



AGENDA
Special Infrastructure Committee
Thursday, April 11, 2019
@ 5:30 PM
Peoria County Courthouse, Room 402

1. **Call to Order**

2. **Resolution**

- Air Handling Unit Controls System Upgrade at Peoria County Jail

3. **Miscellaneous**

4. **Adjournment**



AGENDA BRIEFING

COMMITTEE: County Infrastructure Committee

MEETING DATE: April 11, 2019

<u>TYPE</u>	<u>DESCRIPTION</u>	<u>LINE ITEM</u>	<u>AMOUNT</u>
EXPENSE:	Mechanical Equipment Repair/ Maintenance	062-4-062-3-301-55373	\$25,000.00

ISSUE:

The Air Handler Units (AHUs) 1-9 at the Jail are the original AHUs that are controlled by an obsolete Building Automation System (BAS). The digital and pneumatic controllers and valves are also beyond their useful life. A new state of the art BAS, controllers, electronic valves, and variable frequency drives (VFDs) will allow superior controlling and operation of these existing AHUs. The original project was identified as Jail-16-011, 062-4-062-3-301-54373. This request is to allow the County to engage Midwest Engineering Associates, Inc. (MWEA) to design, define, scope-the-work, prepare bidding documents, and perform Engineering duties during construction. The County and MWEA will oversee the actual construction work that will be separately bid and performed by others.

BACKGROUND/DISCUSSION:

FY 2018 Capital Projects funded \$200,000.00 for the initial phase of work. The project was deferred in 2018 and rescheduled to be started in FY 2019. Therefore, the FY 2019 projected additional funding request was deferred from the FY 2019 Capital Projects. The rollover of the FY 2018 funding will allow the Engineering work to proceed and allow this phase of the AHUs 1-9 upgrade to move significantly forward. The goal of the upgrade is to be able to select the best responsive bid from the existing BAS vendors that presently support our various facilities in an effort to reduce the number of BAS vendors from three BAS vendors to two BAS vendors. It is the County's desire to bid the total upgrade at this time with the caveat that if 2019 Capital Funding for this Project are insufficient, then language will be included in the bid documents and contract award language that the successful bidder will commit to a complete upgrade package and pricing that will complete the Project in FY 2020. This will allow the County and the contractor to have a working document and understanding that will allow the complete project upgrade to be completed when additional funds are available.

MWEA's Proposal includes their complete fee to provide a complete project upgrade regardless if the project completes in this phase of work or extends over multiple phases of work. MWEA's fee is Not-To-Exceed \$25,000.00 and is a Time-And-Materials proposal based on their 2019 hourly consulting rates. MWEA will not exceed this fee without prior written authorization from the County.

MWEA's Proposal includes similar language approved by SAO in the recent MWEA Fire Alarm Proposal. The MWEA Proposal is attached as part of this Agenda Briefing and is awaiting final review by SAO.

Staff is requesting that \$25,000.00 of the Project's \$200,000.00 be appropriated for this work. Staff is further requesting that the County Administrator, with the approval of SAO, shall oversee the issuances of the necessary Purchase Orders, Change Orders, and other Documents necessary to accomplish this Proposal.

COUNTY BOARD GOALS:



Infrastructure Stewardship

STAFF RECOMMENDATION:

Approve the commitment of Project Jail-16-011 funds for this portion of the Project. Authorize the County Administrator, with the approval of SAO, to issue necessary documents to complete this portion of the Project with MWEA.

COMMITTEE ACTION:

PREPARED BY: Daniel O'Connell, Director, Facilities and Grounds Operations

DATE: March 26, 2019



March 15, 2019

Mr. Daniel P. O'Connell
Director, Facilities and Grounds Operations
County of Peoria
324 Main Street, Room 502
Peoria, Illinois 61602-1319
309.495.5098
doconnell@peoriacounty.org

RE: Proposal for Engineering Services, Peoria County Jail – Air Handling Unit Controls System Upgrade – Peoria, IL

Dear Mr. O'Connell:

Midwest Engineering Associates (MWEA) is pleased to offer this proposal to provide engineering services for the **Peoria County Jail – Air Handling Unit Controls System Upgrade** project. The purpose of the proposed engineering services is to provide a complete set of Mechanical & Electrical drawings to a level which shall allow for permitting, bidding, and construction.

