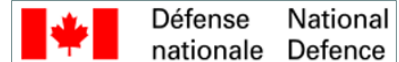




An Update on the Department of National Defence Sediment Remediation in Esquimalt Harbour



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WEDA Dredging Summit and Expo 2017
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Overview

- Project Overview
 - Remediation Objectives
 - Harbour Contaminant Concentrations
 - Conceptual Site Model
 - Key Considerations
- Remedial Planning Areas
 - Schedule
 - Areas and Volumes
 - Common Project Elements
 - Site-by-site Status
- Harbour-wide Risk Management

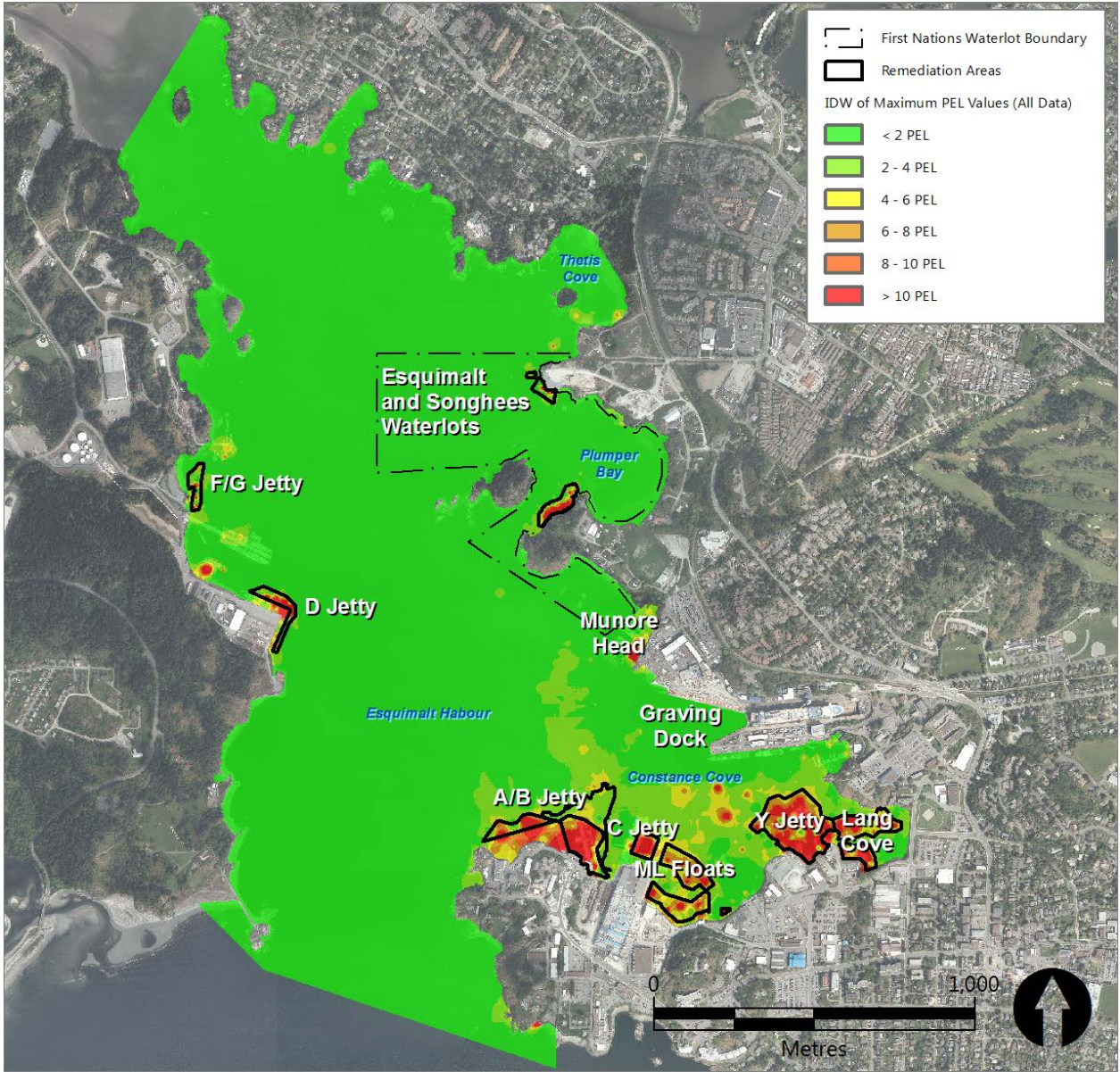
