CITY OF PHILOMATH
Wastewater System Facilities Plan,
Philomath, Oregon

Recommended Collection System Improvements Cost Estimates
Recommended Treatment System Improvements Cost Estimates

Appendix I

Appendix I

Preliminary Collection System Cost Estimates
Philomath Wastewater Facilities Plan
960.3130.0

8/6/2003

1= priority 1A
1.5= priority 1B
2= priority 2
3= priority 3

Priority	Project Number	Project & Location(s)	Size (in)	($/in-dia) 8" - 10" $7.75 Length (ft)	($/in-dia) 12" - 15" $7.00 Length (ft)	($/in-dia) 18" - 24" $6.25 Length (ft)	$3,500 # Manholes	$2,000 # Services	$1,500 # Manhole Rehabs	Other Costs	Constr Cost	20% 10% Constr Contingency	20% Eng	10% Legal, Permits Easement, Admin	Total Project	Rounded Total	*Total project costs rounded to nearest $100* Prior 1A	Prior 1B	Prior 2	Prior 3
		Unit Cost																		
Trunk Collection System																				
1		**Pump Station A (16th & Cedar)**								$ 750,000.00	$750,000	$150,000	$150,000	$75,000	$1,125,000	$1,125,000	$1,125,000	$0	$0	$0
1		**Overflow Structure (15th & College)**								$ 7,500.00	$7,500	$750	$1,500	$750	$10,500	$11,000	$11,000	$0	$0	$0
1		**Buried Fuel Tank at Newton Creek Pump Station**								$ 10,000.00	$10,000	$1,000	$2,000	$1,000	$14,000	$14,000	$14,000	$0	$0	$0
		Pump Station A Trunk Sewer Improvements																		
1		Cedar Street (MH 200 to MH 29)	21			1200	6	10			$198,500	$19,850	$39,700	$19,850	$277,900	$278,000	$278,000	$0	$0	$0
1		13th Street (MH 29 to MH 31)	21			840	2	18			$153,250	$15,325	$30,650	$15,325	$214,550	$215,000	$215,000	$0	$0	$0
1		Applegate Street (MH 31 to MH 32)	21			390	1	6			$66,688	$6,669	$13,338	$6,669	$93,363	$93,000	$93,000	$0	$0	$0
		Basin N3A Trunk Sewer Improvements																		
1		Applegate Street (MH 1 to MH 2)	12		430		2	6			$55,120	$5,512	$11,024	$5,512	$77,168	$77,000	$77,000	$0	$0	$0
1		20th Street (MH 2 to MH 6)	12		740		2	11			$91,160	$9,116	$18,232	$9,116	$127,624	$128,000	$128,000	$0	$0	$0
1		College Street (MH 6 to MH 9)	12		400		2	5			$50,600	$5,060	$10,120	$5,060	$70,840	$71,000	$71,000	$0	$0	$0
		12th Street Trunk Sewer Improvements																		
1		12th Street (MH 32 to MH 71)	12		1150		4	12			$134,600	$13,460	$26,920	$13,460	$188,440	$188,000	$188,000	$0	$0	$0
		Basin A6 Trunk Sewer Imps. Phase I																		
1		Applegate Street (MH 32 to MH 34)	15		820		2	12			$117,100	$11,710	$23,420	$11,710	$163,940	$164,000	$164,000	$0	$0	$0
1		Applegate Street (MH 34 to MH 35)	12		400		1	4			$45,100	$4,510	$9,020	$4,510	$63,140	$63,000	$63,000	$0	$0	$0
