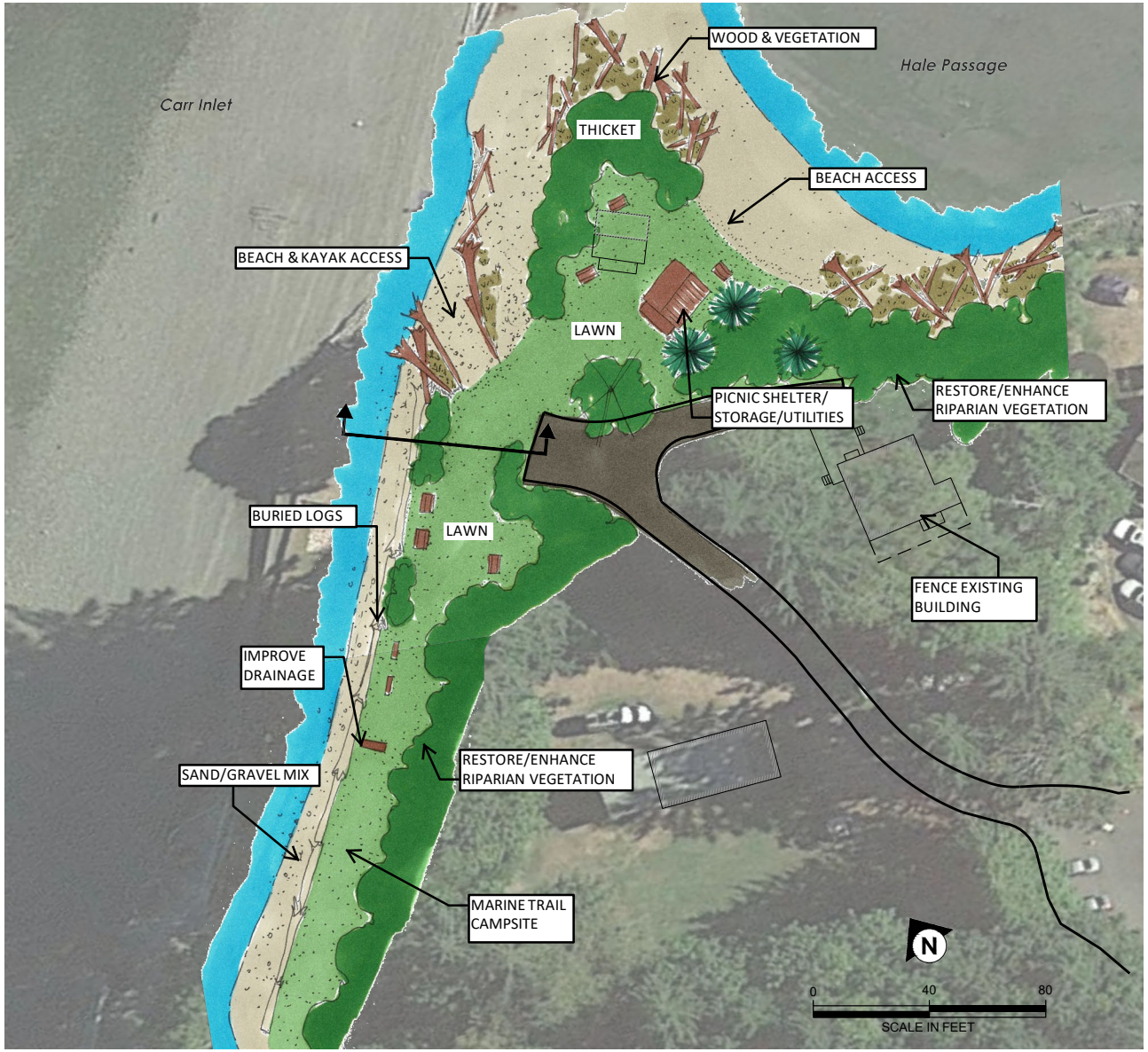
Tacoma DeMolay Sandspit Nature Reserve
Nearshore Restoration

