

Pacific Chapter



Dredging Creates a Strong Economy and a Cleaner Environment

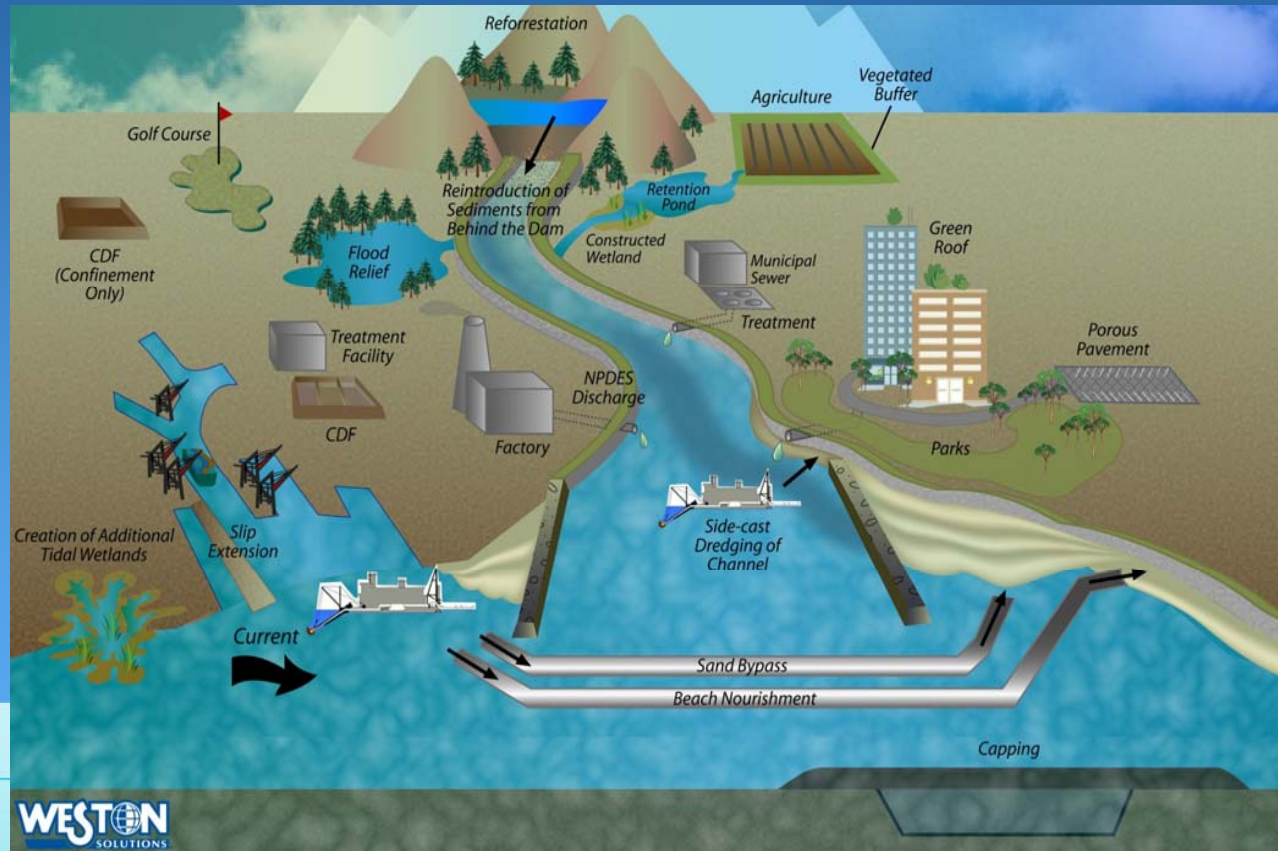


Strategic Sampling and Analytical Sequencing to Optimize Dredging Options in Areas Challenged by Legacy Contaminants



