Proposed

Shoreline Improvements

at Boulevard Park

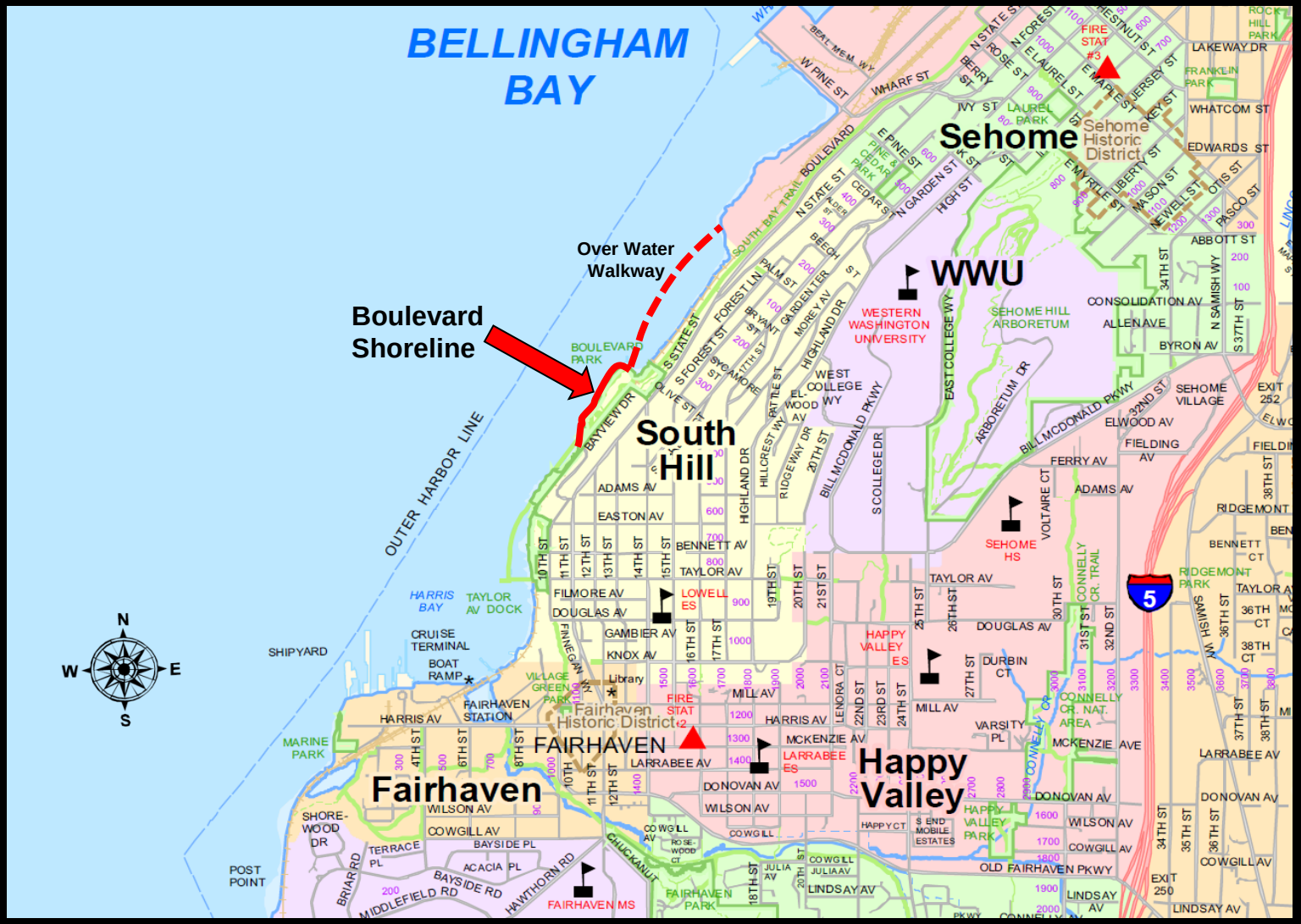
City of Bellingham Parks and Recreation
Design and Development Division

Gina Gobo Austin, P.E.
Project Engineer
Public Meeting
May 9, 2012

Meeting Agenda

- Project Overview
- Site History
- Today's Conditions
- Proposed Design
- Public Process
- Funding & Schedule
- Public Comment

Project Overview



Vicinity Map

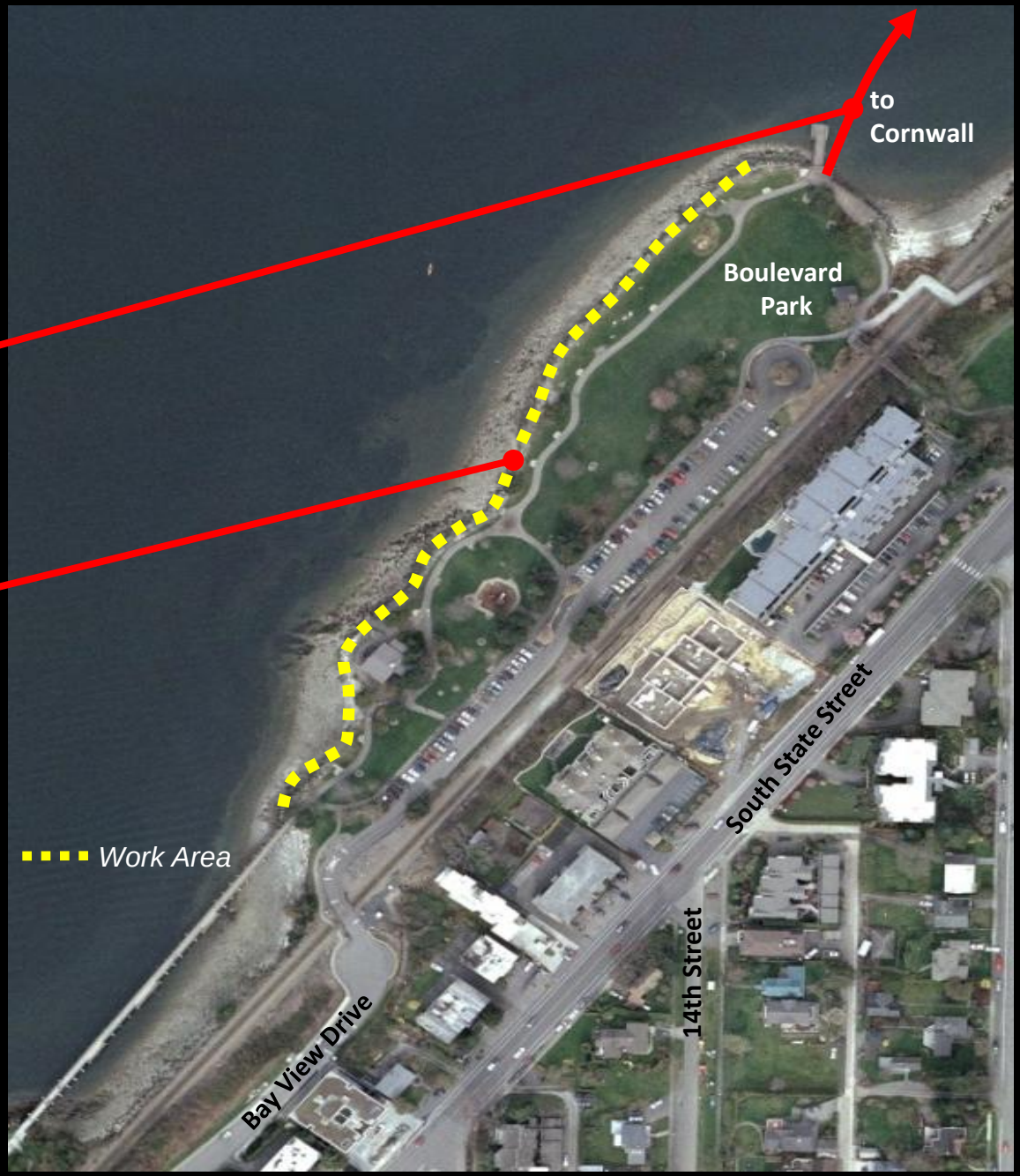
Project Overview

Over Water Walkway

- Separate project
- Currently in permit

Boulevard Park Shoreline

- Reduce shoreline erosion
- Remove shoreline debris
- Complete permit applications now
- Construct in multiple phases



Project Overview

Why Improve the Boulevard Park Shoreline?

- Mitigate shoreline erosion
- Identified in the voter-approved Greenway III Levy
- Improve safety & public access
- Improve shoreline habitat

Fig. F.
Edited shoreline features mapped
by USCGS in 1887, on 2002 orthophoto
- elevation contours & other selected content removed
- some structures sharpened

Site History

Fig. D.

View of Bellingham Bay Mill Co. operation, Fairhaven Herald, 1890

- looking north from near Morrison Point RR cut

Site History

BELLINGHAM BAY COMPANY'S MILL, FAIRHAVEN.

Fig. E.

