



LEHIGH COUNTY AUTHORITY

February 21, 2011

BOARD MEETING AGENDA

1. Call to Order
2. Review of Agenda
 - *Public Participation Sign-In Request*
3. Executive Sessions
4. Approval of Minutes
 - *January 24, 2011 Regular Meeting Minutes*
5. Public Comments
6. Election of Officers
7. Action / Discussion Items

FINANCE AND ADMINISTRATION

- *None*

WATER

- *Information Management & Technology Master Plan (ITMP) Update (Approval)*
- *Knowledge Management (KM) Program Development (Approval)*
- *GIS Mobile Application Development (Approval)*

WASTEWATER

- *Vera Cruz Sewer System (UMiIT) (Approval)*
- *Western Lehigh Wet Weather Relief Facilities Operational Optimization (Approval)*

8. System Operations Overview
9. Staff Comments
10. Solicitor's Comments
11. Other Comments
12. Adjournment

MARCH MEETINGS

Workshop Meeting
Board Meeting

March 14 – 12:00 p.m.
March 28 – 12:00 p.m.

PUBLIC PARTICIPATION POLICY

In accordance with Authority policy, members of the public shall record their name, address, and discussion item on the sign-in sheet at the start of each meeting; this information shall also be stated when addressing the meeting. Members of the public will be allowed 5 minutes to make comments/ask questions regarding non-agenda items, but time may be extended at the discretion of the Chair; comments/questions regarding agenda items may be addressed after the presentation of the agenda item. Members of the public may not request that specific items or language be included in the meeting minutes.

REGULAR MEETING MINUTES
January 24, 2010

The Regular Meeting of the Lehigh County Authority was called to order at 12:21 p.m. on Monday, January 24, 2010, Chairman Asa Hughes presiding. Other Members present at the commencement of the meeting were: Tom Muller, Richard Bohner, Emrich Stellar, Brian Nagle, Norma Cusick, and Scott Bieber. Authority Staff present were: Aurel Arndt, Bradford Landon, Frank Leist, Liesel Adam, Pat Mandes, Joseph McMahon, Douglas Young, and Cristin Keppel.

REVIEW OF AGENDA

Mr. Arndt stated there would be additional items to follow the regular agenda.

EXECUTIVE SESSION

Mr. Arndt stated no executive sessions were required.

APPROVAL OF MINUTES

December 13, 2010 Regular Meeting Minutes

On a motion by Mr. Bohner, seconded by Mr. Muller, the Board unanimously approved the minutes of the December 13, 2010 Regular Meeting as amended (7-0).

ACTION AND DISCUSSION ITEMS

2011 Water Rates (Approval)

Mr. Arndt reviewed the 2010 Water Rate Study that was conducted by Keystone Alliance Consulting. He referenced the attached presentation, noting that the interconnection with the City of Allentown and reduced growth in the service area due to the national and regional economic climate have contributed to the need for an increase in water user charges. He stated there are no proposed increases for the Fixed Charges component of the rate schedule because those charges are at or above the calculated cost of service. Mr. Arndt noted that the Authority is only proposing to increase the Volumetric Charges. Overall, the rate change increases revenues by only 4.3% but its impact varies across all of the customer classes and within customer classes. Based on 2010 average usage, the typical residential customers will be charged around \$2.70 more per quarter in 2011. Mr. Arndt then explained the possibility for future incremental rate increases to keep pace with expenses within the 5-year study period. The proposed rates would be effective April 1, 2011.

Mr. Bohner asked how customers will be notified of the increase.

Ms. Adam stated that a notice will be included in customer bills over the next few months and information will be on the Authority's website.

On a motion by Mr. Bohner, seconded by Mr. Muller, the Board unanimously adopted the new Schedule of Water Rates and Charges to adjust rates according the 2010 Water Rate study (7-0).

Laboratory Services – Wastewater Analysis (Approval)

Mr. McMahon recommended approval of a Professional Services Authorization (PSA) for CH2MHill to continue providing wastewater laboratory services for Commercial/Industrial Exceptional Strength Analysis and monthly samples of the LCA discharge to the City of Allentown. He stated that four labs submitted proposals for the contract and CH2MHill was roughly \$13,000 less than the next lowest proposal.

On a motion by Mr. Muller, seconded by Mr. Bieber, the Board unanimously approved the PSA for CH2MHill Wastewater Laboratory Services in the amount of \$38,358 (7-0).

SYSTEM OPERATIONS OVERVIEW

Mr. McMahon reported Schantz Spring has been running for about one month and staff has been working out the kinks in the system. He also noted that many Operations employees will be attending certification and educational programs over the coming months.

STAFF COMMENTS**2011 Goals**

Mr. Arndt referred to handouts and the attached presentation regarding 2011 organizational goals. He noted that each goal stems from individual Staff goals and each goal has been prioritized both individually and organizationally. Mr. Arndt reviewed the goals that were separated into four categories: organizational development, water, wastewater, and information technology.

Mr. Stellar asked if the Authority has a Master Plan.

Mr. Arndt stated there is such a Plan and the current one goes through 2030 and an update of the Master Plan is included in the Capital Plan for 2012. Discussion followed.

2010 Bonus Benchmarks

Mr. Young referred to the attached presentation. He explained there are four Threshold Benchmarks that must be met by the Authority in order for the ten Bonus Benchmarks to be considered. Mr. Young explained the bonus benchmarks relate to employee and organizational efficiency, as well as safety. He stated that eight of the ten benchmarks were met, and recommended approval of Bonus payout for employees of 1.44% of salaries, or a total of \$32,083 for all employees combined. Mr. Young also noted that the Bonus criteria will be evaluated by Staff to determine if any changes are recommended and asked any Board members to provide feedback if they feel any changes should be made as well.

Mr. Hughes commended employees for their hard work in 2010.

On a motion from Mr. Muller, seconded by Ms. Cusick, the Board unanimously approved the 2010 Bonus Benchmark payout of \$32,083 (7-0).

Residential Sprinkler Requirements

Mr. Leist reviewed a presentation regarding residential sprinklers and provided a handout including an overview of the current configuration for new construction in the Authority system. Mr. Leist noted that a manufacturer has approached the Authority and may want to present another configuration to the Board in the coming month. The Authority will continue utilizing its current configuration.

There were no objections from Board members regarding a presentation from the manufacturer.

Lynn Township Sewer Authority

Mr. Arndt reported that Lynn Township Sewer Authority (LTSA) has asked the Authority to consider providing sewer service in Lynn Township and that discussions are ongoing regarding current service and possible upgrades to the LTSA system. Mr. Arndt stated a meeting has been scheduled to discuss costs and other service issues associated with LCA sewer service. More information will be provided at the February Workshop.

SOLICITOR'S COMMENTS

Solicitor Landon had no comments.

OTHER COMMENTS

None.

EXECUTIVE SESSION

There were no Executive Sessions.

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 2:15 p.m.

Richard H. Bohner
Secretary

FINANCE & ADMINISTRATION**ACTION ITEMS**

1. None.

DISCUSSION ITEMS

1. None.

INFORMATION ITEMS

1. **Recently Purchased Investments – Certificates of Deposit (CDs)**

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Rate %
WDSR	Aurora Bank	Wilmington, NC	96,000.00	1/12/11	1/14/13	0.900
LLRI CR	PSDLAF Collateralized CD		250,000.00	1/20/11	1/19/12	0.850
LLRI CR	Independence Bank	Newport Beach, Ca	98,000.00	1/24/11	1/23/12	0.690
LLRI CR	Centennial Bank	Fountain Valley, Ca	99,000.00	1/26/11	1/26/12	0.450
WDSR	Aurora Bank	Wilmington, NC	99,000.00	2/2/11	2/4/13	0.850
WW Capac	Biscayne Bank	Coconut Grove, FI	99,000.00	2/11/11	2/11/13	1.000
Basin Street	Safra National Bank of NY	New York, NY	98,000.00	2/16/11	3/16/12	0.400

Fund Descriptions for Investments:

LLRI CR	Little Lehigh Relief Interceptor Capital Reserves
WW Capac	Wastewater Capacity
WDSR	Water Debt Service Reserve
Basin Street	Basin Street Project

WATER

ACTION ITEMS

1. **Information Management & Technology Master Plan (ITMP) Update** (Approval)

Three firms proposed on the ITMP (Malcolm Pirnie, EMA and MWH) after being short listed during the qualifications phase of selection. After reviewing the proposal and qualifications, we recommend that EMA be selected as the ITMP consultant. Approvals will be required for a Capital Project Authorization and a Professional Services Authorization. These authorizations and memo will be sent under separate cover.

2. **Knowledge Management (KM) Program Development** (Approval)

LCA received two proposals from pre-qualified consultants for the development of a Knowledge Management (KM) program to address the potential loss of institutional knowledge largely held by long-tenured employees. Eight firms submitted qualifications for the project, and three were selected to receive the RFP: Woolpert, EMA and the Delphi Group. The proposals have been reviewed, and it is recommended to engage EMA to complete a full KM needs assessment as part of a phased approach to KM. Approvals will be required for a Capital Project Authorization and a Professional Services Authorization. These authorizations and memo will be sent under separate cover.

3. **GIS Mobile Application Development** (Approval)

The RFPs for a GIS consultant to assist LCA in developing and implementing a mobile GIS application for use by our field personnel were received on Friday, December 3, 2010. The RFP was issued to four firms that were interviewed during the week of November 8: geographIT, ESRI, Wendel Duchscherer and EMA. RFPs have been reviewed and we recommend awarding these services to Wendel Duchscherer. We will be asking for both Capital Project and Professional Services Authorization approvals. These Authorizations and an accompanying memo will be sent under separate cover.

DISCUSSION ITEMS

1. ***None.***

INFORMATION ITEMS

1. **Water Meter Replacement Project, Phase 1**

Phase 1 - Vanguard Utility Service, Inc. has upgraded 3,242 of approximately 3,270 MXU-only accounts to radio-reads, and 1,471 of approximately 1,500 older meters have been replaced (which includes upgrade to radio-reads) through February 14. Change outs of 483 meters identified as prone to develop leaks at the bottom plate began on November 29. There are approximately 8 of these meters left to change out. Vanguard pulled its remaining two employees off the job site on February 14 leaving approximately 152 accounts incomplete. The vast majority involve accounts that could not be read using radio-read equipment (141). A letter was sent to Vanguard on February 17 requesting they contact us by February 24 to discuss completion of the outstanding work. We are exploring legal options should Vanguard fail to promptly resolve these matters.

Phase 2 –Notices were sent to approximately 3,200 customers in Phase 2 that are not within low pressure areas (~630 customers in low pressure areas). The notices are

intended to introduce the project to customers, and to request that meters be made accessible and recommend that a thermal expansion tank be installed.

Contract specifications are being prepared for bidding in March.

2. Interconnection with Allentown

Phase 1 - Connection at Schantz Spring – We have received the exemption from air quality plan and permitting requirements related to the emergency generator. The third-party emissions testing (required by the contract) is scheduled for February 25.

Phase 2 – Connection to City Transmission System at 26th and Chew Streets – Barry Isett & Associates is continuing to develop the necessary design documents. Easement documents are being prepared for execution by the City and Lehigh County. We expect to advertise for construction bids on March 15.

3. Water Main Replacement Project 2011 – Oakland Park (UMT)

We are on schedule to advertise this project in late March with a bid opening in late April. We expect to present the low bidder for approval at the May workshop meeting and have the contractor ready to begin construction in mid- to late June. We will require the contractor to complete all water main and service installation by early September and paving restoration by mid-November.

4. Water Main Relocation Project – Slatedale

PaDOT is widening the bridges on West Grant and Main Streets in Slatedale and our water facilities will be impacted by this effort. PaDOT opened proposals for the entire work on December 2, 2010. Bid items for the waterline relocations came in higher than estimates show. Due to timing, coordination and potential contaminated soils, we have accepted the costs as proposed. Our exposure, by PaDOT Agreement, is about \$25,000.

5. CLD Water System Model

Gannett Fleming is calibrating the model. They requested data for the next phase of the project involving analyses of the City of Allentown interconnection and water quality.

6. WL-1 Tank Replacement

A pre-Construction meeting was held on December 13. Due to the long lead time for the tank, we expect construction activity to take place in March 2011. Completion is anticipated for June.

7. Developments

Water system construction is occurring at the following developments:

Bethany United Methodist Church, 1 institutional lot, LMT

Lehigh Hills, Phase 1, 1 commercial lot, UMT

Valley West Estates, Phases 4, 5 & 6, 46 residential lots (sfd), UMT *(There has not been any construction activity at this development in over a year.)*

Water system plans are being reviewed for the following developments:

Diocesan Pastoral Center, 2 commercial lots, 3 additional lots, & residual lot for existing cemetery, LMT

Hamilton Crossings, 3 commercial lots, LMT

Hickory Park Estates, 3 residential lots (sfd), UMT

Hillview Farms, 31 residential lots (sfd), LMT/SWT

Indian Creek Industrial Park, 6 commercial lots, UMiT, water and sewer

Morgan Hills, 40 residential lots (sfd), Water & Sewer, WeisT

February 28, 2011

North Whitehall Commercial Center (Walmart), 5 commercial lots, NWT, water and sewer
Rabenold Farms, 205 residential lots (sfd), (Portion south of I-78), UMT
Rabenold Farms II, 288 apartment units and clubhouse, (Portion north of I-78), UMT
Red Maple Acres Expansion, 29 units, LMT
Shepherd's Corner, 1 commercial lot, LMT
Spring Creek Properties Subdivision 1, 14 commercial and industrial lots, LMT
Trexler Business Center, Lot 1, 1 commercial building, LMT
Trexler Senior Living Center, 2 commercial lots, LMT (*In bankruptcy*)
Trexler town Shopping Center Remodeling/Expansion, 1 commercial lot, LMT/UMT
Weilers Road Twins, 82 residential lots (sfa), UMT
West Hills Business Center, 5 industrial lots, WeisT
Woodmere Estates, 60 residential units (sfd), UMT
Wotring North Development, 20 residential units (sfd), UMT

WASTEWATER

ACTION ITEMS

1. **Vera Cruz Sewer System (UMiT)** (Approval)

Approval of the attached (Amendment to the Project Authorization which includes funding through construction completion and the Construction Contracts is recommended. As explained in the attached memo, the Contract authorization should be contingent upon receipt of executed agreements, bonds and insurances as well as upon approval of the Mandatory Connection Ordinance by Upper Milford Township Supervisors. Staff is also recommending approval of an increase in the Professional Services contract with Spotts, Stevens & McCoy for additional efforts through the design phase for a Phase II Archeological Study of the area and construction engineering services. With all approvals in place, we anticipate start of construction in late March/early April.

2. **Western Lehigh Wet Weather Relief Facilities Operational Optimization** (Approval)

Approval is requested for this project in order to continue the EPA/PADEP mandated work on the SCARP. The Wet Weather Operating Logic (WWOL) for LCA's wet weather relief components (FEB, air decks, SCPS, and PPS) must be established before Malcolm Pirnie can complete its LOC/LOS SCARP modeling assignment. The LOC modeling requires written rules of operation that can be converted into a logic that is programmed into the calibrated InfoWorks planning level model (PLM). The existing SOPs for the pump stations are very basic and are not optimized either individually or as an integrated operating system. In addition the existing operation depends on operators trying to predict storm effects on miles of pipes and 3 pump station. This project would simulate and evaluate two 10 year storm events effect on the system in order to optimize operational procedures and recommend improvement to existing equipment and control systems.

