



Remedial Design and Remedial Action at IR Site 12

Boat Channel Sediments

Former Naval Training Center, San Diego

August 10, 2017 - RAB Meeting

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IR Site 12 Project Team



PARSONS



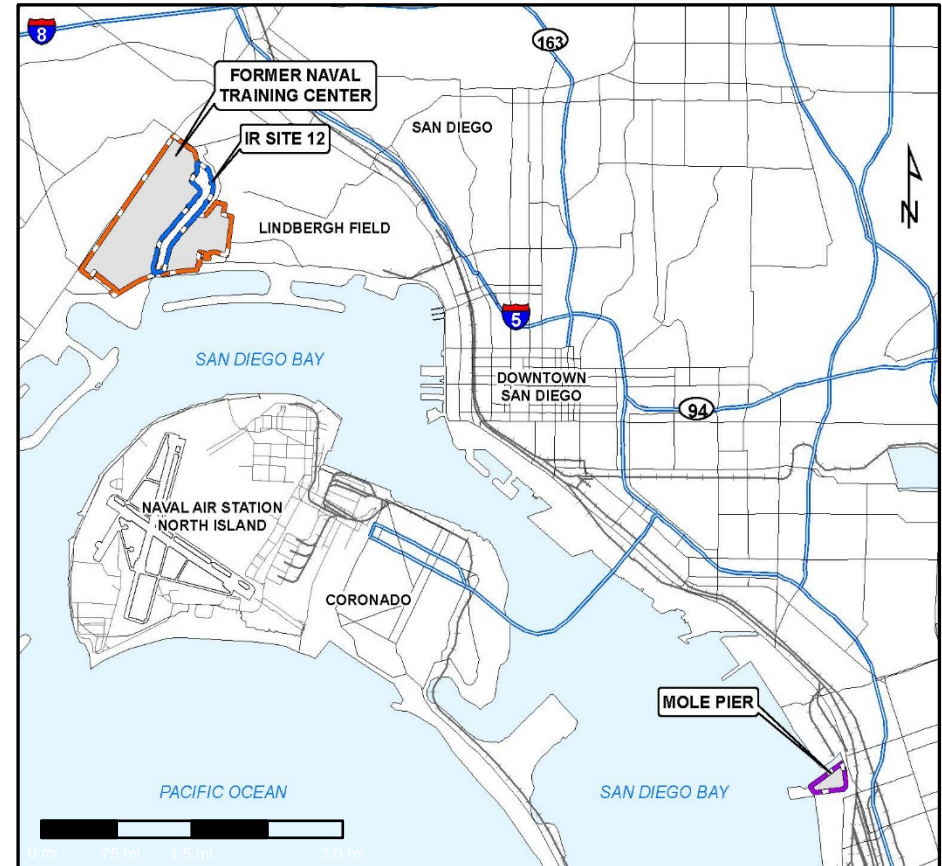
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IR Site 12 Site Overview



- Current Boat Channel Use
 - Recreational boating
 - Small Marina
- Chemicals of Ecological Concern:
 - Metals (copper, lead and zinc)
 - Pesticides (chlordane and DDT)
- Source from storm drain / surface runoff



