

THE NORTHWEST SEAPORT ALLIANCE
MEMORANDUM

MANAGING MEMBERS
STAFF BRIEFING

Item No. 6A
Date of Meeting January 14, 2020

DATE: January 3, 2020

TO: Managing Members

FROM: John Wolfe, CEO

Sponsor: Tong Zhu, Chief Commercial Officer & Chief Strategy Officer

Project Manager: Emma Del Vento, Capital Program Leader

SUBJECT: Terminal 5 Quarterly Update

A. BRIEFING REQUESTED

Program Update.

B. SYNOPSIS

T5 Berth Modernization Program is meeting major milestones, on schedule and budget through Q4 2019. A significant construction risk was addressed in Q4 2019 and work restarted after 75 days.

C. BACKGROUND

The NW Seaport Alliance (NWSA) entered into a long-term lease for the redevelopment of Terminal 5 in the North Harbor, to create a modern international container terminal. Once the Terminal 5 Modernization Program is completed, the facility will have the capability to handle the largest vessels currently calling the west coast, allowing the NWSA to compete for the super post-panamax vessels, increasing current container volumes, supporting economic development and creating jobs in the region.

D. CURRENT STATUS

Orion Marine Contractors are moving forward with:

- Above water dock demolition
- Pile driving (slope stabilization, and structural concrete)
- Landside crane rail
- Substation civil and electrical work

- Utility: sewer, water, and electrical duct bank

On time and on budget.

- Permit Conditions are moving forward on schedule. Major deliverables include Quiet Zone 90% design received in Q4 2019.
- Lease Obligations are progressing in concert with the Tenant. Major milestones this quarter are: Stormwater Master Plan (10% Design) and Marine Building 30% design (90% due in January 2020)
- Tenant discretionary changes are being addressed in change management working group meetings.
- Stochastic Analysis and Risk Register were updated. Program has a P-85 (85% probability of being sufficient) value of \$336.2M. The \$340M program budget has a 95% probability of being sufficient.

Slope Stabilization had a significant delay in Q4 2019 for the timber pinch pile driving:

- Problem Statement: Planned timber piles snap against larger than documented riprap
- Root Cause: As-builts and specs not available and underwater investigation (2014) looked at a small sample
- Timeline and Process:
 - 09/20: Pile driving started per schedule, issues identified within 2 weeks with the rate of pile driving and the success of driving to the required depth
 - 10/15: Suspended pile driving - determined that incremental adjustments would not work
 - 11/07: Engineering solution and water testing completed
 - Nov – 12/05: Engaged Regulatory Agencies, completed informal consultation, permits re-issued
 - 12/05: Pile driving resumed
- Recommendation: Replace 14" timber piles with 20" steel piles (40% less piles)
- Way Forward
 - Document lessons for future projects
 - Finalize Change Order
 - Cost
 - Schedule: working on in-water work extension
 - Recognize team

The first in-water work window will end February 15, 2020, and we are requesting an extension from the regulatory agency due to the in-water work delay.

Construction 12% complete; 18% time elapsed

Phase 1 Completion on schedule for Dec 31, 2020

Opportunities:

MARAD Grant – Award announcement March 2020

State shore power infrastructure – Q1 2020

Dept of Ecology grant for stormwater – funding notice January 2020

Look Ahead:

- Q1 2020
 - MARAD Award announcement
 - Dept of Ecology Grant for Stormwater – Funding notice
 - Complete 1st in-water work window
 - In-water work extension
 - Marine Building 100% Design
 - Quiet Zone stakeholder meeting
 - CBP negotiation
- Q2 2020
 - Marine Building Managing Members Authorization for Construction

E. BUDGET

Program currently on budget

Construction is 11% spent and 12% complete

Management Reserve: \$100K allocated for Clean Truck Gate Equipment Project

2019 Quarter 4 Program Budget	Authorized Budget	Quarter 4 Changes	Updated Budget	Spent to Date	Forecast at Completion	Remaining Authorized Budget
Construction	254.1	0.1	254.2	13.6	245.2	240.6
Design and Project Management	25.7		25.7	17.4	25.7	8.3
Permit Conditions	14.0		14.0	2.6	14.0	11.4
Stormwater Treatment	30.0	-	30.0	0.2	30.0	29.8
Management Reserve*	16.2	(0.1)	16.1	-	16.1	16.1
Total	340.0	-	340.0	33.8	331.0	306.2

Original Contract Amount:	\$160M
Projected Contract Amount: (New Contract Amount + Potential Risk)	\$166.4M
Original Contingency:	\$24M
Remaining Contingency:	\$17.6M
Executed COs to 12/31/2019:	\$300K
Potential Construction Risk – approx. value:	\$6M

Other Potential Risks:

- On-going Tenant Coordination
 - Stormwater Master Plan
 - Permit Conditions
 - Requests for design changes
- Unknown existing conditions
- Customs and Border Patrol
- Quiet Zone
 - Discussions underway with Industrial Neighbors regarding crossing configuration and property acquisition
 - Working with design team for alternate technical solutions
 - Risk is potential schedule delay and cost increase

F. ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS

No request is being made at this time.

G. ENVIRONMENTAL IMPACTS / REVIEW

No environmental impact/review is being made at this time.

