Trends in Facilities Engineering
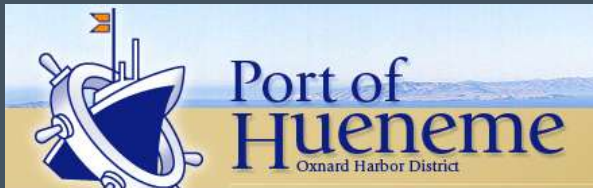
Presented by:

Chris Birkelo - Director of Facilities Development,
            Oxnard Harbor District / Port of Hueneme
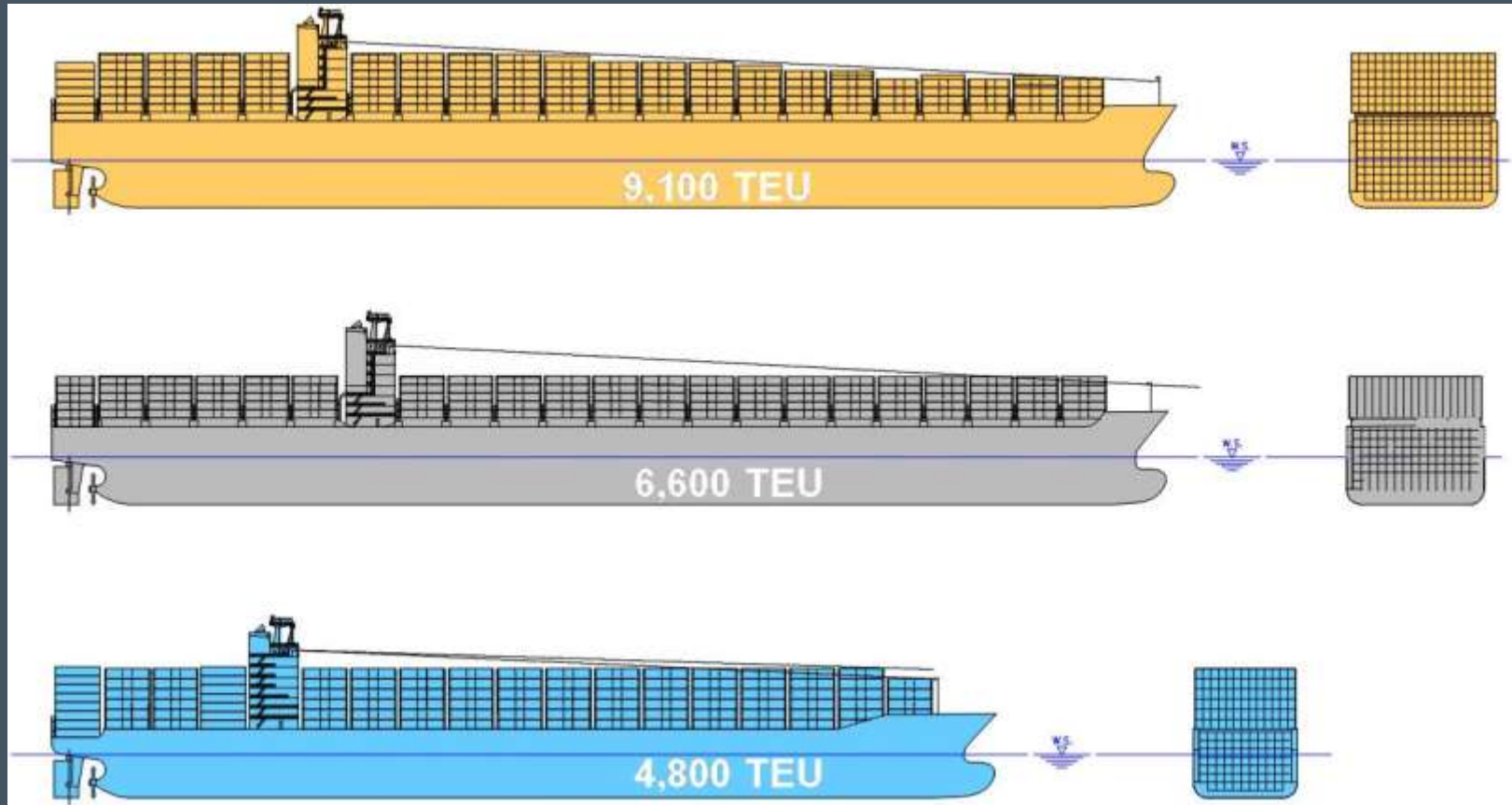
Driving Forces