Optimizing the existing infrastructure is intended to reduce long term costs by diminishing the need for, reducing the size of or delaying the timing of future infrastructure.

DISCUSSION ITEMS

1. ***None.***

INFORMATION ITEMS

1. **Flow Equalization Basin (FEB)**

Construction is complete on this project. Staff is working with PennVest to finalize all numbers and start the loan payment process.

2. **Laury's Station Area Sewer Service**

No current activity. Hanover Engineering Associates will be preparing the Sewage Facilities Plan (Act 537) Amendment for North Whitehall Township in the Laury's Station area. We have provided them with information on the Wynnewood Terrace system and copies of the planning studies that the Authority has completed to date.

3. **South 7th Street Sewer Extension Project - Phase 2 (UMiT)**

We are waiting for the contractor to submit documentation for Final Payment.

4. **Infiltration and Inflow (I&I) Program Update**

The 537 plan revisions and SCARP submitted to the DEP in March of 2010 have not been approved to date. LCA provided clarifications to DEP questions related to the SCARP in December 2010. At the request of Daryl Fritz of DEP, a meeting was held in early February with DEP and LCA representatives. The approval is expected in late February or early March. The semi-annual EPA Report was submitted at the end of January.

Piezometers (monitoring wells) will be installed in 8 locations throughout the wastewater system to monitor the depth of the ground water to determine and document water levels over time. It is expected that KCE will administer the contract and will provide the weekly measurements.

5. **Arcadia West WWTP Upgrade**

Advertisement for bids was published on February 14. Bids will be received on March 17. Document viewing and bid submission will be via PennBID. Settlement on the PennVEST loan is expected on May 18.

6. **Wastewater Treatment Capacity**

The steering committee will meet again in 2011 when additional or updated information is available.

We have received the COA cost estimates for expansion of the Kline Island Wastewater Treatment Plant. Malcolm Pirnie has also updated the cost estimates for the LCA WTP upgrading option costs. A meeting between LCA and the City is scheduled for March 1st to review and discuss both reports. The Board will be provided the various cost estimates when the two parties agree that the cost estimates are complete.

The cost estimate for the City options needs to include the costs for additional conveyance upgrades to transport an additional 4 mgd of flow from the LCA system into the City system. Malcolm Pirnie is utilizing the LCA model to determine the cost estimates for conveyance upgrades and will include these costs in the cost estimate report.

The sampling and analysis of the various waste streams at the WTP to characterize the wastewater is complete. The results have been provided to Malcolm Pirnie for evaluation and a report will be presented to LCA next week.

7. **WTP Energy Audit**

CET Consulting is performing an energy audit of the WTP with an emphasis on the methane gas utilization. In general, the scope of work includes an evaluation of the plant processes and recommendations for energy improvement measures.

Phase I of the study is complete and was presented to the Board at the February workshop. The report included an economic evaluation of the excess biogas production including a comparison of selling the excess biogas to Kraft Foods or utilizing the biogas on-site at the WTP. We have met with Kraft to discuss our findings, their progress and the feasibility of the project.

Phase II of the study will include an evaluation of other energy improvement/energy efficiency measures and will specifically look at optimizing digester performance and the hauler waste program for increased biogas production. The LCA package wastewater treatment plants will be evaluated in Phase III.

MEMORANDUM

Date: February 22, 2011

To: Authority Board

From: Liesel Adam, Joseph McMahon & Emily Gerber

Subject: Related Data-Management Projects
Knowledge Management Program Development
Information Technology Master Plan Update
GIS Mobile Technology

Three related projects are attached for the Authority's Board of Directors to consider at the February 28, 2011 meeting. These projects are related in that they all address a specific aspect of data, information and knowledge we use to operate LCA's water and wastewater systems, improve performance, provide service to our customers and inform our decision-making process.

Today, we face several challenges and opportunities that suggest it is time to refocus our efforts to improve how we manage our data. Examples include:

- Changes in workforce demographics
- Risks related to loss of institutional knowledge
- Recent advancements in technology
- Regulatory changes and compliance risks
- Increasing size and complexity of LCA operations
- Under-utilization of current technology

The projects described in this packet address both the technology and human aspects of managing data and knowledge for organizational performance. By aligning project schedules, teams and goals, we also hope to streamline the process of assessing our needs and evaluating solutions so that each project is completed in the most efficient and cost-effective manner.

A detailed presentation is planned for this discussion; however, this packet serves to introduce the background and approvals that are requested for each project.

MEMORANDUM

Date: February 22,
2011

To: Authority Board
From: Liesel Adam
Subject: Knowledge Management Program Development
Capital Project Authorization
Professional Services Authorization
Phase 1 – Needs Assessment

MOTIONS /APPROVALS REQUESTED:

No.	Motion /Approval Item	Amount
1	Capital Project Authorization (CPA) - Needs Assessment Phase	\$181,291
2	Professional Services Authorization (PSA) - EMA, Inc <i>(1)</i>	\$ 99,810

(1) The amount listed for the PSA is also included within the CPA amount.

PROJECT OVERVIEW: Lehigh County Authority (LCA) intends to retain the services of a management consulting firm to develop a Knowledge Management (KM) program to assist with capture and transfer of institutional knowledge held by long-tenured employees to newer employees. The need for a KM program was established via LCA's 2007 workforce planning project, which evaluated worker demographics and identified risks associated with undocumented critical knowledge related to historical decision-making criteria, operational practices, political and regulatory relationships, and other knowledge that is critical to organizational performance but ill-suited for simplified categorization and automation.

Through the KM project, LCA and the selected consultant will build upon the work completed in 2007 to generate a detailed KM needs assessment to identify and prioritize critical knowledge areas and evaluate KM methods that will be appropriate for LCA's size, technology and organizational culture. Following completion of the needs assessment, selected KM strategies will be tested through a pilot program, and a final KM implementation plan developed.

PROJECT SCOPE: LCA's Request for Proposals (RFP) outlined primary project activities / tasks, as well as overall program objectives, including: A) development of KM strategies that LCA employees can self-implement and incorporate into their daily work, and B) strategies to foster a knowledge-sharing culture that will sustain the program beyond the consultant's initial engagement.

The needs assessment activity / task included in this authorization was described in the RFP as follows:

KM Needs Assessment: Conduct an assessment of LCA's KM needs and provide preliminary recommendations for a KM approach that will meet these needs. At a minimum, the assessment shall include an evaluation of the following:

- Specific vulnerabilities associated with loss of institutional knowledge due to upcoming and/or future retirements
- Specific vulnerabilities to operational and/or business performance related to deficiencies in knowledge sharing, documentation of processes, or other KM-related deficiencies
- Specific vulnerabilities to regulatory compliance as a result of KM-related deficiencies
- Synergies and opportunities between KM planning and information technology planning
- Criticality of risk and prioritization of risks identified
- LCA organizational culture and employee receptivity to knowledge sharing
- Appropriateness of specific KM methods to meet LCA's needs

CONSULTANT SELECTION PROCESS: To assure that a qualified firm was selected and that LCA was receiving the best the overall value, a multi-step selection process that included qualifications based selection to short list qualified firms, with short listed firms participating in an interview/workshop with LCA personnel and ending in the submittal of cost proposals was utilized.

In October 2010, Requests for Qualifications were sent out to 35 management consulting firms. Statements of Qualifications were received from the eight firms listed in Table 1:

Table 1	
LCA Qualification-Based Ranking	Firms Submitting a Statement of Qualifications
1	Delphi Group
2	Woolpert
3	EMA, Inc.
4	Juggernaut Consulting, LLC
	Avant IMC
	MWH
	Malcolm Pirnie / Oxenford Consulting
	Right Management

The top four firms were short-listed, and the interview/workshops were conducted November 22 through December 7, 2010. The interview/workshop/process achieved to two primary goals: (1) the information gained from the consultants was used to finalize a Request for Proposals; and (2) it provided the venue for the consulting firms to fully understand the scope of work.

Based on the results on the interview / workshop process, an RFP was issued to the top three firms listed above. The top two firms – Delphi Group and Woolpert – opted to partner together to

submit a joint proposal, so two complete proposal packages were received. Separate Technical and Cost Proposals from were received on January 26, 2011. A cost and man-hour summary of these proposals are shown in Table 2.

Table 2			
LCA Value-Based Ranking	Firms Submitting a Proposal		
	Firm	Cost	Hours
1	EMA, Inc. (Recommended)	\$99,810	514
2	Woolpert / Delphi Group	\$145,226	498

Based upon our review of all aspects of both the Technical and Cost Proposals submitted by the two firms, we recommend award of the Knowledge Management project to EMA, Inc. Their proposal was on scope and offered a strong level of collaboration among all related projects (information technology master plan and GIS mobile technology), and represents what we believe to be the best overall value for the Authority. A memo from the EMA project manager, Denise O’Berry, is attached to provide greater detail on their proposed approach for this work, and their not-to-exceed costs.

PROJECT SCHEDULE: EMA, Inc. has estimated the needs assessment phase of the project will take approximately four months to complete, and will be completed in tandem with the information technology master planning project in order to avoid duplication of effort as work processes and data requirements are evaluated. A project kick-off meeting will be scheduled upon Board authorization of the project.

Subsequent phases of the project to be addressed in future authorizations include a pilot program to test the KM methods that have been selected as appropriate to meet LCA’s needs and the development of a final implementation plan for a full KM program. It is expected that these phases of work will be completed by December 2011.

CAPITAL PROJECT AUTHORIZATION

PROJECT NO.: W-10-6 BUDGET FUND: ADMINISTRATION - WATER CAPITAL

PROJECT TITLE: Knowlegde Management Program Development

PROJECT TYPE:

☐
☐
☒
☐

Construction
Engineering Study
Design
Amendment

COST ESTIMATE: \$181,291

DESCRIPTION AND BENEFITS

Lehigh County Authority (LCA) intends to develop a Knowledge Management (KM) program to assist with capture and transfer of institutional knowledge held by long-tenured employees to newer employees. The need for a KM program was established via LCA's 2007 workforce planning project, which evaluated worker demographics and identified risks associated with undocumented critical knowledge related to historical decision-making criteria, operational practices, political and regulatory relationships, and other knowledge that is critical to organizational performance but ill-suited for simplified categorization and automation.

Through the KM project, LCA and the selected consultant will build upon the work completed in 2007 to generate a detailed KM needs assessment to identify and prioritize critical knowledge areas and evaluate KM methods that will be appropriate for LCA's size, technology and organizational culture. Following completion of the needs assessment, selected KM strategies will be tested through a pilot program, and a final KM implementation plan developed. Overall program objectives include development of KM strategies that LCA employees can self-implement and incorporate into their daily work, and strategies to foster a knowledge-sharing culture that will sustain the program beyond the consultant's initial engagement.

With retirement eligibility of LCA employees approaching the 50% mark within the next five years, the development of a practical KM program today is of critical importance to ensure long-term business performance can be maintained.

Requested This Authorization

Project Totals

Payroll (includes application training and testing)	\$	65,000
Professional Services	\$	99,810
Contingency	\$	16,481
Total Project Cost	\$	181,291

Future Authorization

Pilot Program & Implementation Plan Development (estimated)	\$	95,000
Total Estimated Project	\$	276,291

REVIEW AND APPROVALS

Project Manager

Date

General Manager

Date

Capital Works Manager

Date

Chairman

Date



Lehigh County Authority

1053 Spruce Street * P.O. Box 3348 * Allentown, PA 18106-0348
(610)398-2503 * FAX (610)398-8413

PROFESSIONAL SERVICES AUTHORIZATION

Professional: EMA, Inc.
Philadelphia Area Office
900 Northbrook Drive
Suite 110
Trevose, PA 19053-8432

Date: February 22, 2011

Requested By: Liesel Adam

Approvals

Department Head: _____

General Manager: _____

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

EMA, Inc. will provide management consulting services to provide a detailed assessment of Lehigh County Authority's (LCA) knowledge management (KM) needs, risks and priorities, and develop preliminary recommendations for a program to manage these risks. The following task breakdown shows the project tasks and EMA's proposed hours and costs (attached memo from EMA provides greater detail / descriptions):

Project Activity / Task	Hours	Cost
A. Project Initiation & Collaboration with IT & GIS Projects	14	\$ 2,770
B. Conduct Needs Assessment	264	\$45,380
1. Workforce management practices, facilitated self-assessment		
2. Work catalogs		
3. Review knowledge vulnerability		
4. Organizational readiness assessment		
C. Present Workforce Gap Analysis	20	\$ 3,100
D. Knowledge Mapping & Social Network Analysis	68	\$11,200
E. Provide Preliminary KM Recommendations	32	\$ 4,800
F. Change Management Planning	16	\$ 2,800
G. Project Management Tasks & Collaborative Project Meetings	100	\$19,060
Additional Expenses (travel, lodging, other expenses)		\$10,700
Total	514	\$99,810

NOTE: The technical and cost proposals submitted by EMA are available for viewing by any Board or staff member upon request. This authorization is a not-to-exceed contract. EMA shall submit invoices to LCA on a monthly basis, with invoices including a breakdown of activities, hours and costs. Additional phases of the KM project will be developed upon completion of the work listed above and are not included in this authorization.

Cost Estimate (not to be exceeded without further authorization) : \$99,810

Time Table and Completion Deadline : This project will begin immediately and shall be completed in no more than 4 months. Assuming a project start date of March 1, this project shall be completed by July 1, 2011.

(For Authority Use Only)

Authorization Completion :

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



EMA, Inc.
Philadelphia Area Office
900 Northbrook Drive, Suite 110
Trevose, PA 19053-8432

phone: 215.942.7510
fax: 215.942.7944
www.ema-inc.com

MEMO

DATE: February 22, 2011

TO: Liesel Adam, Customer Care & Communications Manager, Lehigh County Authority

FROM: Denise O'Berry, MPD Practice Manager, EMA, Inc.

SUBJECT: Knowledge Management Program

Dear Liesel,

Attached is an overview of the tasks and cost for Phase I (Assessment) of your KM project and task overview only for Phase II (Pilot and Implementation Plan).

Thank you for the opportunity to assist your organization in achieving its goals. We look forward to working with you.

Sincerely,

Denise O'Berry

Phase 1 – Organization Assessment

A. Project Initiation & Collaboration with IT & GIS Projects

To initiate the project, a half-day work session will be held with the LCA KM team, EMA, and coordinated with the IT consultant. The purpose will be to identify, coordinate, and formalize project logistics and planning required to meet LCA's needs and schedule, to create alignment with LCA staff and EMA about how the project will be conducted, and to establish overall project goals and objectives.

B. Conduct Needs Assessment

The focus of all assessment activities will be to evaluate LCA's current workforce practices against your stated vision, mission and business goals, and against effective workforce practices. Assessment data is then used to design a knowledge retention plan and associated workforce programs. Assessments that will be conducted and their purpose are presented in Table 3-1.

