

**BOARD ACTION/DISCUSSION ITEMS
JANUARY 2013 – MARCH 2013**

PRIORITY*	PROJECT/ISSUE	TYPE OF ACTION	TIMING**
<i>AS NEEDED</i>			
H	Update on LCA/City 537 Plan Study	Status Report	As needed
H	Acquisition/Growth Strategy Activities	Status Report	As needed
H	Jordan Creek Wastewater Plant	Status Report	As needed
<i>WITHIN 45 DAYS</i>			
M	Operations Department Career Path Program Development	Approval	Jan (B)
M	Employee Manual Update	Approval	Jan (B)
H	Route 309 Crossing @ Sand Spring Road – Construction Phase	Approval	Feb(W/B)
<i>WITHIN 75 DAYS</i>			
M	2013 WLI Manhole PCA	Approval	Feb (B)
H	LCA Facilities Emergency Power Project- Construction Phase	Approval	Feb (B) or Mar (W)
H	Lynn Township WTP Improvements, Phase 1&2- Permitting/Bid Phase	Approval	Mar (B)
1/28/12	January Board Meeting		
2/11/12	February Workshop Meeting		
* H – High			** (W) – Workshop
M – Medium			(B) – Board
L – Low			(W/B) - Either

LEHIGH COUNTY AUTHORITY
WORKSHOP AGENDA
Monday, January 14, 2013 – 12:00 PM

INITIAL ITEMS *(Collectively 5 Minutes)*

1. **Identify items for January Board Meeting**

- Review Board Discussion items, January 2013 – March 2013

ACTION/DISCUSSION ITEMS

1. **Wastewater Flow Monitoring Contract Amendment** *(Approval)*

Approval is needed for a one year contract extension with ADS Environmental Services for flow monitoring services. A memo and Professional Services Authorization is attached (**blue**).

2. **Arcadia West WWTP Improvements** *(Approval)*

The Contract for the Mechanical and Plumbing work (#3) was rebid in November, with proposals received on December 5, 2012. Attached is a memo regarding proposals received and recommending award of this work to W.C. Eshenaur & Son, Inc., and an adjustment in the budget total to incorporate extra costs for both staff/professional services, for PennVest/DEP issues, the rebid process, as well as the difference from previous construction contract approvals. A Capital Project Amendment is attached (**pink**) for Board approval.

3. **Truck Waste Receiving Station (located at the LCA WTP)** *(Approval)*

The project was advertised for bid on Wednesday, November 21, 2012. A mandatory pre-bid meeting at the LCA WTP was held on December 7, 2012. Bids for General and Electrical Construction were received on December 21, 2012. Seven General Construction bids ranging from \$597,895 to \$711,450 were received and six Electrical Construction bids ranging from \$84,900 to \$120,017 were received. Capital Project and Professional Services Authorization Amendments and Contract Awards for the construction phase (**green**) are attached for Board approval.

4. **LCA Facilities Emergency Power Project- PLC Design & Installation Phase** *(Approval)*

LCA Staff working with our design consultant, Hanover Engineering Associates (HEA) and our SCADA consultant, Aptus Control Systems Inc. determined that value could be added to the Project by the utilizing a PLC based control system that would provide sequential start up of the electrical equipment at each facility allowing electrical loads to be sequenced in a way that would allow for a reduction in both the size of the generator and transfer switch needed to supply emergency power to the facility. This methodology provides project cost savings and the basis for the future SCADA telemetry and control implementation (a project that is identified in the Information Technology Master Plan Update). A Capital Project Amendment and Professional Services Authorization for the PLC Design & Installation Phase of the project is attached (**purple**) for Board approval.

INFORMATION ITEMS

1. **None.**

OTHER ITEMS

1. **None.**



Lehigh County Authority

1053 Spruce Street * P.O. Box 3348 * Allentown, PA 18106-0348
(610)398-2503 * FAX (610)398-8413 * Email: service@lehighcountyauthority.org

MEMORANDUM

Date: January 8, 2013

To: Board of Directors & Management Staff
From: Pat Mandes
Re: Signatory I&I Investigation & Remediation Project – One Year Flow Monitoring Amendment

Approvals Requested

Approvals Requested	Brief Description	Amount
Professional Services Authorization (3)	ADS Environmental Flow Monitoring Services	\$0 Time extension

Background

In 2008, the Department of Environmental Protection (DEP) required LCA and the Signatories to generate a Corrective Action Plan for the areas identified as having significant infiltration and inflow (I&I) conditions. In addition, EPA has issued a Compliance Order to the City of Allentown, LCA and all municipalities tributary to the City WWTP to eliminate all SSOs within a five year period (2014).

