APPENDIX C

COST OPINIONS

Revised: 11/25/08

Nipomo Community Services District

UPGRADE TO FRONTAGE ROAD INTERCEPTOR (15" OPEN TRENCH CONSTRUCTION)

SUMMARY

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Item	Description	Quantity	Unit	Total Unit Price	Amount
1	Mobilization	1	LS	*$50,000.00*	$50,000
2	Pothole Existing Utilities	5	EA	*$750.00*	$3,800
3	Temporary Sewage Bypass	1	LS	*$13,000.00*	$13,000
4	Traffic Control & Regulation	3123	LF	*$10.00*	$31,200
5	Sheeting & Shoring	4208	LF	*$17.50*	$73,600
6	Abandon Existing Pipe in Place	1	LS	*$35,000.00*	$35,000
7	Connect Laterals/Exist Manholes to New Main (8' at Division and Southland)	2	EA	*$4,000.00*	$8,000
8	Connect Trunk/Manhole to New Main (12" at Story)	1	EA	*$8,000.00*	$8,000
9	15-inch PVC Sewer Main (Excavate, Install, backfill, pavement repair)	4208	LF	*$175.00*	$736,500
10	Precast 48-inch I.D. Manholes (15-20 ft)	1	EA	*$9,000.00*	$9,000
11	Precast 48-inch I.D. Manholes (10-14 ft)	7	EA	*$6,000.00*	$42,000
12	Precast 48-inch I.D. Manholes (5-9 ft)	2	EA	*$4,000.00*	$8,000
13	Connect to Existing Metering Manhole at WWTF	1	LS	*$8,000.00*	$8,000
14	Pipeline Cleaning and CCTV Inspection	4208	LF	*$3.00*	$12,600

	Sub Total		$1,039,000
	Engineering/Administration	30%	$311,700
	Contingency	30%	$405,210
	Total		$1,756,000

ENR CCI = 8602 (November 2008)

LS = Lump Sum
EA = Each
LF = Linear Foot

Assumptions for Opinion of Cost (By CR):
1. Sewer upgrade to occur within Frontage Rd. paved ROW, in a new trench parallel to existing 12" interceptor sewer.
2. Review of NCSD water atlas indicates presence of water pipes along Frontage Rd.;
As-builts for 12" interceptor indicate presence of 16" Gas. It is assumed the interceptor upgrade can be aligned within the paved ROW w/o utility conflicts or relocates.
3. It is assumed sewage bypass will only be required for last phase of construction, when lateral/trunk connections/manholes are switched over to new sewer.
4. Traffic control only needed from Division to Southland (not on unpaved part to WWTF)

Nipomo Community Services District
UPGRADE TO FRONTAGE ROAD INTERCEPTOR (21" OPEN TRENCH CONSTRUCTION)
SUMMARY
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Item	Description	Quantity	Unit	Total Unit Price	Amount
1	Mobilization	1	LS	*$50,000.00*	$50,000
2	Pothole Existing Utilities	5	EA	*$750.00*	$3,800
3	Temporary Sewage Bypass	1	LS	*$13,000.00*	$13,000
4	Traffic Control & Regulation	3123	LF	*$10.00*	$31,200
5	Sheeting & Shoring	4208	LF	*$17.50*	$73,600
6	Abandon Existing Pipe in Place	1	LS	*$35,000.00*	$35,000
7	Connect Laterals/Exist Manholes to New Main (8" at Division and Southland)	2	EA	*$4,000.00*	$8,000
8	Connect Trunk/Manhole to New Main (12" at Story)	1	EA	*$8,000.00*	$8,000
9	21-inch PVC Sewer Main (Excavate, Install, backfill, pavement repair)	4208	LF	*$235.00*	$988,900
10	Precast 48-inch I.D. Manholes (15-20 ft)	1	EA	*$9,000.00*	$9,000
11	Precast 48-inch I.D. Manholes (10-14 ft)	7	EA	*$6,000.00*	$42,000
12	Precast 48-inch I.D. Manholes (5-9 ft)	2	EA	*$4,000.00*	$8,000
13	Connect to Existing Metering Manhole at WWTF	1	LS	*$8,000.00*	$8,000
14	Pipeline Cleaning and CCTV Inspection	4208	LF	*$3.00*	$12,600

Sub Total		$1,291,000
Engineering/Administration	30%	$387,300
Contingency	30%	$503,490
Total		$2,182,000

ENR CCI = 8602 (November 2008)

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EA = Each
LF = Linear Foot

Assumptions for Opinion of Cost (By CR):
1. Sewer upgrade to occur within Frontage Rd. paved ROW, in a new trench parallel to existing 12" interceptor sewer.
2. Review of NCSD water atlas indicates presence of water pipes along Frontage Rd.;
As-builts for 12" interceptor indicate presence of 16" Gas. It is assumed the interceptor upgrade can be aligned within the paved ROW w/o utility conflicts or relocates.
3. It is assumed sewage bypass will only be required for last phase of construction, when lateral/trunk connections/manholes are switched over to new sewer.
4. Traffic control only needed from Division to Southland (not on unpaved part to WWTF)