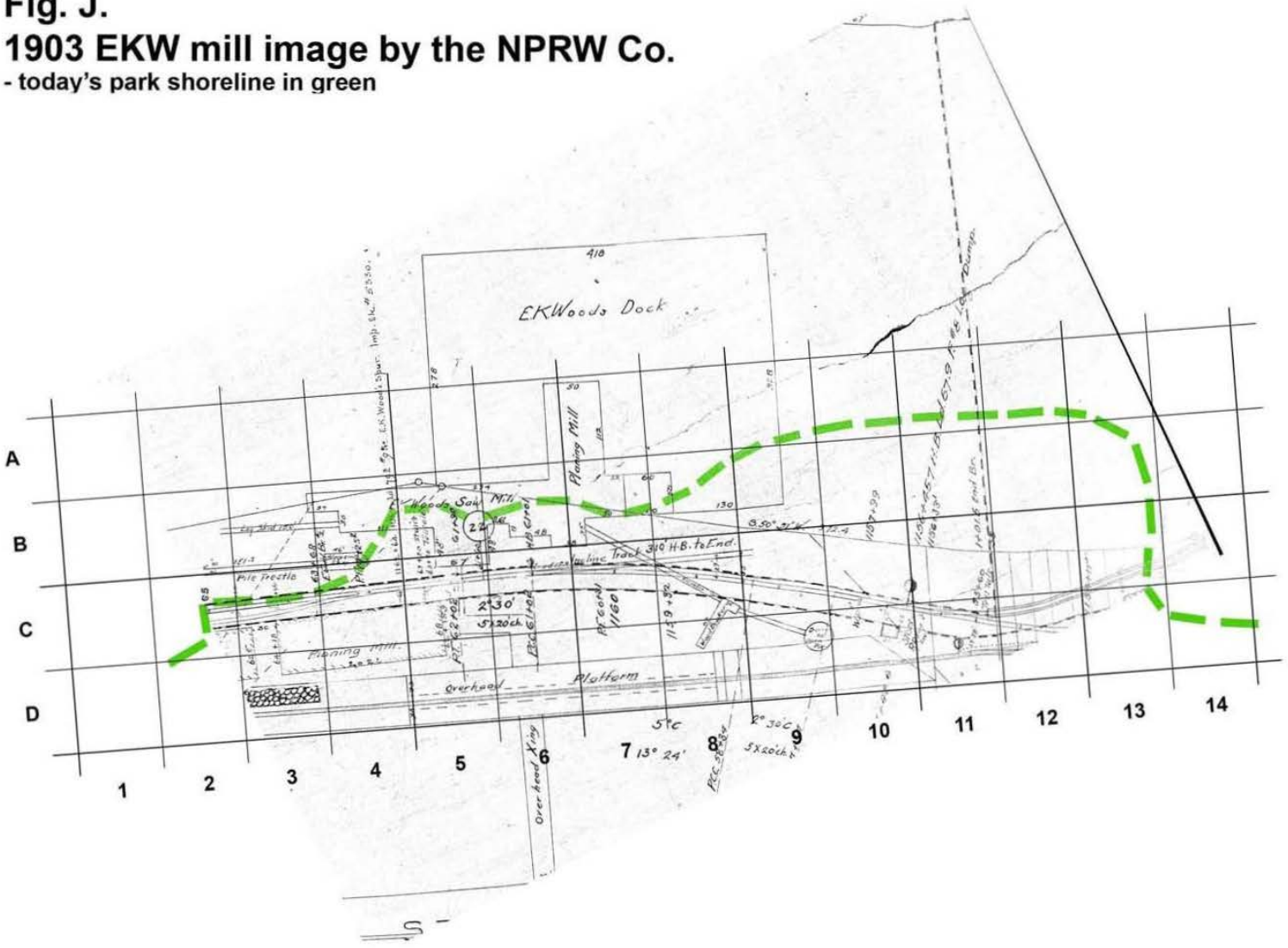
View of Bellingham Bay Mill Co. operation, Fairhaven Herald 1890

- looking southwest from near today's 13th & S. State intersection

BELLINGHAM BAY COMPANY'S MILL FROM THE NORTHEAST.