The LCA Signatory I&I Investigation & Remediation Project Capital Plan was developed in 2009 so that LCA could take the lead in working with the Signatories to address the overload and SSO issues. A Sewer Capacity Assurance & Rehabilitation Program (SCARP) Outline was drafted by Malcolm Pirnie that provides a formalized and planned method of evaluating the LCA and Signatory systems, prioritizing and conducting sewer rehabilitation by all the LCA Signatory Partners. A flow monitoring program is included as part of the I&I SCARP program.

Project Scope

An amendment to the ADS Environmental contract is being recommended for approval to provide an extension of the contract with ADS Environmental for long term flow monitoring, rehab effectiveness monitoring and Signatory monitoring as requested. The total compensation remains unchanged with the 2013 metering based on unit prices in the original contract. Prior approved compensation remains the same so this approval is for a time extension only. The following is a summary of the approvals and payments to date:

Original contract:	2008	\$1,009,000
Amendment 1:	2009	\$271,950
Amendment 2:	2010	\$431,081
Amendment 3:	2013	\$0
Total approved:		\$1,712,031
Spent to date:		\$1,468,312

This amendment will provide the flow monitoring needs through December 31. In 2013, the I & I Engineer's Group will determine what our future flow monitoring needs are and the work will be rebid.



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PROFESSIONAL SERVICES AUTHORIZATION

AMENDMENT NUMBER 3

Professional:
ADS Environmental Services
47 Loveton Circle
Suite N
Baltimore, MD 21152

Date: 01/03/13
Requested By: PLM
Approvals: _____
Department Head: _____
General Manager: _____

Description of Services (Work Scope, Steps, Check Points, etc.):

Provide flow monitoring services as per the LCA Request for Proposal entitled "Sanitary Sewer System Flow Monitoring for the Lehigh County Authority and Signatory Collector Systems", dated November 2008, the ADS Environmental Services Response to the Request for Proposal dated December 4, 2008 and Change Order #3. This request is to extend the contract time period to the end of 2013 and utilize the same unit prices for both long-term flow monitoring and rehab effectiveness flow monitoring as well as allow LCA and City Signatories to piggy back off the contract. This amendment is for an extension of time only and not for additional compensation.

The use of flow meters in 2013 is expected to be used exclusively for rehabilitation effectiveness monitoring in areas where lining projects are being completed by the Signatory communities.

Cost Estimate (not to be exceeded without further authorization):

The total compensation under the agreement is unchanged at \$1,726,815.

Time Table and Completion Deadline:

January 1, 2013 to no later than December 31, 2013

(For Authority Use Only)

Authorization Completion :

Approval : _____ **Actual Cost:** _____ **Date:** _____

Capital Project S-08-5, Signatory I & I Investigation/Remediation Program

Change Order #3

THIS CHANGE ORDER #3 (hereinafter referred as “Change Order 3”), is made and entered into this 15th day of December, 2012, by and between the Lehigh County Authority (hereinafter referred to as “ Owner”) and ADS LLC, a Delaware Limited Liability Company (hereinafter referred to as “ADS”).

WITNESSETH:

WHEREAS, on December 29, 2008, Owner and ADS entered into an Agreement entitled Subcontract Agreement Between Contractor and ADS for Professional or Technical Services (hereinafter referred to as “Agreement”) for flow monitoring related support services; and

WHEREAS, on July 8, 2009, Owner and ADS entered into Change Order 1 to increase the period of performance, scope of services and compensation under the Agreement; and

WHEREAS, on August 10, 2009, Owner and ADS agreed upon Amendment Number 1 increasing the period of performance, scope of services and compensation under the Agreement; and

WHEREAS, on September 27, 2010, Owner and ADS agreed upon Amendment Number 2 increasing the period of performance, scope of services and compensation under the Agreement; and

WHEREAS, Owner and ADS mutually desire to enter into Change Order 3 to modify the period of performance under the Agreement, as set forth below; and

WHEREAS, this Change Order 3 is effective as of the date first above written and will remain in effect through the end date of the Agreement, as amended, unless terminated by the Parties pursuant to the Agreement; and

WHEREAS, all other terms and conditions of the Agreement, as amended, remain unchanged unless expressly modified herein; and

WHEREAS, compensation of the Agreement, as amended, remain unchanged unless expressly modified herein

NOW, THEREFORE, in consideration of the mutual covenants, promises, conditions, and terms to be kept and performed, it is agreed between the parties as follows:

1. The Agreement end date is hereby replaced with December 31, 2013.
2. The total compensation under the Agreement is unchanged including this Change Order 3 is still \$1,726,815.

