

Value Engineering Study

**CMANC WINTER MEETING
REDONDO BEACH, CA**

16 January 2014



**US Army Corps of Engineers
BUILDING STRONG®**



*Final Value Engineering
Study Report*



***USACE South Pacific Division
Regional Dredging Program***

**NOBLE
CONSULTANTS, INC.**



November 2013

Prepared by

Value Management Strategies, Inc.

Value Engineering

What is a Value Engineering Study:

A process of application of the Value Engineering Methodology, which uses a multi-discipline team of designers and stakeholders and the product delivery team to break down the project into functional performance elements. Cost and benefits are assigned to each element and evaluated. Creative options are then sought to improve functionality and/or cost-effectiveness.



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- Requirements:

Current Guidance from HQ USACE (13 Feb 2013)

“..requires VE application on all federal projects/programs over \$2,000,000 total cost.”

Project or Procurements Exceeding \$2M up to \$10M -

“A VE study shall be performed on all projects and procurements in this cost range as described above. While it is fully realized that it may be impractical to study the vast number of District O&M projects/programs in this range, managers should consider utilizing VE studies on a combination of projects and/or program applications.”



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- South Pacific Division (SPD) Regional Value Engineering Study – Dredging Program

San Francisco District (SPN)

Los Angeles District (SPL)

Sacramento District (SPK)

- Noble Consultants Inc.
- VMS (Value Management Strategies, Inc.)



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- VE Study Team:

SPD: Anne Sturm – Navigation & Coastal BL Mgr

Stan Lee – Contracts

Joe Yee – Cost Engineer

SPN: Jessica Burton Evans – Navigation

Nick Malasavage – VE Officer

Dave Doak – Engineering

SPL: Mo Chang – Navigation

Joe Ryan – Engineering

SPK: Doug Ross - Navigation



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- VE Study Team (cont):

Customer: Jim Haussener

Contractor: Patrick Royce (Ahtna Engineering)

Jim McNally (Manson Construction)

Noble Consultants: Scott Noble

Value Management Strategies: Mark Watson (Team Leader)

April Hiller



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San Francisco District	Los Angeles District	Sacramento District
Humboldt Harbor & Bay	Morro Bay Harbor	Sacramento River Deep-Water S C
San Francisco Harbor	Santa Barbara Harbor	Stockton Deep Water Ship Channel
Redwood City Harbor	Ventura Harbor	
Richmond Inner & Outer	Channel Islands Harbor	
Oakland Inner & Outer	Port Hueneme	
Suisun Bay Channel	Marina del Rey	
Pinole Shoal Channel	Los Angeles-Long Beach Harbor	
San Leandro Marina	Los Angeles River Estuary	
Larkspur Ferry Channel	Surfside-Sunset	
Petaluma River & Channel	Newport Harbor	
Napa River	Dana Point Harbor	
San Rafael Inner Canal	Oceanside Harbor	
Sausalito Debris Dock	San Diego-Mission Bay Harbor	
Noyo River & Harbor	San Diego Harbor	
Crescent City Harbor		
Moss Landing Harbor		
Monterey Harbor		

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- Key Program Issues
 - Future Funding Limitations
 - Timing of Funding Availability
 - Delay of Technical Services Contracts
 - Restriction on using Continuing Contract Clause
 - Reprogramming restrictions
 - Coordination w/ other Districts
 - Programmatic Permits Still Require Annual Episodic and Environmental Coordination
 - Additional Review Time Needed Per New Contracting Requirements
 - Long Process for Receiving Contributed Funds



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- Results:
 - 18 VE Alternatives
 - 25 Programmatic Suggestions
- Address the Following Aspects:
 - Maximize flexibility across the region
 - Achieve greater coordination in scheduling of staff and resources;
 - Simplify Project Criteria and Requirements Due to Repetitive and Consistent Nature of Dredging Work



Value Engineering ALTERNATIVES

ALT 1. Extend dredging contracts to multi-year contracts that cover multiple dredge projects

Advantages:

- Reduces amount of USACE workload associated with base contract years
- Reduces the opportunity for protest (bids) for the additional years within the contract term
- Allows for a small percentage of cost-redistribution between projects
- Reduces risks to project delivery schedules relative to executing dredging work w/ environmental windows

Value Engineering ALTERNATIVES

Disadvantages:

- Longer contract extends future unit price, and creates more risk for contractor
- Longer contract may decrease competition, losing contractor takes equipment elsewhere
- Multi-year contracts create more USACE workload during the first year
- Small contracts may restrict the successful contractor's ability to pursue other contracts

Value Engineering ALTERNATIVES

ALT 5. Establish additional placement sites -
Develop additional uplands including infrastructures to make sites fully operational. More near-shore placement sites for coastal projects. And more in-bay aquatic placement for beneficial use

Advantages:

- Provide more cost-effective alternatives to existing sites
- Increase the possibilities for beneficial use of dredge material

Value Engineering ALTERNATIVES

Disadvantages:

- Development of additional upland sites requires considerable capital investment that is beyond O&M budgets
- Science and permitting necessary to support authorization of near-shore sites requires funding, collaboration with the permitting agencies, and time

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ALTERNATIVES

ALT 21. Alternative contract types for on-call availability of dredging equipment

Advantages:

- Improves usage of navigational channels to full depth
- Gives the USACE qualified and experienced staff and equipment to perform maintenance dredging
- Provides a ready resource to perform dredging work
- Potentially assist small business development
- Improves USACE/contractor communications
- Could eliminate the difficulties in scheduling back-to-back projects