Assessment	Focus Area
<i>Workforce Management Practices Facilitated Self-Assessment</i>	<p>This is a facilitated self-assessment that will provide LCA management with a comparison of the practices in use to manage the workforce and organization against the most effective practices being used in the industry in these nine areas:</p> <ol style="list-style-type: none">1. Compensation and Reward2. Generational and Cultural Awareness3. Workforce Succession and Workforce Continuity4. Recruiting and Outreach5. Career Planning and Management6. Knowledge Management7. Strategy and Measures8. Leadership9. Training and Development <p>The assessment consists of a desk audit of HR processes and procedures, individual management interviews, and a facilitated session with the leadership team to rate the indicators.</p> <p>Purpose: Focus the KM and related programs within the workforce plan and</p>

Assessment	Focus Area
	identify specific policies that may require update or revision for LCA to attain its vision for success.
<i>Work Catalog</i>	<p>A Work Catalog is a high-level view of the work that is completed by LCA employees. It is not detailed process modeling, but is focused on identifying the tasks on which an individual dedicates their work hours. Work sessions are conducted with representative samples from organization workgroups to identify and document the group's work processes and required competencies.</p> <p>Purpose: The work catalog provides a baseline for identifying existing and required knowledge.</p>
<i>Review Knowledge Vulnerability</i>	<p>EMA will work with the KM team to identify those employees eligible for retirement and conduct interviews with “at risk” employees and those whose positions are considered “vulnerable” due to the risk of knowledge loss.</p> <p>Purpose: Determine knowledge loss risk criticality and prioritizing knowledge capture activities.</p>
<i>Organization Readiness Assessment</i>	<p>EMA will conduct an online survey of all LCA staff to determine the organization's readiness for change.</p> <p>Purpose: This assessment will gauge the level of readiness within LCA to successfully integrate KM changes within the culture of the organization. The results serve as a starting point for conversation about readiness and drive the change management activities.</p>

Table 3.1 Performing assessments of crucial areas helps to evaluate current workforce practices as well as at-risk knowledge

C. Present Workforce Gap Analysis

The data gathered from the assessments will be compiled, analyzed, and presented in the form of a “workforce gap.” This information will align the focus of the workforce development strategy and the knowledge management plan. EMA will facilitate a half-day work session to review assessment results and the workforce gap.

D. Knowledge Mapping & Social Network Analysis

Utilizing the work catalog data created in Task B, EMA will work with the project team to conduct knowledge mapping by reviewing who owns or maintains information and who uses information. This is our first pass at identifying the criticality of specific LCA knowledge. EMA will build a draft knowledge map, then meet with the project team to validate the map against the Utility Business

Architecture (UBA) model which is a value-chain driven set of business processes. The UBA systematically addresses all utility functions from customer (both external and internal) and service provider perspectives. It also provides an assessment of methods to retain knowledge based on “systems thinking” rather than just a collection of best practices.

Once knowledge is mapped and critical knowledge identified, we will create a social network analysis of the mission critical and highly vulnerable knowledge areas from the work catalog data. A Social Network Analysis (SNA) is a tool for mapping the relationships, influence, and flow of knowledge between people or entities. By analyzing the “connectivity” of people in an organization, the knowledge flow across functions, departments, divisions, and geography is identified and visually mapped. This provides additional information about the ownership and flow of mission critical and vulnerable organization knowledge, such as exceptions to the typical knowledge flow. This information can be explored with employees to make sure knowledge is appropriately captured. The results of these activities will be reviewed with the project team in a half day work session.

E. Provide Preliminary KM Recommendations

EMA will work with LCA to identify critical knowledge based on assessment data, knowledge mapping, and a social network analysis. Then, we will identify knowledge capture processes that are appropriate to the critical knowledge of LCA employees.

EMA applies a four-step, proven methodology for knowledge management as follows:

- Who has the knowledge? (Who?)
- What knowledge is being lost? Or at risk of being lost? (What?)
- What are the business consequences of losing items of knowledge? (So What?)
- What can we do about each item? (Now What?)

The first question is answered by building the work catalog proposed in Task B. The second question is answered by completing knowledge mapping based on the work catalog and a review of knowledge vulnerability. The third question is answered by completing knowledge mapping and a social network analysis around critical knowledge. And the fourth question is answered by testing and recalibrating knowledge capture scenarios, then building an implementation plan based on test results.

F. Change Management Planning

For change to be successful, LCA staff must first understand why the change is necessary and then make a personal decision to support and participate in the change. Although this sounds simple, changing human behavior is difficult (even when the change is desired).

EMA uses the Prosci ADKAR® model for change to map out and implement change management. This is a proven model that manages the stages of human resistance and moves staff along the continuum of change as the change is integrated within your organization.

Methodology - ADKAR Model

The ADKAR model for change provides a path to incrementally walk the people and organization through the change effort.

- A - Awareness of why the change is needed
- D - Desire to support and participate in the change
- K - Knowledge of how to change and what the change looks like
- A - Ability to implement new skills and behaviors
- R - Reinforcement to sustain the change

It's important to align the phases of change (ADKAR) with the phases of the business change to ensure a successful future. The change management plan will include **action steps** for each stage to support movement through the change process.

G. Project Management Tasks & Collaborative Project Meetings

EMA follows the PMI Institutes processes for project management and control to ensure planning, execution and progress align with the project goals and schedule.

EMA will coordinate or attend the following meetings as identified by the LCA project manager.

- IT & KM Project Kickoff Meeting
- KM Needs Assessment Report Meeting
- IT Plan Status Report Meeting
- Pilot Program Assessment Report Meeting
- Preliminary KM Plan / Proposal Review Meeting
- Final Report to LCA Staff & Board of Directors

Consulting Hours / Costs

The costs proposed in this document are based on actual time and expense(s) incurred for Phase I, a not-to-exceed total is provided.

Project Activity / Task	EMA Hours	Cost
A. Project Initiation & Collaboration with IT & GIS Projects	14	\$ 2,770
B. Conduct Needs Assessment 1. Workforce management practices, facilitated self-assessment 2. Work catalogs 3. Review knowledge vulnerability 4. Organizational readiness assessment	264	\$45,380
C. Present Workforce Gap Analysis	20	\$ 3,100
D. Knowledge Mapping & Social Network Analysis	68	\$11,200
E. Provide Preliminary KM Recommendations	32	\$ 4,800
F. Change Management Planning	16	\$ 2,800
G. Project Management Tasks & Collaborative Project Meetings	100	\$19,060
Totals	514	\$89,110

Travel Expenses

Estimated travel/lodging costs (estimated at 12% of labor): \$10,700

Total Not-to-Exceed Amount (Phase I)

EMA's total not-to-exceed amount (labor and expenses): \$99,810

Phase 2 – KM Pilot & Plan Development (future phase)

Once the assessment is complete, Phase 2 will be designed, with the following activities anticipated:

Phase 2 Activity: KM Pilot Program

The pilot program is intended to test the data collected and decisions made about the direction the organization is moving to prepare for full implementation of the knowledge management program. The pilot will focus on key KM methods that have been identified as the best fit for LCA based on the assessment phase.

Piloting a subset of the KM methods enables you to assess how the strategies and techniques will work for your people in their day-to-day work environment and ensures you are on track with and can achieve the change you are targeting prior to full organization implementation. This process will normally produce some quick wins which will enable you to communicate those successes and bring more of the staff on board with the goals of the project.

Prior to the pilot, we will have identified in Phase 1 (Assessment):

- Who has mission critical knowledge
- Which knowledge is vulnerable
- Who are the experts
- What the business impact is of knowledge loss

We will also have defined preliminary recommendations, using a sound business case method to determine the most critical KM issues, in the knowledge management approach.

Pilot Process

Using the recommendations and knowledge data collected, we will know what knowledge to target, who to involve, and what method(s) to use for testing during the pilot. We will conduct the pilot by:

1. Defining expected outcomes for the pilot.
2. Selecting employees for inclusion in the pilot process based on the criteria previously identified in Phase 1.
3. Developing process documentation for implementing the selected KM method(s).
4. Training selected employees on what to do and how to do it.
5. Providing participants with a step-by-step action plan and time frame for conducting KM activities and a method for providing feedback as the pilot moves forward.

Participants will perform the activities as identified in their pilot action plan with oversight from the LCA and EMA project managers.

At pilot completion, an after action review will be conducted to determine whether the activities performed achieved the desired objectives or are on track to do so. Methods will be recalibrated as needed based on this pilot assessment and a decision will be made to determine:

- Whether the pilot should be extended for a longer duration,
- If the pilot should be expanded to include additional employees,
- If additional KM methods should be tested prior to full implementation of the program, or
- That the organization is ready to move to plan implementation.

Phase 2 Activity: Knowledge Management Implementation Plan

Output from Phase 1 (Assessment) and the Pilot Program conducted in Phase 2 will be used to formalize the KM Implementation plan. This plan will include detail to achieve the expected outcomes for LCA with an associated timeline. Items to be included in the plan are:

- Objectives of the KM program
- Knowledge to be captured
- Sequence (order) of knowledge to be captured
- KM methods to be used for capture
- Recommended employees to be involved
- Schedule for knowledge capture and KM process implementation
- Performance measures to determine progress

MEMORANDUM

Date: February 24, 2011

To: Board of Directors
From: Joe McMahon III
Subject: Information Management and Technology Master Plan
Capital Project Authorization
Professional Services Authorization

MOTIONS /APPROVALS REQUESTED:

No.	Motion /Approval Item	Amount
1	Capital Project Authorization (CPA) - Needs Assessment Phase	\$ 151,884
2	Professional Services Authorization (PSA) - EMA, Inc <i>(1)</i>	\$ 104,884

(1) The amount listed for the PSA is also included within the CPA amount.

PROJECT OVERVIEW: Lehigh County Authority (LCA) intends to retain the services of a management consulting firm to assist with development of an Information Management and Technology Master (ITMP) program as an update of the 2001 LCA ITMP. This ITMP project will assess LCA's current and future needs for process and technology improvements against existing processes and information system (IS) in order to design a plan for the migration of the existing IT management and infrastructure into the future with the goals of increased efficiency and data/information/knowledge retention and utilization. The project will proceed from needs analysis through plan development and delivery. The plan will prioritize the most cost beneficial projects in order to have the highest return on investment in the early years of implementation.

The ITMP, Knowledge Management and the GIS Implementation projects are all pieces of an integrated approach that will assist LCA to move confidently into the future by making LCA's personnel and systems more efficient and its data, information and knowledge more secure yet readily accessible for employee work needs. Efficiencies in terms of consultant costs (\$72,760 see note below in costs table) and personnel costs are gained by having a common consultant performing both the ITMP and the KM projects as the data acquisition and needs assessment phase of both projects have common goals in that they are investigating LCA's business and operational systems and processes. In addition, KM compliments the typical IT systems analysis of organizational work flows, information and processes with a more in-depth understanding of human interaction and motivation, thus providing a richer understanding of the integrated human/technology work performed for organizational effectiveness.

Through the ITMP project, LCA and the selected consultant will build upon the plan completed in 2001 and the IT work completed since that time to generate a detailed ITMP needs assessment to identify and prioritize critical information and process gaps, inaccuracies and inefficiencies as well as evaluate IT technologies and support that will be appropriate for LCA's strategic vision, size, capability, business needs and organizational culture.

The scope for the ITMP is included in the attached memo addressed to Joe McMahon dated February 23, 2011 from Dave DiSera and John Pasini - EMA, Inc.

The cost for the ITMP is included in the Professional Services and Capital Projects Authorizations.

PROJECT SCOPE: LCA's Request for Proposals (RFP) outlined primary project activities / tasks, as well as overall program objectives. The following scope summary notes the Scope alignment with RFP tasks to be completed.

- **Task Series 1 – Project Coordination Activities**
(Corresponds to RFP Tasks 1.a. and 1.b.)
- **Task Series 3 – IT Strategy**
(Corresponds to RFP Tasks 2.c., 2.e., 2.f., 2.g., 2.h., 3.a., 3.b., 3.c., 3.d., 3.e., 3.f., 3.f.i., 3.f.ii., 3.f.iii., 3.f.iv., 3.f.v., 3.f.vi., 3.f.vii., 3.g., 3.g.i., 3.g.ii., 3.g.iii., 3.g.iv., 3.g.v., 3.g.vi., and 3.h.)
- **Task Series 4 – IT Master Plan Update**
(Corresponds to RFP Tasks 4.a., 4.b., 4.c., 4.d., and 4.e.)
- **Task Series 5 - Project Management and Quality Assurance**
(Corresponds to RFP Tasks 5.a., 5.a.i., 5.a.ii., 5.a.iii., 5.a.iv., 5.a.v., 5.a.vi., and 5.b.)
- **Task Series 6 - Change Management**
(Corresponds to RFP Tasks 6.a.)

CONSULTANT SELECTION PROCESS: To assure that a qualified firm was selected and that LCA was receiving the best overall value, a multi-step selection process was utilized that included qualifications based selection to short list qualified firms, with short listed firms participating in an interview/workshop with LCA personnel and ending in the submittal of technical and cost proposals.

In October 2010, Requests for Qualifications were sent out to eight consulting firms experienced in information management and technology as well as water/wastewater business and operational practices. Statements of Qualifications were received from the four firms listed in Table 1:

Table 1	
LCA Qualification-Based Ranking	Firms Submitting a Statement of Qualifications
1	EMA, Inc.
2	MWH
3	Malcolm Pirnie
4	Westin Consulting

The top four firms were short-listed, and the interview/workshops were conducted the week of December 5, 2010. The interview/workshop process achieved two primary goals:

- (1) the information gained from the consultants was used to finalize a Request for Proposals; and
- (2) it provided the venue for the consulting firms to fully understand the scope of work.

Based on the results on the interview / workshop process, an RFP was issued to the top three firms listed above. Separate Technical and Cost Proposals were received on January 24, 2011. Costs of these proposals are shown in the table below.

ITMP Proposal Costs						
	Tasks 1-6	Overhead	Task 7	Tasks 1-6	Tasks 1-7	Tasks 1-7
		Direct Costs		includes overhead		Projects Discount (1)(3)
EMA	\$ 116,284	\$ 8,600	\$ 52,570	\$ 124,884	\$ 177,454	\$ 104,884
MWH	\$ 132,110	\$ 25,206	\$ 39,917	\$ 166,896	\$ 197,233	\$ 197,233
MP	\$ 137,130	\$ 17,400	\$ 29,280	\$ 154,530	\$ 183,810	\$ 183,810

- (1) EMA task 7 eliminated if awarded both IT & KM
- (2) MWH add on for task 7 if not taking the lead
- (3) EMA Two Project Discount = \$20,000

\$ 9,580

Based upon our review of all aspects of both the Technical and Cost Proposals submitted by the three firms, we recommend award of the Information Management and Technology Master Project to EMA, Inc. Their proposal was on scope and offered a strong level of collaboration among all related projects (information technology master plan and GIS mobile technology), and represents what we believe to be the best overall value for the Authority. The full proposal from EMA outlining their proposed approach for this work, and their not-to-exceed costs is available for review upon request.

The two project savings from EMA's single project 7 task scope is \$72,760

PROJECT SCHEDULE: EMA, Inc. has estimated the project will take approximately four months to complete, and will be completed in tandem with the Knowledge Management project in order to avoid duplication of effort as work processes and data requirements are evaluated. A project kick-off meeting will be scheduled upon Board authorization of the project.

