



DOES DIGGING UP YOUR LANDFILL MAKE SENSE?

Wyoming Solid Waste & Recycling Association
Casper, Wyoming

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Overview



Landfill Closure Options



Cost & Ranking



Project Example



Lessons Learned



Feasibility Study



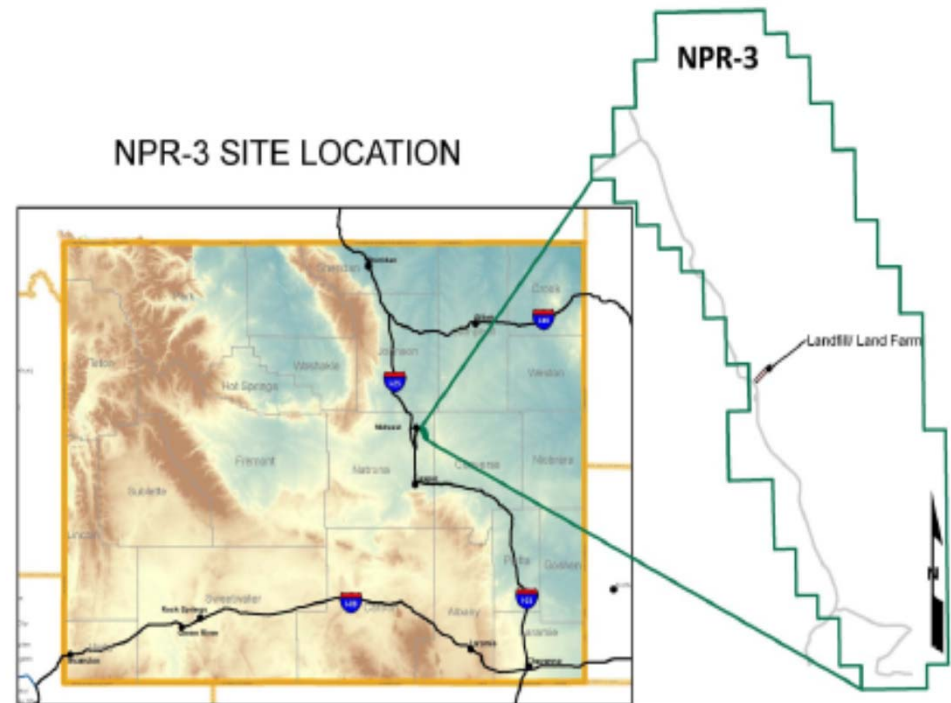
Questions

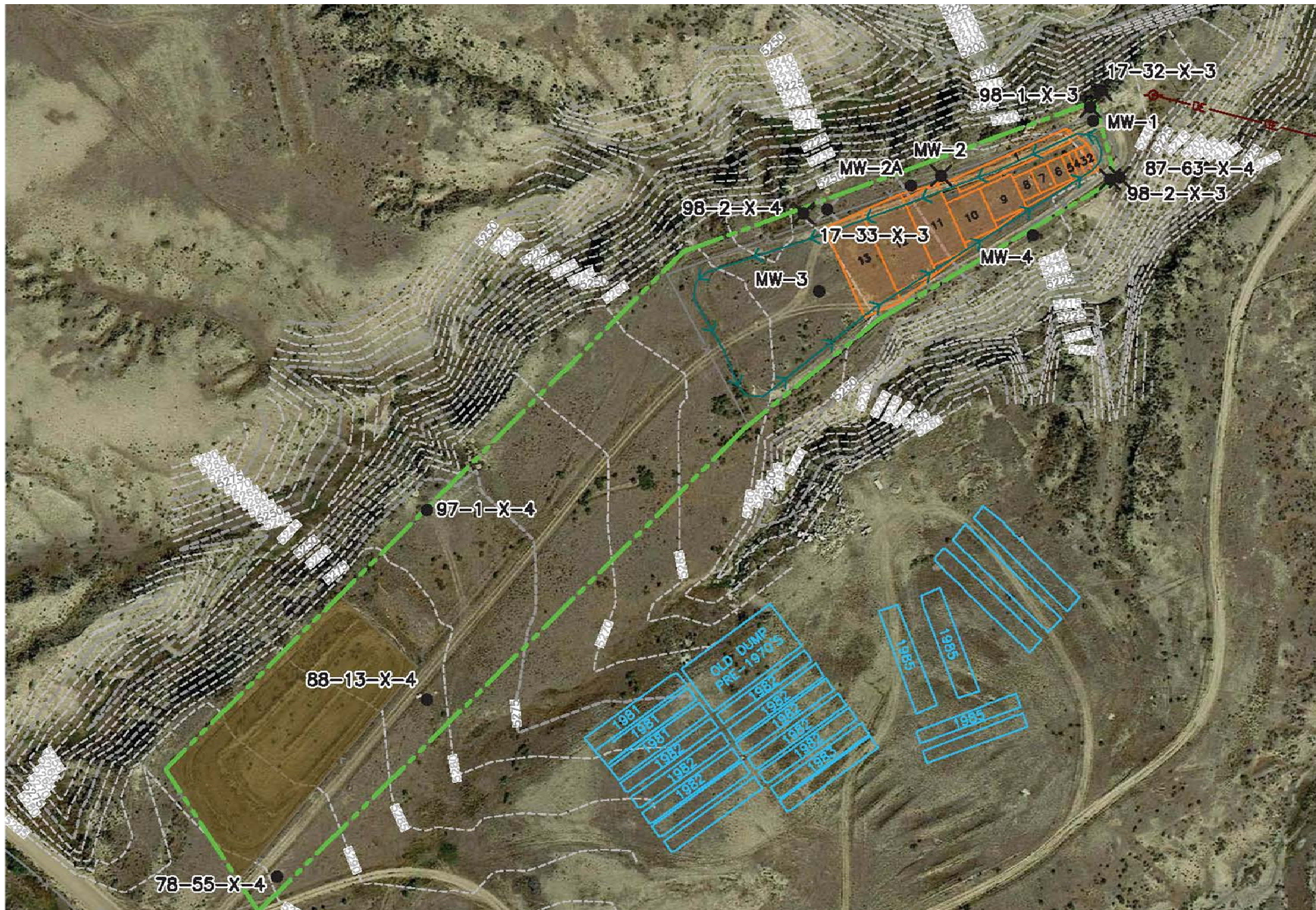
Landfill Closure Options

1. Close in place (cap)
2. Close on-site in new landfill (liner & cap)
3. Clean closure (dig & haul)

Project Example

- Site setting
- Other considerations
- Regulatory options







Feasibility Study

- Preliminary review of hydrogeologic conditions
- Methodology for evaluating alternatives
 - Prepared preliminary cost estimates
 - Identified advantages & disadvantages
 - Ranked feasibility criteria to compare alternatives
- Feasibility Criteria
 - Implementability
 - Reduction of Risk
 - Short-Term Effectiveness
 - Long-Term Reliability
 - Cost
 - Regulatory Support

Alternatives and Cost

	<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>	<u>Alternative D</u>	<u>Alternative E</u>
	Closure in Place with Soil Cover	Closure in Place with Synthetic Cover	Clean Closure with Off-Site Disposal	Clean Closure with On-Site Disposal	Source Investigation and Closure In Place
Capital Costs	\$889,000	\$731,000	\$757,000	\$1,214,000	\$231,000
Long-Term Costs	\$1,154,000	\$1,169,000	\$276,000	\$1,029,000	\$734,000