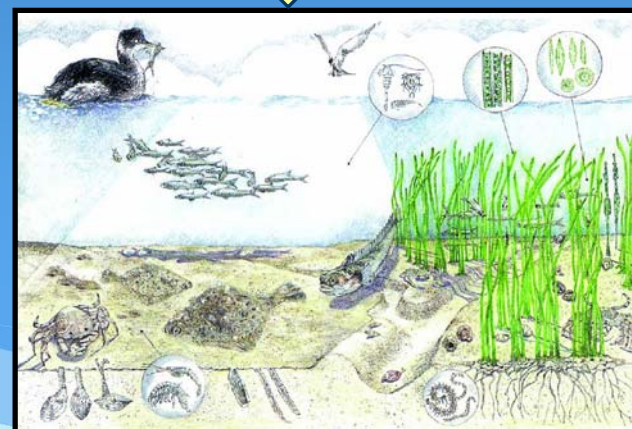
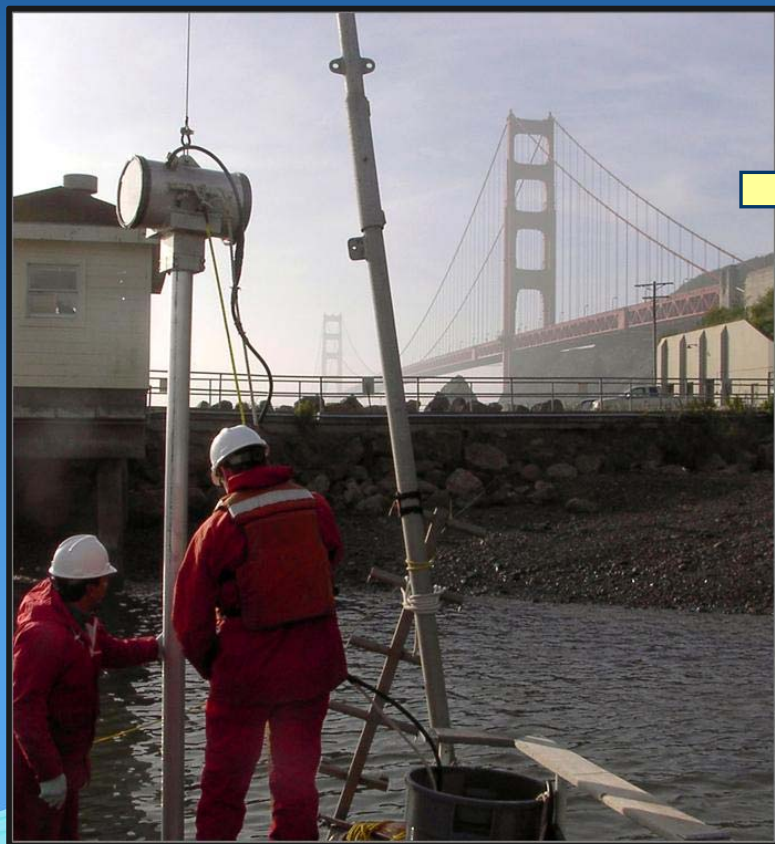


Sustainable Sediment Management





Comprehensive approach for addressing the short and long-term management and conservation of sediments within a watershed to maintain current and future beneficial uses while addressing regional environmental, economic, and social objectives.





