



Opinion of Probable Construction Cost

Arcata Levee Enhancements - 30% Design

SHN Reference: 023018A

Date: 8/26/25

Preparer: Jared O'Barr

Estimated Construction Year: 2031

Item #	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$ 208,477.87	\$ 208,477.87
2	Construction Staking	1	LS	\$ 75,000.00	\$ 75,000.00
3	Erosion Control	1	LS	\$ 50,000.00	\$ 50,000.00
4	Clearing and Grubbing	12,595	SY	\$ 2.36	\$ 29,724.20
5	Pothole Underground Utilities	20	EA	\$ 1,400.00	\$ 28,000.00
6	Excavation/Rough Grading	87	CY	\$ 29.10	\$ 2,531.70
7	Material Off-Haul and Disposal	165	TON	\$ 324.00	\$ 53,460.00
8	Class II Aggregate Base - 1-1/2"	235	CY	\$ 163.00	\$ 38,305.00
9	Hot Mix Asphalt	30	TON	\$ 300.00	\$ 9,000.00
10	RSP Class V - 1/4 Ton	9,151	TON	\$ 205.00	\$ 1,875,955.00
11	RSP Fabric (Class 8)	6,632	SY	\$ 11.00	\$ 72,952.00
12	Truncated Domes	48	SF	\$ 51.94	\$ 2,493.12
13	Relocate/Demolish Misc. Items	1	LS	\$ 5,000.00	\$ 5,000.00
14	Pedestrian Concrete	1,200	SF	\$ 12.72	\$ 15,264.00
15	Pedestrian Ramp Handrail	400	LF	\$ 252.28	\$ 100,912.00
16	Flood Gate	1	EA	\$ 185,500.00	\$ 185,500.00
17	Sheet Pile Utility Crossing	20	EA	\$ 2,650.00	\$ 53,000.00
18	Cast-In-Place T-Wall	162	LF	\$ 1,100.00	\$ 178,200.00
19	NZ Hot Rolled Steel Sheet Piling - Material Only	2,446	TON	\$ 2,200.00	\$ 5,381,200.00
20	NZ Hot Rolled Steel Sheet Piling - Installation	184,125	SF	\$ 9.00	\$ 1,657,125.00
21	Sheet Pile Seam Welds	1,604	EA	\$ 75.00	\$ 120,300.00
22	Sheet Pile Wall Field Fabrication & Modification	184,125	SF	\$ 0.89	\$ 163,871.25
23	Sheet Pile Wall Cap Beam	7,365	LF	\$ 40.00	\$ 294,600.00
24	Sheet Pile Wall Corners	15	EA	\$ 1,500.00	\$ 22,500.00
25	Sheet Pile Wall Transition	6	EA	\$ 1,500.00	\$ 9,000.00

Low Estimate

Construction Subtotal	\$	10,632,371.14
Contingency 30.0%	\$	3,189,711.34
Construction Total	\$	13,822,082.48
Construction Engineering 15.0%	\$	2,073,312.37
Project Subtotal	\$	15,895,394.85
Escalation (6 Years) - Low 4.2%	\$	4,503,316.03
Escalated Project Total	\$	20,398,710.88

High Estimate

Construction Subtotal	\$	10,632,371.14
Contingency 30.0%	\$	3,189,711.34
Construction Total	\$	13,822,082.48
Construction Engineering 15.0%	\$	2,073,312.37
Project Subtotal	\$	15,895,394.85
Escalation (6 Years) - High 7.4%	\$	8,553,955.19
Escalated Project Total	\$	24,449,350.04



