Table A-1 Assumptions Used in Cost Estimates – Depths, Volumes & Production Rates

Alternative Unit	Area (sf)		Assumed Overdredge (ft) or Production Rate (cyd/hr)	Cut Depth (Neat Line without Overdredge 1	2	3	4	5	6	7	8
1A	229,254	Neat Line (and overdredge) Elevation		No Dredge	(38)	(38)	(38)	(38)	(38)	(38)	(38)
		Neat Line Volume			38,851	38,851	38,851	38,851	38,851	38,851	38,851
		Overdredge Depth	2								
		Overdredge Volume									
		Cap Volume (3 ft thickness)									
1B	424,112	Neat Line (and overdredge) Elevation		No Dredge	(38)	(38)	(38)	(38)	(38)	(38)	(38)
		Neat Line Volume			74,239	74,239	74,239	74,239	74,239	74,239	74,239
		Overdredge Depth	2								
		Overdredge Volume									
		Cap Volume (3 ft thickness)									
1C1	50,684	Neat Line Elevation		No Dredge	-38/-41	-38/-41	(35)	(35)	-38/-41	-38/-41	-38/-41
		Neat Line Volume			10,116	10,116	5,298	5,298	10,116	10,116	10,116
		Overdredge Depth	1				(36)	(36)			
		Overdredge Volume			1,877	1,877	1,877	1,877	1,877	1,877	1,877
		Cap Volume (3 ft thickness)					5,632	5,632			
1C2	179,540	Neat Line Elevation		No Dredge	(38)	(38)	(35)	(35)	(38)	(38)	(38)
		Neat Line Volume			26,944	26,944	33,717	33,717	26,944	26,944	26,944
		Overdredge Depth	1				(36)	(36)			
		Overdredge Volume			6,650	6,650	6,650	6,650	6,650	6,650	6,650
		Cap Volume (3 ft thickness)					19,949	19,949			
1C3	254,190	Neat Line Elevation		No Dredge	-38/-41	-38/-41	No Dredge	No Dredge	-38/-41	-38/-41	-38/-41
		Neat Line Volume			35,055	35,055			35,055	35,055	35,055
		Overdredge Depth	1								
		Overdredge Volume			9,414	9,414			9,414	9,414	9,414
		Cap Volume (3 ft thickness)									
2A	69,851	Neat Line Elevation		No Dredge	(35)	(35)	(23)	(23)	(23)	(35)	(35)
capping	133,587	Neat Line Volume			81,293	81,293	4,232	4,232	4,232	81,293	81,293
		Overdredge Depth	1		(36)	(36)	(24)	(24)	(24)	(36)	(36)
		Overdredge Volume			4,948	4,948	2,585	2,585	2,587	4,948	4,948
		Cap Volume (3 ft thickness)			14,843	14,843	14,843	14,843	14,843	14,843	14,843
2B-1	40,410	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	(23)	(23)	(23)	(23)
Alt area (7,8)	30,625	Neat Line Volume						5,987	5,987	5,987	5,987
	40,410	Overdredge Depth	1					(24)	(24)	(24)	(24)
		Overdredge Volume						1,497	1,497	1,497	1,497
		Cap Volume (3 ft thickness)									
2B-2	54,504	Neat Line Elevation		No Dredge	(35)	(35)	(23)	(23)	(23)	(35)	(35)
capping	54,504	Neat Line Volume			30,670	30,670	633	633	633	30,670	30,670
		Overdredge Depth	1		(36)	(36)	(24)	(24)	(24)	(36)	(36)
		Overdredge Volume			2,019	2,019	713	713	713	2,019	2,019
		Cap Volume (3 ft thickness)			6,056	6,056	6,056	6,056	6,056	6,056	6,056
2C	566,756	Neat Line Elevation		No Dredge	(35)	(35)	No Dredge	No Dredge	No Dredge	(35)	(35)
		Neat Line Volume			146,234	146,234				146,234	146,234
		Overdredge Depth	1		(36)	(36)				(36)	(36)
		Overdredge Volume			20,991	20,991				20,991	20,991
		Cap Volume (3 ft thickness)			62,973	62,973		83,964	83,964	62,973	62,973