Understanding Potential Contaminant Impacts at Project Site

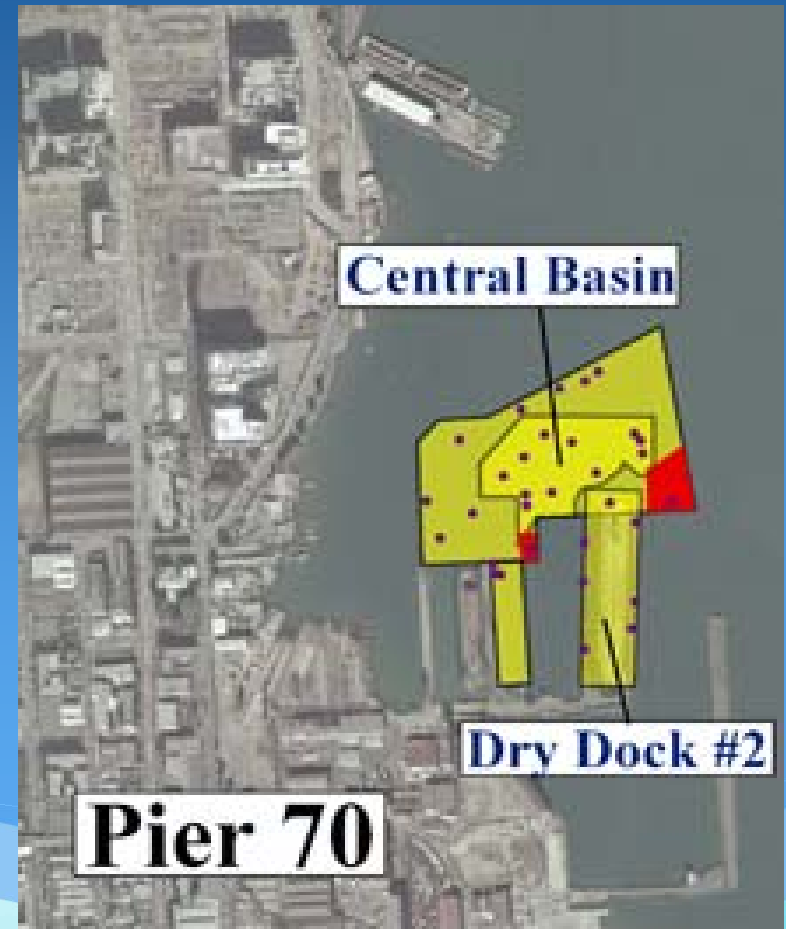
- Review current and historical land-use
- Engage regulatory agencies early
- Take the time to find sampling and testing history
- Overlay historical data using GIS tools





Sampling Approach

- Collect multiple samples in areas of potential concern
- Align sample locations with effective dredge footprint
- Vertically segment sample cores





Analytical Approach

- Understanding of the analytical completion dates necessary to meet the dredging schedule
- Determine quick-turn capability for contaminants of concern
- Understand allowable thresholds for available disposable/re-use options
- Sequence analytical procedures
 - Advance screening
 - Quick-turn analysis for contaminants of concern
 - Horizontal and/or vertical high-resolutions analysis



CASE STUDY BAE System's San Francisco Dry Dock





Background

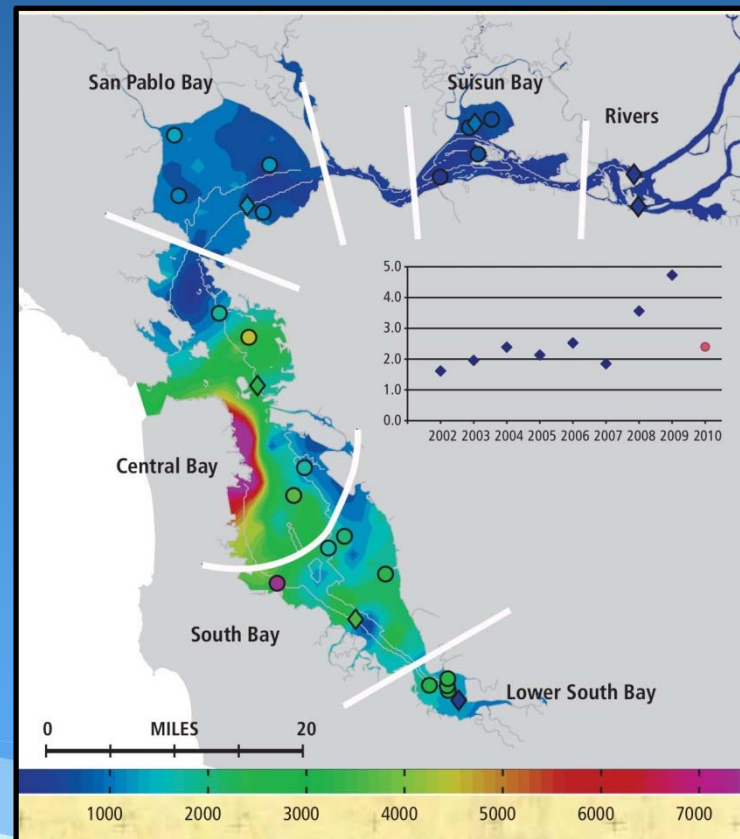
- Located on Pier 70 at the Port of San Francisco
- Only West Coast ship repair service able to accommodate largest Pacific Ocean cruise ships
- Tripartite agreement with the Port and cruise line to maintain navigation depths at dry dock