Engineer's Class 5 Opinion of Probable Costs
GHD Job No. 12616645

City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
AWTF Levee Maintenance

January 27, 2026

Item		Quantity		Unit Cost	Total Cost
1	Mobilization and Demobilization	1	LS	\$200,000	\$200,000
2	Contractor Administration (Procurement, Submittals, Ect.)	1	LS	\$50,000	\$50,000
3	Construction Survey and Staking	1	LS	\$150,000	\$150,000
4	Clearing and Grubbing	1	LS	\$100,000	\$100,000
5	Dust Abatement	1	LS	\$50,000	\$50,000
6	Stormwater and Non-Stormwater Pollution Control	1	LS	\$85,000	\$85,000
7	Excavation Safety Measures (Including Dewatering)	1	LS	\$650,000	\$650,000
8	Excavation to Prepare Subgrade for Levee Raise	5,200	CY	\$12	\$62,400
9	Subgrade Preparation and Compaction	15,000	SY	\$18	\$270,000
10	Compacted Levee Fill to Design Elevation of 11.5 ft	15,000	CY	\$38	\$570,000
11	Compacted Overbuild to Accommodate Future Settlement	9,000	CY	\$38	\$342,000
12	Compacted 6 in Thick Base Course for AC Pavement	700	CY	\$190	\$133,000
13	4 in Thick AC Pavement	30	CY	\$625	\$18,750
14	Geogrid for Stabilization	20,000	SY	\$6	\$120,000
15	Removal of Excess Materials	2,000	CY	\$18	\$36,000
Sub-Total (Rounded)					\$2,837,000
Contingency (25%)					\$709,250
Total Opinion of Probable Construction Cost (Rounded)					\$3,546,000
Preliminary and Final Engineering Design (15%)					\$531,900
Environmental and Permitting (5%)					\$177,300
Construction Management (15%)					\$531,900
Upper Bound of Total Opinion of Probable Project Cost (+50%)					\$7,200,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)					\$3,400,000



Engineer's Class 5 Opinion of Probable Costs
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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
New AWTF Influent Transfer Pump Station and Pipeline

January 27, 2026

Item	Quantity	Unit Cost	Total Cost
1 Mobilization and Demobilization	1 LS	\$175,000	\$175,000
2 Traffic Control	19,300 LF	\$10	\$193,000
3 Construction Survey and Staking	19,300 LS	\$3	\$57,900
4 Contractor Administration (Procurement, Submittals, Ect.)	1 LS	\$275,000	\$275,000
5 Permitting, Testing, Startup, Commissioning, Closeout	1 LS	\$75,000	\$75,000
6 Transfer Pump Station from Ex AWTF Location to New AWTF	1 LS	\$13,000,000	\$13,000,000
7 Onsite Piping (Connect Ex, Lines to new Lift Stations)	1 LS	\$1,125,000	\$1,125,000
8 24" HDPE Piping	19,300 LF	\$500	\$9,650,000
9 Gate Valves	2 EA	\$30,000	\$60,000
10 Combination Air Valves	4 EA	\$5,000	\$20,000
Sub-Total (Rounded)			\$24,631,000
Contingency (25%)			\$6,157,750
Total Opinion of Probable Construction Cost (Rounded)			\$30,789,000
Preliminary and Final Engineering Design (15%)			\$4,618,350
Environmental and Permitting (5%)			\$1,539,450
Construction Management (15%)			\$4,618,350
Upper Bound of Total Opinion of Probable Project Cost (+50%)			\$62,300,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)			\$29,100,000



Engineer's Class 5 Opinion of Probable Costs
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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
New WWTP - Moving Bed Biofilm Reactor

January 27, 2026

Item		Quantity		Unit Cost	Total Cost
1	General Requirements	1	LS	\$980,000	\$980,000
2	Land Acquisition	9	Acre	\$34,000	\$309,400
2	Site Works	1	LS	\$4,900,000	\$4,900,000
3	Concrete	1	LS	\$14,386,000	\$14,386,000
4	Masonry	1	LS	\$1,250,000	\$1,250,000
5	Metals	1	LS	\$450,000	\$450,000
6	Wood & Plastics	1	LS	\$100,000	\$100,000
7	T&M Protection	1	LS	\$100,000	\$100,000
8	Doors & Windows	1	LS	\$200,000	\$200,000
9	Finishes	1	LS	\$200,000	\$200,000
10	Specialties	1	LS	\$50,000	\$50,000
11	Equipment	1	LS	\$15,091,000	\$15,091,000
12	Furnishings	1	LS	\$5,000,000	\$5,000,000
13	Instrumentation & Controls	1	LS	\$3,773,000	\$3,773,000
14	Conveying System	1	LS	\$100,000	\$100,000
15	Process mechanical	1	LS	\$1,000,000	\$1,000,000
16	Building Mechanical	1	LS	\$3,000,000	\$3,000,000
17	Electrical	1	LS	\$10,000,000	\$10,000,000
Sub-Total (Rounded)					\$60,889,000
Contingency (25%)					\$15,222,250
Total Opinion of Probable Construction Cost (Rounded)					\$76,111,000
Preliminary and Final Engineering Design (15%)					\$11,416,650
Environmental and Permitting (5%)					\$3,805,550
Construction Management (15%)					11416650
Upper Bound of Total Opinion of Probable Project Cost (+50%)					\$154,100,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)					\$71,900,000



