ENGINEERING DESIGN REPORT
PUBLIC MEETING
CORNWALL AVENUE LANDFILL SITE

February 15, 2018

The Cleanup Process

The Model Toxics Control Act (MTCA) is Washington's environmental cleanup law.

- MTCA directs the investigation, cleanup, and prevention of sites that are contaminated by hazardous substances.
- It works to protect people's health and the environment, and to preserve natural resources for the future.
- Matching grant funding may be available for eligible parties.

Cornwall Avenue Landfill
Engineering Design
Report

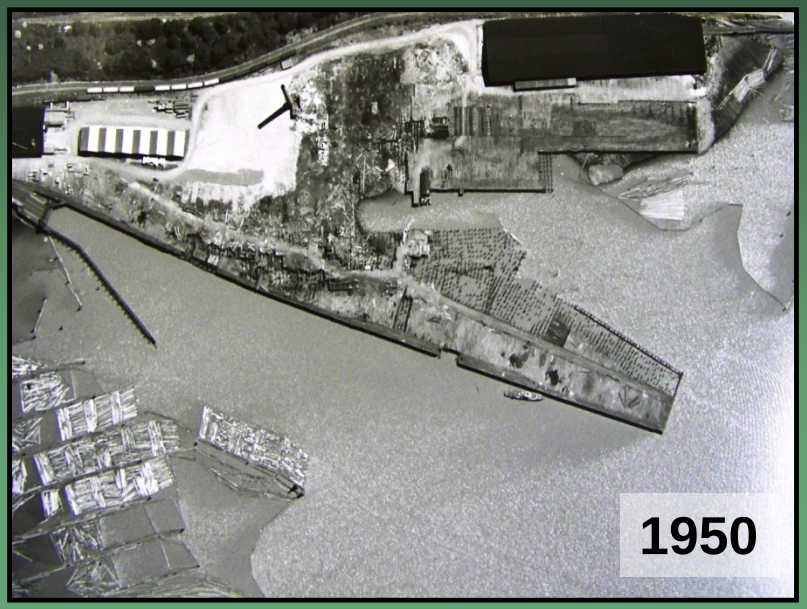
Presentation Topics

- Site Environmental Conditions
- Selected Cleanup Action
- Engineering Analysis/Design
- Integration with R.G. Haley Site Cleanup

Cornwall Avenue Landfill Site

Site Background

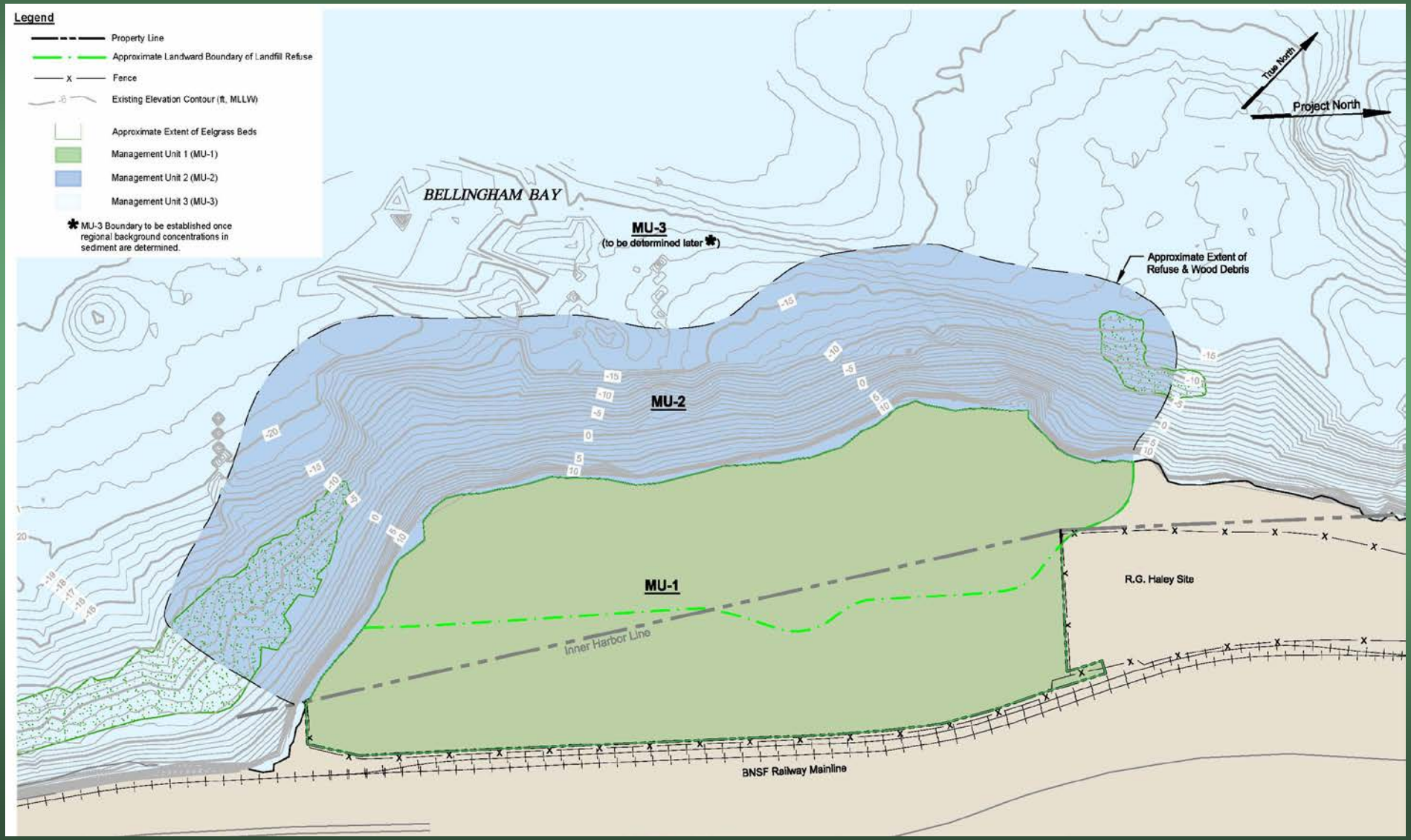
- **1800s to Late 1940's**
  Sawmilling
- **1953 to 1965**
  Municipal Landfill
- **1950's-2005**
  Timber Production, Warehousing & Log Storage
- **1992** Ecology Site Listing
- **2013** RI/FS Completed
- **2014** CAP Completed
- **2014 - Present** Prepare draft EDR



Primary Constituents of Concern

- Soil
  - Refuse
  - Wood Waste
- Groundwater
  - Manganese
  - Ammonia
- Sediment
  - Metals (Copper, Lead, Silver, Zinc)
  - Bis(2-ethylhexyl)phthalate
  - PCBs
  - Refuse and Wood Waste

