Elmendorf Dam - Quantities and cost estimate

Note - Estimates are only intended to provide planning level comparison between alternatives. Quantities and cost estimates are based on concepts of Alternatives, rough estimates of volumes and typical unit prices. More detailed feasiblity, design/analysis and estimates of quantities anc cost will be required for preferred alternative.

Alternative 2 - Bypass channel

excavation/haul	833	cy	$	30	$	24,990
substrate	650	tons	$	55	$	35,750
F & I rock weirs	120	tons	$	150	$	18,000
Excavation & backfill for Retaining wall	750	tons	$	30	$	22,500
Concrete retaining wall, assume 5' height w/ footing	250	cy	$	625	$	156,250
Ped. bridge over channel	320	sf	$	150	$	48,000
fence	600	lf	$	30	$	18,000
		Subtotal =			$	323,490
mobilization	15%				$	48,524
site restoration	20%				$	64,698
dewatering	1	LS			$	30,000
contingency	25%				$	80,873
		Total =			**$**	**547,600**

Does not include: access or strengthening to intake building

Alternative 3 (Option 1) - Extend existing fishway

vault - 6x4x10	1	LS	$	15,000	$	15,000
F&I AK Steep Pass fishway	1	LS	$	50,000	$	50,000
Equipment Rental	2	weeks	$	5,000	$	10,000
Labor, 4 man crew	3	weeks	$	9,000.00	$	27,000
		Subtotal =			$	102,000
mobilization	15%				$	15,300
site restoration	20%				$	20,400
dewatering	1	LS			$	30,000
contingency	25%				$	25,500
		Total =			**$**	**193,200**

Alternative 3 (Option 2) - Retrofit new fishladder

Cut and remove existing sheetpile wall	4	days	$	2,500.00	$	10,000
Foundation prep - Excav.	1500	CY	$	32.00	$	48,000
install concrete fish ladder	750	CY	$	625.00	$	468,750
		Subtotal =			$	526,750
mobilization	15%				$	79,013
site restoration	20%				$	105,350
dewatering	1	LS			$	50,000
contingency	25%				$	131,688
		Total =			**$**	**892,800**

Elmendorf Dam - Quantities and cost estimate

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Alternative 4 - Partial dam removal Footprint = 18906 sf

Cut and remove existing sheetpile wall	4	days	$	2,500.00	$	10,000
Un-useable excavation and haul off	1050	cy	$	30.00	$	31,500
substrate	3400	tons	$	55.00	$	187,000
armor layer	2800	tons	$	55.00	$	154,000
rock vanes	2800	tons	$	150.00	$	420,000
		Subtotal =			$	802,500
mobilization	15%				$	120,375
site restoration	20%				$	160,500
dewatering	1	LS			$	125,000
contingency	25%				$	200,625
		Total =			**$**	**1,409,000**

Alternative 5 - Full dam removal Footprint = 36015 sf

Cut and remove existing sheetpile wall	4	days	$	2,500.00	$	10,000
excavation/haul	2650	cy	$	30.00	$	79,500
substrate	6600	tons	$	55.00	$	363,000
armor layer	5200	tons	$	55.00	$	286,000
rock vanes	3600	tons	$	150.00	$	540,000
		Subtotal =			$	1,278,500
mobilization	15%				$	191,775
site restoration	20%				$	255,700
dewatering	1	LS			$	175,000
contingency	25%				$	319,625
		Total =			**$**	**2,220,600**

Fort Richardson Dam - Quantities and cost estimate

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Alternative 2 - Bypass channel

excavation/haul	444	cy	$	30	$	13,320
F & I substrate	425	tons	$	55	$	23,375
F&I rock weirs	125	tons	$	150	$	18,750
fence	175	lf	$	30	$	5,250
Headgate	1	LS	$	15,000	$	15,000
labor/equip. - rock berm, assume 3 man crew	7	days	$	3,800.00	$	26,600
		Subtotal =			$	102,295
mobilization	15%				$	15,344
site restoration	20%				$	20,459
dewatering	1	LS			$	30,000
contingency	25%				$	25,574
		Total =			**$**	**193,700**

Alternative 3 (Option 1) - Retrofit new fish ladder along stream bank

excavation/haul	350	cy	$	30	$	10,500
Shore, cut, strengthen dam	1	LS	$	100,000	$	100,000
install concrete fish ladder	300	cy	$	625	$	187,500
labor/equip. - rock berm assumne 3 man crew	7	days	$	3,800.00	$	26,600
		Subtotal =			$	324,600
mobilization	15%				$	48,690
site restoration	20%				$	64,920
dewatering	1	LS			$	75,000
contingency	25%				$	81,150
		Total =			**$**	**594,400**

