

Middle Harbor Redevelopment Project

An aerial photograph of the Middle Harbor Redevelopment Project in Long Beach, California. The image shows a large industrial area with numerous shipping docks, cranes, and storage yards. In the background, the city of Long Beach is visible, including its downtown skyline and a large marina. The harbor is filled with water, and several large ships are docked at the piers. The overall scene depicts a major port facility undergoing redevelopment.

James Vernon
Port of Long Beach

October 31, 2019

Project Overview



- Combine two aging and obsolete terminals
- Create one 345 acre, state-of-the-art terminal

Project Overview

- \$1.49 billion budget
- Phased, 10-year construction schedule
- Created 65 acres of new land
- Required 6 million cy of fill material
- Project generated 2 million cy
- 4 million additional cy required
 - 1.3 million cy sourced from 3rd parties



LBCT Remained In Operation

Electrified Dredge



1



2



4



3



Stage 1

Stage 1 Fill Sources

- **Slip 3**
 - 1.4 million cy
 - **Port maintenance dredging**
 - 150,000 cy
 - **Third party material**
 - 1.3 million cy
 - **Total = 2.9 million cy**
- Marina Del Ray
 - Rhine Channel
 - Lower Newport Bay Federal Channel
 - Colorado Lagoon
 - Alamitos Marina
 - Harborlight Marina
 - LA River Estuary
 - Rainbow Harbor

Stage 1 Challenges

- 3rd party material selection process
- Hydrocarbon impacted material encountered in Slip 3
 - Cement stabilization
- Dolphin stranding