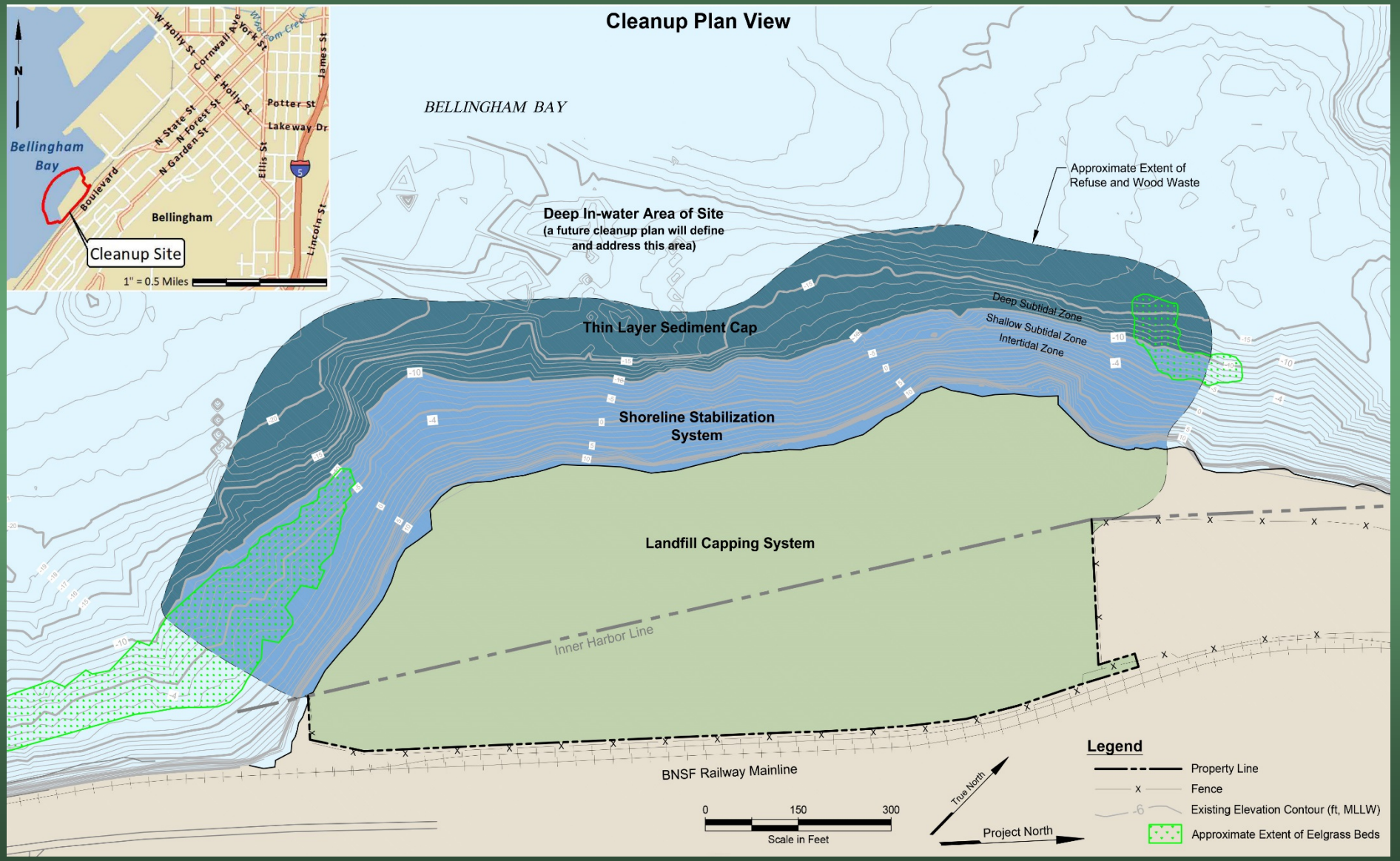
Cleanup Management Units



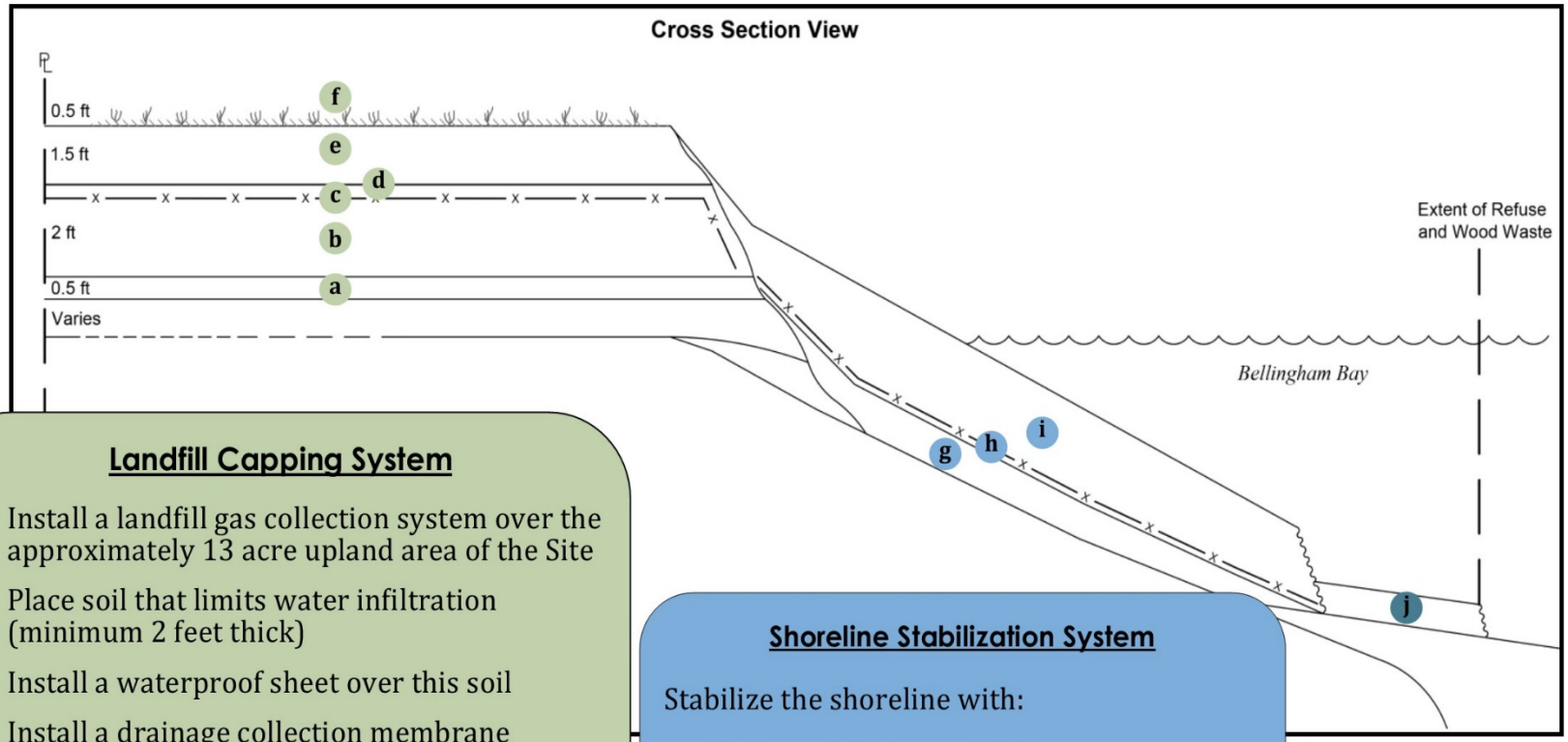
Selected Cleanup Action

- Landfill gas system
- Upland low permeability cap
- Stormwater drainage control
- Shoreline protection and cover system
- Thin layer sediment cap to limits of refuse and wood waste

Cleanup Action – Plan View



Cleanup Action – Section View



Landfill Capping System

a. Install a landfill gas collection system over the approximately 13 acre upland area of the Site
b. Place soil that limits water infiltration (minimum 2 feet thick)
c. Install a waterproof sheet over this soil
d. Install a drainage collection membrane
e. Place soil that promotes drainage (minimum 1.5 feet thick)
f. Place top soil (minimum 6 inches thick)

