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Pier 3 Upgrade Project

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Port of Tacoma
People. Partnership. Performance.

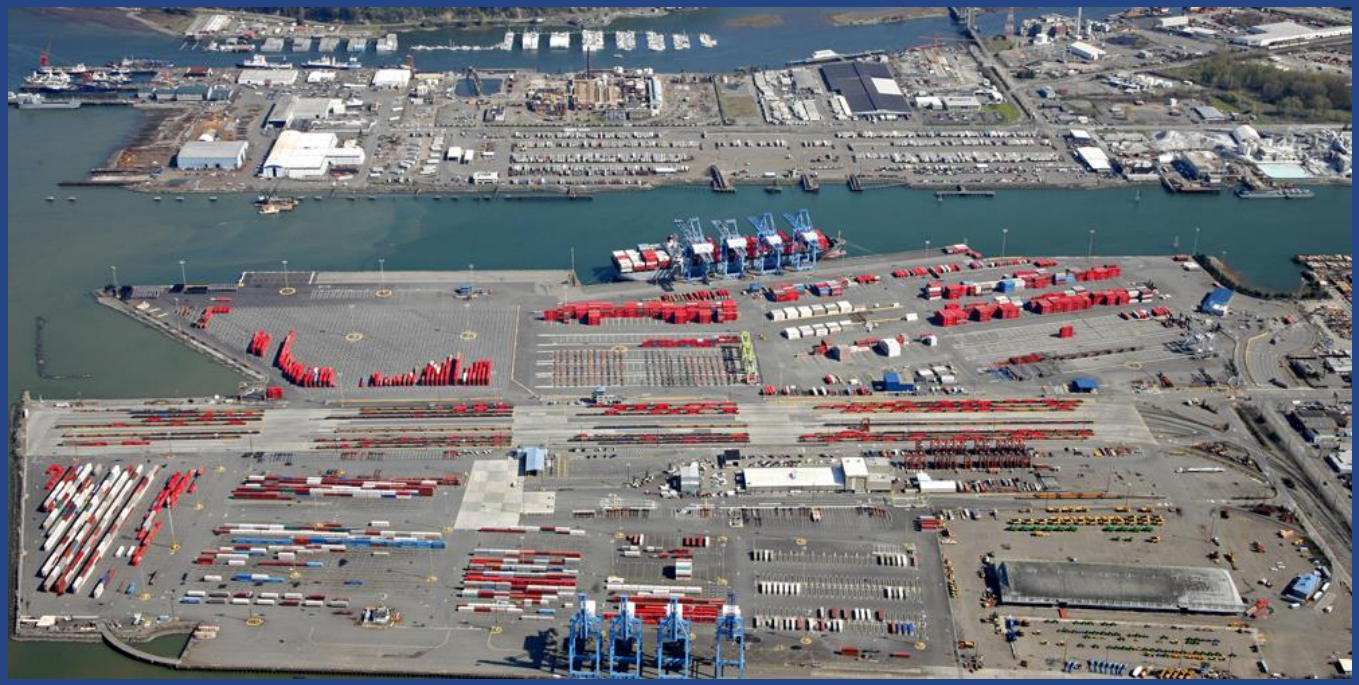
Future Facility Plan
Pier 3 Project Upgrade

Project Team Members	
Owner:	Port of Tacoma
Port Project Manager:	Stanley Ryter, PE, PMP
Engineer of Record:	BergerABAM
Electrical Engineer:	Cross Engineering
General and Marine Contractor:	Orion Marine Group
Electrical Subcontractor:	REP
Earthwork Subcontractor:	Roadway Construction
Construction Cost:	$15M
Total Project Cost:	$20M

Future Facility Plan
Pier 3 Project Upgrade

Port of Tacoma

- Redevelop the General Central Peninsula
- Realign Pier 4 with Pier 3
- Simultaneously operate up to ten 100’-gauge container cranes
- Berth 2 ultra large container ships