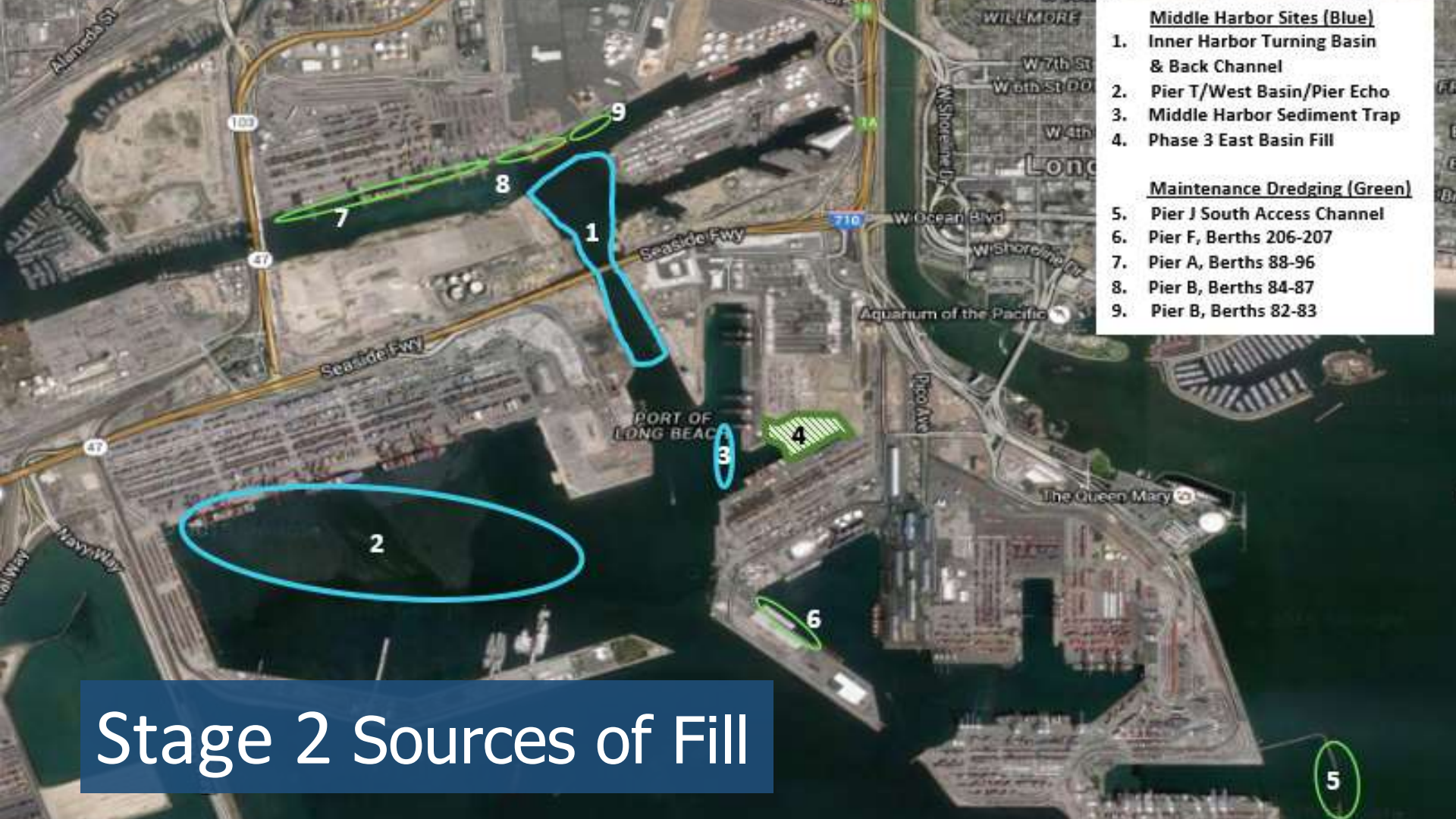




An aerial photograph of a large industrial port facility. The image shows a complex of buildings, paved areas, and shipping infrastructure. A prominent feature is a large, irregularly shaped area in the lower-left quadrant, outlined in red. This area is filled with a dark, greenish liquid, likely oil or a similar industrial fluid. The surrounding area is filled with various industrial structures, including large storage tanks, cranes, and shipping containers. A multi-lane highway runs along the right side of the facility. The water in the harbor is a deep green color. The overall scene depicts a busy industrial and maritime hub.