Concept 2

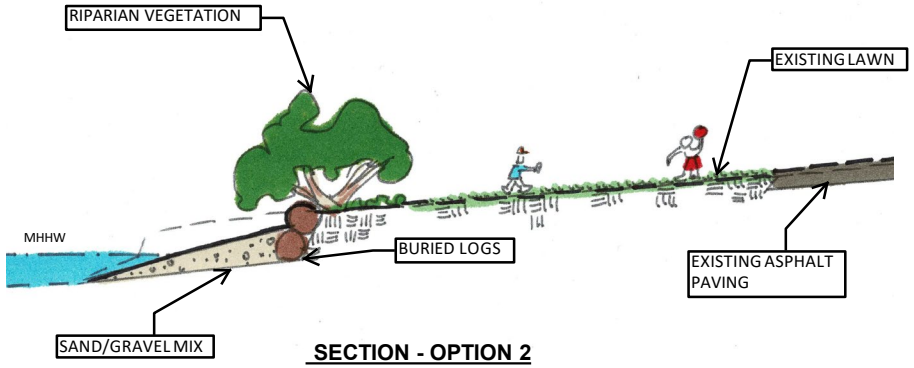
Restoration goals:

- Full bulkhead removal but retain some lawn, limiting restoration benefit
- Limited access improvement





