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September 20, 2018

City of Hollywood
Department of Public Utilities
1621 N. 14th Ave.
Hollywood, FL 33022

Attention: Steve Joseph, PE

Subject: Automation and SCADA Improvements for Optimization of the SRWWTP's Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station.

Thank you for the opportunity to develop this scope of work (SOW) to support the City of Hollywood's (City) Department of Public Utilities with the development of automation and SCADA improvements for the optimization of the Southern Regional Wastewater Treatment Plant's (SRWWTP) unit processes. The SOW presented below comprises the tasks that should be performed, as part of Phase III of the SRWWTP Automation Project, to optimize the operations of the Screening, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station, through the implementation of automation and SCADA improvements.

BACKGROUND

The SRWWTP is a wastewater treatment facility permitted at 55.5 MGD consisting of two mechanical bar screens, followed by three grit removal tanks, and an influent pump station, two oxygenation tanks consisting of five trains having four cells each, eight clarifiers, gaseous chlorination system, effluent pump station, odor control system, thickening and dewatering facilities, AA residual treatment system, oxygen generation plant and seven standby emergency generators to provide continuous disinfection and effluent pumping.

Some of this equipment is currently controlled manually by Operations professionals, as the existing SCADA system within the unit processes lacks the necessary level of automation to monitor and control the processes from a Human Machine Interface (HMI) in the control room. The lack of automation limits the level of efficiency that could be achieved during the operation of these unit processes. As a result, the City has identified, as an operational efficiency goal, the need to increase the level of automation at its unit processes to allow for automatic or semi-automatic control from the HMI in the control room.

The SCADA system that comprises the unit processes that are part of Phase III for this SOW includes a total of seven (7) PLCs, detailed as follows:



Screening Building (PLC 1a & 1b I/O)

- Two bar screens

Influent Degritting Building (PLC 2 I/O)

- Three grit chambers
- Six grit pumps
- Five grit cyclones
- Three scrubber recirculation pumps
- Seal water booster pump
- Two scrubbers
- Two scrubbers fans
- Two caustic soda metering pumps
- Sample pumps
- Instrumentation, including flow meters, pump discharge pressure indicators, seal water pressure indicators, hydrogen sulfide monitor, and chlorine residual analyzer.

Reuse/Non-potable Water Treatment (PLC 4 I/O)

- Four reuse filters and four non-potable water filters
- Six filter feed pumps (Three low saline and three high saline pumps)
- Two Chlorine Contact Tanks(CCT) (One low and one high saline tank)
- Reuse storage tank 1
- Polymer feed systems for reuse, non-potable water, low and high saline
- Two strainers (One low saline and one high saline)
- One low saline wet well
- One filter feed pump station sump
- Seal water system
- Three air compressors
- Two raw reuse water equalization tanks

- Instrumentation for the filter system, CCTs, reuse storage tank and wetwells include flow meters, turbidity meters, pH meters, chlorine residual, conductivity meter, level meters

Influent Pump Station (PLC 5 I/O)

- Five influent pumps with VFDs
- Five pump discharge check valves
- Instrumentation, including flow meters, pump discharge pressure indicators, seal water pressure indicators

RAS Pump Station No. 3 (PLC 9 I/O)

- Four RAS pumps with VFDs
- Two Clarifiers 5 and 6
- Instrumentation, including flow meters, pump discharge pressure indicators, seal water pressure indicators
- The City requires a pump rotation sequence to be included in the programming for these RAS pumps

North Electrical Service Center (PLC 11 I/O)

- Four generators
- Fuel storage day tanks
- Fuel storage containment sump
- Ten feeder breakers

Reuse Water Pump Station (PLC 12 I/O)

- Three reuse pumps
- Two reuse storage tanks
- Five check valves
- Instrumentation, including flow meters, pump discharge pressure indicators, and seal water pressure indicators, tank level indicators.

Task 100 – Data Gathering, Review and Field I/O List Verification

1. Data Gathering and Review. Black & Veatch will review existing drawings and Operation and Maintenance manuals of the Screening Building, Degritting Building, Reuse/Non-

potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station.

2. PLC panels and field I/O documentation, PLC communications network drawings, and electrical diagrams of the process equipment will be provided by the ICE Manager to determine the configuration and functionality of the existing systems. As part of the review, Black & Veatch will export the iFix HMI tags and PLC I/O configuration program and compare this to the existing drawings.