Stage 2

East Basin
Fill

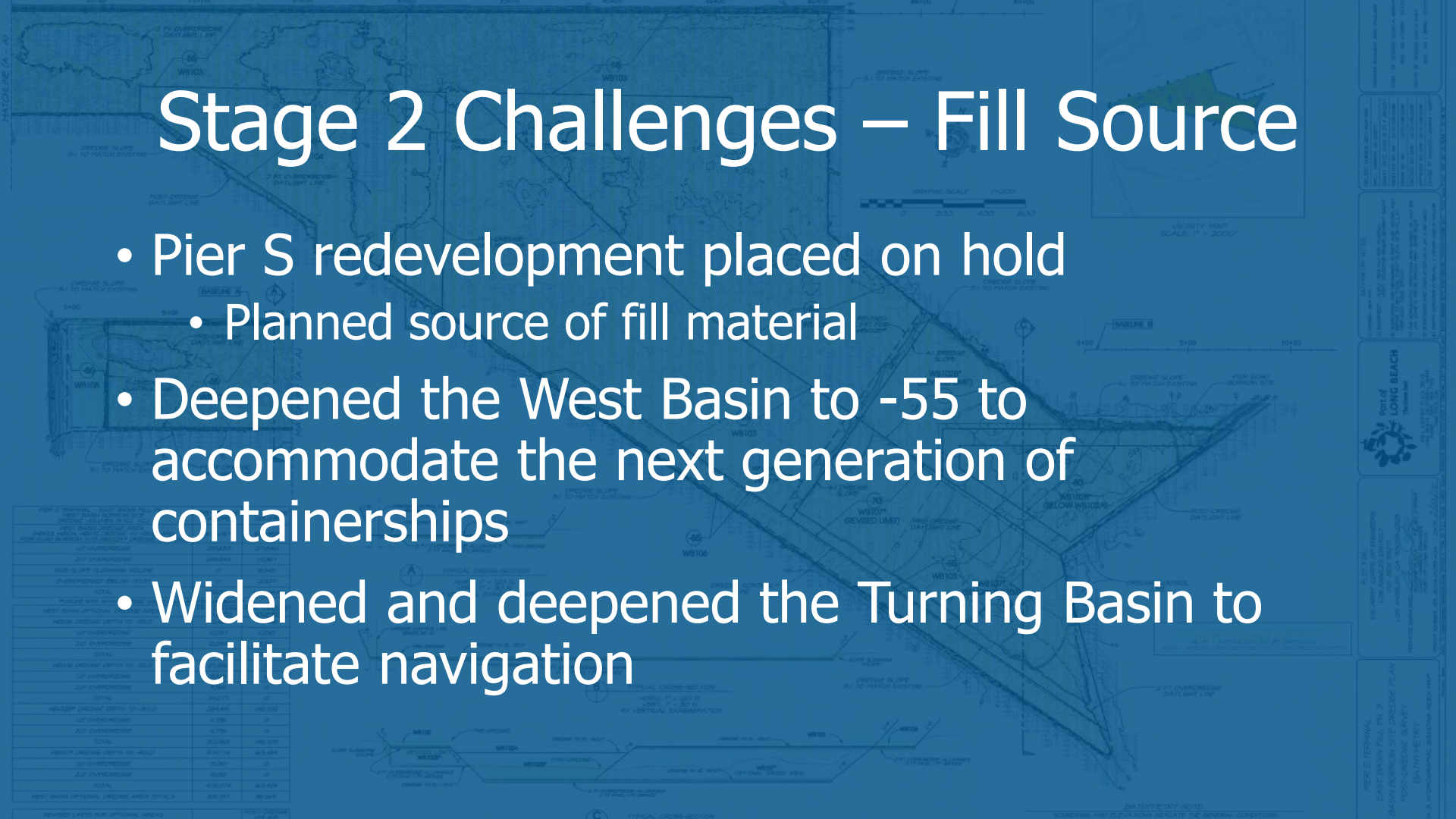


- Middle Harbor Sites (Blue)**
1. Inner Harbor Turning Basin & Back Channel
 2. Pier T/West Basin/Pier Echo
 3. Middle Harbor Sediment Trap
 4. Phase 3 East Basin Fill
- Maintenance Dredging (Green)**
5. Pier J South Access Channel
 6. Pier F, Berths 206-207
 7. Pier A, Berths 88-96
 8. Pier B, Berths 84-87
 9. Pier B, Berths 82-83

Stage 2 Sources of Fill

Stage 2 Challenges – Fill Source

- Pier S redevelopment placed on hold
 - Planned source of fill material
- Deepened the West Basin to -55 to accommodate the next generation of containerships
- Widened and deepened the Turning Basin to facilitate navigation



PIER E TERMINAL
WEST BASIN FILL PHASE 2
BASIN DEEPENING AND DREDGING PLAN
PORT CHANNEL SURVEY
DATE: 11/11/2011



PIER S

PIER E

PIER T

PIER F

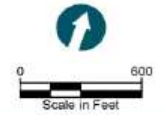
Stage 2 Challenges – Navy Piers



Stage 2 Challenges – Impacted Fill

LEGEND:

-  Dredge Units
-  Actual Sampling Location
-  Not Suitable for Unconfined Open Water Placement
-  Existing Contours
-  Existing Stormwater Outfalls



Stage 3



Wharf

East Basin
Fill

Pier F Cut

Pier F
Cut

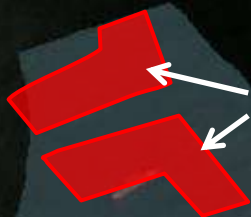
Berth E22 Wharf

1943-1944
Quay Wall

Stage 3 Challenges Cyclopean Quay Wall

Stage 3 Challenges

Disposal of Final Surcharge



Western Anchorage Sediment Storage Site

DECEMBER 2018



DEMOLITION





LONG BEACH CONTAINER TERMINAL

STATE-OF-THE-ART, GREENEST



An aerial photograph of a port facility. In the foreground, a large blue ship is docked at a pier. Several massive red and white lattice-boom cranes are mounted on the ship's deck, extending over the water. The background shows a city skyline with various buildings and a body of water under a clear blue sky. A semi-transparent dark blue box is overlaid on the lower half of the image, containing white text.

BIG SHIP READY CRANES

ELECTRIC, PARTIALLY AUTOMATED







ELECTRIC, AUTOMATED STACKING CRANES

A large green driverless tractor is shown in a port terminal, carrying a white container. The tractor has "ZERO EMISSION" written on its side and the number "030" on its front. A yellow crane with "BROMMA" written on it is positioned above the container. The background shows the complex steel structure of the port terminal.

ELECTRIC, DRIVERLESS TRACTORS



9/10/2019







THANK YOU



Port of
LONG BEACH

The Green Port