Alternative 3 (Option 2) - Retrofit new fishladder bypassing ex. Dam

excavation/haul	360	cy	$	30	$	10,800
F & I substrate	250	tons	$	55	$	13,750
install concrete fish ladder	425	cy	$	625.00	$	265,625
		Subtotal =			$	290,175
mobilization	15%				$	43,526
site restoration	20%				$	58,035
dewatering	1	LS			$	75,000
contingency	25%				$	72,544
		Total =			**$**	**539,300**

Revised January 8, 2007

Fort Richardson Dam - Quantities and cost estimate

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Alternative 4 - Raise tail water elevation Footprint = 3900 sf

excavation/haul	350	cy	$	30.00	$	10,500
substrate	550	tons	$	55.00	$	30,250
armor	1150	tons	$	55.00	$	63,250
rock vane	650	tons	$	150.00	$	97,500
		Subtotal =			$	201,500
mobilization	15%				$	30,225
site restoration	20%				$	40,300
dewatering	1	LS			$	125,000
contingency	25%				$	50,375
		Total =			**$**	**447,400**

Alternative 5 - Full dam removal Footprint = 24743 sf

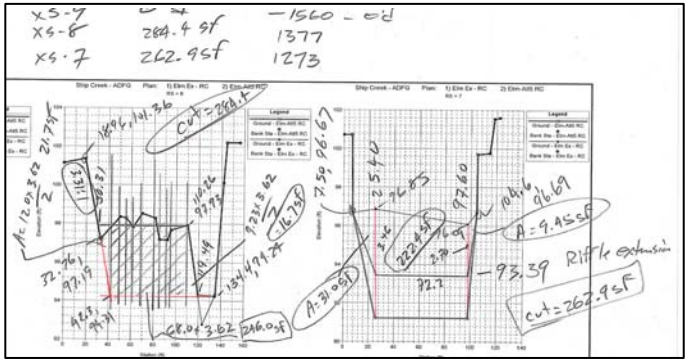
L/Eq - Remove dam above F.G.	7	days	$	2,400.00	$	16,800
excavation/haul	3666	cy	$	30.00	$	109,980
armor/substrate	4800	tons	$	55.00	$	264,000
rock vanes	1600	tons	$	150.00	$	240,000
streambank - berm	778	cy	$	50.00	$	38,900
streambank - revetment	207	cy	$	100.00	$	20,700
streambank - vegetation	4.2	msf	$	15,000.00	$	63,000
		Subtotal =			$	626,600
mobilization	15%				$	93,990
site restoration	20%				$	125,320
dewatering	1	LS			$	150,000
contingency	25%				$	156,650
		Total =			**$**	**1,152,600**

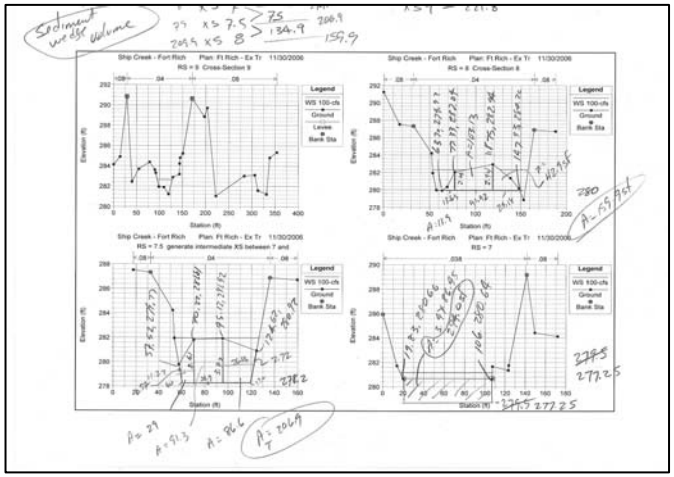
Revised January 8, 2007

Sediment wedge volume estimate

Elmendorf Dam

Location	Station	Length (ft)	Cut Vol (cf)	Incremental Vol (cf)
Upper Weir - XS 7	1273		262.9	
		104		28,460
XS 8	1377		284.4	
		183		26,023
u/s end impoundment	1560		0	
	Total Volume Estimate (CY) =			**2,020**



Fort Richardson Dam

Location	Station	Length (ft)	Cut Vol (cf)	Incremental Vol (cf)
Upper Weir - XS 7	0		294	
		75		18,784
XS 7.6	75		206.9	
		134.9		24,741
XS 8	209.9		159.9	
		221.8		17,733
u/s end impoundment	431.7		0	
	Total Volume Estimate (CY) =			**2,270**