Previous Investigations and Studies

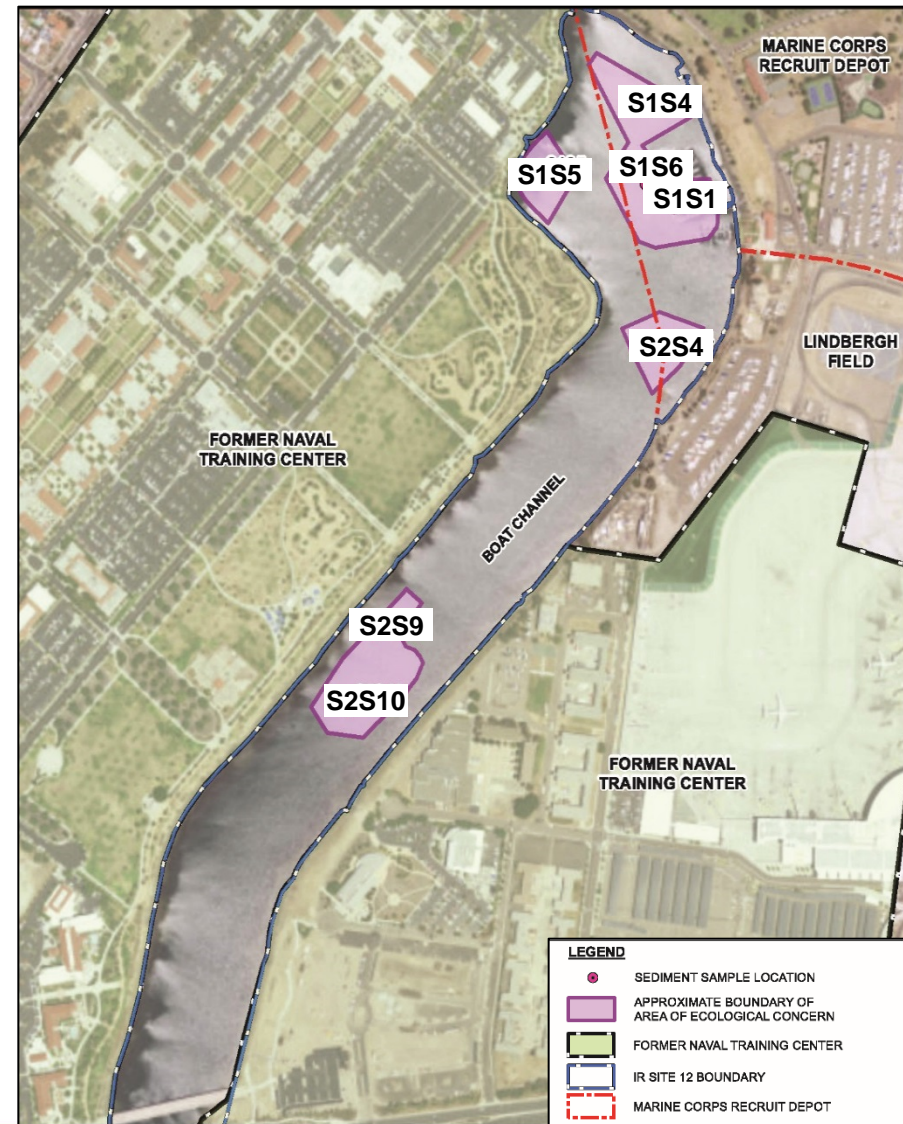


Remedial Investigation

- Identified seven Areas of Ecological Concern that pose a risk to benthic invertebrates (organisms that live in or on the sediments)
 - Polygons S1S1, S1S4, S1S5, S1S6, S2S4, S2S9, and S2S10
- No risk to humans or wildlife was identified

Feasibility Study

- Evaluated eight different remedial options
- Dredging and disposal at an off-site landfill was the preferred option



- **Final Record of Decision / Remedial Action Plan - August 2017**

- Remedial Action Objective: prevent direct contact between benthic invertebrates and concentrations of sediment chemicals of ecological concern that may be harmful to them.

- The Navy, in coordination with the regulatory agencies and the community, has selected the remedy:

- Confined Disposal - Removal of Sediments to an Off-site Landfill**

Remedial Design/Remedial Action Approach



Pre-Design Surveys

- Bathymetric survey
- Eelgrass survey
- Invasive Algae survey

Pre-Dredge Sediment Sampling

- Confirm dredging depth in each polygon
- Collect waste characterization samples

Remedial Action

- Dredge, transport to NBSD for stabilization, and disposal of sediment
- Collect confirmation samples



Pre-Design Surveys

- March 2017
 - Bathymetric survey
 - Evaluated channel bottom
 - Eelgrass survey
 - Assessed eelgrass beds present in the boat channel
- September 2017
 - Pre-construction eelgrass survey & invasive algae survey prior to dredging



Pre-Design Sediment Sampling

What?