Design Vessel Requirements
Pier 3 Project Upgrade

- Vessels between 5,000-18,000 TEUs (twenty-foot equivalent units)
- Maximum anticipated draft of 50’
- Vessel width – up to 23 containers

Project Overview
Pier 3 Project Upgrade

- All new appurtances
- Electrical distribution capacity upgrade

- Step 1 in the long-term plan
- Strengthening of pier for increased loads

Constructed Project Elements
Pier 3 Project Upgrade

- 100 precast pre-stressed piles
- Replacement of waterside crane beam
- Upgrade of the fender system
- Upgrade of bollards

Constructed Project Elements (cont)
Pier 3 Project Upgrade

- Strengthening of landside crane beam and installation of 100'-gauge crane rail

- Additional 36 concrete piles on landside crane beam
- New electrical substation for 13.8kV power

Constructed Project Elements (cont)
Pier 3 Project Upgrade

New bollards

New crane rail

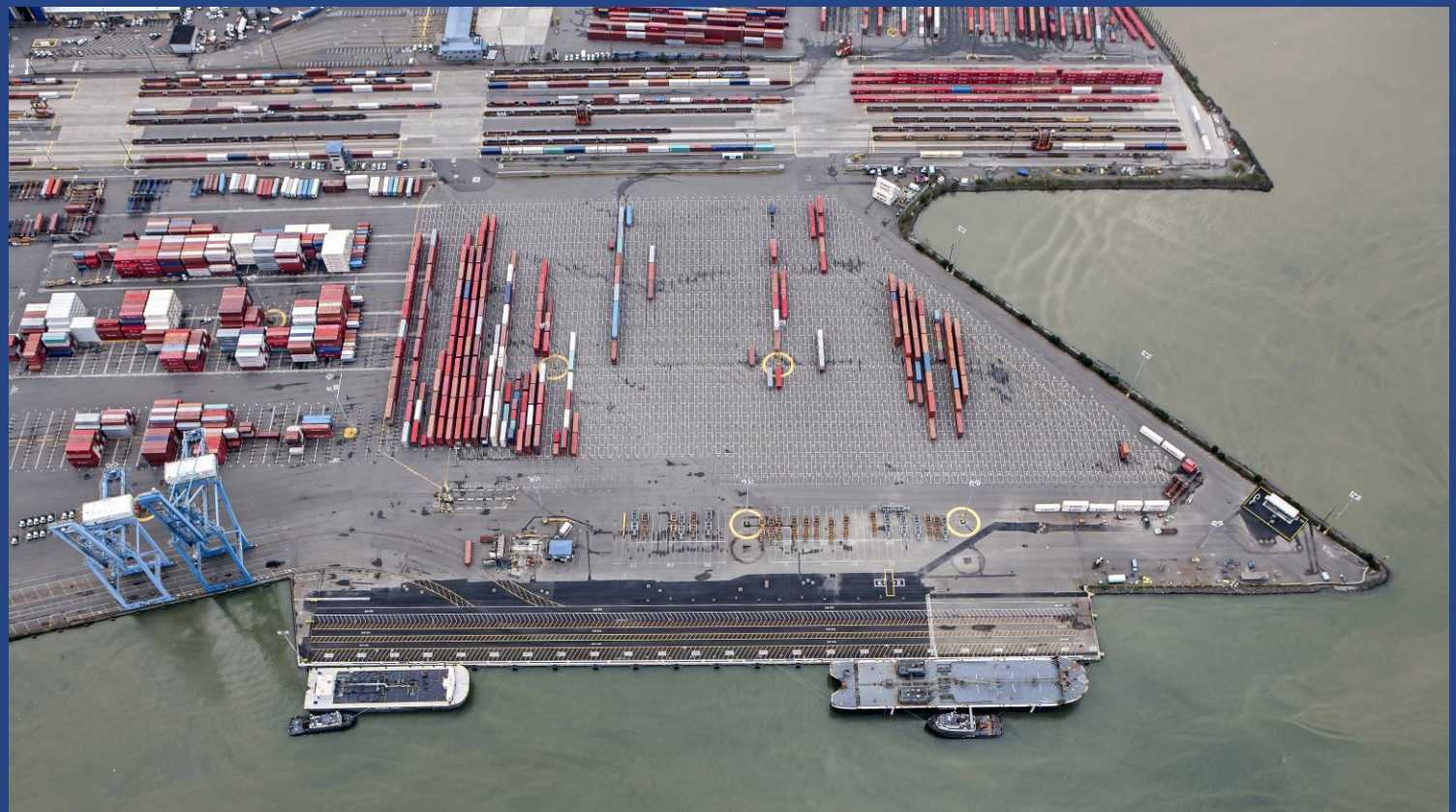
Constructed Project Elements (cont)
Pier 3 Project Upgrade

