



The Port District of  
South Whidbey Island

# South Whidbey Harbor Expansion, in Langley

GEOENGINEERS 

Reid Middleton

ENGINEERS PLANNERS SURVEYORS

Pre-Application Meeting  
July 8, 2009



# Port District of South Whidbey Harbor Expansion



## PROJECT LOCATION



Pre-Application Meeting - July 8, 2009



# Port District of South Whidbey **Harbor Expansion**



## **BACKGROUND INFORMATION**

- **Small Boat Harbor**
  - City of Langley
  - 38 Slips
  - Piling Breakwater
  - Pump out Station
  - No fueling
- **Master Planned Facility**
  - 2004 Master Plan
  - Comprehensive Scheme 2007-2013
  - Public Participation



Pre-Application Meeting - July 8, 2009





# Port District of South Whidbey Harbor Expansion



## EXISTING FACILITY



Pre-Application Meeting - July 8, 2009





# Port District of South Whidbey **Harbor Expansion**



## **PROJECT INTRODUCTION**

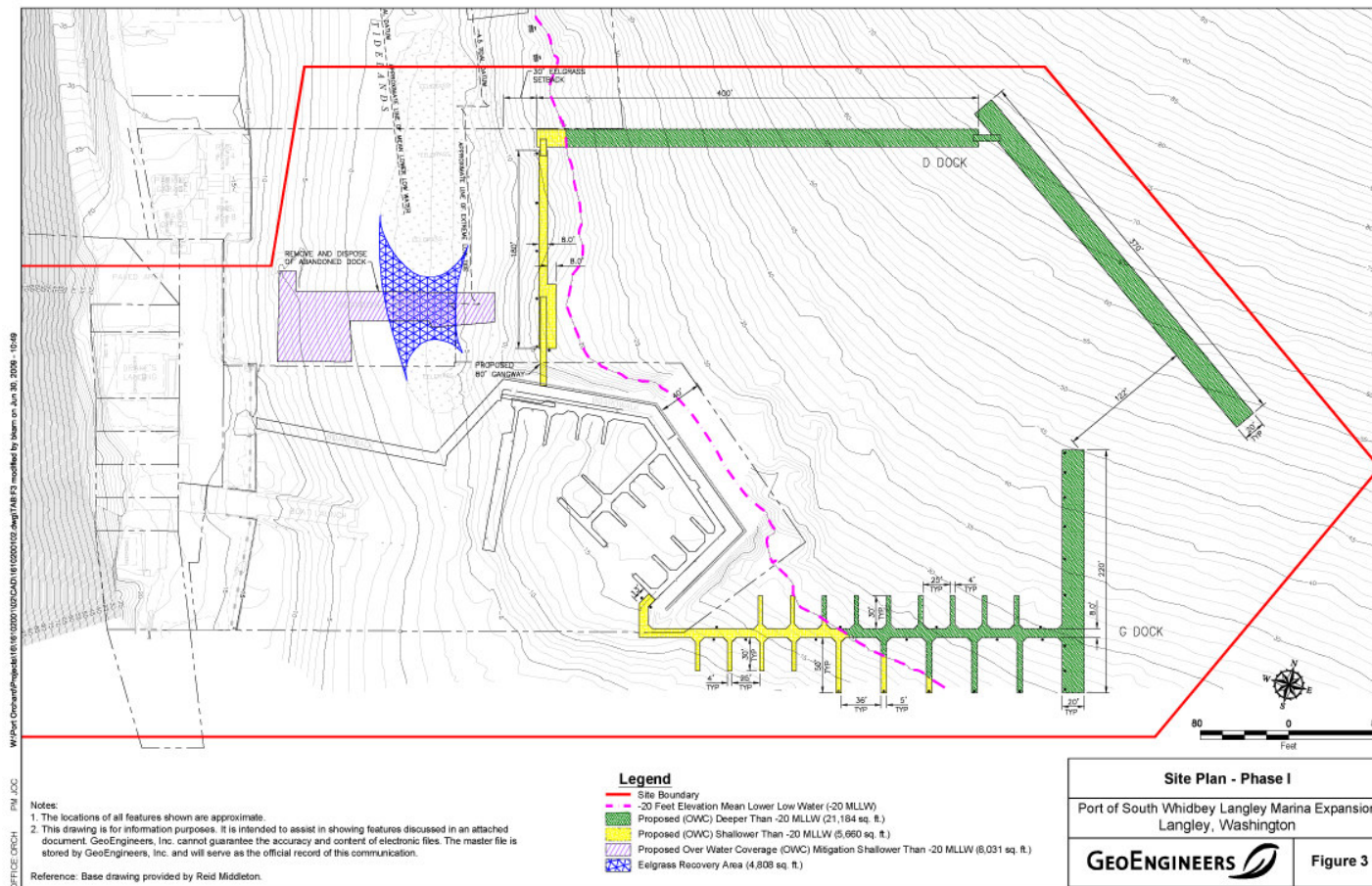
- **Essential Public Facility**
  - Fire Rescue Moorage
  - Emergency/Disaster Response
- **46 New Slips**
- **Floating Wave Attenuators**
  - Eventually Replace Piling Breakwater
- **Deep Water Moorage**
  - 83% of Floats Deeper than -20 MLLW
- **Multiple Phases**



