

CITY OF HIGH POINT

AGENDA ITEM



Title: Materials Recovery Facility Upgrade Construction Administration

From: Terry Houk – Public Services Director
Robby Stone – Asst. Director Public Services

Meeting Date: November 19, 2018

Public Hearing: N/A

Advertising Date: N/A
Advertised By: On-Call

Attachments: Attachment A – Scope of Services

PURPOSE:

The City budgeted for facility and safety improvements at the Material Recovery Facility (MRF). The City has developed a project that adds office space, breakroom, bathrooms, electrical upgrades, safety eye wash/showers, and lighting upgrades to complement the existing state-of-the-art sorting and recycling equipment. Bids for these improvements were opened on October 31, 2018 which consisted of bids for the construction of mechanical, structural, and electrical upgrades to the existing MRF.

BACKGROUND:

The professional engineering services to be provided for this project involve work associated with construction administration activities associated with the MRF Upgrade construction project.

BUDGET IMPACT:

Funds for the construction administration are in the Material Recovery Facility Capital Improvement Plan.

RECOMMENDATION / ACTION REQUESTED:

The Public Services Department recommends approval and asks for the Council to award the professional engineering services to CDM Smith, Inc. in the amount of \$197,955.00 and authorize the appropriate City Official to execute all necessary documents.



**FORMAL BID RECOMMENDATION
REQUEST FOR COUNCIL APPROVAL**

DEPARTMENT: **Public Services - Material Recovery Facility (MRF)**

COUNCIL AGENDA DATE: **November 19, 2018**

BID NO.: **On-Call** CONTRACT NO.: DATE OPENED:

DESCRIPTION:

Material Recovery Facility Upgrades for office space, bathrooms, breakrooms, safety eye wash/showers and lighting upgrades.

PURPOSE:

The City budgeted for facility and safety improvements at the Material Recovery Facility (MRF). The City has developed a project that adds office space, breakroom, bathrooms, electrical upgrades, safety eye wash/showers, and lighting upgrades to compliment the existing state-of-the-art sorting and recycling equipment.

COMMENTS:

This is for construction administration for the MRF Phase III project.

RECOMMEND AWARD TO: **CDM Smith, Inc.** AMOUNT: **\$197,955.00**

JUSTIFICATION:

CDM Smith, Inc. is on the Public Services on-call list. They have successfully demonstrated working on projects of similar size and complexity.

ACCOUNTING UNIT	ACCOUNT	ACTIVITY	CATEGORY	BUDGETED AMOUNT
661749	527105	661131001720	40218	\$197,955.00
TOTAL BUDGETED AMOUNT				\$197,955.00

DEPARTMENT HEAD: **Terry Houk** Digitally signed by Terry Houk
DN: cn=Terry Houk, o=City of High Point, ou=Public Services, email=terry.houk@highpointnc.gov, c=US
Date: 2018.11.08 13:02:03 -05'00' DATE: **Nov 8, 2018**

The Purchasing Division concurs with recommendation submitted by the **Public Services** and recommends award to the lowest responsible, responsive bidder **CDM Smith** in the amount of \$ **197,955.00**.

PURCHASING MANAGER: **Erik Conti** Digitally signed by Erik Conti
DN: cn=Erik Conti, o, ou,
email=erik.conti@highpointnc.gov, c=US
Date: 2018.11.08 14:28:53 -05'00' DATE: **Nov 8, 2018**

Approved for Submission to Council
FINANCIAL SERVICES DIRECTOR: **Kelly Latham** Digitally signed by Kelly Latham
DN: cn=Kelly Latham, o, ou,
email=kelly.latham@highpointnc.gov, c=US
Date: 2018.11.09 10:15:02 -05'00' DATE: **11/9/2018**

CITY MANAGER: **Greg Demko** Digitally signed by Greg Demko
Date: 2018.11.09 11:01:06 -05'00' DATE: **11/9/2018**

**AMENDMENT TO
SCOPE OF SERVICES SUPPLEMENTAL AGREEMENT
BETWEEN
CITY AND ENGINEER
FOR
PROFESSIONAL ENGINEERING SERVICES**

FURTHER DESCRIPTION OF ENGINEERING SERVICES AND RELATED MATTERS

This is an exhibit attached to and made a part of the Contract dated February 24, 2017, between the City of High Point (City) and CDM Smith Inc. (Engineer/Consultant) for Professional Engineering Services.

