



ADDENDUM NO. 1

RFQ NO. 2017-017 DESIGN SERVICES FOR EAST WASTEWATER TREATMENT PLANT UPGRADE ENGINEERING

June 21, 2017

TO ALL PROPOSERS:

Please incorporate the following information/clarifications, changes, additions, and/or deletions into the specification packet for the above referenced project:

REQUESTS FOR INFORMATION (RFI):

1. Is it possible to provide us with the opinion of probable cost of construction for the East WWTP upgrade using IFAS technology?

Response: Yes. The seven (7) page document (Technical Memorandum No. 2) requested has been incorporated into this addendum. Please insert the document into the Appendix as Exhibit 2.

There are no other changes at this time. The RFQ submission deadline remains July 11, 2017 at 3:00 PM, local time.

Spencer Shambray, CPPB
Purchasing Manager
6/21/17

Please sign and return the acknowledgment page of this addendum by email or by fax. The original acknowledgement page is to be included with your bid proposal.

ACKNOWLEDGEMENT FORM

ADDENDUM NO. 1

RFQ NO. 2017-017

DESIGN SERVICES FOR EAST WASTEWATER TREATMENT PLANT UPGRADE ENGINEERING

I acknowledge receipt of Addendum No. 1 for RFQ No. 2017-001, Design Services for East Wastewater Treatment Plant Upgrade Engineering. This addendum contains nine (9) pages. Please include the original of this form in your RFQ submission.

Company Name: _____

Address: _____

Name of Signer _____
(please print)

Signature: _____ Date: _____

Telephone: _____ Facsimile: _____

Please fax your completed form to (954) 935-5258 or e-mail to purchase@margatefl.com.



Spencer Shambray, CPPB
Purchasing Manager
6/21/17

NOTE: The original of this form must be included with your RFQ response.



CITY OF MARGATE

EAST WASTEWATER TREATMENT PLANT UPGRADE
USING IFAS TECHNOLOGY

TECHNICAL MEMORANDUM NO. 2
COST ESTIMATE

FINAL
August 2016



CITY OF MARGATE
EAST WASTEWATER TREATMENT PLANT UPGRADE USING IFAS TECHNOLOGY
TECHNICAL MEMORANDUM
NO. 2
COST ESTIMATE

TABLE OF CONTENTS

	<u>Page No.</u>
1.0 INTRODUCTION	2-1
2.0 COST ESTIMATE	2-1

LIST OF APPENDICES

APPENDIX A COST ESTIMATE

LIST OF TABLES

Table 2.1 Cost Estimate	2-2
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COST ESTIMATE

1.0 INTRODUCTION

The City of Margate tasked Carollo Engineers with refining the facility modifications and cost to convert the East Wastewater Treatment Plant (WWTP) to an integrated fixed-film activated sludge (IFAS) process. Technical Memorandum (TM) 1 provided a summary of the data collected as well as the evaluation for the basis of the cost estimate presented in this TM.

2.0 COST ESTIMATE

The estimate of probable cost of construction provided in Table 2.1 is considered a Class 4 "Budget Level" estimate per the *Recommended Practice 18R-97 Cost Estimate Classification System - As Applied in Engineering, Procurement, and Construction for the Process Industries*, published in 2011 by AACE International. Class 4 cost estimates are estimates made on limited information and, subsequently, have a fairly wide range of accuracy. Typically, engineering is from 1 to 15 percent complete and includes, at a minimum, the following items: estimates of plant capacity, preliminary layouts, PFDs, preliminary engineering for the process, and preliminary equipment lists. Class 4 cost estimates are normally used for budgetary and planning purposes and used for screening of alternative concepts. The expected accuracy range for Class 4 estimates is within +20 to +50 percent on the high side and -15 to -30 percent on the low side. This means that construction bids can be expected to fall within a range of 30 to 50 percent over the estimate to 15 to 30 percent under the estimate at this stage.