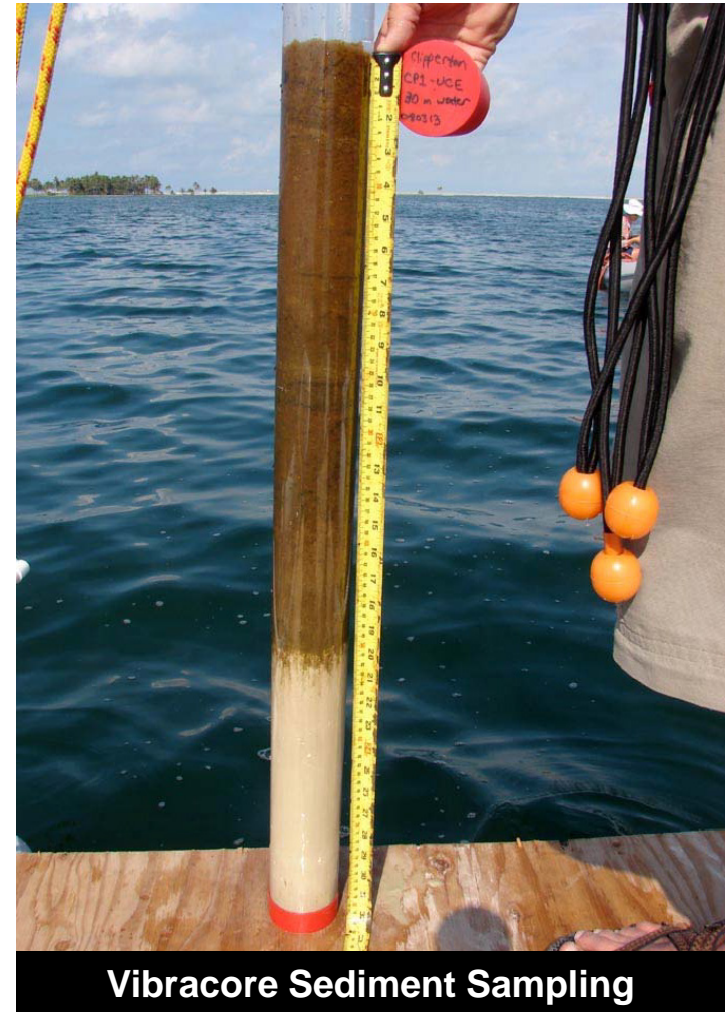
- Verify dredge depth
- Waste Characterization

How?

- Collect sediment samples
- Vibracore drilling

Where?

- Seven areas of ecological concern



Dredging Activities

Set up

- Dredge area will be wrapped with double silt curtains
- Four real-time turbidity monitors will be installed
 - Background and compliance
 - Alert level based on background
 - If an alert occurs response actions will be implemented



Dredging Activities

Vertical depth

- 1 or 2 feet below the channel bottom
 - Prescribed in the Feasibility Study
 - Updated based on March 2017 bathymetric survey

Equipment

- Excavator
 - Environmental clamshell bucket
- Tug boat
- Scow

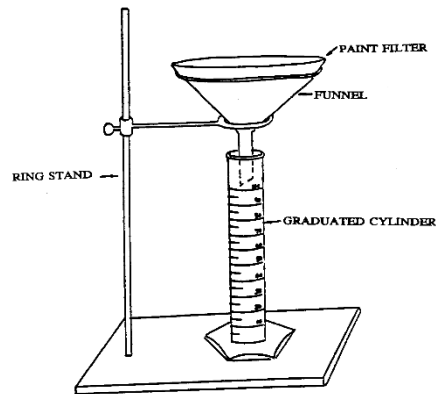


Excavator w/clamshell bucket

Dredging Activities

Sediment Processing

- Directly load sediment into scow (haul boat) within silt curtain
- Dewater within Boat Channel
- Transport scow by tug boat to Mole Pier (~7 miles)
- Reduce water content by adding a solidifying agent (within scow)
- A paint filter test will be done to ensure no free liquid is present
- Directly load sediment into haul trucks
- Transport to disposal facility



Scow

Remedial Action Staging Areas

- Marine Corps Recruit Depot
 - Boat channel access
 - Parking
 - Equipment storage
 - Marina dock relocation
- Naval Base San Diego Mole Pier
 - Sediment unloading
 - Water management
 - Loading sediment into trucks

