

DEPARTMENT INPUT
CONSTRUCTION CONTRACT/PROJECT MEASURE ANALYSIS AND RECOMMENDATION

Check applicable Ordinance(s): 90-143 Responsible Wage and Benefits 03-237 (formerly 03-1) Community Workforce Program

PROJECT INFORMATION See attachment

Contract/Project/*Work Order No.: W-938

*Reference corresponding project number when submitting a work order

Contract/Project Title: ALEXANDER ORR JR. WATER TREATMENT PLANT EAST HIGH SERVICE PUMP NO. 6 REPLACEMENT

Description/Scope of Work: See Attached

Estimated Cost: 8484740 **Funding Source:** Other (specify)

Location of Project (street address or beginning and ending points) i.e. 12345 NE 23rd Ct or Starts at 135 St. ends at 145 St.
East Pump Room at the Alexander Orr Jr. Water Treatment Plant, located 6825 SW 87th Avenue, Miami-Dade County, Florida 33173

PROJECT ANALYSIS FOR GOAL RECOMMENDATION (CWP) See attachment

Engineer/Department or Agency's estimated required workforce for Project Work Order :

Trade/Skills Required	Est. # of workforce required per trade	Est. # of total days to complete job
N/A		
N/A		
N/A		

Comments:Not Applicable, Project is not in a DTA

PROJECT ANALYSIS FOR GOAL RECOMMENDATION (CSBE) See attachment

Sub-Trade	Est. Cost	% of Item to Base Bid	Availability
Construction	\$271,200	3.20%	
G & S	\$152,120	1.79%	
	\$	0%	

RECOMMENDATION

Set-Aside: Level 1 Level 2 Level 3 Trade Set-Aside Sub-Contractor Goal Workforce Goal No Measure

Basis for Recommendation: Availability among SBE subcontractors. Also, this is highly specialize heavy industrial work required for the replacement of High Service Pump 6 and appurtenances; electrical panels, instrumentation and controls within the East Pump Room at the Alexander Orr Jr. Water Treatment Plant.

Date submitted to DBD: 11/13/17

Contact Person: Isaac Smith

Telephone No.: 786-552-8989

**DEPARTMENTAL INPUT
CONTRACT MEASURE ANALYSIS AND RECOMMENDATION**

To: Gary T. Hartfield, Division Director
Internal Services Department
Small Business Development Division

From: Isaac Smith, Manager
Construction Contracts Section

Department: Miami-Dade Water and Sewer Department

Contract Title: ALEXANDER ORR JR. WATER TREATMENT PLANT
EAST HIGH SERVICE PUMP NO. 6 REPLACEMENT

Contract No.: W-938

Estimate Amount: \$8,484,740.00 [7,713,400.00 Construction + \$771,340.00 Contingency]

Funding Source: EW 221

Small Business Enterprise – Construction – 3.20% Analysis for Recommendation (Attached)
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Department Head or Authorized Agent

DESCRIPTION OF PROJECT:

This project is one in a series of projects that are being processed under Section 2-8.2.12 of the Code, entitled Miami-Dade Water and Sewer Department Consent Decree and Capital Improvement Programs Accelerate Ordinance. In general, the project consist of the replacement of High Service Pump No. 6 in the East Pump Room at the Alexander Orr Jr. Water Treatment Plant, located 6825 SW 87th Avenue, Miami-Dade County, Florida 33173.

The project consists of furnishing all materials, labor, and equipment necessary to replace High Service Pump No. 6 which includes one new pump and engine rated at 2,000 – 2,500 horsepower, new pump control valves and piping, and a new power distribution enclosure to install new motor control center, UPS and batteries. Contractor to furnish and install new natural gas engine and gear reducer, complete with new emissions and exhaust system; furnish and install new horizontal split case pump, with and a dedicated water supply from system for hydraulic accumulator operation. Piping work includes replacement of 48" suction and 42" discharge piping and valves. Contractor to replace suction and discharge butterfly valves which will require separate shutdowns. Replacement of suction side butterfly valve will require a diver to install a temporary plug in existing reservoir. Architectural improvements include renovation of existing office space to serve as new power distribution center to accommodate the electrical upgrades, and modification of operations room for new Pump No. 6 engine controls. Structural improvements include modifications to pump room floor in order to install new pump and engine. Partial demolition of masonry walls, concrete floors and concrete equipment supports is required. Contractor to furnish and install insulated metal panels above existing overhead door. Furnish and install new and modified access grating, handrails and ladders as required to access the pump, engine, piping and valves around the pump and in the piping trenches. Furnish and install new MCCs, UPS and batteries in renovated power distribution center (PDC). Install new circuit breaker and circuit to power equipment

within the PDC. Install new pump No. 6 engine control panel. Furnish and install vibration monitoring system for pumps. Modify the existing I/O to the plant monitoring system to accommodate electrical changes. Replace the pressure transmitters/Interconnection wiring and conduit between engine, pump, cone valve, control valves, junction boxes, instrumentation and auxiliary devices. The Contractor shall be responsible, through furnishing a single qualified Control System Integrator (CSI), for the pump instrumentation and control systems (PSICS) to ensure system uniformity, subsystem compatibility and coordination of system interfaces.

LICENSES: The types of licenses required are: General Engineering, General Building Contractor and/or other categories as applicable by Chapter 489 of the Florida Statutes or Chapter 10 of Miami-Dade County Code.

COMMUNITY WORKFORCE PROGRAM

CWP PARTICIPATION: Not Applicable, project is not located in a DTA.

