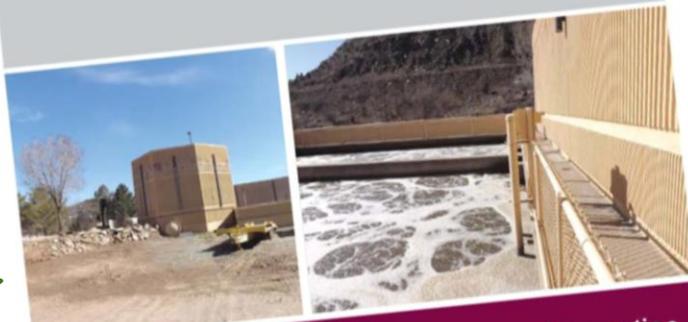




Santa Rita Wastewater Treatment Plant Alternative Site Investigation

Durango City Council
Work Session
August 11, 2015



Delivering Client Service & Technical Expertise

Nutrient Engineering Report

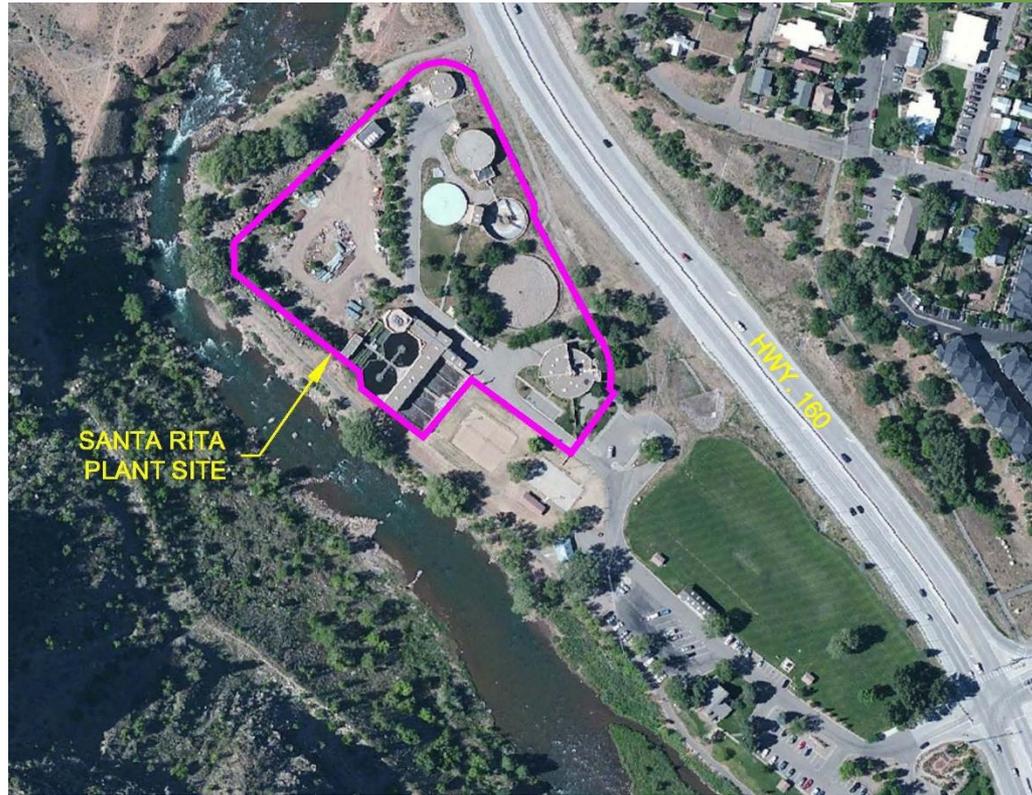
City of Durango WWTP Facility Plan

October, 2014



Reaching Capacity
Nutrient Removal
Big Costs
Other Options?