A draft I/O list will be created based on the information provided by the City. The City has indicated that the existing drawings and programming applications are not as-built and will need to be field verified.

3. Field I/O List Verification. Black & Veatch will provide one engineer to field verify (for a maximum of eight business days) the existing I/O in PLCs 1a/1b, 2, 4, 5, and 11. Using the draft I/O list developed during Task 1, each field I/O signal terminated in the PLC panel will be identified and verified that it is working properly. The output of this effort will be an updated I/O list for each PLC. The City will provide one technician to assist the engineer during the I/O field verification.

Black & Veatch will coordinate with the ICE Manager to gain an understanding of the drawings, PLCs, field instrumentation and equipment. In addition, Black & Veatch will coordinate with the ICE Manager to update the existing SCADA system network architecture drawings to reflect current conditions. Black & Veatch will scan the City's existing PLC panel drawings to PDF, if not already in PDF format, and field notes red-lined mark-ups of the PDFs will be provided as part of this work. No AutoCAD panel drawings will be created; however, may be provided as supplemental services to this SOW.

4. Following completion of the field investigations a working wrap-up meeting will be held with the ICE Manager and selected Operations staff to discuss findings, HMI and PLC standards and preferences, and identify outstanding issues.
5. Automation System Verification. Black & Veatch will perform field investigations with the ICE manager and selected Operations staff to determine if the existing equipment, instrumentation, control and electrical systems can support increased levels of automatic control. Following completion of the field investigations and control strategy development, Black & Veatch will provide a summary of the findings and identify the items that the City will need to upgrade to further increase automation. Examples of improvements may include addition or replacement of instrumentation, actuators, motor controls, variable frequency drives or process equipment. Implementation of these improvements are not part of this SOW, but could be provided as supplemental services to this task order.

Task 200 – Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station No. 3 (PLC 9), North Electrical Service Center (PLC 11), Reuse Water Pump Station (PLC 12), PLCs and HMI Control Strategies

1. Operations Review. Black & Veatch will meet with the ICE Manager and selected Operations staff to coordinate access to equipment and review, from a control and automation perspective, the operating procedures for the Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station. A Black & Veatch instrumentation and controls engineer, process engineer, and operations specialist will visit the SRWWTP site for a maximum of two business days. The team will review the City's operational procedures and processes associated with start-up, operations, and shutdown of the screens, degritting system, reuse water filter system, influent pumping station, reuse water pumps and standby generators.
2. Based on information gathered above, Black & Veatch will develop control strategies and, if necessary, update the I/O listing for the Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, North Electrical Service Center, and Reuse Water Pump Station that will serve as the basis for the PLC and HMI programming efforts described in Task 300 below.
3. A draft of the control strategies will be provided to the ICE Manager for review and comment. After a two-week review period, comments will be incorporated and the final control strategies will be prepared.
4. The Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station control strategies will utilize the PLC and HMI standards and conventions developed under the previous Automation Control Project phases and updated based on the work performed in this phase. Black & Veatch will update the Standards and Conventions document to incorporate changes required for the Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station.
5. Implementation of the control strategies in the PLC and HMI may require control system equipment and hardware changes such as new PLC processors, PLC input/output cards, new instrumentation, network hardware, and communication cable. As an appendix to the Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station control strategies, Black & Veatch will prepare a brief narrative description of the control system equipment and

hardware improvements that are required. The appendix may also include an updated SCADA system network architecture drawing including these improvements. Detailed connection diagrams, updated PLC panel drawings, P&IDs and construction specifications are not included as part of this SOW. The City will be responsible for furnishing and installing new PLC equipment, instrumentation and network improvements identified prior to the commissioning of the programming improvements.

Task 300 – Screening Building (PLC 1a & PLC 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station No. 3 (PLC 9), North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12) PLCs and HMI Programming