SCOPE OF SERVICES

The general scope consists of an upgrade to and replacement of the existing “Barber-Colman controls system” currently utilized for the operation of air handling units, AHU-1 through AHU-9, at the Peoria County Jail. The current temperature controls system incorporates both electronic and pneumatic (water valve actuation) controls. The controls components are no longer supported and shall be replaced. The installation of new hydronic control valves and variable frequency drives (VFD) shall be included within the overall scope. Refer to “Mechanical Engineering” and “Electrical Engineering” below for additional, detailed scopes.

The list below describes Consultant’s Scope of Services:

1. **General Engineering:**
 - a. Review of OWNER request for proposal (RFP) dated February 25th, 2019 to ensure compliance with intended system(s) and functionality.
 - b. Includes detailed site investigation required to complete Mechanical and Electrical design and drawings.
 - c. Comply with codes applicable to Peoria, Illinois as follows:

- i. 2012 International Building Code
- ii. 2012 International Existing Building Code
- iii. 2012 International Mechanical Code
- iv. 2014 National Electrical Code
- v. 2015 International Energy Conservation Code

2. **Mechanical Engineering: Create bidding documents (drawings & specifications) to indicate the following mechanical scope:**

- a) Demolition (removal and disposal) of the existing Barber-Colman control components (electronic and pneumatic) associated with each air handling unit.
 - i. Permanently cap all pneumatic mains.
- b) Furnish, install, and configure the required digital controller(s), in new NEMA1 enclosure(s), to monitor and control each air handling unit, in accordance with an engineer-prescribed and owner-approved sequence of operation.
 - i. Controllers must speak the open BACnet protocol and be BTL listed as B-AAC.
 - ii. Engineering Drawing(s) shall incorporate:
 - 1) Controls Schematic,
 - 2) Points List, and
 - 3) Sequence of Operation.
- c) Furnish and install new probe-style temperature sensor for monitoring the energy recovery unit (ERU) supply air temperature (AHU-1 thru 6 only).
- d) Furnish and install new probe-style temperature sensors for monitoring the supply air and return air temperatures of each air handling unit.
- e) Furnish and install new averaging-style temperature sensor for monitoring the mixed-air temperature of each air handling unit.
- f) Furnish and install duct-type humidity sensor for monitoring the return air relative humidity of each air handling unit.
- g) Furnish and install duct-type carbon dioxide (CO₂) sensor for monitoring the return air CO₂ concentration of each air handling unit.
- h) Furnish and install a new current relay on the exhaust fan motor (ERU operation) for monitoring purposes (AHU-1 thru 6 only).



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- i) Furnish and install new current relays on the supply and return fan motors for monitoring purposes.
- j) Furnish and install new electronic safety devices on each air handling unit, as follows:
 - i. Freezestat(s), and
 - ii. Pressure Switches.
- k) Furnish and install new electronic control damper actuator (Belimo) for the existing ERU bypass damper (AHU-1 thru 6 only).
 - i. The existing dampers are in good condition and shall be cleaned and commissioned by the temperature controls contractor (TCC).
- l) Furnish and install new electronic control damper actuators (Belimo) for the existing: outside, return, and exhaust air dampers on each AHU.
 - i. The existing dampers are in good condition and shall be cleaned and commissioned by the TCC.
- m) Furnish and install variable frequency drives (VFDs) for each AHU supply fan and return fan.
 - i. Refer to VFD schedule and specifications included within Owner RFP document.
 - ii. There shall be a total of eighteen (18) VFDs: nine (9) supply and nine (9) return.
- n) Install the Owner-furnished control valves for the hot water and chilled water coils on each AHU.
 - i. Refer to the valve schedule included within the Owner RFP document.
 - 1) There shall be a total of sixteen (16) control valves, including both 2-way and 3-way configurations.
 - 2) AHU- 7 & 9 are cooling only.
 - 3) Valves have been pre-purchased and are onsite.
 - ii. NOTE: Piping modifications shall be made when replacing the 3-way control valves (existing valves are globe-type and the new valves are ball-type. The A, B, and AB ports are different). The TCC shall be responsible for all piping modifications.
- o) **Engineering Drawings** will incorporate **VFD and Valve Schedules**, provided within the Owner RFP document and issued as part of the Bidding Documents.
- p) Engineering Drawings will include Controls Drawings displaying the following:

- i. A Controls Schematic, indicating unit configuration and all pertinent controls components.
 - ii. A complete Points List for temperature controls contractor (TCC) incorporation.
 - iii. A Sequence of Operation applicable to each system type.
 - 1) NOTE: It is anticipated that a minimum of two (2) unique controls drawings / sequences of operation shall be required: one for air handling units AHU-1 through AHU-6, which incorporate energy recovery units (ERU), and one for air handling units AHU-7, 8, & 9.
- q) Coordinate across disciplines for power requirements (refer to “Electrical Engineering” Scope).
- r) Coordinate with the following temperature controls manufacturers:
 - i. Johnson Controls Metasys
 - ii. Automated Logic WebCTRL – by Environmental Controls Solutions, Inc. (ECSi)
- s) Provide specifications on drawings (as required).
3. **Electrical Engineering: Create bidding documents (drawings & specifications) to indicate the following electrical scope:**
- a) Demolition (removal and disposal) of the existing motor control components associated with each air handling unit.
 - b) Provide power to all (18) new variable frequency drives leveraging existing conductor and raceway whenever possible.
 - c) Provide power to controls components based on coordination with the aforementioned Mechanical scope.
4. Provide bidding process and construction administration support.
- a) MWEA will attend a pre-bid meeting per Peoria County’s request.
 - b) MWEA will attend a pre-construction meeting per Peoria County’s request.
 - c) MWEA will attend construction phasing meetings anticipated to be one (1) time per week for an estimated (2) months. The hours for this are included in the estimated construction observation hours shown in Section 4.d.iv.



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- d) MWEA will provide the following construction administration services:
- i. Shop drawing submittal review.
 - ii. Responses to contractor RFI's.
 - iii. Limited Construction Observation - MWEA personnel shall visit the project at appropriate intervals during construction to be generally familiar with the progress and quality of the Contractor's work and to determine if the work is proceeding in general accordance with the Contract Documents. Peoria County has not retained MWEA to make detailed tests or to provide continuous/daily project review and observation services. If Peoria County desires more extensive project observation or full-time project representation, Peoria County shall request such services to be provided by MWEA as Additional Services in accordance with the terms of this Agreement.
 - iv. On site construction observation services are estimated at 2 hours per week for a project duration of 2 months.
 - v. Answer contractor questions during construction.
 - vi. Perform a walk-through of the project and prepare a punch list and review completed punch list items with the contractor at substantial completion.
 - vii. Provide onsite observation during system startup testing.

ADDITIONAL SERVICES

Additional services that are not included in the proposed Scope of Work may include, but are not limited to:

- a) Mechanical, Electrical, and Plumbing engineering and design services other than as related to the Air Handling Unit Controls System Upgrade project.
- b) Fire Protection and Fire Suppression systems.
- c) Smoke Management Control systems.
- d) Continuous Construction Observation and/or Construction Inspection Services.
- e) Construction Management Services.
- f) Commissioning Services.
- g) Communication systems.
- h) Building Security, Access Control, and Lighting systems.