Renovate Vs. Relocate

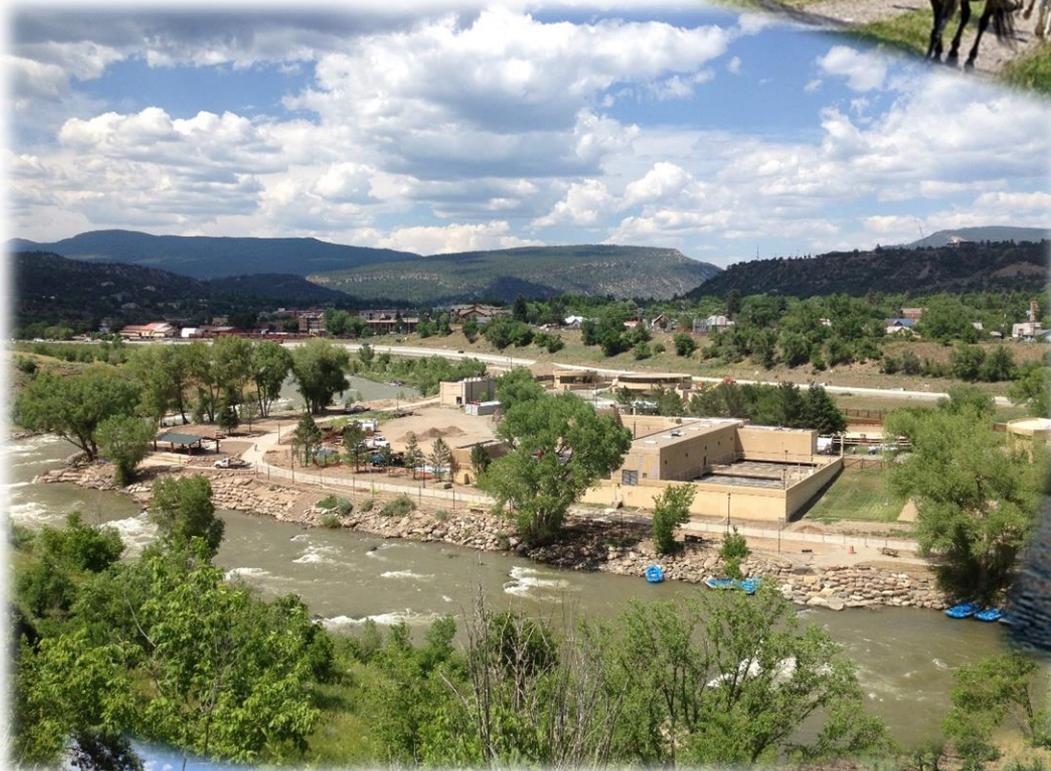


BNR Study Cost Summary

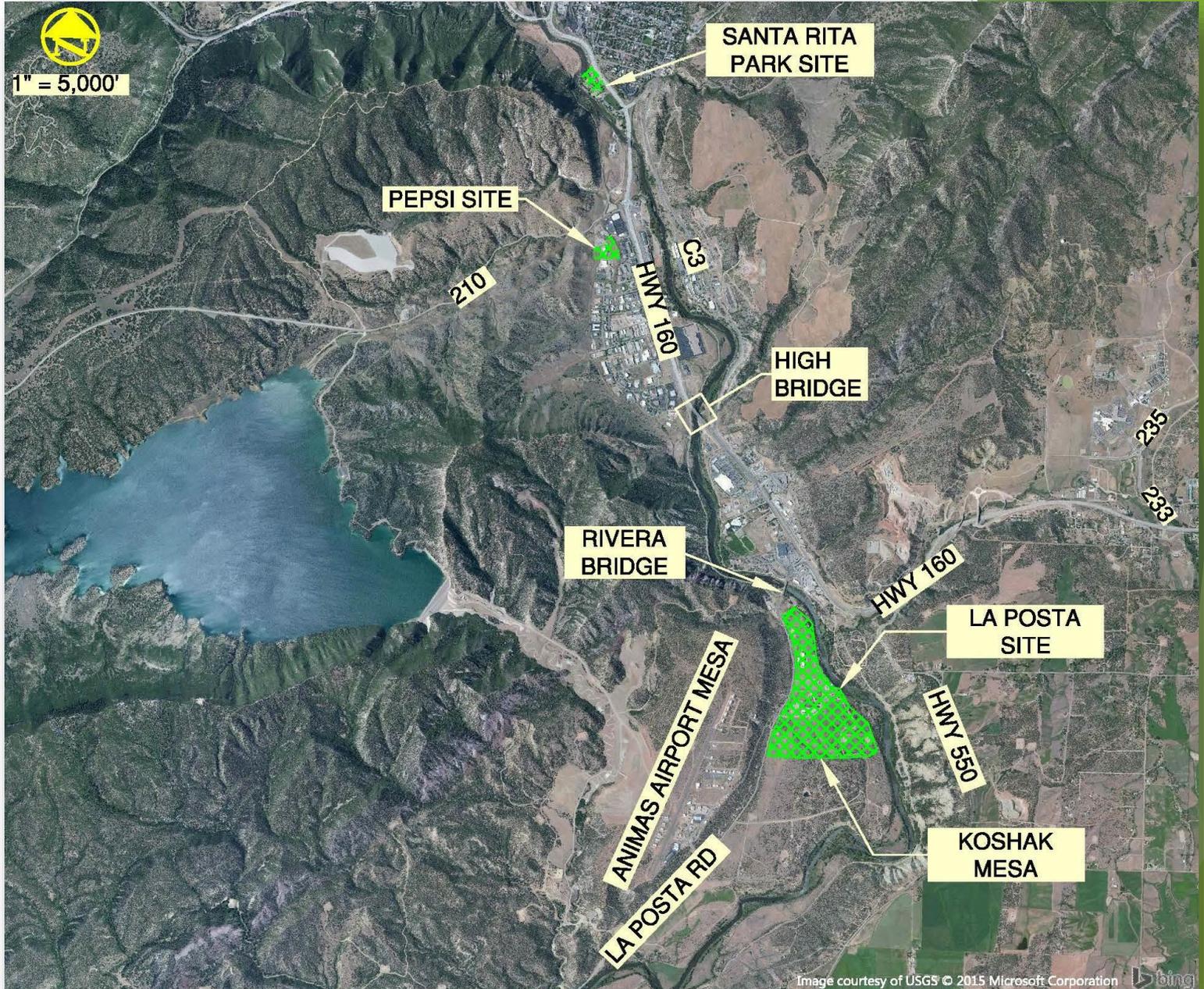
Site	Treatment Plant Cost (millions)	Conveyance/Lift Station (millions)	Total Cost (millions)
Santa Rita (existing)	\$58.2		\$58.2
Near So. Durango Plant	\$72.7*	\$22.5	\$95.2*

