

WORK ORDER SCOPE OF SERVICES AND PAYMENT FOR SERVICES

DHCD Project # 097147

Fitchburg Housing Authority

Selected HTG./DHW system replacement and Heat Pump Pilot study 2 units @ Green
Acres

097-200-01

August 20, 2020

Pursuant to Article 6 of RFS DHCD HD2020, the scope of services under this work order is described herein. The construction budget for this project is **\$125,000**.

I. Background:

This family housing development has 120 townhouse type apartments arranged in 45 two story wood frame buildings. Most of the buildings have 4 apartments each with the remaining having two apartments (ten buildings). These apartments are provided heat and domestic hot water (DHW) by individual natural gas fired hybrid heating and DHW systems that are failing more frequently and need to be replaced. These systems consist of a hot water generator that supplies DHW plus hot water for heating to a fan coil/ air handler connected to the warm air distribution ductwork.

A Consultant has done an evaluation for the most economical and expeditious replacement of the failing heating/DHW systems at this family housing development. Three options were presented and one was recommended. The recommended option for replacement was a modification of the system that the FHA was using as an immediate replacement of a failed system to expedite the restoration of heat and domestic hot water to the apartment. This consists of the installation of an electric water heater and a high efficiency gas fired warm air furnace. Included in the evaluation was a capacity check of the existing electric power to the building. This was determined to be inadequate and improvements are needed. One of the other options was for replacement of the failed systems with an all-electric Heat pump system. A pilot installation of this type system was decided to be needed for future considerations of replacements. This pilot will determine the costs of installation and operation of these systems in these family units.

The LHA does have a copy of the original construction drawings for this development. Asbestos testing is required for this project. The apartments will be occupied during construction.

II. Project Goals and General Scope:

The Goal of the project is: ***The intent of this project is twofold***; (1) provide documentation for public bidding to replace the HTG./DHW systems in the ***selected 8 apartments*** (by FHA) having the most imminent possibility of failure of these systems and (2) provide documentation for bidding for installation of the all-electric HP system ***in two apartments identified by the FHA***, replacing the existing hybrid system.

The FHA will have to identify the 8 apartments that should be included in this project. It is assumed these will be the apartments with the most imminent probable failure of the existing system. The FHA has already identified a two unit building (recently replaced water heaters with electric) that will be used for the pilot all-electric HP system.

The Scope of the project included, but is not limited to:

- (1) Remove the current hybrid HTG/DHW system in the eight (8) apartments identified by the FHA and replace with the option # 1 system recommended in the SD report, i.e. a suitably sized electric water heater, a properly sized gas fired warm air furnace, include the upgrade of the electric power service feed to the buildings that have the eight apartments in this project. **Two of the apartments should be structured as Alternate # 2 since there is currently insufficient funding allotted for eight apartments.**
- (2) Provide a Heat pump system for heating and cooling of the two units identified by the FHA for this purpose. It is my understanding these two apartments are in the same duplex building and have recently been provided with new electric water heaters. **All of the documentation for this scope of work should be structured as Alternate # 1 in this project. This is being done to get an actual cost of this installation separate from the option # 1 system costs.**
 - Include the methodology used to size the heat pump system for heating and cooling for the record, (heat/cool load calcs., etc.)
 - Include the upgrade required for the electric power service feeder for this building,
 - Include asbestos abatement testing and abatement of ACM of construction materials impacted by this installation (i.e. gypsum wallboard removal, etc.),
 - Insulation of uninsulated existing ductwork (to permit use of cooling feature w/o condensation),
 - Provide manufacturers cuts of HP equipment proposed (for FHA/DHCD review),
 - Include cutting ,patching, etc. to restore wall/ceiling surfaces for duct installation
 - Issues of sustainability and resiliency to climate hazards as relate to the project should be considered in the project design, e.g. all new equipment should be installed on 4 inch pads.
 - The budgeted amount indicated above is not sufficient to satisfy the intent of this project it will need to be adjusted.