Table A-1 Assumptions Used in Cost Estimates – Depths, Volumes & Production Rates

Alternative Unit	Area (sf)		Assumed Overdredge (ft) or Production Rate (cyd/hr)	Cut Depth (Neat Line without Overdredge 1	2	3	4	5	6	7	8
3A	144,814	Neat Line Elevation		No Dredge	(23)	(23)	No Dredge	No Dredge	No Dredge	(23)	(23)
		Neat Line Volume			77,282	77,282				77,282	77,282
		Overdredge Depth	1		(24)	(24)				(24)	(24)
		Overdredge Volume			5,363	5,363				5,363	5,363
		Cap Volume (3 ft thickness)			16,090	16,090				16,090	16,090
3B	69,226	Neat Line Elevation		No Dredge	(23)	(23)	(23)	(23)	(23)	(23)	(23)
cap area	95,597	Neat Line Volume			10,231	10,231	10,231	10,231	10,231	10,231	10,231
		Overdredge Depth	1		(24)	(24)	(24)	(24)	(24)	(24)	(24)
		Overdredge Volume			2,564	2,564	2,564	2,564	2,564	2,564	2,564
		Cap Volume (3 ft thickness)			10,622	10,622	10,622	10,622	10,622	10,622	10,622
4		Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge
		Neat Line Volume									
		Overdredge Depth	1								
		Overdredge Volume									
		Cap Volume (3 ft thickness)									
5A	1,773,099	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	3 foot cut
		Neat Line Volume									197,011
		Overdredge Depth	1								
		Overdredge Volume									65,670
		Cap Volume (3 ft thickness)									
5B	248,199	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	3 foot cut
		Neat Line Volume									27,578
		Overdredge Depth	1								
		Overdredge Volume									9,193
		Cap Volume (3 ft thickness)		27,578	27,578	27,578	27,578	27,578	27,578	27,578	
5C	157,156	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	3 foot cut
alt area	212,271	Neat Line Volume									23,586
		Overdredge Depth	1								
		Overdredge Volume									7,862
		Cap Volume (3 ft thickness)									
6A	782,764	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	3 foot cut
		Neat Line Volume									86,974
		Overdredge Depth	1								
		Overdredge Volume									28,991
		Cap Volume (3 ft thickness)									
6B	158,500	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	3 foot cut
		Neat Line Volume									17,611
		Overdredge Depth	1								
		Overdredge Volume									5,870
		Cap Volume (3 ft thickness)		17,611	17,611	17,611	17,611	17,611	17,611	17,611	
6C	146,497	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	3 foot cut
		Neat Line Volume									4,493
		Overdredge Depth	1								
		Overdredge Volume									5,426
		Cap Volume (3 ft thickness)		16,277	16,277	16,277	16,277	16,277	16,277	16,277	
7	40,437	Neat Line Elevation		No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	No Dredge	Dredge to clean bottom (varies). Est. volume 300,000 cyd.

Table A-1 Assumptions Used in Cost Estimates – Depths, Volumes & Production Rates