The Basic Services of the Consultant as described in Section 2 of said Contract are supplemented as follows for services associated with additional scope as requested for the MRF Phase 3 Improvements:

PROJECT DESCRIPTION

Under Phase 2 of an overall Materials Recovery Facility (MRF) improvements plan, the City upgraded the existing single-stream MRF processing line with state-of-the-art sorting and recycling equipment. The City requested that CDM Smith begin the design of Phase 3 components of the improvements plan, which includes: new administration building with employee offices, bathrooms, multi-purpose meeting room, and breakroom space; major electrical and lighting improvements; new sewer pump station and force main; addition of a network system to monitor processing equipment operation status and connect new cameras to the for visual monitoring of the process area; and other miscellaneous building repairs. The original scope of work has been advanced to the 90% design level. This amendment addresses additional improvements requested by the City.

This Amendment to the Scope of Services describes additional work requested for the Phase 3 MRF improvements. The additional scope includes engineering services associated with: additional lighting and electrical receptacles throughout the equipment process area, ventilation for the sorter areas on the equipment processing lines, repairing external roof support columns, repair of a roll-up door and loading dock plate, and installation of additional cameras for the City to monitor facility operations. Based on discussion of the Amendment scope with the City, other potential improvements were discussed, and CDM Smith initiated evaluation and/or design efforts for the following: truck scales and appurtenances and a hallway/corridor area to provide access to the MRF from the new administration building. As a result, this amendment includes design services for improvements that will not be incorporated into the final design. This scope also includes construction administration by the Engineer during the construction of Phase 3 improvements.

The professional engineering services to be provided under this Amendment involve work for the MRF Phase 3 Improvements project described above. These additional services will be conducted as a revision to the current drawing and specification package, with new drawings/specifications as required.

BASIC SERVICES

Basic Services to be provided by the Engineer under this Amendment shall be conducted under existing Tasks 3 and 4, and new Tasks 7 and 8. As the work performed under the original scope was through Final Design, and the work under this amendment scope generally can be included as a revision to the existing engineering design package (with additions as necessary), this additional scope will be conducted under

the Final Design task (Task 3), with one component (addition of the hallway) conducted by our subcontractor under the Architectural task (Task 4). A new optional task, Task 7, has been added to conduct an Arc Flash Study. A new Task 8 has been added to include construction administration/management services during the construction of the Phase 3 improvements. The detailed scope for the basic services included under this Amendment are provided below.

Task 3 – Final Design — Civil, Electrical, Automation, Structural, and HVAC

Civil

The additional civil scope of work includes work conducted on the preliminary layout and design of a new truck scale, which was considered as a potential addition to the facility. CDM Smith performed work evaluating several site locations, drainage, operational components, and traffic issues associated with the truck scale. Due to cost restraints, the scale has been removed from consideration, and will not be included in the final design.

Electrical

The Electrical scope of the work includes design drawing and specification preparation for the following items within the existing process area and new building addition:

1. Provide additional lighting and electrical receptacles throughout the MRF equipment process area, including:
 - electrical receptacles in/near-by the existing sumps to allow for use of portable pumps to remove accumulated liquids,
 - electrical receptacles located on the elevated platform near-by the line workers,
 - electrical receptacles located along the concrete walls near the floor for maintenance purposes,
 - QC area lighting,
 - Lighting beneath some of the equipment, and
 - Lighting internally to the sumps.

The above work is anticipated to include revisions to existing plan sheets, and three new sheets providing power and lighting plans and/or details, and section views.

2. Electrical components of the ventilation (fans) for the sorter areas on the equipment processing lines. Work was conducted during discussions of making this a separate item to be moved up in construction. Although no specifications or drawings were prepared, some time was spent on the process.

Automation

The Automation scope of the work includes design drawing and specification preparation for the following items for the existing process area and the new addition:

1. Additional operator workstations at the Baler for viewing cameras positioned within the process areas. This is anticipated to require revisions to the system architecture drawing.

2. The automation scope assumes Machinex will install and configure SCADA software on various workstations as part of the selected contractor's scope¹.

Structural

Based on the initial inclusion of a scale in the scope, significant structural work was conducted on the scale foundation and associated components prior to removal from the scope. This work included coordination with civil on the location and geotechnical requirements, and with scale manufacturers on structural components. The remaining structural scope of work includes engineering and/or review for the MRF building column repair, dock repair, and paneling over the rollup door. It is anticipated that revisions and/or additions to three drawings (Standard Structural Notes and Abbreviations; MRF Building Repairs and Modifications; and Standard Structural Details) will be required. Additionally, multiple specification sections will be modified and/or added.