III. Project Phases:

Work under this Work Order is divided into the Project Phases as listed below. Each Project Phase may consist of one or more required submissions, and may include site visits, meetings with the LHA, DHCD, and others, or other tasks as described.

- The DHCD Design and Construction Guidelines and Standards which are applicable to the scope of work of this project are listed below: HVAC, Plumbing-230000, 220000.

The DHCD Standards can be found at <https://www.mass.gov/service-details/design-construction-guidelines-standards>

- Electronic Submissions should be made at: <https://caphub.azurewebsites.net/Project/Detail?fishNumber=097147&tab=design-tab>. Sign in with your user name and password to access projects to which you have been assigned. Electronic Submissions should be made in PDF format. A copy of the standard DHCD A/E Document Submission Transmittal Form for hard copies will be available by link from the electronic submission window and can be found at <https://www.mass.gov/service-details/design-construction-guidelines-standards>.
- The Fitchburg Housing Authority contact for the project will be Mr. Douglas Bushman at dbushman@fitchburgha.org. The DHCD contact will be Frank Bossi at frank.bossi@mass.gov.

- **Submittals are to be both hard copy and electronic submittal to Cap Hub.** Hardcopy Submittals should be sent to the Housing Authority. The submissions will not be considered on time until the hardcopy submission is received.

A. Study/Investigative Phase: Not required

B. Schematic Design Phase: Not required

C. Design Development Phase: Not required

D. Construction Documents Phase:

1. If required by the Authority, meet with DHCD and the Authority to review and select design options developed in previous design review phases.
2. **Milestone Work Product Submission:** Prepare and submit "Construction Document Submissions" at the **100%** level of completion. For each submission:
 - a. Include a revised cost estimate broken down according to CSI specification sections as part of the submission. ***Provide separate cost estimates for each system i.e. all electric HP system and option # 1 system. Provide manufacturers cuts of proposed HP equipment with this submission.***
 - b. Incorporate the DHCD "front end" sections, including Division 01, General Requirements of the Technical Specifications into the Project Manual. The "front end" sections are available on the DHCD website to facilitate editing at <https://www.mass.gov/public-housing-modernization-documentation/need-to-know>
 - c. Include Specifications prepared in CSI standard format.
 - d. Include changes required from previous submission.
3. After review and written comments prepared by the Authority, their RCAT if applicable and the Department for the 100% submission have been addressed, a single construction bid package shall be prepared for the solicitation of competitive bids in accordance with MGL Chapter 149 Section 44A-J bid requirements.
4. After Approval to Bid has been issued, the Designer shall prepare and transmit a PDF version of the bid set documents to the electronic plan rooms for posting on their website. (see DHCD advertisement to bid to see multiple choices available for a plan room).

The Bid Sets of construction documents shall:

- a. Incorporate the comments included with the 100% CD approval.
- b. Include a revised Advertisement reflecting the correct bidding schedule developed in coordination with the Authority and Department.
- c. Include an up to date Prevailing Wage
- d. Include the necessary ebidding documentation and be uploaded to the ebidding host. Information for ebidding vendors and their process is located on the DHCD information for bidding webpage at: <https://www.mass.gov/service-details/public-housing-bidding-information>

E. Bid Phase:

1. The project shall be bid electronically.
2. Provide technical assistance to the Authority relative to questions and requests for clarifications received from potential bidders.
3. **Milestone Work Product:**
 - a. Prepare and place the project into the Central Register;
 - b. Prepare any and all addenda required during the bidding phase;
 - c. Schedule, attend and conduct a pre-bid conference;

- d. Make recommendations to the Authority regarding the award of a Construction Contract, including a written review of the contractor's qualifications and recommendations. These recommendations must be submitted to the DHCD PM and the Housing Authority within 7 days of the bid opening; and
- e. **Archive the Final Bid Documents:** The Designer shall prepare and transmit a PDF version of the bid set documents (including addenda) BidDocsONLINE to be archived. (BidDocs is DHCD's vendor for digital archiving.) The PDF documents shall be forwarded via email to support@biddocsonline.com. If the documents are too large to email, please forward a CD to BidDocsONLINE, P.O. Box 51, Groton, MA 01450. All documents should be accompanied by a transmittal indicating the Housing Authority, the project name, the development name and number, the DHCD number and the Designer's contact information.

