Presentation to City Council

Value Engineering Summary City of Sutherlin Wastewater System Improvements

August 8, 2016





BUILDING A BETTER WORLD

Purpose and Need

- Purpose of VE study is to improve the reliability and operations while reducing overall project costs.
- Unique opportunity to identify and compare design alternatives focusing on balancing capital expense and operational costs.
- NOT a design review.
- NOT a quality control exercise
- NOT intended to be critical, judgmental or create controversy.

Constraints and Opportunities

- Boundary conditions/constraints were established to include:
 - Flows and Loads are established
 - Process Technology is established
 - Project site is established within current City owned property

VE Team initially identified 99 opportunities

General Classification of VE Opportunities

Selected for further advancement for formal consideration, 36, 36% Dismissed as impractical, violated boundary conditions/constraints or resulted an in increase capital or operating costs, 36, 37%

Captured as potential for further consideration by design engineer, 27, 27%

Opportunities to Recommendations

The 36 ideas were coalesced into 10 VE recommendations.

Sum total of capital cost reduction if all VE recommendations prove to be viable was valued at \$1.94M

Risk Identification

Areas of risk potential were identified to be:

- MAO Schedule for Design and Construction is aggressive
- ✓ Final discharge permit limits are not finalized
- ✓ Site accessibility for construction is limited
- Groundwater conditions and adjoining private water well need further characterization
- Pre-Design budget estimates need to be adjusted for inflation

VE Team

MWH

- Process Engineer
- Mechanical Engineer
- Construction Manager
- Slayden Construction General Contractor
- Richwine Environmental Operations Engineer
- Dyer Partnership
 - Project Manager
 - Design Engineer
- City of Sutherlin
 - Staff, City Council and City Representatives

Existing Plant

Roue

E

L.



ZONE





Baseline Cost Estimating

Independent Construction Cost Estimate was developed by Slayden Construction's Estimating Group

	2015 Predesign Estimate	2016 Predesign Estimate	2016 VE Estimate
Base Estimate	\$15.6M	\$16.2M	\$18.4M
Contingency	\$1.0M	\$1.0M	\$1.0M
Total Estimate	\$16.6M	\$17.2M	\$19.4M

VE Cost Saving Summary

VE Opportunity		Capital Cost Savings	
	Ī		
Relocation of Dewatering Process	\$	200,000	
Reduction in Quantity of Blowers	\$	100,000	
Eliminate Separate Control Building	\$	100,000	
Minimize Modification to Existing Plant		410,000	
Change in Disinfection Process	\$	500,000	
Repurpose Existing Space for Shop/Storage	\$	127,000	
Civil/Site Modifications	\$	137,500	
Reductions in Equipment (4 VE Items)	\$	368,000	
Total	\$	1,942,500	

Optimal Project Schedule

- Design (Pre-design to Bid Docs)
 - 10-Months to account for reviews
- Bidding & Award
 - 2-Months (30d for bid)
- Construction
 - 21-month construction period
 - Construction Limitations
 - Equipment lead times
 - Sequencing of construction
 - Continued plant operations and variable flow requirements.



Schedule Evaluation

Current MAO Schedule Design Complete by Dec. 22, 2016 Construction Period is 24 months

VE Schedule

- ✓ Design Complete by July 2017
- ✓ Bidding and Award 2 months
- Construction Period 24 months

Cash Source and Use Summary

Cash Source	MAO Schedule	VE Recommended Schedule
Reserve	\$ 700,000	\$ 900,000
Loan	\$ 18,500,000	\$ 18,500,000
TOTAL	\$ 19,200,000	\$ 19,400,000
Cash Usa	MAO	VE Recommended
Casil Use	Schedule	Schedule
Design	\$ 900,000	\$ 900,000
Design Acceleration	\$ 250,000	-
ESDC/CM	\$ 1,267,000	\$ 1,267,000
Construction	\$ 18,440,000	\$ 18,440,000
VE Adjustments	\$ (1,947,000)	\$ (1,947,000)
DEQ Design Penalty	-	\$ 37,500
Change Order Contingency	\$ 1,000,000	
Inflation Adjustment	-	\$ 700,000
Project Contingency	\$ 1,000,000	\$ 1,000,000
TOTAL	\$ 20,910,000	\$ 20,397,500
SOURCE LESS USE	\$ (1,710,000)	\$ (997,500)

Cost Estimate Ranges



Recommendations

- Request Time Extension for Design with ODEQ (July 2017)
- Validate and Accept VE Recommendations
- Evaluate additional VE Suggestions
- Conduct additional groundwater monitoring and include in bid documents
- Provide laydown/staging areas in bid documents
- Provide materials wasting areas in bid documents
- Potentially seek additional \$1 to \$2M in SRF loan balance

Discussion