HVAC

The HVAC scope of work includes the evaluation of several ventilation fan types, a comparison of costs and fan velocities and variable/various speeds, layout of locations, and information required for specification and purchase. Other scope components include: the review of existing building mechanical systems, calculations, code analysis, and coordination with electrical team on the fan selections.

Task 4 – Architectural Design

The additional scope of work for our subcontractor architect included design and layout of a corridor (hallway) in the MRF that was to connect the staff breakroom to the bathrooms (both within the new addition). After review by City staff, this component was eliminated from final design.

Task 7 – Arc Flash Study (Optional)

As requested by the City, an Arc flash study per NFPA 70E as required by OSHA will be performed for the MRF facility and new administration area in our scope. The following provides a list of anticipated tasks:

- a. Survey the facility to develop a list of electrical equipment required to be included in the arc flash study by OSHA. Include the list in the Phase 3 Construction Documents so that the contractor can collect the required data for the Engineer to perform the arc flash study.
- b. Build an arc flash study model using SKM Power Tools and perform the arc flash study.
- c. Once all construction and modifications to both buildings are complete, an arc flash study report as required by OSHA will be provided to the City.
- d. Generate and print arc flash hazard warning labels and adhere them to the equipment.

This scope is anticipated to include two site visits; one for the initial survey and one to conduct

¹ We will incorporate into the specifications that Machinex will be required to be retained by the Contractor for associated work at the various workstations. The cost associated with retaining Machinex will be designated as an Allowance item.

the arc flash study.

Task 8 – Construction Administration

As requested by the City, the Engineer will provide construction administration services, including site inspections, during construction of the Phase 3 improvements, as detailed below. A construction schedule has not been developed at this point, but we estimate a total of 9 months, where the first three months of the schedule will be for off-site construction of the pre-engineered building. After the building arrives, it is anticipated that the remainder of the tasks will take approximately six months to complete, which is the time frame we have assumed for on-site construction activities for this scope. The scope and cost would need to be revised should the schedule be different than assumed. This amendment includes the following scope for construction administration and site inspections:

- Prepare a conformed set of documents
- Development of a contract set of documents for project award
- Preparation for and conducting the pre-construction meeting with the selected contractor and City representatives at the start of construction. Includes preparation and distribution of meeting minutes
- Review and approval of shop drawings and other contractor submittals
- Progress meetings to document the progress of the work and any issues to address; this includes preparation and distribution of meeting minutes
- Provide consultation and advise the City during active construction, as needed
- Regular site visits to monitor and document progress of the work
- Site visits by specialty engineer (mechanical, electrical, structural, etc.) to verify construction of critical work items, address on-site technical issues, and review field changes
- Issue interpretations and clarifications of the contract documents and evaluate, recommend, and prepare change orders, as required
- Monitoring of construction schedule and notification of variances, as necessary
- Review and recommend approval of payment applications from the contractor
- Review contractor-prepared as-built drawings
- Assist City staff with one pre-final inspection, one written “punch list”, review and resolution of issues associated with final payment to the contractor

Engineer assumes that the contractor will utilize preferred equipment suppliers included in the bid documents; therefore, this amendment does not include costs to review and evaluate alternate manufacturers/vendors submitted by the contractor.

Engineer will provide periodic observation of contractor’s construction of the Phase 3 improvements, as detailed below. Engineer assumes that City staff will be on-site daily observing the majority of the construction and will notify Engineer of issues that arise or variations from the project schedule. Engineer also assumes that the City will contract with an independent testing firm to provide concrete, steel, soil material testing, and any other Specialty Inspections required by Building Code not covered by

the contractor. The budget for this task assumes the Engineer will conduct the following services during construction:

- Management of the overall construction project by Engineer will require time during the period prior to building arrival (for shop drawing and submittal review), during construction activities (for payment application review, continued submittal review, review and processing change orders, etc.), and finalization of the construction and follow-up documentation from Engineer. Additionally, the PM will attend/moderate progress meetings described below and prepare and distribute minutes. We have estimated approximately 275 hours will be required for this work. The scope for this work is described above.
- Additionally, the Project Manager will require input from the specialty engineers for submittal approval, change orders, technical issues, etc., as required; the budget for this input is estimated at 196 total hours, including site visits/inspections (see below).
- Progress meetings via conference call are anticipated to occur monthly during the three-month period prior to start of the foundation construction (about 3 weeks prior to the arrival of the pre-engineered building) to review contractor submittals and schedule. Conference calls will be attended by the Project Manager and Resident Project Representative (RPR) for the Engineer. Meeting minutes will be prepared and distributed.
- Progress meetings/routine inspections are anticipated to occur twice per month during the estimated six-month construction (after start of foundation for pre-engineered building). These will be coordinated with construction activity at the site and there may be periods when a progress meeting is not required or can be conducted via conference call. Progress meetings will be attended by the Project Manager and RPR, and meeting minutes will be prepared and distributed.
- In addition to the routine inspections associated with the progress meetings, Engineer assumes that it will conduct inspection services once per week over a 28-week construction period, and attendance at the pre-construction meeting and pre-final inspection, for a total of 250 hours; these inspections are to be conducted by the RPR.
- Six specialty engineer site visits/inspections are anticipated during the six-month construction period for critical components of the construction. These may or may not be concurrent with the progress meetings but will be scheduled to correspond with the once per week inspection if possible.
- The architect for the building will have similar duties to the specialty engineers in that the architect will be responsible for shop drawing review, addressing RFIs during construction, and site visits to observe critical construction components for the new building.
- One additional inspection is included for the pre-final inspection for development of the punch list. This inspection will be conducted by the Project Manager and RPR.

The on-site progress meetings will occur during times of actual construction activities and will include an inspection (routine inspection) of the activities. The level of work estimated for general services during the construction activities does not include excessive reviews of inadequate shop drawings, excessive request for information (RFI) or change order submittals, pay applications, etc. Engineer reserves the right to request additional compensation should our review efforts increase due to inadequate or excessive contractor submittals.

1. The responsibilities of the City are as follows:

- City will review and provide any comments on the final design (90%) deliverables within 2 weeks.
- City staff will observe and document daily on-site construction activities when Engineer is not on site and will notify Engineer of issues that arise or variations from the project schedule.
- City will contract with an independent testing firm during construction to provide concrete, steel, or soil material testing not covered by the contractor.

2. The time periods for the performance of the Engineer's services are as follows:

The Engineer will prepare the 90% package revisions under Tasks 3 and 4 within four weeks of authorization. Once we receive the comments on the package from the City, we will complete the work (100% package) within approximately two weeks. Bidding services will begin upon initiation of the bidding process by the City.

As stated above, new Task 7 will be completed at the end of construction if this work is to be conducted (currently optional). The new Task 8 will be conducted starting approximately two weeks prior to the Notice to Proceed is provided to the contractor and will continue throughout the construction of the Phase 3 improvements. We have assumed a construction schedule for the Phase 3 improvements, with a portion of that time with little on-site activity but submittal review activity, but the inspections based on the estimated time for on-site construction activity. Should the actual schedule for the on-site construction differ from this estimate, the costs may be impacted.

3. The method of payment for services rendered by the Engineer shall be as set forth below.

For the scope included in this Amendment to the Basic Services (for Tasks 3, 4, 7, and 8), Engineer shall be paid a lump sum fee of \$197,955. In addition to this compensation, the City reserves the right to amend this Contract so that the Engineer may furnish additional services as may be needed.

The estimated additional lump sum fees for each Task are provided in the following table. As per the various components described above, the Task 3 - Final Design cost is divided into these components for your information. These estimates by Task are for tracking purposes only and do not reflect upper limits for each task. It is noted that the task breakdown amounts for Tasks 3 and 4 will be added to the previous task lump sum fees, respectively. Monthly payments shall be made in accordance with the amount of work completed and invoiced on a monthly basis, based on a percent of completion.

		CDM Smith & Outside Professionals
Task 3 – Final Design		\$40,185
	Civil - \$7,000	
	Electrical - \$10,115	
	Automation - \$5,200	
	Structural/Architectural - \$9,710	
	HVAC - \$8,160	
Task 4 – Architectural Design (Outside Professional)		\$4,300
Task 7 – ARC Flash Study (Optional)		\$11,460
Task 8 – Construction Administration		\$142,010
<hr/>		
Total		\$197,955

The Engineer shall submit its invoices applicable under the terms of this Contract on a monthly basis based on a percent complete of the overall lump sum. The Engineer shall submit its final invoice applicable under the terms of this Contract within 30 days of the Contract termination date.

4. The City has established the following special provisions and/or other considerations or requirements in respect of the Assignment:

None.

This Task Order is executed this _____ day of _____ 2018.

CDM SMITH, INC.

WITNESS

By: _____

David L. Collins, P.E.
Vice President

Martin D. Sanford, P.E.
Associate

CITY OF HIGH POINT

WITNESS

By: _____

Terry Houk
