



Contract # 20180234 Amendment No. 1

City of Springfield Contract Tracer Log

INSTRUCTIONS: Upon receipt, please initial and write in the date of receipt on this Tracer form. When your department has approved and signed the blanket contract, please initial and date in the forwarding section and deliver to the next department.

DEPARTMENT	DATE RECEIVED		DATE FORWARDED TO NEXT DEPT.	
	Initials	Date	Initials	Date
Office of Procurement			KV	09/24/18
Capital Assets	JL	10/2/18	FG	10-2-18
City Comptroller	KL	10/3/18	KL	10/3/18
Law	PF	10-4-18	PF	10-4-18
CAFO	CF	10-9-18	CF	10-12-18
Mayor	MM	10/12/18	MM	10/12/18
Office of Procurement	KV	10/12/18		

Vendor No.: 6824 Contract Number: 20180234 Contract Date: 09/01/2017

Amendment No. 1

Contract Renewal Date: N/A

Contract Expiration Date: 08/31/2020 *PO# 18006500*

Req No.: *18007625* Account No.: *26451811.530105.64516*

Vendor Name: GZA Environmental

Contract Purpose: Amendment No. 1

Requesting Dept.: DCAC

TYPE OF DOCUMENT (Please select at least one):

New Amendment *#1* Extension Renewal

AMENDMENT No. 1 TO CITY CONTRACT NO: 20180234

WHEREAS, on or about September 1, 2017, the **CITY OF SPRINGFIELD**, a municipal corporation within the County of Hampden, Commonwealth of Massachusetts, with its principal offices at 36 Court Street, Springfield, Massachusetts 01103, acting by and through its Director of Capital Asset Construction, with approval from its Mayor, and **GZA ENVIRONMENTAL** (hereafter the "Engineer"), a corporation with a business mailing address at **1350 Main Street, Suite 1400, Springfield, MA 01103** (hereinafter called the "Designer") entered into a Contract Agreement referred to as **City Contract No. 20180234** (the "Agreement"), to provide Professional Designer/Consulting Services for the Watershops Pond Hydropower Design; and

WHEREAS, the City retained the services of the Designer on the terms and conditions set forth in this Agreement and the DESIGNER has agreed to accept such retainer after being selected as the top ranked proposer from the City's Request for Proposals Qualifications performed pursuant to MGL Ch. 7C § 38-44; and

WHEREAS, the original agreement was executed for an amount not to exceed One Hundred Ninety Six Thousand Dollars and 00/100 (\$196,000.00), and the City now wishes to extend the scope of services and corresponding contract value to include additional scopes of service not included in the original Agreement that include a feasibility study, and other Phase II scopes of service that will address the future programmatic needs and services of the residents of the City of Springfield, (the additional scope of services is attached as **Exhibit A** to this Amendment); and

WHEREAS, due to in project scope and a need for an increased level of services required, the City and the Engineer have now agreed to modify the scope and cost of the services contained in the Agreement through this Amendment No. 1;

NOW THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto mutually agree to amend the Agreement as follows:

1. **ARTICLE I, SCOPE OF SERVICES**, is amended by adding the following scope of services:
 - i. Task 1- Preliminary Evaluation of Potential Renewable Energy Options (\$2,700.00)
 - ii. Task 2- Site Visit and General Assessments (\$8,900.00)
 - iii. Task 3- Evaluate Existing Electrical Configuration (\$4,300.00)
 - iv. Task 4- Memorandum Detailing Preliminary Evaluation of Renewable Energy Options (\$6,600.00)
 - v. Task 5- Further Investigation of Preferred Option (\$37,100.00)
 - vi. Task 6- Cost Estimate, Schedule, and Final Report Preparation (\$8,600.00)

All additional tasks, including timelines for completion and complete descriptions, are described in the attached **Exhibit A**.

2. ARTICLE IV, COMPENSATION, is amended by increasing the total financial obligation of the City by **Sixty Eight Thousand Two Hundred Dollars and 00/100 (\$68,200.00)**, making the new total compensation available under the agreement **Two Hundred Sixty Four Thousand Two Hundred Dollars and 00/100 (\$264,200.00)**. These changes are reflected for the costs of the additional Task 1-6, as well as other scope increases and modifications described in the attached **Exhibit A**.