Esquimalt Harbour Overview



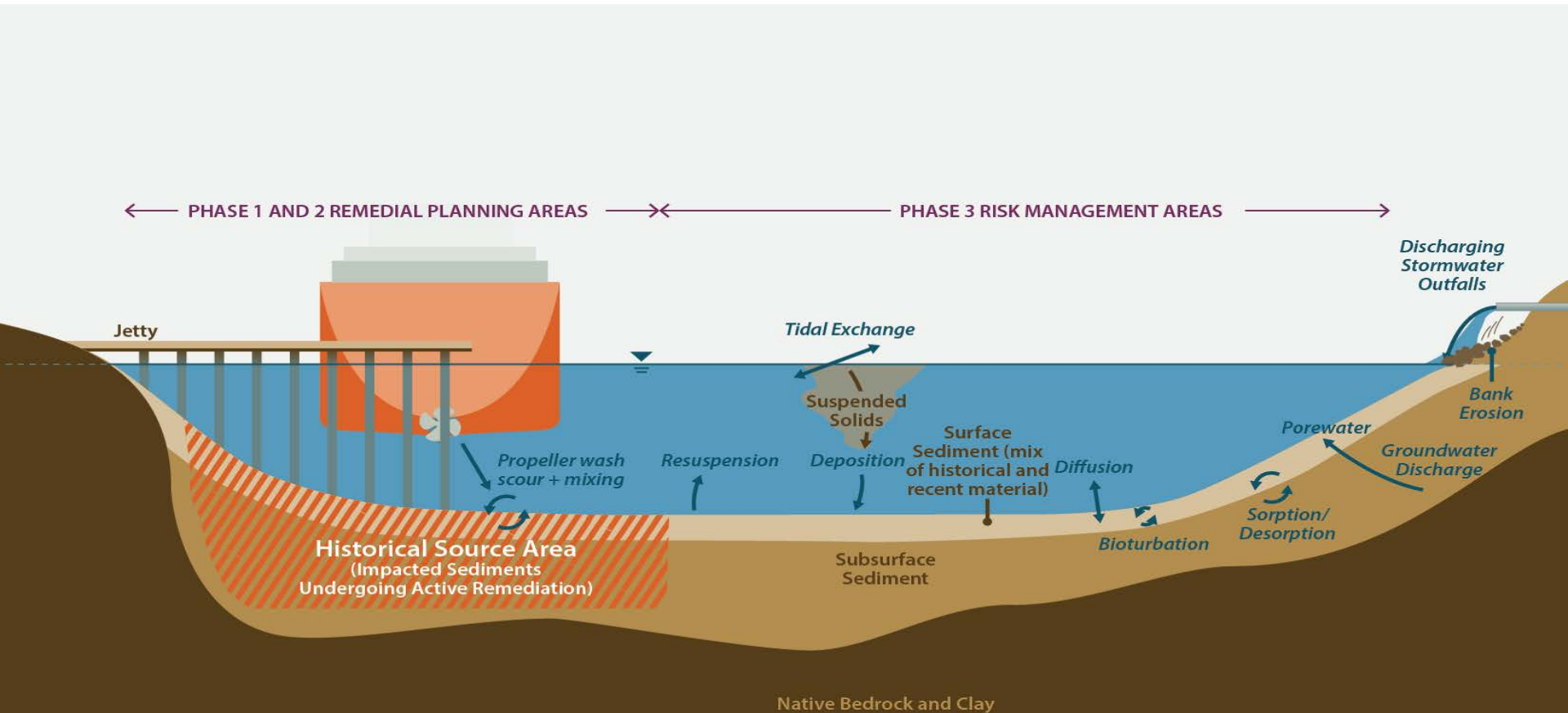
Remediation Objectives

- Key drivers
 - 25 chemicals of potential concern
 - Identified contaminants translate to Human Health and Ecological Risks
 - Esquimalt Harbour is a Class 1 federal contaminated site with a booked liability in excess of \$240 million
- Purpose
 - Reduction in DND's environmental liability
 - Remediation of prioritized areas with historically contaminated sediments
 - Implementation of a Harbour-wide Risk Management Plan (RMP) that addresses areas with less contamination
 - Minimization of recontamination potential