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ALTERNATIVES

Disadvantages:

- Might need different rental contracts for different types of dredging operations
- Potential high cost or rental equipment without high utilization
- Reduce competition if rental equipment operates multiple locations
- Opportunity cost to the contractor
- No dedicated funding stream
- Undetermined workload
- Concurrent projects often encounter schedule challenges

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ALTERNATIVES

ALT 28. Increase the use of regional planning for dredging needs and contract capacities across west coast

Advantages:

- Cost saving on mobilizing and demobilizing of equipment
- Provides a greater economy of scale
- Efficiency on contract submittals, scheduling pre- and post-dredge surveys, and safety and equipment inspection
- Efficiency on design and contract administration of the contract
- Facilitates work load on Gov hopper dredges

Value Engineering ALTERNATIVES

Advantages (cont):

- Expand work windows to accomplish more dredging within the given windows

Disadvantages:

- May limit contractor competition
- May drive contractors to different areas
- May limit dredging contract experience in specific Districts

Value Engineering ALTERNATIVES

ALT 35. Revise project descriptions to be more general to cover extended dredging area

Advantages:

- Allows sediment testing to be performed earlier in the process
- Allows timely, and not expedited, review of environmental and contract documents
- Allows dredging contracts to be bid early to optimize the chance of being ready to dredge when window opens
- Maximizes channel dimension availability

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Disadvantages:

- Additional hydrographic surveys required – one to develop the project description and one as basis for bidding purposes
- Can result in higher unit costs if too much uncertainty associated with large dredge area
- Increase the risk of quantity overruns or change conditions during the contract execution
- Delay in the dredging schedule if actual required dredging is significantly different than project description
- Delay in dredging cause increase in costs

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ALTERNATIVES

ALT 41. Create new IDIQ for environmental services to support dredging projects

Advantages:

- Brand new IDIQ contracts will specifically support dredging projects
- Contractor will be more specialized towards navigation/dredging environmental work
- Pricing may be more applicable to work needed for dredging projects
- A base IDIQ with two option years would provide up to 3 years of environmental services, or match longer dredging contracts period

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Advantages (cont):

- Awarding task orders saves time and resources; task orders can be awarded shortly after funds are received

Disadvantages:

- Upfront costs and work needed to create new IDIQ
- There may be an existing IDIQ in another District/Division that limits the number of potential bidders

Value Engineering Summary

List of Alternatives:

1. Extend dredging contracts to be multi-year contracts that cover multiple dredge projects
5. Establish additional placement sites
13. Provide additional funds to advance schedule in order to synchronize dredging windows with funding timelines
15. Pursue multi-year approvals from regulatory agencies in lieu of episodic approvals
16. Pursue the use of sediment samples from previous years to cover dredging for the following year
18. Standardize specifications and plans for each dredge type and reduce P&S review timeframe
19. Develop a dedicated navigation team for resources in each district for technical support
21. Evaluate alternative contract types for rental of dredging equipment
23. Re-evaluate the definition of beneficial use to allow more in-bay placement
26. Revise delivery schedule to solicit contracts as early as possible prior to dredging window start date
28. Increase the use of regional planning for dredging needs and contract capacities across west coast
35. Set project areas in the environmental documents and contracts to maximize flexibility of executing dredging as needed
41. Create multi-year ID/IQ contract(s) for environmental services that support dredging projects
45. Pursue demonstration or experimental projects for advance maintenance dredging
50. Prioritize O&M dredging contracts in Contracting during high volume timeframes
53. Consolidate and concentrate BCOE and contracting review using required in-person conferences
76. Award multiple year open-by-amendment contracts for dredging



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Summary of Additional Considerations

4. Maximize use of government-owned hopper dredge as a regional resource
8. Revise reprogramming restrictions to allow shared funding across projects
9. Pursue additional funds for SPD dredging
10. Pursue funding for system-wide approach (all California ports system) in lieu of project-specific funding
11. Streamline the contributed funds process
- 14 .Eliminate or modify USACE dredging program execution metrics
20. Revise USACE organizational structure for navigation program to be in Operations branch
22. Pursue expanding environmental windows for dredging operations
24. Establish a placement site for contaminated materials
30. Revise dredge quality management requirements
32. Pursue third party cost share of placing materials at beneficial use sites
36. Revise budget criteria relative to prioritizing dredging of sediment traps
38. Allow third parties to take materials in Federal channels or placement sites for commercial use
40. Pursue funding relative to flood damage reduction relative to areas requiring dredging
48. Utilize USACE policies and guidance relative to over depth restrictions in lieu of Region 9 EPA requirements
52. Eliminate peer review of IFB contracts
54. Expand responsibility of navigation technical team to prepare front-end portions of dredging contracts



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Summary of Additional Considerations

- 55. Specify the use of the ProjNet/DrChecks system for contract inquiries
- 58. Expand the quantity and area restrictions for knock-downs
- 63. Consider project-specific consultations to allow year-round dredging of Oakland channel
- 71. Post interim after-dredge surveys prior to completion of dredge project
- 73. Ensure lessons learned from After Action Reviews are used in programming future projects
- 77. Consider regionalizing the USACE technical services for sharing across Districts
- 83. Revise the project description and unit cost implications in dredging budget requests
- 84. Consider re-evaluating environmental restrictions that are driving costs of dredging projects



Questions

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