1. Black & Veatch will re-program PLCs 1a & 1b, 2, 4, 5, 9, 11, and 12 based on the control strategies developed in Task 200.
2. Re-programming of PLC 1a & 1b will affect the communications to the existing Operator Interface Terminals (OIT) connected to PLC 1a & 1b. Black & Veatch will re-configure the OITs to connect to the re-programmed PLCs.
3. Black & Veatch will provide new iFix graphic displays for the Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station, based on the control strategies developed in Task 200. Black & Veatch will review with Operations font size and colors prior to finalizing graphic displays.
4. Black & Veatch will provide new iFix graphics for the ASCO Switchgear in the North Electrical building. The ASCO switchgear data is anticipated to be read from a Wonderware HMI that is currently connected to the switchgear controls.
5. Black & Veatch will utilize iFix historian tools to map existing tag names to the new standard tag names to retain access existing historical data.
6. Programming will include tagging updates to existing trends.
7. Programming will be based on the final I/O list developed in Task 100 or updated in Task 200. An additional update to the I/O list, beyond Task 200, requiring changes to the programming or iFix may be provided as a supplemental service to this SOW.
8. Reports development will not be part of the Programming SOW. If desired by the City, reports development may be provided as supplemental services to this SOW.

Task 400 – Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station No. 3 (PLC 9), North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12)) PLCs and HMI Commissioning

1. PLC and HMI Commissioning will commence once the City has installed any the Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station equipment, hardware and/or instrumentation improvements necessary to implement the automation control strategies identified in Task 300, as necessary to implement the automation control strategies.
2. Black & Veatch, in a coordinated effort with City ICE staff, will download the PLC programs developed in Task 300 and commission the I/O, database, graphic screens and control logic on a system-by-system basis, as defined herein.
3. City ICE staff will assist in loop checks, testing, startup and commissioning activities.
4. Commissioning activities will include final documentation and correction of punch list items.
5. The level of effort for the Commissioning activities is based on the following:
 - a. A maximum of thirty business days for PLCs 1a & 1b, 2, 4, 5,9, 11 and12, including HMI displays.

Task 500 – Operations and Maintenance Staff Training

Black & Veatch will provide an operations specialist to develop and conduct system training sessions for the City's Operations and Maintenance staff. The training sessions will focus on the system design, control and automation concepts for the SCADA system and treatment processes, as identified in the SOW. Four sessions of four hours over a period of four consecutive business days, will be provided for each major process system (Screening, Degritting, Reuse/Non-potable Water Treatment System, Influent Pump Station, RAS Pump Station No. 3, North Electrical Service Center, and Reuse Water Pump Station). Training will be provided as follows:

1. PowerPoint slides will be prepared and distributed for each session. The document will be comprised of a PowerPoint and control information topics. An electronic version (PDF) of the PowerPoint presentation will also be provided.
2. Training will be conducted at the SRWWTP site.

Hands-on-training will be provided with individual operators while on site during the training. A Black & Veatch operations specialist will be available to work with Operations staff at the workstation in the control room to assist operators in understanding the new automation and control system. The training will be delivered over a period of four business days to the City Operations and Maintenance staff.

SCADA System Training Session: Black & Veatch will provide an HMI & PLC programmer specialist to develop and conduct system training sessions for the City's Operations and Maintenance staff. The training sessions will focus on detail programming of the HMI & PLC system. A maximum of four days will be provided for the advance training.

Task 600 – PLC Drawings Update

Black & Veatch will update the PLC drawings for 16 PLCs, including the Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Chlorine Facility (PLC 3), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), Effluent Pump Station (PLC 6), WAS & RAS Pumping (PLC 7), North Electrical Service Center (PLC 11), RAS Pump Station No. 3 (PLC 9) Reuse Water Pump Station (PLC 12), RAS Pump Station No. 2 (PLC 8), Influent Distribution Box (PLC 10), Oxygenation Train (PLC 10), Dewatering System (PLC 13), Sludge Stabilization (PLC 14), RAS Pump Station 4 (PLC 15), and Deep Injection Well Pump Station (PLC 16). Black & Veatch will update the existing PDF PLC I/O sheets to echo what the new I/O list reflects. The PDFs will be updated per the following assumptions:

- Drawings updates will only include the changes performed by Black & Veatch and not work by others.
- No CAD work is to be performed.
- All edits will be to the PDF files using a PDF editor.
- New borders are not to be provided.
- Some drawing sets are set up as 1 loop per sheet. Formats will not be changed.
- Some drawing sets show logic symbols for Main Control. Modifications of logic symbols are not to be made.
- Some drawing sets will require the City to markup sets to reflect deleted equipment (i.e. scrubber systems on the solids PLC-13/14).
- A maximum of 240 drawings will be updated as part of this task.