H. ATTACHMENTS TO THIS REQUEST

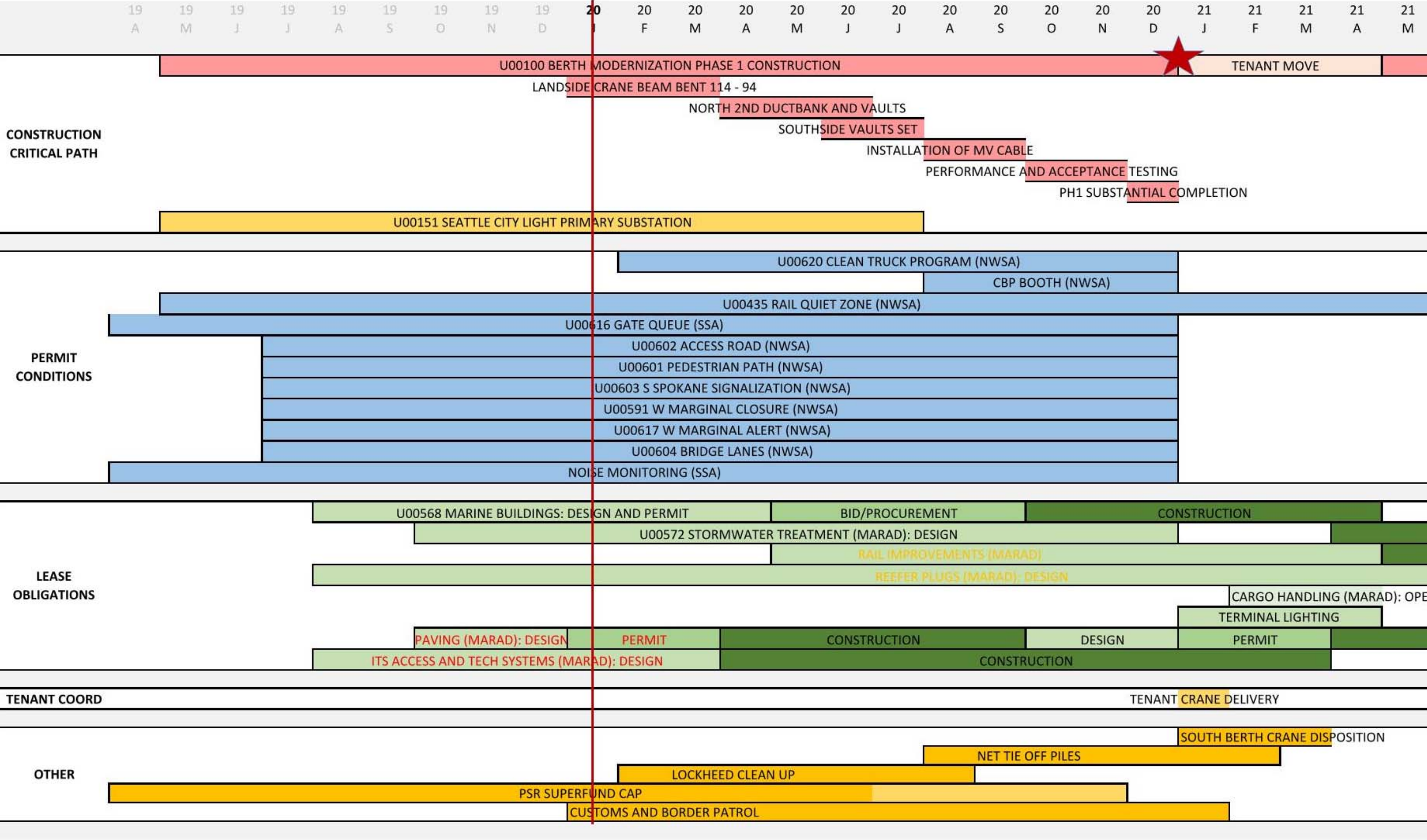
- Computer slide presentation.

I. PREVIOUS ACTIONS OR BRIEFINGS

<u>Date</u>	<u>Action</u>	<u>Amount</u>
TOTAL		340,000,000

Date	Action	Amount
January 14, 2020	T5 Modernization - Program Update	\$0
October 1, 2019	T5 Modernization - Program Update	\$0
August 6, 2019	T5 Modernization - Program Update	\$0
June 4, 2019	T5 Program Update	\$0
May 20, 2019	Program Authorization for Construction of Berth Modernization Program	\$0
April 2, 2019	Additional Program Funding and Authorization to Fund T5 Modernization Program	\$314,150,000
February 26, 2019	Authorization to advertise for construction	\$0
February 5, 2019	Pre-authorization Program Briefing	\$0
November 13, 2018	Motion to prepare construction documents for authorization to advertise	\$0
August 1, 2017	Railroad quiet zone funding, tribal payments, and Agreements	\$5,650,000
October 4, 2016	Additional Funding, Seattle City Light Agreement, and Project Labor Agreement	\$8,200,000
June 7, 2016	DEIS Briefing	\$0
November 4, 2015	Additional SEPA and Design Funding	\$2,000,000
October 13, 2015	Test Pile Bids Exceeded Engineer's Estimate	\$0
July 14, 2015	Additional Design Authorization	\$5,000,000
June 3, 2014	Initial Design Authorization	\$4,700,000
May 13, 2014	T5 Berth Modernization Briefing	\$0
March 12, 2014	Additional Pre-Design Authorization	\$150,000
October 27, 2013	Initial Pre-Design Authorization	\$150,000

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Quarterly Program Update Terminal 5 Modernization

Presenter: Emma Del Vento
Capital Program Leader

Terminal 5 – Program Overview

Primary Elements of Scope

- **Berth Modernization**
 - Crane Rails
 - Dock Rehabilitation
 - Slope Stabilization
 - Berth Deepening
 - Power Supply/
Distribution
- **Uplands Improvements**
 - Storm water
 - Marine Buildings
 - Permit Conditions
 - Lease Obligations



Terminal 5 – Q4 2019 Progress

- **Berth Modernization Project**

- In Construction by Orion Marine Contractors
 - Above water dock demolition almost complete
 - Pile driving is pursuing an aggressive schedule to make up for delay
 - Landside crane rail: shoring, lagging, and excavation underway
 - Substation civil and electrical work in progress
 - Utility: sewer, water, and electrical duct bank and vaults are being formed

- **Uplands Improvements Projects**

- Permit Condition Progress: Quiet Zone 90% design received Q4 2019 per schedule
- Lease Obligations
 - Storm Water Treatment: Master Plan received Dec 2019
 - Marine Buildings:
 - 90% design due January 2020
 - Agreed to size and location with Tenant
 - Customs and Border Patrol and Radiation Portal Monitor locations received from Tenant

