

APPENDIX H

CONVEYANCE ALTERNATIVES COST ESTIMATES

Alternative 6

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE				
(BLUE - BORING AT REDWOOD WWTP, LOWER RIVER ROAD ROUTE)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	143,422	\$143,422
Mobilization	LS	8%	229,476	\$229,476
Dual 12" PVC Sewer Pipe ²	LF	26,500	66.35	\$1,758,275
Asphalt Pavement Restoration (2-12")	LF	24,000	23.40	\$561,600
Landscaping Restoration (2-12")	LF	2,500	40.00	\$100,000
2" Air Release Valve and Enclosure	EACH	2	7,700.00	\$15,400
3" Vacuum Release Valve	EACH	1	1,500.00	\$1,500
Gate Valve	EACH	5	1,200.00	\$6,000
Horizontal Boring at Redwood WWTP ³	LS	1	367,670.00	\$367,670
Traffic Control	LS	1	35,000.00	\$35,000
Potential Utility Conflicts	LS	1	10,000.00	\$10,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		1		
Total				\$3,241,343

Notes:

- (1) General Conditions includes bonds, insurance etc.
- (2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.
- (3) Horizontal boring cost includes casing, carrier pipe and installation.

Alternative 7

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE (GREEN/BLUE - EXISTING EASEMENTS TO RI-25, BORING AT RI-25, LOWER RIVER ROAD ROUTE)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	130,929	\$130,929
Mobilization	LS	8%	209,487	\$209,487
6" PVC Sewer Pipe ²	LF	10,000	36.00	\$360,000
12" PVC Sewer Pipe ²	LF	14,500	66.35	\$962,075
Asphalt Pavement Restoration (6")	LF	1,900	18.60	\$35,340
Asphalt Pavement Restoration (2-12")	LF	13,400	23.40	\$313,560
Landscaping Restoration (6")	LF	8,100	25.00	\$202,500
Landscaping Restoration (2-12")	LF	600	40.00	\$24,000
2" Air Release Valve and Enclosure	EACH	2	7,700.00	\$15,400
3" Vacuum Release Valve	EACH	1	1,500.00	\$1,500
Cold Plane Asphalt Pavement	LF	15,300	13.60	\$208,080
Gate Valve	EACH	9	1,200.00	\$10,800
Horizontal Boring at RI-25 ³	LS	1	438,330.00	\$438,330
Traffic Control	LS	1	24,000.00	\$24,000
Potential Utility Conflicts	LS	1	10,000.00	\$10,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		48		
Total				\$2,959,001

24,500

Notes:

- (1) General Conditions includes bonds, insurance etc.
- (2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.
- (3) Horizontal boring cost includes casing, carrier pipe and installation.

Alternative 8

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE				
(GREEN - EXISTING EASEMENTS TORI-25, EXISTING EASEMENTS TO PEDESTRIAN BRIDGE CROSSING)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	123,082	\$123,082
Mobilization	LS	8%	196,932	\$196,932
6" PVC Sewer Pipe ²	LF	10,000	35.00	\$350,000
Dual 12" PVC Sewer Pipe ²	LF	17,000	66.35	\$1,127,950
Asphalt Pavement Restoration (6")	LF	1,900	18.60	\$35,340
Asphalt Pavement Restoration (2-12")	LF	17,370	23.40	\$406,458
Landscaping Restoration (6")	LF	8,100	25.00	\$202,500
Landscaping Restoration (2-12")	LF	1,900	40.00	\$76,000
2" Air Release Valve and Enclosure	EACH	2	7,700.00	\$15,400
3" Vacuum Release Valve	EACH	2	1,500.00	\$3,000
Gate Valve	EACH	5	1,200.00	\$6,000
Pedestrian Bridge Crossing	LF	660	300.00	\$198,000
Traffic Control	LS	1	18,000.00	\$18,000
Potential Utility Conflicts	LS	1	10,000.00	\$10,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		77		
Total				\$2,781,662

27,000

(2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.