EXISTING CONDITIONS AT MAIN BULKHEAD



SECTION - OPTION 2
SCALE: Not to Scale

WATERFRONT ENVIRONMENTAL

BLUE COAST ENGINEERING

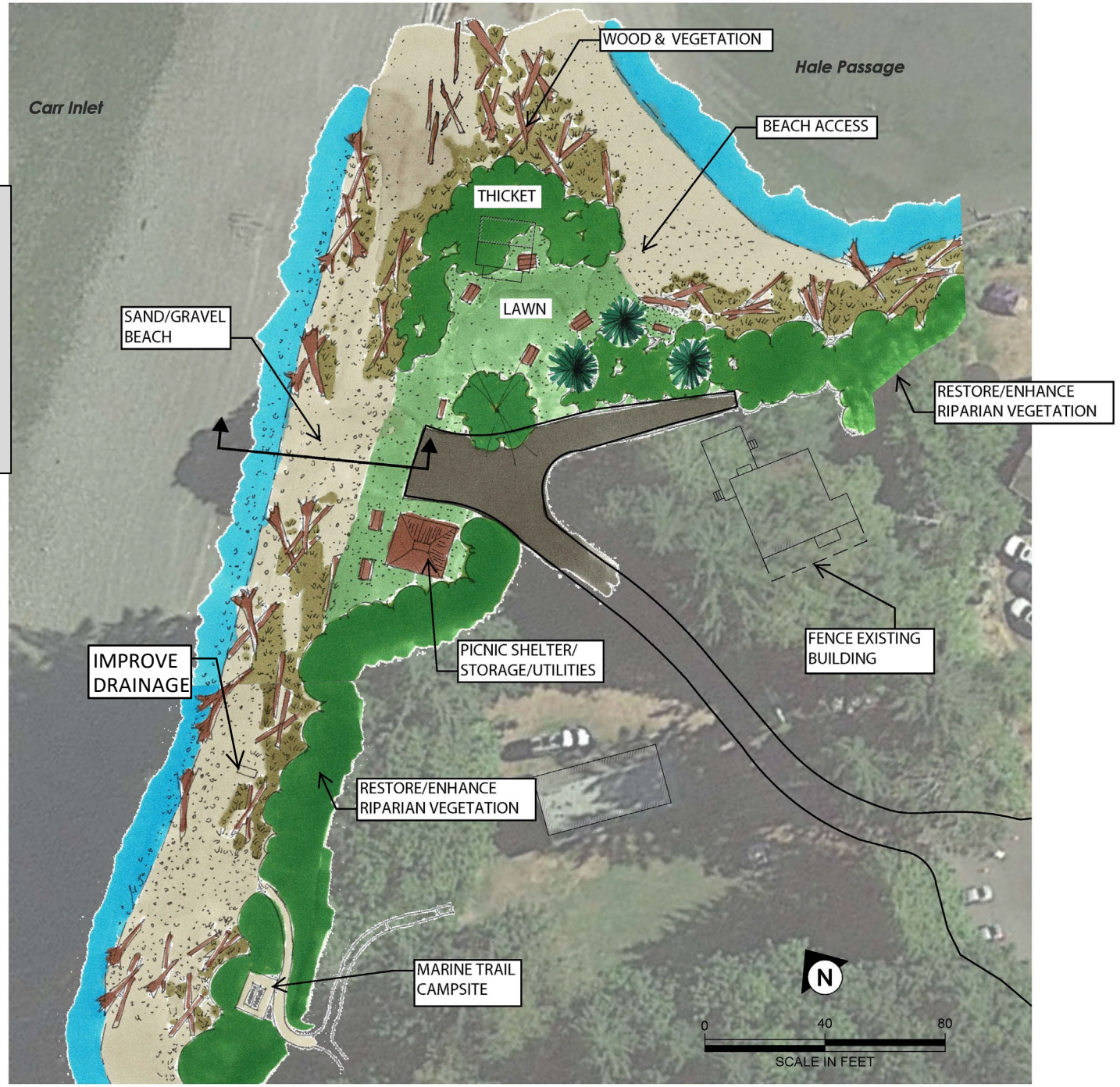