Nipomo Community Services District
SOUTHLAND WASTEWATER TREATMENT FACILITY
MASTER PLAN
Headworks Improvement Options
OPINION OF PROBABLE CAPITAL COST

Item	Description	Unit	Unit Price	Quantity	Installation Adjustment	Amount
SCREENS						
I. Parkson HLS400 Hycor® HeliSieve®						
1	HeliSieve® HLS500	EA	$71,000	2	1.5	$213,000
2	2 Concrete channels, w/common wall	YD^3	$1,000	12		$12,000
3	Miscellaneous piping	LS				$21,800
4	Bypass pipe	LS				$10,900
5	Sitework	LS				$16,400
6	Electrical + Instrumentation	LS				$21,800
7	Bagger (optional)	EA	$2,200	2	1.5	$6,600
	Subtotal					$302,500
8	Engineering/Admin (30 % of subtotal)					$90,750
9	Contingency (30% of total)					$117,975
	TOTAL					$512,000
II. Parkson Aqua Guard® AG-MN-A						
1	Aqua Guard® AG-MN-A	EA	$98,200	2	1.5	$294,600
2	2 concrete channels, w/common wall	YD^3	$1,000	9		$9,000
3	Misc. piping	LS				$21,800
4	Bypass pipe	LS				$10,900
5	Sitework	LS				$16,400
6	Electrical + Instrumentation	LS				$21,800
7	Parkson Hycor® Screw Wash & Press Unit SWP20-XX (optional)	EA	$43,700	2	1.5	$131,100
	Subtotal					$505,600
8	Engineering/Admin (30 % of subtotal)					$151,680
9	Contingency (30% of total)					$197,184
	TOTAL					$855,000

ENR CCI = 8602 (November 2008)

Nipomo Community Services District
SOUTHLAND WASTEWATER TREATMENT FACILITY
MASTER PLAN
Headworks Improvement Options
OPINION OF PROBABLE CAPITAL COST

Item	Description	Unit	Unit Price	Quantity	Installation Adjustment	Amount
GRIT REMOVAL						
I. Eimco Jones & Attwood JetAir 100 & Screw Classifier 100						
1	JetAir + Classifier + assoc. equipment	EA	$100,000	2	1.5	$300,000
2	Concrete	YD^3	$1,000	20		$21,800
3	Misc. piping	LS				$21,800
4	Electrical + Instrumentation	LS				$16,400
5	Sitework	LS				$5,500
6	Bagger (optional)	EA	$2,200	2	1.5	$6,600
	Subtotal					$372,100
7	Engineering/Admin (30 % of subtotal)					$111,630
8	Contingency (30% of total)					$145,119
	TOTAL					$629,000
II. Aerated Grit Chamber (two at 6' x 6' x 24')						
1	2 concrete chambers	LS				$131,000
3	Air Piping	LS				$32,700
4	Diffusers	LS				$38,200
5	Misc. piping	LS				$27,300
6	Electrical + Instrumentation	LS				$16,400
7	Sitework	LS				$5,500
8	Grit classifier	LS				$96,600
	Subtotal					$347,700
8	Engineering/Admin (30 % of subtotal)					$104,310
9	Contingency (30% of total)					$135,603
	TOTAL					$588,000

ENR CCI = 8602 (November 2008)

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EA = Each
LF = Linear Foot
YD^3 = Cubic Yard

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Nipomo Community Services District
SOUTHLAND WASTEWATER TREATMENT FACILITY
MASTER PLAN
Future Treatment Alternatives
OPINION OF PROBABLE CAPITAL COST