SIGNATURES ON NEXT PAGE

In Witness Whereof, the Parties hereto have executed this Change Order 3 to the Agreement, and the Owner hereby authorizes ADS to continue work:

For OWNER:

For ADS:

By: _____

By: _____

Printed Name:

Printed Name:

Title: _____

Title: _____

Date Signed: _____

Date Signed: _____



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MEMORANDUM

Date: January 4, 2013

To: LCA Board of Directors
From: Lance Babbitt, Frank Leist
Subject: Arcadia West WWTP Upgrade - Construction Phase

MOTIONS /APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization Amendment No. 2	\$54,900
2 **	Construction Contract Award- Contract No. 3, Mechanical & Plumbing Construction – <i>W.C. Eshenaur & Son, Inc.</i>	<hr/> \$112,200

** The \$16,700 difference between the bid of \$ 95,300 received on June 2, 2012 for Contract No. 3 and the \$112,200 re-bid received on December 5, 2012 is included in Capital Project Authorization Amendment No. 2 as the bid amount of \$95,300 was already approved by the Board.

CAPITAL PROJECT AUTHORIZATION AMENDMENT #2

We recommend that the Board approve the attached Capital Project Authorization Amendment No. 2 for the project. The Amendment updates the estimated costs for the Construction phase based on the bid received on December 5, 2012. The Amendment also updates the cost for the Final Design and Bidding phase to include the costs of attempting to resolve the DEP issues of the first bid, negotiating the terms of the PENNVEST loan and rebidding the contracts in June 2012 and December 2012.

CONSTRUCTION CONTRACT AWARDS

Construction proposals were originally received on March 17, 2011, but were rejected because DEP maintained that the bid documents did not meet PENNVEST requirements. Proposals were received a second time on June 1, 2012. Because of protracted negotiations with PENNVEST over the terms of the funding offer, we needed to request time extensions from the low bidders in order to award the contracts. These time extensions were received from the bidders for Contract 1 and Contract 2, and those contracts were awarded in October. However, the low bidder for Contract 3 declined to provide the necessary time extension. So, this contract was re-bid.

CONSTRUCTION CONTRACT AWARDS (continued)

Construction bids were received for Contract 3, Mechanical and Plumbing Construction, on December 5, 2012 the results are as follows

Mechanical and Plumbing	
Bidder	Amount
<i>W.C. Eshenaur & Son, Inc.</i>	<i>\$112,200</i>
Tri County Mechanical	\$116,000
K.C. MECHANICAL SERVICE, INC.	\$117,000
Five Star Inc.	\$129,000

References for W.C. Eshenaur & Son, Inc. have been checked and no issues were identified. Therefore, we recommend that the Authority award Contract 3 to W.C. Eshenaur & Son, Inc., being the lowest responsible bidder for the contract, at their proposed price of \$112,200, conditioned upon receipt of all the required documents to complete the award.

**CAPITAL PROJECT AUTHORIZATION
Amendment No. 2**

PROJECT NO.: S-10-02 BUDGET FUND: Wastewater Capital

PROJECT TITLE: Arcadia Wastewater Treatment Plant
Upgrades

- PROJECT TYPE:**
 Construction
 Engineering Study
 Equipment Purchase
 Amendment

THIS AUTHORIZATION \$54,900
 TO DATE (W/ ABOVE) \$3,501,500

DESCRIPTION AND BENEFITS:

Project Authorization Amendment No. 1 was approved by the LCA Board of Directors on June 18, 2012 following the receipt of bids for the three prime construction contracts on June 1, 2012. However, due to delays in negotiating acceptable terms for the PENNVEST financing, the low bidder for Contract 3 (Mechanical and Plumbing Construction) declined to extend the award period for his proposal. Therefore, Contract 3 was rebid, with proposals received on December 5, 2012.

This amendment updates the Staff and Professional Services items in the Final Design and Bidding phase to include the costs of the PENNVEST negotiations and the contract re-bidding. This amendment also updates the Construction Contracts and Contingencies items in the Construction Phase to reflect the recent rebid of Contract 3. For additional information please reference the cover Memo.

AUTHORIZATION STATUS:

Phase/ Item	Authorizations			LCA Share 70%
	Prior	This	Total	
Preliminary Design	\$ 286,100	\$ -	\$ 286,100	\$ 200,270
Final Design/Bidding				
Staff	\$ 55,000	\$ 35,000	\$ 90,000	\$ 63,000
Professional Services	\$ 65,000	\$ 3,200	\$ 68,200	\$ 47,740
Miscellaneous	\$ 6,000	\$ -	\$ 6,000	\$ 4,200
Subtotal	\$ 126,000	\$ 38,200	\$ 164,200	\$ 114,940
Construction				
Construction Contracts	\$ 2,519,000	\$ 16,700	\$ 2,535,700	\$ 1,774,990
Staff	\$ 164,000	\$ -	\$ 164,000	\$ 114,800
Professional Services	\$ 174,100	\$ -	\$ 174,100	\$ 121,870
Other	\$ 51,400	\$ -	\$ 51,400	\$ 35,980
Contingencies	\$ 126,000	\$ -	\$ 126,000	\$ 88,200
Subtotal	\$ 3,034,500	\$ 16,700	\$ 3,051,200	\$ 2,135,840
TOTALS	\$ 3,446,600	\$ 54,900	\$ 3,501,500	\$ 2,451,050