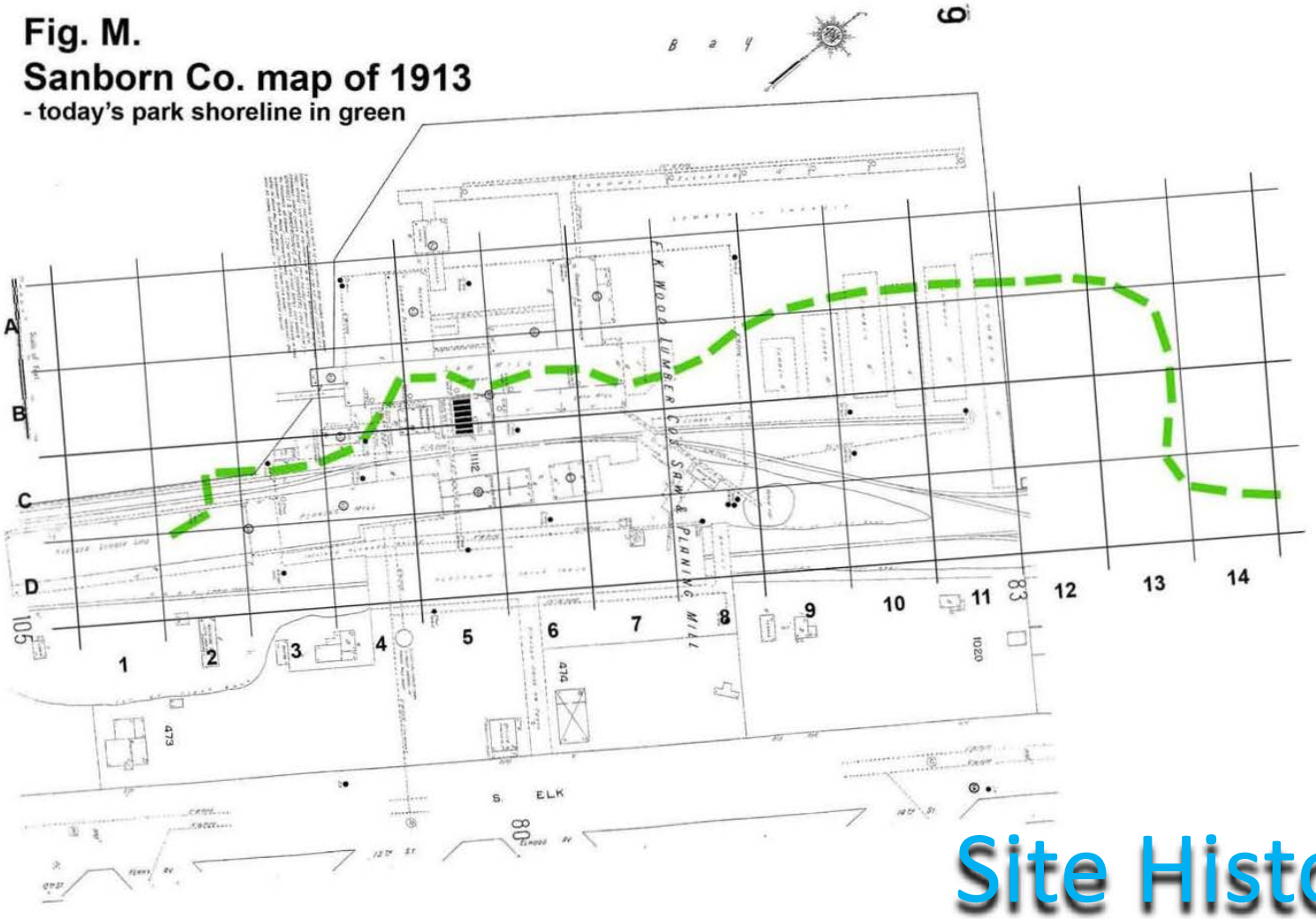
Site History

Fig. J.
1903 EKW mill image by the NPRW Co.
- today's park shoreline in green



Site History

Fig. M.
Sanborn Co. map of 1913
- today's park shoreline in green



Site History

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Today's Conditions

Boulevard Park Flooding, Storm Surge
Today's Conditions

Today's Conditions

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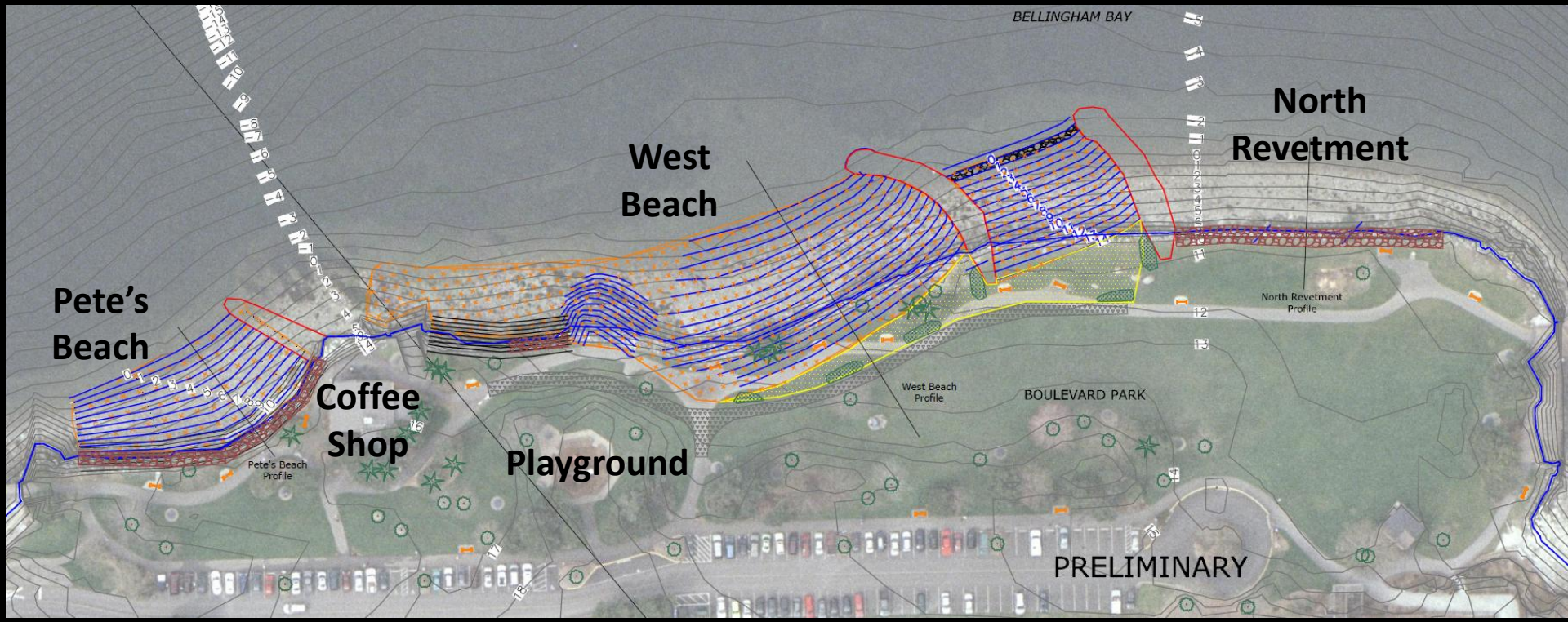
Design



Design Highlights

- Eliminate erosion problems (some maintenance required to replenish beach sediment over long term)
- Raise elevation at back of beaches to decrease storm surge impact on site
- Increase habitat areas (more organisms in the gravel = food for fish and birds)
- Improve public access to intertidal through beach enhancement

West Beach - What it could look like

Boulevard Park Shoreline
Looking South

Marine Park Shoreline
Looking South

Design

asbpa
BEST RESTORED BEACHES
"Best of the Best Restored Beach"
Northwest Region
Preserving our coastal economy
asbpa
and ecology since 1926
The American Shore & Beach Preservation Association
Marine Park Shoreline
Looking South
Design

Marine Park Year 2002

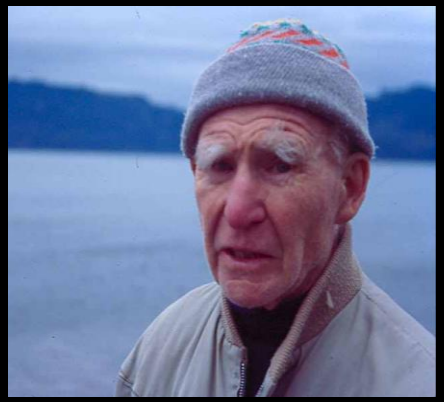
November 2004

March 2010

Design

Driftwood
Beach
Blakely Is.
1997/ 2010

North Beach
Orcas Is.
Wolf Bauer Project
1991/2005



Design

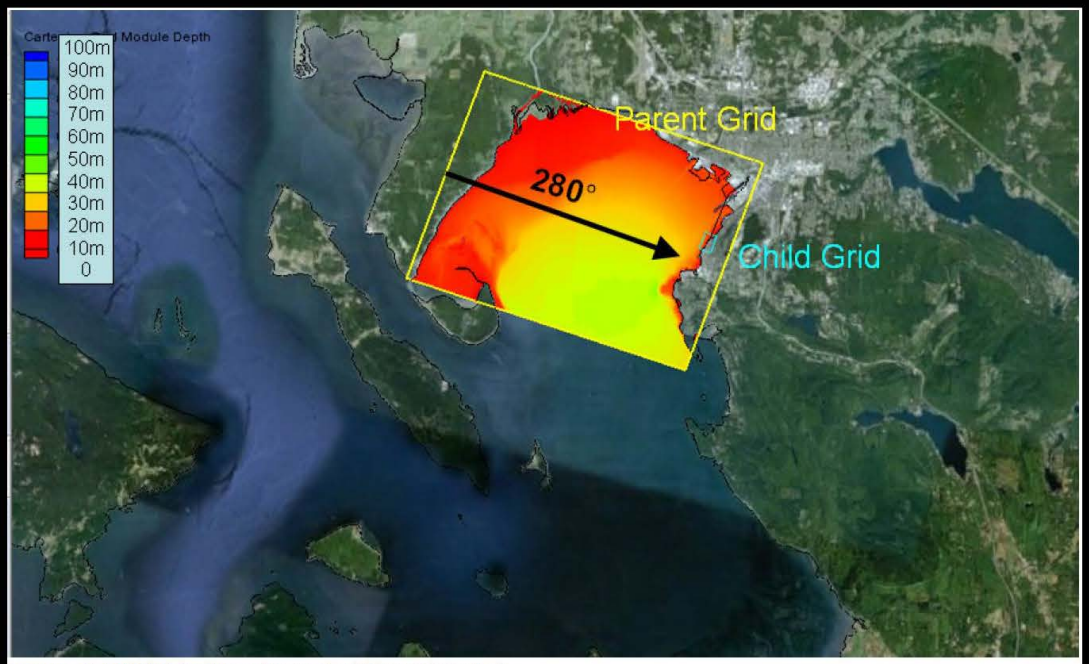


Figure 7. MHHW bathymetry and grid for 280° wind.