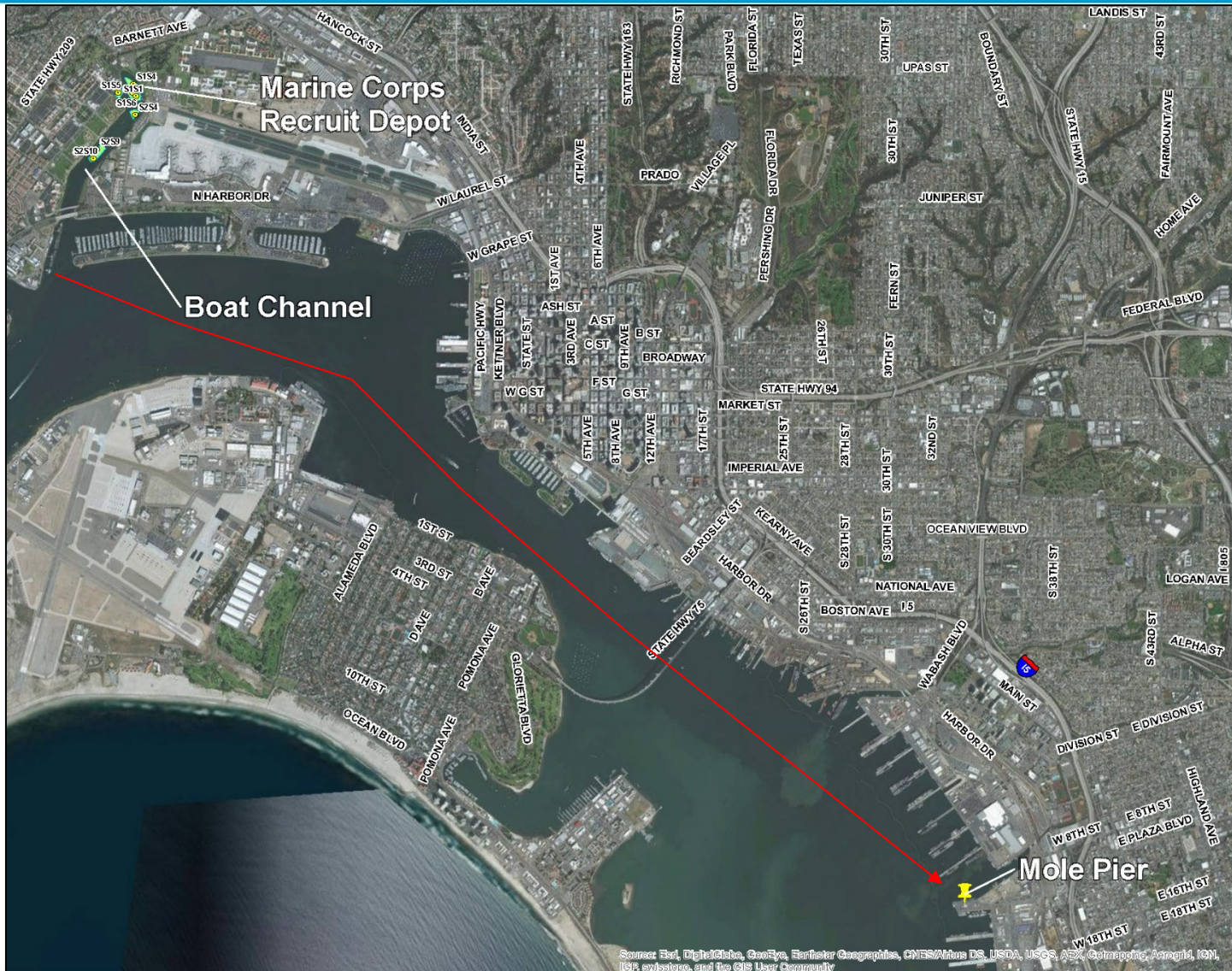


Dock at Marine Corps Recruit Depot



Naval Base San Diego Mole Pier

Remedial Action Staging Areas



Disposal Activities

Dredged Sediments

- Waste characterization data collected during pre-design
- Dewatered/stabilized sediment will be loaded onto trucks
- Visible sediment will be removed from truck exteriors
- Sediment will be transported to a regulated landfill in Arizona for disposal



Construction water

- Held in sedimentation tanks
- Collect sample
- Disposed as industrial waste water

Post-Dredging Sediment Sampling

- Collect confirmation samples from each polygon
- Chemicals of ecological concern above cleanup goals
 - Perform additional dredging
 - Collect additional sample
- Chemicals of ecological concern below cleanup goals
 - Dredging complete



Sediment Sampling

Post-dredging Activities

- Bathymetric survey
 - Document Boat Channel depth
- Eelgrass survey
 - Determine if restoration is needed
 - Follow-on Inspections



Survey Boat

- Avoid California Least Tern nesting season
 - September - March
- Noise mitigation
 - Sound level meter
- Traffic Control
- Best Management Practices
 - Avoid surface runoff at Mole Pier



Schedule



Date	Activity
September 2017	Final Remedial Design / Remedial Action Work Plan
September 2017	Pre-Design Investigation
September 2017 to March 2018	Dredging, Solidification, Transport, and Disposal of Sediments. Complete Restoration.
March 2018	Bathymetric & Eelgrass Survey
March 2018	Demobilize from Sites
August 2018	Final Remedial Action Completion Report

Questions?