Item	Description	Unit	Unit Price	Quantity	Installation Adjustment	Amount
I. Expansion of Aerated Ponds (4)						
1	Excavation for 4 ponds	YD^3	$25	118,550	1.0	$2,963,800
2	Fill for 4 ponds	YD^3	$25	40,400	1.0	$1,010,000
3	Grading for 4 ponds	FT^2	$0.20	207,500	1.0	$41,500
4	4 HDPE Liners (40 mil)	FT^2	$0.33	341,900	1.7	$191,800
5	Mechanical Aerators (15 HP)	EA	$23,600	14	1.7	$561,700
	Subtotal					$4,768,800
6	Piping (10% subtotal)					$476,880
7	Electrical (10% subtotal)					$476,880
8	Engineering/Admin (20 % of subtotal)					$953,760
9	Contingency (30% of total)					$2,002,896
	Total					$8,680,000
II. EIMCO Carrousel ® 3000 (Oxidation Ditch)						
1	Mobilization (3% of subtotal)					$99,324
2	Oxidation Ditch System	LS	$1,522,800	1	1.0	$1,522,800
3	(2) Secondary Clarifiers	LS	$894,000	2	1.0	$1,788,000
	Subtotal					$3,310,800
4	Sitework (20% of Subtotal)					$662,160
5	Piping (15% subtotal)					$496,620
6	Electrical (15% subtotal)					$496,620
7	Engineering/Admin (20 % of subtotal)					$662,160
8	Contingency (30% of total)					$1,688,508
	Total					$7,417,000
III. Parkson Biolac® Wave Oxidation System						
1	Biolac® System in 2 secondary ponds	EA	$520,000	1	1.7	$884,000
2	(2) HDPE Liner (40 mil)	FT^2	$0.40	170,968	1.7	$116,300
3	(2) Secondary Clarifiers	LS				$1,689,800
4	Earthwork (fill part of retrofitted ponds)	YD^3	$20	12250	1.0	$245,000
5	Instrumentation	LS				$100,000
5	Modification of air piping	LF	$50	970	1.0	$48,500
	Subtotal					$3,083,600
6	Piping (15% of subtotal)					$462,540
7	Electrical (15% of subtotal)					$462,540
8	Engineering/Admin (20 % of subtotal)					$616,720
9	Contingency (30% of total)					$1,387,620
	Total					$6,014,000

ENR CCI = 8602 (November 2008)

Nipomo Community Services District
SOUTHLAND WASTEWATER TREATMENT FACILITY
MASTER PLAN
Future Treatment Alternatives
OPINION OF PROBABLE CAPITAL COST

Item	Description	Unit	Unit Price	Quantity	Installation Adjustment	Amount
IV. Completely Mixed Activated Sludge						
1	Mobilization (3% of subtotal)					$126,735
2	(2) Aeration Basins	LS				$844,900
3	(2) Primary Clarifiers	LS				$1,689,800
4	(2) Secondary Clarifiers	LS				$1,689,800
	Subtotal					$4,224,500
5	Sitework (5% of Subtotal)					$211,225
6	Piping (15% of subtotal)					$633,675
7	Electrical (15% of subtotal)					$633,675
8	Engineering/Admin (20 % of subtotal)					$844,900
9	Contingency (30% of total)					$1,964,393
	Total					$8,640,000

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Nipomo Community Services District

SOUTHLAND WASTEWATER TREATMENT FACILITY

MASTER PLAN

AERATED POND SYSTEM vs. BIOLAC SYSTEM

OPINION OF PROBABLE OPERATING AND MAINTENANCE COST

Life cycle costs to 2030

I. AERATED POND SYSTEM

Year	Capital Cost	Power Cost	Parts Cost	Total Cost	Cumulative Cost
2009	$8,680,000	$178,500	$0	$8,858,500	$8,858,500
2010	$0	$178,500	$0	$178,500	$9,037,000
2011	$0	$178,500	$0	$178,500	$9,215,500
2012	$0	$178,500	$0	$178,500	$9,394,000
2013	$0	$178,500	$0	$178,500	$9,572,500
2014	$0	$178,500	$0	$178,500	$9,751,000
2015	$0	$178,500	$0	$178,500	$9,929,500
2016	$0	$178,500	$0	$178,500	$10,108,000
2017	$0	$178,500	$0	$178,500	$10,286,500
2018	$0	$178,500	$0	$178,500	$10,465,000
2019	$0	$178,500	$44,500	$223,000	$10,688,000
2020	$0	$178,500	$0	$178,500	$10,866,500
2021	$0	$178,500	$0	$178,500	$11,045,000
2022	$0	$178,500	$0	$178,500	$11,223,500
2023	$0	$178,500	$0	$178,500	$11,402,000
2024	$0	$178,500	$0	$178,500	$11,580,500
2025	$0	$178,500	$0	$178,500	$11,759,000
2026	$0	$178,500	$0	$178,500	$11,937,500
2027	$0	$178,500	$0	$178,500	$12,116,000
2028	$0	$178,500	$0	$178,500	$12,294,500
2029	$0	$178,500	$44,500	$223,000	$12,517,500
2030	$0	$178,500	$0	$178,500	$12,696,000

Notes:

1. Project is built in 2009 for 2030 design flows.
2. Parts replacement consists of 14 aerators, replaced every 10 years.
3. Power is based on required power for 2018, 210 hp.