- ❖ **Trends in shipping (Larger Container Vessels, Channel Depth, Air Draft)**

- ❖ **Container Cargo Growth (delayed)**

- ❖ **Roadway/Rail Traffic Congestion**

- ❖ **Security**

- ❖ **Environmental Concerns**

- ❖ **Mitigation and Other Factors**

Trends in shipping
(Larger Container Vessels)

Trends in shipping
(Larger Container Vessels)

Larger Cranes/ Higher Wharf Loads

Trends in shipping
(Larger Container Vessels)

Larger Cranes/ Higher Wharf Loads

Trends in shipping
(Larger Cruise Vessels)

- Deeper Draft
- Higher Air Draft
- Wharf Loads
- Parking Requirements
- Traffic Control

Container Cargo Growth
Higher Throughput Velocities

Container Cargo Growth
Higher Throughput Velocities

OCR Gate Portal at TraPac POLA

Container Cargo Growth
Higher Throughput Velocities

Container Cargo Growth
Higher Throughput Velocities

Roadway/Rail Traffic Congestion

Security

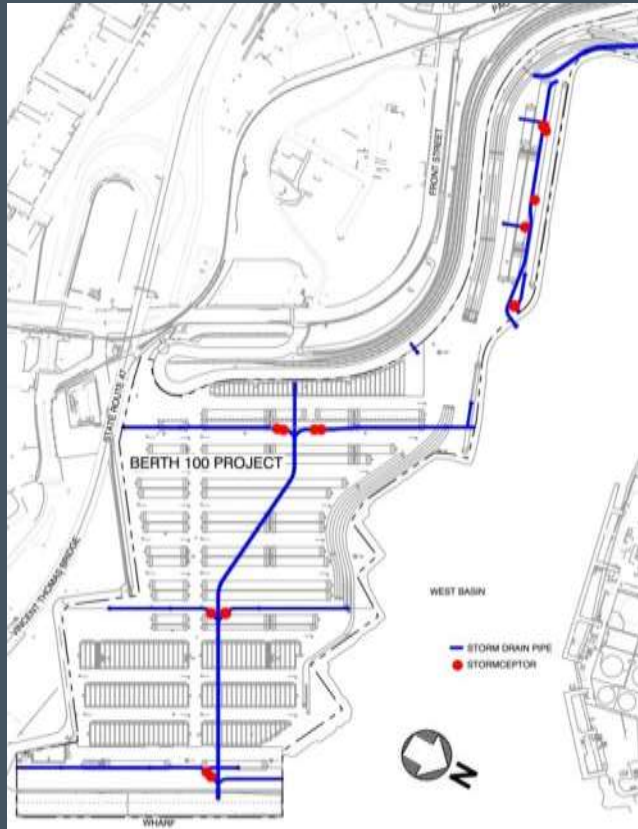# Security – Radiation Portals Port Hueneme version