FEES

Midwest Engineering Associates proposes to complete the above Scope of Services on a time and materials basis using our 2019 hourly consulting rates with an estimated not to exceed fee of \$25,000.00.



MWEA will not exceed the estimated not to exceed fee without prior written authorization from Peoria County.

SCHEDULE

Midwest Engineering Associates can start work immediately upon receipt of an executed copy of this agreement. MWEA will work with Peoria County in order to meet key design/bidding schedule milestones.

Construction phasing will be adjusted based on availability of funds.

TERMS AND CONDITIONS

We have attached to this proposal our General Conditions of Service, which are expressly incorporated into, and are an integral part of, our contract for professional services. Please indicate your acceptance of this proposal by having an authorized representative of your office execute a complete copy and return it to our office.

Your acceptance of our proposal confirms that the terms and conditions are understood, including payment to Midwest Engineering Associates, Inc. upon receipt of the invoice, unless specifically arranged otherwise in writing. Of course, if you wish to discuss the terms, conditions, and provisions of our proposal, we would be pleased to do so.

We look forward to working with you on this project and sincerely appreciate the opportunity to provide our professional engineering services to you and your team.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn E. Gleason".

Shawn E. Gleason, EI
Electrical Engineer

Responsible for Payment and Accepted by:

Signature: _____

Name (please print): _____

Title (please print): _____

A handwritten signature in black ink, appearing to read "David L. Horton".

David L. Horton, P.E.
Sr. Project Manager

Attachments:
MWEA 2019 Consulting Services Rate Sheet
General Conditions of Service



BASIS OF PAYMENT
2019 CONSULTING SERVICES RATES

The following schedule is for normal design and consulting services provided on an hourly basis.

Engineer/Surveyor/Scientist/Technician/Administrative Positions

Principal	\$180.00
Sr. Structural Engineer	\$180.00
Sr. Civil/Transportation Engineer	\$175.00
Sr. Electrical Engineer	\$169.00
Certified Commissioning Authority	\$165.00
Sr. Mechanical/Plumbing Engineer	\$163.00
Sr. Fire Protection Engineer	\$163.00
Sr. Project Manager	\$157.00
Process Engineer	\$149.00
Project Manager	\$134.00
Civil/Transportation Engineer II	\$128.00
Electrical Engineer II	\$125.00
Construction Services Manager	\$117.00
Professional Land Surveyor	\$107.00
Landscape Architect/Wetlands Specialist	\$107.00
Project Engineer	\$104.00
Sr. Designer	\$104.00
Civil/Transportation Engineer I	\$96.00
Designer/Sr. CADD Technician	\$96.00
Construction Technician II	\$93.00
Mechanical Engineer I	\$92.00
Electrical Engineer I	\$92.00
Construction Technician I/Materials Tester	\$78.00
Administrative Assistant	\$75.00
Intern	\$45.00

1. Rates are subject to change and may be superseded by a new schedule on or about January 1, 2020.
2. Charges for special services, expert testimony, etc. will be negotiated.
3. The above rates cover straight time only. Overtime directed by the client will be surcharged by 25 percent.
4. Charges for outside consultants and contractors will be at invoice cost plus 10 percent.
5. All direct job expenses and materials other than normal office supplies will be charged at cost plus 10 percent.
6. Mileage charges for automobile = Federal Rate per mile. Mileage charges for survey truck = \$0.75 per mile.
7. Services will be billed monthly, and at the completion of the project. There will be an additional charge of 1 percent per month compounded on amounts outstanding more than 60 days.



Midwest Engineering Associates, Inc.
General Conditions Agreement for Professional Services

To assure an understanding of matters related to mutual responsibilities, these General Conditions are made a part of the Agreement.

1. WARRANTY

- a. In performing its professional services hereunder, the services of Midwest Engineering Associates, Inc. will be of the kind and quality designated and will be performed by qualified personnel, under similar circumstances, by reputable members of its profession currently practicing in the same or similar locality. No other warranties, express or implied, is made or intended by Midwest Engineering Associates, Inc.'s undertaking herein or its performance of services hereunder.