Alternative Unit	Area (sf)		Assumed Overdredge (ft) or Production Rate (cyd/hr)	Cut Depth (Neat Line without Overdredge 1	2	3	4	5	6	7	8
		Neat Line Volume									300,000
		Overdredge Depth	1								
		Overdredge Volume									
		Cap Volume									
8	1,306,679	Neat Line Elevation		No Dredge	No Dredge	-15 (only in outer corner)	No Dredge	(15)	(15)	(15)	(15)
		Neat Line Volume				65,399		377,977	377,977	377,977	377,977
		Overdredge Depth	1					(16)	(16)	(16)	(16)
		Overdredge Volume				6,025		34,074	34,074	34,074	34,074
		Cap Volume		145,187	145,187		145,187				
TOTALS		1A/1B Dredging (include Overdredge)		-	113,090	113,090	113,090	113,090	113,090	113,090	113,090
		Contaminated Dredging (excluding ASB)		-	417,825	417,825	54,111	60,098	93,197	423,812	1,081,064
		Contaminated Overdredge (excluding ASB)		-	53,826	53,826	14,389	15,885	25,302	55,323	178,335
		Capping		206,653	317,237	172,050	263,754	202,531	176,951	172,050	110,584
		Capping Excluding ASB		61,466	172,050	172,050	118,568	202,531	176,951	172,050	110,584
WORK BREAKOUT SYSTEM						584,741					
FISH WINDOW IS 22 WEEKS											
ALL INCLUSIVE - STRAIGHT DREDGING RATES (WKS)											
Dredge Timing											
Production Pass - Environmental Bucket			cy/hr								
		1 dredge - 10 hour days	170.0	-	52.1	52.1	16.4	17.0	20.2	52.6	117.1
		1 dredge - 20 hour days	170.0	-	26.0	26.0	8.2	8.5	10.1	26.3	58.5
		2 dredges - 20 hour days	340.0	-	13.0	13.0	4.1	4.2	5.1	13.2	29.3
Finish Pass (overdredge) - Articulated Bucket											
		1 dredge - 10 hour days	70.0	-	12.8	12.8	3.4	3.8	6.0	13.2	42.5
		1 dredge - 20 hour days	70.0	-	6.4	6.4	1.7	1.9	3.0	6.6	21.2
Hydraulic Dredging											
TOTAL CAPPING											
Cap Timing - 10 hour days											
		1 unit - Low Production Rate	60.0	57.4	88.1	47.8	73.3	56.3	49.2	47.8	30.7
		1 unit - High Production Rate	130.0	26.5	40.7	22.1	33.8	26.0	22.7	22.1	14.2
		2 units - Low Production Rate	120.0	28.7	44.1	23.9	36.6	28.1	24.6	23.9	15.4
		2 units - high production Rate	260.0	13.2	20.3	11.0	16.9	13.0	11.3	11.0	7.1
Cap Timing - 20 hour days											
		1 unit - Low Production Rate	60.0	28.7	44.1	23.9	36.6	28.1	24.6	23.9	15.4
		1 unit - High Production Rate	130.0	13.2	20.3	11.0	16.9	13.0	11.3	11.0	7.1
		2 units - Low Production Rate	120.0	14.4	22.0	11.9	18.3	14.1	12.3	11.9	7.7
		2 units - high production Rate	260.0	6.6	10.2	5.5	8.5	6.5	5.7	5.5	3.5

Table A-1 Assumptions Used in Cost Estimates – Depths, Volumes & Production Rates