A subsequent phase of the project to be addressed in future authorizations will include one of the top recommendations as appropriate to meet LCA's needs.



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MEMO

DATE: February 23, 2011

TO: Joseph McMahon, III – Lehigh County Authority

FROM: Dave DiSera and John Pasini – EMA, Inc.

SUBJECT: Work Scope for the Information Management & Technology Master Plan

Dear Mr. McMahon,

Attached is the work scope for the Information Management & Technology Master Plan project.

Please feel free to call us if you have any questions. Again, we look forward to the opportunity to work with you and your team on this strategic project for LCA.

Sincerely,

A handwritten signature in black ink that reads 'David DiSera'.

David P. DiSera
Vice President/Chief Technology Officer
EMA, Inc.

A handwritten signature in black ink that reads 'John Pasini'.

John Pasini
Practice Director II
EMA, Inc.

Proposed Work Plan

Our proposed work plan is composed of six task series that correspond directly to LCA's Request for Proposal (RFP) tasks to be performed. Each task series is described below, including its purpose and methods used to carry out the task and deliverables.

Task Series 1 – Project Coordination Activities

(Corresponds to RFP Tasks 1.a. and 1.b.)

This task involves the project coordination activities including the planning and managing of tasks to avoid overlapping assessment and data collection efforts among the IT Master Plan, GIS, and KM projects. This coordination is essential for LCA to effectively manage these three projects simultaneously. While each project will vary based on specific business objectives, they will need to be closely coordinated to reduce redundancy of effort and improve the value to all three projects collectively.

Deliverables

- **Attend Project Kick-off meeting with LCA IT Master Plan Project Team and KM Consultant**
- **Participate in Coordination Meetings with the GIS and KM Project Teams** (as required).
- **Prepare IT Master Plan Material for Coordination Meetings**

Task Series 2 – IT Assessment

(Corresponds to RFP Tasks 2.a., 2.b., 2.d., 2.d.i., 2.d.ii., 2.d.iii., and 2.d.iv.)

This task series focuses on standard project initiation activities and establishing goals for project success. Tasks include a review of LCA's performance relevant to the 2000/2001 Master Plan, a review of business requirements and the ability of existing software and technology to support current processes, a review of the organization and IT resources, needs and issues, an assessment of application support for business functions, and definition of baseline performance indicators.

Project Initiation

This task encompasses a systematic process to initiate the project – meeting and establishing a framework for the work, schedule, deliverables, and performance measures for the IT Master Plan. Four activities are included in this important task: project coordination with KM and GIS Project Teams, a kick-off meeting to get acquainted and oriented with LCA staff for the IT Master Plan project, departmental interviews, and a “business objectives” workshop.

We will follow a structured project initiation process. EMA strongly recommends that LCA convene two formal groups to manage and participate during the entire project: a Management Team to set policy and strategic direction, and a Project Team to make tactical

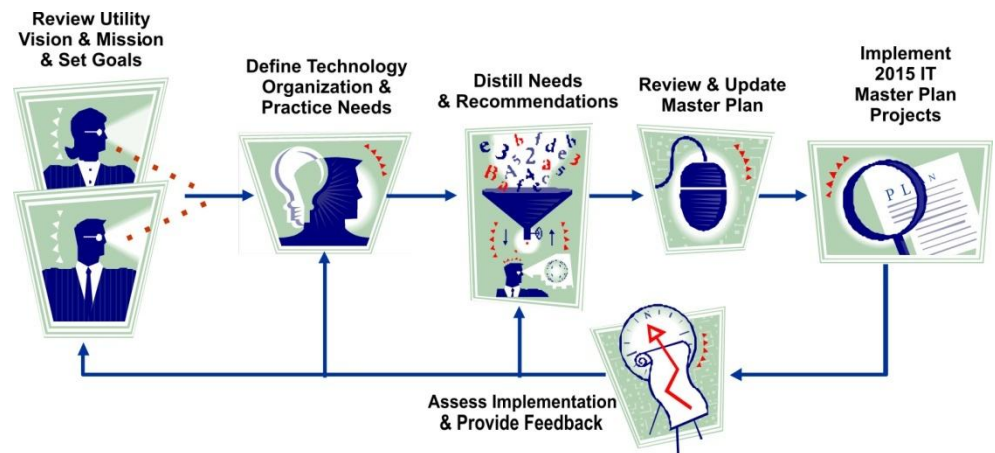


Figure 3-2. LCA's Vision for Information Technology

Additional elements to be covered during project initiation include aligning project goals amongst project participants, identifying project success, finalizing work plan milestones and schedules, and finalizing on-site investigations, meetings, workshops, and schedules, and distributing and communicating the schedule to the Project Team members and staff.

We will prepare and conduct an on-site “business objectives” workshop with the LCA Management and Project Teams. The business objectives workshop goals include:

- Review LCA's performance relative to implementation of 2000/2001 *Master Plan*
- Review and discuss current operating and capital plans
- Review and discuss LCA's vision, mission, and strategic objectives, including future business direction and growth
- Review ongoing projects, including the GIS and KM efforts, and define expected results from future technology investments and process improvements and how these support LCA's business objectives
- Review project success criteria
- Review work plan milestones and schedules

EMA will conduct interviews with key staff and coordinate the findings from interviews with the business objectives workshop to provide a basis for a shared vision for the Project Team.

Deliverables

- **On-site Project Kick-off Meeting with LCA IT Master Plan Project Team**
- **A One-Day Business Objectives Workshop and Notes**
- **Project Notebook and Material:** EMA will prepare a project notebook containing the finalized scope of work, a detailed project schedule (including scheduled dates for meetings, focus group sessions, workshops, deliverable milestones, and Board presentations), communication procedures, key performance measures for IT Master Plan, LCA staff involvement schedule, contact information for all project participants and findings of the business objectives workshop.

Business Process Discovery and Assessment

Reviewing the as-is business processes performed by LCA is the first step in this task. Next to personnel and management practices, technology is a leading enabler for driving process efficiency. The purpose of this task is to confirm how the LCA currently performs its daily operations, maintenance, and business support processes.

EMA's project team will conduct focus group sessions to understand key business processes within LCA. Several sessions will be organized by key functional areas. We recommend that each session be attended by two to three individuals from each group who possess broad experience of the business processes carried out by the group. In addition to the selected group representatives, it is recommended that at least one IT Master Plan team member be included in each focus group. This resource should be familiar with the technology currently used in the business area as well as planned technology upgrades or projects. Finally, other IT Master Plan Project Team members are encouraged to participate in each focus group session. EMA will also meet one-on-one with key managers and project members.

The discussions will include the themes developed in the visioning process performed in the previous task. Brainstorming around future business objectives and how they resonate within each group will provide focus to the ultimate objectives of this project. Following completion of the focus group sessions, EMA will document the business processes, their high level work flow, customer expectations, business activities supported and not support by IT, IT staffing competencies and gaps, organizational and communication barriers, technical integration points, strengths, and opportunities for improvements through adding or modifying the use of technology.

Deliverables

- **Workshops and One-On-One Interviews** (as required).
- **Coordination Meetings with the GIS and KM Project Teams** (as required).
- **Business Process and Assessment Memorandum:** Documents the findings of the focus group sessions, high level departmental and enterprise-wide practices and work flows, and recommendations for changes to these work flows and practices that will move LCA towards utility leading practices. Following LCA's review of the Memorandum, an on-site review meeting will be conducted to discuss the Memorandum and any comments, clarifications, and suggested revisions to the report. The finalized content of the report will be incorporated into the IT Master Plan.

Task Series 3 – IT Strategy

(Corresponds to RFP Tasks 2.c., 2.e., 2.f., 2.g., 2.h., 3.a., 3.b., 3.c., 3.d., 3.e., 3.f., 3.f.i., 3.f.ii., 3.f.iii., 3.f.iv., 3.f.v., 3.f.vi., 3.f.vii., 3.g., 3.g.i., 3.g.ii., 3.g.iii., 3.g.iv., 3.g.v., 3.g.vi., and 3.h.)

Based on the business and process requirements defined in Task Series 2, we will review and assess the IT infrastructure, policies, and practices, data, applications and business functions against IT leading practices and the business and performance objectives for the IT Master Plan. EMA will also conduct a staffing analysis, identify knowledge/training gaps, and recommend an organization structure. Information technology recommendations will be developed and rolled into projects with individual business cases.

IT Infrastructure Assessment and Practices Review

EMA will conduct a review/assessment of IT assets, based on an inventory provided by LCA, with the objective to catalog hardware, software, communication, and related IT infrastructure components. This assessment will enable the Project Team and EMA to determine whether the overall IT environment is deployed and equipped in accordance with industry leading practices and supports LCA's future business goals. It will also identify any "out of date" IT assets and/or assets that are deficient or misapplied, either in form or function.

EMA will conduct interviews with LCA staff to assess the existing and planned IT infrastructure, review current technology performance, identify any historical roadblocks for improving performance, IT practices and policies, and establish a vision of technology needs and objectives.

In addition, EMA will use the materials furnished by LCA from the desk audit and will perform an asset inventory review to ensure completeness. LCA will provide a lead contact and asset inventories to the EMA team during this task. IT staff members will assist in verifying and locating assets and communicating with users as required in order to support this effort.

EMA generally organizes the asset inventory into the following categories:

- Network Assets
- Printers & Related Appliances
- Database Management Systems
- Office Automation Applications
- Multi-User Package Applications
- Personal Computers
- Servers
- Storage Systems
- Multi-User Custom Applications
- Network Services Applications

Deliverables

- **Desktop Reviews and Audits:** Includes information technology and control system/SCADA assets and one-on-one interviews as required.
- **Technology Assessment Memorandum:** Summarizes results of infrastructure assessment, review of technology practices and policies, review of systems, data, and business processes. The draft Memorandum will be submitted for LCA's review. Following a review meeting, the results will be finalized and incorporated into the IT Master Plan.
- **Presentation of IT Infrastructure Technical Assessment Findings:** Involves a review of the technical infrastructure assessment and consensus on the findings. This meeting will be held in conjunction with the Organizational and Staff presentation.

IT Skills Assessment

The IT Skills Assessment task will be used to gather information on the technology skills currently in place at the LCA. The discovery process will not only include members of the IT staff, but will also include a cross-section of all LCA department technology users, including control system/SCADA. The outcome of this task will describe the current state of staffing levels and technical skills and will identify areas where additional staff, training, risks, and skills will be needed to ensure continued user satisfaction and successful IT management and support.

EMA has developed a detailed, easy-to-use IT skills self-assessment survey tool. We will convene a meeting to describe the survey and customize it as necessary to meet LCA's specific needs. Once the survey is completed, the results will be tabulated and shared with Management Project Team members. EMA will assess the staffing and skills data and will make recommendations that can be used by LCA to plan for future initiatives.

Deliverables

- **Organization & Staffing Technical Memorandum:** Consists of a “rolled up” version of the survey data with EMA's analysis and recommendations. The raw survey data will also be provided. EMA will conduct a meeting to review, discuss, and revise the Memorandum as needed. The Memorandum will be incorporated into the IT Master Plan.
- **Presentation of Organization & Staffing Assessment Findings:** Involves a review of the organizational and staffing assessment and consensus on the findings. This meeting will be held in conjunction with the Technical presentation.

Information Technology, Organization, Practices Recommendations

This task is a core component of the project because it will contain the analysis, findings, and recommendations to meet the objectives of LCA's IT Master Plan project. The outcome of this task will be the core analysis, recommendations, costs, business cases, and implementation requirements for ongoing and new initiatives. The recommendations in this task will be developed as “Projects” so they can be effectively prioritized. Each recommendation will include organization and practice related requirements to ensure the essential aspects needed for the project are in place. The information gathered and documented in the previous tasks will be used as criteria for evaluating, estimating, and prioritizing recommendations. Analysis points include the following:

- Project objective, scope, and estimated schedule
- Integration requirements with existing and recommended systems
- Impacts on LCA staff availability, training, and completion schedule
- Estimated equipment hardware, software, and maintenance costs
- Business case, including return on investment, quantifiable benefits (cost savings) and intangible benefits such as improved customer satisfaction and employee morale
- Estimated system (project) planning/selection and implementation costs (including integration, data, training, etc.)
- IT infrastructure for supporting the recommendations
- Organizational and practice considerations and implications for the recommendations
- Estimated ongoing staff and personnel requirements for systems operations, maintenance, support, with costs

Once the above information has been compiled for each recommendation, we will hold an on-site meeting with the LCA Project Team and other key staff to review and prioritize each project. This is a key step in the process for performing the business case analysis.

Deliverables

- **Project Recommendation IT Strategy Memorandum:** Contains project recommendations with detailed descriptors, budgets, impact analysis on staffing, and business case analysis. Following the review, EMA will finalize the results and incorporate the prioritized recommendations into the IT Master Plan.
- **Review and Prioritization of Recommendations:** Involves a review and prioritization of the recommendations by the LCA Project Team and other key staff

Business Case Analysis

The key to successfully defining and executing an information technology strategy is to obtain Executive (Board) approval for the defined projects and the funding allocations needed to implement and sustain the projects. EMA understands that the LCA seeks a proven, systematic approach for accomplishing this process. What's more, LCA seeks the knowledge transfer that will enable it to repeat the process on a regular basis with its own internal resources.

EMA uses a simple approach for performing project business case analyses. This process will be used for the recommended ongoing and new initiatives and related projects. The primary benefit of this process will be a concise project description and prioritization document that will be valuable for LCA staff and for subsequent Board presentations and discussions. The focus will be on the highest value projects – resources will naturally flow to their best use. The process ensures that project goals and scope are clearly defined in advance, and individual accountability for project success is assigned.

Deliverables

- **Project Business Case Analyses:** A mini-business case for each recommended project of the IT Master Plan.

Task Series 4 – IT Master Plan Update

(Corresponds to RFP Tasks 4.a., 4.b., 4.c., 4.d., and 4.e.)

Creation of IT Master Plan Update

EMA will prepare a draft IT Master Plan update that will provide a clear path for LCA to meet the objectives and success factors defined during the project initiation. The five year plan will address LCA's unique technology business needs and present strategies for IT systems implementation, systems migration, applications development and integration, practice and organizational considerations, and budgeting recommendations. The information gathered and documented in the previous tasks will be used to create the draft IT Master Plan. A draft plan will be produced for review and comment by the LCA Project Team and other key staff. Based on that review, EMA will update, finalize and deliver the IT Master Plan. In addition, we will develop and distribute a briefing document for the LCA Board and Executive staff. This will be followed by a presentation to the Board.

Deliverables

- **Updated IT Master Plan:** A draft and final IT Master Plan and support documents.
- **Half-day Workshop:** Present IT Master Plan to the LCA Project Team and other key staff for review and update.

- **Board and Executive Briefing Document**
- **Board Presentation and Material**

Task Series 5 - Project Management and Quality Assurance

(Corresponds to RFP Tasks 5.a., 5.a.i., 5.a.ii., 5.a.iii., 5.a.iv., 5.a.v., 5.a.vi., and 5.b.)