*Original cost presented in BNR Study was \$99.0 million. This cost was reduced by \$3.8 million due to inclusion of two dewatering equipment options. Only one option is needed.

Why Move?



Site Locations



Capital Costs for Alternative Treatment Plant Locations

Alternative	Treatment Plant Cost	Lift Station Costs	Conveyance Pipelines	Land	Total Project Cost
Santa Rita	\$58,194,000				\$58,194,000
La Posta	\$62,370,000	\$5,010,000	\$20,511,000	\$5,857,000	\$93,748,000
Off-River	\$63,110,000	\$5,010,000	\$7,320,000	\$3,833,000	\$79,273,000

Total Project Cost and NPV for LS & Pipelines Only (20 years)

Alternative	Total Project Cost	NPV Operating Costs for LS & Pipelines (20 years)	Total Capital and Operating Cost for LS & Pipelines (20 years)
Santa Rita	\$58,194,000	N/A	\$58,194,000
La Posta	\$93,748,000	\$8,364,000	\$102,112,000
Off-River	\$79,273,000	\$6,203,000	\$85,476,000

Note: Treatment Plant Operations and Maintenance not included

Decisions

Santa Rita \$58,194,000

- Least Cost
- Look can be greatly Improved
- Odors can be largely eliminated

La Posta \$93,748,000

- Benefits don't warrant costs?
- Permitting Challenges
- 4 ½ to 6 years (compliance schedule)

Pepsi \$79,273,000

- Can the land be acquired?
- Does the benefit warrant costs?
- 4 ½ to 6 years to Implement (compliance schedule)