# Port District of South Whidbey Harbor Expansion



## PHASE 1



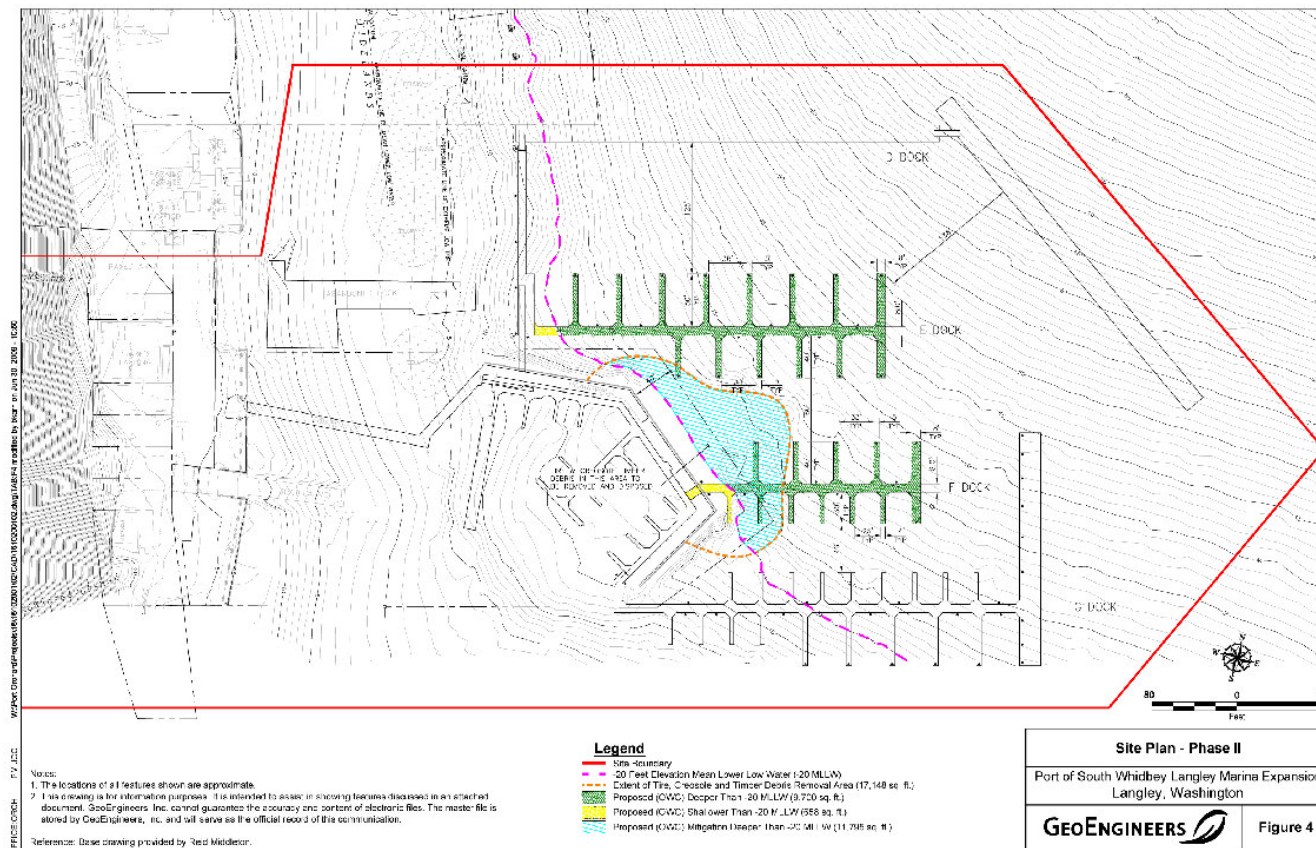
Pre-Application Meeting - July 8, 2009



# Port District of South Whidbey Harbor Expansion



## PHASE 2



Pre-Application Meeting - July 8, 2009





# Port District of South Whidbey **Harbor Expansion**



## **EXISTING HABITAT**

- Eelgrass Habitat (Eelgrass Survey)
- Sandy Inter-tidal - Unconsolidated
- Sandy Sub-tidal - Unconsolidated