Security

Vacis X-ray Inspection in Hong Kong for Automated Inspection of Empties
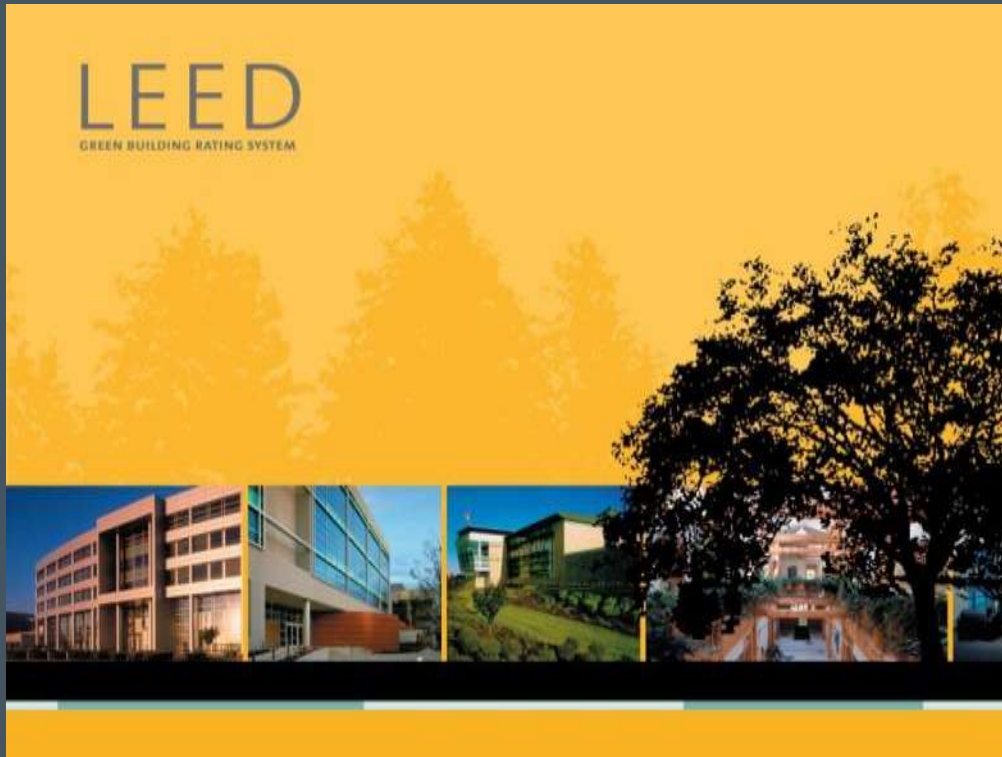
Radiation is beamed between these two panels