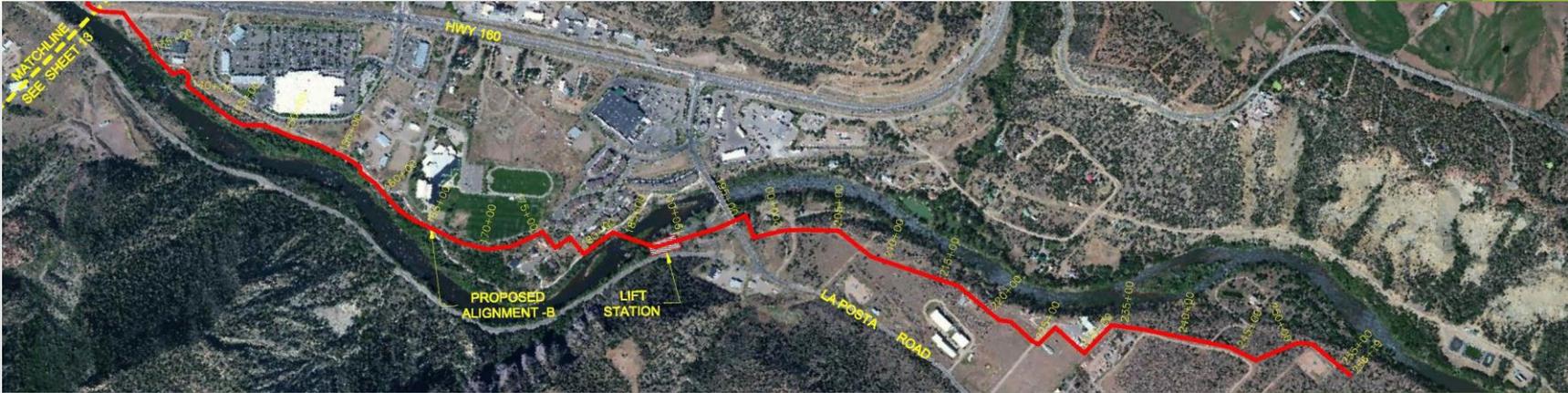
Future

- Limited Options

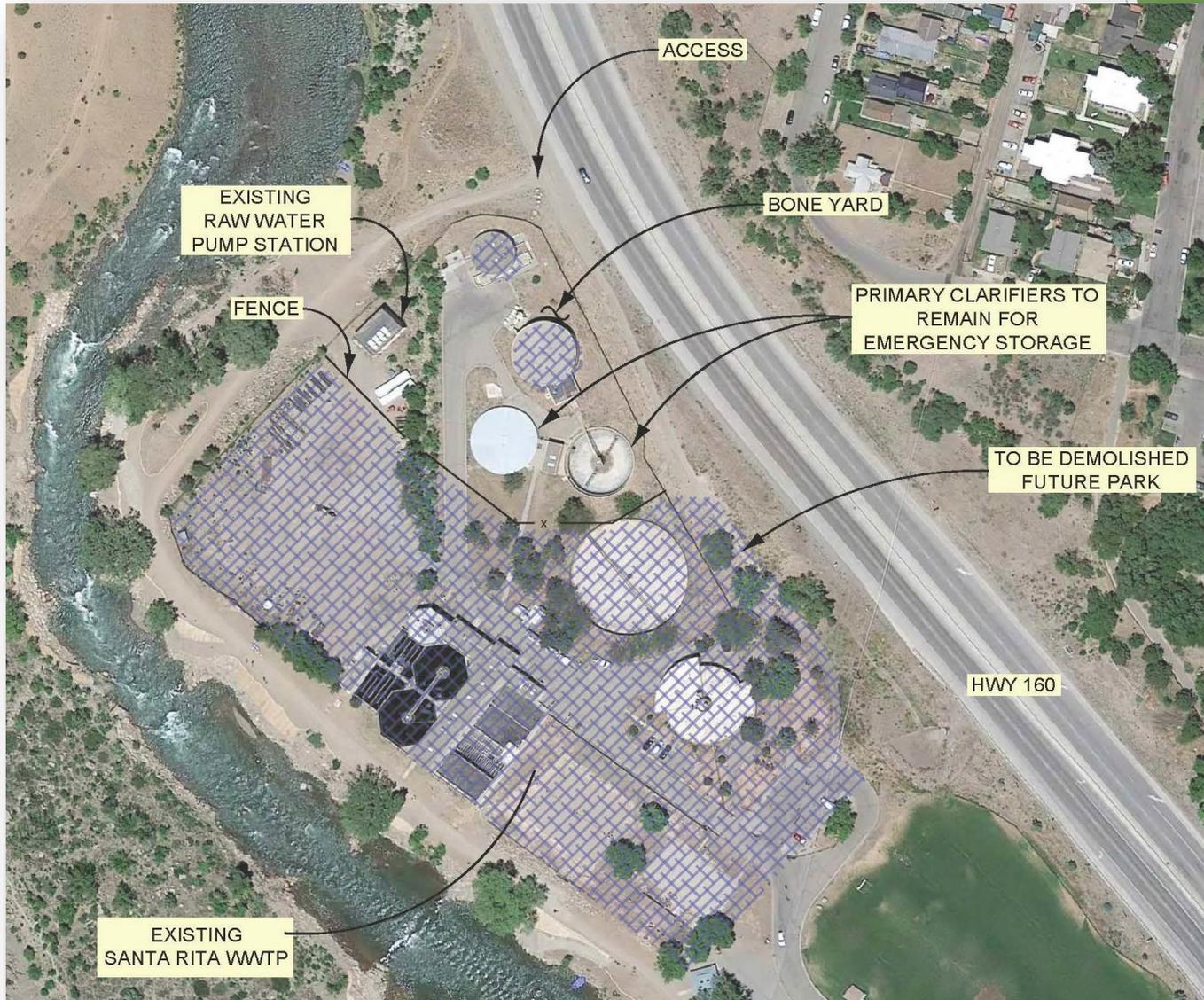
La Posta Site



La Posta Site Alignment B



Santa Rita Revisions for La Posta



**Opinion of Probable Costs
New WWTP Located near La Posta Road**

<u>Description - Base</u>	<u>Project Cost</u>
Santa Rita WWTP Demolition	\$1,430,000
Site/Civil	\$5,480,000
Headworks	\$4,100,000
Primary Clarifiers	\$3,740,000
Secondary Process + Thickening	\$21,800,000
Anaerobic Digestion	\$6,580,000
Dewatering - Fournier Rotary Press	\$3,080,000
Sidestream Treatment	\$1,360,000
Class A Biosolids - Heat Dryer	\$3,660,000