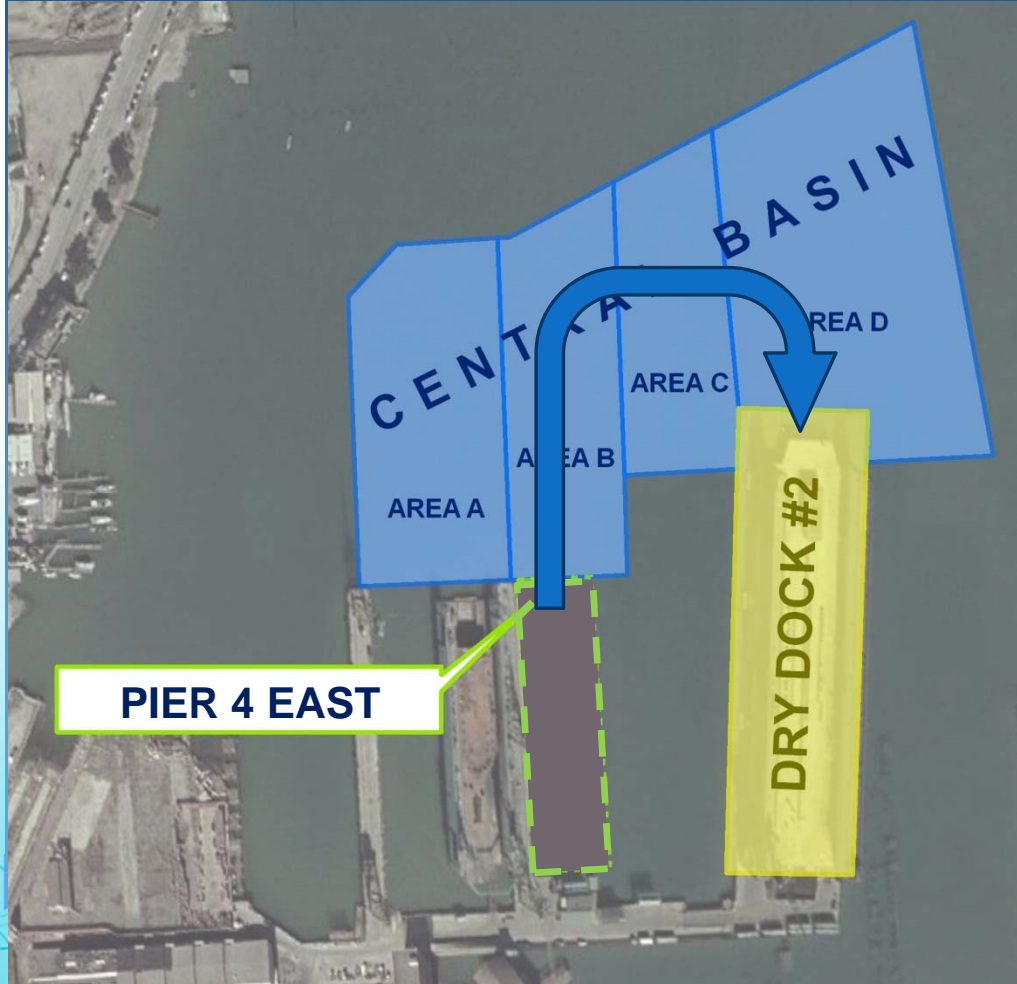




Potential Confounding Issues

- Likely polycyclic aromatic hydrocarbon (PAH) contamination within the dredge area
- Imminent and near-term Cruise ship call scheduled
- Regional LTMS policy dictate consideration of two beneficial use/disposal options