Pre-remediation Harbour Concentrations



Conceptual Site Model

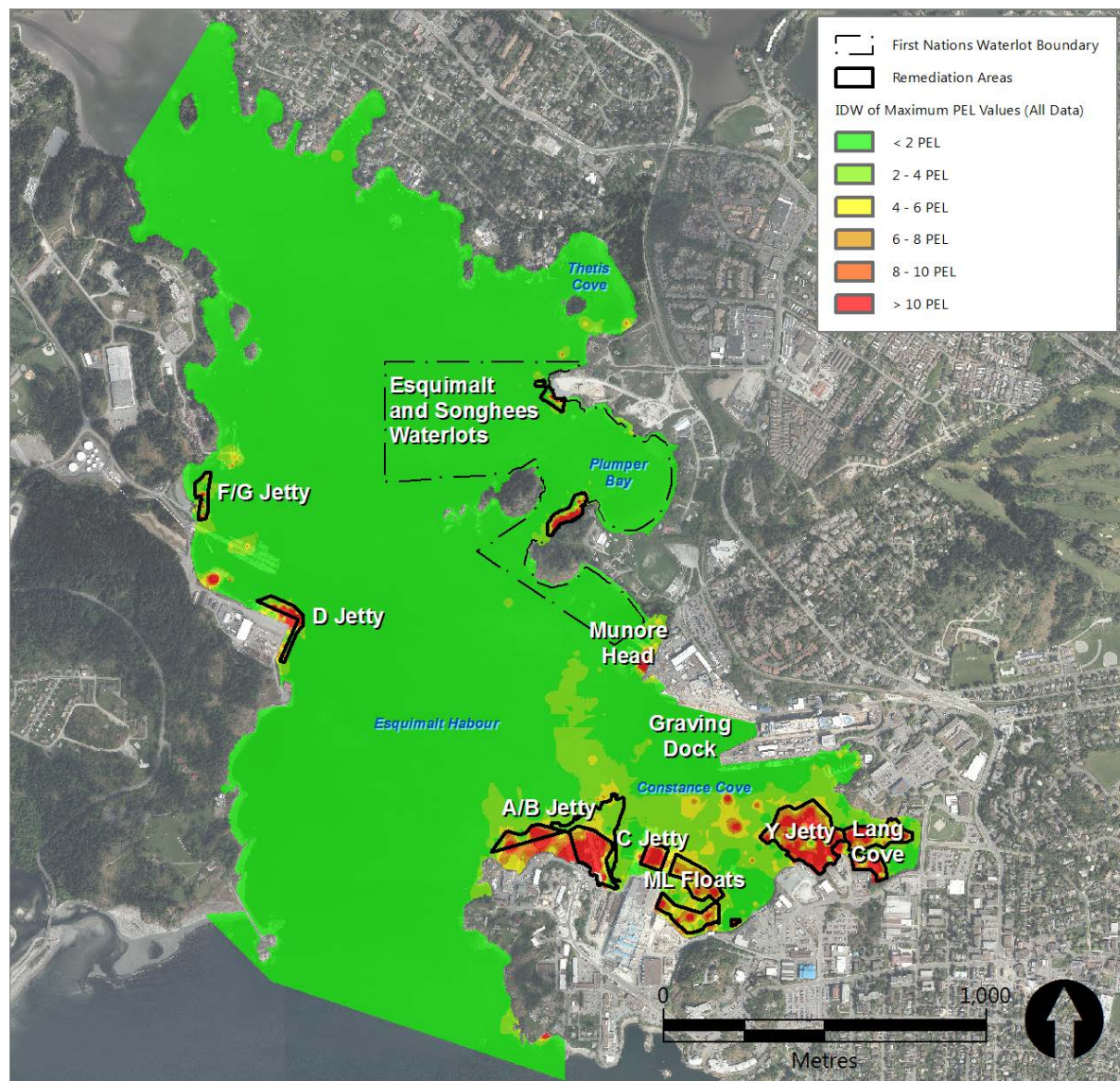


Key Considerations

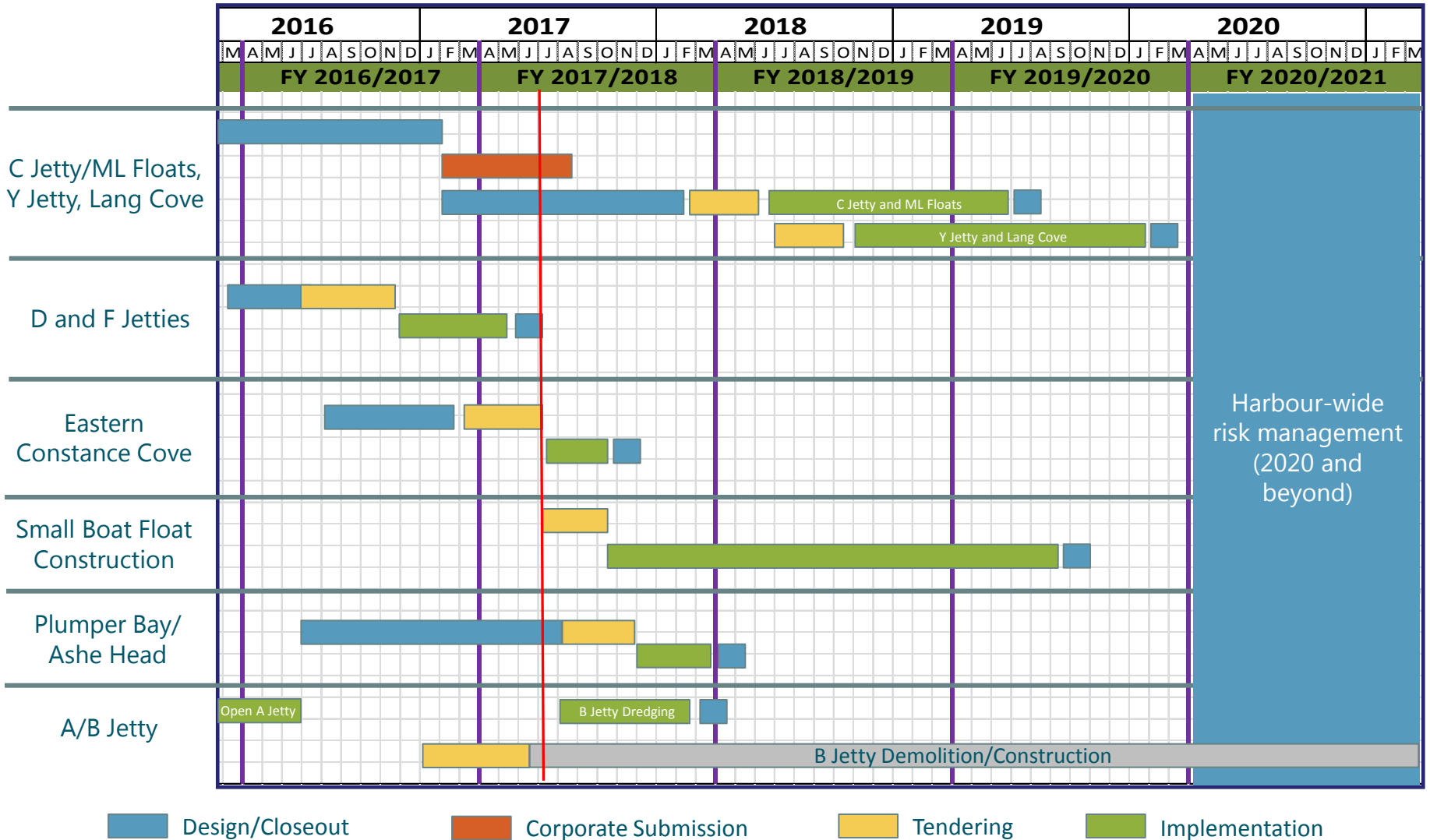
- Schedule constraints
 - Funding (e.g., FCSAP sunsets 2020)
 - Harbour capital projects (A/B Jetty, small boat float)
 - RCN operations (vessel berthing, dry dock use)
- Procurement
 - Two contracting authorities (i.e., PSPC and DCC)
- Resource management
 - Contractors
 - Consultants
 - Client team (e.g., DND)

Remedial Planning Areas

- A/B Jetty
- C Jetty and ML Floats
- Constance Cove
- Y Jetty
- Lang Cove
- D Jetty
- F/G Jetty
- Ashe Head
- Plumper Bay



Schedule



Area and Dredge Volume Estimates

Remedial Planning Area	Area (m ²)	Volume (m ³)
A/B Jetty	37,000	140,100
C Jetty	32,200	47,900
Constance Cove	10,700	20,800
Y Jetty	32,300	57,000
Lang Cove	6,200	11,500
D Jetty	7,700	14,300
F/G Jetty	5,600	10,100
Ashe Head	4,500	9,100
Plumper Bay	2,000	4,400
Total	138,200	315,200

Notes:

m² = square meters

m³ = cubic meters

Common Project Elements

- Environmental dredging
 - Silt curtains
 - Slower dredging production rates
- Significant debris anticipated
- Contingency re-dredging
 - Sampling downtime and directed re-dredging
- Material processing
 - Removal of suspected UXO and archaeological items
 - Requirement at most sites (not Plumper Bay/Ashe Head)