- Infrastructure for future cold ironing
- Relocation of existing light poles
- Demolition of existing 5kV electrical substation

- Maintenance of service for 4 existing 64’-gauge cranes

Schedule and Budget
Pier 3 Project Upgrade

- Substantial completion – October 27, 2014
- 460 calendar days construction
- On budget with total project cost of $20M



Management Practices
Pier 3 Project Upgrade

- Primavera Construction Management software
- Weekly meetings with contractor, tenant, engineer, and all stakeholders
- Construction inspection by Port of Tacoma
- Detailed 3-week look ahead
- Upgraded change order procedure

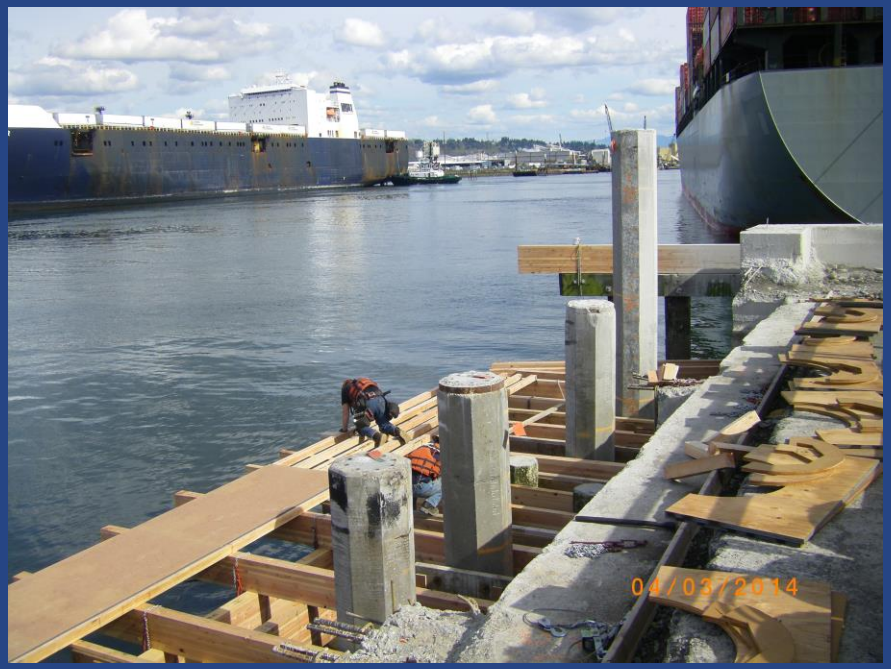
Sustainability
Pier 3 Project Upgrade

- Reuse of the pier ballast
- Spare conduits installed for future-use scenarios
- All exposed galvanized steel was painted

- Remodeling far more cost effective than rebuilding
- Used purple epoxy-coated reinforced steel

Safety
Pier 3 Project Upgrade

- No lost time incidents
- 53,000 hours of craft labor on job site
- Special signage to guide construction traffic through active container yard



- Close coordination with intermodal operations tower to accommodate construction traffic