(1) General Conditions includes bonds, insurance etc.

(2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.

(3) Horizontal boring cost includes casing, carrier pipe and installation.

Alternative 9

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE (GREEN/RED - EXISTING EASEMENTS TO RI-25, REDWOOD AVENUE TO PEDESTRIAN BRIDGE CROSSING)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	132,848	\$132,848
Mobilization	LS	8%	212,557	\$212,557
6" PVC Sewer Pipe ²	LF	10,000	35.00	\$350,000
12" PVC Sewer Pipe ²	LF	19,270	66.35	\$1,278,565
Asphalt Pavement Restoration (6")	LF	1,900	18.60	\$35,340
Asphalt Pavement Restoration (2-12")	LF	17,370	23.40	\$406,458
Landscaping Restoration (6")	LF	8,100	25.00	\$202,500
Landscaping Restoration (2-12")	LF	1,900	40.00	\$76,000
2" Air Release Valve and Enclosure	EACH	3	7,700.00	\$23,100
3" Vacuum Release Valve	EACH	2	1,500.00	\$3,000
Gate Valve	EACH	5	1,200.00	\$6,000
Pedestrian Bridge Crossing	LF	660	300.00	\$198,000
Traffic Control	LS	1	35,000.00	\$35,000
Potential Utility Conflicts	LS	1	30,000.00	\$30,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		47		
Total				\$3,002,368

Notes:

- (1) General Conditions includes bonds, insurance etc.
- (2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.
- (3) Horizontal boring cost includes casing, carrier pipe and installation.

Alternative 10

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE				
(RED/BLUE - LEONARD ROAD TO RI-25, BORING AT RI-25, LOWER RIVER ROAD ROUTE)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	129,801	\$129,801
Mobilization	LS	8%	207,682	\$207,682
6" PVC Sewer Pipe ²	LF	14,100	35.00	\$493,500
12" PVC Sewer Pipe ²	LF	14,500	66.35	\$962,075
Asphalt Pavement Restoration (6")	LF	13,100	18.60	\$243,660
Asphalt Pavement Restoration (2-12")	LF	13,400	23.40	\$313,560
Landscaping Restoration (6")	LF	1,000	25.00	\$25,000
Landscaping Restoration (2-12")	LF	600	40.00	\$24,000
2" Air Release Valve and Enclosure	EACH	2	7,700.00	\$15,400
3" Vacuum Release Valve	EACH	1	1,500.00	\$1,500
Gate Valve	EACH	5	1,200.00	\$6,000
Horizontal Boring at RI-25 ³	LS	1	438,330.00	\$438,330
Traffic Control	LS	1	35,000.00	\$35,000
Potential Utility Conflicts	LS	1	25,000.00	\$25,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		1		
Total				\$2,933,508

Notes:

- (1) General Conditions includes bonds, insurance etc.
- (2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.
- (3) Horizontal boring cost includes casing, carrier pipe and installation.

Alternative 11

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE				
(RED/GREEN - LEONARD ROAD TO RI-25, EXISTING EASEMENTS TO PEDESTRIAN BRIDGE CROSSING)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	136,235	\$136,235
Mobilization	LS	8%	217,977	\$217,977
6" PVC Sewer Pipe ²	LF	14,100	35.00	\$493,500
12" PVC Sewer Pipe ²	LF	17,000	66.35	\$1,127,950
Asphalt Pavement Restoration (6")	LF	13,100	18.60	\$243,660
Asphalt Pavement Restoration (2@12")	LF	5,570	23.40	\$130,338
Unimproved Restoration	LF	1,230	0.70	\$861
Landscaping Restoration (6")	LF	1,000	25.00	\$25,000
Landscaping Restoration (2-12")	LF	10,200	40.00	\$408,000
2" Air Release Valve and Enclosure	EACH	2	7,700.00	\$15,400
3" Vacuum Release Valve	EACH	2	1,500.00	\$3,000
Gate Valve	EACH	5	1,200.00	\$6,000
Pedestrian Bridge Crossing	LF	660	300.00	\$198,000
Traffic Control	LS	1	35,000.00	\$35,000
Potential Utility Conflicts	LS	1	25,000.00	\$25,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		32		
Total				\$3,078,921

Notes:

- (1) General Conditions includes bonds, insurance etc.
- (2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.
- (3) Horizontal boring cost includes casing, carrier pipe and installation.