REVIEW AND APPROVALS:

_____	_____	_____	_____
Project Manager	Date	General Manager	Date
_____	_____	_____	_____
Capital Works Manager	Date	Chairman	Date



MEMORANDUM

Date: January 07, 2013

To: Authority Board
From: Frank Leist ,Pat Mandes
Subject: LCA-WTP Truck Waste Receiving Station & Digesters Mixer Replacement Project

Truck Waste Receiving Station - Construction Phase: Capital Project Authorization & Professional Services Amendments No. 2 & Contracts Award

MOTIONS /APPROVALS REQUESTED:

No.	Item	Amount
1	<u>Capital Project Authorization – Amendment No.3</u> Construction Phase-Truck Waste Receiving Station:	\$ 834,775
2 **	<u>Professional Services Amendment No. 3-</u> Construction Phase Truck Waste Receiving Station - <i>CET/GHD Inc.</i>	\$ 47,000
3 **	<u>Contract Awards:</u> Construction Phase Digester Mixers. <ul style="list-style-type: none"> • General Construction: <i>MGK Industries, Inc.</i> • Electrical: <i>BSI Electric</i> 	\$ 597,875 \$ 84,900

(**) *Included in the Capital Project Authorization*

GENERAL BACKGROUND

Based upon the WTP Energy Audit/Bioenergy Recovery Evaluation Study completed in August 2011, the Board in December of 2011 authorized the Design Phase for the Truck Waste Receiving Station & Primary Digesters Mixer Replacement Project (Project) at the LCA Wastewater Treatment Plant (WTP). Some details of the Project follow:

- *Constructing a Truck Waste Receiving Station:* Will allow the introduction of high strength liquid waste directly into the digesters which will (1) increase biogas production by an estimated ~114 cfm; and (2) will reduce the amount of high purity oxygen that needs to be produced resulting in an estimated annual electrical power savings of ~ \$150,000.

- Replacing the Digester Mixers: Replacing the current inefficient mixing systems in the three digesters will; (1) increase biogas production by an estimated ~31cfm; (2) reduce the amount of solids, thereby resulting in an estimated annual land application disposal cost; savings of ~\$65,900; and (3) provide estimated annual electric power savings of ~\$10,400.

Among the aforementioned benefits of this Project, will be the increased production of biogas which is necessary for the financial justification of a future CHP System project that is expected to be capable of providing approximately ~75% of the LCA-WTP electric power needs. (Note: Assumes that a minimum biogas production of 300 cfm is available for CHP system).

PROJECT STATUS

Digester Mixers: Because of long lead times the six Mechanical Draft Tube Mixers were procured in April 2012 in advance of the construction contract from Olympus Technologies. Both the General Construction and Electrical Construction Contracts have been awarded and construction is underway. The installation of the mixers is being executed by the contractors one digester at a time; as such, two operating digesters will always be maintained to assure adequate treatment capacity. OMI, our WTP contract operator will be responsible for emptying, cleaning and restarting the digesters as part of their on-going operating contract. At this juncture OMI has encountered difficulty in emptying the contents of first digester to facilitate mixer installation; as such the start of first mixer installation has been delayed until February 2013 until the mixer can be properly drained. A non-monetary change order for extended time for the contractors will be executed. Electrical construction is proceeding as planned. . The installation of the mixers is expected to take 280 days to complete.

Note: When the digesters are emptied they will be inspected for defects; however, correction of any identified defects is not within the scope of this project and will be handled as an amendment.

THIS APPROVAL: TRUCK WASTE RECEIVING STATION - CONSTRUCTION PHASE

BIDDING SUMMARY

This project requires General Construction and Electrical Construction Contracts. The project was advertised for bid on Wednesday, November 21, 2012. A mandatory pre-bid meeting at the LCA WTP was held on December 7, 2012. Bids were received on December 21, 2012, the results of which follow:

General Construction	
Bidder	Amount
<i>MGK Industries, Inc.</i>	<i>\$ 597,875</i>
Heisey Mechanical, Ltd.	\$ 599,800
Johnston Construction, Inc	\$608,670
DESCCO Design & Construction	\$617,500
Blooming Glenn Contractors, Inc.	\$ 637,754
C & T Associates	\$ 671,400
LB Industries, Inc.	\$ 711,450

Electrical Construction	
Bidder	Amount
<i>BSI Electric</i>	<i>\$ 84,900</i>
High Peak Electrical.	\$ 94,350
JB Electric	\$ 110,769
Thomas L. Hoffman Electrical	\$ 117,389
Yates Electrical Services	\$ 118,950
George J. Hayden, Inc	\$ 120,017

References have been checked for the lowest responsible bidders, MGK Industries, Inc. - General Construction and BSI Electric and have identified no issues. Therefore, we recommend awarding the applicable contract to the aforementioned contractors, subject to the receipt of the necessary Performance Bonds, Insurance and other required documentation.