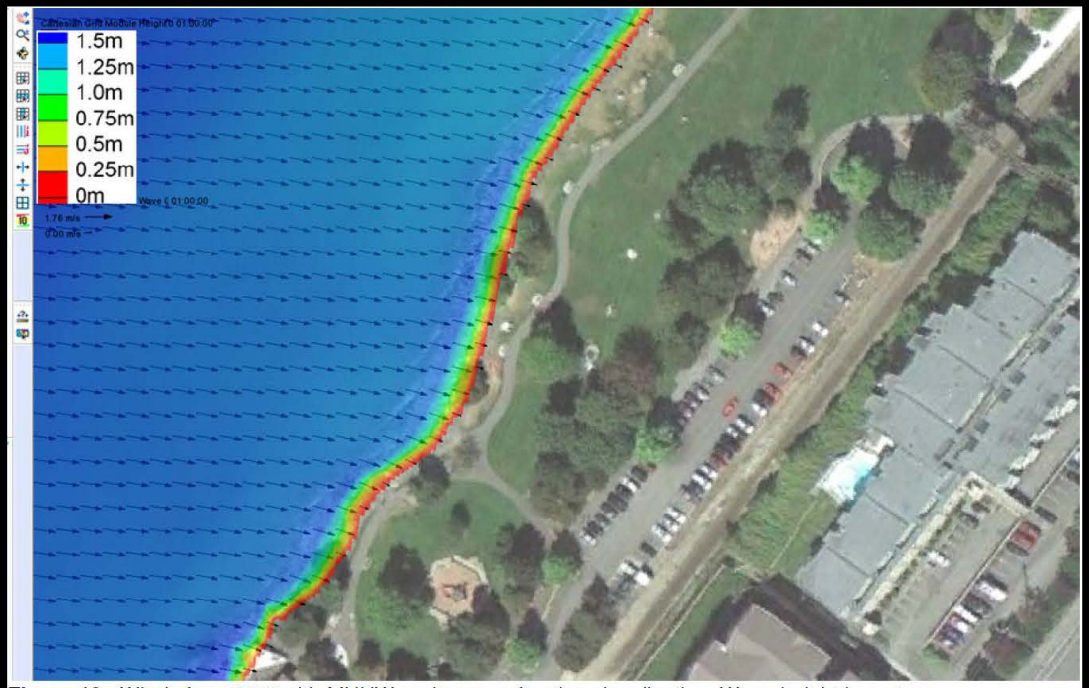
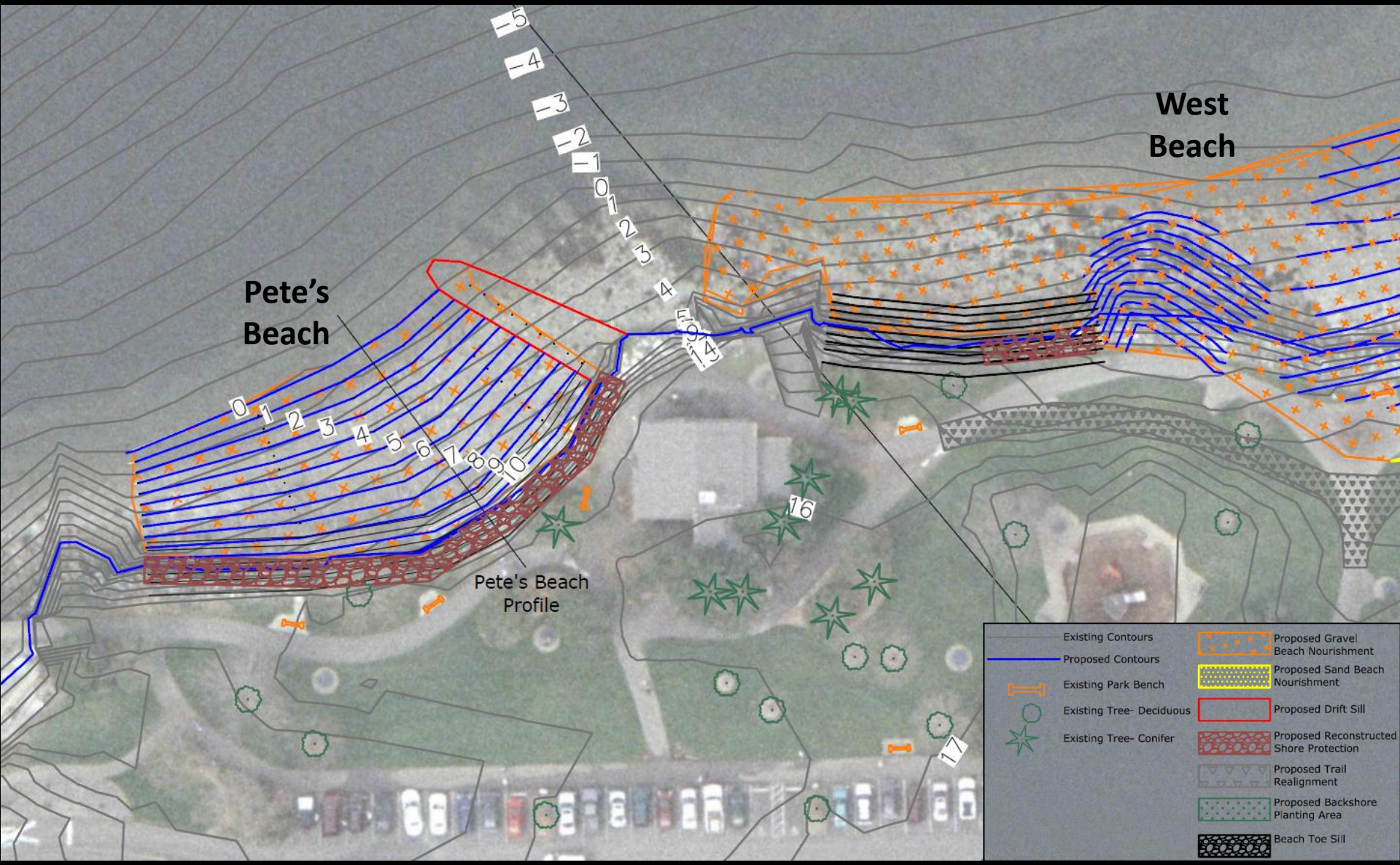


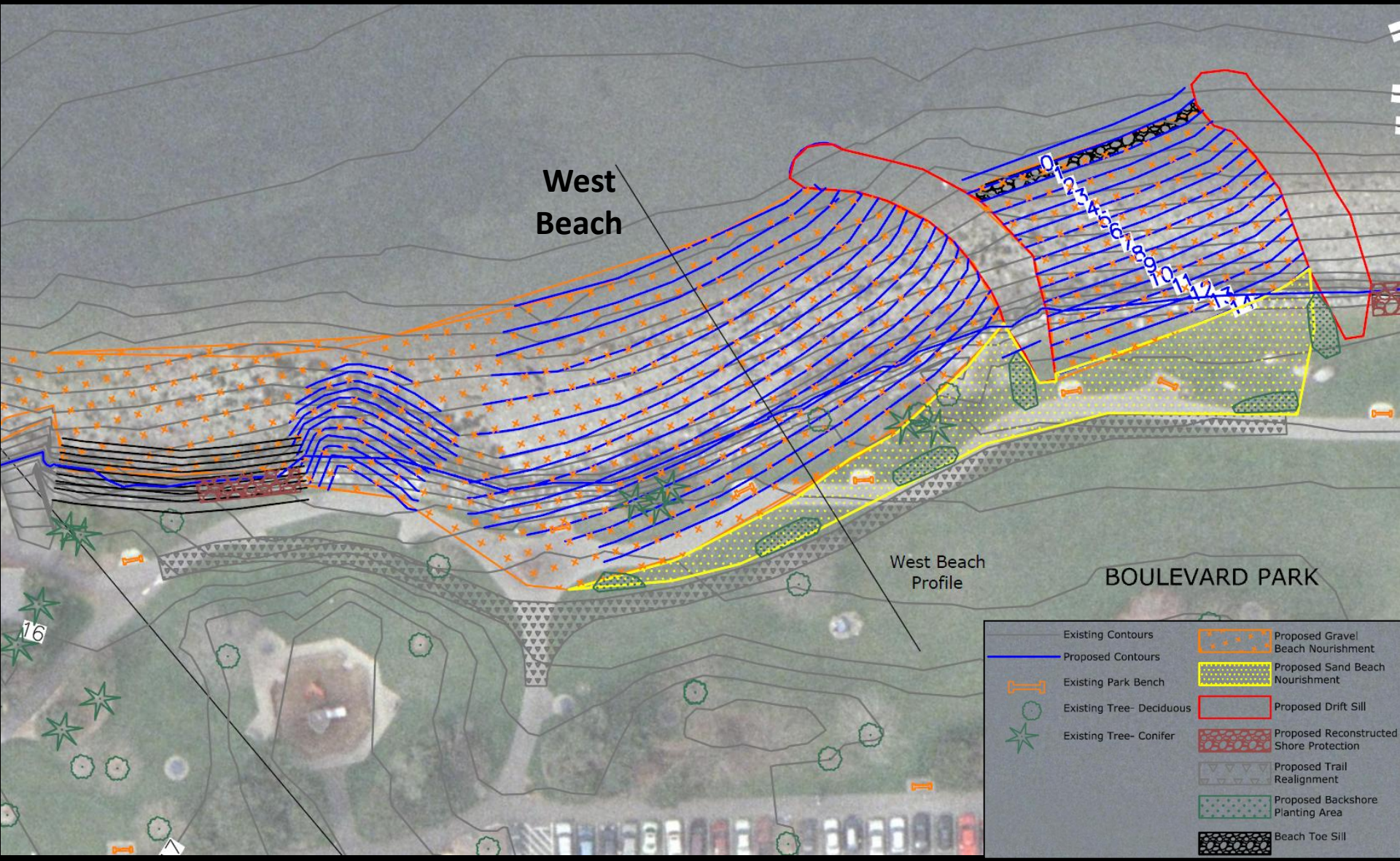
Figure 13. Winds from 280° with MHHW and wave refraction visualization. Wave height in meters.

Design

Design


West Beach
Pete's Beach
Pete's Beach Profile
Existing Contours
Proposed Contours
Existing Park Bench
Existing Tree- Deciduous
Existing Tree- Conifer
Proposed Gravel Beach Nourishment
Proposed Sand Beach Nourishment
Proposed Drift Sill
Proposed Reconstructed Shore Protection
Proposed Trail Realignment
Proposed Backshore Planting Area
Beach Toe Sill