Table 2.1 provides a summary of the cost estimate. As shown, total direct costs for equipment, materials, and installation are approximately \$2.3 million, while total construction cost is estimated to be about \$3.7 million. The construction estimate does not include project costs for engineering, legal, or administration fees. IFAS system equipment includes the K5 media, screen assemblies, air scour system, aeration system, submersible mixers, mixed liquor recycle wall pumps, blowers, PLC control panel, high level float switches, DO probes, flowmeters, control valves, isolation valves, and nitrate/ammonia analyzer. Details of the cost estimate are included in Appendix A.

Table 2.1 Cost Estimate East WWTP Upgrade Using IFAS Technology City of Margate			
Description	Qty	Unit	Total Cost
<u>Mechanical</u>			
IFAS System Equipment	1	LS	\$1,758,000
Influent Screen	1	EA	\$141,000
Pipe Connection to West Digesters	1	LS	\$12,000
Allowance for Pump Replacement	1	LS	\$150,000
<u>Structural</u>			
Influent Splitter Box	1	LS	\$22,000
Aeration Basin Modifications	1	LS	\$131,000
Blower Pad	1	LS	\$14,000
Allowance for Digester & Aeration Basin Rehab ⁽¹⁾	1	LS	\$25,000
<u>Electrical</u>	1	LS	\$64,000
<u>Instrumentation</u>	1	LS	\$12,000
TOTAL DIRECT COST			\$2,329,000
Contingency (25%)			\$583,000
Subtotal			\$2,912,000
GC Overhead, Profit, and Risk (18%)			\$525,000
Subtotal			\$3,437,000
Escalation to Mid-Point (6%)			\$207,000
Subtotal			\$3,644,000
Sales Tax (6.0%) ⁽²⁾			\$70,000
TOTAL ESTIMATED CONSTRUCTION COST			\$3,714,000
<u>Notes:</u>			
(1) Based on recommendation in Digester and Aeration Basin Assessment TM (Hazen and Sawyer, 2013).			
(2) Based on 50 percent of the total direct cost.			

APPENDIX A – COST ESTIMATE

**Detailed Cost Estimate
East WWTP Upgrade Using IFAS Technology
City of Margate**

Description	Qty	Unit	Unit Cost	Installation	Total Cost
<u>Mechanical</u>					
IFAS System Equipment	1	LS	\$ 1,465,000.00	\$ 293,000.00	\$ 1,758,000
Influent Screen	1	EA	\$ 117,000.00	\$ 23,400.00	\$ 140,400
Pipe Connection to West Digesters	1	LS	\$ 682.21	\$ 2,557.72	\$ 11,136
6" x 6" Tee	2	EA	\$ 334.88	\$ 1,086.23	\$ 2,842
6" 45 deg. Bend	1	EA	\$ 158.06	\$ 724.16	\$ 882
6" 90 deg. Bend	2	EA	\$ 175.03	\$ 724.16	\$ 1,798
6" DIP in Open Trench	150	LF	\$ 8.05	\$ 23.17	\$ 4,684
6" Pipe Excavation	150	LF	\$ 6.19	\$ -	\$ 929
Allowance for Pump Replacement	1	LS	\$ 125,000.00	\$ 25,000.00	\$ 150,000
<u>Structural</u>					
Influent Splitter Box		LS	\$ 8,787.68	\$ -	\$ 21,323
Demolition of Channel Wall, 8" thk	66	SF	\$ 18.61	\$ -	\$ 1,228
Demolition of Walkway Slab, 4" thk	146	SF	\$ 3.05	\$ -	\$ 446
Concrete wall extension, 8" thk.	1	CY	\$ 1,356.34	\$ -	\$ 1,834
Concrete wall extension, 12" thk.	0	CY	\$ 1,088.41	\$ -	\$ 312
Rebuild channel walls, 18" thk.	4	CY	\$ 859.22	\$ -	\$ 3,273
Rebuild channel walls, 8" thk.	1	CY	\$ 1,356.34	\$ -	\$ 974
Drilled/Epoxyed Rebar Dowels (Walls)	98	EA	\$ 75.00	\$ -	\$ 7,350
Raise Guardrail (Labor Only)	62	LF	\$ 30.71	\$ -	\$ 1,904
Raise Platform (Labor Only)	1	LS	\$ 2,000.00	\$ -	\$ 2,000
Raise Cover (Labor Only)	1	LS	\$ 2,000.00	\$ -	\$ 2,000
Aeration Basin Modifications	1	LS	\$ 987.11	\$ -	\$ 130,170
Divider Walls (full height, 12" thk.)	116	CY	\$ 912.11	\$ -	\$ 106,170
Drilled/Epoxyed Rebar Dowels	320	EA	\$ 75.00	\$ -	\$ 24,000
Blower Pad		LS	\$ 979.82	\$ -	\$ 13,092
Concrete slab-on-grade 20'x30', 12" thk., turn-down edge	27.77	CY	\$ 396.97	\$ -	\$ 11,024