Shoreline Stabilization System

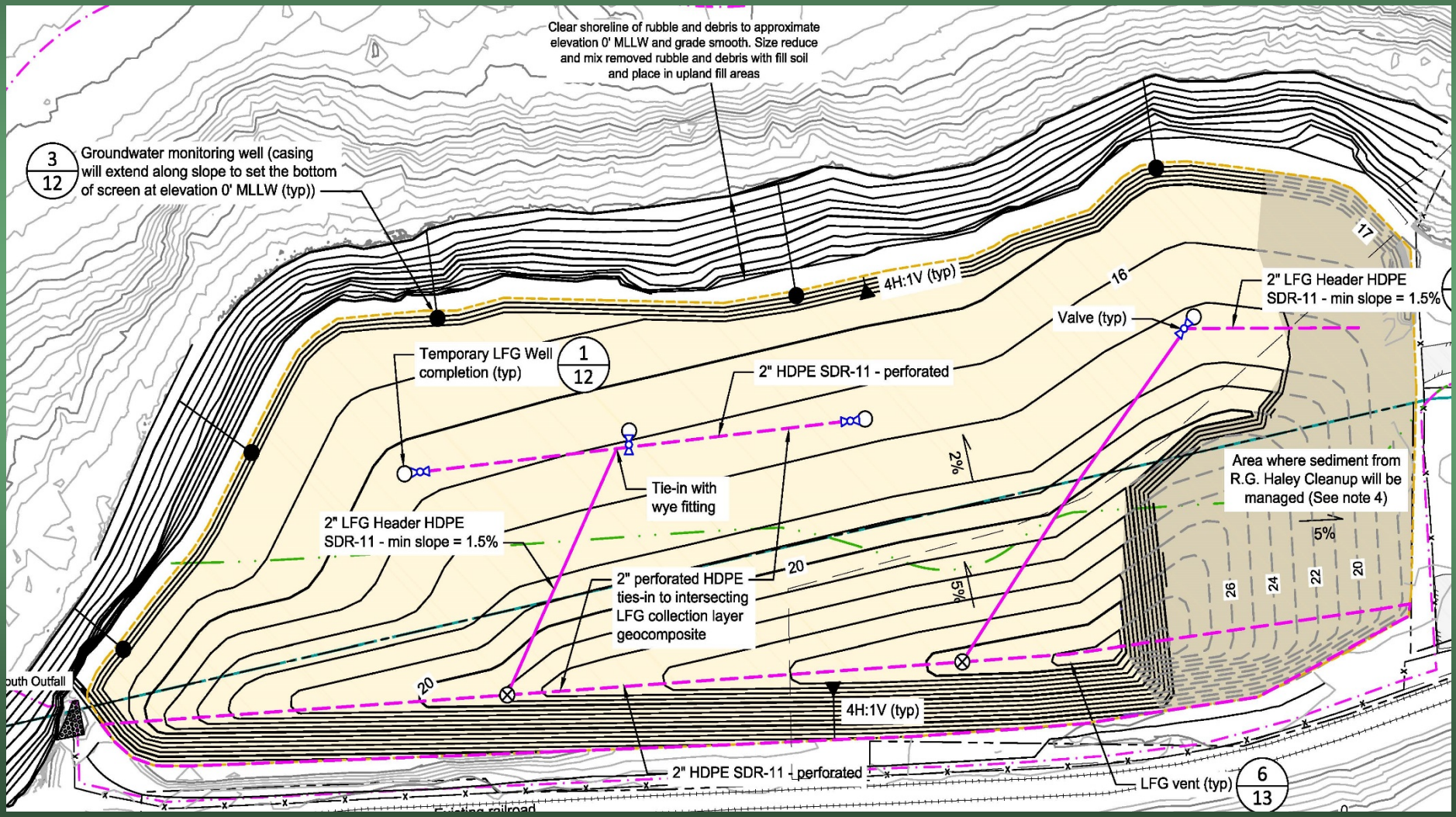
Stabilize the shoreline with:

g. Minimum 1 foot sand filter
h. Filter fabric
i. 2-3 feet of gravel to boulder-size material