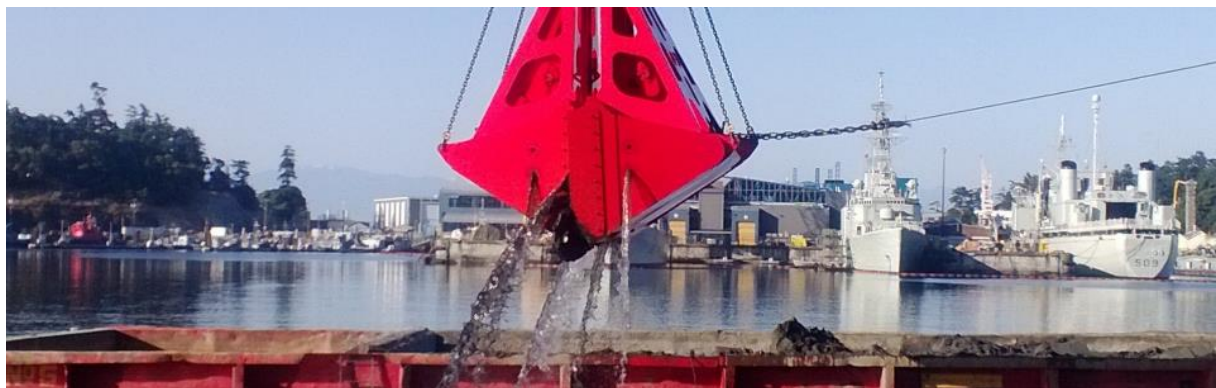
Environmental Dredging

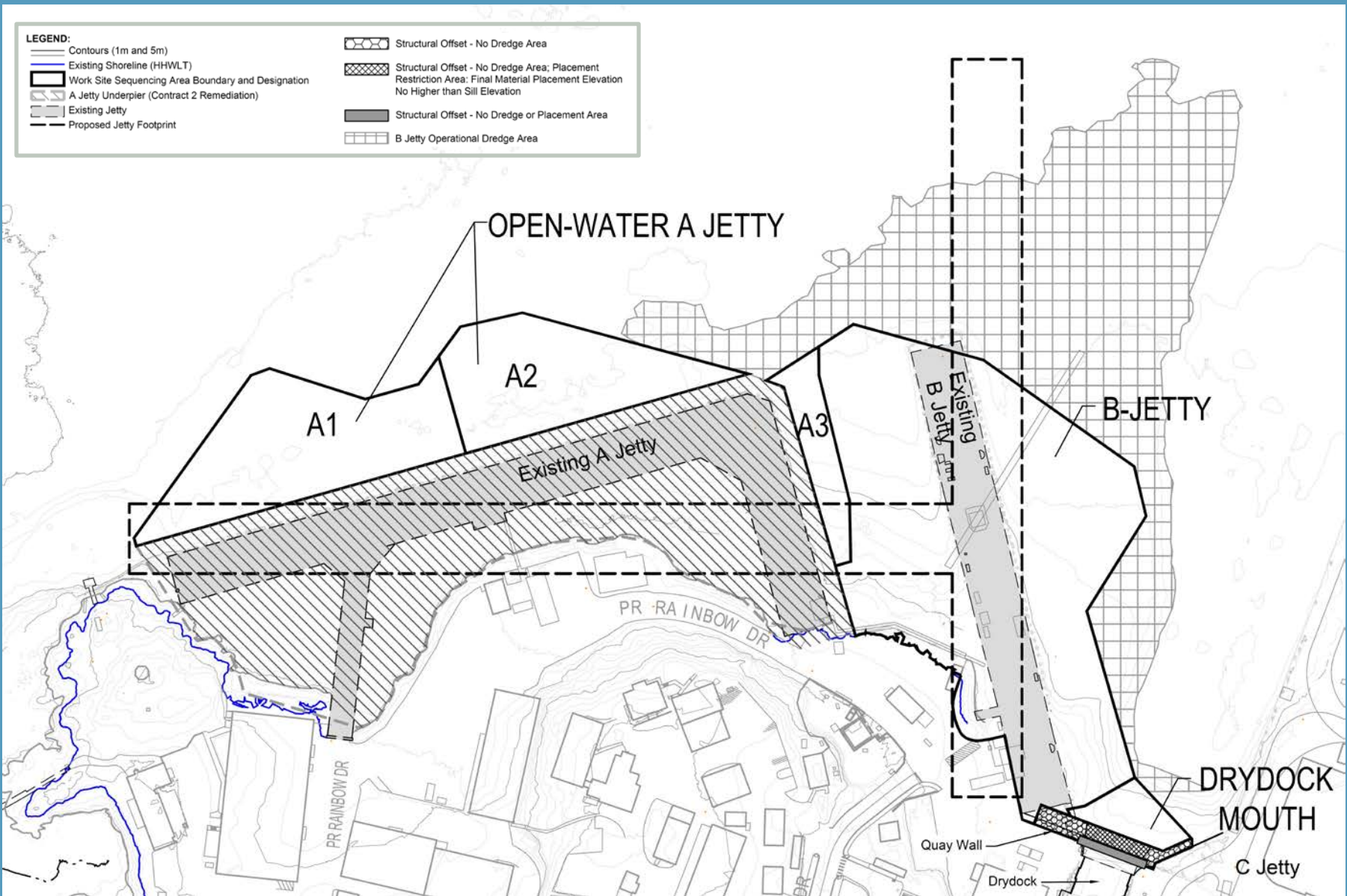