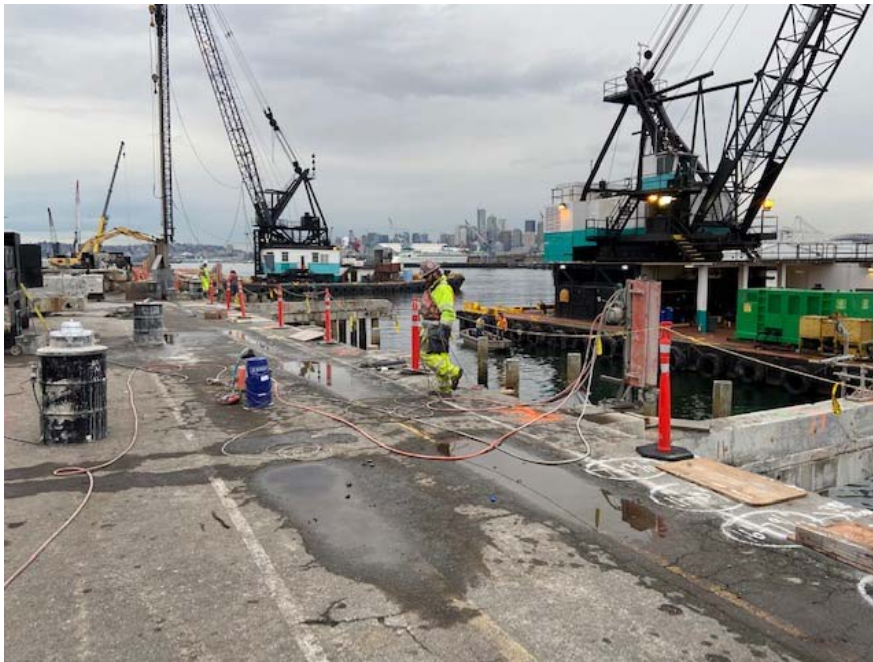
- **Stochastic Analysis and Risk Register updated by Planning and Management Services**

- P-85 value (85% probability of being sufficient) of \$336.2M
- The \$340M program budget has a 95% probability of being sufficient

Terminal 5 – Q4 2019 Progress

- **Potential Q3 risk updates:**
 - Manhole covers – final amount less than estimated
 - Electrical substation permit – obtained within scheduled timeline
 - Crane tie downs – final amount less than estimated
- **Retired major risks are:**
 - One-year delay in construction start due to delay of authorization to proceed
 - Current Seattle “hot” construction market impacting labor and material costs
 - Risks of changes to the 100% design package due to an unsecured tenant
- **Continuing risks:**
 - Events negatively impacting in water work productivity
 - Differing subsurface geotechnical conditions for in water and landside work
 - Tenant driven scope of work additions adding to project costs and potential schedule delays

