CITY OF
WASILLA
• ALASKA •

Date of Action: 3/13/17	
Approved ☑	Denied ☐
By:	

CITY COUNCIL ACTION MEMORANDUM

AM No. 17-12: Contract Award to AMC Engineers in the amount of $31,797 to design a new Heating, Ventilation and Air Conditioning system for the new museum.

Originator: Public Works Director
Date: February 28, 2017 Agenda of: March 13, 2017

Route to:	Department Head	Signature	Date
X	Public Works Director		3/1/17
X	Finance Director		3-1-17
X	Deputy Administrator		3-1-17
X	City Clerk		3/2/17

Reviewed by Mayor Bert L. Cottle: 3/2/2017

Fiscal Impact: ☒ yes or ☐ no
Account name/number/amount: Museum Relocation 110-4510-451.45-03 $31,797

Attachments: AMC Building Assessment & Proposal (6 pages)

Summary Statement: This contract award is proposed in accordance with WMC 5.08.100.B.6 for professional services not to exceed $50,000. AMC Engineers provided the HVAC design for the new library and their services were solicited for the new museum. AMC Engineers provided an initial building assessment for the new museum dated February 14, 2017 and subsequent fee proposal on February 27, 2017.

The old library building (new museum) has only a heating system that is past its useful life. The building has no humidity control or air conditioning. The conversion of the building from a library to a museum requires improved air quality for humidity and temperature control to better protect the museum collections and displays.

Staff Recommendation: Approve AM No. 17-12.

AMC
ENGINEERS

2/14/2017

Archie Giddings
Public Works Director
City of Wasilla, Department of Public Works
290 E. Herning Avenue
Wasilla, AK 99654

RE: Wasilla Museum HVAC Remodel
SUBJ: Building Assessment

Dear Mr. Giddings:
AMC Engineers conducted an initial building assessment of the existing Wasilla Museum on 12/7/2016 to determine the feasibility of adding indoor humidification control to the existing heating, ventilating and air-conditioning (HVAC) system. A follow-up site visit was conducted on 2/14/17.

Based on available record drawings, this existing two-story, nominal 8,000 SF facility was built in 1977 and is now 40 years old. The facility is heated with a single zone, built up, natural gas fired furnace. Based on our site observations, it is our opinion that the existing building's HVAC system is well past its useful life and is due for complete replacement. The existing HVAC system should not be modified to include humidification equipment, as precise humidification control would not be possible within the limitations of the existing system. Adding humidification equipment to the existing HVAC system may result in building envelop moisture damage and mold development.

Findings
The building's existing HVAC system does not meet current International Mechanical Code (IMC) ventilation requirements. The system appears to be improperly sized to provide adequate heating, cooling and indoor air quality for the intended use of the building as a small museum. HVAC system components are in various states of disrepair, resulting in energy inefficient and poor indoor air quality performance. It is unlikely that the system is properly air flow balanced.

AMC
ENGINEERS

Engineering Recommendations

Demolish the existing building HVAC system and replace with a new central HVAC system designed for commercial use which is simple to understand, operate and maintain. The new system would include the following:

1. A small, sectional, 9,000 CFM central air handling unit (AHU). The AHU will include a mixing box, 65% filter section, direct expansion (DX) cooling coil, supply fan section and two discharge hydronic reheat coils (two zone temperature control). The unit will include a package control system (with web/smart phone access) and variable speed supply fan controller.
2. Basic high efficiency hydronic boiler (320 MBH) to serve AHU reheat coils, new vestibule cabinet unit heaters, toilet room radiant panel heating panels and other perimeter heating elements as necessary. Due to the small hydronic heating system volume, a buffer tank will be provided to dampen system control response.
3. A 20-ton condensing unit will be provide for summer time air conditioning. The unit will be located on a concrete pad exterior to the building.
4. The new HVAC system will include two heating and cooling zones (one per floor). New, properly sized and insulated supply ductwork will be provided. The main floor will be heated/cooled through floor mounted supply outlets similar to existing. The basement will receive independent, insulated supply air ductwork. Uninsulated/acoustically lined return air plenum ductwork will return air back to the central AHU.
5. Each of the two zones will receive a duct mounted humidifier (located directly downstream of each zone reheat coil) to limit the minimum relative humidity (RH) on each of the two floors. The new ventilation system will allow the building's interior to be effectively controlled to a neutral pressure and provide the necessary air recirculation rate to ensure homogeneous RH throughout the building.
6. The new system will require approximately 300 SF of clear space. The best option would be to create a new mechanical room at the far west end of the existing basement storage room to the west of the existing mechanical/electrical room. The existing mechanical/electrical room would be gutted mechanically, the fire sprinkler piping consolidated with the existing electrical panels maintained in place. A partition could be added to create a dedicated electrical room and the remain space repurposed.

Project Cost

Based on similar projects of this size and complexity, replacement of the central HVAC system as described is estimated at $250,000 to $300,000 construction cost. This cost does not include architectural work to support the HVAC remodel. Mechanical and electrical design is estimated at $30,000.

AMC
ENGINEERS

Recent Project Reference

Unfortunately, commercial buildings in similar condition, built in the 1970's, are very common in our area. We recently provided a HVAC redesign for a slightly smaller, but similar building in Anchorage last summer. Please feel free to contract Sean Spiegel with Castable Ceramics at (907) 258-0165. We're sure he will be able to provide you with some useful information regarding his recent HVAC remodel experience.

Final Comment

After visiting the facility, it is our option that this building is worth renovating and shows much potential as a future museum. Please let us know how you wish to proceed.