Environmental Concerns

Environmental Concerns

Leadership in Energy & Environmental Design®

Low Impact Development

Environmental Concerns

Vessels Generate a Large Fraction of Total Port Pollution

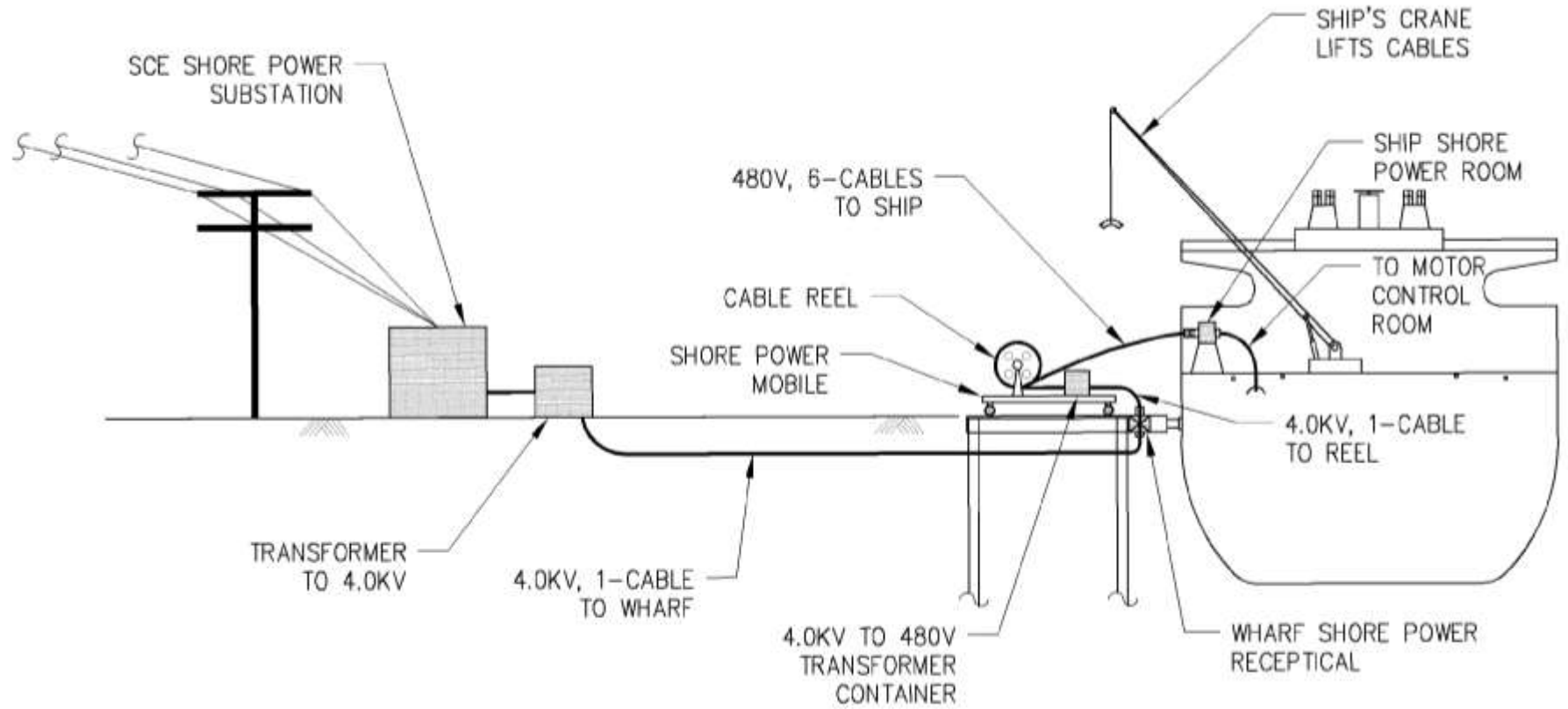
Diesel Yard Cranes Are Also Significant Emitters

Alternative Maritime Power (AMP) Wharf-to-Vessel Cable Connections

Alternative Maritime Power (AMP)