1		10th Street (MH 34 to MH 45)	12		420		2	5		$ 5,000.00	$57,280	$5,728	$11,456	$5,728	$80,192	$80,000	$80,000	$0	$0	$0
1		Main Street (MH 45 to MH 46)	12		400		1	4		$ 10,000.00	$55,100	$5,510	$11,020	$5,510	$77,140	$77,000	$77,000	$0	$0	$0
		Basin N3B Trunk Sewer Improvements				7190														
2		Applegate Street (MH 203 to MH 205)	15		390		2	8			$63,950	$6,395	$12,790	$6,395	$89,530	$90,000	$0	$0	$90,000	$0
2		Applegate Street (MH 205 to MH 208)	12		1280		3	22			$162,020	$16,202	$32,404	$16,202	$226,828	$227,000	$0	$0	$227,000	$0
		Basin A6 Trunk Sewer Imps. Phase II																		
2		9th Street (MH 35 to MH 36)	10	200			1	2			$23,000	$2,300	$4,600	$2,300	$32,200	$32,000	$0	$0	$32,000	$0
2		Alley (MH 36 to MH 38)	10	770			2	11			$88,675	$8,868	$17,735	$8,868	$124,145	$124,000	$0	$0	$124,000	$0
2		Main Street (MH 46 to MH 52)	10	400			1	4		$ 10,000.00	$52,500	$5,250	$10,500	$5,250	$73,500	$74,000	$0	$0	$74,000	$0
2		8th Street (MH 52 to MH 53)	10	330			1	5			$39,075	$3,908	$7,815	$3,908	$54,705	$55,000	$0	$0	$55,000	$0
2		**Timber Estates Pump Station Imps**								$ 75,000.00	$75,000	$15,000	$15,000	$7,500	$112,500	$113,000	$0	$0	$113,000	$0
		Newton Creek Pump Station Capacity Imps																		
2		New Forcemain to WWTP (5400 ft @ $110/ft)								$ 594,000.00	$594,000	$59,400	$118,800	$59,400	$831,600	$832,000	$0	$0	$832,000	$0
2		Pump Station Improvements								$ 200,000.00	$200,000	$40,000	$40,000	$20,000	$300,000	$300,000	$0	$0	$300,000	$0
		Basin A6 Trunk Sewer Imps. Phase III																		
3		7th Street (MH 38 to MH 39)	10	220			1	3			$26,550	$2,655	$5,310	$2,655	$37,170	$37,000	$0	$0	$0	$37,000
3		Main Street (MH 39 to MH 40)	10	230			1	2		$ 7,500.00	$32,825	$3,283	$6,565	$3,283	$45,955	$46,000	$0	$0	$0	$46,000
3		College Street (MH 53 to MH 56)	10	400			1	5			$44,500	$4,450	$8,900	$4,450	$62,300	$62,000	$0	$0	$0	$62,000
		Basin A4B Trunk Sewer Imps. Phase II																		
3		Pioneer Street (MH 71 to MH 73)	10	400			1	8			$50,500	$5,050	$10,100	$5,050	$70,700	$71,000	$0	$0	$0	$71,000
3		11th Street (MH 73 to MH 74)	10	375			1	6			$44,563	$4,456	$8,913	$4,456	$62,388	$62,000	$0	$0	$0	$62,000
		15th Street Trunk Sewer Improvements																		
3		15th Street (MH 27 to MH 288)	12		1630		3	32			$211,420	$21,142	$42,284	$21,142	$295,988	$296,000	$0	$0	$0	$296,000
		Basin N3AA Trunk Sewer Improvements																		
3		Applegate Street (MH 202A to MH 1)	15		875		3	19			$140,375	$14,038	$28,075	$14,038	$196,525	$197,000	$0	$0	$0	$197,000
		Newton Creek Trunk Sewer Improvements																		