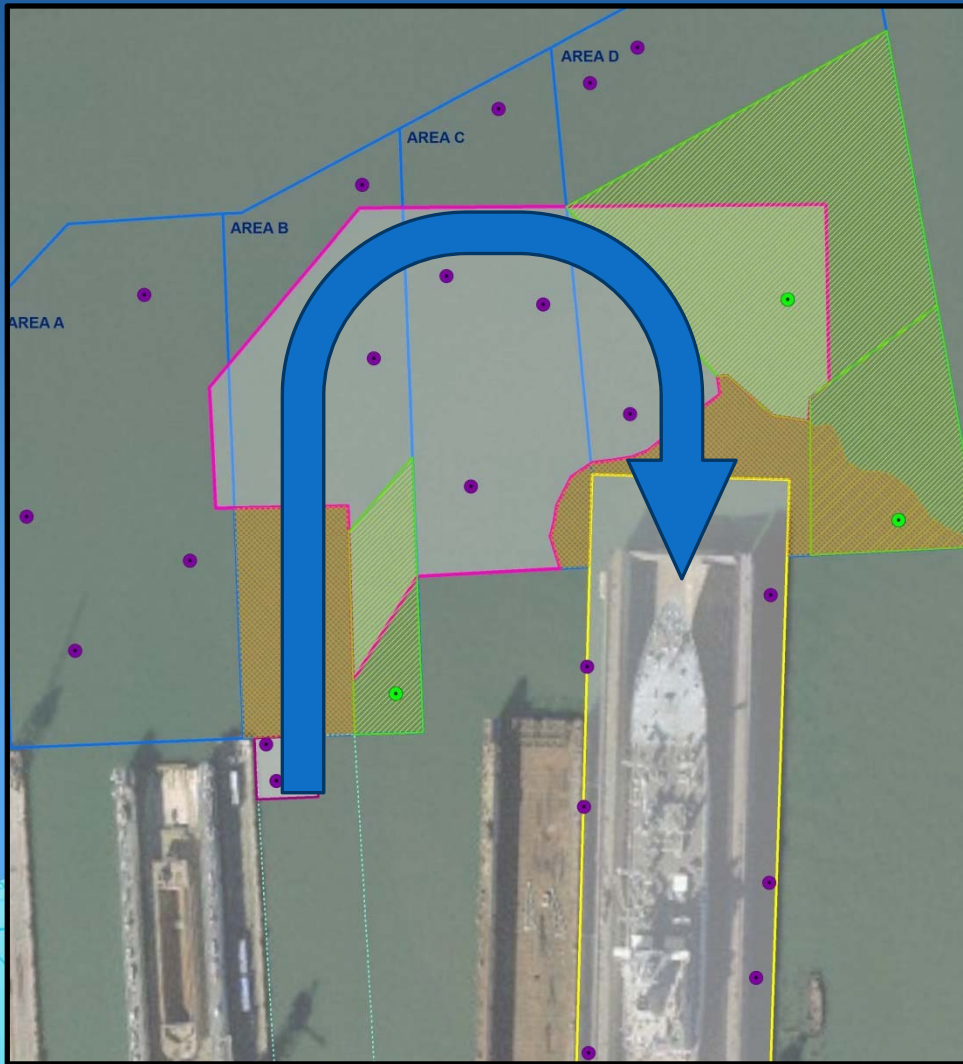


Dredging needs to accommodate maneuvering from staging berth to dry dock.