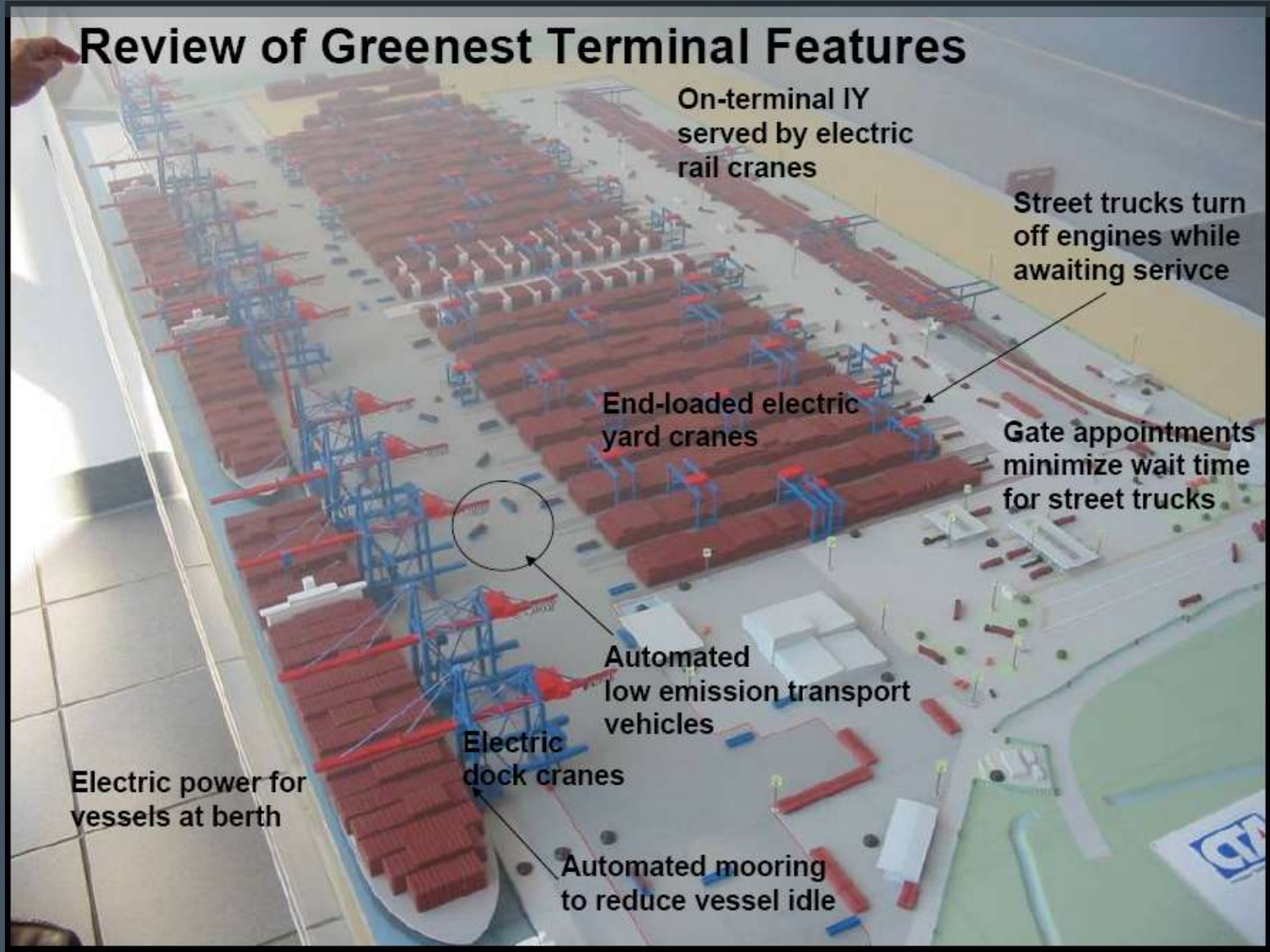# Alternative Maritime Power
Port Hueneme approach