Design


West Beach
West Beach Profile
BOULEVARD PARK
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
16
Existing Contours
Proposed Contours
Existing Park Bench
Existing Tree- Deciduous
Existing Tree- Conifer
Proposed Gravel Beach Nourishment
Proposed Sand Beach Nourishment
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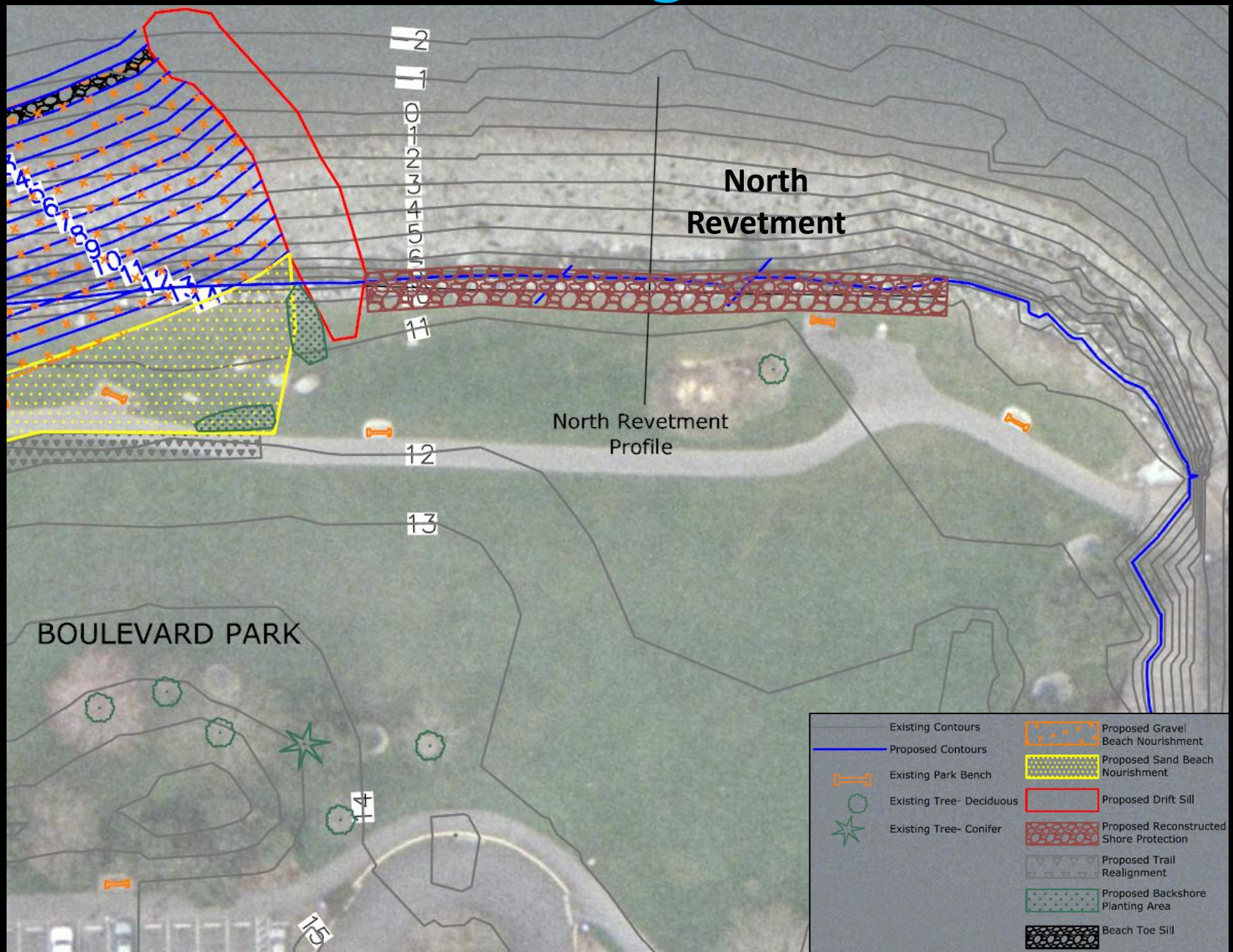
Design


North
Revetment
North Revetment
Profile
BOULEVARD PARK
Existing Contours
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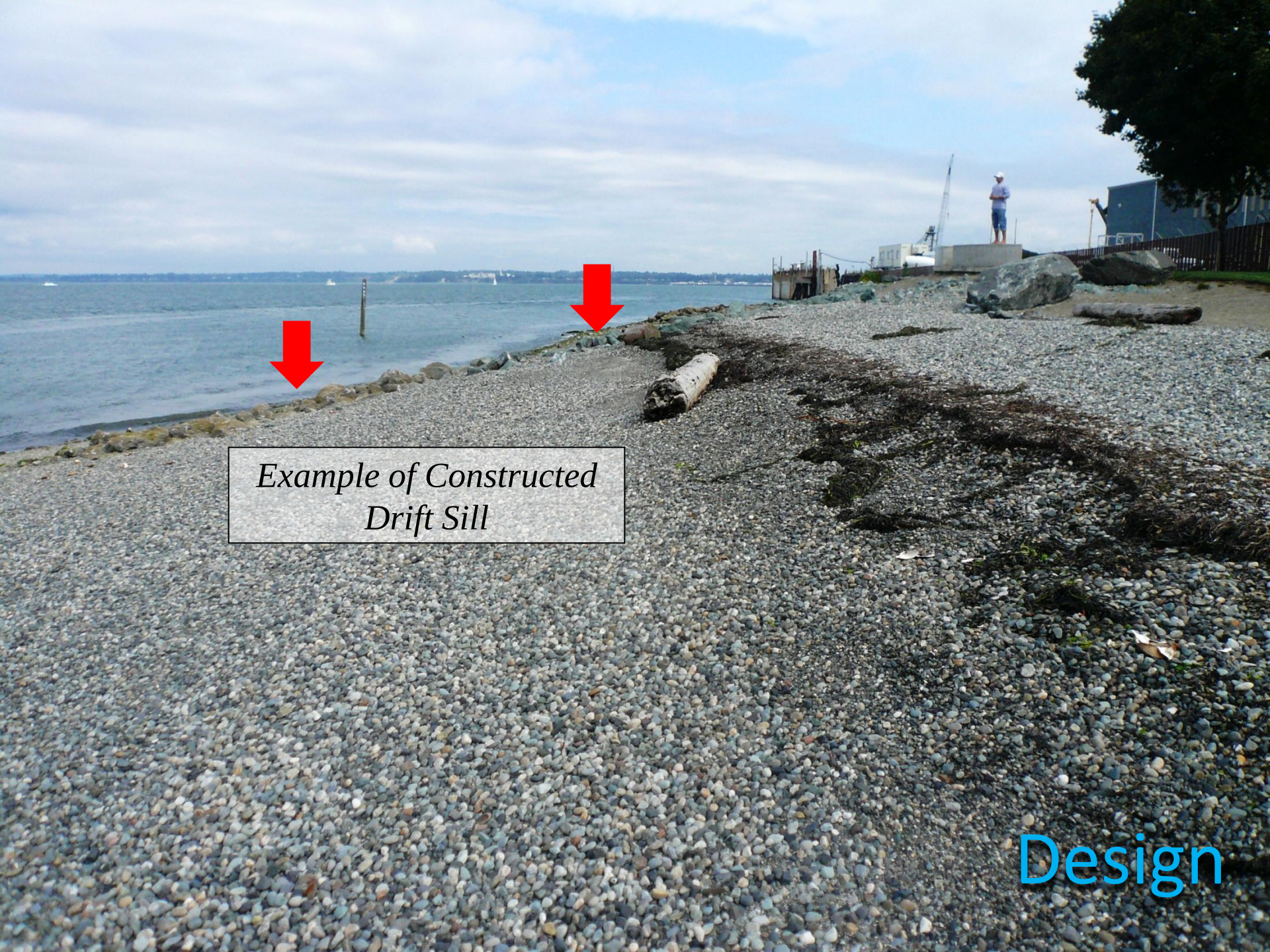
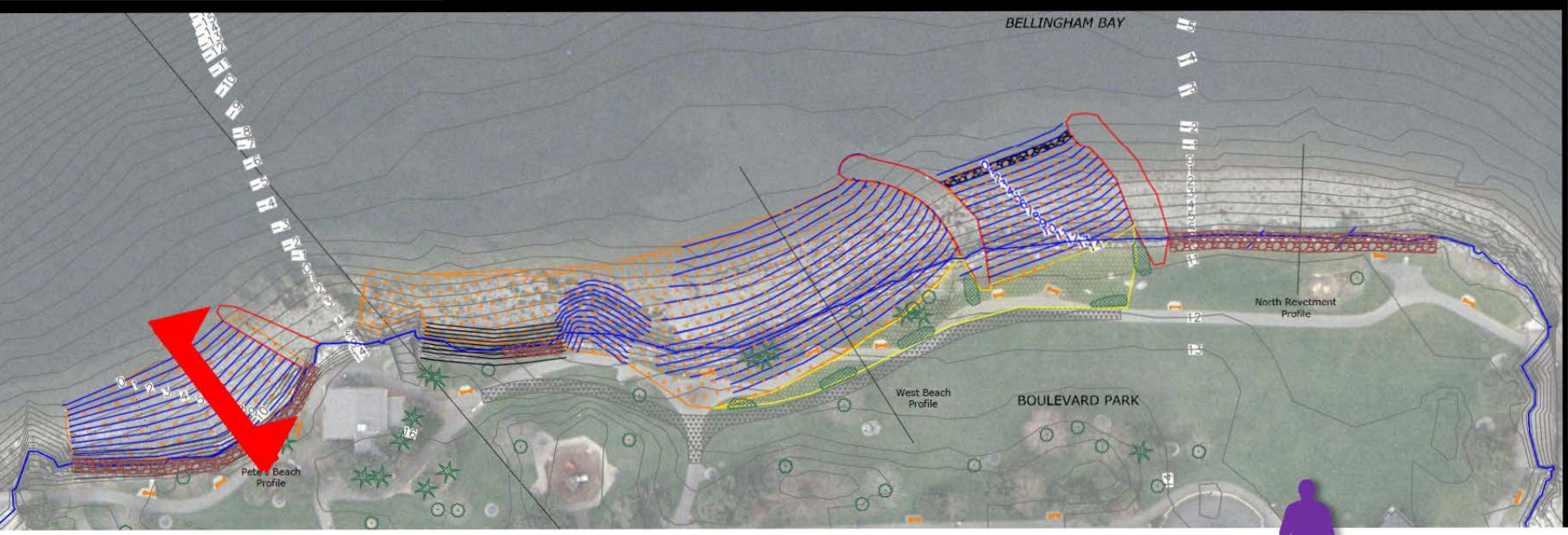
Beach Toe Sill