UV Disinfection	\$2,260,000
Chemical Building	\$660,000
Admin/Lab Building	\$6,480,000
FOG/Septage Receiving	\$1,740,000
WWTP Subtotal	\$62,370,000

**La Posta Conveyance
Alternative
Summary of Total Costs**

**La Posta Alternative
Summary of Total Project Cost**

Alignment	Conveyance Cost	Lift Station Costs	Total Costs
A	\$27,663,000	\$5,010,000	\$32,673,000
B	\$20,511,000	\$5,010,000	\$25,521,000
C	\$18,144,000	\$10,020,000	\$28,144,000

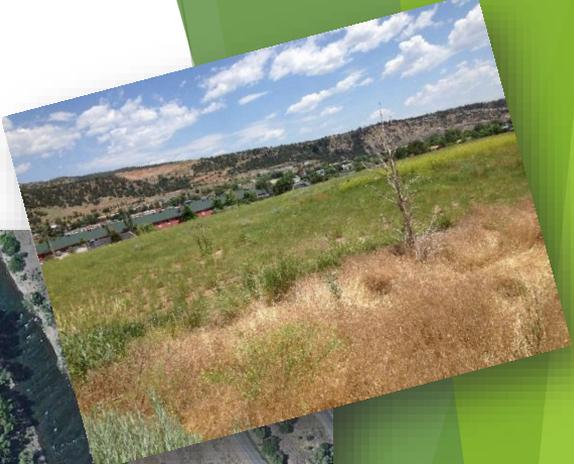
Treatment Plant Cost	Lift Station Costs	Conveyance Pipelines	Land	Total Project Cost
\$62,370,000	\$5,010,000	\$20,511,000	\$5,857,000	\$93,748,000