Alternative / Unit	Area (sf)	Assumed Overdredge (ft) or Production Rate (cyd/hr)	Cut Depth (Neat Line without Overdredge) 1	2	3	4	5	6	7	8
CAPPING EXCLUDING ASB										
Cap Timing - 10 hour days										
1 unit - Low Production Rate		60.0	17.1	47.8	47.8	32.9	56.3	49.2	47.8	30.7
1 unit - High Production Rate		130.0	7.9	22.1	22.1	15.2	26.0	22.7	22.1	14.2
2 units - Low Production Rate		120.0	8.5	23.9	23.9	16.5	28.1	24.6	23.9	15.4
2 units - high production Rate		260.0	3.9	11.0	11.0	7.6	13.0	11.3	11.0	7.1
Cap Timing - 20 hour days										
1 unit - Low Production Rate		60.0	8.5	23.9	23.9	16.5	28.1	24.6	23.9	15.4
1 unit - High Production Rate		130.0	3.9	11.0	11.0	7.6	13.0	11.3	11.0	7.1
2 units - Low Production Rate		120.0	4.3	11.9	11.9	8.2	14.1	12.3	11.9	7.7
2 units - high production Rate		260.0	2.0	5.5	5.5	3.8	6.5	5.7	5.5	3.5
ALTERNATIVE SPECIFIC RATES										
Placement in Cornwall CAD										
CAD Construction										
	Cobble 6 to 12-inch - (Built to +3 ft x 3200 feet long -2:1 slopes	100.0		9.3						
	Sheet Piling									
Dock Construction (sf	Assume 200 feet by 40 feet	6.0		22.2	22.2		22.2	22.2	22.2	22.2
Track Construction	Assume									
Placement in CAD										
	1 crane	170.0								
	2 crane	340.0								
Placement in ASB										
Hydraulic Dredging										
Mechanical Dredging										
	Dock Construction									
	1 crane	170.0								
	2 crane	340.0								
Unit 3A, 3B, 2A, 2B, 2C										
Production Pass - Environmental Bucket				345,710.2	345,710.2	15,095.8	21,082.5	21,082.7	351,696.8	351,696.8
1 dredge - 20 hour days		170.0		16.9	16.9	0.7	1.0	1.0	17.2	17.2
2 dredges - 20 hour days		340.0		8.5	8.5	0.4	0.5	0.5	8.6	8.6
Finish Pass (overdredge) - Articulated Bucket				35,884.9	35,884.9	5,861.8	7,358.5	7,360.5	37,381.5	37,381.5
1 dredge - 20 hour days		70.0		4.3	4.3	0.7	0.9	0.9	4.5	4.5
Capping - 20 hour days				110,584.2	110,584.2	31,520.9	115,484.7	115,484.7	110,584.2	110,584.2
1 unit - low production rate		60.0		15.4	15.4	4.4	16.0	16.0	15.4	15.4
1 unit - high production rate		130.0		7.1	7.1	2.0	7.4	7.4	7.1	7.1
Unit 1C										
Production Pass - Environmental Bucket				72,114.8	72,114.8	39,015.2	39,015.2	72,114.8	72,114.8	72,114.8
1 dredge - 20 hour days		170.0		3.5	3.5	1.9	1.9	3.5	3.5	3.5
2 dredges - 20 hour days		340.0		1.8	1.8	1.0	1.0	1.8	1.8	1.8
Finish Pass (overdredge) - Articulated Bucket				17,941.2	17,941.2	8,526.8	8,526.8	17,941.2	17,941.2	17,941.2
1 dredge - 20 hour days		70.0		2.1	2.1	1.0	1.0	2.1	2.1	2.1
Capping - 20 hour days						25,580.4	25,580.4	-	-	-
1 unit - low production rate		60.0				3.6	3.6	-	-	-
1 unit - high production rate		130.0				1.6	1.6	-	-	-

Table A-1 Assumptions Used in Cost Estimates – Depths, Volumes & Production Rates

Alternative Unit	Area (sf)	Assumed Overdredge (ft) or Production Rate (cyd/hr)	Cut Depth (Neat Line without Overdredge 1	2	3	4	5	6	7	8
Unit 1A/1B										
Production Pass - Environmental Bucket				113,090.1	113,090.1	113,090.1	113,090.1	113,090.1	113,090.1	113,090.1
	1 dredge - 20 hour days	170.0		5.5	5.5	5.5	5.5	5.5	5.5	5.5
	2 dredges - 20 hour days	340.0		2.8	2.8	2.8	2.8	2.8	2.8	2.8
Unit 5B, 6B, 6C										
Capping - 20 hour days				61,466.2	61,466.2	61,466.2	61,466.2	61,466.2	61,466.2	
	1 unit - low production rate	60.0		8.5	8.5	8.5	8.5	8.5	8.5	
	1 unit - high production rate	130.0		3.9	3.9	3.9	3.9	3.9	3.9	
Unit 5A/5B										
Production Pass - Environmental Bucket										224,588.6
	1 dredge - 20 hour days	170.0								11.0
	2 dredges - 20 hour days	340.0								5.5
Finish Pass (assume 1/3 Production Pass) - Articulated Bucket										74,862.9
	1 dredge - 20 hour days	70.0								8.9
Production Dredge - Articulated Bucket										248,174.3
	1 dredge - 20 hour days	70.0								29.5
Unit 6										
Production Pass - Environmental Bucket										104,584.9
	1 dredge - 20 hour days	170.0								5.1
	2 dredges - 20 hour days	340.0								2.6
Finish Pass (assume 1/3 production pass) - Articulated Bucket										34,861.6
	1 dredge - 20 hour days	70.0								4.2
Production Dredge - Articulated Bucket										104,584.9
	1 dredge - 20 hour days	70.0								12.5
Unit 7										
Production Pass - Environmental Bucket										300,000.0
	1 dredge - 20 hour days	150.0								16.7
	2 dredges - 20 hour days	300.0								8.3
Finish Pass (assume 1/3 production pass) - Articulated Bucket										26,712.4
	1 dredge - 20 hour days	50.0								4.5
Production Dredge - Articulated Bucket										300,000.0
	1 dredge - 20 hour days	50.0								50.0