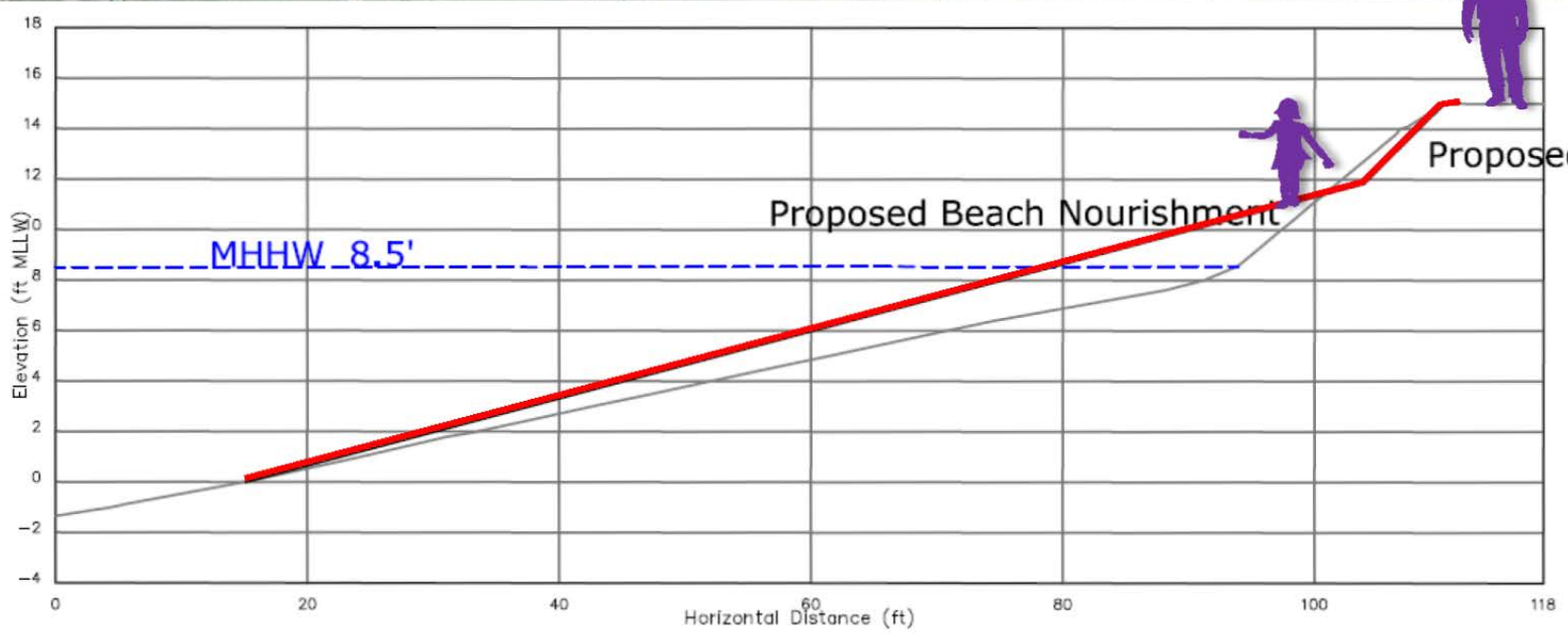
Design

Example of Constructed Drift Sill
Design

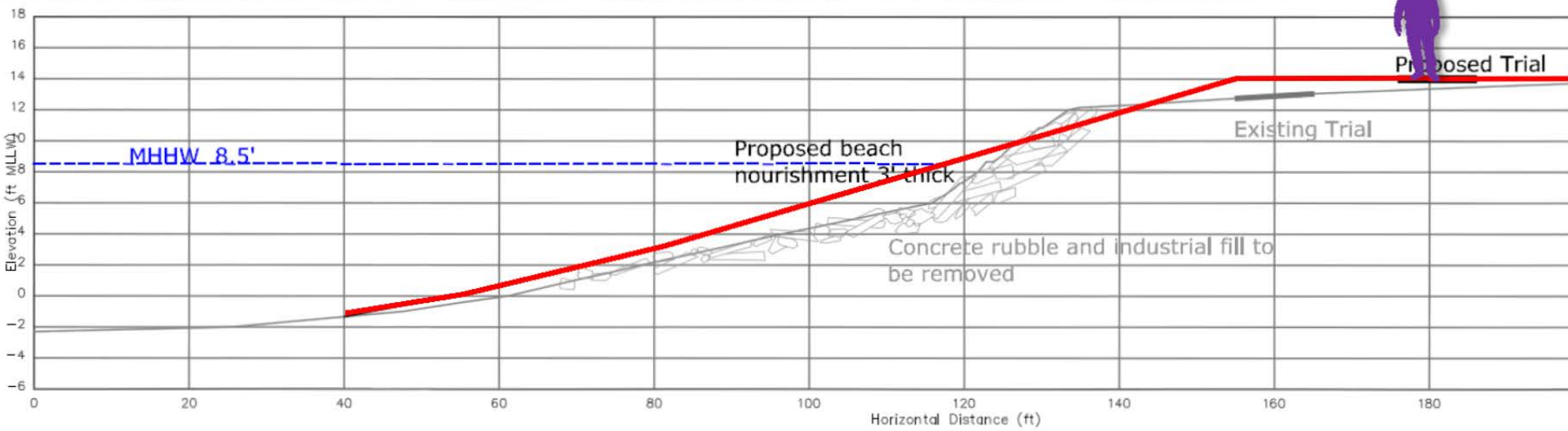


Design

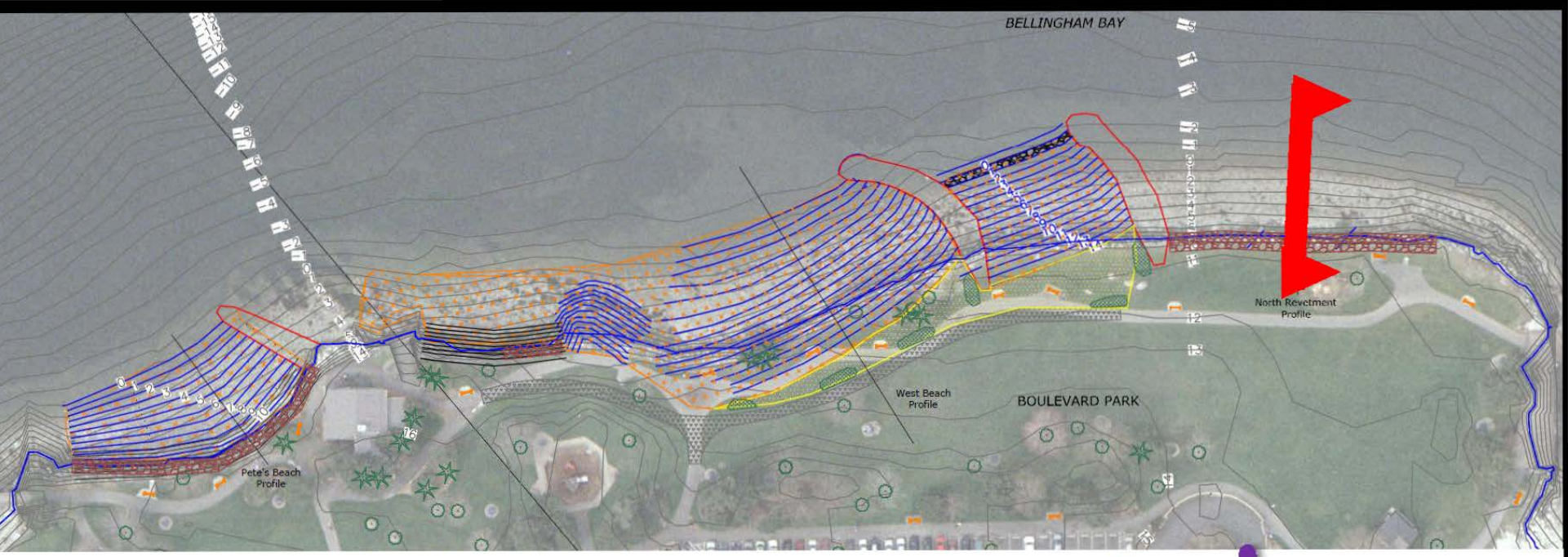

BELLINGHAM BAY
North Revetment Profile
West Beach Profile
BOULEVARD PARK
Pete's Beach Profile


Proposed Revetment
Proposed Beach Nourishment
MHHW 8.5'
Elevation (ft MLLW)
Horizontal Distance (ft)
18
16
14
12
10
8
6
4
2
0
−2
−4
0
20
40
60
80
100
118