F. Construction Phase:

Milestone Work Product:

1. Conduct scheduled job meetings according to the **Submission Schedule** at the project site to observe the quality and progress of the work. Include the Housing Authority and their representatives. Furnish to the Authority, the DHCD Construction Advisor and the DHCD Architect/Engineer a written field report for every such visit, including the minutes of the job meeting, and a summary of any RFI or Change Orders discussed.
2. Review and act upon shop drawings, in a timely manner, as submitted by the contractor.
3. Provide consultation and technical assistance in the interpretation of contract documents.
4. Review construction process to ensure compliance with construction documents.
5. Review and recommend action relative to Contractor's Request for Payments.
6. Ensure that all necessary inspections and approvals from appropriate regulatory authorities are secured.
7. Prepare punch lists and final contractor payment/completion documents.
8. **Update the Capital Inventory for the Capital Planning System (CPS):**
DHCD and all Local Housing Authorities utilize CPS to electronically gather, track, and forecast inventory and condition data for the Commonwealth's supply of state-assisted public housing.
 - a. DHCD will provide a "CPS Inventory Component Verification" form in the Cap Hub Documents Tab, in the Construction Documents Box. This form will have instructions and a list of all of the inventory components for all of the facilities at the subject development. The form will be in Microsoft Excel format to be edited by the Project Designer as required by the project at or just prior to Substantial Completion of the project. The form is to be uploaded into Cap Hub into the same box along with the Certificate of Substantial Completion (CSC).
9. Obtain from and check the general accuracy and completeness of the as-built information maintained by the General Contractor during Construction, and performing the necessary drafting and editing of all record drawings. Upon completion of the required drafting and editing the Designer shall transmit one PDF file of the as-built set of documents to Biddocsonline to be archived. The PDF documents shall be forwarded via email to support@biddocsonline.com. If the documents are too large to email, please forward a CD to BidDocs ONLINE, P.O. Box 51, Groton, MA 01450. All documents should be accompanied by a transmittal indicating the Housing Authority, the project name, the development name and number, the DHCD number and the Designer's contact information.

G. Warranty Phase:

1. The Designer shall schedule with the Housing Authority and perform an inspection of the subject project approximately nine months from the date of Substantial Completion. The Designer shall invite the General Contractor, the DHCD Architect/Engineer and the DHCD Construction Advisor. Only the Designer and the Housing Authority are required to attend.
2. **Milestone Work Product Submission:** The Designer shall write a report noting any possible one year warranty claims against the General Contractor. The report shall be sent to the Housing Authority, the

RCAT if applicable, the General Contractor, the DHCD Construction Advisor and the DHCD Architect/Engineer.

IV. Submission Schedule:

The submission times listed on the **Signature Page** in Cap Hub are requirements of this Work Order, not estimates. After receipt of each required submission, DHCD will issue a written Design Review Memo, under normal circumstances within 2 to 3 weeks of receiving the submission. The memo will indicate whether the submission is “Approved” or “Not Approved”. Unless otherwise stated, performance times listed below include the time required for any meetings necessary to the production of the submission. Non-approved submissions must be resubmitted within the time period shown. A resubmission may consist of additional information requested by the reviewer, a partial resubmission, or complete resubmission. In some cases, a DHCD reviewer may request that the resubmission material be due at a meeting. If so, the resubmission deadline will also be the deadline for the meeting.

Submissions must be complete. If, for example, a submission requires a cost estimate that has not been included, the DHCD reviewer will notify the Designer of the missing item, and the submission will not be reviewed at DHCD until the cost estimate is received.