PROFESSIONAL SERVICES

CET/GHD, Inc. our design consultant will provide construction engineering and on-site inspection services for the construction phase of the digester mixer installation. The work will generally include:

1. Review and approve of shop drawings, samples, and tests as appropriate.
2. Organize, conduct and provide meeting minutes for the following meetings
 - a) Pre-construction- 1 meeting
 - b) Construction Progress- 2 meetings
 - c) Construction Progress- Structural only- 1 meeting
 - d) Construction Progress- Electrical only – 1 meeting
 - e) Substantial Completion – 1 meeting
 - f) Final Completion -1 meeting
3. Provide Technical Assistance to include, but not limited to responding to contractor’s RFIs, issuance of clarifications and change orders if necessary, phone consulting, copies to LCA of written and electronic job related correspondence.
4. Provide on-site inspection services including structural and electrical on an as-needed basis. It is anticipated that varied levels of inspection expertise and effort will be required.

FUTURE AUTHORIZATIONS

None Anticipated.



Lehigh County Authority

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(610)398-2503 * FAX (610)398-8413 * Email: service@lehighcountyauthority.org

**PROFESSIONAL SERVICES AUTHORIZATION
Amendment No. 3**

Professional: COMMONWEALTH
ENGINEERING &
TECHNOLOGY, INC (CET)
3655 Route 202, Suite 105
Doylestown , PA 18902

Date: January 7, 2013

Requested By: FJL/PLM
Approvals
Department Head: _____
General Manager: _____

Wastewater Capital – LCA WTP

Description of Services (Work Scope, Steps, Check Points, etc.):

Previous Authorizations- \$137,000 for Design Phase of a Truck Waste Receiving Station and Mixer Replacements; \$52,500 for Construction Phase -Digester Mixer Replacement

This Authorization- Truck Waste Receiving Station Construction Phase \$47,000:

CET will provide construction related services including but not limited to conducting pre-construction, progress and close out meetings, catalog cut / shop drawing review and approval, change orders, RFI response, technical assistance and on-site inspection.

For additional information please reference the cover Memo.

Cost Estimate (not to be exceeded without further authorization): \$236,500

Time Table and Completion Deadline: As per agreed upon schedule

(For Authority Use Only)

Authorization Completion:

Approval: _____ **Actual Cost:** _____ **Date:** _____

MEMORANDUM

Date: January 4, 2013

To: Authority Board
From: Jason Peters, Frank Leist
Subject: Lehigh County Authority Facilities Emergency Power Capabilities Project-
PLC Design & Installation Phase

MOTIONS / APPROVALS REQUESTED:

No.	Motion/Approvals	Amount
1	Capital Project Authorization Amendment No.1- <i>PLC Design & Installation Phase</i>	\$132,125
2 **	Professional Services Authorization – Aptus Control Systems, Inc.	\$ 65,125

** Included in Capital Project Authorization Amendment No. 1

PROJECT OVERVIEW/ BACKGROUND:

In May 2012, the Board approved the Design Phase of the aforementioned Lehigh County Authority Facilities Emergency Power Capabilities Project. The Project consists of installing emergency power generators and automatic transfer switches at seven water well/pumping stations, three waste water treatment plants, and the LCA Office Operations Center located in seven municipalities within Lehigh County and one water well/pumping station located in Moore Township, Northampton County. The intent of this project is to replace PPL or Met Ed power from the grid with power from an emergency generator in the event of a power loss. The size and location of both the emergency power generator and automatic transfer switch at each facility will be based upon current demands and potential future upgrades.

In the event of power outages, the proposed facility improvements will increase the reliability of water and wastewater service for our customers; and will allow full utilization of the Office Operations Center.

At present our design consultant, Hanover Engineering Associates (HEA), has provided us with 90% preliminary plans for the project and is currently in the process of preparing the construction bidding documents. We expect final plans and specifications for our review by mid January 2013.

Facilities that do not require zoning and/or other Township approvals are expected to be bid by the end of January. Barring any delays, we anticipate substantial completion of the Project by July 2013.

PLC DESIGN & INSTALLATION PHASE (THIS APPROVAL)

LCA Staff, working with HEA and our SCADA consultant Aptus Control Systems Inc. (Aptus), determined that value could be added to the Project by utilizing a PLC based control system that would provide sequential start up of the electrical equipment at each facility allowing electrical loads to be sequenced in a way that would allow for a reduction in both the size of the generator and transfer switch needed to supply emergency power to the facility. This methodology provides Project cost savings and the basis for the future SCADA telemetry and control implementation a project that is identified in the Information Technology Master Plan Update. PLC based control systems will be installed in 10 of the 12 facilities in the Project. Aptus will

design /provide the equipment, program the PLCs and provide start-up assistance technical support. The equipment will be installed by LCA Operations personnel. The following summarizes the costs and estimated net Project savings.