Terminal 5 – Construction Progress



Pile Cap Demolition Underway

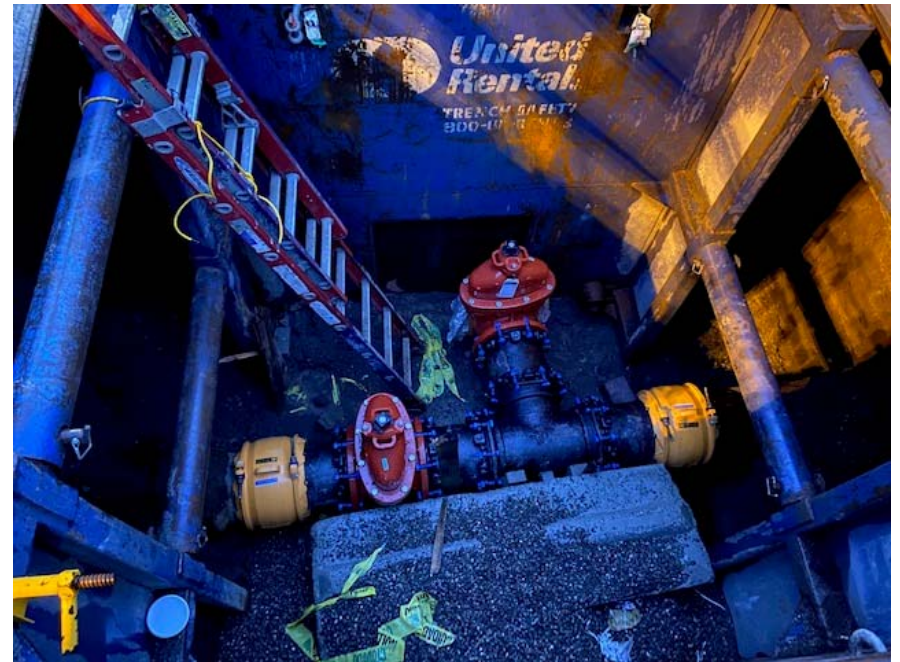


Primary Substation Floating Floor

Terminal 5 – Construction Progress



Concrete Pile Installation



Water Main Tie-in

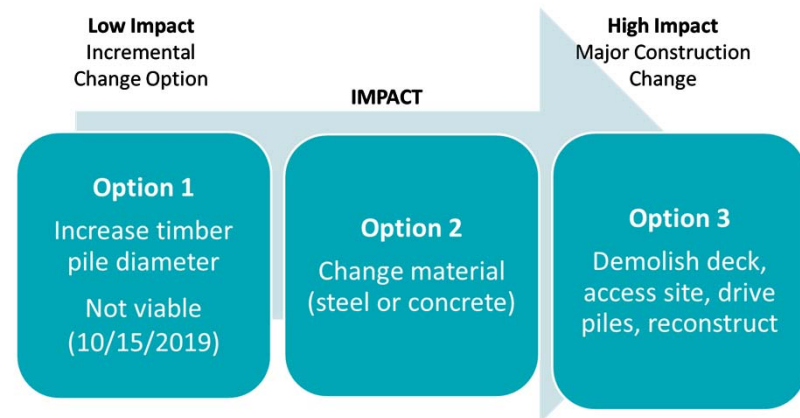
Terminal 5 – Slope Stabilization

Overall schedule delay: 75 days during constrained in water work window

- **Timber Pinch Pile Driving**

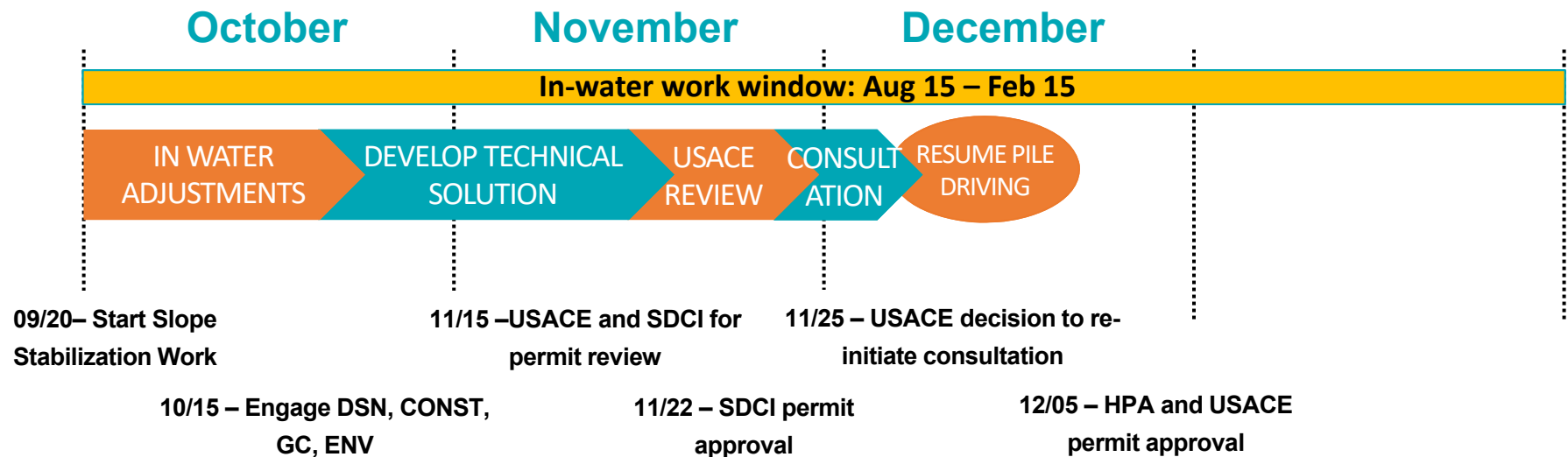
- Problem: Planned timber piles snap against larger & thicker than documented riprap
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 - 10/15: Suspended pile driving - determined that incremental adjustments would not work
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Pile Driving Option Analysis



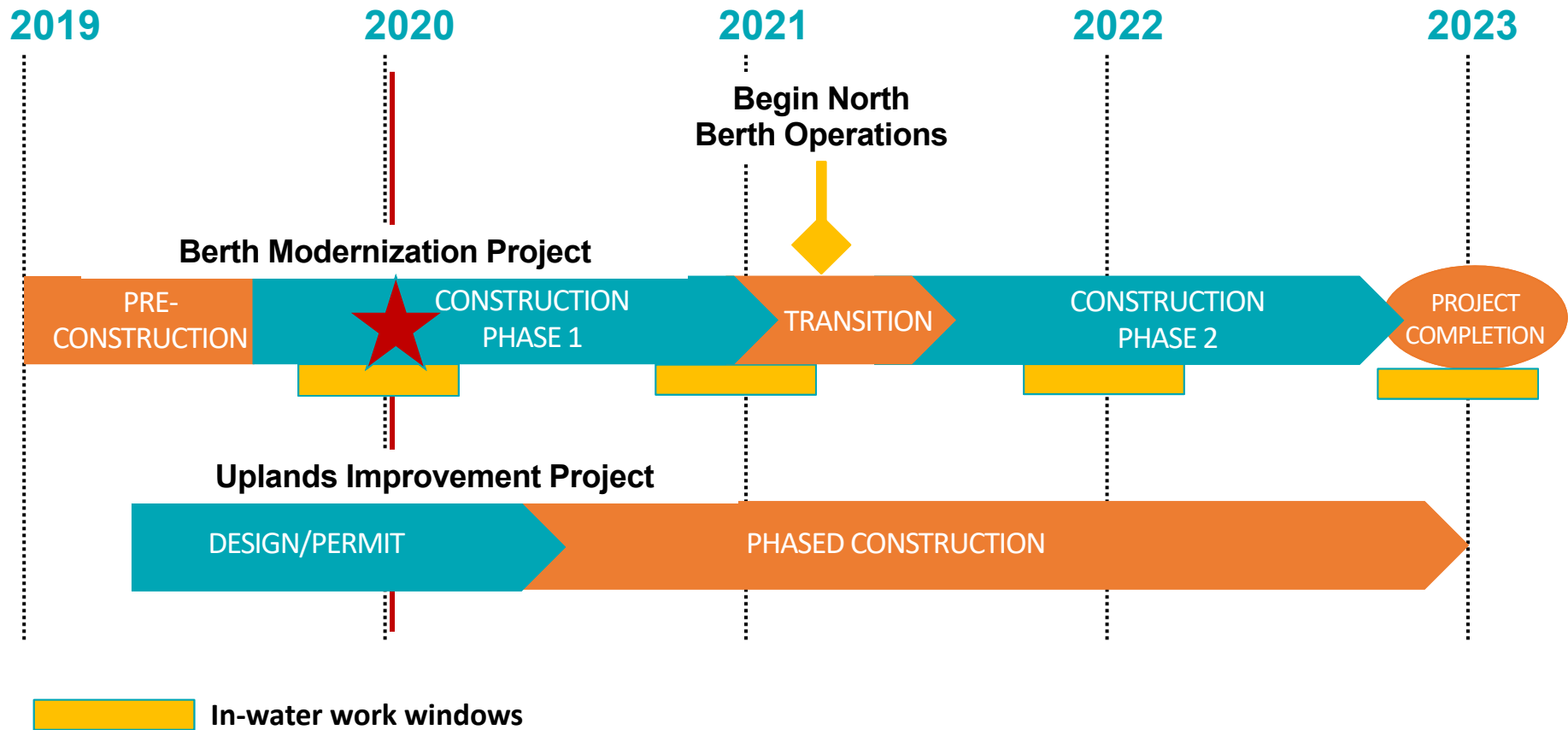
Terminal 5 – Slope Stabilization (cont.)