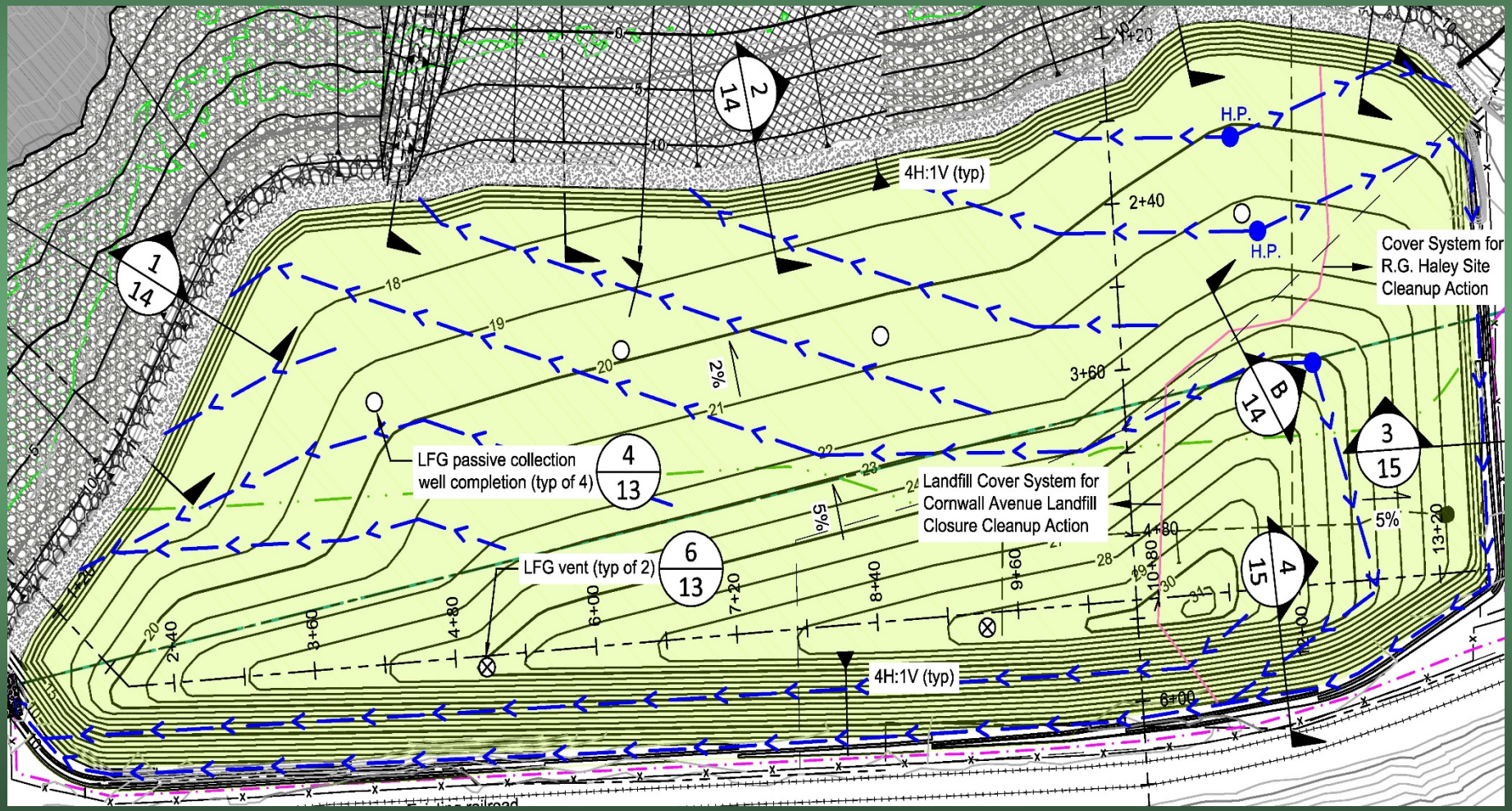
Thin Layer Sediment Cap

j. Place a minimum of 6 inches of sand

Upland Grading Plan – Below Cover



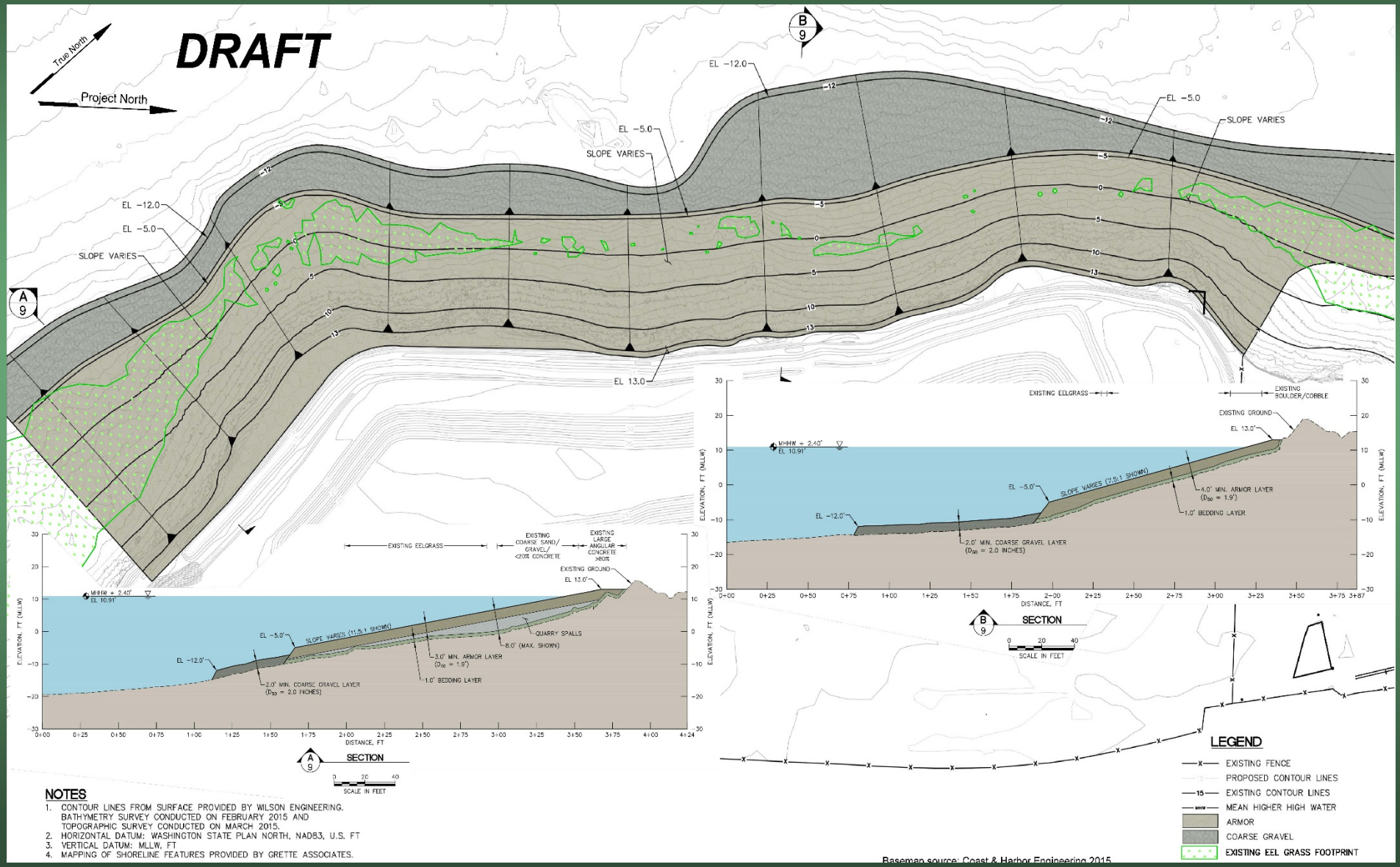
Upland Grading Plan – Final Cover



Bases of Design for Shoreline Stabilization System

- 100 year design wind/wave storm
- 2.4 ft sea level rise
- Evaluate wind/wave impacts at high and low tide levels (MHHW, MLLW)
- Estimate wind/wave impacts and sizing for shoreline protection using numerical model