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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
New WWTP - Conventional Activated Sludge

January 27, 2026

Item		Quantity		Unit Cost	Total Cost
1	General Requirements	1	LS	\$980,000	\$980,000
2	Land Acquisition	13	Acre	\$34,000	\$442,000
2	Site Works	1	LS	\$4,900,000	\$4,900,000
3	Concrete	1	LS	\$12,958,000	\$12,958,000
4	Masonry	1	LS	\$1,250,000	\$1,250,000
5	Metals	1	LS	\$450,000	\$450,000
6	Wood & Plastics	1	LS	\$100,000	\$100,000
7	T&M Protection	1	LS	\$100,000	\$100,000
8	Doors & Windows	1	LS	\$200,000	\$200,000
9	Finishes	1	LS	\$200,000	\$200,000
10	Specialties	1	LS	\$50,000	\$50,000
11	Equipment	1	LS	\$12,896,000	\$12,896,000
12	Furnishings	1	LS	\$5,000,000	\$5,000,000
13	Instrumentation & Controls	1	LS	\$3,224,000	\$3,224,000
14	Conveying System	1	LS	\$100,000	\$100,000
15	Process mechanical	1	LS	\$1,000,000	\$1,000,000
16	Building Mechanical	1	LS	\$3,000,000	\$3,000,000
17	Electrical	1	LS	\$10,000,000	\$10,000,000
Sub-Total (Rounded)					\$56,850,000
Contingency (25%)					\$14,212,500
Total Opinion of Probable Construction Cost (Rounded)					\$71,063,000
Preliminary and Final Engineering Design (15%)					\$10,659,450
Environmental and Permitting (5%)					\$3,553,150
Construction Management (15%)					\$10,659,450
Upper Bound of Total Opinion of Probable Project Cost (+50%)					\$143,900,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)					\$67,200,000



Engineer's Class 5 Opinion of Probable Costs
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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
Enhancement Marshes Levee Maintenance

January 27, 2026

Item		Quantity		Unit Cost	Total Cost
1	Mobilization and Demobilization	1	LS	\$250,000	\$250,000
2	Contractor Administration (Procurement, Submittals, Ect.)	1	LS	\$60,000	\$60,000
3	Construction Survey and Staking	1	LS	\$187,500	\$187,500
4	Clearing and Grubbing	1	LS	\$125,000	\$125,000
5	Dust Abatement	1	LS	\$62,500	\$62,500
6	Stormwater and Non-Stormwater Pollution Control	1	LS	\$100,000	\$100,000
7	Excavation Safety Measures (Including Dewatering)	1	LS	\$750,000	\$750,000
8	Excavation to Prepare Subgrade for Levee Raise	7,000	CY	\$12	\$84,000
9	Subgrade Preparation and Compaction	20,000	SY	\$18	\$360,000
10	Compacted Levee Fill to Design Elevation of 11.5 ft	21,000	CY	\$38	\$798,000
11	Compacted Overbuild to Accommodate Future Settlement	11,000	CY	\$38	\$418,000
12	Compacted 6 in Thick Base Course for AC Pavement	1,200	CY	\$190	\$228,000
13	4 in Thick AC Pavement	400	CY	\$625	\$250,000
14	Geogrid for Stabilization	30,000	SY	\$6	\$180,000
15	Removal of Excess Materials	4,900	CY	\$18	\$88,200
Sub-Total (Rounded)					\$3,941,000
Contingency (25%)					\$985,250
Total Opinion of Probable Construction Cost (Rounded)					\$4,926,000
Preliminary and Final Engineering Design (15%)					\$738,900
Environmental and Permitting (5%)					\$246,300
Construction Management (15%)					\$738,900
Upper Bound of Total Opinion of Probable Project Cost (+50%)					\$10,000,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)					\$4,700,000
Additive Bid Item		Quantity		Unit Cost	Total Cost
1	Living Shoreline crest elevation 11.5 feet NAVD88	3,100	LF	\$2,500	\$7,800,000
Upper Bound of Total Opinion of Probable Project Cost + Additive Item					\$17,800,000
Lower Bound of Total Opinion of Probable Project Cost + Additive Item					\$12,500,000