Pete's Beach

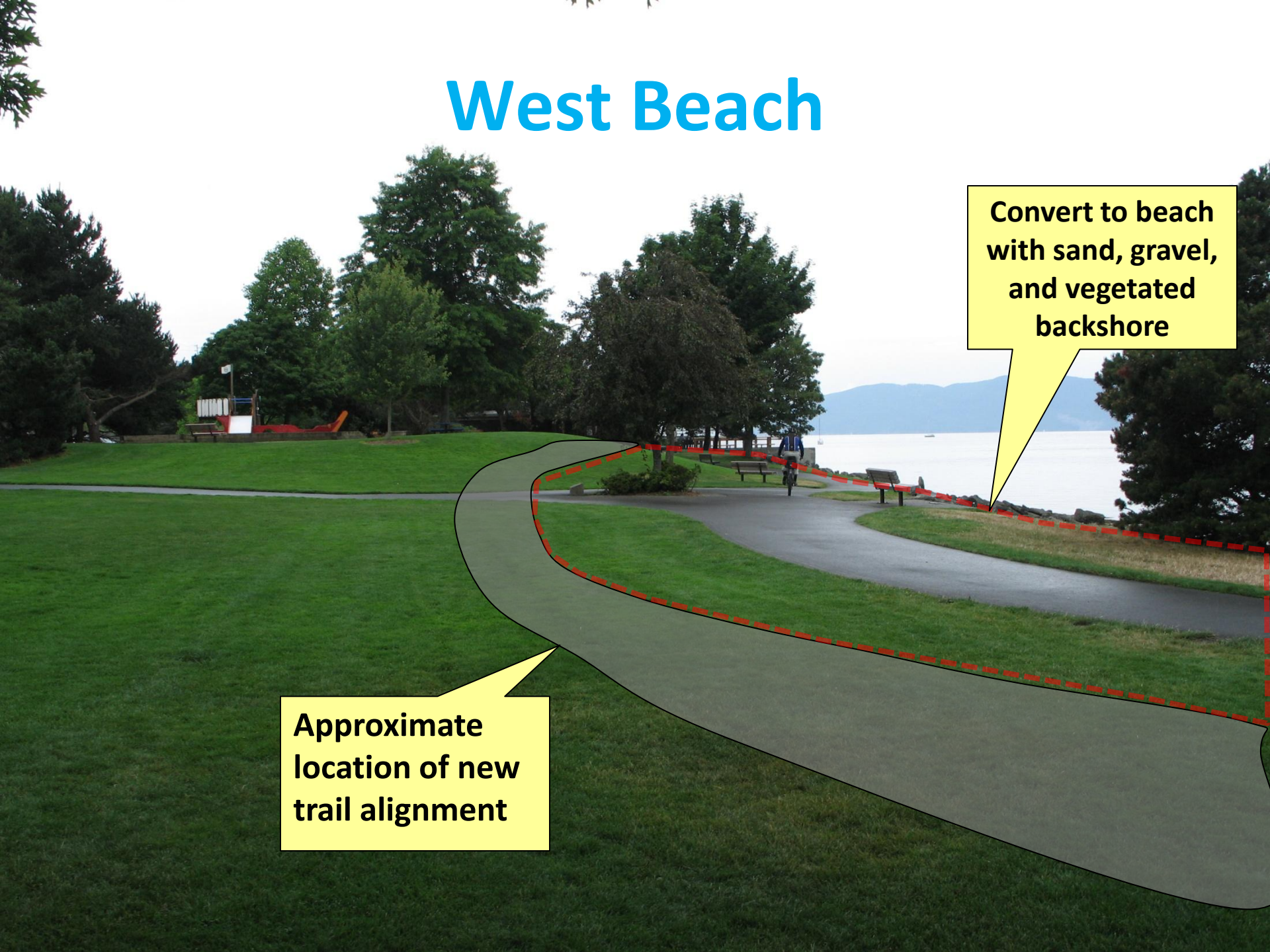


West Beach Nourishment

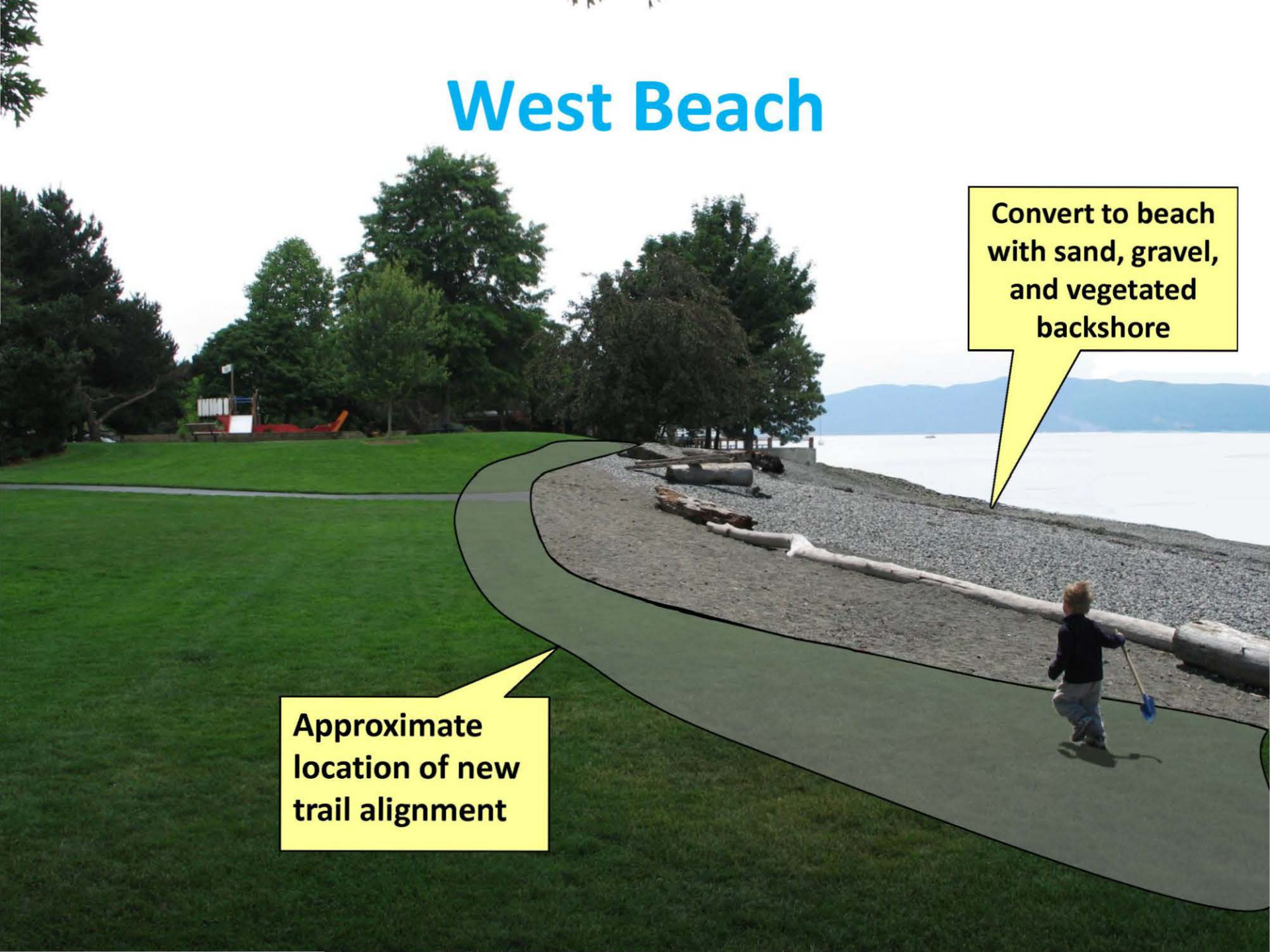


North Beach Revetment

West Beach


Convert to beach with sand, gravel, and vegetated backshore
Approximate location of new trail alignment