Item	\$
<i>Generators & Transfer Switches (1)</i>	
Without PLC controlled start-up	\$ 636,000
With PLC controlled start-up	\$ 474,000
Est. Gross Savings	\$ 162,000

<i>PLC Control Costs</i>	
Professional Services (Aptus)	\$ 65,125
Installation- by LCA Personnel	\$ 59,000
Additional Materials – provided by LCA	\$ 8,000
Est. Total PLC Control Costs	\$ 132,125

Est. Net Project Savings	\$ 29,875
---------------------------------	------------------

(1) Estimated cost based upon diesel generators, equipment only, and average of three manufacture budget quotes.

SCHEDULE

Aptus will complete the design and build for all the PLC control systems in approximately 8-10 weeks and will deliver equipment incrementally on an as soon as completed basis. It is anticipated that the installation by LCA personnel of all the PLC equipment will be completed by July 2013.

FUTURE AUTHORIZATIONS

Construction Phase

**CAPITAL PROJECT AUTHORIZATION
AMMENDMENT No. 1**

PROJECT NO.: W-12-1 **BUDGET FUND:** Water\Capital

PROJECT TITLE: Lehigh County Authority Facilities Emergency Power Capabilities Project – PLC Design & Installation Phase **PROJECT TYPE:**

THIS AUTHORIZATION \$132,125
TO DATE (W/ ABOVE) \$260,965

- Construction
- Engineering Study
- Equipment Purchase
- Amendment

DESCRIPTION AND BENEFITS:

The Project consists of installing emergency power generators and automatic transfer switches at 12 facilities located within Lehigh and Northampton Counties. The intent of this project is in the event of a power loss to replace PPL or Met Ed power from the grid with power from an emergency generator. The size and location of both the emergency power generator and automatic transfer switch at each facility will be based upon current demands and potential future upgrades.

In the event of power outages the proposed facility improvements will increase the reliability of water and wastewater service for our customers; and will allow full utilization of the Office Operations Center.

THIS AMENDMENT –PLC Design & Installation Phase

Working with our design consultant Hanover Engineering Associates (HEA) and our SCADA consultant Aptus Control Systems Inc. (Aptus) it was determined that by utilizing a PLC based control system that would provide sequential start up of the electrical equipment at each facility it would allow for a reduction in both the size of the generator and transfer switch needed to supply emergency power to the facility. This methodology provides Project cost savings and the basis for the future SCADA telemetry and control implementation a project that is identified in the Information Technology Master Plan Update.

Please reference the cover Memo for additional information.

Authorization Status:

Previous Authorizations	
Design Phase (<i>exclusive of PLC Control</i>)	\$128,840
Requested This Authorization	
PLC Design & Installation Phase	
Professional Services (Aptus)	\$65,125
Installation- by LCA Personnel	\$59,000
Additional Materials– provided by LCA	\$8000
Total This Authorization	\$132,125
Future Authorization	
Construction Phase	\$1,300,000
Total Estimated Project	\$1,560,965

REVIEW AND APPROVALS:

_____	_____	_____	_____
Project Manager	Date	General Manager	Date
_____	_____	_____	_____
Capital Works Manager	Date	Chairman	Date



Aptus Control Systems, Inc.

Brian K. Hibshman, P.E.
President
Aptus Control Systems, Inc.
332 East Oak St
Palmyra, PA 17078

December 13, 2012

Mr. Jason M. Peters
Capital Works Assistance
Lehigh County Authority
1053 Spruce Street
P.O. Box 3348
Allentown, PA 18106-0348

Re: Load Staging PLC Panel Proposal

Dear Mr. Peters:

Aptus Control Systems, Inc. is pleased to provide you with this proposal to provide 10 PLC based control panels, intended for load staging at miscellaneous Lehigh County Authority Stations. These panels will be equipped with 4 relays, each controlled by separate time delays programmed into a PLC. Each relay will be a four pole double throw relay and all four normally open contacts of each relay will be wired to a terminal strip for interfacing to existing control wiring and staging of individual motor (pump and blower) operation. This will permit up to 4 load stages at each facility and will permit as many as 4 loads to be controlled per stage, for control of as many as 16 separate loads at each station. Each time there is a power outage at the site, a load staging sequence will be initiated.

Each panel will be equipped with a Modicon M340 processor with both serial and Ethernet Modbus communication ports installed in a 12 slot chassis to accommodate future expansion. A 24 VDC 16 point discrete input card and a 16 point 24 VDC discrete output card will be employed to provide input and output interface to the PLC and also to permit future expansion of the I/O count. The PLC components (power supply, processor, chassis, and I/O modules) will be of the same make and model as I/O modules used in other Lehigh County Authority facilities in order to facilitate future integration into the SCADA system, as well as to maintain consistency for spare parts stocking and ease of maintenance.