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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
Enhancement Marshes Levee Augmentation

January 27, 2026

Item		Quantity		Unit Cost	Total Cost
1	Levee Augmentation (from SHN 30% Design)	6,500	LF	\$1,399	\$9,093,475
Sub-Total (Rounded)					\$9,093,000
Contingency (25%)					\$2,273,250
Total Opinion of Probable Construction Cost (Rounded)					\$11,366,000
Preliminary and Final Engineering Design (15%)					\$1,704,900
Environmental and Permitting (5%)					\$568,300
Construction Management (15%)					\$1,704,900
Upper Bound of Total Opinion of Probable Project Cost (+50%)					\$23,000,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)					\$10,700,000
Additive Bid Item		Quantity		Unit Cost	Total Cost
1	Living Shoreline, crest elevation 15 feet NAVD88	3,100	LF	\$3,250	\$10,100,000
Upper Bound of Total Opinion of Probable Project Cost + Additive Item					\$33,100,000
Lower Bound of Total Opinion of Probable Project Cost + Additive Item					\$20,800,000



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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
New Enhancement Marshes

January 27, 2026

Item	Quantity	Unit Cost	Total Cost
1 Site Restoration	32 ACRE	\$100,000	\$3,200,000
2 Land Acquisition	32 ACRE	\$34,000	\$1,088,000
3 Discharge Pump Station from AWTF to New Enhancement Project	1 LS	\$13,000,000	\$13,000,000
4 24" HDPE Discharge Piping	20,000 LF	\$500	\$10,000,000
5 Yard Piping	1 LS	\$1,000,000	\$1,000,000
6 Instrumentation & Controls	1 LS	\$260,000	\$260,000
Sub-Total (Rounded)			\$28,548,000
Contingency (25%)			\$7,137,000
Total Opinion of Probable Construction Cost (Rounded)			\$35,685,000
Preliminary and Final Engineering Design (15%)			\$5,352,750
Environmental and Permitting (5%)			\$1,784,250
Construction Management (15%)			\$5,352,750
Upper Bound of Total Opinion of Probable Project Cost (+50%)			\$72,300,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)			\$33,700,000



Engineer's Class 5 Opinion of Probable Costs
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City of Arcata
Arcata Wastewater Treatment Facility Sea Level Rise Adaptation Feasibility Study
Ocean Outfall - Pipeline to RMTII

January 27, 2026

Item		Quantity		Unit Cost	Total Cost
1	Mobilization and Demobilization	1	LS	\$2,419,000	\$2,419,000
2	Traffic Control	49,830	LF	\$10	\$498,300
3	Construction Survey and Staking	1	LS	\$157,500	\$157,500
4	Contractor Administration (Procurement, Submittals, Ect.)	1	LS	\$85,000	\$85,000
5	Permitting, Testing, Startup, Commissioning, Closeout	1	LS	\$55,000	\$55,000
6	AWTF Discharge Pump Station	1	LS	\$15,000,000	\$15,000,000
7	24" HDPE Piping - Rural (Including Trenching and Restoration)	13,330	LF	\$500	\$6,665,000
8	24" HDPE Piping - HWY (Including Trenching and Restoration)	36,500	LF	\$650	\$23,725,000
9	36" SS Piping	1	LS	\$35,000	\$35,000
10	Mad River Slough Crossing - Jack & Bore	700	LF	\$1,250	\$875,000
11	Gate Valves	4	EA	\$30,000	\$120,000
12	Combination Air Valves	10	EA	\$5,000	\$50,000
13	Pipe Tap	1	LS	\$50,000	\$50,000
Sub-Total (Rounded)					\$49,735,000
Contingency (25%)					\$12,433,750
Total Opinion of Probable Construction Cost (Rounded)					\$62,169,000
Preliminary and Final Engineering Design (15%)					\$9,325,350
Environmental and Permitting (5%)					\$3,108,450
Construction Management (15%)					\$9,325,350
Upper Bound of Total Opinion of Probable Project Cost (+50%)					\$125,900,000
Lower Bound of Total Opinion of Probable Project Cost (-30%)					\$58,700,000