Alternative 12

WASTEWATER CONVEYANCE TO GRANTS PASS				
PRELIMINARY ENGINEER'S ESTIMATE				
(RED - LEONARD ROAD TO RI-25, REDWOOD AVENUE TO PEDESTRIAN BRIDGE CROSSING)				
Item Description	Units	Estimated Quantity	Unit Price	Total
General Conditions ¹	LS	5%	142,929	\$142,929
Mobilization	LS	8%	228,687	\$228,687
6" PVC Sewer Pipe ²	LF	14,100	35.00	\$493,500
12" PVC Sewer Pipe ²	LF	19,270	66.35	\$1,278,565
Asphalt Pavement Restoration (6")	LF	13,100	18.60	\$243,660
Asphalt Pavement Restoration (2-12")	LF	17,370	23.40	\$406,458
Landscaping Restoration (6")	LF	1,000	25.00	\$25,000
Landscaping Restoration (12")	LF	1,900	40.00	\$76,000
2" Air Release Valve and Enclosure	EACH	2	7,700.00	\$15,400
3" Vacuum Release Valve	EACH	2	1,500.00	\$3,000
Gate Valve	EACH	5	1,200.00	\$6,000
Pedestrian Bridge Crossing	LF	660	300.00	\$198,000
Traffic Control	LS	1	60,000.00	\$60,000
Potential Utility Conflicts	LS	1	40,000.00	\$40,000
Trimming and Cleanup	LS	1	13,000.00	\$13,000
Easements		1		
Total				\$3,230,198

Notes:

- (1) General Conditions includes bonds, insurance etc.
- (2) Cost includes trench excavation, shoring, bedding, backfill, and dewatering.
- (3) Horizontal boring cost includes casing, carrier pipe and installation.

CONVEYANCE COST SUMMARY

Alternative	KEY	ROUTE	River Crossing	Total Length, if	# Ease.	Easement Cost *	Pipeline & Easements	Pump Station	Contingency 30%	Eng'g & Admin-25%	Total Cost Whole Lane, Short Route
7	GREEN / RED / GREEN	Existing easements to RL-25, Leonard Rd to Pedestrian Bridge	\$0.295	27,650	64	\$0.32	\$3.08	\$1.28	\$1.31	\$1.09	\$6.76
9B	GREEN / RED-DASH / GREEN	Existing easements to RL-25, Leonard Rd to	\$0.295	27,010	67	\$0.34	\$3.01	\$1.28	\$1.29	\$1.07	\$6.66
9A	GREEN / BLUE	Existing easements to RL-25, Boring at RL-25, Lower River Road Route	\$0.682	24,500	48	\$0.24	\$2.96	\$1.28	\$1.27	\$1.06	\$6.57

All costs in millions

* Assume average of \$5,000 per easement - including both temporary, permanent, appraisals, negotiations.

Redwood Wastewater O&M Cost Estimates
Conveyance Alternatives

Conveyance O&M	Annual Cost
Salary and Wages	\$ 18,000
Employee Benefits	\$ 6,300
Chemicals and Material	\$ 50,000
Power	\$ 11,000
Collection System	\$ 15,000
Subtotal	\$ 100,300
Portion of Grants Pass WWTP O&M	
WWTP O&M Cost	\$ 88,500
Billing Services	\$ 22,000
Customer Service	\$ 20,000
Subtotal	\$ 130,500
Grand Total	\$ 230,800