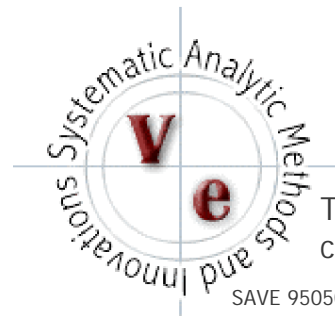


Results of Value Engineering Workshop of  
Feb 15-19, 2009

Eastern New Mexico Rural Water  
System Project

For CH2MHill, Occam Consulting

**DRAFT 1**  
**2/20/2010**



The worldwide seal of  
confidence and acceptance

SAVE 950501-VESI 01101401

# Total Savings

- q Maximum potential identified at this time is:
  - § Total amount studied (available for study) \$301 million
  - § \$19.7 million total estimated overall maximum savings, more expected once savings fully estimated
  - § Many value added features identified
  - § LCC
    - \$33.4 million long term life cycle reductions
    - operations estimate \$13.8 million + savings, more expected once savings fully estimated

Thanks

# Summary of Proposals

No	Concept	Description	Presenter	amt	savings	lcc
1	B	Ute Lake pump intake station	Danny	5,040,000	750,000	750,000
2	F	Relocate WTP to Clovis	Danny	55,400,000	500,000	500,000
3	G	Relocate WTP to multiple sites	Danny	55,400,000		
4	AL	Size intake pipe for 28MGD	Danny	5,040,000	18,000	18,000
5	AD	VFD reduce number	Dave	7,400,000	1,200,000	1,200,000 **
6	AH	Use radio SCADIA	Dave	3,000,000	2,700,000	2,600,000
7	L	Use hydro power generator at WTP	Dave	5,000,000	5,000,000	17,400,000
8	AB	Optional pipe layout and size	Dave	13,100,000	1,450,000	1,450,000
9	Y	Add redundant vacuum relief valves	Dave	4,000	4,000	10,000
10	C	Eliminate upper intake (2 to 1)	Chris	198,000	100,000	130,000
11	D	Use tow equal size intake tunnels	Chris	505,000	103,000	135,000
12	M	Minimize building cover	Chris	3,365,000	2,520,000	3,400,000
13	O	Adjust treatment plant hydraulics	Chris	1,000,000	210,000	297,000
14	W	Use alt tx process	Chris	614,000	307,000	332,000
15	X	Conduct addition bench scale studies	Chris	-	-	-
16	S	Process unit improvements	Chris		544,000	715,000
17	AA	Reduce pipe cover from 5' to 4'	Wayne	201,150,000	3,000,000	3,000,000 *
18	AC	Storage tank materials	Wayne	850,000	250,000	250,000
19	J	Optimize HVAC units	Wayne	162,750	93,000	130,000
20	N	Smaller M&O space	Wayne	697,500	112,500	112,500
21	P,Q,\	Alternate materials	Wayne	2,400,000	250,000	250,000
22	AE	paving vs not paved	Wayne	112,500	112,500	112,500
23	AF	size building	Chris	1,530,000	459,000	649,000
		OCFC	Bob			
				301,528,750	19,683,000	33,441,000
					op savings	13,758,000

\* Amount shown is earth only. Savings of risers, access, etc are not computed. Expect much higher savings than amount shown upon further analysis. Data not found during study to compute.

\*\* Significant life cycle savings not computed due to time available to value study team.



## Plus- Other concepts for further consideration

- q Defined as worthy of consideration but not fully developed by team due to time, simplicity, or other issues
  - § About 10 are suggested
  - § Please review written report for more details



## Caveats:

- q Effect of each savings is shown for each proposal
  - expectation is that implemented savings will be reallocated to authorized scope or "value added" costs
- q Some proposals may be mutually exclusive
  - (e.g., 3 methods proposed, only one being built)



# The Team

- q Sam Martin, PE, LCVS, LCVC, Facilitator, SAMI VE LLC
- q Carol Landau, QVT, Acumen VE
- q Danny Anderson, Geotechnical, PSI USA
- q Chris Chen, Water Treatment/Intake, AECOM
- q Bob Moran, Electrical, Coupland Moran Eng
- q David C. Rogers, Civil, Rogers Eng Hyd
- q Wayne Yevoli, Mech, Coupland Moran Eng



# Lead Consultants

## CH2M Hill

- q Greg Gates, Project Manager
- q J. Brock McEwen, Water Business Group

## Occam Consulting Engineers

- q Clay Koontz, PE, Project Engineer

## AECOM

- q Estimating Group
- q Robert Jarnis, treatment process, AECOM



# Presentation ("Draft") Report

- q Available in March 2010
- q In addition to details of proposals and OCFC, includes many supporting features in report
  - § Briefing attendance logs
  - § Consultation logs
  - § Documents logs
  - § Economic analyses
  - § Telephone and other records
  - § Other activity logs





# Questions?

May we have your questions please

<http://verereporting.com/report/gov/enmrws/>