- Recommendation: Replace 14” timber piles with 20” steel piles (40% fewer piles)
- Way Forward
 - Document lessons for future projects
 - Finalize Change Order
 - Cost
 - Schedule: working on in-water work extension
 - Recognize team
 - Team has been exceptionally responsive and taken ownership



Terminal 5 – Programmatic Schedule

Construction 12% complete; 18% time elapsed



Terminal 5 – Budget

Program currently on budget
Construction is 11% spent and 12% complete

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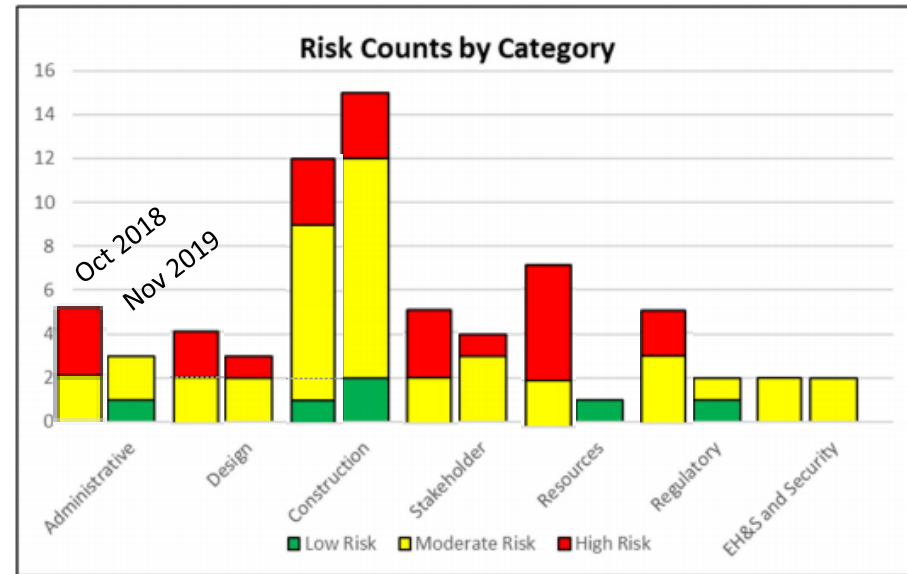
Management Reserve: \$100K allocated for Clean Truck Gate Equipment Project

Terminal 5 – Berth Modernization Trends

- **Original Contract Amount:** **\$160M**
- **Projected Contract Amount:** **\$166.4M**
(New Contract Amount + Potential Risk)
- **Original Contingency:** **\$24M**
- **Remaining Contingency:** **\$17.6M**
- **Executed COs to 12/31/2019:** **\$300K**
- **Potential Risk – approx. value:** **\$6M**
 - Amounts above \$250K
 - Manhole Covers \$300K
 - Early Stormwater Infrastructure \$1M
 - Marine Building Utilities \$650K
 - Existing Bull rail thickness \$660K
 - Landside Crane Rail Excavation \$250K
 - Steel Tariffs on Toe Wall \$1.5M
 - Other (Pin Sockets) \$28K
 - Slope Stabilization (pinch piles) TBD

Terminal 5 – Risks

- **On-going Tenant Coordination**
 - Stormwater Master Plan
 - Permit Conditions
 - Requests for design changes
- **Unknown existing conditions**
- **Customs and Border Patrol**
- **In water work extension (pending)**
- **Quiet Zone**



- Discussions underway with Industrial Neighbors regarding crossing configuration and property acquisition
 - Working with design team for alternate technical solutions
 - Risk is potential schedule delay and cost increase