3		Newton Creek (MH 202A to NCPS)	24			2660	7	0			$423,500	$42,350	$84,700	$42,350	$592,900	$593,000	$0	$0	$0	$593,000
3		**Benton View Drive Sewer Improvements**	8	1150			4	17			$119,300	$11,930	$23,860	$11,930	$167,020	$167,000	$0	$0	$0	$167,000
		East Highway 20 Trunk Sewer																		
3		From 24" Stub to Basin N4/N5 Boundary	15			1650	4	5			$178,688	$17,869	$35,738	$17,869	$250,163	$250,000	$0	$0	$0	$250,000
3		From Basin N4/N5 Boundary to End 15"	15			1600	4	5			$174,000	$17,400	$34,800	$17,400	$243,600	$244,000	$0	$0	$0	$244,000
3		From End 15" to End of Trunk Sewer	12			1050	3	5			$99,250	$9,925	$19,850	$9,925	$138,950	$139,000	$0	$0	$0	$139,000
		20th Place Trunk Sewer																		
3		From 24" Stub to 20th Pl./Hwy 20 Intersection	24			680	2	5			$119,000	$11,900	$23,800	$11,900	$166,600	$167,000	$0	$0	$0	$167,000
3		From 20th Pl./Hwy 20 Intersection to SPRR	24			2100	4	10			$349,000	$34,900	$69,800	$34,900	$488,600	$489,000	$0	$0	$0	$489,000
3		Railroad Bore (Length = 100 ft)	24				2			$ 30,000.00	$37,000	$3,700	$7,400	$3,700	$51,800	$52,000	$0	$0	$0	$52,000
		Railroad Trunk Sewer	15		1600		4			$ 45,000.00	$227,000	$22,700	$45,400	$22,700	$317,800	$318,000	$0	$0	$0	$0
		Green Road Trunk Sewer Phase I																		
3		From SPRR to Industrial Way	21			1100	3	4			$162,875	$16,288	$32,575	$16,288	$228,025	$228,000	$0	$0	$0	$228,000
		Green Road Trunk Sewer Phase II																		
3		From Industrial Way to West Hills Rd.	15		1700		4	6			$204,500	$20,450	$40,900	$20,450	$286,300	$286,000	$0	$0	$0	$286,000
3		From West Hills Rd. to End	12		900		2	6			$94,600	$9,460	$18,920	$9,460	$132,440	$132,000	$0	$0	$0	$132,000
		Industrial Way Trunk Sewer																		
3		From Green Rd. to MH 134	12		1300		4	8			$139,200	$13,920	$27,840	$13,920	$194,880	$195,000	$0	$0	$0	$195,000
3		From MH 134 to End	10	2000			4	12			$193,000	$19,300	$38,600	$19,300	$270,200	$270,000	$0	$0	$0	$270,000
		Applegate Street Pump Station (185 GPM)																		
3		Pump Station								$ 350,000.00	$350,000	$70,000	$70,000	$35,000	$525,000	$525,000	$0	$0	$0	$525,000
3		Force main (800 ft @ $60/ft)								$ 48,000.00	$48,000	$4,800	$9,600	$4,800	$67,200	$67,000	$0	$0	$0	$67,000
		13th Street Pump Station (400 GPM)																		
3		Pump Station								$ 385,000.00	$385,000	$77,000	$77,000	$38,500	$577,500	$578,000	$0	$0	$0	$578,000
3		Force main (1150 ft @ $60/ft)								$ 69,000.00	$69,000	$6,900	$13,800	$6,900	$96,600	$97,000	$0	$0	$0	$97,000
									Totals		$7,013,863	$877,386	$1,402,773	$701,386	$9,995,408	$9,999,000	$2,584,000	$0	$1,847,000	$5,250,000