Task 700 – Additional Engineering Services (Contingency)

Black & Veatch may provide additional services, as requested by the City, beyond the level of effort of the scope of work outlined in Tasks 100 through Task 600. Engineering Services performed under Task 700 must be initiated by a separate written Notice to Proceed issued by the City's Project Manager.

WORK TO BE PERFORMED BY THE CITY

1. The City will provide PLC panel and field I/O documentation, PLC communications network drawings, and electrical diagrams of the process equipment.
2. The City will provide one technician to assist the field engineer during the I/O field verification.
3. The City's ICE Manager will review the control strategies and standard operating procedures developed and provide comments to Black & Veatch.
4. The City will be responsible for furnishing and installing all new PLC equipment, instrumentation and network improvements identified prior to the commissioning of the programming improvements.
5. PLC and HMI Commissioning will not commence until the City has installed any equipment, hardware and instrumentation improvements necessary to implement the automation control strategies.
6. City ICE staff will assist in loop checks, testing, startup and commissioning activities.
7. City will provide access to Screening System, Degritting System, Reuse/Non-potable Water Treatment System, Influent Pump Station, North Electrical Service Center, RAS Pump Station No. 3 and Reuse Water Pump Station equipment during commissioning and make temporary provisions including manual control, temporary wiring, temporary networks, etc., to maintain plant operations during commissioning.
8. City will make ICE staff available to participate in the operations training.
9. City will provide the latest version of PDF file for PLC panels.
10. City will provide the correct terminal numbers for field equipment.
11. City will markup PLC drawing sets, as needed, to reflect deleted equipment and changes.

SUPPLEMENTAL SERVICES

The following items are not included in this SOW and can be provided as supplemental services to this Task Order.

1. Preparation of AutoCAD panel drawings.
2. Programming will be based on the final I/O lists developed. Additional programming or iFix as a result of additional updates to the final I/O list.
3. Additional updates to the final I/O list developed beyond Task 200.
4. Reports development.

PROJECT SCHEDULE

Black & Veatch will perform the services in accordance with the following schedule:

Task Series	Task Description	Schedule
PHASE III – Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), North Electrical Service Center (PLC 11), RAS Pump Station No. 3 (PLC 9) and Reuse Water Pump Station (PLC 12)		
Task 100	Data Gathering and Review and Field I/O List Verification	To be completed 6 weeks after Kick-off Meeting
Task 200	Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12) PLCs and HMI Control Strategies	To be completed 6 weeks after Task 100 has been completed
Task 300	Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12) PLCs and HMI Programming	To be Completed 18 weeks after Task 200 has been completed
Task 400	Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12) PLCs and HMI Commissioning	To be Completed 16 weeks after Task 300 has been completed
Task 500	Operations and Maintenance Staff Training	To be completed 2 weeks after Task 400 has been completed
Task 600	PLC Drawings Update	To be completed 4 weeks after Task 100 has been completed
Task 700	Additional Engineering Services (Contingency)	Per City's Request
Total Project Duration		56 weeks

We estimate that project execution should not exceed 56 weeks. We will work closely with the City to minimize project duration and impact to SRWWTP operations as much as practical.

PROJECT COST

The engineering services for this project will be performed on a Not-to-Exceed basis in the amount of \$693,994, as detailed in the table below. This amount includes a contingency of \$25,000.00, which may be used only after receiving approval from the City. Monthly invoices that will be submitted to the City based on project progress.

Task	Cost
PHASE III – Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5A/B), RAS Pump Station No. 3 (PLC 9), North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12)	
Task 100: Data Gathering, Review and Field I/O List Verification	\$61,080.00
Task 200: Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station No. 3 (PLC 9), and North Electrical Service Center (PLC 11) PLCs and HMI Control Strategies	\$99,570.00
Task 300: Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station No. 3 (PLC 9), and North Electrical Service Center (PLC 11) PLCs and HMI Programming	\$234,555.00
Task 400: Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station No. 3 (PLC 9), and North Electrical Service Center (PLC 11) PLCs and HMI Commissioning	\$152,775.00
Task 500: Operations Staff Training	\$43,914.00
Task 600: PLC Drawings Updates	\$77,100.00
Task 700: Additional Engineering Services (Contingency)	\$25,000.00
Total Phase III	\$693,994.00

We look forward to the opportunity to continue to assist the City with this innovative and important project. Please, feel free to contact me with any questions at (954) 465-6872.