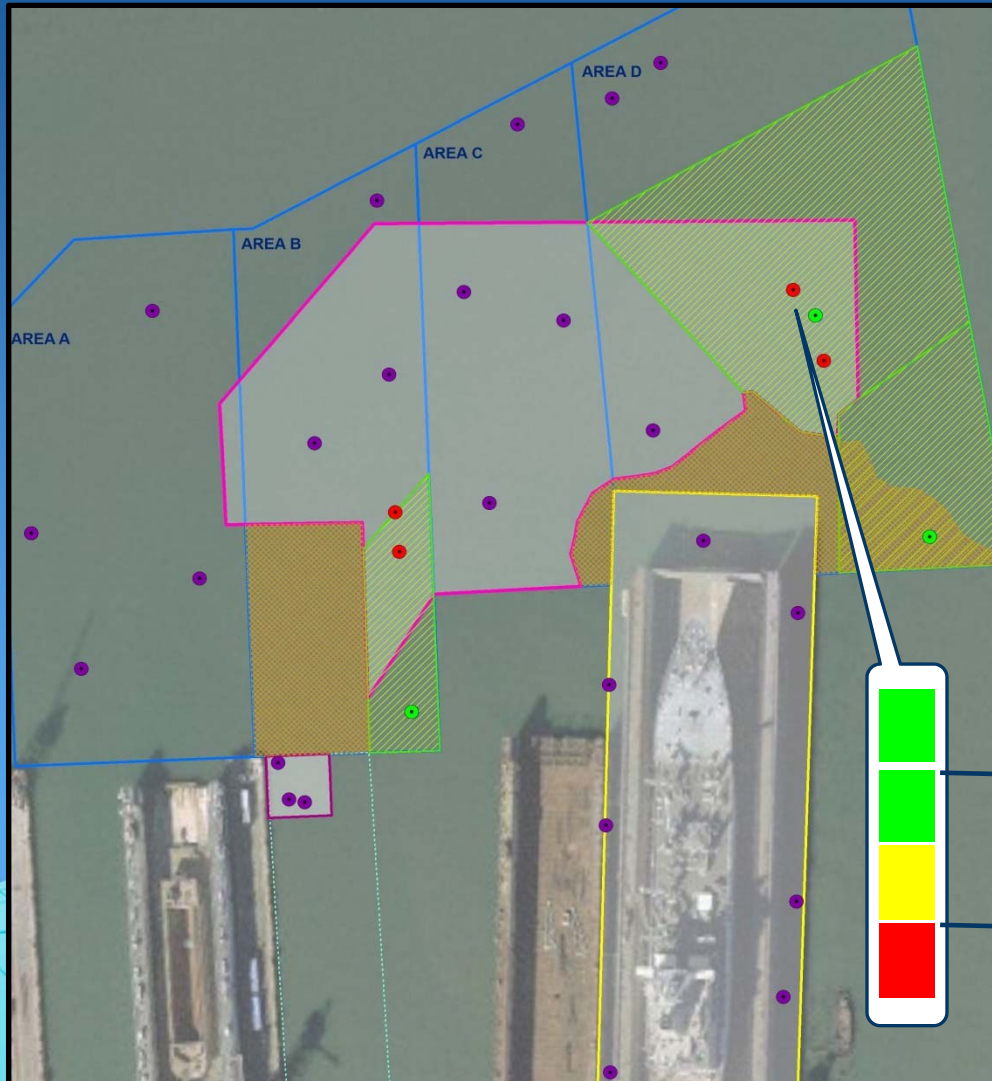
Analytical Results

- Initial composite analysis resulted in PAH 2 hot-areas
- Quick-turn high-resolution analysis resulted in 3 hot-spots



Analytical Results

- Hot zones delineated by agencies based on 3 hot-spots
- Path of maneuverability impeded