Appendix I

City of Philomath, Oregon
Wastewater Facilities Plan

COST ESTIMATE
Level of Detail - Planning

Evaluation of Wastewater Treatment Alternatives
Comparison of Capital Costs

Alternative

Item	Qty	Unit	Unit Cost	Construction Cost	15% Contingency	20% Engineering	10% Legal & Admin	Total Project Cost
1. Lined Faculative Lagoon/Summer Effluent Reuse								
New headworks	ALL	LS	Lump Sum	$100,000	$15,000	$20,000	$10,000	$145,000
New influent flow and rainfall measurement equipment	ALL	LS	Lump Sum	$8,500	$1,275	$1,700	$850	$12,325
New refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New faculative lagoon with synthetic liner	24	acre	$45,000	$1,080,000	$162,000	$216,000	$108,000	$1,566,000
New distribution piping (from new headworks to new lagoon)	1,800	LF	$90	$162,000	$24,300	$32,400	$16,200	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	1,400	LF	$100	$140,000	$21,000	$28,000	$14,000	$203,000
Lagoon dike rip-rap protection	ALL	LS	Lump Sum	$150,000	$22,500	$30,000	$15,000	$217,500
Lagoon dike roadway rehabilitation	ALL	LS	Lump Sum	$40,000	$6,000	$8,000	$4,000	$58,000
New 3-phase power service	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
Irrigation booster pump station & forcemain	ALL	LS	Lump Sum	$200,000	$30,000	$40,000	$20,000	$290,000
Irrigation control building	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
New effluent flow measurement equipment	ALL	LS	Lump Sum	$6,000	$900	$1,200	$600	$8,700
New effluent refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New SCADA system for Wastewater Utility	ALL	LS	Lump Sum	$69,000	$10,350	$13,800	$6,900	$100,050
Alternative 1 Totals				**$2,079,500**	**$311,925**	**$415,900**	**$207,950**	**$3,015,275**
2. Unlined Faculative Lagoon/Summer Effluent Reuse								
New headworks	ALL	LS	Lump Sum	$100,000	$15,000	$20,000	$10,000	$145,000
New influent flow and rainfall measurement equipment	ALL	LS	Lump Sum	$8,500	$1,275	$1,700	$850	$12,325
New refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New faculative lagoon with native clay liner	24	acre	$30,000	$720,000	$108,000	$144,000	$72,000	$1,044,000
New distribution piping (from new headworks to new lagoon)	1,800	LF	$90	$162,000	$24,300	$32,400	$16,200	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	1,400	LF	$100	$140,000	$21,000	$28,000	$14,000	$203,000
New 3-phase power service	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
Lagoon dike rip-rap protection	ALL	LS	Lump Sum	$150,000	$22,500	$30,000	$15,000	$217,500
Lagoon dike roadway rehabilitation	ALL	LS	Lump Sum	$40,000	$6,000	$8,000	$4,000	$58,000
Irrigation booster pump station & forcemain	ALL	LS	Lump Sum	$200,000	$30,000	$40,000	$20,000	$290,000
Irrigation control building	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
New effluent flow measurement equipment	ALL	LS	Lump Sum	$6,000	$900	$1,200	$600	$8,700
New effluent refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New SCADA system for Wastewater Utility	ALL	LS	Lump Sum	$69,000	$10,350	$13,800	$6,900	$100,050
Alternative 2 Totals				**$1,719,500**	**$257,925**	**$343,900**	**$171,950**	**$2,493,275**

Appendix I

City of Philomath, Oregon
Wastewater Facilities Plan

COST ESTIMATE
Level of Detail - Planning

Evaluation of Wastewater Treatment Alternatives
Comparison of Capital Costs
Alternative