La Posta Alternative Estimated Operational Costs

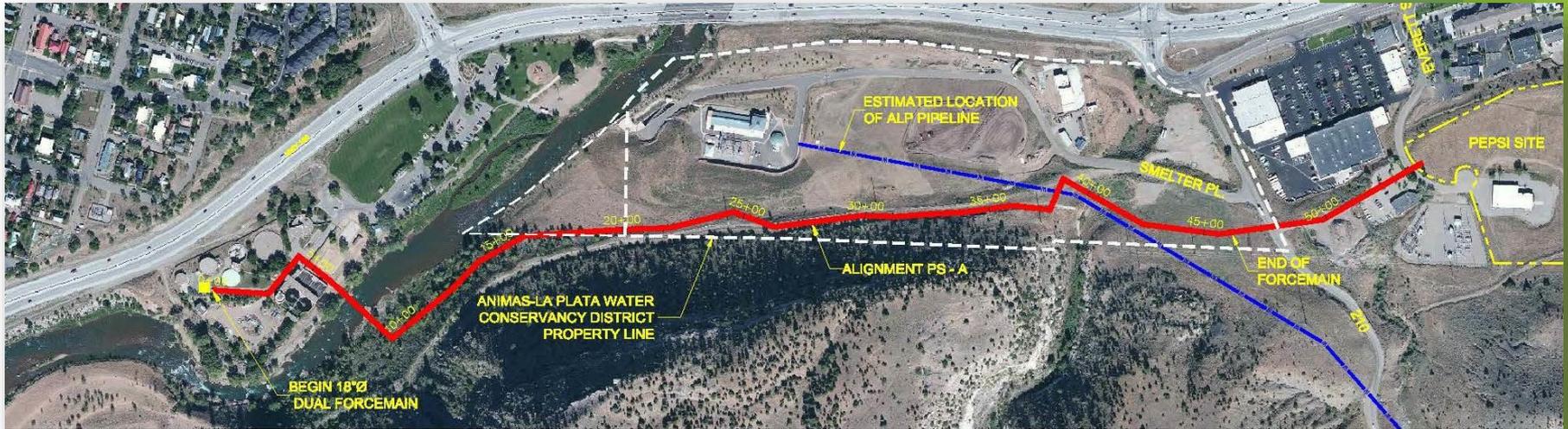
Parameter	Construction Cost	O&M Factor	Annual Operating/ O&M Cost	20-Yr Net Present Value
Lift Station	a	b	c = (a*b)	d = c*20
Structure	\$975,000	0.02	\$19,500	\$390,000
Equipment	\$2,715,000	0.04	\$108,600	\$2,172,000
Lighting Cost			\$631	\$13,000
Heating/Cooling Cost			\$1,080	\$22,000
Pumping Power			\$60,000	\$1,200,000
Conveyance Pipelines	\$16,310,000	0.014	\$228,340	\$4,566,800
		TOTAL	\$419,000	\$8,364,000

Note: Does not include treatment plant operation and maintenance costs

Pepsi Site



Alignment PS-A



Santa Rita Revisions for the Pepsi Site PS-A



Alignment PS-B



Santa Rita Revisions for Pepsi Site PS-B



Pepsi Site Cundiff Park Facilities



Opinion of Probable Costs
Off-River WWTP at the Pepsi Site

<u>Description - Base</u>	<u>Project Cost</u>
Santa Rita WWTP Demolition	\$1,380,000
Site/Civil	\$5,260,000
Headworks	\$4,100,000
Primary Clarifiers	\$3,740,000
Secondary Process + Thickening	\$21,800,000
Anaerobic Digestion	\$6,580,000
Dewatering - Fournier Rotary Press	\$3,080,000
Sidestream Treatment	\$1,360,000
Class A Biosolids - Heat Dryer	\$3,660,000
UV Disinfection	\$2,260,000
Chemical Building	\$660,000
Admin/Lab Building	\$6,480,000
FOG/Septage Receiving	\$1,740,000
Odor Control	\$1,010,000
WWTP Subtotal	\$63,110,000

**Off-River Conveyance
Alternatives
Summary of Costs**

Off-River Alternative Summary of Total Costs	Alignment	Conveyance Cost	Lift Station Costs	Total Costs
	PS-A	\$7,320,000	\$5,010,000	\$12,330,000
	PS-B	\$5,160,000	\$5,010,000	\$10,170,000

Treatment Plant Cost	Lift Station Costs	Conveyance Pipelines	Land	Total Cost
\$63,110,000	\$5,010,000	\$7,320,000	\$3,833,000	\$79,273,000

Net Present Value Operating Costs Off-River Alternative

Parameter	Construction Cost	O&M Factor	Annual Operating/ O&M Cost	20-Yr Net Present Value
Lift Station	a	b	c = (a*b)	d = c*20
Structure	\$975,000	0.02	\$19,500	\$390,000
Equipment	\$2,715,000	0.04	\$108,600	\$2,172,000
Lighting Cost			\$631	\$13,000
Heating/Cooling Cost			\$1,080	\$22,000
Pumping Power			\$95,000	\$1,900,000
Conveyance Pipelines	\$6,090,000	0.014	\$85,260	\$1,705,200
		TOTAL	\$311,000	\$6,203,000

Note: Does not include treatment plant operation and maintenance costs

Decisions

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