II. BIOLAC SYSTEM

Year	Capital Cost	Power Cost	Parts Cost	Total Cost	Cumulative Cost
2009	$6,014,000	$76,500	$0	$6,090,500	$6,090,500
2010	$0	$76,500	$0	$76,500	$6,167,000
2011	$0	$76,500	0	$76,500	$6,243,500
2012	$0	$76,500	$0	$76,500	$6,320,000
2013	$0	$76,500	$0	$76,500	$6,396,500
2014	$0	$76,500	$31,500	$108,000	$6,504,500
2015	$0	$76,500	$0	$76,500	$6,581,000
2016	$0	$76,500	$0	$76,500	$6,657,500
2017	$0	$76,500	$96,000	$172,500	$6,830,000
2018	$0	$76,500	$0	$76,500	$6,906,500
2019	$0	$76,500	$31,500	$108,000	$7,014,500
2020	$0	$76,500	$0	$76,500	$7,091,000
2021	$0	$76,500	$0	$76,500	$7,167,500
2022	$0	$76,500	$0	$76,500	$7,244,000
2023	$0	$76,500	$0	$76,500	$7,320,500
2024	$0	$76,500	$31,500	$108,000	$7,428,500
2025	$0	$76,500	$96,000	$172,500	$7,601,000
2026	$0	$76,500	$0	$76,500	$7,677,500
2027	$0	$76,500	$0	$76,500	$7,754,000
2028	$0	$76,500	$0	$76,500	$7,830,500
2029	$0	$76,500	$31,500	$108,000	$7,938,500
2030	$0	$76,500	$0	$76,500	$8,015,000

Notes:

1. Assume project is built in 2009 for 2030 design flows.
2. Parts replacement consists of diffusers, replaced every 5 years, and air hoses, replaced every 8 years.
3. Power is based on required power for 2018, 90 hp.

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Nipomo Community Services District
SOUTHLAND WASTEWATER TREATMENT FACILITY
MASTER PLAN
Tertiary Treatment Alternatives
OPINION OF PROBABLE CAPITAL COST

Item	Description	Unit	Unit Price	Quantity	Installation Adjustment	Amount
FILTRATION						
I. Parkson Dynasand						
1	Coagulation & Mixing System	LS				$100,000
2	Pumping System	LS				$200,000
3	Filter Module	EA	$32,000	12	1.7	$652,800
4	Air compressors	EA	$13,750	2	1.7	$46,800
5	Concrete	YD^3	$1,100	270	1.0	$297,000
6	Ladders, handrails, grates	LS				$80,000
7	Instrumentation & Controls	LS				$50,000
	Subtotal					$1,426,600
8	Sitework (10% of subtotal)					$142,660
9	Piping (10% subtotal)					$142,660
10	Electrical (10% subtotal)					$142,660
11	Engineering/Admin (20 % of subtotal)					$285,320
12	Contingency (30% of total)					$641,970
	Total					$2,782,000
II. Aqua-Aerobic Aquadisk						
1	Coagulation & Mixing System	LS				$100,000
2	Pumping System	LS				$200,000
3	Filter Unit (10 disk) with controls	EA	$346,500	2	1.7	$693,000
4	Concrete foundation	YD^3	$1,100	24	1.0	$26,400
5	Ladders, handrails, grates	LS				$50,000
	Subtotal					$1,069,400
6	Sitework (5% of Subtotal)					$53,470
7	Piping (10% subtotal)					$106,940
8	Electrical (10% subtotal)					$106,940
9	Engineering/Admin (20 % of subtotal)					$213,880
10	Contingency (30% of total)					$465,189
	Total					$2,016,000
DISINFECTION						
I. Chlorine Contact Basin						
1	(2) Concrete basins	YD^3	$1,100	352	1.0	$387,200
2	Chlorine feed system & storage	LS				$380,000
3	Instrumentation & controls	LS				$100,000
	Subtotal					$867,200
5	Sitework (10% of subtotal)					$86,720
6	Piping (15% of subtotal)					$130,080
7	Electrical (10% of subtotal)					$86,720
8	Engineering/Admin (20 % of subtotal)					$173,440
9	Contingency (30% of total)					$403,248
	Total					$1,748,000

ENR CCI = 8602 (November 2002)

Nipomo Community Services District
SOUTHLAND WASTEWATER TREATMENT FACILITY
MASTER PLAN
Tertiary Treatment Alternatives
OPINION OF PROBABLE CAPITAL COST

Item	Description	Unit	Unit Price	Quantity	Installation Adjustment	Amount
II. Trojan UV3000 Plus™						
1	UV banks and equipment	LS	$780,000		1.7	$1,326,000
2	Concrete	YD^3	$1,100	37	1.0	$40,700
3	Instrumentation & controls	LS				$100,000
4	Ladders, handrails, and grates	LS				$80,000
	Subtotal					$1,546,700
5	Sitework (10% of Subtotal)					$154,670
6	Piping (15% of subtotal)					$232,005
7	Electrical (15% of subtotal)					$232,005
8	Engineering/Admin (20 % of subtotal)					$309,340
9	Contingency (30% of total)					$742,416
	Total					$4,544,000

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