

# **EASTERN MUNICIPAL WATER DISTRICT**

## **PERRIS II DESALINATION FACILITY**

### **ENGINEERING SERVICES DURING CONSTRUCTION**

#### **AMENDMENT NO. 4**

#### **SCOPE OF WORK**

The scope of services defined herein are intended to supplement the original Engineering Services During Construction contract for additional Office Administration and Design Services During Construction. Supplemental services include additional level of effort for shop drawing, submittal and RFI reviews and Schneider SCADA integration consultation services.

#### **TASK 4.0 – OFFICE ADMINISTRATION**

##### **Task 4.1 – Shop Drawing and Submittal Reviews - Supplemental**

This task is intended to supplement the original Scope of Work and Amendment 3 for Task 4.1 with additional budget for the review, coordination and management of submittals.

Black & Veatch has reviewed a total of 550 submittals under the current contract budget capacity, inclusive of Amendment 3. As of August 27, 2020, Black & Veatch has reviewed 680 submittals inclusive of resubmittals and there are currently 10 submittals reviews pending. The average level of effort for submittal reviews has averaged 8.5 hours per submittal. The current Contractor Submittal log indicates a total of 940 submittals. It is assumed that 800 technical submittals will require Black & Veatch review.

##### **Task 4.2 – Requests for Information - Supplemental**

The original Scope of Work assumed a level of effort to render interpretation and responses necessary for a total of 150 RFIs, with approximately 4.5 hours per response. At the time of preparing Amendment 3, Black & Veatch had completed review of 266 RFIs at 3.2 hours per RFI. Amendment 3 included effort beyond the originally estimated amount to cover 400 RFIs at 3.2 hours each. As of August 27, 2020, Black & Veatch has reviewed 385 RFIs at 4.5 hours per RFI, consistent with the original level of effort assumed by the original contract.

RFIs have recently required additional level of effort due to complexity. RFIs have required FRP pipe support analyses, structural clarifications and detailing, SCE/electrical evaluation and clarifications, duct bank evaluations, panel and instrumentation reviews, for example.

The project has averaged 20 RFIs per month. Per discussions with the field team, based on current construction progress and construction schedule remaining, up to 500 RFI's are anticipated.

#### **TASK 7.0 – DESIGN SERVICES DURING CONSTRUCTION**

##### **Task 7.3 – Stand-by Generator Connection Design - Supplemental**

The original scope of work included professional services for the design of five (5) temporary generators for the Perris/Menifee Desalter Brine Pump Station, SCRWRf Lift Station and Odor Control facility, SCRWRf Pond Pump Station and the Reach IV Booster Pump Station during service shutdown. Over the course of various generator design coordination meetings and at the request of the District, the generator design package has been revised to include two (2) additional temporary generators. Additional generators were requested to provide service to Perris and Menifee CIP operations and to provide a secondary power source to SCRWRf Lift Station while the primary temporary generator is being connected. The design of the primary temporary generator for

SCRWRF was also reevaluated to accommodate the second smaller generator. The District also requested that a Rough-Order-Magnitude (ROM) cost estimate be developed to compare change order generator package costs to the generators included with the contract documents. This task includes the additional level of effort for the design of two additional generators, and development of ROM costs.

#### **Task 7.6 – Schneider SCADA Integration Support**

Amendment 3 included 40 hours of as-needed professional services in support of Schneider SCADA integration for Perris II. The anticipated services included attendance at Schneider coordination meetings, review of integration work plans and general SCADA integration consultation. As of August 27, 2020, Black & Veatch has provided over 20 hours of professional services including meeting attendance and providing revisions to the Perris II Network Diagram. It is anticipated that additional level of effort will be required to further support project SCADA Integration throughout the project duration. This task includes an additional 40 hours of as-needed professional services.



**ENGINEERING SERVICES DURING CONSTRUCTION**  
**AMENDMENT 4 FEE PROPOSAL**  
**EASTERN MUNICIPAL WATER DISTRICT**  
**PERRIS II DESALTER**  
**BLACK & VEATCH**



Task No.	Description	Project Manager	Senior Technical Specialist II	Project Engineer / Technical Specialist	Staff Engineer	Senior Process Engineer / Senior Operations Specialist	Senior Struct, Arch, & Bldg Mech Eng	Struct, Arch, & Bldg Mech Eng	Senior Electrical Engineer	Electrical Engineer	Senior I&C Engineer	I&C Engineer	B&V Total Hours	Total B&V Labor	Indirect Expense (\$8.75/hr)	Sub Expense	Direct Expense	Total Fee
		\$235	\$225	\$195	\$135	\$235	\$185	\$140	\$245	\$140	\$185	\$140						
<b>4.0</b>	<b>OFFICE ADMINISTRATION</b>																	
4.1	Shop Drawing and Submittal Reviews	16		240	360	24	120	380	120	380	120	380	2,140	\$338,200	\$18,725			\$356,925
4.2	RFI Reviews and Responses	12	48	260	60		240		180		180		980	\$194,220	\$8,575			\$202,795
	<b>Task 4.0 Subtotal</b>	<b>28</b>	<b>48</b>	<b>500</b>	<b>420</b>	<b>24</b>	<b>360</b>	<b>380</b>	<b>300</b>	<b>380</b>	<b>300</b>	<b>380</b>	<b>3,120</b>	<b>\$532,420</b>	<b>\$27,300</b>	<b>\$0</b>	<b>\$0</b>	<b>\$559,720</b>
<b>7.0</b>	<b>Design Services During Construction</b>																	
7.3	Stand-by Generator Connection Design			12					20	36			76	\$13,560	\$665			\$14,225
7.6	Schneider SCADA Integration Support										40		40	\$7,400	\$350			\$7,750
	<b>Task 7.0 Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>40</b>	<b>\$7,400</b>	<b>\$350</b>	<b>\$0</b>	<b>\$0</b>	<b>\$21,975</b>
	<b>AMENDMENT TOTAL</b>	<b>28</b>	<b>48</b>	<b>500</b>	<b>420</b>	<b>24</b>	<b>360</b>	<b>380</b>	<b>300</b>	<b>380</b>	<b>340</b>	<b>380</b>	<b>3160</b>	<b>\$539,820</b>	<b>\$27,650</b>	<b>\$0</b>	<b>\$0</b>	<b>\$581,695</b>
<b>Amendment Total</b>																		<b>\$581,695</b>