The Project Manager's primary responsibility is to ensure that the LCA's IT Master Plan project requirements are met on schedule and within budget. EMA's Project Manager, John Pasini, will be LCA's primary point of contact for the duration of the IT Master Plan project. John will facilitate the project kick-off meeting, weekly status updates, monthly progress meeting, and conference calls, as well as special presentations to management. Monthly meetings/calls will include a review of the previous month's progress, project schedule update, discussion of the planned work and logistics for the upcoming month, and any other specific items that need to be addressed. EMA will prepare and distribute meeting minutes for each progress meeting/call.

EMA brings a refined set of methods and tools with which to manage projects. Our projects deliver the desired results, while staying on schedule and within budget. Project management fundamentals will be applied over the course of the project. Our overall approach is consistent with the Project Management Institute (PMI), addressing each of the five major project management processes: project initiating, project planning, project execution, project monitoring and control, and project closeout.

For example, EMA's project control process monitors and measures progress regularly to identify variances from plan so that corrective action can be taken when necessary in order to meet your project objectives. EMA's project control practices address six key areas:

- **Scope Verification:** Obtaining formal acceptance of the project scope by LCA. To this end, EMA will review deliverables and work results to ensure that all were completed correctly and satisfactorily.
- **Scope Change Control:** Establishing and implementing change approval procedures with LCA. EMA will offer options and solutions to resolve issues and obstacles that will affect the scope of work. It also includes keeping LCA's Management Team informed of what is happening on the project, both positive news and any difficulties or obstacles being faced.
- **Schedule Control:** Establishing milestones and monitoring schedule progress, including changes that are required to address changing needs and priorities.
- **Cost Control:** Reviewing project control reports, computing "Estimate to Complete" (ETC), and comparing variance.
- **Risk Monitoring and Control:** Identifying and categorizing risks, keeping track of identified risks, monitoring residual and identifying new risks, ensuring execution of risk plans, and evaluating their effectiveness in reducing risk.
- **Performance Reporting:** Developing progress reports that cover both the progress (what the team has accomplished) and a forecast (predicting future progress) and providing status reports to indicate where the project now stands in terms of budget and schedule.

Quality Assurance

Quality assurance management is more than ensuring quality work products and deliverables; it is also creating a process that enhances the Project Team's ability to do so. Our quality process provides repeatable, consistent results. It imposes discipline on the work of the Project Team, improving the ability of each team member to produce high quality work products and deliverables.

Two types of quality assurance reviews have been defined for this project:

- **Deliverable Review** – review of work products and deliverables by the EMA Project Manager to verify completeness and conformance with the deliverables.
- **Quality Assurance (QA) Review** – review of deliverables by the Project Manager. This level of review is initiated prior to delivery of the initial and final deliverable.

Detailed description of the deliverables review and approval process will be developed as part of the project notebook.

Project SharePoint Site

To enhance project delivery and coordination for the IT Master Plan project, as well as the coordination between the KM and GIS projects, EMA will use web-based interaction tools such as SharePoint and web conferencing that can provide secure, 24-7 online access for all participants. It should be noted that all deliverables will be also sent to the LCA Project Manager, in addition to being available on the project site.

Deliverables

- **Project Coordination of IT Master Plan Project Tasks and Meeting Schedules**
- **Project Coordination with the GIS and KM Projects and Consultants**
- **Weekly Status Updates to the LCA Project Manager**
- **Monthly Progress Reports to the LCA Project Manager:** Project/task progress, next steps, and any issues.

Task Series 6 - Change Management ***(Corresponds to RFP Tasks 6.a.)***

This project will likely result in varying levels of organizational, work practice, and technology change. Change is inevitable to improve productivity in an environment of increasing customer service and competition, and fast technology changes. In addition, changes can often be dramatic when new technology has made it possible to achieve the same results in very different ways and at much lower costs.

Existing ways of doing things have become familiar to LCA staff over the years and they know what to expect. When changes are proposed, employees typically tend to resist them primarily because they don't know what to expect in the changed scenario. There will also be the problem of acquiring new skills if existing skills are inadequate. EMA's approach to resistance to change includes the involvement of the affected people in deciding to change. This approach involves:

- Helping LCA employees understand and feel that an existing situation cannot continue. Explain why change has become necessary.
- Presenting the prospects if things are changed. Create a vision of the future possibilities as a result of the change. If employees feel that there is a realistic possibility of achieving great results by making the changes, they will accept these more willingly.
- Indicating some specific changes and actions that will take place immediately and show how these will start the process of reaching the vision. Immediate and specific actions have great tactical value. It will also clearly show how changes are likely to be made and what impact they can have.

The essential step in the change management process is to prepare the employees for change. The change itself will need to be:

- Planned in advance in detail, showing how LCA will reach the desired state from the current situation.
- Communicated as indicated above in a strategic manner so that acceptance of the affected employee is gained.
- Implemented along project management lines in a systematic manner through a prioritized sequence of steps.
- Followed through and reinforced till the new ways are institutionalized and become normal ways of doing things.

Deliverables

- **Assistance with Change Management Ideas and Processes.** Create and sustain employee support for new IT projects and processes.
- **Document Change Management Risks and Solutions.** As needed for each project.



Lehigh County Authority

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(610)398-2503 * FAX (610)398-8413

PROFESSIONAL SERVICES AUTHORIZATION

Professional: EMA
900 Northbrook Drive
Suite 110
Trevose, PA 19053

Date: February 22, 2011

Requested By: Joe McMahon III

Approvals

Department Head: _____

General Manager: _____

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

EMA will provide Information Management and Technology consulting and will develop an Information Management and Technology Master Plan (ITMP) to update LCA's 10 year old ITMP. Given the dramatic changes in both technology and LCA's assets and responsibilities a plan that provides a path for the development of new tools and processes that capture information and knowledge as well as increase efficiency is needed at this critical juncture. The following task breakdown shows the project tasks as outlined in the RFP and EMA's proposed hours and costs:

Task / Proposal Item	Description	Hours	Cost
Task 1	Project Kick-Off & IT/KM Consultant Coordination	14	\$3,032
Task 2	Complete LCA IT Assessment	268	\$44,828
Task 3	Develop IT Strategy	152	\$25,752
Task 4	Update LCA Existing Master Plan	116	\$15,140
Task 5	Project Management	122	\$24,732
Task 6	Change Management	16	\$2,800
Task 7(Optional)	Overall ITMP – Knowledge Management Projects Facilitation	280	\$52,760
Efficiency Discount	Two Project Discount \$20,000 per project / Task 7 Not needed	(280)	(\$72,760)
Additional Expenses	Travel / Lodging / Other Expenses		\$8,600
		688	\$104,884

The technical and cost proposals submitted by EMA are available for viewing by any board or staff member upon request.

This contract is a not-to-exceed contract and will be invoiced on a monthly basis.

Cost Estimate (not to be exceeded without further authorization): \$104,884

Time Table and Completion Deadline: This project will begin immediately and shall be completed in more than 7 months. Assuming a project start date of March 1, this project shall be completed by November 1, 2011.

(For Authority Use Only)

Authorization Completion:

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

CAPITAL PROJECT AUTHORIZATION

PROJECT NO.: W-10-7 BUDGET FUND: ADMINISTRATION - WATER CAPITAL

PROJECT TITLE: Information Management and Technology Master Plan (ITMP) PROJECT TYPE:

	<input type="checkbox"/>	Construction
	<input checked="" type="checkbox"/>	Engineering Study
	<input type="checkbox"/>	Design
	<input type="checkbox"/>	Amendment

COST ESTIMATE: \$ 151,884

DESCRIPTION AND BENEFITS

This ITMP project will assess LCA's current and future needs for process and technology improvements against existing processes and information system (IS) in order to design a plan for the migration of the existing IT management and infrastructure into the future with the goals of increased efficiency and data/information/knowledge retention and utilization. The plan will proceed from needs analysis through plan development and delivery. The plan will prioritize the most cost beneficial projects in order to have the highest return on investment in the early years of implementation. The last plan was done in 2000/2001.

The ITMP, Knowledge Management and the GIS Implementation are all pieces of an integrated approach that will assist LCA to move confidently into the future by making LCA's systems more efficient and its data, information and knowledge more secure yet readily accessible for employee work needs.

This capital project has additional funding that will be used to begin implementation of the updated ITMP recommendations after they have been presented to and approved by the LCA Board. .

Professional services have been secured to provide consulting.

Requested This Authorization		
<u>Project Totals</u>		
Payroll (includes application training and testing)	\$	32,000
Professional Services	\$	104,884
Equipment Purchases (hardware / software)	\$	-
Misc. Costs	\$	-
Contingency	\$	15,000
Total Project Cost	\$	151,884
<u>Future Authorization</u>		
Recommended ITMP Project Implementation Costs (estimate)	\$	170,000
Total Estimated Project	\$	321,884

REVIEW AND APPROVALS

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



Lehigh County Authority

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MEMORANDUM

Date: February 22, 2011

To: Authority Board
From: Emily Gerber
Subject: GIS Future Application Needs Assessment &
Mobile Application Development &
Implementation

MOTIONS /APPROVALS REQUESTED:

No.	Motion /Approval Item	Amount
1	Capital Project Authorization (CPA)	\$309,000
2	Professional Services Authorization (PSA) – Wendel Duchscherer (1)	\$101,880

(1) The amount listed for the PSA is also included within the CPA amount.

GENERAL PROJECT OVERVIEW:

Lehigh County Authority (LCA) intends to retain the services of a consulting firm specializing in geographic information systems (GIS) to provide LCA with assistance in both updating our existing GIS Needs Assessment, focusing primarily on mobile needs, and developing and implementing a new mobile application for use by our field technicians. Since 2003, LCA has been utilizing an in-house GIS using ESRI ArcGIS software. It was originally envisioned that the data stored within the GIS would eventually be available outside of the office for our mobile workforce. This project will initially incorporate only LCA's existing GIS data, including aerial photography and previously scanned and georeferenced documentation, and all newly converted digital documents, which will be included as part of the Document Conversion Phase of this project. A future authorization will be requested for the conversion efforts. This project will be the foundation for any future GIS or IT mobile implementations and will include the purchase of new hardware and software for use in the field.

The selected firm will perform the following services listed in Table 1 under the terms of a Professional Services Authorization:

Table 1 – GIS Consulting & Application Development Services	
Task 1	Attend Project Kick-Off Meeting(s) & coordinate with IT/KM Consultant
Task 2	Update GIS Needs Assessment & provide new Mobile Implementation Plan
Task 3	Provide recommendations for mobile hardware & software and assist in installation
Task 4	Provide recommendations for data conversion efforts
Task 5	Develop a Mobile GIS Application and provide a pilot study area for review & critique
Task 6	Develop a Final Mobile GIS Application for full deployment
Task 7	Provide Training and Project Oversight

CONSULTANT SELECTION PROCESS

To assure that a qualified firm was selected and that LCA was receiving the best overall value, a multi-step selection process that included a qualifications based selection to short list qualified firms was utilized. The short listed firms were then asked to participate in an interview/workshop with LCA personnel and only these firms were sent our final Request for Proposals (RFP) and asked to submit technical and cost proposals for this project.

Requests for Qualifications (RFQ) were sent to over one hundred different GIS and/or engineering consulting firms nationwide. Additionally, the RFQ was advertised on several free GIS on-line services. Statements of Qualifications were received from the fifteen firms listed in Table 2 and the firms short listed to participate in the interview process are listed in Table 3:

Table 2
Firms Submitting a Statement of Qualifications
<i>(in alphabetical order)</i>
ARRO
Azavea
BAE Systems
Carahsoft Technology
Carroll Engineering
CarteGraph
CyberTech
EMA
ESRI
Gannett Fleming
GeographIT
JMT Technology Group
Maser Consulting PA
Sanborn
Wendel Duchscherer

Table 3
Firms Selected to Participate in Interviews
<i>(in alphabetical order)</i>
EMA
ESRI
geographIT
Wendel Duchscherer

Interviews/workshop sessions were conducted the week of November 8, 2010. The interview/workshop process achieved two primary goals:

- 1) Additional information was obtained from the four different consulting firms in order to fully finalize the GIS RFP so that we felt comfortable with all of the tasks and subtasks that were included; and
- 2) The consulting firms were able to ask questions and develop a complete understanding of the scope of work in order to provide comprehensive and comparable technical and cost proposals.

Separate technical and cost proposals from all four firms were received on December 3, 2010. Cost and man-hour summaries of these proposals are shown in Table 4:

Table 4		
Cost & Consultant Man-Hour Breakdown		
Firm	Hours	Cost
Wendel Duchscherer	846	\$101,880.00
geographIT	1453	\$147,423.00
ESRI	731	\$186,909.00
EMA	1109	\$205,520.00

A team of LCA employees composed of both Operations and Capital Works staff reviewed these proposals. The ESRI proposal was immediately removed from consideration due to what the team considered inadequate understanding of the project scope and LCA needs. The proposals for the remaining three firms were further reviewed and the team selected geographIT as having the most comprehensive and intriguing RFP. However, due to cost differences, specific questions regarding components of their individual proposals were posed to both Wendel Duchscherer and geographIT in order to further evaluate their submittals.

Based upon this review and the clarifications received from these firms, we recommend award of this project to Wendel Duchscherer. Their proposal included all of the tasks and subtasks that we had initially requested and in a time frame that was acceptable. Additionally, they were able to demonstrate that their proposal would provide the same services as the other firms but at a significant savings. We believe that they are the best overall value for LCA.

PROJECT SCHEDULE:

Wendel Duchscherer has estimated that the project will take approximately seven months to complete. A joint project kick-off meeting with the IT/KM consultant (EMA) will be scheduled upon Board authorization of all three projects.

This project will be coordinated with the IT Master Plan update and may need to wait for certain milestones in the IT project to be completed before it can proceed to specific tasks. This may cause the project timeline to be extended.



Lehigh County Authority

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PROFESSIONAL SERVICES AUTHORIZATION

Professional: Wendel Duchscherer
1140 John James
Audubon Parkway
Suite 201
Amherst, NY 14228

Date: February 22, 2011

Requested By: Emily Gerber

Approvals

Department Head: _____

General Manager: _____

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

Wendel Duchscherer (Wendel) will provide both GIS consulting and application development services to review and update our existing GIS Needs Assessment from a mobile perspective and create and implement a mobile GIS application. The following task breakdown shows the project tasks as outlined in the RFP and Wendel's proposed hours and costs:

Task / Proposal Item	Description	Hours	Cost
Task 1	Project Kick-Off & IT/KM Consultant Coordination	32	\$4,360
Task 2	Mobile Application Needs Assessment & Implementation Plan	196	\$22,330
Task 3	Mobile Hardware & Software Selection & Installation	83	\$10,530
Task 4	Data Conversion Recommendations	75	\$7,620
Task 5	Mobile GIS Development & Implementation (Pilot Project)	230	\$26,260
Task 6	Mobile GIS Development & Implementation (Final Product)	96	\$9,920
Task 7	Project Management	42	\$5,180
Needs Allowance	Customization Allowance based on RFP	92	\$10,680
Additional Expenses	Travel / Lodging / Other Expenses		\$5,000
		846	\$101,880

The technical and cost proposals submitted by Wendel are available for viewing by any board or staff member upon request.

This contract is a not-to-exceed contract and will be invoiced on a monthly basis.