Total Costs	\$2,043,000	\$1,900,000	\$1,033,000	\$2,243,000	\$965,000

Alternatives and Ranking

<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>	<u>Alternative D</u>	<u>Alternative E</u>
Closure in Place with Soil Cover	Closure in Place with Synthetic Cover	Clean Closure and Off-Site Disposal	Clean Closure and On-Site Disposal	Source Investigation and Closure In Place

CRITERIA

Implementability					
Technical Considerations	Moderate	High	Moderate	Moderate	High
Legal Considerations	Low	Low	High	Moderate	Unknown
Reductions in Waste					
Toxicity	None	None	Low	None	None
Mobility	Moderate	Moderate	High	High	None
Volume	None	None	High	None	None
Short-Term Effectiveness	High	High	High	Moderate	High
Long-Term Effectiveness	Low	Low	High	Moderate	Unknown
Cost	Moderate	Moderate	High	Low	High
State Acceptance	Low	Low	High	Moderate	Unknown

RANKING RECOMMENDATION

Overall	Low	Moderate	High	Low	Low
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Lessons Learned

- Characterize site
 - Delineate aerial & vertical extent
 - Test waste/soil



Lessons Learned

- Estimate waste/soil ratios
 - Difficult to segregate waste/cover soil
 - Impractical to work around trench walls



Lessons Learned

- Identify back-hall borrow source
- Plan for contingencies
 - Field screening
 - Lab testing
 - Storing, hauling, & disposal (asbestos, liquids, HW, NORM)



Questions?

WHAT

WHY

WHERE

WHEN

WHO

HOW