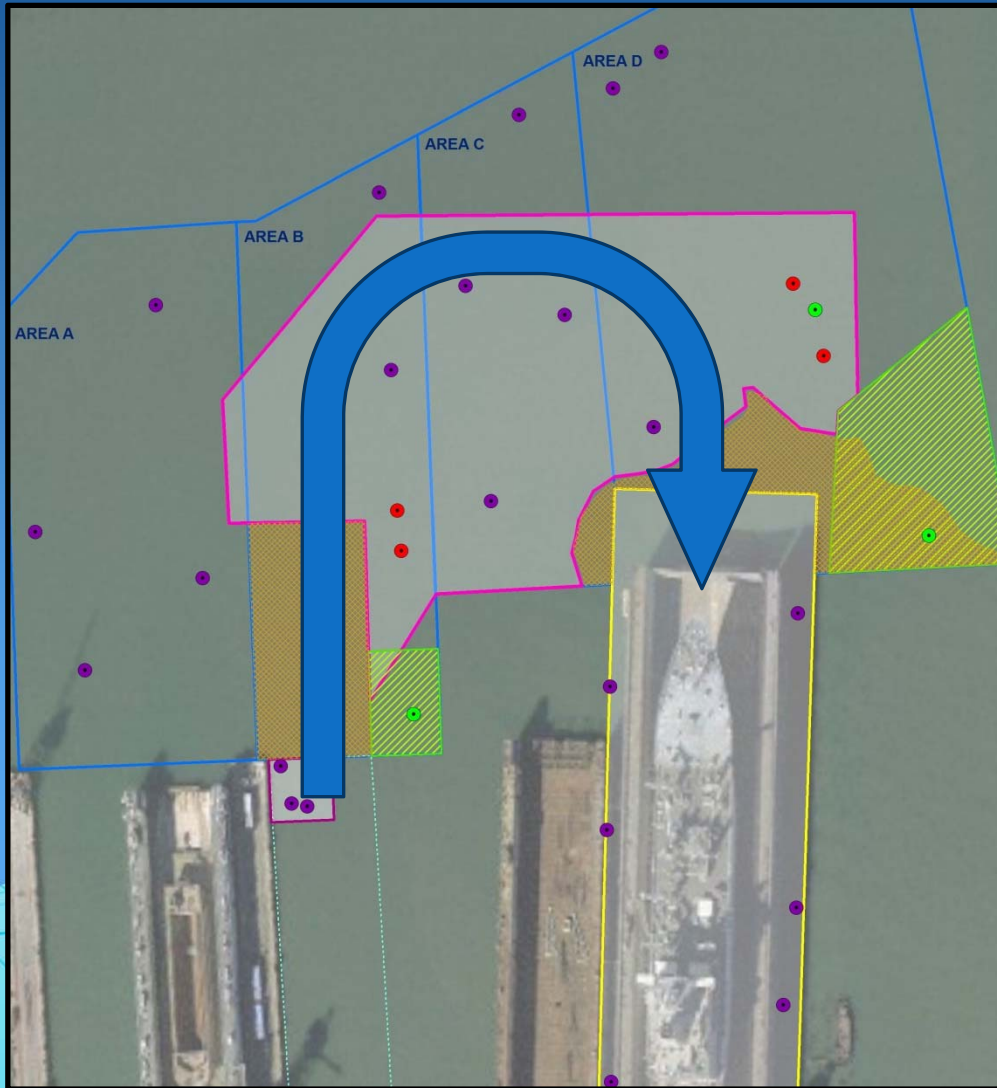


Analytical Results

- Quick-turn analysis of auxiliary samples and vertically segmented samples
- Horizontal isolation of PAH contaminants in one area
- Vertical isolation in other area

-31.5 MLLW

-32.5 MLLW



Analytical Results

- Horizontal isolation and adjustment of dredge depth allows contraction of hot-zones
- Path of maneuverability can now be dredged



CONCLUSIONS

- Collection of auxiliary samples followed by horizontal and vertical segmentation testing results in approval of an adequate dredge footprint
- Close and frequent communication with BAE, regulatory agencies and the analytical lab allowed for expeditious resolution of contaminant impacts to dredging objective



QUESTIONS



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