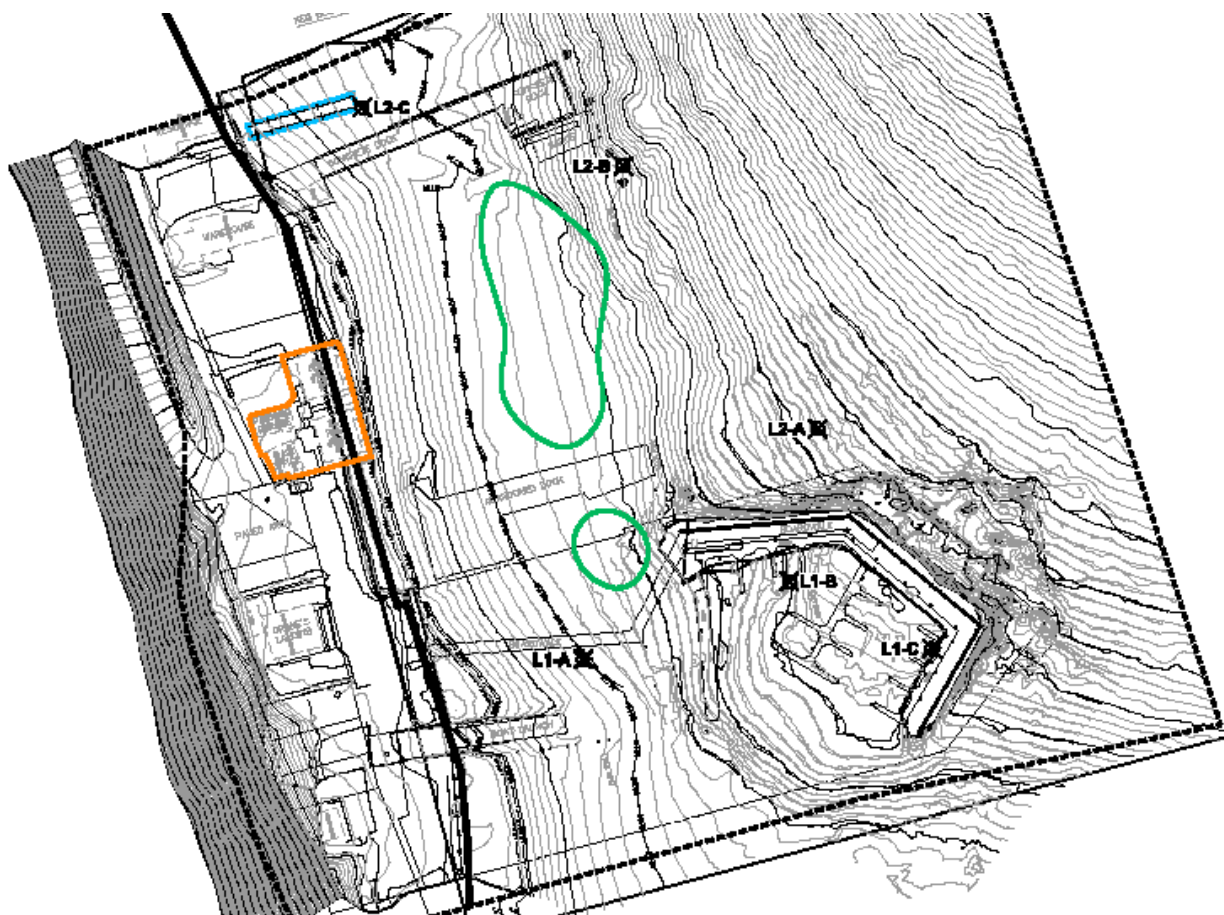
Pre-Application Meeting - July 8, 2009



# Port District of South Whidbey **Harbor Expansion**



## **EELGRASS SURVEY**



Pre-Application Meeting - July 8, 2009



# Port District of South Whidbey **Harbor Expansion**



## **POTENTIAL IMPACTS OF PROJECT**

- **Construction Impacts**
  - Increased Underwater Noise
  - Increased Terrestrial Noise
  - Localized Turbidity
- **Long-term Impacts**
  - Increased Benthic Shading
  - Decreased Water Quality
  - Increased Human Disturbance





# Port District of South Whidbey **Harbor Expansion**



## **MITIGATION PLANNING**

- **Mitigation Sequencing**
  - Avoidance, Minimization, Mitigation
- **Evaluate Proposed Impacts of Project**
  - Existing Habitat Functions and Values
- **Assess Benefits of Proposed Mitigation**
  - Mitigation Options
  - Functions and Values of Proposed Mitigation



# Port District of South Whidbey Harbor Expansion



## IMPACT VS. MITIGATION MATRIX

Action	Impact	Mitigation
<b><i>Pilings</i></b>	Install 81 Piles 12-36 inches in diameter.	Remove 83 creosote piles 12-18 inches in diameter.
<b><i>Increased Overwater Structure Phase 1</i></b>	26,844 square feet of overwater shading	Removal of Wharf and Eelgrass Recovery (12,839 SF)
<b><i>Increased Overwater Structure Phase 2</i></b>	10,358 square feet of overwater shading	Removal of Benthic Debris (11,795 SF)