Environmental Considerations
Pier 3 Project Upgrade

- Pile driving during the fish window (February 15 to July 15)
- Concrete pumped on the outgoing tide
- Soil testing at multiple locations to ensure proper disposal of contaminants
- Accelerated crane beam construction to minimize disruption to fish

Community Relations
Pier 3 Project Upgrade

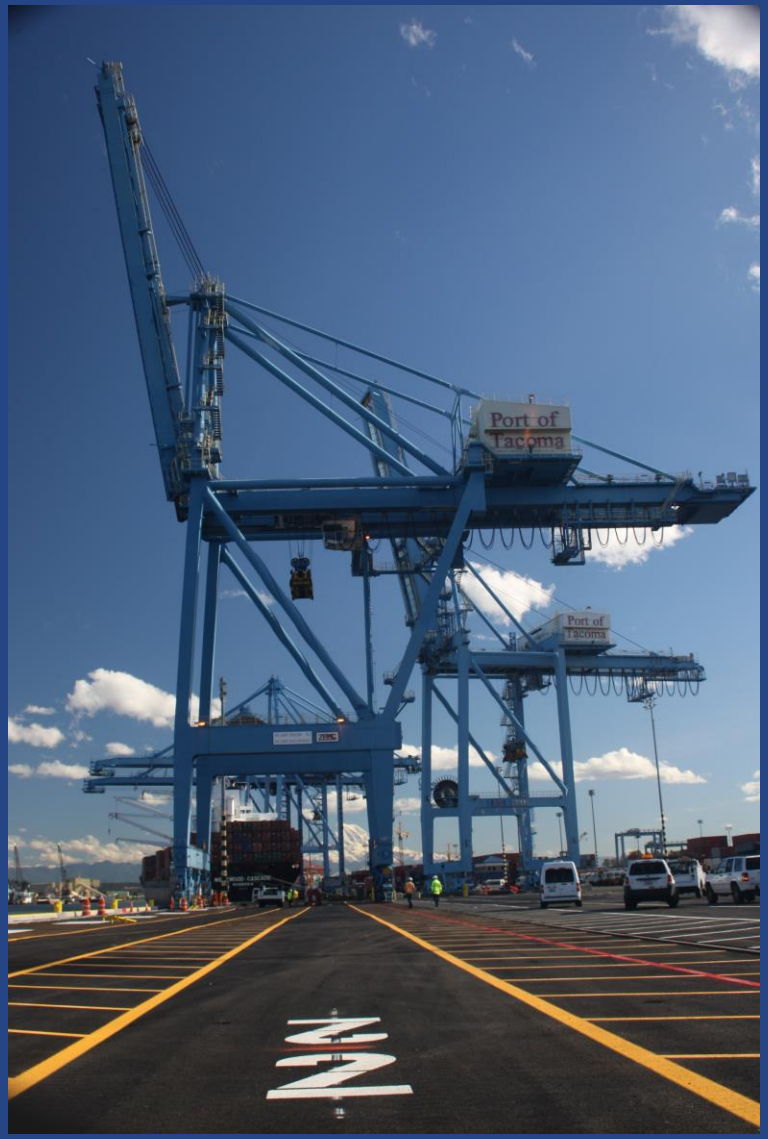
- Weekly pile driving updates to the Northeast Tacoma Community Association
- Regular communication with longshore ensured that construction continued alongside the railroads, trucks, and straddle carriers
- Weekly communication with Husky ITS, tenant

Unusual Accomplishments
Pier 3 Project Upgrade

- Structural work extremely tide dependent, low tides generally in the middle of the night
- Construction footprint minimized to reduce impact to terminal
- Pile collars and false work in the intertidal zone

Conclusion
Pier 3 Project Upgrade

- Success of project
- Collaborative effort from top down
- On time
- On budget
- Accepted Westwood Shipping Lines 2 weeks after completion
- Best bang for the buck!



Thank you!
Port of Tacoma
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