Sincerely,
AMC ENGINEERS

David F. Shumway, PE, CPMP
Vice President

X:\17801 WASEUM\Building Assessment\LtME170214 WASEUM Eng Assessment.docx

AMC Number: **17801**
AMC Code: **WASEUM**
Prepared by: **DFS**
Approved by: **KTR**

Proposal Date: **27-Feb-17**
Printed on: 27-Feb-17 04:50 PM

Wasilla Museum HVAC Remodel

Mechanical and Electrical Engineering Fee Proposal

Basic MEP Design Services:	Mechanical	Electrical	Total	Fee
0.30 HVAC System Design	$ 21,753	$ 9,544	$ 31,297	LSFF
Design Travel Expenses	$ 250	$ 250	$ 500	T&EB
DESIGN FEE:	$ 22,003	$ 9,794	$ 31,797	
Basic MEP Construction Administration (CA) Services:				
0.80 Construction Administration Services	$ 6,046	$ 5,086	$ 11,132	T&EB
CA Travel Expenses	$ 250	$ 250	$ 500	T&EB
CA SERVICES FEE:	$ 6,296	$ 5,336	$ 11,632	
TOTAL MEP SERVICES FEE:	$ 43,429			

*** "Basis" Codes:**
LSFF = Lump Sum Fixed Fee
NTX = Time & Expenses, not to exceed limit
T&EB = Time & Expenses "Budget" (only)
T&E = Time & Expenses
NIC = Not in Contract

Basic Assumptions:

1. Our "Standard Proposal Assumptions" apply to all services proposed. Our Standard Rate Schedule applies to all additional services and outlines other Terms and Conditions. The prevailing rate schedule will apply to all services provided on a Time & Expenses basis. Scope of engineering services to include:
2. MEP design for new, 2 zone forced air HVAC system with central hydronic heat. Deliverables to include MEP bid drawings with sheet specifications.
3. Contract administration services as requested on a T&E basis. Estimate of anticipated CA services provided.

Thank you for selecting AMC to work with you on this project!!

Wasilla Museum HVAC Remodel
AMC Number: 17801
AMC Code: WASEUM

Proposal Date: 27-Feb-17
Printed on: 27-Feb-17 04:50 PM

Mechanical - Design Phase

PAMC Latouche Pediatics Tenent Improvement	ENGR 8	ENGR 7	ENGR 6	ENGR 5	ENGR 4	ENGR 3	ENGR 2	CAD	WORD PRO
1) HVAC System Concept Meeting	**3.0**								
2) Site "As-Builting""	**2.0**			**16.0**					
3) HVAC System Design	**6.0**			**60.0**					
4) Prepare Bid Documents	**2.0**			**12.0**				**24.0**	
5) Peer Review	**2.0**								
Hour Totals:	15.0	0.0	0.0	88.0	0.0	0.0	0.0	24.0	0.0
Billing Rate:	$215.00	$205.00	$190.00	$180.00	$170.00	$155.00	$145.00	$112.00	$82.00
Billing Subtotals:	$3,225	$0	$0	$15,840	$0	$0	$0	$2,688	$0

Total Phase Fee **$21,753**

Electrical - Design Phase

TASKS	ENGR 8	ENGR 7	ENGR 6	ENGR 5	ENGR 4	ENGR 3	ENGR 2	CAD	WORD PRO
1) Site "As-Builting"	**2.0**			**8.0**					
2) Electrical System Design	**2.0**			**16.0**					
3) Prepare Bid Documents	**2.0**			**12.0**				**12.0**	
4) Peer Review	**2.0**								
Hour Totals:	8.0	0.0	0.0	36.0	0.0	0.0	0.0	12.0	0.0
Billing Rate:	$215.00	$205.00	$190.00	$180.00	$170.00	$155.00	$145.00	$112.00	$82.00
Billing Subtotals:	$1,720	$0	$0	$6,480	$0	$0	$0	$1,344	$0

Total Phase Fee **$9,544**

Wasilla Museum HVAC Remodel
AMC Number: 17801
AMC Code: WASEUM

Proposal Date: 27-Feb-17
Printed on: 27-Feb-17 04:50 PM

Mechanical - CA Services

PAMC Latouche Pediatics Tenent Improvement

TASKS	ENGR 8	ENGR 7	ENGR 6	ENGR 5	ENGR 4	ENGR 3	ENGR 2	CAD	WORD PRO
1) Project Management:	**4.0**								
2) Product Submittal Review:					**8.0**				
3) Respond to RFIs/Questions:					**8.0**				
4) Site Visits:					**8.0**				
5) Prepare Record Drawings:					**2.0**			**3.0**	
6) Peer Review:	**2.0**								
Hour Totals:	6.0	0.0	0.0	0.0	26.0	0.0	0.0	3.0	0.0
Billing Rate:	$215.00	$205.00	$190.00	$180.00	$170.00	$155.00	$145.00	$112.00	$82.00
Billing Subtotals:	$1,290	$0	$0	$0	$4,420	$0	$0	$336	$0

Total Phase Fee **$6,046**

Electrical - CA Services

TASKS	ENGR 8	ENGR 7	ENGR 6	ENGR 5	ENGR 4	ENGR 3	ENGR 2	CAD	WORD PRO
1) Product Submittal Review:				**6.0**					
2) Respond to RFIs/Questions:				**8.0**					
3) Site Visits:				**8.0**					
4) Prepare Record Drawings:				**2.0**				**3.0**	
5) Peer Review:	**2.0**								
Hour Totals:	2.0	0.0	0.0	24.0	0.0		0.0	3.0	0.0
Billing Rate:	$215.00	$205.00	$190.00	$180.00	$170.00	$155.00	$145.00	$112.00	$82.00
Billing Subtotals:	$430	$0	$0	$4,320	$0	$0	$0	$336	$0

Total Phase Fee **$5,086**