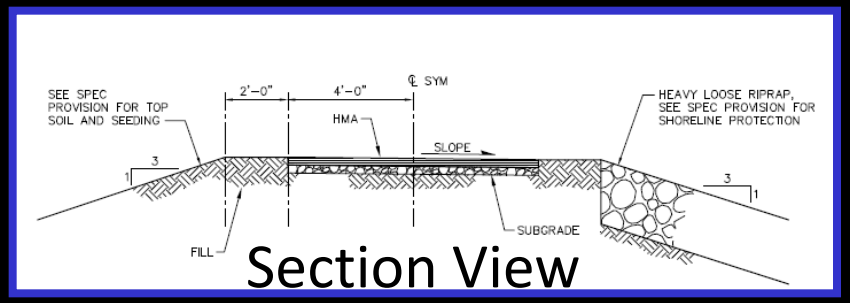
West Beach

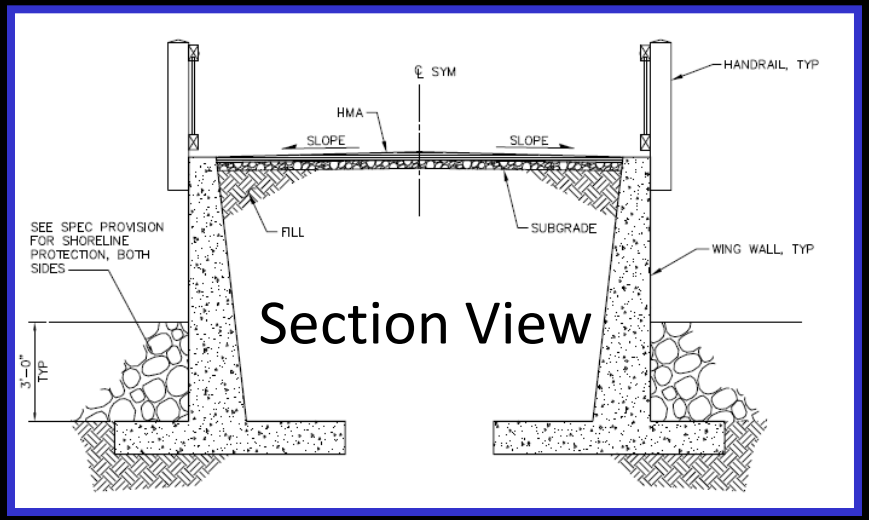

Convert to beach with sand, gravel, and vegetated backshore
Approximate location of new trail alignment

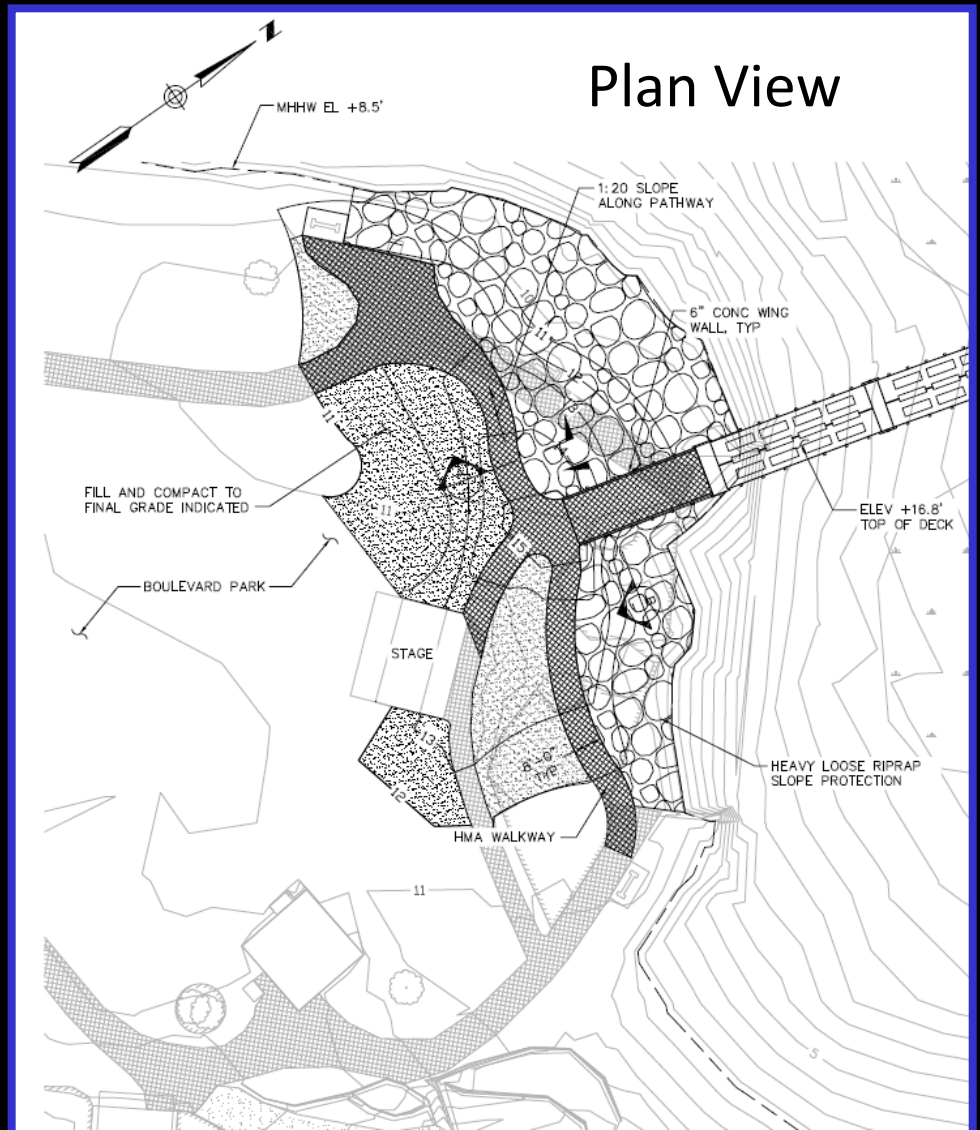
Boulevard Park Before (actual)

Boulevard Park After (photo simulation)

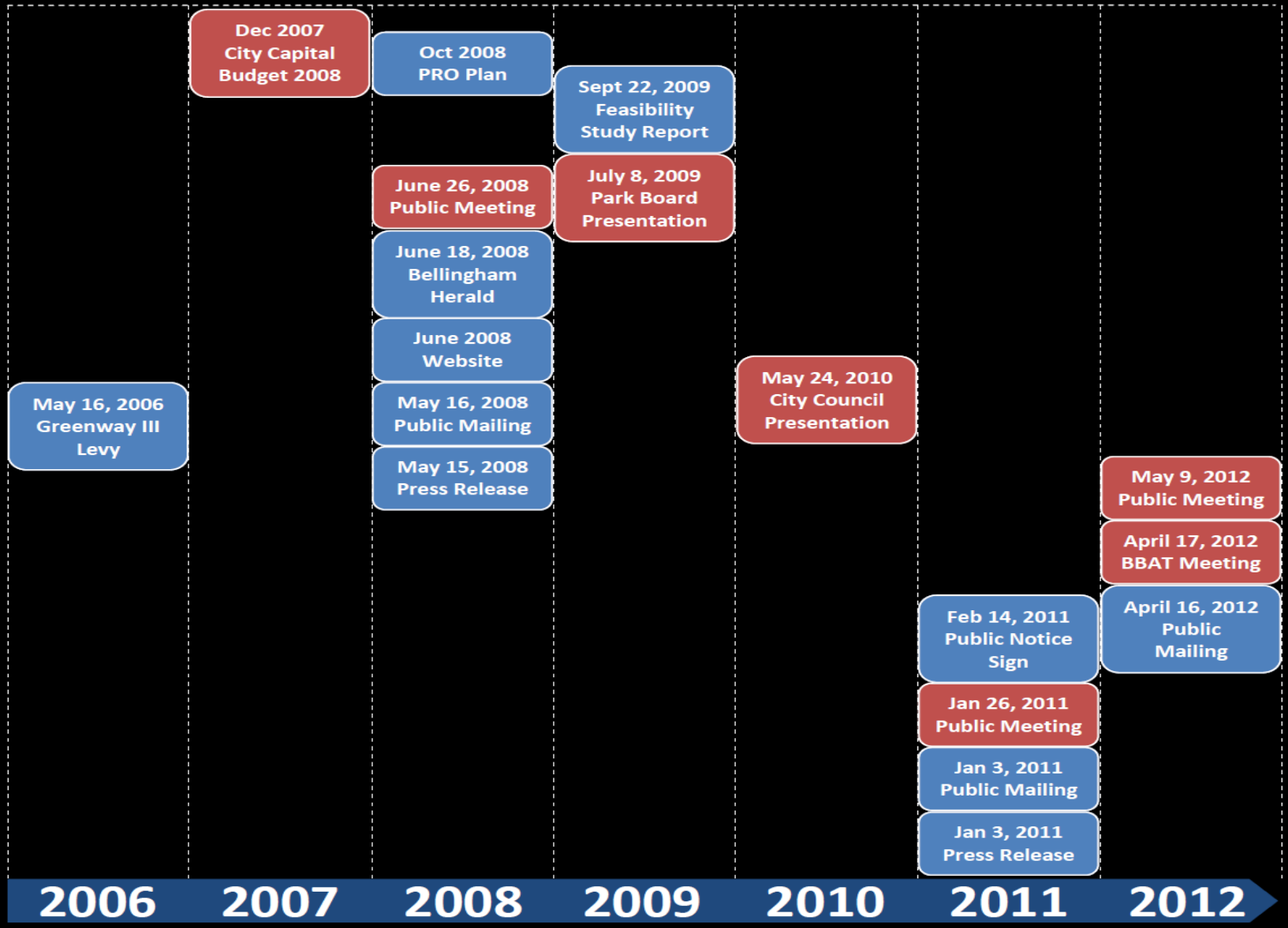
Over Water Walkway Landing







Public Process



Funding and Schedule

- $1.3M
  - Greenway III Levy $528,445
  - Park Impact Fees $200,000
  - Unfunded $571,555
- Phase 1 Construction September 2013 or 2014

Comments?

City of Bellingham
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