Item	Qty	Unit	Unit Cost	Construction Cost	15% Contingency	20% Engineering	10% Legal & Admin	Total Project Cost
3. Lined Facultative Lagoon/Continue Summer-Holding Winter Discharge								
New headworks	ALL	LS	Lump Sum	$100,000	$15,000	$20,000	$10,000	$145,000
New influent flow and rainfall measurement equipment	ALL	LS	Lump Sum	$8,500	$1,275	$1,700	$850	$12,325
New refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New faculative lagoon with synthetic liner	24	acre	$45,000	$1,080,000	$162,000	$216,000	$108,000	$1,566,000
New distribution piping (from new headworks to new lagoon)	1,800	LF	$90	$162,000	$24,300	$32,400	$16,200	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	1,400	LF	$100	$140,000	$21,000	$28,000	$14,000	$203,000
Lagoon dike rip-rap protection	ALL	LS	Lump Sum	$150,000	$22,500	$30,000	$15,000	$217,500
Lagoon dike roadway rehabilitation	ALL	LS	Lump Sum	$40,000	$6,000	$8,000	$4,000	$58,000
Lagoon outlet piping modifications	ALL	LS	Lump Sum	$35,000	$5,250	$7,000	$3,500	$50,750
New 3-phase power service	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
Effluent lift station & controls	ALL	LS	Lump Sum	$225,000	$33,750	$45,000	$22,500	$326,250
Effluent polishing equipment & controls	ALL	LS	Lump Sum	$900,000	$135,000	$180,000	$90,000	$1,305,000
Effluent polishing equipment building & sitework	ALL	LS	Lump Sum	$125,000	$18,750	$25,000	$12,500	$181,250
Yard piping modifications	ALL	LS	Lump Sum	$20,000	$3,000	$4,000	$2,000	$29,000
New Auxiliary power unit with automatic transfer switch	ALL	LS	Lump Sum	$58,000	$8,700	$11,600	$5,800	$84,100
New effluent flow measurement equipment	ALL	LS	Lump Sum	$6,000	$900	$1,200	$600	$8,700
New effluent refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New SCADA system for Wastewater Utility	ALL	LS	Lump Sum	$69,000	$10,350	$13,800	$6,900	$100,050
Alternative 3 Totals				**$3,192,500**	**$478,875**	**$638,500**	**$319,250**	**$4,629,125**
4. Unlined Facultative Lagoon/Continue Summer-Holding Winter Discharge								
New headworks	ALL	LS	Lump Sum	$100,000	$15,000	$20,000	$10,000	$145,000
New influent flow and rainfall measurement equipment	ALL	LS	Lump Sum	$8,500	$1,275	$1,700	$850	$12,325
New refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New faculative lagoon with native clay liner	24	acre	$30,000	$720,000	$108,000	$144,000	$72,000	$1,044,000
New distribution piping (from new headworks to new lagoon)	1,800	LF	$90	$162,000	$24,300	$32,400	$16,200	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	1,400	LF	$100	$140,000	$21,000	$28,000	$14,000	$203,000
Lagoon dike rip-rap protection (existing lagoons)	ALL	LS	Lump Sum	$150,000	$22,500	$30,000	$15,000	$217,500
Existing dike roadway rehabilitation	ALL	LS	Lump Sum	$40,000	$6,000	$8,000	$4,000	$58,000
Lagoon outlet piping modifications (existing secondary lagoon)	ALL	LS	Lump Sum	$60,000	$9,000	$12,000	$6,000	$87,000
New 3-phase power service	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
Effluent lift station & controls	ALL	LS	Lump Sum	$225,000	$33,750	$45,000	$22,500	$326,250
Effluent polishing equipment & controls	ALL	LS	Lump Sum	$600,000	$90,000	$120,000	$60,000	$870,000
Effluent polishing equipment building & sitework	ALL	LS	Lump Sum	$125,000	$18,750	$25,000	$12,500	$181,250
Yard piping modifications	ALL	LS	Lump Sum	$20,000	$3,000	$4,000	$2,000	$29,000
New Auxiliary power unit with automatic transfer switch	ALL	LS	Lump Sum	$58,000	$8,700	$11,600	$5,800	$84,100
New effluent flow measurement equipment	ALL	LS	Lump Sum	$6,000	$900	$1,200	$600	$8,700
New effluent refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New SCADA system for Wastewater Utility	ALL	LS	Lump Sum	$69,000	$10,350	$13,800	$6,900	$100,050
Alternative 4 Totals				**$2,557,500**	**$383,625**	**$511,500**	**$255,750**	**$3,708,375**

Appendix I

City of Philomath, Oregon Wastewater Facilities Plan	COST ESTIMATE Level of Detail - Planning

Evaluation of Wastewater Treatment Alternatives
Comparison of Capital Costs
Alternative