Material Processing

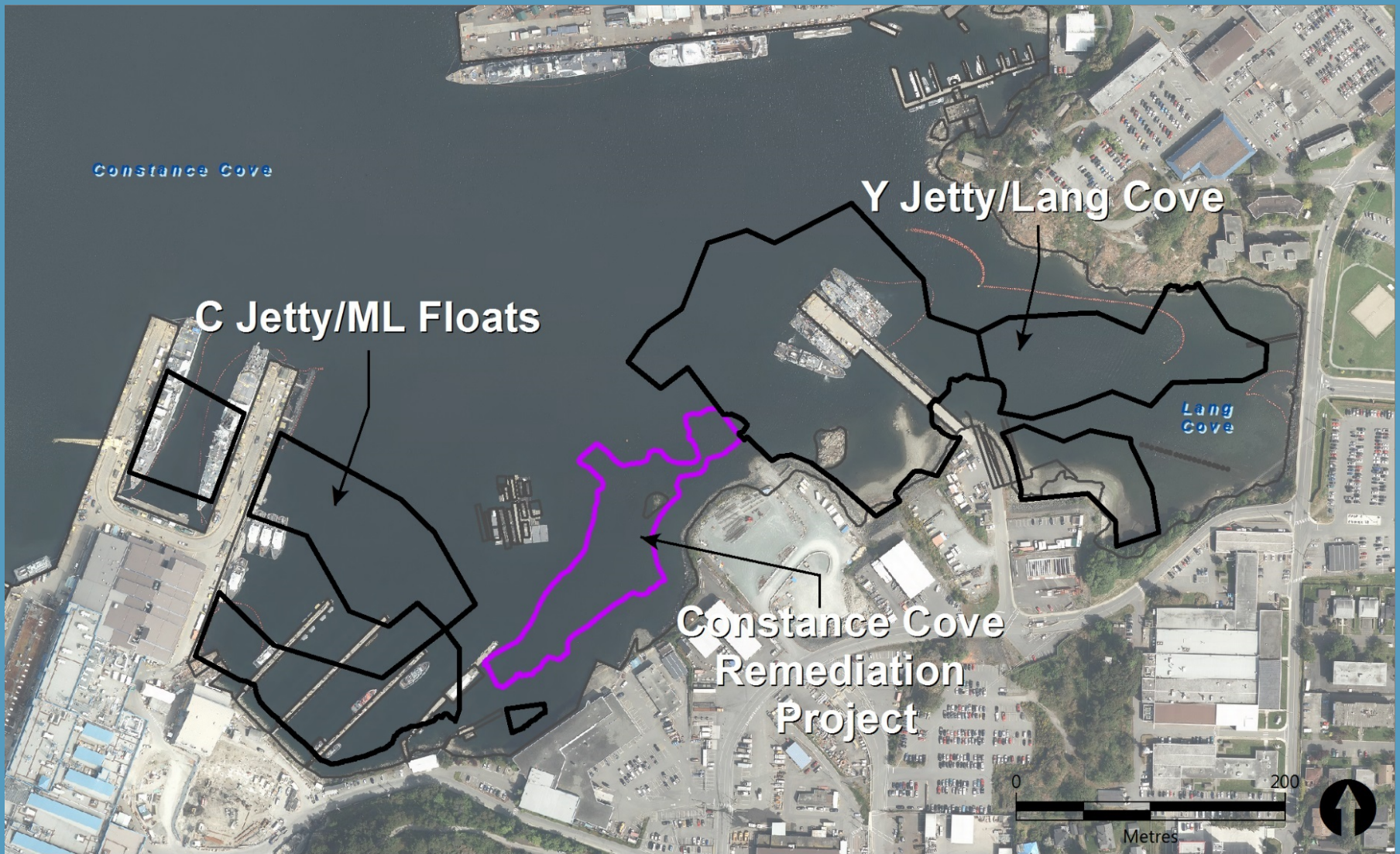
Common Project Elements (cont.)