Alternative Maritime Power

Environmental Solutions

Review of Greenest Terminal Features

Mitigation Measures
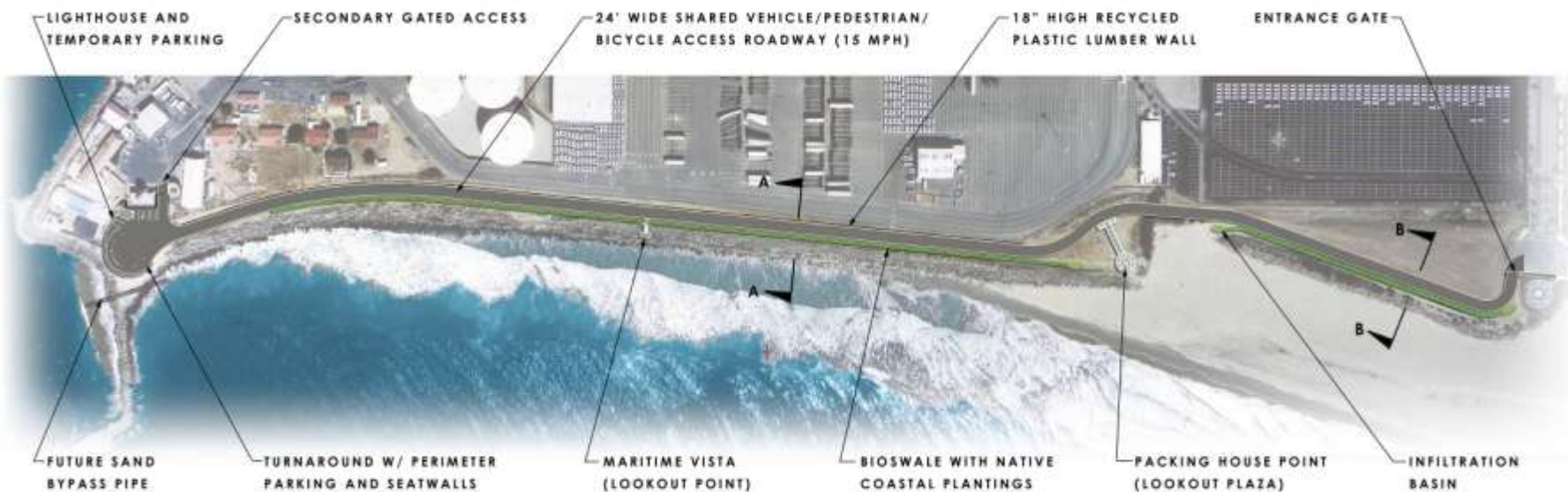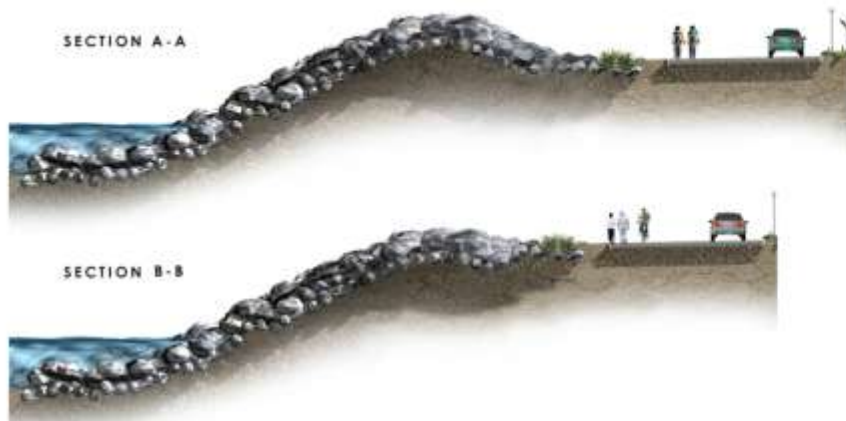
SOUTH ACCESS ROAD AND REVETMENT RESTORATION