Cost Estimate (not to be exceeded without further authorization) : \$101,880

Time Table and Completion Deadline : This project will begin immediately and shall be completed in no more than 7 months. Assuming a project start date of March 1 and no significant project delays, this project shall be completed by November 1, 2011.

(For Authority Use Only)

Authorization Completion :

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

CAPITAL PROJECT AUTHORIZATION

PROJECT NO.:	W-10-5	BUDGET FUND:	ADMINISTRATION - WATER CAPITAL
PROJECT TITLE:	GIS Future Application Needs Assessment & Mobile Application Development & Implementation	PROJECT TYPE:	<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> <input checked="checked" type="checkbox"/> X <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div> <div> Construction Engineering Study Design Amendment </div> </div>
COST ESTIMATE:	\$309,000.00		

DESCRIPTION AND BENEFITS

This project will assess LCA's existing geographic information system (GIS) and determine future application needs and enhancements with a specific focus on mobile workforce needs. The original GIS Needs Assessment was completed in 2000 prior to the implementation of the current in-house GIS software and applications. This Needs Assessment will be refreshed from a mobile application perspective in order to account for the GIS implementations and improvements that have since been addressed as well as the changes that have been made to LCA's financial and billing softwares. This will not be a full re-evaluation of the Needs Assessment as it will focus primarily on GIS mobile technology.

Upon completion of the Needs Assessment update, a mobile GIS application will be developed and implemented. The mobile application will initially incorporate only LCA's existing GIS data, including aerial photography and previously scanned and georeferenced documentation, and newly converted digital documents identified as critical for the mobile workforce as part of the Needs Assessment. A separate authorization will be prepared at a later time for the necessary document conversion efforts for this mobile application, which will include consultant assistance to properly incorporate the new data into the existing GIS. This project will serve to directly benefit all field technicians including our inspector and customer care field technician.

Professional services have been secured to provide both consulting and application development and implementation expertise for this project.

Requested This Authorization		
Project Totals		
Payroll (includes application training and testing)	\$	70,000
Professional Services	\$	101,880
Equipment Purchases (hardware / software)	\$	90,000
Misc. Costs (includes purchase of additional licensing)	\$	20,000
Contingency	\$	27,120
Total Project Cost	\$	309,000
Future Authorization		
Document Conversion & Implementation Costs (estimated)	\$	146,000
Total Estimated Project	\$	455,000

REVIEW AND APPROVALS

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

CAPITAL PROJECT AUTHORIZATION

Amendment No. 1

PROJECT NO.: S-08-1

BUDGET FUND: WASTEWATER CAPITAL

PROJECT TITLE: Vera Cruz Area Sewer Project

PROJECT TYPE:

- ☐ Engineering Study
☐ Design
☒ Construction
☒ Amendment

COST ESTIMATE: \$ 4,676,019

DESCRIPTION AND BENEFITS

The project consists of the Construction of a public sewer system to serve the village of Vera Cruz and surrounding areas. Construction will entail installation of 28,500 feet of low pressure sewer main, 81 manholes and service laterals to approximately 278 properties in Upper Milford Township. Reference cover Memo for additional information.

	Previously Approved	Actual
Planning (Complete)	\$ 43,000	\$ 29,200
Design (Complete)	\$ 557,000	* \$ 474,781
Total	\$ 600,000	\$ 503,981

Construction

	This Approval
Payroll	400,000
Professional Services	165,000
Construction Contracts	3,088,000
Financing Costs	50,000
PaDOT Performance Bond	12,000
Construction Interest	20,000
Misc.	16,000
Contingencies	450,000
Allocation Purchase	475,019

Total Requested This Authorization

\$ 4,676,019


Total Estimated Project

\$ 5,180,000

2011 Budget \$ 4,800,000

* Includes SSM, Inc. PSA amendment for Phase II - Archeological Study @ \$58,211

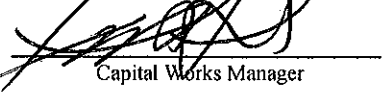
REVIEW AND APPROVALS


Project Manager

2/18/11
Date

General Manager

Date


Capital Works Manager

2/18/11
Date

Chairman

Date

**Lehigh County Authority**

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MEMORANDUM

Date: February 18, 2011

To: Board of Directors & Management Staff
From: Lance M. Babbitt
Re: Vera Cruz Area Sewer Project

MOTIONS /APPROVALS REQUESTED ()**

No.	Motions/Approval Items	Brief Description	Amount
1	Capital Project Authorization Amendment	Construction Phase	\$ 4,676,019
2	Professional Services Authorization Amendment No. 1	Spotts, Stevens & McCoy <i>Design Phase- Archeological Study</i> <i>Construction Engineering(I)</i> Total Amendment	 \$ 58,211 <u>\$ 114,873</u> \$ 173,084
3	Construction Contracts Awards	Pact Construction, Inc., <i>General Construction(I)</i> Environmental One Corporation, (E/One) <i>Grinder Pump Supply and Service (I)</i>	\$ 2,332,090 \$ 755,865

(1) Included in CPA Construction Phase Amendment

****Note:** Board Approvals/Awards conditioned upon Upper Milford Township adoption of a Mandatory Connection Ordinance for the Project and the receipt of the required documentation from the respective contractors.

PROJECT OVERVIEW

The proposed project will provide public wastewater service to approximately 278 Upper Milford Township (UMiLT) properties located in the Vera Cruz area. Approximately 260 of these properties will be required to connect to the system; the remaining 18 properties are vacant. There are approximately 299 existing Equivalent Dwelling Units (EDUs), and 11 future EDUs. The Project Area is shown on the attached map.

Data from a Sewage Disposal Needs Identification conducted by the Township Sewage Enforcement Officer indicated that the on-site wastewater disposal systems of approximately 219 of the developed properties had some degree of malfunction.

A Low-Pressure alternative was selected and presented to the Project Area residents in January 2009. The Low-Pressure system includes approximately 28,500 linear-feet of High Density Polyethylene (HDPE), ranging from 1-1/4" to 6-inches in diameter, installed by direction drilling. As part of the Project Cost an individual grinder pump unit will be provided to each property owner for installation by their contractor.

It is anticipated that Upper Milford Township will adopt a Mandatory Connection Ordinance, in accordance with §67502(a) of the Second Class Township Code requiring all properties that are adjoining or adjacent to or whose principal building is within one hundred and fifty feet (150') from the sanitary sewer to connect. In summary, this requires all properties in the Project Area to connect.

The project will be constructed in three milestone areas, starting at the lower end in Salem Ridge. This will allow the connection of about 1/3 of the customers and their generated revenue every 90 days.

PROJECT FUNDING / COST RECOVERY (Public Facilities)

The \$5.18 million Project will be funded by a combination of grant(s), LCA contribution, connection fees, tapping fees and financing. \$2.6 million in financing for the Vera Cruz Project was assumed in the LCA Common Collector rate. The LCA Common Collector rate is applicable to the UMiLT, Weisenberg, Sand Spring, Wynnewood and Heidelberg wastewater systems.

Item	Amount
New Public Facility Cost	\$ 4,705,000
Allocation Cost	475,000
Total Estimated Project Cost	\$ 5,180,000
<u>Less Estimated Credits</u>	-
EPA Grant	(1,455,000)
LCA Contribution	(315,000)
Project Capacity Tapping Fees	(50,000)
Project Connection Fee	(285,000)
Non-project Capacity Tapping Fees	(475,000)
Total Estimated Credits	\$ (2,580,000)
Net Amount to be Financed	\$ 2,600,000

ONE-TIME UP-FRONT AND ON-GOING ANNUAL COSTS:

Back on August 3, 2010 when a Project update was presented to the Board the One-time up-Front costs for a typical residential property (1-EDU) was estimated to be \$ 9,785 (\$3,985 for public facilities and \$ 5,800 for private plumbing). Now because of very favorable Construction and Pump Supply bids and effective design phase cost management we were able to reduce these Up-front costs to \$8,931 (\$2,911 for public facilities and \$6,020 for private plumbing). The following tables provide examples of how various types of properties will be impacted.

Single Family Residential							
Up-Front Costs							
Public Facility Costs (Paid to LCA)				Private (Paid to Others)			Grand Total
Connection Fee (1)	Capacity Tapping Fees (2)		Total Public	Plumbing (3)	Township Permits (4)	Total Private	
	Project	Non-Project					
\$ 1,025	\$ 180	\$ 1,706	\$ 2,911	\$ 5,800	\$ 220	\$ 6,020	\$ 8,931

(1) Assumes One Public Lateral

(2) Assumes 1-EDU. Non-Project Capacity Fees include WLI, LLRI & Wastewater Treatment Capacity

(3) Typical property -Estimated Costs, Includes installation of grinder pump & electrical connection, private lateral and septic tank abandonment

(4) Plumbing, Electrical and Septic Abandonment

Single Family Residential			
On-Going Annual Costs			
Paid to LCA User Charges (1)	Paid to Others (2)		Total
	Electricity	GP Maintenance Contract (3)	
\$ 362	\$ 28	\$ 140	\$ 530

(1) Based upon the current flat rate of \$90.43 per/quarter. Optional metering depending upon actual use may reduce or increase this charge.

(2) Assumes one-grinder Pump

(3) Per Township Ordinance the property owner must secure an Annual Maintenance Agreement

Multi-Family Residential								
Number of Units	Up-Front Costs							
	Public Facility Costs (Paid to LCA)				Private (Paid to Others)			Grand Total
	Connection Fee (1)	Capacity Tapping Fees (2)		Total Public	Plumbing (3)	Township Permits (4)	Total Private	
		Project	Non- Project					
2	\$ 1,025	\$ 216	\$ 2,050	\$ 3,291	\$ 5,800	\$ 220	\$6,020	\$ 9,311
3	\$ 1,025	\$ 324	\$ 3,075	\$4,424	\$ 5,800	\$ 220	\$6,020	\$10,444
4	\$ 1,025	\$ 432	\$ 4,100	\$5,557	\$ 5,800	\$ 220	\$6,020	\$11,577
5	\$ 1,025	\$ 540	\$ 5,125	\$6,690	\$ 5,800	\$ 220	\$6,020	\$12,710
6	\$ 1,025	\$ 648	\$ 6,150	\$7,823	\$ 5,800	\$ 220	\$6,020	\$13,843
7	\$ 1,025	\$ 756	\$ 7,175	\$8,956	\$ 5,800	\$ 220	\$6,020	\$14,976

(1) Assumes One Public Lateral

- (2) Assumes MFR Tapping Fees. Non-Project Capacity Fees include WLI, LLRI & Wastewater Treatment Capacity
 (3) Typical property -Estimated Costs, Includes installation of grinder pump & electrical connection, private lateral and septic tank abandonment
 (4) Plumbing, Electrical and Septic Abandonment

Multi-Family Residential				
Number of Units	On-Going Annual Costs			
	Paid to LCA	Paid to Others (2)		Total
	User Charges (1)	Electricity	GP Maintenance Contract (3)	
2	\$ 643	\$ 32	\$ 140	\$ 815
3	\$ 965	\$ 48	\$ 140	\$ 1,153
4	\$ 1,287	\$ 64	\$ 140	\$ 1,491
5	\$ 1,609	\$ 80	\$ 140	\$ 1,829
6	\$ 1,930	\$ 96	\$ 140	\$ 2,166
7	\$ 2,252	\$ 112	\$ 140	\$ 2,504

- (1) Based upon the current MRF flat rate of \$80.43 per/quarter. Optional metering depending upon actual use may reduce or increase this charge.
 (2) Assumes one-grinder Pump
 (3) Per Township Ordinance the property owner must secure an Annual Maintenance Agreement

Commercial								
Number of EDUs	Up-Front Costs							
	Public Facility Costs (Paid to LCA)				Private (Paid to Others)			Grand
	Connection Fee (1)	Capacity Tapping Fees (2)		Total Public	Plumbing (3)	Township Permits (4)	Total Private	Total
		Project	Non-Project					
1	\$ 1,025	\$ 180	\$ 1,706	\$ 2,911	\$ 6,175	\$ 220	\$6,395	\$ 9,306
2	\$ 1,025	\$ 360	\$ 3,412	\$ 4,797	\$ 6,175	\$ 220	\$6,395	\$11,192
3	\$ 1,025	\$ 540	\$ 5,118	\$ 6,683	\$ 6,175	\$ 220	\$6,395	\$13,078
4	\$ 1,025	\$ 720	\$ 6,824	\$ 8,569	\$ 6,175	\$ 220	\$6,395	\$14,964
5	\$ 1,025	\$ 900	\$ 8,530	\$10,455	\$ 6,175	\$ 220	\$6,395	\$16,850

- (1) Assumes One Public Lateral
 (2) Based upon a cost per-EDU. Non-Project Capacity Fees include WLI, LLRI & Wastewater Treatment Capacity
 (3) Typical property -Estimated costs, include; installation of grinder pump & electrical connection, private lateral, septic tank abandonment, 5/8" x 3/4" meter
 Note: Some commercial properties may be required to install a grease trap and/or wastewater sampling station these costs are not included in the estimate
 (4) Plumbing, Electrical and Septic Abandonment

Commercial				
Number of EDUs	On-Going Annual Costs			
	Paid to LCA User Charges (1)	Paid to Others (2)		Total
		Electricity	GP Maintenance Contract (3)	
.1	\$ 362	\$ 28	\$ 140	\$ 530
2	\$ 723	\$ 56	\$ 140	\$ 919
3	\$ 1,085	\$ 84	\$ 140	\$ 1,309
4	\$ 1,446	\$ 112	\$ 140	\$ 1,698
5	\$ 1,809	\$ 140	\$ 140	\$ 2,089

(1) Commercial customers must install a meter on their water supply and their sewer bill will be based upon on actual usage.

The estimated charges above are based upon 1-EDU equaling approximately 180 gallons per-day of flow.

(2) Assumes one-grinder pump

(3) Per Township Ordinance the property owner must secure an Annual Maintenance Agreement

BIDDING SUMMARY FOR GENERAL CONSTRUCTION AND PUMP SUPPLY CONTRACTS

Staff received eight proposals for the general construction contract and one proposal for the pump supply contract on this project on January 6, 2011. A tabulation of the bids is attached. The three lowest bids for the general construction and the one bid for pump supply are all in compliance with the bidding requirements. Lehigh County Office of Community and Economic Development has approved the bidder's Minority & Women's Business Enterprise solicitation efforts. The Department of Environmental Resources has approved the Disadvantaged Business Enterprise solicitation efforts. Spotts, Stevens & McCoy have reviewed the submittals and made recommendation to award the work to the lowest bidder for each contract. (See attached)

SCHEDULE

The UMiT Mandatory Connection Ordinance is scheduled for action on March 3, 2011. Once enacted, we will issue the Intent to Award to the low bidders. They have 15 days to respond with signed Agreements, bonds and insurances. After Agreement execution by LCA, a Notice to Proceed will be issued to the contractors. Construction should start in late March and will be complete by spring of 2012.