Very truly yours,

BLACK & VEATCH CORPORATION



Rafael E. Frias III, PE
Associate Vice President

cc: Francois Domond, PE
Kellvy Angeles
Jeff Jiang, PE
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City of Hollywood, FL
Automation and SCADA Improvements for Optimization of the SRWWTP's Screening Building, Degritting System,
Reuse Water Control Building, Influent Pump Station, RAS PS No. 3, North Electrical Service Center, and Reuse Water Pump Station
Level of Effort Estimate - Phase III



Task	Description	Project Director	Sr. Project Manager	Engineering Manager	National Practice Leader	Sr. Technical Specialist	Senior Engineer	Project Engineer II	Senior Engineer II	Sr. Engineering Technician	Senior Administrator	Administrative Assistant	Subs and Expenses			Totals	
													Reproduction	Mark-up	Total	Hours	Cost
PHASE III – Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse Water Control Building (PLC 4), Influent Pump Station (PLC 5), RAS Pump Station 3 (PLC 9) North Electrical Service Center (PLC 11), and Reuse Water Pump Station (PLC 12)																	
Task 100	Data Gathering, Review and Field I/O List Verification																
100	Data Gathering and Review and Field I/O List Verification	4	12	24	16	40			240		8		\$0.00	\$0.00	\$0.00	344	\$61,080.00
	Subtotal	4	12	24	16	40	0	0	240	0	8	0	\$0.00	\$0.00	\$0.00	344	\$61,080.00
Task 200	Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent PS (PLC 5), North Electrical Service Center (PLC 11), and Reuse Water PS (PLC 12) PLCs and HMI Control Strategies																
200	PLC and HMI Control Strategies	8	32	60	40	80	40		240	40	8	8	\$100.00	\$10.00	\$110.00	556	\$99,570.00
	Subtotal	8	32	60	40	80	40	0	240	40	8	8	\$100.00	\$10.00	\$110.00	556	\$99,570.00
Task 300	Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent PS (PLC 5), North Electrical Service Center (PLC 11), and Reuse Water PS (PLC 12) PLCs and HMI Programing																
300	PLC and HMI Programming	4	16	48	20	557		605			8		\$0.00	\$0.00	\$0.00	1,258	\$234,555.00
	Subtotal	4	16	48	20	557	0	605	0	0	8	0	\$0.00	\$0.00	\$0.00	1,258	\$234,555.00
Task 400	Screening Building (PLC 1a & 1b), Degritting Building (PLC 2), Reuse/Non-potable Water Treatment System (PLC 4), Influent PS (PLC 5), North Electrical Service Center (PLC 11), and Reuse Water PS (PLC 12) PLCs and HMI Commissioning																
400	PLC and HMI Commissioning	4	20	32	20	401		307			8		\$0.00	\$0.00	\$0.00	792	\$152,775.00
	Subtotal	4	20	32	20	401	0	307	0	0	8	0	\$0.00	\$0.00	\$0.00	792	\$152,775.00
Task 500	Operations Staff Training																
500	Operations Staff Training	4	20	32		28	103	24			16	64	\$200.00	\$20.00	\$220.00	291	\$43,914.00
	Subtotal	4	20	32	0	28	103	24	0	0	16	64	\$200.00	\$20.00	\$220.00	291	\$43,914.00
Task 600	PLC Drawings Update																
600	PLC Drawings Update	4	16	28					368	40	12	8	\$200.00	\$20.00	\$220.00	476	\$77,100.00
	Subtotal	4	16	28	0	0	0	0	368	40	12	8	\$200.00	\$20.00	\$220.00	476	\$77,100.00
Task 700	Additional Engineering Services (Contingency)																
700	Additional Engineering Services (Contingency)													\$0.00	\$0.00	0	\$25,000.00
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	\$0.00	\$0.00	\$0.00	0	\$25,000.00
	Phase III Totals	28	116	224	96	1,106	143	936	848	80	60	80	\$500.00	\$50.00	\$550.00	3,717	\$693,994.00
	Hourly Rates	\$275.00	\$205.00	\$175.00	\$245.00	\$225.00	\$158.00	\$150.00	\$165.00	\$126.00	\$100.00	\$80.00					
	Phase III Totals	\$7,700.00	\$23,780.00	\$39,200.00	\$23,520.00	\$248,850.00	\$22,594.00	\$140,400.00	\$139,920.00	\$10,080.00	\$6,000.00	\$6,400.00			\$550.00	3,717	\$693,994.00