The control enclosures themselves will be industry standard gray painted mild steel NEMA 4 & 12 rated for installation indoors or outdoors. The enclosure's layout and wiring will all be identical for this project; however, as they will be installed in various types of stations, they will be oversized and configured for future expansion/customization to permit interfacing to additional instrumentation and controls as well as the Authority's SCADA system.

Pricing:

Base Estimate: Design and provision of 10 identical control panels and associated detailed wiring diagrams. The panels will be configured to stage four separate groups of loads with up to four loads per stage. The Panels will be PLC based, with Modicon M340 Processors, 12 slot chassis, and (16) 24 VDC discrete inputs and (16) 24 VDC discrete outputs, as well as 4 DPDT relays with Normally Open contacts pre-wired to a terminal strip for ease of field wiring.

10 Units @ \$6,512.46 Each \$65,124.60 Total

December 13, 2012

Page 2

Payment Terms:

- 30% upon Receipt of Order
- 30% upon submittal of final design drawings
- 30% for delivery of panels (3% per panel)
- 10% upon completion of startup (1% per panel)

Additional services, can be quoted upon request, or provided on a time and materials basis.

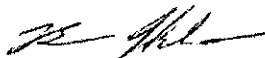
Clarifications:

- Aptus has included a total of 4 days of startup assistance for system commissioning, following completion of panel installation and field wiring. Additional days can be quoted or provided on a time and materials basis.
- Installation to be provided by others.
- Interfacing of control panel to existing motor control circuits to be determined and performed by Lehigh County Authority Electricians.
- While the panels are built to be compatible with the SCADA system, actual connection to the SCADA system will require additional design, hardware, wiring, and software; which are not included in this estimate.

Synopsis:

Aptus Control Systems appreciates the opportunity to submit this proposal and looks forward to your favorable review. If you agree with the content of this Proposal and the attached Standard Terms and Conditions, please sign below and return an executed copy to me. If you have any questions or require additional information, please feel free to contact me.

Sincerely,



Brian K. Hibshman, P.E.
President

ACCEPTED AND AGREED

as of this ____ day of _____, 2013

Lehigh County Authority

By: _____
Name: _____
Title: _____

STANDARD TERMS AND CONDITIONS

1. Agreement: These Standard Terms and Conditions and the Aptus Control Systems, Inc. ("Aptus") Proposal (the "Proposal") to which these terms are attached constitute the final, complete and exclusive written expressions of the agreement between Aptus and Customer as to either the sale of the products or the provision of services (collectively, the "Services") set forth on the Proposal (collectively, the "Agreement"), and supersede all prior oral or written agreements with respect to the same. Any attempted modification of this Agreement by Customer, and any additional or different terms included in any purchase order, in any other document responding to any offer, or in subsequent documents, purchase orders or acknowledgment requests are hereby objected to unless conspicuously and expressly assented to in writing by both parties. Finally, Customer acknowledges and agrees that it has not been induced to enter into this Agreement by any oral or written representation, guaranty or warranty made by Aptus, its employees, agents or representatives other than as expressly set out in this Agreement.

2. Effective Date: Term. This Agreement shall be effective as of the acceptance date set forth on the Proposal and shall continue until the Services have been completed or the Agreement has been terminated, whichever first occurs.

3. Price and Payment Terms: If Aptus does not receive payment for the total amount of an invoice within thirty (30) days of the date of such invoice, interest compounded at one and one half percent (1.5%) per month shall thereafter be added to all amounts unpaid and outstanding. Aptus Control Systems shall have the right to cease further work, to retain or repossess any and all deliverables contemplated by the Proposal (a "Deliverable"), and shall have a lien upon the Deliverables. Customer agrees that if legal proceedings are filed to collect any unpaid invoice(s), Customer shall also pay all costs of collection, including attorneys' fees.

4. Confidentiality: All information provided by one party marked as confidential, proprietary or trade secret shall be maintained as such by the other party, and will not be disclosed to any outside person or entity; however, the parties recognize that Customer is subject to the Pennsylvania Right-to-Know Act ("RTKA"), may be required by the RTKS to disclose information considered a Public Record and definitions in the RTKA shall guide interpretation of this language, including the definitions of "Confidential Information" and "Trade Secrets". If the party receiving such information is served with a subpoena or other legal process seeking the disclosure of such information, the party being served with the subpoena, etc., will immediately notify the party providing such information, which party shall have the sole right to oppose such disclosure to the party seeking such disclosure. Nothing in this Agreement restricts or prohibits Aptus from providing similar services to others, but Aptus shall keep confidential any Customer confidential, proprietary or trade secret information so marked.