Table A-2 Whatcom Waterway Remediation – Unit Cost Used for Cost Estimation

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8
Uncontaminated Sediment Volume, cy :	0	113,090	113,090	113,090	113,090	113,090	113,090	113,090
Uncontaminated Overdredge Volume, cy :	0	0	0	0	0	0	0	0
Contaminated Sediment Volume, cy :	0	417,825	417,825	54,111	60,098	93,197	423,812	1,081,064
Contaminated Overdredge Volum	0	53,826	53,826	14,389	15,885	25,302	55,323	178,335
Dredge Volume (excluding ASB)	0	530,915	530,915	167,201	173,188	206,288	536,902	1,194,154
Total Overdredge Volume (excluding ASB)	0	53,826	53,826	14,389	15,885	25,302	55,323	178,335
Capping Volume, cy (includes ASB):	206,653	317,237	172,050	263,754	202,531	176,951	172,050	110,584
Capping Volume, cy (ASB):		145,187						
Clean Imported Sand Volume for CAD:		141,115						
ASB Sludge Removal (Exc.. Overdredge):			65400		377,977	377,977	377,977	377,977

Equipment Rates:

	Mob	Setup	Rental	Operation	Teardown	Demob	Production Rate	Source	
Loader, front-end, wheel, 130-hp, 3-cy bucket	$100/ea/Seattle-Barge	NA	$350/ea/day	$16/ea/hr	NA	$100/ea/Barge-Seattle	200 cy/hr	01590-200-4710	RS Means 2005
Dredge, barge-mounted derrick crane, 100-ton, 7-cy clamshell	$4,800/ea/Seattle-Bellingham	NA	$2,225/ea/day	$350/ea/hr	NA	$4,800/ea/Bellingham-Seattle	200 cy/hr	American & General Constr.	1500 cy
Dredge, barge-mounted derrick crane, 40-ton, 4-cy clamshell	$3,000/ea/Seattle-Bellingham	NA	$1,250/ea/day	$250/ea/hr	NA	$3,000/ea/Bellingham-Seattle	75 cy/hr	American & General Constr.	
Dredge, barge-mounted backhoe, 5-cy bucket	$3,000/ea/Seattle-Bellingham	NA	$1,500/ea/day	$200/ea/hr	NA	$3,000/ea/Seattle-Bellingham	50 cy/hr	American Construction	
Hopper/Tremie, barge-mounted backhoe	$3,000/ea/Seattle-Bellingham	NA	$1,500/ea/day	$200/ea/hr	NA	$3,000/ea/Seattle-Bellingham	50 cy/hr		
Tug, diesel, bow, 900-hp	$1,500/ea/Seattle-Bellingham	NA	$1,000/ea/day	$220/ea/hr	NA	$1,500/ea/Bellingham-Seattle	10 kt		
Dozer, diesel, 200-hp, crawler	$100/ea/Seattle-Barge	NA	$1,000/ea/day	$41/ea/hr	NA	$100/ea/Barge-Seattle	200 cy/hr	01590-200-4260	RS Means 2005
Tug, diesel, push, 500-hp	$2,000/ea/Seattle-Bellingham	NA	$500/ea/day	$200/ea/hr	NA	$2,000/ea/Bellingham-Seattle	6 kt		
Lights, flood, 2-1,000 w, with generator	$75/4 ea/Seattle-Barge	NA	$120/ea/day	$5/ea/hr	NA	$75/4 ea/Barge-Seattle	NA	01590-400-1960	RS Means 2005
Barge, flat-deck, 2,000-ton capacity	$700/ea/Seattle-Bellingham	NA	$1000/ea/day	NA	NA	$700/ea/Bellingham-Seattle	NA	American Construction	
Barge, flat-deck, 6,000-ton capacity	$1,500/ea/Seattle-Bellingham	NA	$2000/ea/day	NA	NA	$1,500/ea/Bellingham-Seattle	NA	American Construction	
Construction office	$150/Seattle-Bellingham	$1,450/ea	$350/month	$630/month	$1,450/ea	$150/Bellingham-Seattle	NA	01520-500-0550&550	RS Means 2004