Lehigh County Authority

1053 Spruce Road * P.O. Box 3348 * Allentown, PA 18106-0348
(610)398-2503 * FAX (610)398-8413

PROFESSIONAL SERVICES AUTHORIZATION

Amendment #1

Professional: Spotts, Stevens & McCoy
City Line Plaza
2005 City Line Road
Bethlehem, PA 18017

Date: February 18, 2011

Requested By: Lance M. Babbitt

Approvals

Department Head:

General Manager:

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

Vera Cruz Area Sewer Project

Perform design phase services related completion of a Phase II Archeological Study to satisfy the PA Historical and Museum Commission. Cost of \$58,210.50

Perform Construction Phase services for construction engineering per the attached proposal. Cost of \$114,873.00

Total amount of this contract amendment: \$173,083.50

Previous authorization: \$267,000.00

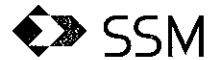
Cost Estimate (not to be exceeded without further authorization): \$ 440,083.50

Time Table and Completion Deadline: March 1, 2012

(For Authority Use Only)

Authorization Completion:

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



February 3, 2011

Lance Babbitt
Lehigh County Authority
1053 Spruce Road
P.O. Box 3348
Allentown PA 18106-0348

Re: Vera Cruz Sewer System
Construction Phase Scope of Work and Cost Proposal
SSM File POP01104.2007

Dear Mr. Babbitt:

As requested, Spotts, Stevens and McCoy, Inc. (SSM) is pleased to offer this Cost Proposal for construction phase engineering services for the Vera Cruz Sanitary Sewer Collection System. The fees presented herein are for budgetary purposes for you to identify the expenses associated with performing the work and to define the Scope of Work by SSM.

We will provide construction engineering as presented in more detail in the enclosed Scope of Work:

Our work will be provided in accordance with the Federal Requirements and Contract Provisions for the Appropriation Act Projects as administered by the Environmental Protection Agency, under provisions of 40 CFR Part 30 and 31 and as provided in Attachment 2, Federal Contract Requirements.

SCOPE OF WORK

CONSTRUCTION SERVICES

SSM will provide the following construction engineering services:

- SSM will attend a pre-construction conference (if desired). The meeting minutes will be provided by LCA and should include a list of all contacts for the project, including but not limited to, SSM, LCA, UMT and the contractor.
- SSM will provide one full time resident construction observer. The construction observer will observe the construction to insure that the job is being constructed in accordance with the approved plans and specifications. The construction observer will assist LCA with initial inspections and we will have limited involvement as the project proceeds.

Mr. Lance Babbitt
February 3, 2011
SSM File POP01104.2007 Construction Phase Engineering
Page 2

SSM's field personnel utilize Tablet PC's in the field for construction observation in lieu of the traditional field books. All of the specifications, drawings and shop drawings are loaded onto the PC prior to construction. This allows for the easy retrieval of any needed information in the field without the need for paper copies. The Tablet has a touch screen which allows for the direct writing of field notes on the screen in the field. These notes are then electronically stored and are downloaded to our office each day and can be distributed to the LCA on a daily basis if desired. Annotated photographs and sketches are included with the field notes.

- SSM will respond to technical questions from the contractors or as a result of unexpected field conditions. This will include interpretation and clarification of contract documents. Responses resulting in changes in the contract price will be addressed via a change order request as noted below.
- SSM will provide monthly quantity totals for the contractor for the periods we are assisting with construction observation for LCA's use in completing PennVEST Applications for Payment.
- SSM will review and approve, or take other appropriate action upon the contractor's submittals such as shop drawings, product data and samples, but only for conformance with the information given in the contract documents. Such action shall be taken with reasonable promptness so as to cause no delay.
- SSM will prepare change orders, if requested, for LCA's approval and execution.
- SSM will prepare record drawings for the completed work based on information submitted by the contractor. Furnish one (1) complete set of reproducible drawings plus computer disks of the drawings to LCA.
- SSM will inspect (final) the work under each contract and will recommend issuance of a Certificate of Completion for each segment of the project.
- Submit four (4) complete sets of operation and maintenance manuals for all equipment installed within the pump stations. This will be a compilation of manufacturers provided information.

UNDERSTANDINGS AND ASSUMPTIONS

- Our Proposal includes two meetings at the discretion of the LCA.
- LCA will submit the PennVEST Applications for payment. SSM will supply construction quantities for LCA's use in completing the application.
- Our construction observation fee provides for 111 man days (1,000 hours) based on a nine (9) hour workday.

Mr. Lance Babbitt
February 3, 2011
SSM File POP01104.2007 Construction Phase Engineering
Page 3

- Submittal (shop drawing) reviews include up to two submissions by the contractor. Additional resubmissions will be billed in accordance with our Rate Schedule.
- We have assumed a one (1) year construction period. Construction related engineering services in this Proposal cover a one (1) year time frame. Engineering services required beyond one year will be billed in accordance with our Rate Schedule.
- The LCA will assign one person to act as client contact for SSM to interface with on the project.
- Other responsibilities are more clearly defined in the attached Project Responsibility Matrix.

COMPENSATION

SSM will provide the services described in this Proposal for the not-to-exceed fee of One Hundred Fourteen Thousand Eight Hundred Seventy Three Dollars (\$114,873). This fee is valid for ninety (90) days from the date of this Proposal. The work performed shall be billed on a time and material basis, plus expenses. The fee is an estimate only. Actual fees will be calculated on a time and materials basis at hourly charges for individuals assigned to various tasks as shown on the attached 2008 Rate Schedule.

Applicable out-of-pocket expenses chargeable to this project may include (but are not limited to) expenses for equipment, supplies, communication, printing, mailing and transportation. The costs represent our estimate of the total out-of-pocket expenses and hourly costs for this project.

	Hourly Rate	Manhours	Fee
1 Construction Phase			
1 Review of Shop Drawings			
Senior Engineer/Technical Manager	\$ 114.00	3	\$ 342.00
Specialist IV	\$ 104.00	78	\$ 8,112.00
Specialist III/Senior Project Representative	\$ 94.00	6	\$ 564.00
Project Representative/Designer	\$ 83.00	11	\$ 913.00
Administrative Support	\$ 40.00	5	\$ 200.00
		103	\$ 10,131.00
2 Construction Phase Engineering			
Senior Engineer/Technical Manager	\$ 114.00	32	\$ 3,648.00
Specialist IV	\$ 104.00	60	\$ 6,240.00



Mr. Lance Babbitt
February 3, 2011
SSM File POP01104.2007 Construction Phase Engineering
Page 4

Specialist III/Senior Project Representative	\$ 94.00	10	\$ 940.00
Administrative Support	\$ 40.00	10	\$ 400.00
		112	\$ 11,228.00
3 Construction Observation			
Senior Engineer/Technical Manager	\$ 114.00	9	\$ 1,026.00
Specialist IV	\$ 104.00	11	\$ 1,144.00
Project Representative/Designer	\$ 83.00	1000	\$ 83,000.00
Administrative Support	\$ 40.00	5	\$ 200.00
		1025	\$ 85,370.00
4 Record Drawings			
Senior Engineer/Technical Manager	\$ 114.00	3	\$ 342.00
Project Representative/Designer	\$ 83.00	44	\$ 3,652.00
		47	\$ 3,994.00
<hr/> Subtotal			\$ 110,723.00
Expenses			
Mileage			\$ 2,600.00
Specification and Drawing			
Reproduction			\$ 1,500.00
Postage			\$ 50.00
			<hr/> \$ 4,150.00
TOTAL		1,287	\$ 114,873.00

Terms and Conditions

Our Standard Terms and Conditions for the performance of services are included in this Proposal.

The Issuance of a Purchase Order in response to this Proposal constitutes acceptance. In the event of any inconsistencies between this Proposal and any other contract document, including but not limited to Purchase Orders issued in response hereto, this Proposal shall govern.

We can begin work upon receipt of your signed authorization.



Mr. Lance Babbitt
February 3, 2011
SSM File POP01104.2007 Construction Phase Engineering
Page 5

Thank you for the opportunity to present this Outline of Services to you. We have performed similar work for many of our clients and are confident that we can meet and exceed your expectations on this project. If you have any questions regarding the content of this additional information, please do not hesitate to contact us. We look forward to helping LCA with this important project.

Sincerely,
SSM Group, Inc.

A handwritten signature in black ink, reading "Carl F. Dicker, Jr." in a cursive script.

Carl F. Dicker, Jr., P.E.
Director, Water and Wastewater Services
carl.dicker@ssmgroup.com

TERMS AND CONDITIONS FOR SERVICE AUTHORIZATION

1. JOB SITE

- 1.1 CLIENT, at CLIENT's expense, will furnish such reports, data, studies, plans, specifications, documents and other information related to the site, that client has at its disposal on surface and subsurface site conditions required by SSM for proper performance of its services. SSM shall be entitled to rely on the accuracy and completeness of CLIENT-provided information in performing the services required under this AGREEMENT. CLIENT-provided documents will remain the property of the CLIENT.
- 1.2 CLIENT shall mark the location of all underground utilities affecting the job site. SSM assumes no liability for the accuracy or completeness of these markings. CLIENT shall arrange for proper disconnection or de-energizing of utilities as requested by SSM.

2. DISPOSAL OF CONTAMINATED MATERIAL

- 2.1 It is understood and agreed that SSM is not, and has no responsibility as, a handler, generator, operator, treater or storer, transporter or disposer of hazardous or toxic substances, including asbestos and that CLIENT shall undertake or arrange for the handling, removal, treatment, storage, transportation and disposal of any hazardous substances or constituents found or identified in any sample collected by SSM.
- 2.2 All samples of hazardous substances or materials containing hazardous substances (whether soil, water, sludge, or any other material collected as a result of testing or sampling) shall become and remain the property of the CLIENT and will be returned to the CLIENT after laboratory analyses are completed and the CLIENT shall have responsibility for the proper handling and disposal of all such samples and materials.
- 2.3 Any and all testing or sampling equipment, clothing, expendables or supplies which cannot be decontaminated will also become the property of the CLIENT subject to the CLIENT's responsibilities as outlined in Paragraph 2.2.

3. PAYMENT

- 3.1 Payment shall be made by CLIENT within thirty days from the date of the invoice. SSM reserves the right to require payment at any time prior thereto if in good faith it believes that the prospect of payment is impaired. Interest at the rate of 1.5% per month shall accrue for late payment beginning 30 days after the date of invoice. If an invoice is in dispute, interest shall not continue to accrue.
- 3.2 SSM may suspend performance under this AGREEMENT if at any time any fees or costs are due and outstanding for a period of more than 45 calendar days from the date of invoice. In the event of a suspension, CLIENT agrees to reimburse SSM for all increases in costs of its services caused by the suspension, including cost of performance and expenses related to demobilization and remobilization, if any.
- 3.3 In the event of delays through no fault of SSM and due to the CLIENT's conduct, the CLIENT shall pay all costs which have been reasonably incurred by SSM in suspending the services, including all costs incurred in reactivating the services. This is in addition to compensation for services performed and costs incurred prior to suspension.

4. LIABILITY, LIMITATIONS

- 4.1 Standard of Care
Services provided by SSM under this AGREEMENT will be conducted with the level of skill and care ordinarily exercised by members of the profession under similar conditions. No other warranty, expressed or implied, is made.
- 4.2 As between the parties to this AGREEMENT, any applicable statute of limitations or repose will begin to run, and any cause of action will have accrued, not later than the date of the last invoice sent to CLIENT by SSM for project work performed. In no event shall the CLIENT be permitted to make any claim against any party, including third parties not in privity with this AGREEMENT, after four years from the date of any specific substantial completion of the PROJECT or the date of the final payment to SSM for any PROJECT, whichever event occurs earliest (referred to as the date of repose), whether the basis of any claim is known or discovered before or after that date of repose.
- 4.3 The liability of SSM or any of its principals or employees for any claims based on the performance or nonperformance of any duties arising from this AGREEMENT shall be limited to the sum of all fees paid, or the amount of insurance proceeds, whichever is greater.
THE REMEDIES SET FORTH IN THIS ARTICLE ARE IN LIEU OF AND EXCLUDE ALL OTHER REMEDIES AVAILABLE TO CLIENT AND CONSTITUTE CLIENT'S EXCLUSIVE REMEDIES AGAINST SSM REGARDLESS OF WHETHER CLIENT'S CLAIM ARISES FROM THE NEGLIGENCE OF SSM, ITS SUBCONTRACTORS, SUPPLIERS, AGENTS OR EMPLOYEES; BREACH OF WARRANTY; BREACH OF CONTRACT; STRICT OR ABSOLUTE LIABILITY; OR OTHER ACT, ERROR OR OMISSION; OR FROM ANY OTHER CAUSE WHATSOEVER; OR ANY COMBINATION OF THE FOREGOING.
- 4.4 Neither SSM nor any of its principals or employees shall be liable for any delay not within its control in performing under this AGREEMENT, including delay attributable to labor disputes, force majeure, substantial modification of the scope of work, or any cause beyond SSM's control.
- 4.5 Neither SSM nor any of its principals or employees make any implied or express warranties with regard to any of the services to be provided hereunder and nothing herein shall be construed as such. To the contrary, any alleged breach of this AGREEMENT or claim against SSM or any of its principals or employees by any person or entity arising from the services

provided under this AGREEMENT is to be judged by the standard of reasonable care as rendered by others under similar circumstances at the time when and the place where the services are rendered.

5. INDEMNIFICATION

- 5.1 To the fullest extent permitted by law, CLIENT shall indemnify and hold harmless SSM, its successors and assigns, and the directors, officers, agents, and employees of each of them, from and against any and all claims, damages, losses and expenses, including attorney's fees, provided that (1) such liability is caused by CLIENT's wrongful acts, and (2) such claim is attributable to bodily injury, sickness, disease or death, or to the injury to or destruction of tangible property, including the loss of use resulting therefrom.
- 5.2 To the fullest extent permitted by law, SSM shall indemnify and hold harmless CLIENT, successors and assigns, and the directors, officers, agents, and employees of each of them, from and against any and all claims, damages, losses, and expenses, including attorney's fees, provided that (1) such liability is caused by wrongful acts, and (2) such claim is attributable to bodily injury, sickness, disease or death, or to the injury to or destruction of tangible property, including the loss of use resulting therefrom.

6. TERMINATION OF AGREEMENT

- 6.1 This AGREEMENT may be terminated by either party upon seven days' written notice should the other party fail substantially to perform in accordance with its terms through no fault of the party initiating the termination. CLIENT's failure to make payments promptly when due, or if SSM has reason to believe CLIENT will be unable to make any such payment, shall be events justifying termination pursuant to this clause.
- 6.2 In the event of termination which is not the fault of SSM, SSM shall be compensated for all services performed to termination date, together with Reimbursable Expenses then due.

7. INTEGRATION

The AGREEMENT represents the entire and integrated agreement between the CLIENT and SSM and supersedes all prior negotiations, representations or agreements, either written or oral. This AGREEMENT may be amended only by written instrument signed by both CLIENT and SSM. No course of prior dealing between the parties, no usage of trade and no course of performance accepted or acquiesced in shall be relevant to supplement, define or explain any term used in this AGREEMENT.

8. PATENTS, COPYRIGHTS AND TRADE SECRETS

SSM will not conduct patent searches and does not assure any liability for patent or copyright infringement or use of trade secrets and SSM makes no representations that equipment, or materials used in its work or design are free of such claims.

9. INTERPRETATION

If any provision of this AGREEMENT differs in any respect from the provisions (if any) of CLIENT's invitation to bid, purchase order or other solicitation, this AGREEMENT shall govern and shall be construed as SSM's counteroffer and shall not be effective as an acceptance of such invitation to bid, purchase order, or other solicitation.