# Port District of South Whidbey **Harbor Expansion**



## **MITIGATION ELEMENTS**



**Phase 1 - Wharf Removal**



**Phase 2 - Sub-tidal Debris Removal**

Pre-Application Meeting - July 8, 2009





# Port District of South Whidbey **Harbor Expansion**



## **PHASE 1 - WHARF REMOVAL**



**Creosote Pilings and Decking**



**Inter-tidal and Sub-tidal Shading**

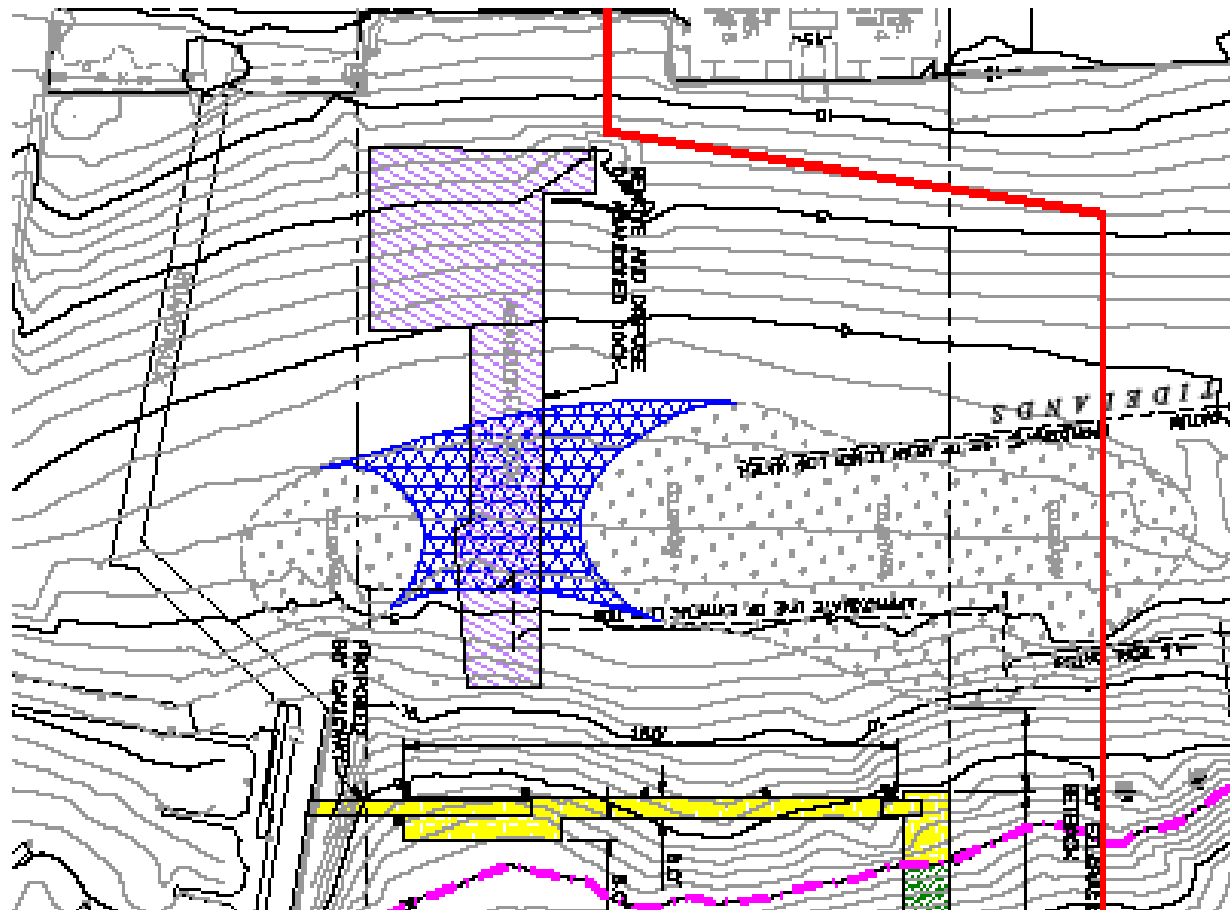
Pre-Application Meeting - July 8, 2009



# Port District of South Whidbey Harbor Expansion



## EELGRASS RECOVERY



Pre-Application Meeting - July 8, 2009



# Port District of South Whidbey **Harbor Expansion**



## **PHASE 2 - SUB-TIDAL DEBRIS REMOVAL**



Pre-Application Meeting - July 8, 2009





# Port District of South Whidbey **Harbor Expansion**



## **MITIGATION SUMMARY**

- **Phase 1 - Overwater Structure Removal**
  - Wharf Removal (8,031 SF and 83 Creosote Piles)
  - Eelgrass Recover (4,808 SF)
- **Phase 2 - Benthic Debris Removal**
  - Benthic Production Recovery (11,795 SF)
- **Net Habitat Function Improvement**
  - Avoid Impacts to Productive Habitat
  - Improve Functions of Productive Habitat
  - Minor Impacts of Less Productive Habitat



# DISCUSSION

The Port District of  
South Whidbey Island

## South Whidbey Harbor Expansion, in Langley

GEOENGINEERS 

Reid Middleton

ENGINEERS PLANNERS SURVEYORS

Pre-Application Meeting  
July 8, 2009