Terminal 5 – Opportunities

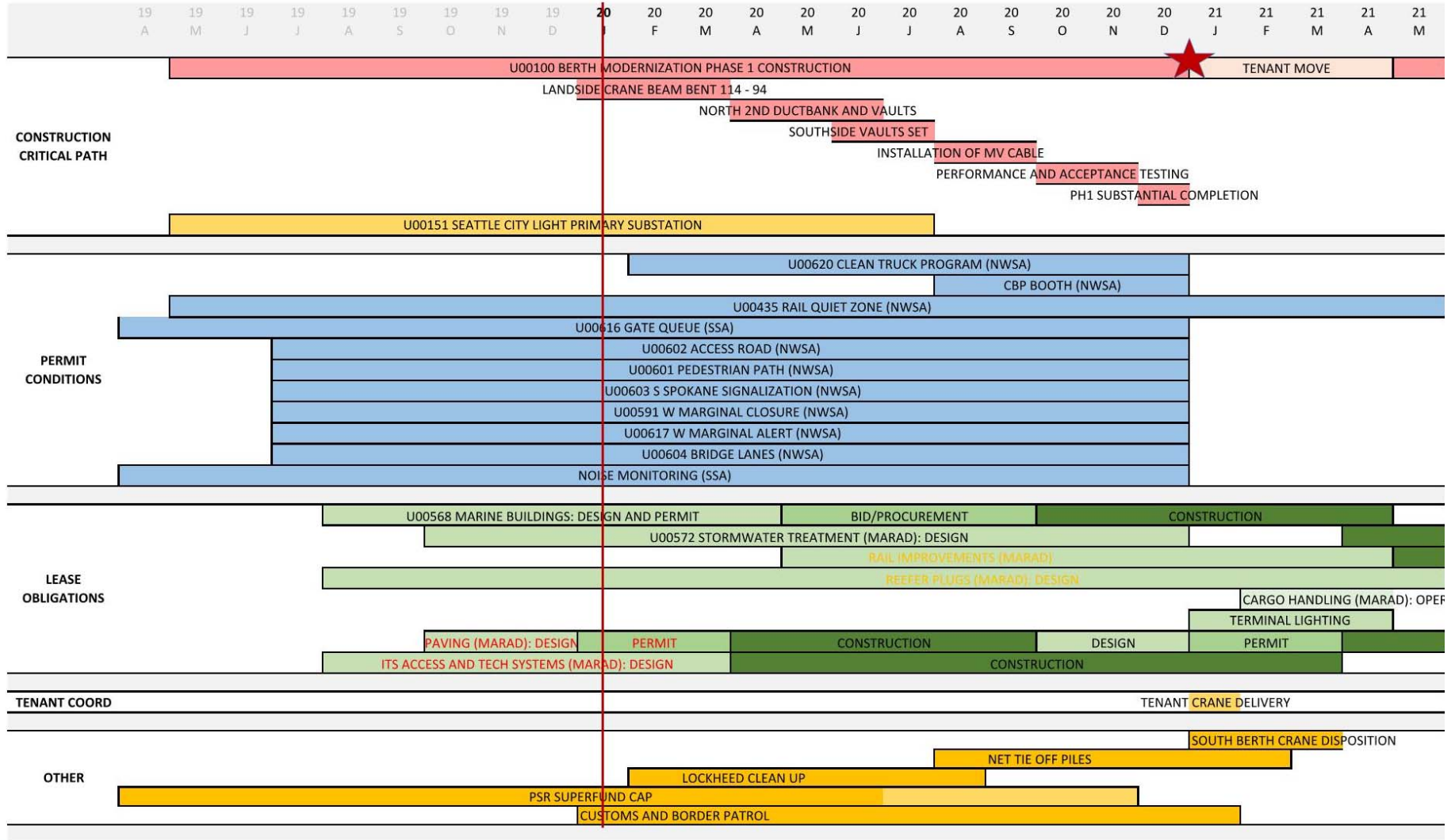
- **MARAD (Maritime Administration) Grant for Port Infrastructure Development Program (PIDP)**
 - Request of \$33M for six upland project components shared with Tenant:
 - Paving
 - Storm-water Treatment System
 - Reefer Plugs (1400)
 - On-dock Rail Improvements
 - Access and Technology Systems
 - Cargo Handling Equipment
 - Awards to be announced March 2020
- **\$4.4M Budget Proviso in the State budget for shore-power infrastructure at Terminal 5**
- **Dept of Ecology Grant for Stormwater – Funding notice Jan 2020**

Terminal 5 – Look Ahead

- **Q1 2020**
 - MARAD Award announcement
 - Dept of Ecology Grant for Stormwater – Funding notice
 - Complete 1st in water work window
 - In water work extension: duration will be known early February
 - Quiet Zone stakeholder meeting
 - CBP negotiation for area offices and T5 facilities
- **Q2 2020**
 - Marine Building Managing Members Authorization for Construction

Terminal 5 – Phase 1 Schedule

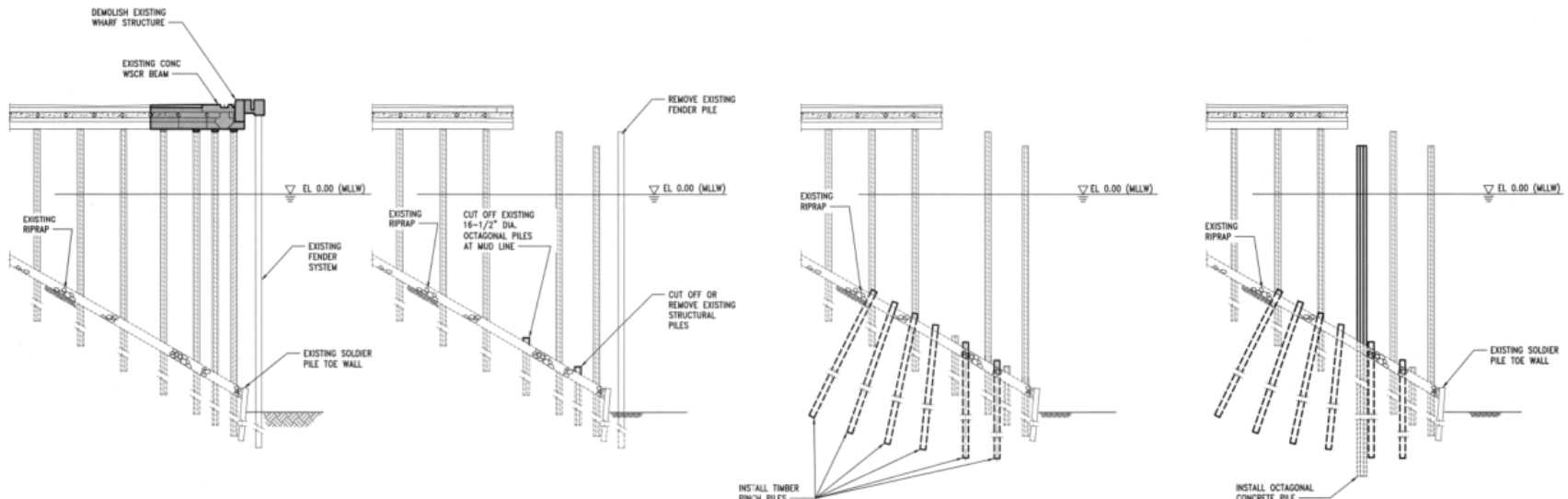
Phase 1 Completion on schedule for Dec 31, 2020