Detailed Cost Estimate
East WWTP Upgrade Using IFAS Technology
City of Margate

Description	Qty	Unit	Unit Cost	Installation	Total Cost
Edge forms for SOG	100	LF	\$ 11.37	\$ -	\$ 1,137
Concrete housekeeping pads, 4" thk.	1.155	CY	\$ 567.48	\$ -	\$ 655
Edge forms for housekeeping pads	69	LF	\$ 4.00	\$ -	\$ 276
Allowance for Digester & Aeration Basin Rehab	1	LS	\$ 25,000.00	\$ -	\$ 25,000
<u>Electrical</u>	1	LS	\$ 63,300.00	\$ -	\$ 63,300
Demolition of existing aerators electrical starters/disconnects	1	LS	\$ 3,000.00	\$ -	\$ 3,000
Demolition and removal of existing aerator power feeders	1	LS	\$ 3,000.00	\$ -	\$ 3,000
Demolition of existing DO instruments	1	LS	\$ 1,000.00	\$ -	\$ 1,000
Blower's Lighting Lighting Poles (2 units)	1	LS	\$ 3,000.00	\$ -	\$ 3,000
Blower's Equipment Pad - Grounding	1	LS	\$ 1,300.00	\$ -	\$ 1,300
Blower's Panel (BL) for Power Distribution- NEMA 4X; 480 V; 400 A	1	LS	\$ 7,000.00	\$ -	\$ 7,000
Blower's Disconnect Switches; NEMA 4X; 3 P-200 A	1	LS	\$ 3,000.00	\$ -	\$ 3,000
Add 3 Pole; 400 A Breaker at SWBD DSB-1 (Main Elect. Bldg)	1	LS	\$ 2,000.00	\$ -	\$ 2,000
Wiring of 3 new Blowers and associated controls	1	LS	\$ 6,000.00	\$ -	\$ 6,000
DO Transmitter associated conduit wiring at Aeration Basins	1	LS	\$ 2,000.00	\$ -	\$ 2,000
Conduit & Wiring from blowers to RAS SCADA Panel	1	LS	\$ 4,500.00	\$ -	\$ 4,500
Duct banks trench and concrete encasement	1	LS	\$ 4,500.00	\$ -	\$ 4,500
Power Feeders; 2 Runs x 3 x 500 FT of # 250 KCM & 1 # 2 AWG	1	LS	\$ 19,000.00	\$ -	\$ 19,000
Repar Asphalt, Patch Sod and Lanscape Trench Area	1	LS	\$ 2,500.00	\$ -	\$ 2,500
Electrical Miscellaneous Supports and Labels	1	LS	\$ 1,500.00	\$ -	\$ 1,500
<u>Instrumentation</u>	1	LS	\$ 12,000.00	\$ -	\$ 12,000
Installation and software configuration of I/O Points related to Blowers: (10) DI, (2) DO	1	LS	\$ 12,000.00	\$ -	\$ 12,000