Item	Qty	Unit	Unit Cost	Construction Cost	15% Contingency	20% Engineering	10% Legal & Admin	Total Project Cost
5. Convert Existing Lagoons to Partially Mixed Lagoons/Summer Effluent Reuse								
New headworks	ALL	LS	Lump Sum	$100,000	$15,000	$20,000	$10,000	$145,000
Relief pipe from new headworks to first lagoon	ALL	LS	Lump Sum	$20,000	$3,000	$4,000	$2,000	$29,000
New influent flow and rainfall measurement equipment	ALL	LS	Lump Sum	$8,500	$1,275	$1,700	$850	$12,325
New influent refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
Solar powered mechanical mixing equipment, installed	ALL	LS	Lump Sum	$320,000	$48,000	$64,000	$32,000	$464,000
Power distribution for backup power to mixers	3,550	LF	$18	$63,900	$9,585	$12,780	$6,390	$92,655
New Auxiliary power unit with automatic transfer switch	ALL	LS	Lump Sum	$20,000	$3,000	$4,000	$2,000	$29,000
New 3-phase power service	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
Lagoon dike rip-rap protection	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
Lagoon dike roadway rehabilitation	ALL	LS	Lump Sum	$40,000	$6,000	$8,000	$4,000	$58,000
Irrigation booster pump station & forcemain	ALL	LS	Lump Sum	$200,000	$30,000	$40,000	$20,000	$290,000
Irrigation control building	ALL	LS	Lump Sum	$50,000	$7,500	$10,000	$5,000	$72,500
New effluent flow measurement equipment	ALL	LS	Lump Sum	$6,000	$900	$1,200	$600	$8,700
New effluent refrigerated wastewater sampler	ALL	LS	Lump Sum	$12,000	$1,800	$2,400	$1,200	$17,400
New SCADA system for Wastewater Utility	ALL	LS	Lump Sum	$69,000	$10,350	$13,800	$6,900	$100,050
Alternative 5 Totals				**$1,021,400**	**$153,210**	**$204,280**	**$102,140**	**$1,481,030**

Appendix I

City of Philomath, Oregon
Wastewater Facilities Plan

Level of Detail - Planning

Evaluation of Wastewater Treatment Alternatives	Years	20
Present Worth Analysis	Disount rate	5%

Alternative

Item	Project Cost (Capital Cost)	Annual Cost	Present Worth
1. Lined Faculative Lagoon/Summer Effluent Reuse			
	$145,000	$500	$151,231
New influent flow and rainfall measurement equipment	$12,325	$250	$15,441
New refrigerated wastewater sampler	$17,400	$1,000	$29,862
New faculative lagoon with synthetic liner	$1,566,000	$5,000	$1,628,311
New distribution piping (from new headworks to new lagoon)	$234,900	$0	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	$203,000	$0	$203,000
Lagoon dike rip-rap protection	$217,500	$0	$217,500
Lagoon dike roadway rehabilitation	$58,000	$2,500	$89,156
New 3-phase power service	$72,500	$0	$72,500
Irrigation booster pump station & forcemain	$290,000	$20,000	$539,244
Irrigation control building	$72,500	$1,000	$84,962
New effluent flow measurement equipment	$8,700	$250	$11,816
New effluent refrigerated wastewater sampler	$17,400	$1,000	$29,862
New SCADA system for Wastewater Utility	$100,050	$2,500	$131,206
Alternative 1 Totals	**$3,015,275**	**$34,000**	**$3,438,990**
2. Unlined Faculative Lagoon/Summer Effluent Reuse			
New headworks	$145,000	$500	$151,231
New influent flow and rainfall measurement equipment	$12,325	$250	$15,441
New refrigerated wastewater sampler	$17,400	$1,000	$29,862
New faculative lagoon with native clay liner	$1,044,000	$5,000	$1,106,311
New distribution piping (from new headworks to new lagoon)	$234,900	$0	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	$203,000	$0	$203,000
New 3-phase power service	$72,500	$0	$72,500
Lagoon dike rip-rap protection	$217,500	$0	$217,500
Lagoon dike roadway rehabilitation	$58,000	$2,500	$89,156
Irrigation booster pump station & forcemain	$290,000	$20,000	$539,244
Irrigation control building	$72,500	$1,000	$84,962
New effluent flow measurement equipment	$8,700	$1,000	$21,162
New effluent refrigerated wastewater sampler	$17,400	$1,000	$29,862
New SCADA system for Wastewater Utility	$100,050	$2,500	$131,206
Alternative 2 Totals	**$2,493,275**	**$34,750**	**$2,926,337**
3. Lined Facultative Lagoon/Continue Summer-Holding Winter Discharge			
New headworks	$145,000	$500	$151,231
New influent flow and rainfall measurement equipment	$12,325	$250	$15,441
New refrigerated wastewater sampler	$17,400	$1,000	$29,862
New faculative lagoon with synthetic liner	$1,566,000	$5,000	$1,628,311
New distribution piping (from new headworks to new lagoon)	$234,900	$0	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	$203,000	$0	$203,000
Lagoon dike rip-rap protection	$217,500	$0	$217,500
Lagoon dike roadway rehabilitation	$58,000	$2,500	$89,156
Lagoon outlet piping modifications	$50,750	$0	$50,750
New 3-phase power service	$72,500	$0	$72,500
Effluent lift station & controls	$326,250	$15,000	$513,183
Effluent polishing equipment & controls	$1,305,000	$20,000	$1,554,244
Effluent polishing equipment building & sitework	$181,250	$1,000	$193,712
Yard piping modifications	$29,000	$0	$29,000
New Auxiliary power unit with automatic transfer switch	$84,100	$2,000	$109,024
New effluent flow measurement equipment	$8,700	$250	$11,816
New effluent refrigerated wastewater sampler	$17,400	$1,000	$29,862
New SCADA system for Wastewater Utility	$100,050	$2,500	$131,206
Alternative 3 Totals	**$4,629,125**	**$51,000**	**$5,264,698**