Public Use/Picnic Area
Concept 2

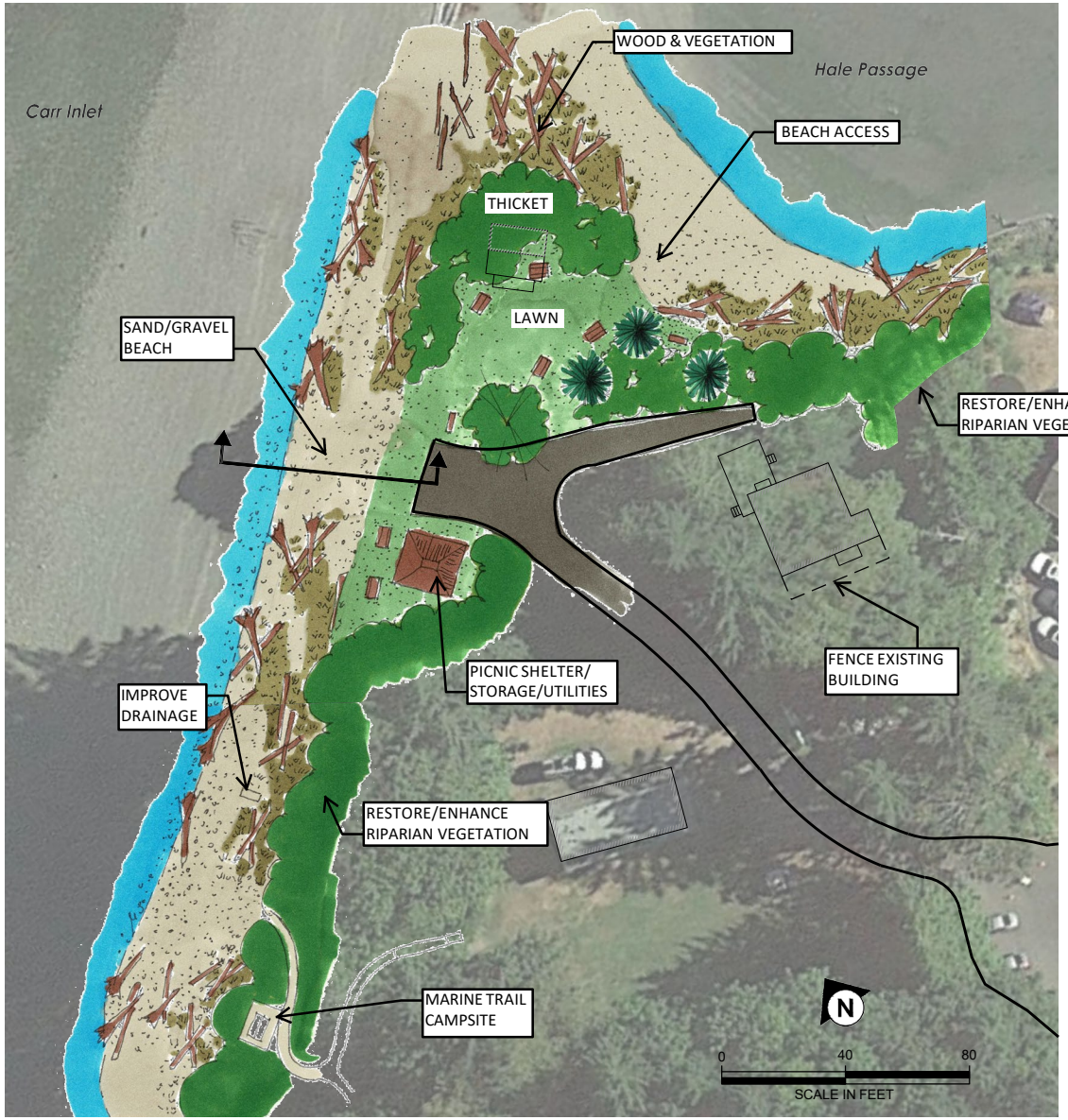
Tacoma DeMolay Sandspit Nature Reserve
Nearshore Restoration