Other Factors
Contaminated Sediments

Step 2: Place Contaminated Sediment in Pit

Other Factors
CAD Site Excavation

Other Factors
Contaminated Sediment Dredging

Other Factors
Contaminated Sediment Dredging

Average Barge Load =
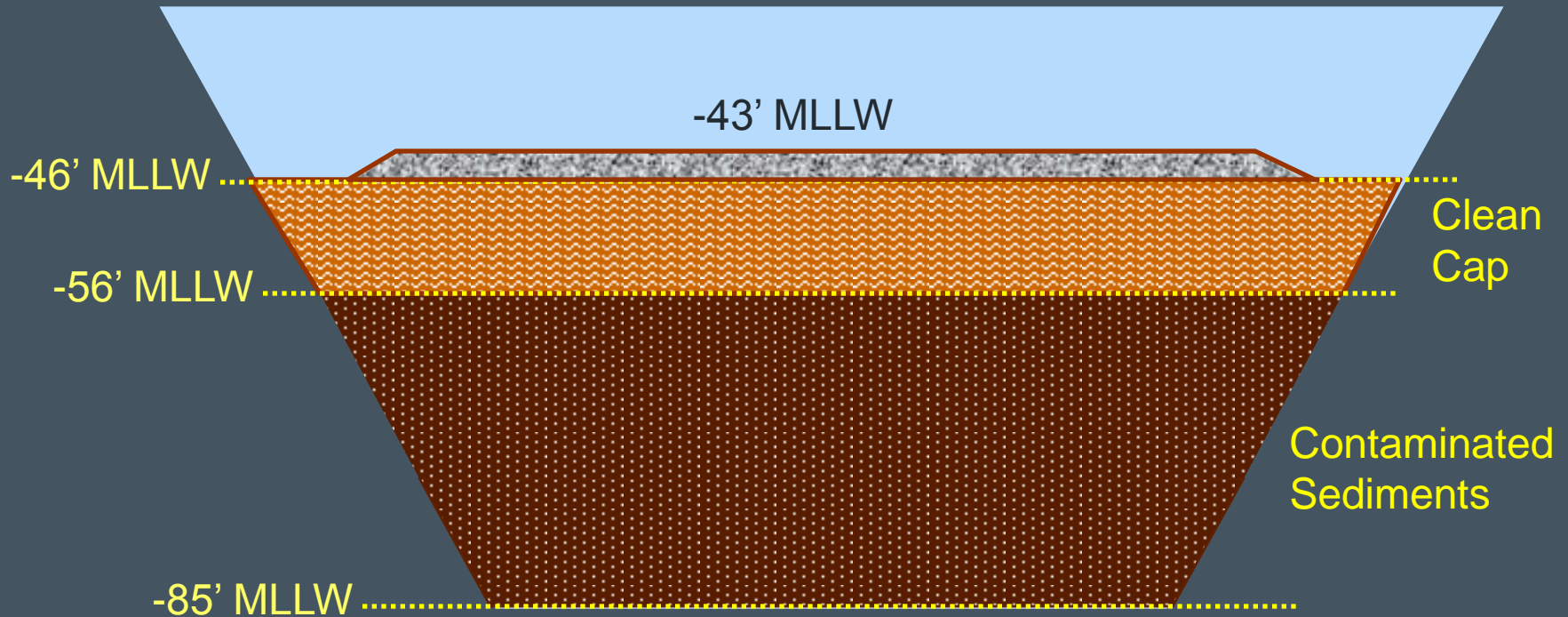900 cubic meters

Other Factors
Clean Cap Material

Other Factors