10. OWNERSHIP AND USE OF DOCUMENTS

All documents, including drawings, specifications, reports, and digitized versions thereof, furnished by SSM under this AGREEMENT shall be the property of the CLIENT subject to the following:

- 10.1 SSM shall be entitled to keep copies of all such documents;
- 10.2 SSM shall have the right to use the intellectual property contained in such documents;
- 10.3 All proprietary information of SSM, including formulae, calculations, standards and computer programs used in the preparation of the documents, shall remain the property of SSM;
- 10.4 Any reuse of the documents without specific written verification or adaptation by SSM will be at the CLIENT'S sole risk and without liability to SSM and CLIENT shall indemnify and hold SSM harmless from any claims or damages resulting from such reuse. Any verification or adaptation of the documents by SSM will entitle SSM to further compensation at rates to be agreed to by the CLIENT and SSM.

11. OPINION OF PROBABLE COSTS

Opinions of probable construction and related costs, financing, and acquisition of land and rights-of-way prepared by SSM represent its judgment as a design professional and are supplied for the general guidance of the CLIENT. Since SSM has no control over cost of labor, materials, equipment, or services furnished by others, over contractors' methods of determining prices, over costs of financing, acquisition of land or rights-of-way, or over competitive bidding, market or negotiating conditions, SSM does not guarantee that any such opinions will not vary from actual costs or contractors' bids to the CLIENT.

12. NONDISCRIMINATION CLAUSE

We at Spotts, Stevens and McCoy, Inc. are an Equal Opportunity Employer and adhere to the Equal Employment Opportunity Clause under Executive Order 11246, as amended, Section 503 and Section 2012.



Mr. Lance Babbitt
February 3, 2011
SSM File POP01104.2007 Construction Phase Engineering
Page 7

AUTHORIZATION FOR SERVICES

Vera Cruz Sewer System
SSM File POP01104.2007 Construction Phase Engineering

Spotts, Stevens and McCoy, Inc., (SSM) thanks you for the opportunity to provide Civil Engineering Construction Phase Services for the Vera Cruz Sewer System in Upper Milford Township, Lehigh County, Pennsylvania as outlined in our Proposal (POP01104.2007), dated March 14, 2008, revised March 28, 2008 and February 3, 2011.

COMPENSATION

SSM will provide the services described in the Scope of Work for a Not-to-Exceed Time and Materials Fee of One Hundred Fourteen Thousand Eight Hundred Seventy Three Dollars (\$114,873.00).

Please review the enclosed Conditions and acknowledge your acceptance of them by signing and returning to us one copy of the Authorization for Services. The second Authorization for Services copy is for your records.

We look forward to working with you on this project.

Sincerely,
SSM Group, Inc.

Reviewed and Accepted:

A handwritten signature in black ink, appearing to read "Paul A. Pendzick", is written over a horizontal line.

Signature

Paul A. Pendzick, PE, RLA
Vice President
paul.pendzick@ssmgroup.com

Printed Name and Title

Date



Mr. Lance Babbitt
February 3, 2011
SSM File POP01104.2007 Construction Phase Engineering
Page 7

AUTHORIZATION FOR SERVICES

Vera Cruz Sewer System
SSM File POP01104.2007 Construction Phase Engineering

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We look forward to working with you on this project.

Sincerely,
SSM Group, Inc.

Reviewed and Accepted:

A handwritten signature in black ink, appearing to read "Paul A. Pendzick", is written over a horizontal line.

Signature

Paul A. Pendzick, PE, RLA
Vice President
paul.pendzick@ssmgroup.com

Printed Name and Title

Date

Project Responsibility Matrix							
	Scope Ref.	Activity	Owner	Engineer	LCA Project Rep	Contractor	Other
2.0 - Bid and Award Phase							
	2.1	Prequalify Bidders					
	2.2	Bidder Solicitation					
	2.3	Distribute Bidding Documents					
	2.3	Prepare Planholders List					
	2.4	Respond to Bidder's Questions					
	2.5	Conduct Pre-Bid Conference					
	2.6	Prepare Bid Document Addenda					
	2.6	Distribute Bid Document Addenda					
	2.7	Conduct Bid Opening					
	2.7	Evaluate Bids					
	2.7	Tabulate Bids					
	2.8	Issue Notice of Award					
	2.8	Delivery and Execution of Contract					
	2.8	Issue Notice to Proceed					
3.0 - Construction Phase							
	n/a	Coordinate work of subcontractors & suppliers				X	
	n/a	Supervise and direct construction work				X	
	n/a	Furnish construction site				X	

Project Responsibility Matrix

	Scope Ref.	Activity	Owner	Engineer	LCA Project Rep	Contractor	Other
3.0 - Construction Phase (continued)							
	n/a	Furnish additional staging sites				X	
	n/a	Coordinate other contracts on site				X	
	n/a	Deliver bonds and insurance certificates				X	
	n/a	Review bonds and insurance certificates for acceptability		X			
	n/a	Furnish Contract Documents to Contractor		X			
	n/a	Obtain permits	X				
	3.1	Prepare Work plan				X	
	3.1	Prepare Daily Report to Owner	X		X		
	3.2	Establish Document Management System	X		X		
	3.3	Respond to Resident concerns and identify lateral tie in points with residents	X		X		
	3.3	Conduct Preconstruction Conference	X		X		
	3.3	Attend Preconstruction Conference	X		X	X	
	3.3	Conduct Project Site Meetings	X		X		
	3.3	Attend Project Site Meetings	X		X	X	
	3.4	Correspond/Communicate With Contractor	X	X			
	3.4	Verify receipt of bonds and insurance certificates		X			
	n/a	Prepare Schedule of Values				X	
	3.4	Review Schedule of Values		X	X		

Project Responsibility Matrix

	Scope Ref.	Activity	Owner	Engineer	LCA Project Rep	Contractor	Other
3.0 - Construction Phase (continued)							
	3.4	Recommend Contractor Payment			X		
	n/a	Give notices required by laws & regulations			X	X	
	n/a	Submit Application for Payment				X	
	3.5	Review/Respond to Substitution Requests		X			
	n/a	Initiate change orders		X	X		
	3.5	Review / Recommend change orders		X	X		
	n/a	Execute change orders	X	X	X		
	3.6	Issue contract interpretations		X			
	3.6	Authorize minor contract variations (Field Orders)			X		
	3.7	Coordinate As-Build Drawings		X	X	X	
	n/a	Maintain record documents			X	X	
	3.8	Review and Advise Owner regarding claims			X		
	n/a	Prepare Construction Progress Schedule				X	
	3.9	Review Construction Progress Schedule			X		
	n/a	Conduct / coordinate Independent Testing & Inspection				X	X
	3.10	Witness Testing and Inspections			X		
	3.10	Reject defective work			X		
	n/a	Report Differing Site Conditions			X		

Project Responsibility Matrix

	Scope Ref.	Activity	Owner	Engineer	LCA Project Rep	Contractor	Other
3.0 – Construction Phase (continued)							
	3.10	Investigate/Review Differing Site Conditions			X	X	
	n/a	Prepare Schedule of Shop Drawings and Samples		X		X	
	3.11	Review Schedule of Shop Drawings and Samples		X			
	n/a	Submit Shop Drawings and Samples				X	
	3.11	Coordinate Shop Drawings and Samples		X			
	3.12	Issue contract clarifications		X			
	3.11	Review shop drawings and samples		X			
	3.13	Site Safety			X	X	
4.0 – Closeout Phase							
	4.1	Inspect Work for Substantial Completion			X		
	n/a	Issue Certificate of Substantial Completion		X			
	n/a	Issue Punch List			X		
	4.2	Inspect Work for Final Completion			X		
	n/a	Apply for Final Payment				X	
	4.3	Recommend Final Payment	X		X		
	4.4	Coordinate Manufacturer's Services			X	X	
	n/a	Prepare O&M Vendor Manuals				X	
	4.4	Review O&M Vendor Manuals		X			
	4.4	O&M Training				X	

Project Responsibility Matrix

	Scope Ref.	Activity	Owner	Engineer	LCA Project Rep	Contractor	Other
	4.5	Coordinate Warranties				X	
	4.6	Close-out File and Records		X	X		

5.0 - Post Construction Phase

	5.1	System/Facility O&M Manual				X	
	5.2	System/Facility O&M Instruction				X	
	5.3	Start-up Support				X	
	5.4	As-Built Drawings				X	
	5.5	Perform Warranty Period Inspection			X		

Project Responsibility Matrix

	Scope Ref.	Activity	Owner	Engineer	LCA Project Rep	Contractor	Other
	6.11	Witness Services, Including Preparation					
	6.12	Public Relations Support Services					
	6.13	Development, Coordination, or Participation in Partnering Programs					
	6.14	Value Engineering Services					
	6.15	Services to Review / Prepare Proposed Changes					
	6.16	Services Related to Assisting Owner in Litigation					
	6.17	Labor Evaluations and Prevailing Wage Documentation					

Vera Cruz Area Sewer Project
Bid Opening: January 6, 2011

BIDDER	Contract #1 - Pipe	Contract #2 - Pumps
Aaron Enterprises, Inc.	NO BID	NO BID
Anrich, Inc.	NO BID	NO BID
Brubacher Excavating, Inc.	NO BID	NO BID
Doli Construction Corporation	\$ 2,337,521	NO BID
Environment One Corp.	NO BID	\$ 755,865
Forrer Supply Co. Inc.	NO BID	NO BID
Jack Grace Construction/Directional Drilling Specialist	NO BID	NO BID
James T. O'Hara, Inc.	\$ 3,433,120	NO BID
JMF Underground, Inc.	NO BID	NO BID
Joao & Bradley Construction Co, Inc.	\$ 2,595,595	NO BID
Kobalt Construction, Inc.	NO BID	NO BID
Lee Supply Co. Inc.	NO BID	NO BID
Linde Corporation	\$ 4,629,485	NO BID
Marks Contracting, Inc.	NO BID	NO BID
Mazzuca Enterprises	\$ 2,457,790	NO BID
McGraw-Hill Construction	NO BID	NO BID
Melcar Underground	NO BID	NO BID
Michael F. Ronca & Sons, Inc.	NO BID	NO BID
Mid Atlantic Pump & Equipment	NO BID	NO BID
MidAtlantic Construction & Design Associates, Inc.	NO BID	NO BID
N. Abbonizio Contractors, Inc.	\$ 2,754,561	NO BID
PACT Construction, Inc.	\$ 2,332,090	NO BID
Pioneer Construction Company, Inc.	NO BID	NO BID
Reed Construction Data	NO BID	NO BID
Site Specific	NO BID	NO BID
Theresa Murphy, CIT	NO BID	NO BID
United Engineering and Contracting Co.	NO BID	NO BID
Utility Services Group, Inc.	NO BID	NO BID
Wexcon Inc.	\$ 2,345,818	NO BID

Engineering Estimate

\$2.6 mil

\$1.0 mil

Lance Babbitt

From: Laurie A Moyer [LaurieMoyer@lehighcounty.org]
Sent: Tuesday, January 11, 2011 3:13 PM
To: Lance Babbitt
Cc: Paulette Gilfoil
Subject: Procurement of Pumps


Lance,

LCA ran the prescribed number of advertisements in the Morning Call, distributed a significant amount of bid packets to interested contractors (20) and performed all other due diligence in the proper procurement of a pump provider. It is my belief that, despite obtaining only one (1) bid, LCA has proven that a reasonable effort was made in attaining three (3) bids. LCA does not need to move forward with additional efforts to attain more bids.

Thanks,

Laurie

Laurie Moyer
Grants & Housing Manager
County of Lehigh
Government Center
17 South 7th Street
Allentown, PA 18101
610.871.1964
610.820.8257 (fax)
484.764.4461 (cell)

 Please consider the environment before printing this email

"The opinions expressed within emails are my own and do not necessarily represent those of the County of Lehigh."

Lance Babbitt

From: Paulette Gilfoil [paulettgilfoil@lehighcounty.org]
Sent: Tuesday, January 18, 2011 3:50 PM
To: Lance Babbitt; Laurie A Moyer
Subject: RE: Vera Cruz EXPO

Lance:

The Community and Economic Development Office has reviewed the three lowest bidders for Contract 1 and Contract 2 for the Vera Cruz Project and approves all the bids submitted.

Please let our office know who was awarded these contracts and submit the executed contracts to our office when available.

Regards,

Paulette G. Gilfoil

CDBG Program Coordinator
County of Lehigh
Government Center
17 South Seventh St.
Room 519
Allentown, PA 18101-2401

Phone: 610-782-3566
Fax: 610-820-8257
Email: paulettgilfoil@lehighcounty.org

Opinions expressed in this e-mail are my own and not directly associated with Lehigh County Government

From: Lance Babbitt [mailto:lancebabbitt@lehighcountyauthority.org]
Sent: Tuesday, January 18, 2011 3:41 PM
To: Laurie A Moyer; Paulette Gilfoil
Subject: Vera Cruz EXPO

FYI, please call with any questions. What is your status of review of the low bids?

Thanks,
Lance



February 2, 2011

Mr. Lance Babbitt
Lehigh County Authority
1053 Spruce Street
P.O. Box 3348
Allentown, PA 18106

Re: Vera Cruz Sewer System, Upper Milford Township
Contract No. 1 – Low Pressure Sewer System
SSM File 103426.0007.0702

Dear Mr. Babbitt:

We have completed our review of the bids received for Contract No. 1 – Low Pressure Sewer System for the Vera Cruz sewer project. The bid submitted by PACT Construction, Inc. appears to be the lowest responsible bid received for the project. We are satisfied that the bid meets all of the requirements of the contract documents and we recommend award of the project to PACT Construction Inc. in the amount of \$2,332,090.00.

Should you have any questions, please contact our office.

Sincerely,
SSM Group, Inc.

A handwritten signature in black ink, reading "Carl F. Dicker, Jr." in a cursive script.

Carl F. Dicker, Jr., P.E.
Director, Water/Wastewater Services
carl.dicker@ssmgroup.com

cc: Frank Leist (LCA)
Daniel Delong (Upper Milford Township)



February 2, 2011

Mr. Lance Babbitt
Lehigh County Authority
1053 Spruce Street
P.O. Box 3348
Allentown, PA 18106

Re: Vera Cruz Sewer System, Upper Milford Township
Contract No. 2 – Grinder Pumps and Service Agreements
SSM File 103426.0007.0702

Dear Mr. Babbitt:

We have completed our review of the bids received for Contract No. 2 – Grinder Pumps and Service Agreements for the Vera Cruz sewer project. The bid submitted by Environment One Corporation appears to be the lowest responsible bid received for the project. We are satisfied that the bid meets all of the requirements of the contract documents and we recommend award of the project to Environment One Corporation in the amount of \$755,865.00.

Should you have any questions, please contact our office.

Sincerely,
SSM Group, Inc.

A handwritten signature in black ink that reads "Carl F. Dicker, Jr." with a stylized flourish at the end.

Carl F. Dicker, Jr., P.E.
Director, Water/Wastewater Services
carl.dicker@ssmgroup.com

cc: Frank Leist (LCA)
Daniel Delong (Upper Milford Township)