5. Intellectual Property: Customer and Aptus shall each retain ownership of their respective pre-existing Intellectual Property, and no license therein, whether express or implied, is granted by this Agreement or as a result of the Services performed hereunder; Aptus shall retain ownership of and unrestricted right to use any Intellectual Property that includes inventions (whether or not patentable), works of authorship, trade secrets, techniques, know-how, ideas, concepts, algorithms, and other intellectual property incorporated into any Deliverable and first created or developed by Aptus in providing the Services.

6. Limited Warranty: Aptus will make all reasonable attempts to pass on to Customer equipment warranties as offered by a manufacturer (Aptus' labor and expenses excluded). APTUS WARRANTS ONLY THAT WORK UNDER THIS CONTRACT WILL BE PERFORMED USING PROFESSIONAL JUDGMENT, AND EXPRESSLY DISCLAIMS, AND CUSTOMER HEREBY WANES, ANY AND ALL OTHER EXPRESS OR IMPLIED STANDARDS, GUARANTEES, OR WARRANTIES, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE.

7. Indemnification and Limitation of Liability: (a) Customer acknowledges and agrees that Aptus has not contributed to the presence of hazardous substances, hazardous wastes, petroleum products, asbestos, chemicals, pollutants, contaminants, or any other hazardous or toxic

materials (hereinafter "Hazardous Materials") that may exist or be discovered in the future at the site at which the Services shall be provided and that Aptus does not assume any liability for the known or unknown presence of Hazardous Materials; (b) Customer shall to the fullest extent permitted by law indemnify and hold harmless Aptus and its employees, agents, officers, directors, and subcontractors from and against all suits, actions, legal or administrative proceedings, damages, costs, expenses, and liabilities (hereinafter collectively, the "Liabilities") brought or incurred by Customer, ~~third parties, or employees of Customer~~, including but not limited to attorneys' fees and court costs, that are caused by or related to any negligent act or omission of Customer or ~~third party~~ arising from or related to the Agreement or Services provided; (c) Customer's obligation to indemnify Aptus includes Liabilities that: (1) are directly or indirectly caused by or incident to Hazardous Materials; (2) arise out of any State or Federal statute relating to Hazardous Materials; and/or (3) arise directly or indirectly from any professional services, report, data, or assessment furnished by Aptus its employees, agents, or subcontractors under this contract; this additional indemnification obligation shall not apply to Liabilities to the extent resulting from the ~~gross~~ negligence or willful misconduct of Aptus its employees, agents, and subcontractors; (d) Customer's exclusive remedy for any cause of action arising in connection with this Agreement is expressly limited to replacement of or repayment of the price paid for the Services, or the maximum limits of Aptus' liability insurance covering such, whichever is higher. Aptus and its employees', agents', officers', directors', and subcontractors' total liability to Customer, ~~third parties, or employees of Customer~~ for any and all Liabilities, claims or damages arising out of or relating to this Agreement, howsoever caused and regardless of the legal theory asserted, including breach of contract, warranty, tort, strict liability, statutory liability or otherwise, shall not, in the aggregate, exceed the amount actually paid to Aptus under this Agreement or the maximum limits of Aptus' liability insurance covering such, whichever is higher. All such claims not brought within ~~ninety-one hundred eighty (9180)~~ days of delivery or completion of Services, ~~as determined solely by Aptus,~~ shall be deemed waived; (e) In no event shall either Aptus or Customer be liable to the other for any punitive, exemplary, special, indirect, incidental or consequential damages (including, but not limited to, lost profits, lost business opportunities, loss of use or equipment down time, and loss of or corruption to data) arising out of or relating to this Agreement, regardless of the legal theory under which such damages are sought, and even if the parties have been advised of the possibility of such damages or loss.

8. Severability: If any term or condition in this Agreement is invalid in whole or in part, it shall be severed from this Agreement and the remaining terms and conditions shall continue in force and effect.

9. Force Majeure: Neither party shall be liable for performance failures (except for payment) due to acts of God, acts of a public enemy, fires, floods, power outages, wars, civil disturbances, sabotage, terrorism, accidents, insurrections, blockades, embargoes, storms, explosions, labor disputes, failure of common carriers, Internet Service Providers, or other communication devices, acts of cyber criminals, terrorists or other criminals, acts of any governmental body, failure or delay of third parties or governmental bodies from whom an approval must be obtained, authorizations, licenses, franchises or permits, inability to obtain labor, materials, power, equipment, or transportation, or other circumstances beyond its reasonable control (collectively referred to herein as "Force Majeure Occurrences").

10. Survival. Sections 1, 3, 4, 5, 6 and 7 shall survive the termination or expiration of this Agreement.

11. The parties hereto agree that this Agreement shall be governed by the laws of the State of Pennsylvania, and that any actions between the parties arising from this Agreement shall be filed in the applicable circuit court or district court in Pennsylvania.