2. REUSE OF DOCUMENTS

- a. All documents including drawings and specifications prepared by Midwest Engineering Associates, Inc. pursuant to this Agreement are instruments of service. They are not intended or represented to be suitable for reuse by Client or others on extensions of the Project, or any other project. Any reuse without specific written verification or adaptation by Midwest Engineering Associates, Inc. will be at Client's sole risk and without liability or legal exposure to Midwest Engineering Associates, Inc.; and Client shall indemnify and hold harmless Midwest Engineering Associates, Inc. from all claims, damages, losses and expenses including attorney's fees arising out of or resulting from its reuse of documents. Any such verification or adaptation will entitle Midwest Engineering Associates, Inc. to further compensations at rates to be agreed upon by Client and Midwest Engineering Associates, Inc.

3. CONFIDENTIALITY

- a. Each party shall retain as confidential all information and data furnished to it by the other party which are designated in writing by such other party as confidential at the same time of transmission and said party shall not reveal such information to any third party, unless required to do so by law or court order.

4. PAYMENT

- a. Payment for services rendered shall be made monthly in accordance with invoices rendered by Midwest Engineering Associates, Inc. If payment is to be on a Lump Sum basis, monthly invoices will be based on the portion of the total services completed during the month as estimated by Midwest Engineering Associates, Inc. If payment is to be on a Standard Hourly basis, or a Multiplier or direct labor basis, monthly invoices will be computed from the actual effort applied during the month. If Client requires work beyond the standard 40 hour work week overtime rates shall apply. Overtime shall be time and a half of applicable labor rate or direct multiplier. If Client does not accept new Standard Hourly Rate schedules adopted by Midwest Engineering Associates, Inc. on an annual basis, Midwest Engineering Associates, Inc. may terminate the Agreement and/or cease performing services under the Agreement until paid in full.
- b. Any and all changes or deviations in the scope of work defined ordered by Client must be in writing, the contract sum being increased or decreased accordingly by Midwest Engineering Associates, Inc. Any claims for increases in the cost of the work must be presented by Midwest Engineering Associates, Inc. to the Client in writing, and written approval of the Client shall be obtained by Midwest Engineering Associates, Inc. before proceeding with the ordered change or revision.
- c. Invoices, or parts thereof, which are not paid within 60 days after the date of their issue shall be assessed a service charge at the rate of 1% per month. Client will pay on demand all collection costs, legal expenses and attorneys' fees incurred or paid by Midwest Engineering Associates, Inc. in collecting payment for services rendered. Non-payment of invoices shall be cause for suspension of services by Midwest Engineering Associates, Inc.



5. SUBCONTRACTING

- a. Neither party has the right to subcontract all services, duties, or obligations of the Agreement without the prior written authorization of the other party.

6. TERMINATION

- a. At any time, either Midwest Engineering Associates, Inc. or the Client may terminate, with or without cause, by giving seven days advance written notice to the other party. If Midwest Engineering Associates, Inc. terminates its consulting relationship with the Client, the Client shall have the option, in its complete discretion, to terminate Midwest Engineering Associates, Inc. immediately without the running of any notice period. In the event of termination, Midwest Engineering Associates, Inc. shall be compensated by Client for all services rendered to the date of termination plus reasonable termination costs to organize Midwest Engineering Associates, Inc.'s files and any reasonable expenses incurred by Midwest Engineering Associates, Inc. to coordinate efforts with another party.

7. USE OF WORK PRODUCT

- a. Except as specifically set forth in writing and signed by both Midwest Engineering Associates, Inc. and Client, Midwest Engineering Associates, Inc. shall have all copyright and patent rights with respect to all materials developed under this contract, and Midwest Engineering Associates, Inc. is hereby granted a non-exclusive license to use and employ such materials within Midwest Engineering Associates, Inc. business.