Engineering Design – Baseline Option

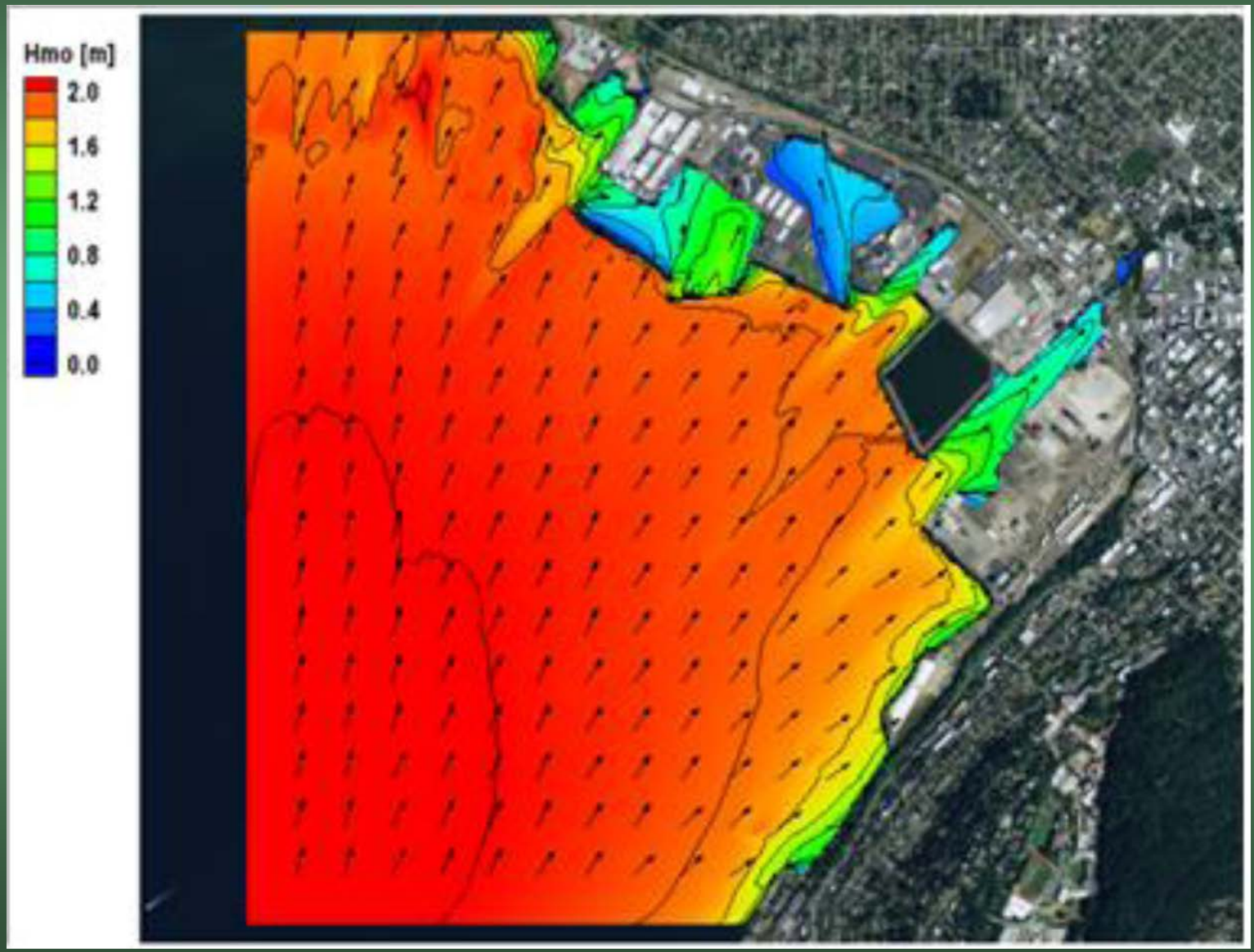


NOTES

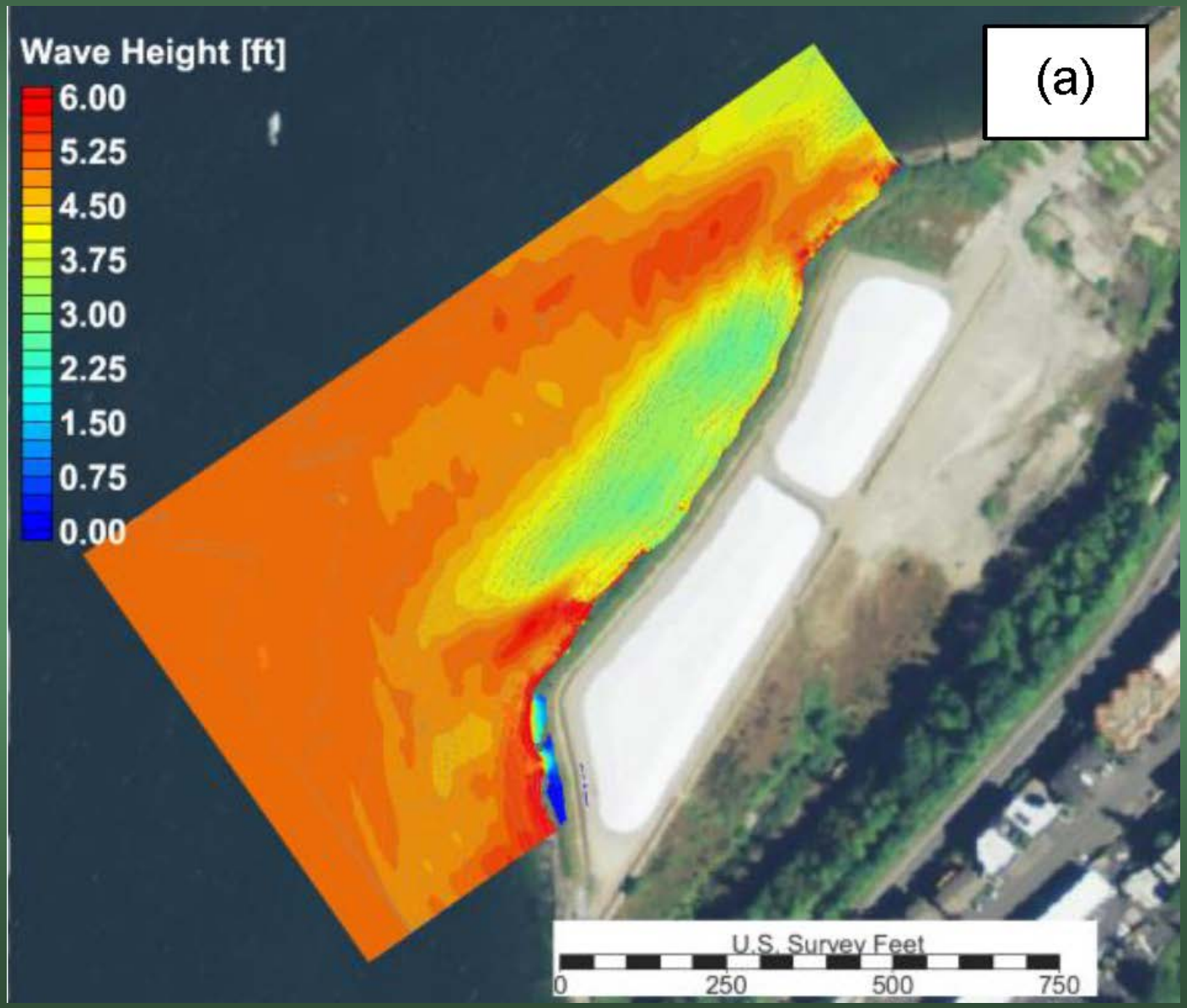
1. CONTOUR LINES FROM SURFACE PROVIDED BY WILSON ENGINEERING. BATHYMETRY SURVEY CONDUCTED ON FEBRUARY 2015 AND TOPOGRAPHIC SURVEY CONDUCTED ON MARCH 2015.
2. HORIZONTAL DATUM: WASHINGTON STATE PLAN NORTH, NAD83, U.S. FT
3. VERTICAL DATUM: MLLW, FT
4. MAPPING OF SHORELINE FEATURES PROVIDED BY GRETTE ASSOCIATES.