Appendix I

City of Philomath, Oregon
Wastewater Facilities Plan

Level of Detail - Planning

Evaluation of Wastewater Treatment Alternatives	Years	20
Present Worth Analysis	Disount rate	5%

Alternative

Item	Project Cost (Capital Cost)	Annual Cost	Present Worth
4. Unlined Facultative Lagoon/Continue Summer-Holding Winter Discharge			
New headworks	$145,000	$500	$151,231
New influent flow and rainfall measurement equipment	$12,325	$250	$15,441
New refrigerated wastewater sampler	$17,400	$1,000	$29,862
New faculative lagoon with native clay liner	$1,044,000	$5,000	$1,106,311
New distribution piping (from new headworks to new lagoon)	$234,900	$0	$234,900
New transfer piping (from new lagoon to existing primary lagoon)	$203,000	$0	$203,000
Lagoon dike rip-rap protection (existing lagoons)	$217,500	$0	$217,500
Existing dike roadway rehabilitation	$58,000	$2,500	$89,156
Lagoon outlet piping modifications (existing secondary lagoon)	$87,000	$0	$87,000
New 3-phase power service	$72,500	$0	$72,500
Effluent lift station & controls	$326,250	$15,000	$513,183
Effluent polishing equipment & controls	$870,000	$20,000	$1,119,244
Effluent polishing equipment building & sitework	$181,250	$1,000	$193,712
Yard piping modifications	$29,000	$0	$29,000
New Auxiliary power unit with automatic transfer switch	$84,100	$2,000	$109,024
New effluent flow measurement equipment	$8,700	$250	$11,816
New effluent refrigerated wastewater sampler	$17,400	$1,000	$29,862
New SCADA system for Wastewater Utility	$100,050	$2,500	$131,206
Alternative 4 Totals	**$3,708,375**	**$51,000**	**$4,343,948**
5. Convert Existing Lagoons to Partially Mixed Lagoons/Summer Effluent Reuse			
New headworks	$145,000	$500	$151,231
Relief pipe from new headworks to first lagoon	$29,000	$0	$29,000
New influent flow and rainfall measurement equipment	$12,325	$250	$15,441
New influent refrigerated wastewater sampler	$17,400	$1,000	$29,862
Solar powered mechanical mixing equipment, installed	$464,000	$12,000	$613,547
Power distribution for backup power to mixers	$92,655	$0	$92,655
New Auxiliary power unit with automatic transfer switch	$29,000	$2,000	$53,924
New 3-phase power service	$72,500	$0	$72,500
Lagoon dike rip-rap protection	$72,500	$0	$72,500
Lagoon dike roadway rehabilitation	$58,000	$2,500	$89,156
Irrigation booster pump station & forcemain	$290,000	$25,000	$601,555
Irrigation control building	$72,500	$1,000	$84,962
New effluent flow measurement equipment	$8,700	$1,000	$21,162
New effluent refrigerated wastewater sampler	$17,400	$1,000	$29,862
New SCADA system for Wastewater Utility	$100,050	$2,500	$131,206
Alternative 5 Totals	**$1,481,030**	**$48,750**	**$2,088,563**