Material Rates:

	Purchase	Source
Capping sand, including delivery to site (market rate)	$15/cyd	02510-760-0400
Capping sand procurement	$10/cyd	

Labor Rates:

	hour	8-hour day	10-hour day	Source	
General labor	$32.61	$261	$359	WDL&I - Whatcom County	Current wages as of 3/2005
Excavator operator	$39.88	$320	$439	WDL&I - Whatcom County	Current wages as of 3/2005
Crawler crane operator	$39.88	$320	$439	WDL&I - Whatcom County	Current wages as of 3/2005
Dozer operator	$39.49	$316	$435	WDL&I - Whatcom County	Current wages as of 3/2005
Equipment service engineer	$39.49	$316	$435	WDL&I - Whatcom County	Current wages as of 3/2005
Equipment mechanic	$40.34	$323	$444	WDL&I - Whatcom County	Current wages as of 3/2005
Dredge leverman	$41.04	$329	$452	WDL&I - Whatcom County	Current wages as of 3/2005
Dredge mate	$39.52	$317	$435	WDL&I - Whatcom County	Current wages as of 3/2005
Dredge deckhand	$38.76	$311	$427	WDL&I - Whatcom County	Current wages as of 3/2005
Dredge oiler	$39.16	$314	$431	WDL&I - Whatcom County	Current wages as of 3/2005
Survey party chief	$13.40	$108	$148	WDL&I - Whatcom County	Current wages as of 3/2005
Survey instrument person	$11.40	$92	$126	WDL&I - Whatcom County	Current wages as of 3/2005
Survey chain person	$9.35	$75	$103	WDL&I - Whatcom County	Current wages as of 3/2005
Construction foreman	$46.75	$374	$515	01310-700-0140	RS Means 2005
Construction superintendent	$71.50	$572	$787	01310-700-0280	RS Means 2005
Construction clerk	$13.20	$106	$146	01310-700-0010	RS Means 2005
Construction timekeeper	$36.44	$292	$401	01310-700-0290	RS Means 2005

Other Rates:

Quoted (Envirogreen) disposal and tipping fee of $25/ton.
Quoted (Waste Management) $3,100/100-ton gondola Bellingham to Arlington, OR, plus $1,200/gondola/month lease charge, plus $20/ton disposal and tipping fee at Columbia Ridge.
Quoted (Tau/Rabanco) $29.90/ton hauling by 2-20' box railcar from Bellingham to Roosevelt landfill, includes disposal and tipping fee; $25.90/ton hauling by 2-20' box railcar from Seattle (Pier 25) to Roosevelt landfill,

Table A-3 Whatcom Waterway – ASB Remediation (Area 8)

Unit Rates Used in Construction Cost Estimates -- $2004 Rates, Adjusted in Final Estimates to $2005 Using Scaling Factor

Equipment Rates:

	Mob	Setup	Rental	Operation	Teardown	Demob	Production Rate	Source
Loader, front-end, wheel, Cat 950, 183 hp, 3-cy bucket	$100/ea/Seattle-Bellingham	NA	$5,000/ea/month	$22/ea/hr	NA	$100/ea/Bellingham-Seattle	130 cy/hr	MP&E
Excavator, crawler, Cat 320, 2-cy bucket	$100/ea/Seattle-Bellingham	NA	$5,200/ea/month	$25/ea/hr	NA	$100/ea/Bellingham-Seattle	110 cy/hr	MP&E
Pump, centrifugal (water & sludge), 6", motor-driven	$100/4 ea/Seattle-Bellingham	$200/ea	$2,000/ea/month	$5/ea/hr	$100/ea	$100/4 ea/Bellingham-Seattle	2,000 gpm max; use 1,600 gpm	MP&E
Dozer, 75 hp, crawler, JD450	$100/ea/Seattle-Bellingham	NA	$3,900/ea/month	$16/ea/hr	NA	$100/ea/Bellingham-Seattle	60 cy/hr	Hertz
Conveyor, 24" x 50', trough belt, 7-1/2 hp electr.	$200/5 ea/Seattle-Bellingham	$200/ea	$1,000/ea/month	$0.42/ea/hr	$150/ea	$200/5 ea/Bellingham-Seattle	200 cy/hr	Balzer Pacific
Marsh Buggie, excavator, 1-1/2 cy bucket	$30,000/ea/Marrero,LA-Bellingham	NA	$25,000/ea/month	$20/ea/hr	NA	$26,000/ea/Bellingham-Marrero,LA	90 cy/hr	Wilco
Crane, crawler, 75-ton capacity, 3 cy bucket	$370/ea/Seattle-Bellingham	$1,400/ea	$12,500/ea/month	$53/ea/hr	$1,100/ea	$370/ea/Bellingham-Seattle	110 cy/hr	01590-600-1100
Crane, truck-mounted, 60-ton capacity	$250/ea/Seattle-Bellingham	NA	$1,100/ea/day	$34/ea/hr	NA	$250/ea/Bellingham-Seattle	NA	01590-600-2000
Lights, flood, 2-1,000 w, with generator	$100/4 ea/Seattle-Bellingham	NA	$1,000/ea/month	$100/day	NA	$100/4 ea/Bellingham-Seattle	NA	01590-400-1960
Dredge, hydraulic, 10", portable	$3,200/ea/ plus add $2/ea/mi	$1,400/ea	$2,000/ea/day	$75/hr	$1,400/ea	$2,600/ea/ plus add $2/ea/mi	100 cy/hr	JS dredge program
Construction office	NA	$1,450/ea	$350/month	$630/month	$1,450/ea	NA	NA	01520-500-0550&550
Toplift, container box, 35-ton capacity	$5,000/ea/Seattle-Bellingham	NA	$8,000/ea/week	incl. in rental	NA	$5,000/ea/Bellingham-Seattle	8 boxes/hr	SSA Marine
Dump truck, road, 12-ton capacity	$50/ea/local	NA	$300/ea/day	$22/hr	NA	NA	6 ton/hr	01590-200-5250
Shuttle truck and chassis, 20' container box	NA	NA	$270/ea/8-hr day	incl. in rental	NA	NA	8 boxes/hr	SSA Marine

Material Rates:

	Purchase	Source
HDPE pipe, 10"	$17.50/ft	02510-760-0400
HDPE pipe, 12"	$22.55/ft	02510-760-0500
HDPE pipe, 18"	$43.45/ft	02510-760-0800
Conveyor, 24" x 50', trough belt, 7-1/2 hp electr.	$12,950/ea	Balzer Pacific
HDPE elbow, 10"	$407/ea	02510-760-1500
HDPE elbow, 12"	$682/ea	02510-760-1600
HDPE elbow, 18"	$1,210/ea	02510-760-1900
HDPE tee, 10"	$445/ea	02510-760-2500
HDPE tee, 12"	$622/ea	02510-760-2600
HDPE tee, 18"	$1,210/ea	02510-760-2900
Conveyor floats, 4'x10', polystyrene, steel frame, wood deck	$1,220/ea	02390-350-1340

Lagoon Water Volumes:

Elevation (MLLW)	Water Volume (Gal)
20 to 10	90,146,000
10 to 3	55,278,000
3 to 0	21,590,000
0 to -10	30,896,000
-10 to -12	519,000
-12 to -15	94,000
Total	**198,523,000**

Labor Rates:

	$2004 Rates (Prior to Scaling Factor Addition)			Rates as of 3/2005			
	hour	8-hour day	10-hour day	hour	8-hour day	10-hour day	Source
Demolition labor	$31.86	$255	$351	$32.61	$261	$359	WDL&I - Whatcom County
General labor	$31.86	$255	$351	$39.88	$320	$439	WDL&I - Whatcom County
Excavator operator	$39.19	$314	$432	$39.88	$320	$439	WDL&I - Whatcom County
Crawler crane operator	$39.19	$314	$432	$39.49	$316	$435	WDL&I - Whatcom County
Dozer operator	$38.36	$307	$422	$39.49	$316	$435	WDL&I - Whatcom County
Equipment service engineer	$38.36	$307	$422	$40.34	$323	$444	WDL&I - Whatcom County
Equipment mechanic	$39.19	$314	$432	$39.19	$314	$432	WDL&I - Whatcom County
Pump operator	$36.19	$290	$399	$37.26	$299	$410	WDL&I - Whatcom County
Truck crane operator	$38.36	$307	$422	$39.88	$320	$439	WDL&I - Whatcom County
Dump truck driver	$19.32	$155	$213	$19.32	$155	$213	WDL&I - Whatcom County
Dredge leverman	$39.85	$319	$439	$41.04	$329	$452	WDL&I - Whatcom County
Dredge mate	$38.37	$307	$423	$39.52	$317	$435	WDL&I - Whatcom County
Dredge deckhand	$37.91	$304	$418	$38.76	$311	$427	WDL&I - Whatcom County
Dredge oiler	$38.02	$305	$419	$39.16	$314	$431	WDL&I - Whatcom County
Survey party chief	$13.40	$108	$148	$13.40	$108	$148	WDL&I - Whatcom County
Survey instrument person	$11.40	$92	$126	$11.40	$92	$126	WDL&I - Whatcom County
Survey chain person	$9.35	$75	$103	$9.35	$75	$103	WDL&I - Whatcom County
Construction foreman	$46.75	$374	$515	$46.75	$374	$515	01310-700-0140
Construction superintendent	$71.50	$572	$787	$71.50	$572	$787	01310-700-0280
Construction clerk	$13.20	$106	$146	$13.20	$106	$146	01310-700-0010
Construction timekeeper	$36.44	$292	$401	$36.44	$292	$401	01310-700-0290
ILWU Gang (1 foreman, 1 clerk, 2 toplift drivers, 1 utility			SS&H			SS&H	SSA Marine
1 mechanic, 6 truck drivers)		$8,636	$11,400		$8,636	$11,400	

Other Rates:

Quoted (Sumas) $32-36/wet ton by truck (tandem) from Bellingham to East Wenatchee, distance of 190 miles, return included.
Quoted (Envirogreen) disposal and tipping fee of $25/ton.
Quoted (Waste Management) $3,100/100-ton gondola Bellingham to Arlington, OR, plus $1,200/gondola/month lease charge, plus $20/ton disposal and tipping fee at Columbia Ridge.
Quoted (Waste Management) $40/ton to barge from Bellingham to Arlington, OR, includes barge, roundtrip, nd unloading, plus $20/ton disposal and tipping fee at Columbia Ridge.
Quoted (Tau/Rabanco) $29.90/ton hauling by 2-20' box railcar to Roosevelt landfill, includes disposal and tipping fee.
Quoted (Tau/Rabanco) $25.90/ton hauling by 2-20' box railcar from Seattle (Pier 25) to Roosevelt landfill, includes disposal and tipping fee.
Quoted (City of Bellingham POTW) discharge to City sewers at $2.21/ccf, plus BOD @ $0.17/lb and TSS @ $0.15/lb.