Backup



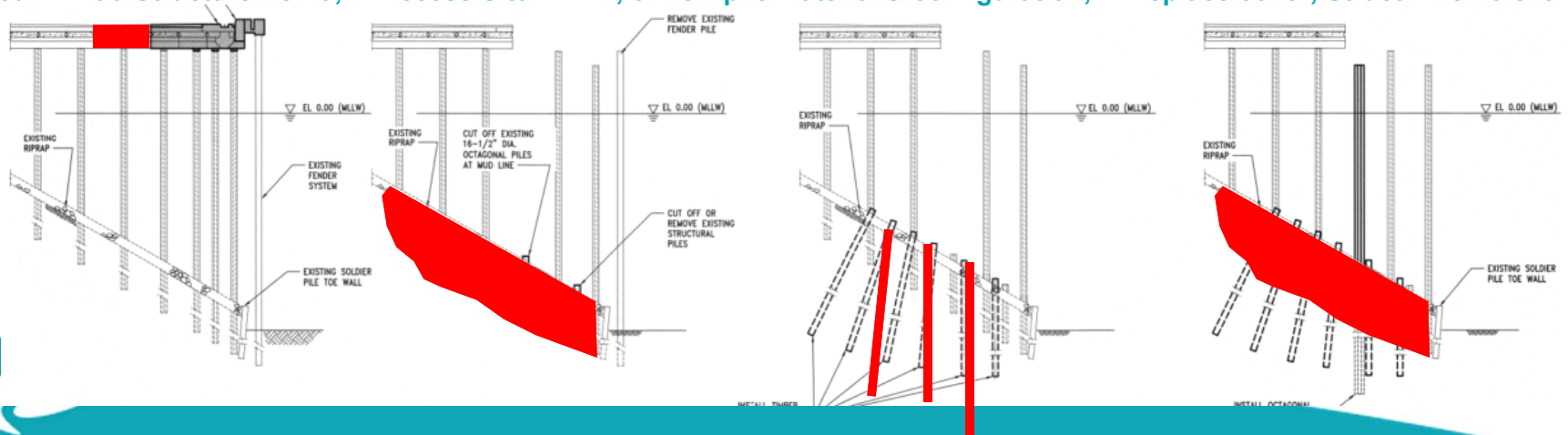
Pile Driving – Phasing 1-4



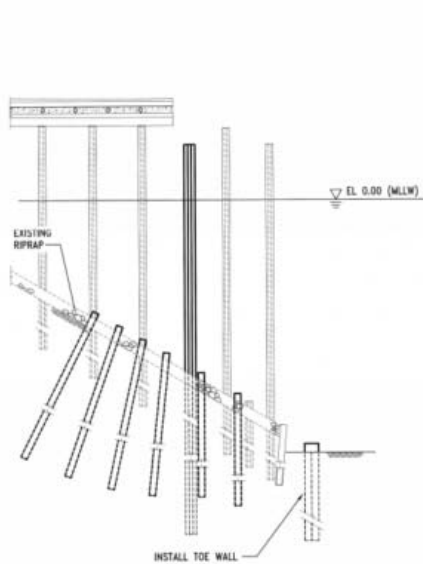
Planned: 1. Wharf Demo – done; 2. Cut off piles – done; 3. Install pinch piles – change;

4. Structural pile

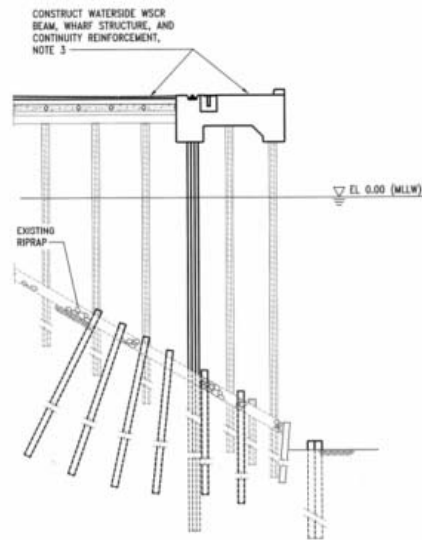
Proposed: 1. Add Structure Demo; 2. Access Site - NEW; 3. New pile material & configuration; 4. Replace cover; Struct. Pile no change



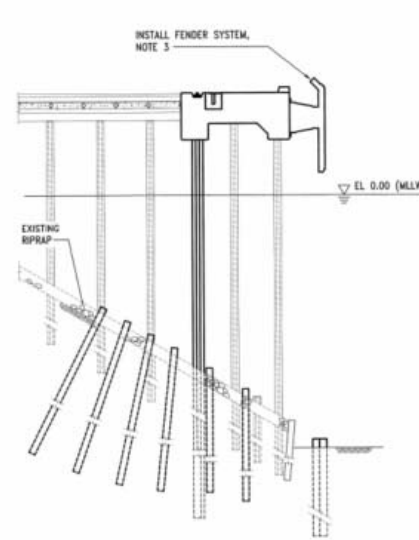
Pile Driving – Phasing 5-8



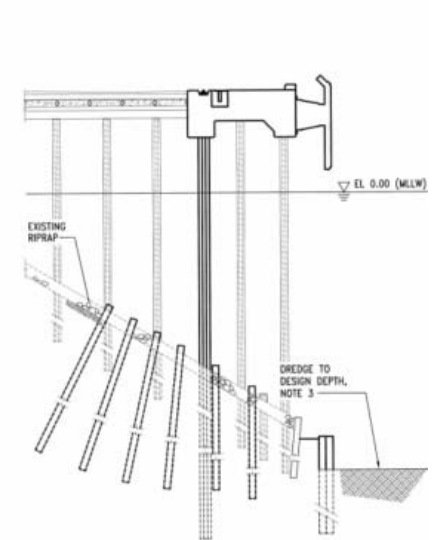
Planned: 5. Toe wall install;