V. Estimated Project Duration:

The total duration of this Work Order is estimated at approximately 32 **weeks**, which is composed of a design and review period of 8 **weeks**, a Bidding Phase of 12 **weeks**, and a Construction Administration Phase of 12 **weeks**. The required warranty walk-thru is not calculated in the estimated duration but the work associated with doing the walk-thru still forms a part of the project. These durations are estimates only based on DHCD experience with similar projects in the past. Actual durations may vary according to the extent of document revisions required, time required for non-DHCD regulatory approvals, and the construction contractor’s performance. Such variances in estimated time will not, in and of themselves, constitute a justification for an increased fee.

VI. Work Included:

Unless specifically excluded, services to be performed consist of the tasks described in this Work Order including all investigative work, design work, preparation of construction documents, bidding period administration, Owner Contractor contract administration, and other related work reasonably inferred, (in the opinion of DHCD) as being necessary to meet the project’s stated scope and goals.

Services specifically include (but are not limited to) the following items that are included in the Work Order fee listed herein:

- A. Cost Estimating.** Detailed constructions cost estimates, whether done by the Designer or a consultant or subcontractor to the Designer, are included in this Work Order. In addition, where project cost estimates generated during the design process exceed the approved construction budget listed in the contract, as amended in writing by DHCD, it shall be the responsibility of the Designer, as part of Basic Services, to research and propose ways to reduce such costs while meeting DHCD construction standards.
- B. Revisions and Re-submissions of “Non-Approved” work.** DHCD will review and issue written comments on all Designer submissions. Work that in the written opinion of DHCD is found to be “Not Approved” shall be revised and resubmitted at no additional cost. Such submission approvals will not be withheld unreasonably. DHCD may require revisions and/or resubmissions where submitted designs or construction documents:
 1. Do not meet DHCD written requirements for submission content;
 2. Do not meet building code, Massachusetts bid law, or other regulatory requirements;
 3. Do not adequately or accurately reflect the project’s goals, scope, or tasks as stated herein;
 4. Do not meet DHCD’s established submission format standards;
 5. Are not sufficiently clear or complete enough to allow for proper bidding and construction;

6. Do not meet, or have not been shown to be equal in quality to established DHCD design and construction standards; and/or
7. Do not, in the opinion of DHCD, reflect the most cost-effective means of meeting project goals and scope.

C. Architecture and Engineering Services. All architectural and engineering services incidental and required to fulfill the project goals and general scope as described herein are included as Basic Services.

D. Project Phasing/Tenant Relocation. Not applicable

VII. Work Excluded:

A. Any asbestos testing will be considered as a reimbursable service to the Designer but the Designer's costs for administering this consultant are part of basic services. Procurement and coordination (including coordination of construction documents) with the asbestos abatement consultant are part of the Basic Services. Such coordination work may involve the clarification of testing results, and assistance in the scheduling of post abatement certification inspections.

1. If asbestos containing materials are identified, the services of an industrial hygienist to develop the scope of the asbestos containing material to be abated, cost estimating, the preparation of the construction documents and any bid phase services, i.e. review of submittals and final air clearance testing, as required, will be a reimbursable service.

VIII. Submission Schedule & Payment Schedule

The LHA shall make progress payments upon satisfactory completion of each Project Milestone listed in the active Work Order Submission Schedule and Payment Schedule in Cap Hub for DHCD Project #097147 indicated by acceptance and approval.

- Note: Whole or partial resubmissions are due within **2** weeks of DHCD "Non Approval" memo.
- Note: DHCD requires 2 weeks to review each design submission.

The Designer shall invoice the LHA according to the above schedule. Upon Receipt of the Designer's invoice the LHA shall verify the milestone has been satisfactorily achieved and shall then forward said invoice to DHCD for final approval. The LHA shall pay the Designer upon receipt of DHCD's written approval.