ANALYSIS FOR RECOMMENDATION:

		SBE - ANALYSIS - CONTRACT W-938					
Item	Item			SBE-Cons		SBE- G&S	
No.	Description	Amount	Percent	Value	Percent	Value	Percent
1	Mobilization	166,800.00	1.97%				
2	Division #1 - Special Conditions	123,000.00	1.45%	60000	0.71%	27000	0.32%
3	Division #2 - Site Work	3,500.00	0.04%	2400	0.03%	120	0.00%
4	Division #3 - Concrete	26,600.00	0.31%	15000	0.18%		
5	Division #5 - Metals	170,000.00	2.00%	65000	0.77%		
6	Division #6, 7 & 8 - Wood & Plastics, Thermal and Moisture Protection, Doors and Windows	20,500.00	0.24%	2000	0.02%		
7	Division #9 - Finishes	800.00	0.01%	800	0.01%		
8	Division #10 - Specialties	600.00	0.01%				
9	Division #11 - Equipment						
	- Horizontal Split Case Pump	828,000.00	9.76%				
	- Duel Fuel Pump Engine with Gear Reducer	5,150,000.00	60.70%				
	- Compressed Air Reciever & Piping	17,250.00	0.20%				
10	Division #13 - Special Construction						
	- Vibration Monitoring Panel & RTD's	66,700.00	0.79%				
	- Fiberoptic Line inside East Pump Room	9,200.00	0.11%				
11	Division #15 - Mechanical						
	- Pipe & Fittings	239,200.00	2.82%	76000	0.90%	30000	0.35%
	- Control Valves	316,250.00	3.73%			95000	1.12%
12	Division #16 - Electrical						
	- Transformers	385,250.00	4.54%				
	- Electrical Conductor, Raceway and Ductbank	57,500.00	0.68%	50000	0.59%		
	- Instrumentation & Control	132,250.00	1.56%				
13	Subtotal	7,713,400.00					
14	Contingency (10%)	771,340.00	9.09%		SBE-Cons		SBE-G&S
15	SBE Project Total	8,484,740.00	100.00%		3.20%		1.79%

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To: Gary T. Hartfield, Division Director
Internal Services Department
Small Business Development Division

From: Isaac Smith, Manager
Construction Contracts Section

Department: Miami-Dade Water and Sewer Department

Contract Title: ALEXANDER ORR JR. WATER TREATMENT PLANT
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Contract No.: W-938

Estimate Amount: \$8,484,740.00 [7,713,400.00 Construction + \$771,340.00 Contingency]

Funding Source: EW 221

Small Business Enterprise – Goods & Services – 1.79%

Analysis for Recommendation (Attached)

Department Head or Authorized Agent

DESCRIPTION BY TRADE:

The work consists of furnishing all materials, labor, and equipment necessary to replace High Service Pump No. 6 which includes one new pump and engine rated at 2,000 – 2,500 horsepower, new pump station valves and piping, and a new power distribution enclosure to install new motor control center, UPS and batteries. The upgrades include the following:

1. Structural and Architectural:

- a. Renovate existing office space to serve as new power distribution center to accommodate the electrical upgrades and code requirements.
- b. Modify pump room floor in order to install new pump, engine and gear reducer.
- c. Partial demolition of masonry walls, concrete floors and concrete equipment supports.
- d. Modify operations room for new pump no. 6 engine control panel.
- e. New piping and equipment supports.
- f. New and modified access grating, handrails and ladders as required to access the pump, engine, piping and valves around the pump and in the trenches.

2. Electrical/Instrumentation:

- a. Install new power distribution center (PDC) that houses MCCs, UPS and batteries. Install new circuit breaker and circuit to power equipment within the PDC.
- b. Install new pump no. 6 engine control panel.
- c. Modify the existing I/O to the plant monitoring system to accommodate electrical changes.
- d. Interconnection wiring and conduit between engine, pump, cone valve, control valves, junction boxes, instrumentation and auxiliary devices.

3. Mechanical:

- a. Install new engine and gear reducer.
- b. Install new emissions and exhaust system.
- c. Install new pump with new equipment selections as indicated.
- d. Install new cone valve for the pump discharge including control system, dedicated water supply and back-up hydraulic accumulator.
- e. Replace suction and discharge piping and valves.

4. Civil:

- a. Temporary removal of yard piping access doors for discharge piping and valve replacement.
- b. Site restoration to restore the finished site to preconstruction condition.

CONSIDERATIONS FOR ANALYSIS:

1. The project involves the replacement of a high service pump as stated above. The high service pump is a very large and expensive engine that is capable of being operated by natural gas in the event of power failure.
2. The work shall be executed while the water plant is in operation. The contractor's activities shall not adversely affect the operations or impact the treatment capacity of the plant.
3. The replacement of suction side butterfly valve will require a diver to install a temporary plug in existing reservoir.
4. The work shall require the installation of a vibration monitoring system for pumps. The work shall also require providing the services of a Control System Integrator (CSI).
5. The Department has evaluated the project for possible opportunities for participation in the area of SBE – Goods and Services. Based on the scope and nature of the work, we have concluded that there are limited opportunities for participation on this project. The recommended areas of participation for SBE Goods & Services providers includes the possible areas:

Analysis for Small Business Enterprise – Goods and Services Recommendation				
Item	Goods & Services	Prime Contractor	Sub-Contractor	SBE Availability
1.	GOODS: High Service Pump & Engine Electrical Switchgear Instrumentation & Controls Piping, Valves & Fittings Painting	X X X X X	 X X X X	 X X
2.	SERVICES Structural Electrical Instrumentation Systems Integration Utility Piping Finishing Security Guard Services	X X	X X X X X X X	X X X X X