Baseman source: Coast & Harbor Engineering 2015

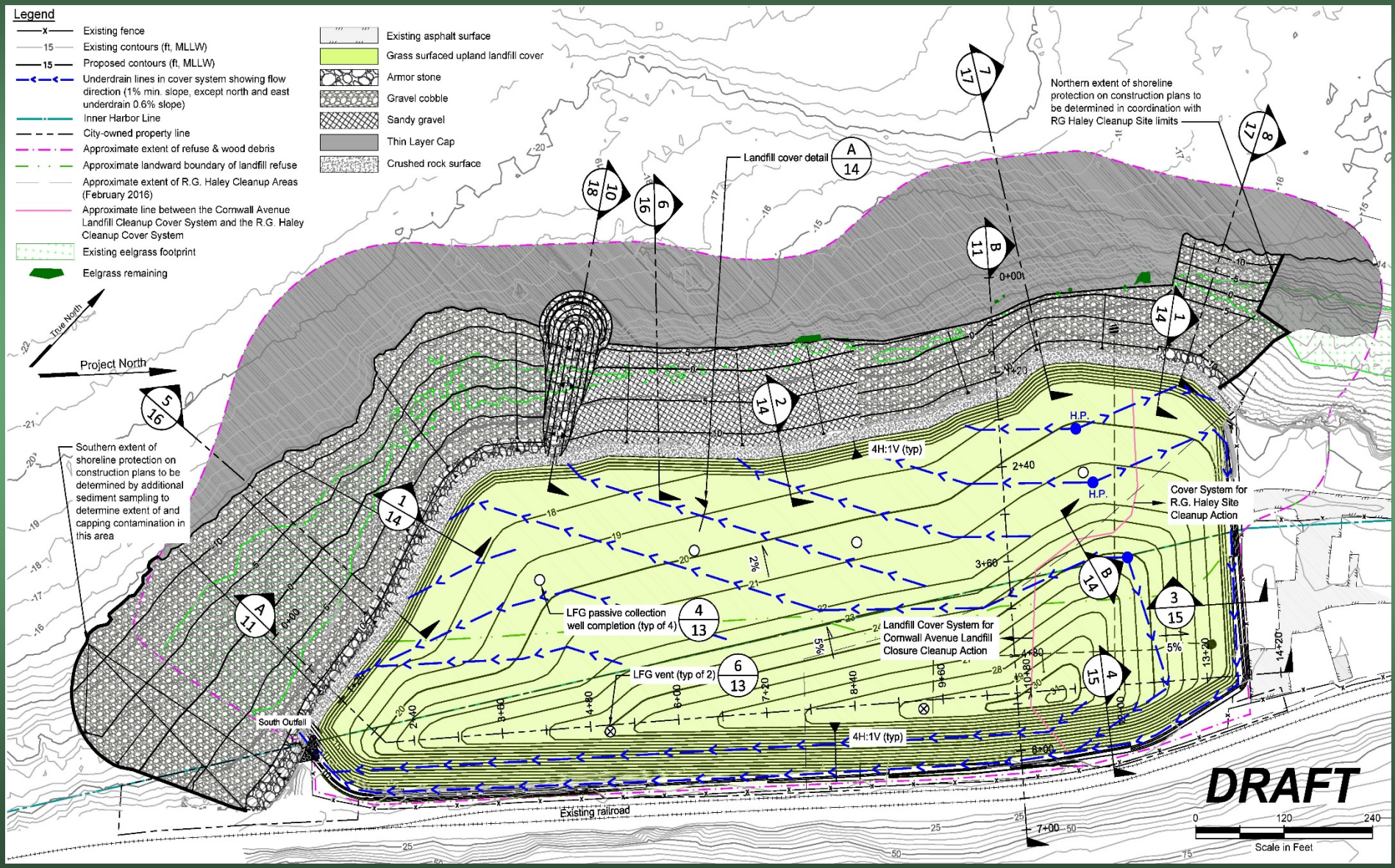
Wave Model Output - Baywide



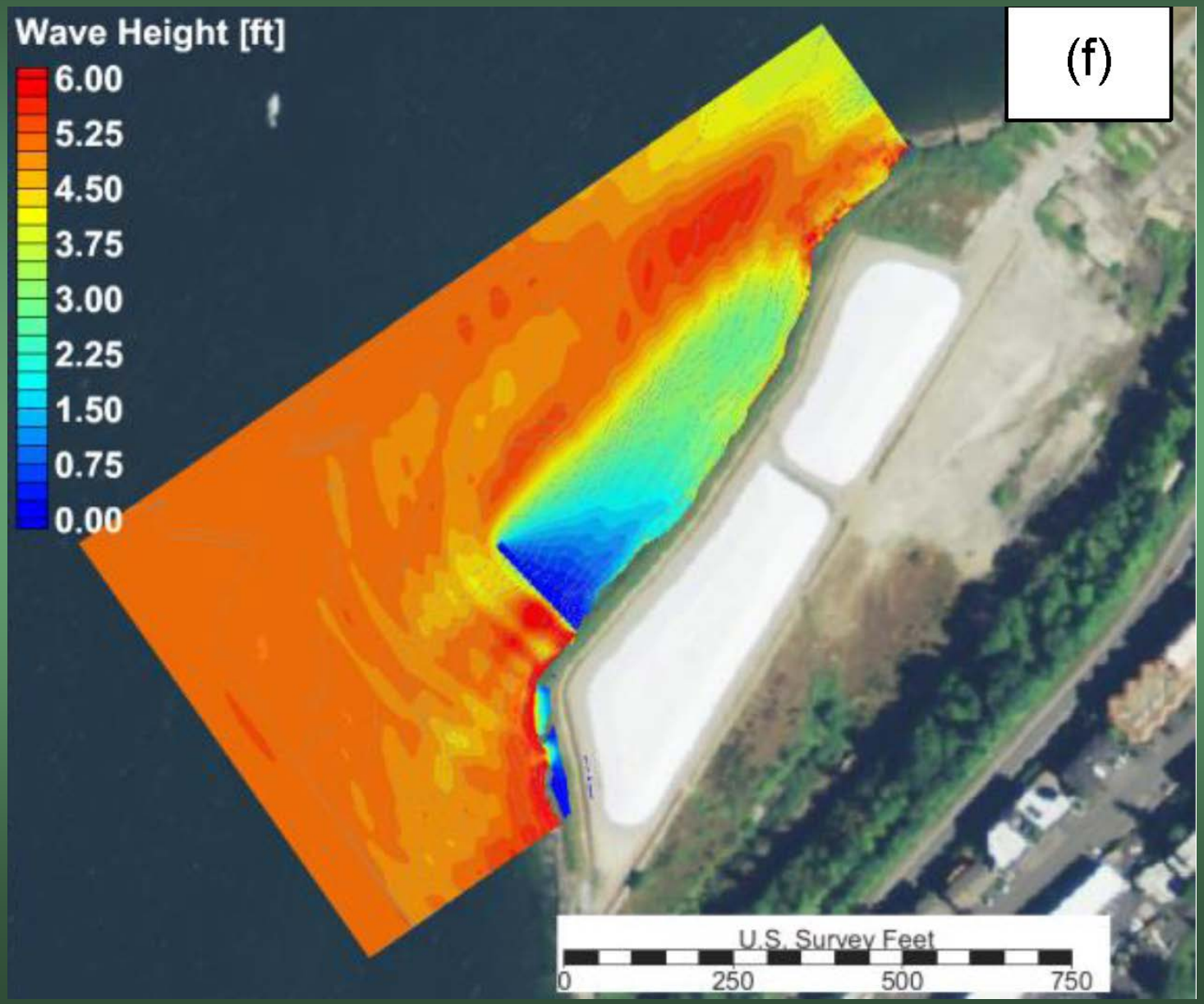
Model Output – Baseline Option



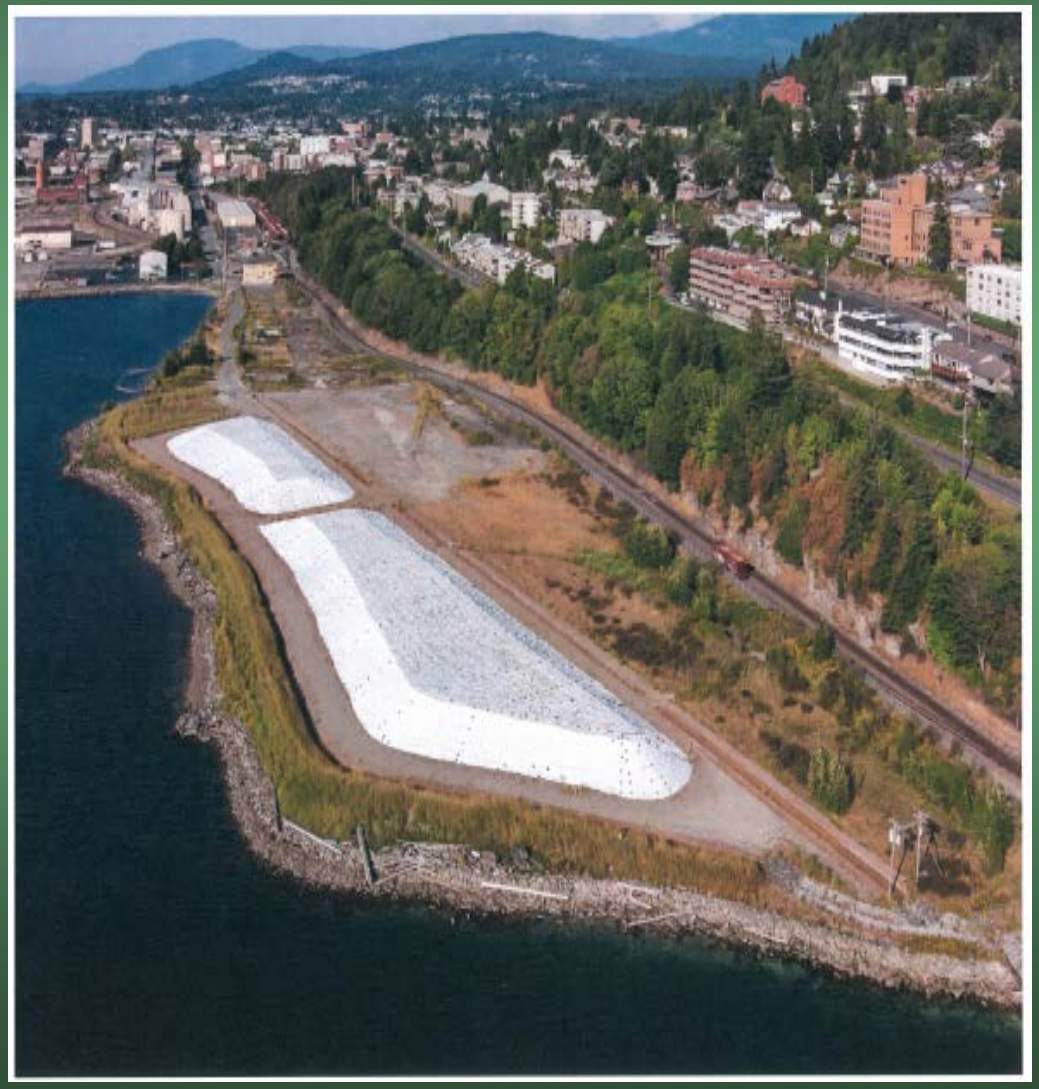
Engineering Design – Groin Option



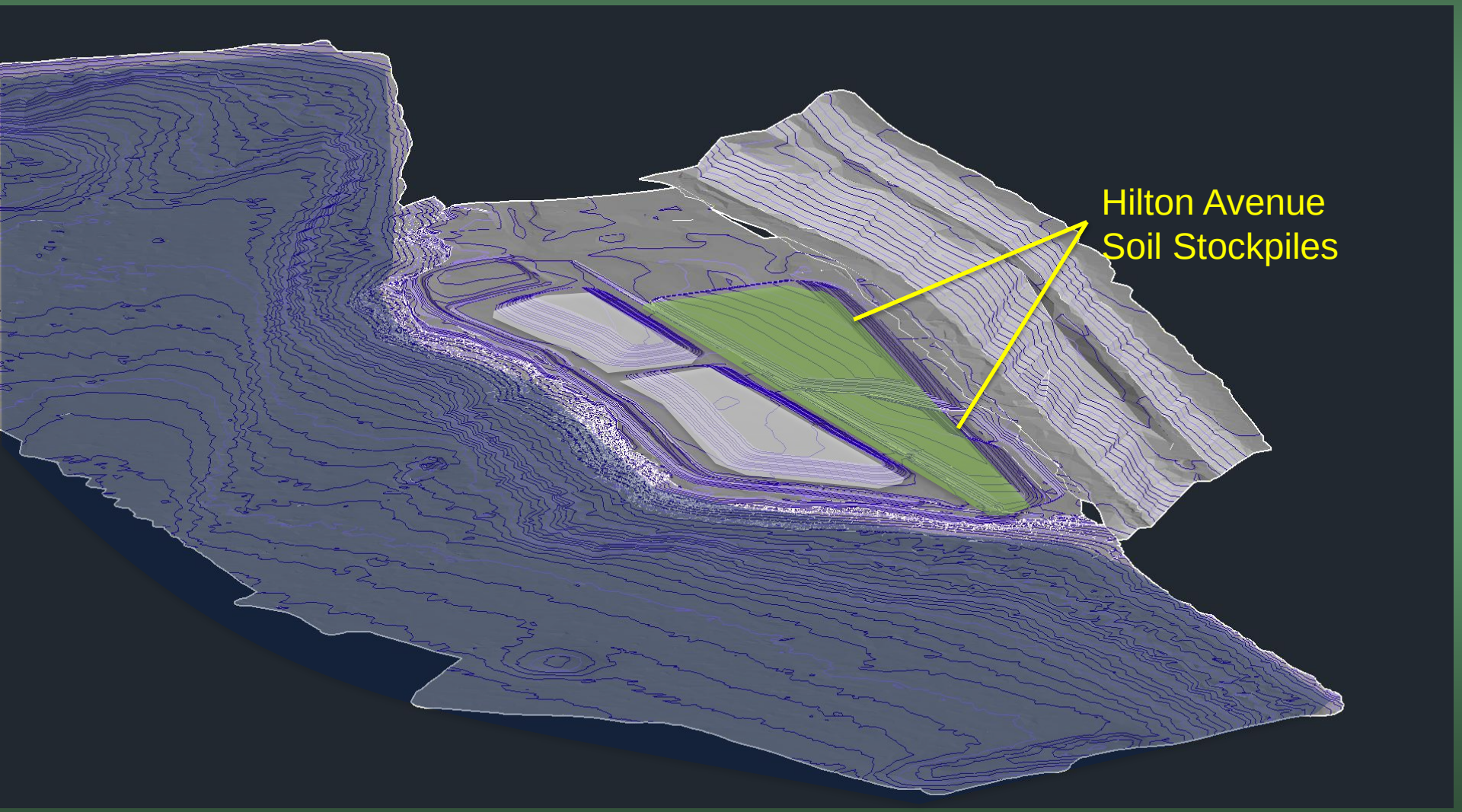
Model Output for Groin Option



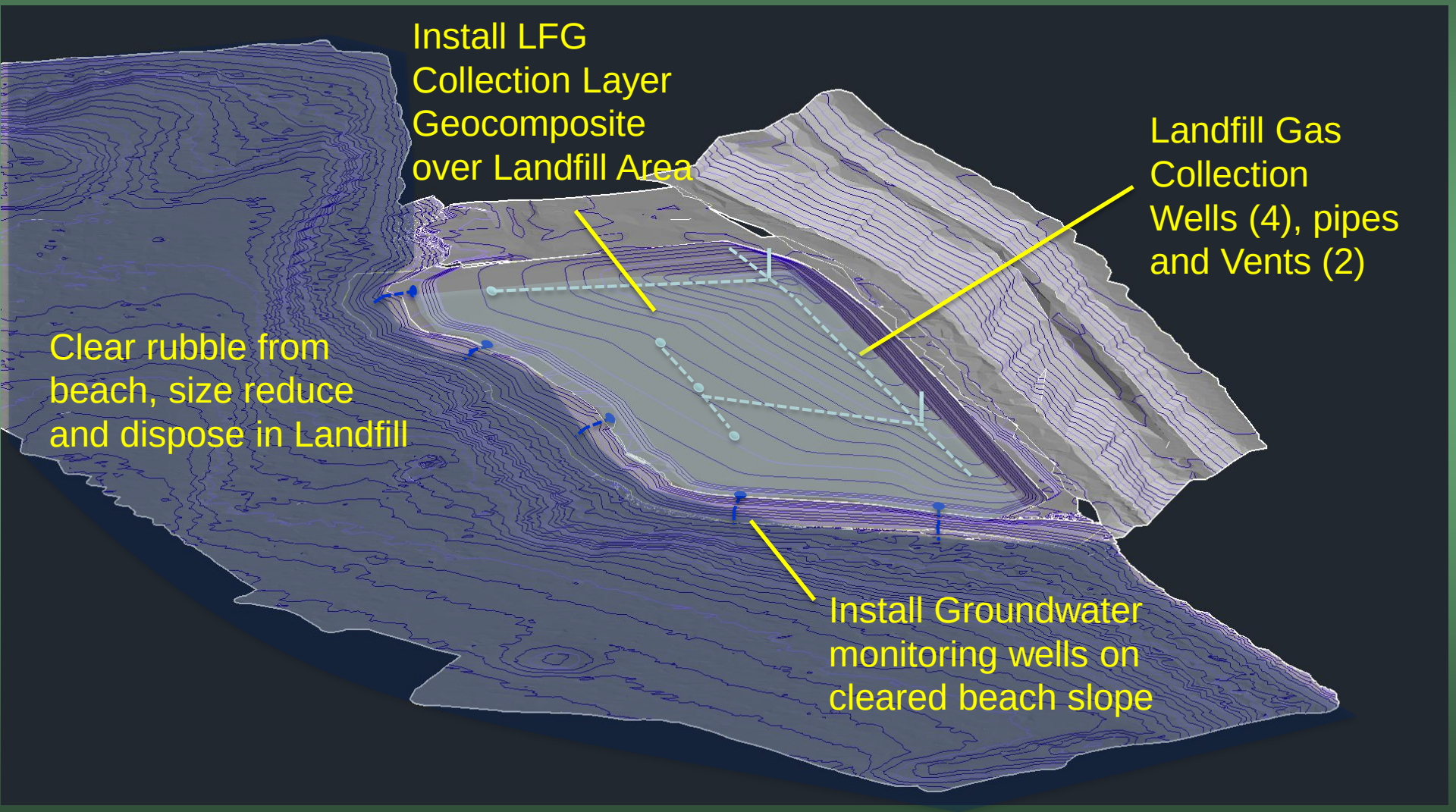
3-D Site Rendering Perspective



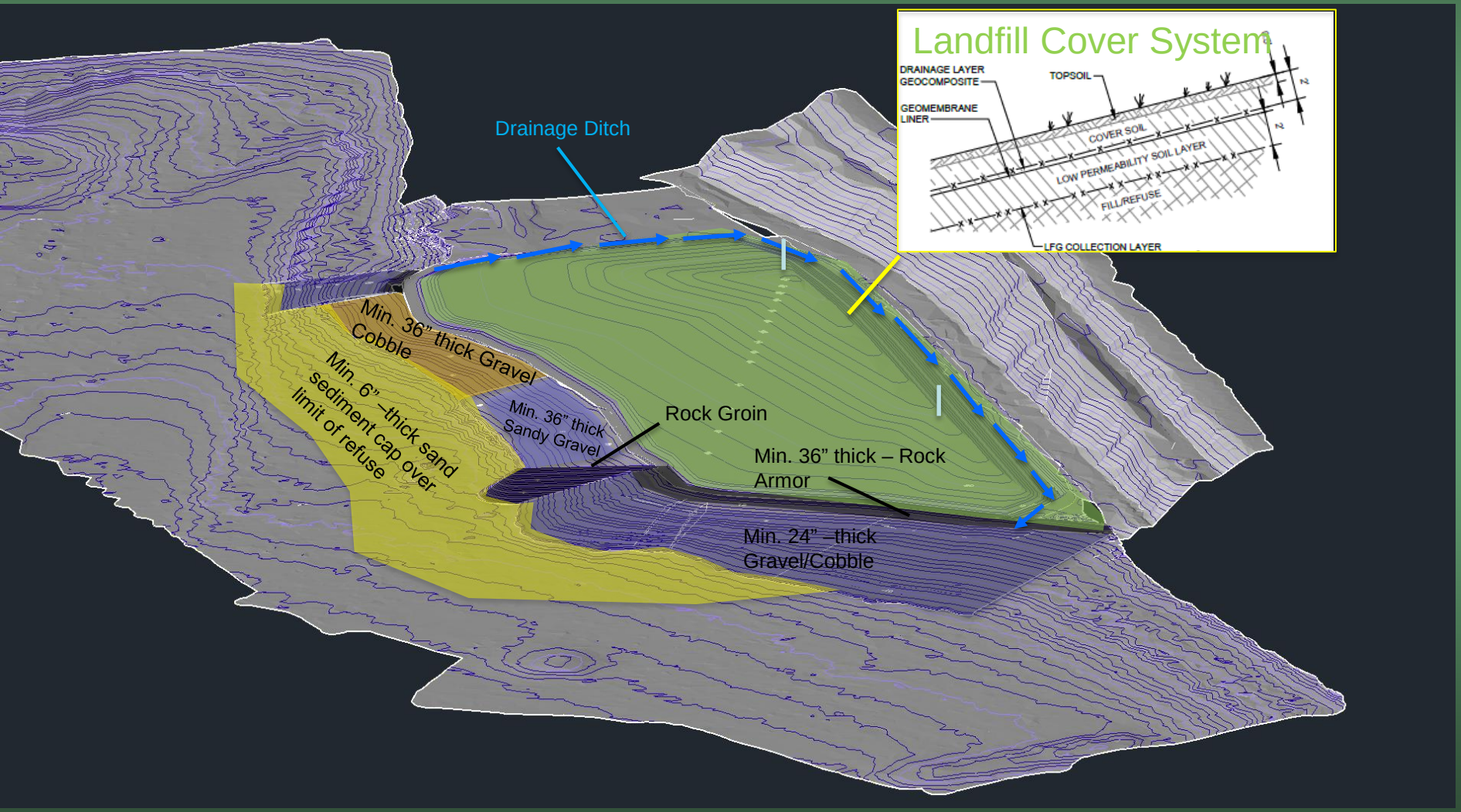
3-D SITE RENDERING
CURRENT CONDITIONS



COVER SUBGRADE, LFG COLLECTION & GW MONITORING WELL INSTALL

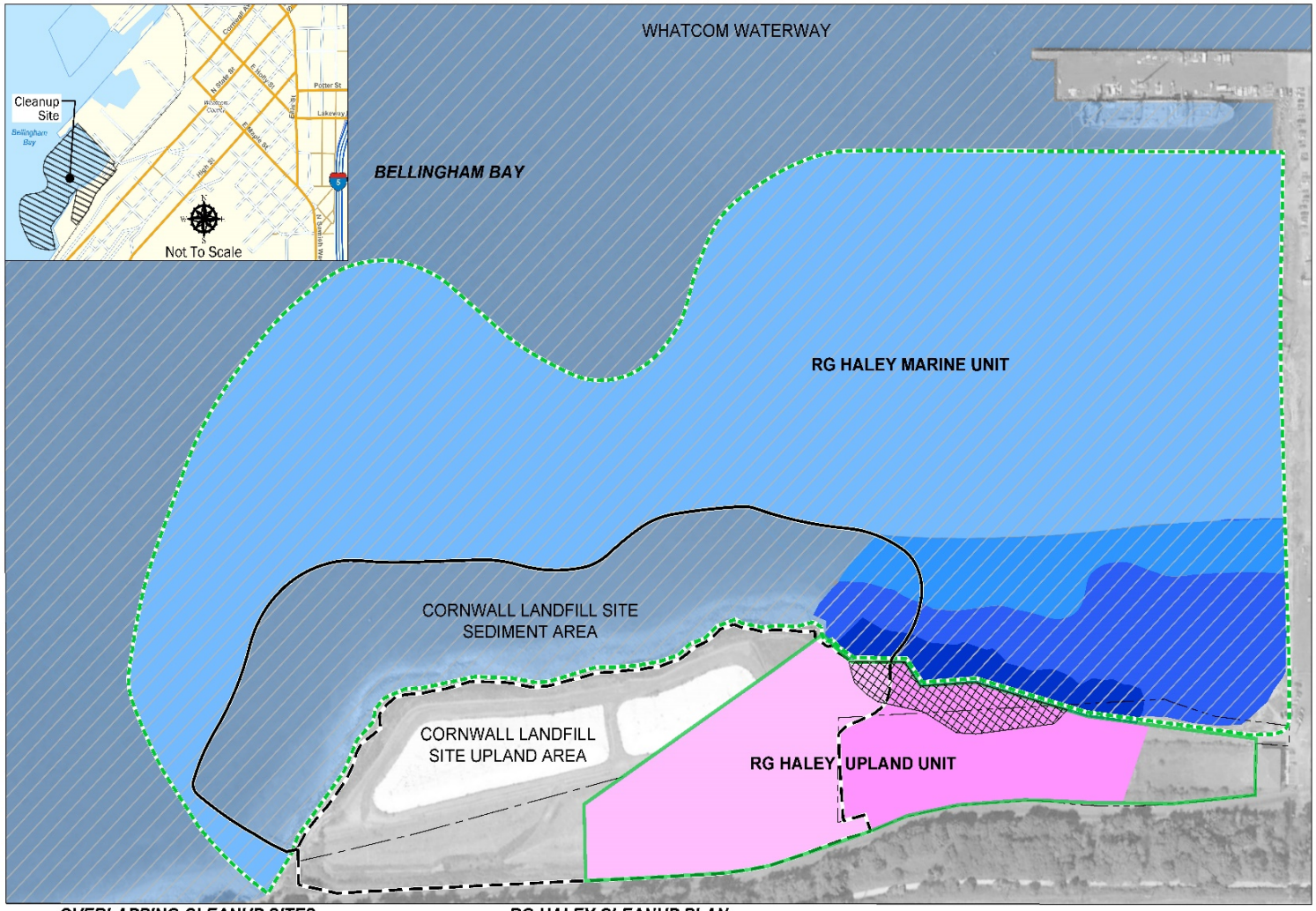