Armor Rock

Other Factors
CAD Cross Section

-43' MLLW

-46' MLLW

-56' MLLW

Clean Cap

Contaminated Sediments

-85' MLLW
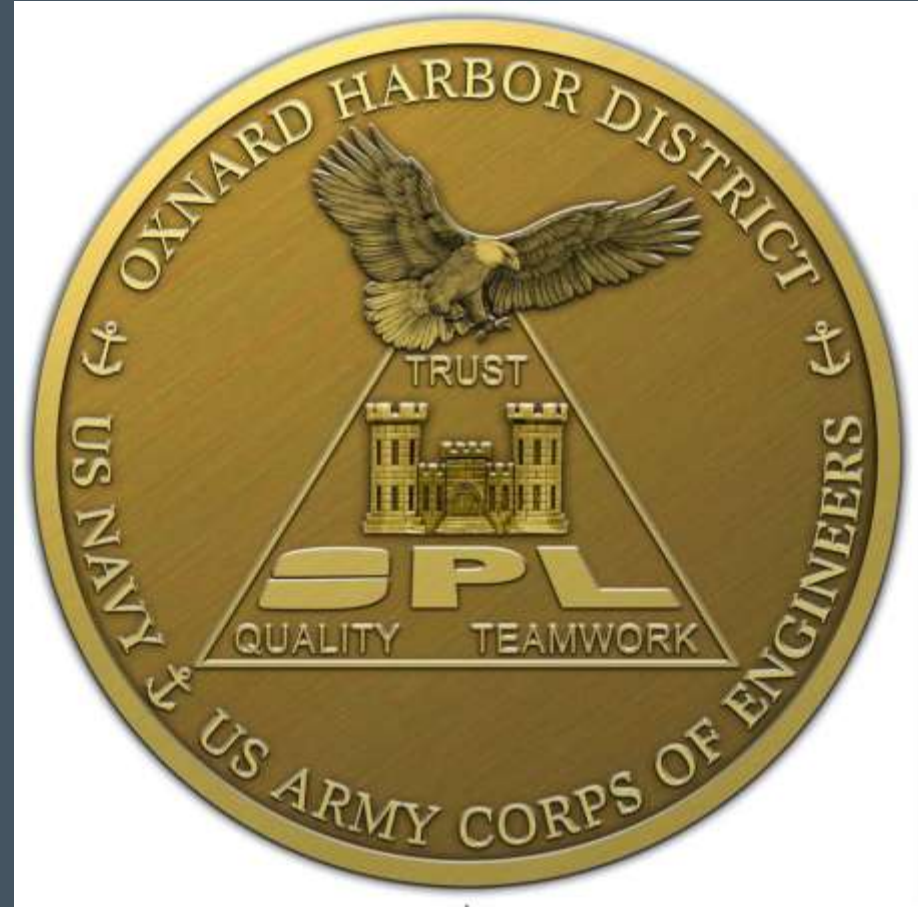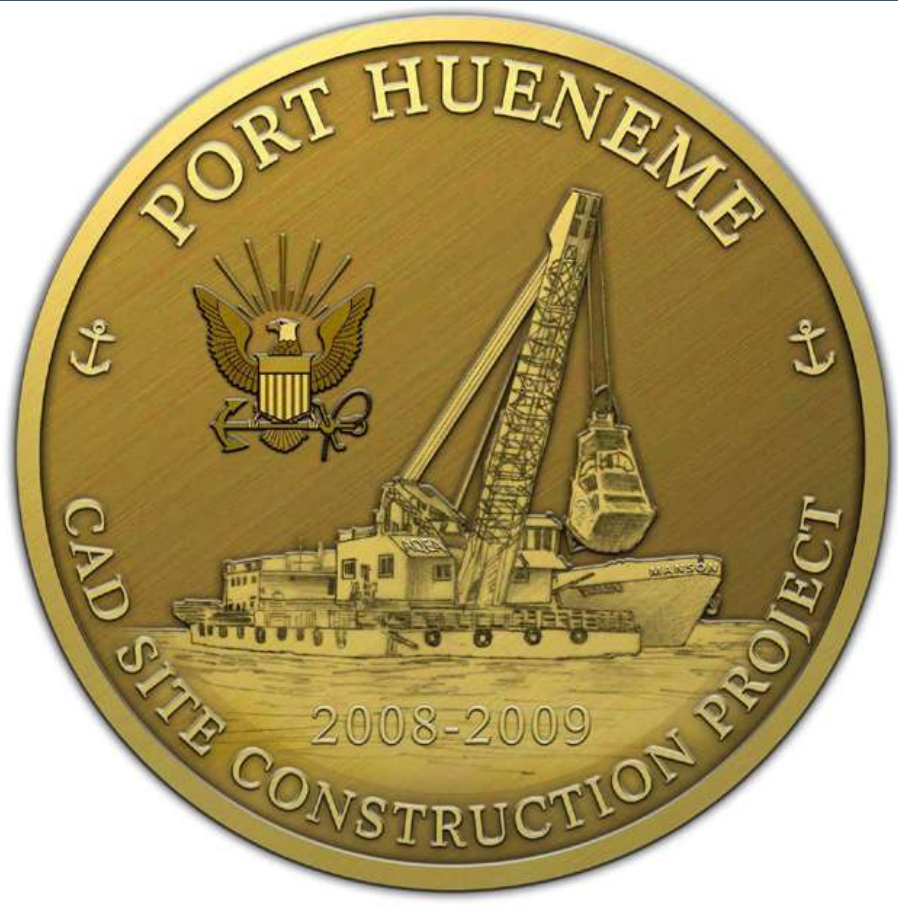
GBA
ENGINEERS ★ SURVEYORS
Port Hueneme CAD site - 2009

Surprise Factor! Greatest Accomplishment – A Model for Successful Teaming

Thank you