8. CONSTRUCTION RESPONSIBILITY

- a. Midwest Engineering Associates, Inc. shall not be responsible for the means, methods, procedures, techniques, or sequences of construction, nor safety on the job site, nor shall Midwest Engineering Associates, Inc. be responsible for the Contractor's failure to carry out the work in accordance with the contract documents.

9. OPINIONS OF COST

- a. Since Midwest Engineering Associates, Inc. has no control over the cost of labor, materials, or equipment, or over a Contractor's method of determining prices, or over competitive bidding or market conditions, the opinions of probable project cost or construction that may be provided will be based solely on Midwest Engineering Associates, Inc.'s own experience and represent his best judgment as a design professional familiar with the construction industry, but Midwest Engineering Associates, Inc. cannot, and does not, guarantee that proposals, bids or the construction cost will vary from opinion s of probable cost prepared by Midwest Engineering Associates, Inc.

10. LAW OF STATE OF ILLINOIS

- a. The parties to this contract expressly agree that it is governed by the laws of the State of Illinois. Any action in regard to the contract or arising out of its terms and conditions shall be instituted and litigated in the Circuit Court of Peoria County, State of Illinois. In accordance, the Contractor submits to the jurisdiction of the Courts in the State of Illinois.

11. COMPLIANCE WITH CODES AND STANDARDS

- a. In the performance of all services to be provided hereunder, Midwest Engineering Associates, Inc. and Client agree to put forth reasonable professional efforts to comply with codes, regulations and laws in effect as of this Agreement date.

12. STANDARD OF CARE

- a. Services performed by MIDWEST under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other representation expressed or implied, and no warranty or guarantee is included or intended in this Agreement, or in any report, opinion, document, or otherwise.

13. HAZARDOUS MATERIALS

- a. Any hazardous or toxic substances encountered by associated with services provided by Midwest Engineering Associates, Inc. for the Project shall at no time be or become the property of Midwest Engineering Associates, Inc. Arrangements for handling the hazardous or toxic substances, which are made by Midwest Engineering Associates, Inc., shall be made solely and exclusively on Client's behalf and benefit and Client shall indemnify and hold harmless Midwest Engineering Associates, Inc. from and against any and all liability which arises out of the hazardous or toxic substance handling.

TO THE HONORABLE COUNTY BOARD)
)
COUNTY OF PEORIA, ILLINOIS)

Your County Infrastructure Committee does hereby recommend passage of the following Resolution:

RE: Approval of funds for the Midwest Engineering Associates, Inc. (MWEA) Proposal for the AHUs 1-9 Upgrade Project (Project), and to authorize the County Administrator, with the approval of SAO, to issue the necessary documents for this phase of the overall Project with MWEA.

RESOLUTION

WHEREAS, your County Infrastructure Committee recommends that the County Board approve the appropriation of necessary funds from the 2018 Capital Project Jail-16-011 to 2019 Capital Projects, if it hasn't already been rolled; and

WHEREAS, your County Infrastructure Committee recommends that the County Board approve the appropriation of necessary funds from the 2019 Capital Project Jail-16-011 to pay for the Proposal work from MWEA on the Project at the Jail; and

WHEREAS, your County Infrastructure Committee recommends that the County Board authorize these funds to be Twenty-Five Thousand Dollars (\$25,000.00) for FY 2019 for this Proposal of the Project with MWEA; and

WHEREAS, your County Infrastructure Committee recommends that the County Board authorize the County Administrator, with the approval of SAO, to issue the necessary documents for this Proposal work of the overall Project with MWEA;

NOW THEREFORE BE IT RESOLVED, by the Peoria County Board, that FY 2019 funds for the Proposal of the Project at the Jail is approved and that the County Administrator, with the approval of SAO, is authorized to execute the necessary documents for this initial phase of the Project with MWEA.

RESPECTFULLY SUBMITTED,

County Infrastructure Committee

Date: March 26, 2019