FINAL COVER AND CONTAINMENT SYSTEM



Coordination with R.G. Haley Site

- Integrated upland gas control and capping systems in overlap area
- Sequencing of aquatic cleanup elements
- Implementation of cleanup actions for both sites likely to be implemented as a single construction project



OVERLAPPING CLEANUP SITES

- RG Haley Upland Unit Boundary
- RG Haley Marine Unit Boundary
- Cornwall Landfill Site Upland Area Boundary
- Cornwall Landfill Site Sediment Area Boundary
- Whatcom Waterway Sediment Site

RG HALEY CLEANUP PLAN

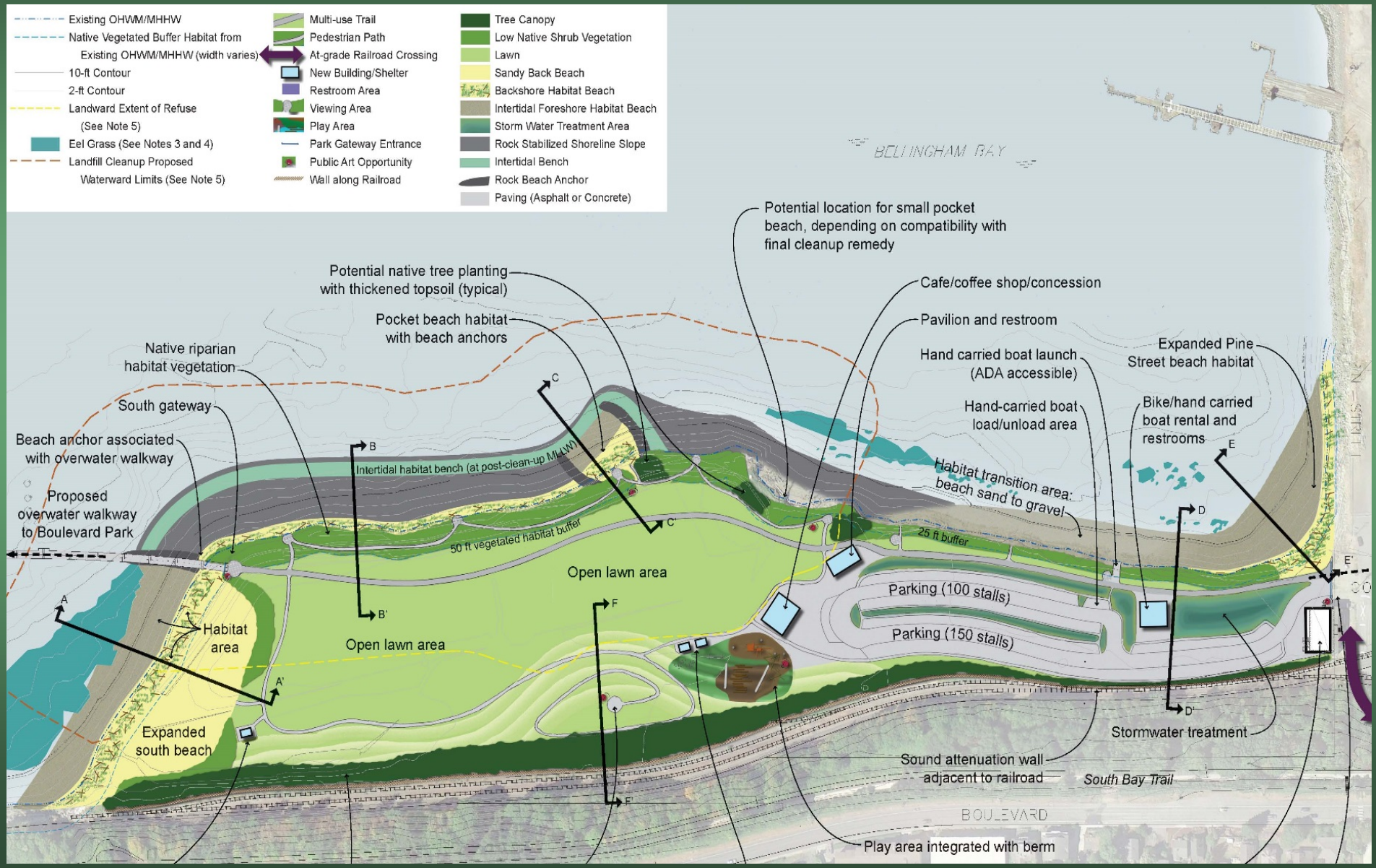
- RG Haley Low-Permeability Soil Cap
- Combined RG Haley/Cornwall Low-Permeability Soil Cap
- Soil Solidification
- Sediment Removal and Cap
- Sediment Cap
- Enhance Natural Recovery with Thin Sediment Cap
- Monitor Naturally-Forming Sediment Cap

True North
Project North

250 0 250
Feet

Cleanup Plan
RG Haley Site
Bellingham, WA

City Park Master Plan – Plan View



How to Comment:

Comment Period extended until **Thursday, February 22**

- Online
  - Bit.ly/Cornwall-EDR-Comments
- Use comment card on sign-in table
- Mark Adams – Site Manager
  - 3190 160th Avenue SE
  - Bellevue, WA 98008-5452
  - (425) 649-7107
  - Mark.Adams@ecy.wa.gov

Questions?