- Material placement
 - Residuals management cover
 - Structural backfill
 - Remedial covers (nearshore, underpier)
 - Engineered capping
 - General and surficial habitat-related backfill
- Structural removal and reinstatement
 - ML Floats
 - C, D, and Y Jetty Fender Systems
 - Gas Float

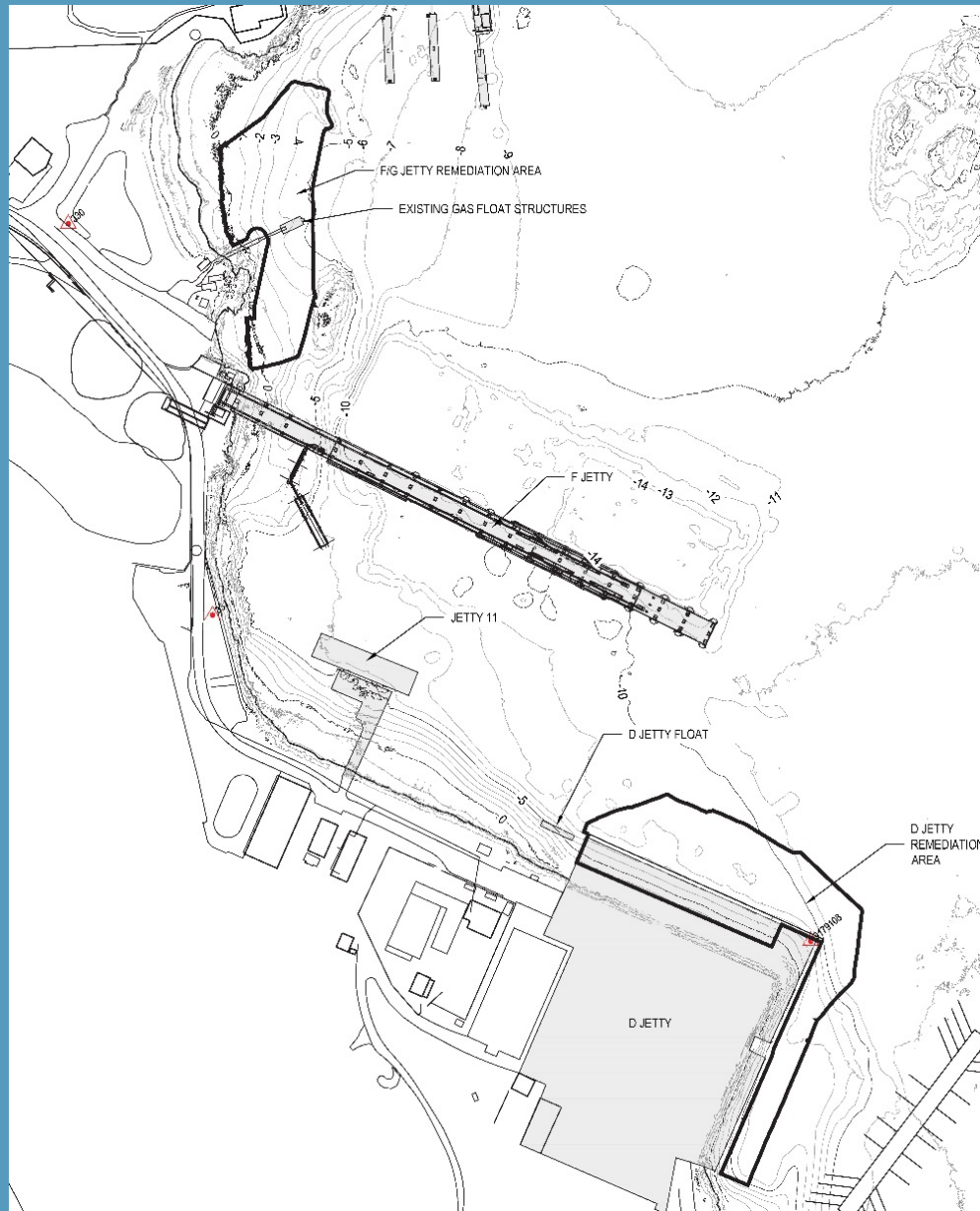




A/B Jetty Recapitalization Project



Esquimalt Harbour Remediation Project and Constance Cove Remediation Project

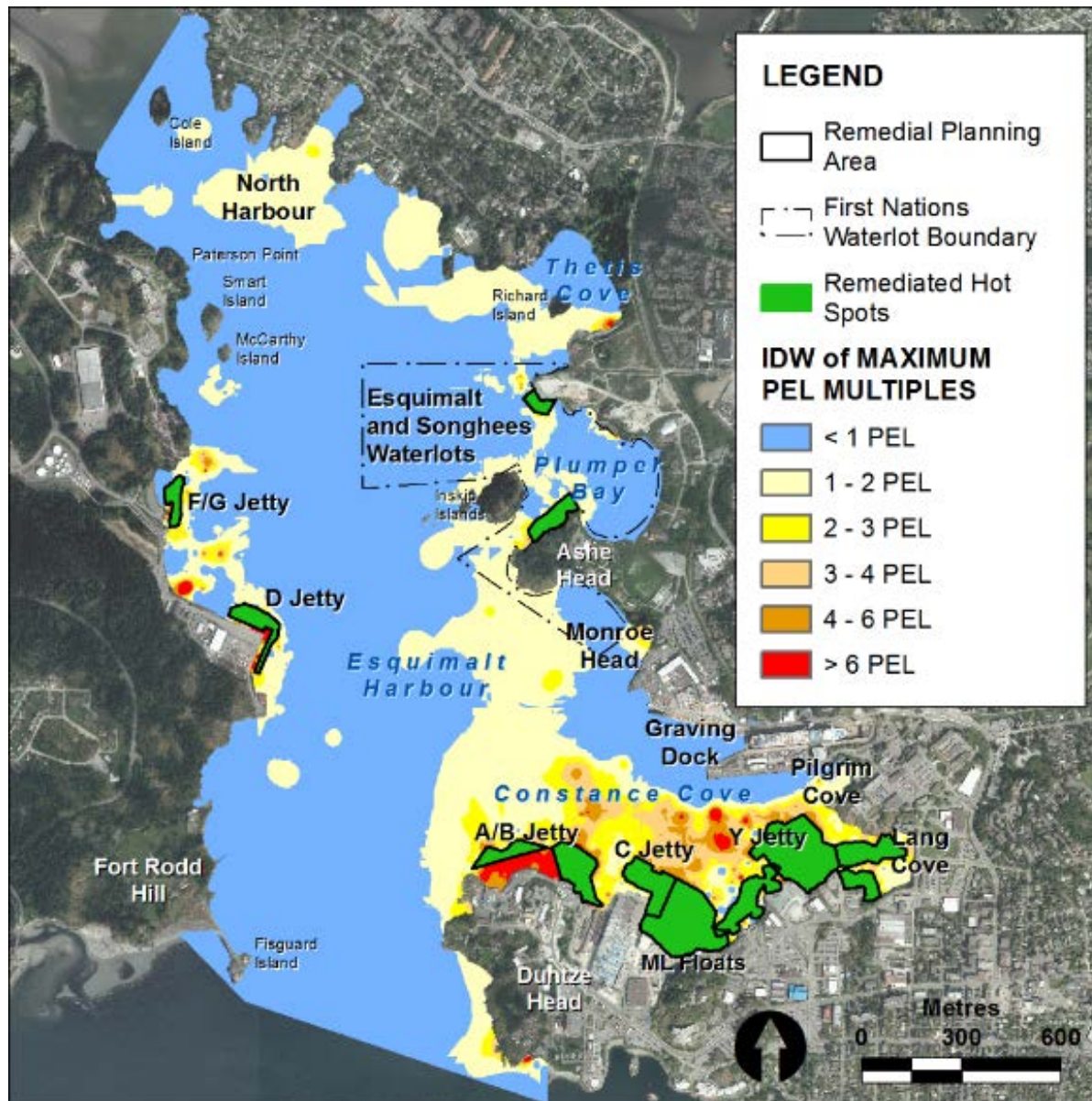


Colwood Jetties Remediation Project



Ashe Head and Plumper Bay Remediation Projects

Post-2020 Sediment Concentrations



Harbour-wide Risk Management

- Development of a Risk Management Plan (RMP)
 - Working Harbours Guidance to tie together harbour risk assessments with recontamination potential to predict future risk
- Risk management components
 - Conduct post-construction performance monitoring in remediated areas
 - Monitor harbour recovery and overall risk reductions over time and compare to RMP predictions
 - Continue to track harbour conditions with long-term monitoring





Questions

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