Concept 3

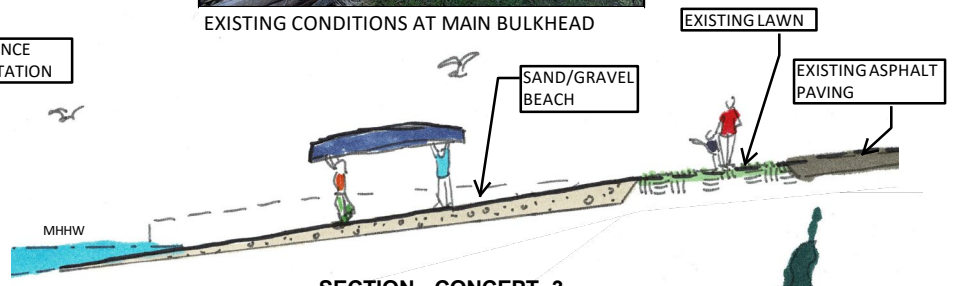
Restoration goals:

- Full bulkhead removal with maximum beach restoration
- Maximum beach access

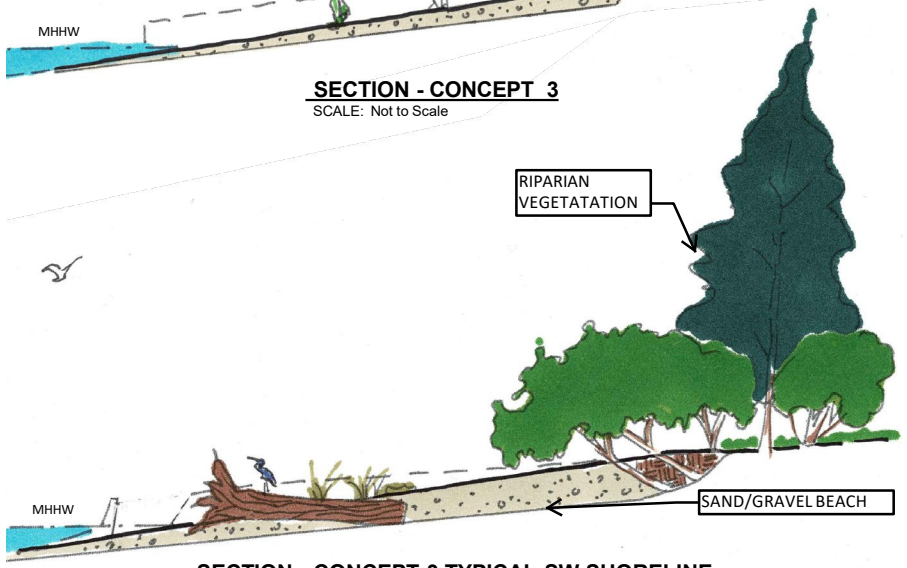




EXISTING CONDITIONS AT MAIN BULKHEAD



SECTION - CONCEPT 3
SCALE: Not to Scale



SECTION - CONCEPT 3 TYPICAL SW SHORELINE
SCALE: Not to Scale

WATERFRONT ENVIRONMENTAL

BLUE COAST ENGINEERING

Public Use/Picnic Area Concept 3

Tacoma DeMolay Sandspit Nature Reserve
Nearshore Restoration

Design options summary

Concept 1
Partial bulkhead removal with very limited restoration and limited access improvement

Pros:
- Added beach access and shoreline improvements

Cons:
- Unstable condition of remaining bulkhead/shoreline
- Grant funding most challenging
- Added engineering/permitting challenges

Concept 2
Full bulkhead removal with limited restoration and limited access improvement

Pros:
- Added beach access and shoreline improvements
- Balances current use with restoration goals

Cons:
- Increased maintenance vs 3
- Added engineering/permitting challenges
- Grant funding more challenging

Concept 3
Full bulkhead removal with maximum beach restoration and maximum access

Pros:
- Most improvement to beach access & experience
- Most ecologic benefit
- Good candidate for grant funding
- Lowest maintenance

Cons:
- Most drastic change for users

Public Input - Polling

Question 1: Which is your preferred restoration option for the recreational area of preserve? (single choice)

- Option 1 – Partial bulkhead removal with very limited restoration and limited access improvement
- Option 2 – Full bulkhead removal with limited restoration and limited access improvement
- Option 3 – Full bulkhead removal with maximum beach restoration and maximum access

Question 2: Which is your least preferred restoration option for the recreational area of preserve? (single choice)

- Option 1 – Partial bulkhead removal with very limited restoration and limited access improvement
- Option 2 – Full bulkhead removal with limited restoration and limited access improvement
- Option 3 – Full bulkhead removal with maximum beach restoration and maximum access

Question 3: What are your favorite element(s) of the restoration concepts? (Multiple choice)

- Removal of failing bulkhead
- Expanded beach in cove
- Maximize natural beach (option 3)
- Improved access to beach (all options)
- Restoration of native vegetation
- Removal of concrete slabs near cove
- Removal of concrete slabs/steps at end of bulkhead
- Moving shelter/house away from spit (option 2 and 3)
- Move camp site upland (option 3)
- Retaining more lawn rather than expanding natural beach (option 1 and 2)
- Restoration of vegetation and wood on sand-spit
- Removal of SW bulkhead
- Other (type in chat)

Question 4: What are your LEAST favorite element(s) of the restoration concepts? (Multiple choice)

- Removal of failing bulkhead
- Expanded beach in cove
- Maximize natural beach (option 3)
- Improved access to beach (all options)
- Restoration of native vegetation
- Removal of concrete slabs near cove
- Removal of concrete slabs/steps at end of bulkhead
- Moving shelter/house away from spit (option 2 and 3)
- Move camp site upland (option 3)
- Retaining more lawn rather than expanding natural beach (option 1 and 2)
- Restoration of vegetation and wood on sand-spit
- Removal of SW bulkhead
- Other (type in chat)

Question 6: Are you in favor of enhancing habitat and building resiliency to sea level rise by adding wood and vegetation on the sand spit?

- Yes
- No
- Unsure/Concerned (type more detail in chat)

Question 5: Have you observed erosion or loss of vegetation and wood on the sand spit over time?

- Yes
- No
- Unsure

Question 6: Do you walk along the beach adjacent to SW bulkhead?

- Yes
- No

Question 7: Are you in favor of the concept to partially remove the SW bulkhead to restore feeder bluff processes and improve sediment supply to sandspit?

- Yes
- No
- Unsure/Concerned (type more detail in chat)