6. Rebuild Wharf

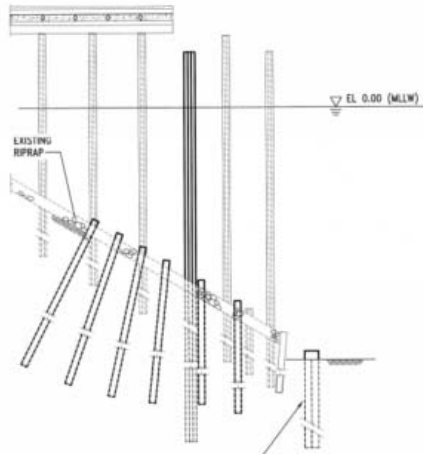


7. Fender install;

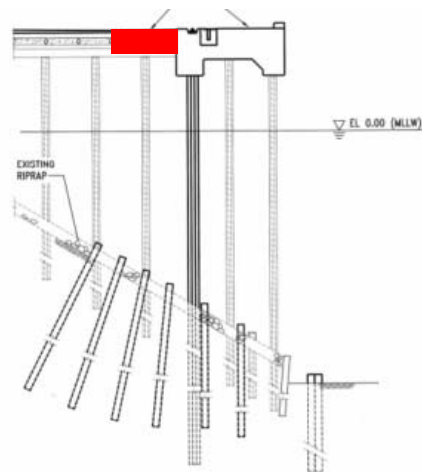


8. Dredging

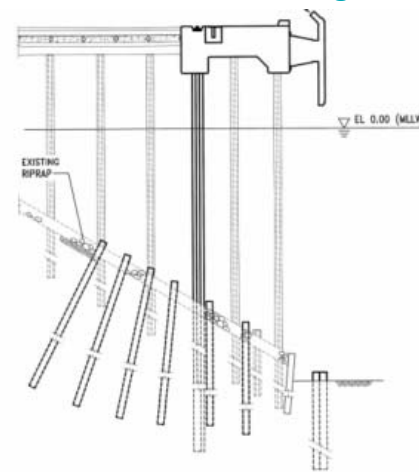
Proposed: 5. Toe wall no change;



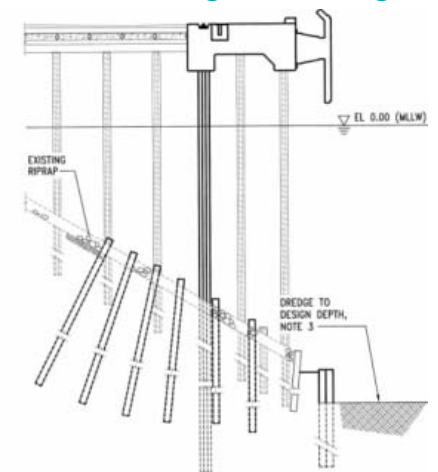
6. Rebuild additional Wharf;



7. Fender no change;

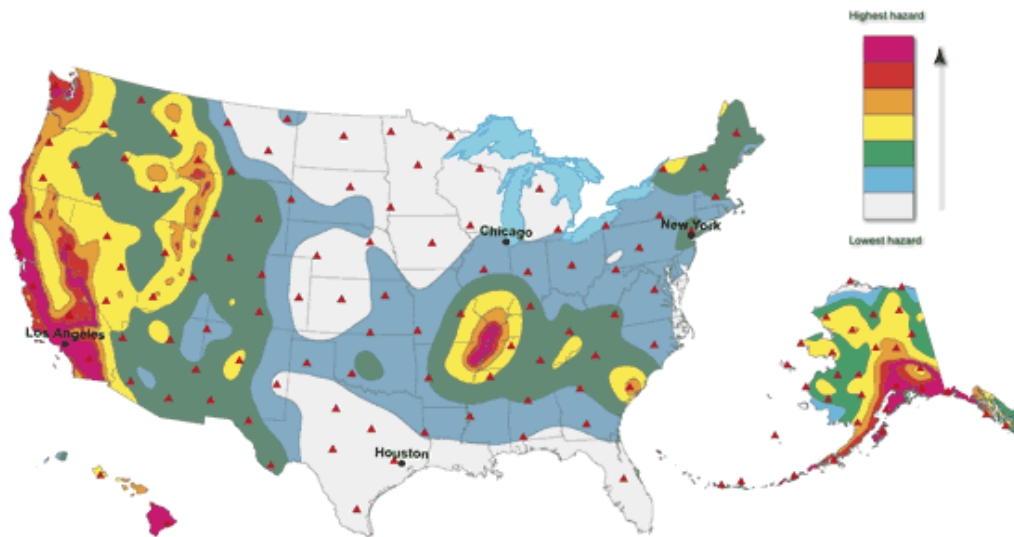


8. Dredge no change



Terminal 5 – Additional items

- **Washington and California Seismic hazard level comparison**
 - CA and WA are both governed by the International Building Code (IBC), as adopted by their various jurisdictions
 - This includes the City of Seattle and Sea-Tac Airport Building Department
 - IBC determines seismic accelerations that must be used for new design and construction using risk-based statistics that consider the relevant local earthquake faults



Terminal 5 – Additional items

- **Washington and California Seismic (cont.)**

- The comparison code-required seismic design accelerations for various cities, including many in California, is as follows:

City	Approximate % of Seattle's Seismic Acceleration
Los Angeles	170%
Irvine	110%
San Diego	90%
Sacramento	60%
San Francisco	120%
Seattle	100%
Portland	80%
Boise	30%
Las Vegas	50%
St. Louis	50%
Chicago	20%
New York	30%

- Accelerations are adjusted based on a building's exact site because buildings on fill (Pioneer Square, etc.) see more shaking than those on solid ground (Beacon Hill, etc.)