3. Engineer is to be bound to all of the additional terms, conditions, covenants, and obligations as described in the attached **Exhibit A**, which is incorporated herein by reference.

3. Except as specifically modified and amended by the provisions of this Amendment No. 1, all other terms, provisions, requirements and specifications contained in the Agreement shall remain the same and in full force and effect.

Signature page to follow

IN WITNESS WHEREOF, the CITY OF SPRINGFIELD, acting by and through the Director of DCAC, with the approval of its Mayor, and the Consultant, have executed this Amendment No. 1 to the Agreement on the day and year the same is signed by all necessary parties, on the latest date listed below.

THE CONSULTANT,
GZA Environmental:

By: Tom E. Jenkins THOMAS E. JENKINS JR
Its: VICE PRESIDENT
Date signed: 9.21.2018

THE CITY OF SPRINGFIELD:

Approved: [Signature] 10-2-18
Executive Director, DCAC

Approved:

[Signature]
Office of Procurement

UKL Approved as to Appropriation:

[Signature] 10/3/18
Comptroller, Deputy
org/obj# 26451811-530105-64516
increase: \$ 68,800

Approved as to Form:

[Signature]
City Solicitor

Reviewed:

[Signature]
CAFO

APPROVED:

[Signature]
DOMENIC J. SARNO
MAYOR
Date signed: 10/12/18

Exhibit A



Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION
MANAGEMENT

1350 Main Street
Suite 1400
Springfield, MA 01103
T: 413.726.2100
F: 413.732.1249
www.gza.com



August 2, 2018
01.P000376.19

Peter J. Garvey, Director
City of Springfield - Department of Capital Asset Construction (DCAC)
36 Court Street, Room 312
Springfield, MA 01103

Re: **Proposal for Professional Consulting Services**
Feasibility Study for Renewable Energy at Elias Brookings School
HUD NDRC Grant
Springfield, MA

Dear Mr. Garvey:

GZA GeoEnvironmental, Inc. (GZA) is pleased to submit to the City of Springfield (the City) this Proposal for Professional Consulting Services to perform a **Feasibility Study** for a renewable energy project that would provide power to the Elias Brookings School in Springfield, Massachusetts (the Project). This Proposal is made pursuant to the following:

- The City's request for this Proposal to perform a Feasibility Study in line with the recommended Scope of Services developed by Pinck & Co. and Mott MacDonald dated June 22, 2018 and received by GZA on July 11, 2018.

The goal of this study is to evaluate the potential of wind and/or solar opportunities to offset power consumption at the school and increase resiliency of the City. This study will include an overview of the available renewable energy resources in the area, the technical and economic feasibility of both wind and solar, and how that could be integrated within the local electrical grid.

PROJECT BACKGROUND AND UNDERSTANDING

The City's 2015 Phase II application under HUD's NDRC Grant program originally proposed to increase resilience through a portfolio of activities to be carried out in its Urban Watershed Resilience Zone, an economically distressed area along the Connecticut River. The initiative was presented to HUD to provide flood protection, introduce two clean redundant energy sources, create business and job opportunities, provide safe and healthy housing, and engage the community about climate change and environmental stewardship. The proposed activities were demonstrated to include significant co-benefits, including local and regional health benefits, decreased heat island effect, disaster preparedness, climate change mitigation, and recreation opportunities. One of the key components of the City's NDRC application was the re-establishment of hydropower at the Watershops Pond dam.

The feasibility of implementing hydropower at Watershops Pond Dam to provide energy to the Brookings School was evaluated by GZA and summarized in a draft Feasibility Report dated May 9, 2018. It is our understanding that the City of Springfield received approval from the United States Department of Housing and Urban Development (HUD), to further investigate alternatives for implementing renewable energy generation



projects for use of the CDBG-NDR competition funds awarded to the City. The funds, previously awarded for the installation of a Hydropower Facility at the Watershops Pond Dam, could be reallocated to a renewable energy project that would provide power to the Elias Brookings School in Springfield, MA.

In support of the City's execution of the NDRC Grant, which was awarded in 2016, the City contracted Pinck & Co. to provide owner's project management services to oversee implementation of the NDRC Grant. Pinck & Co. subcontracted Mott MacDonald, an engineering, management and development consultant, to aid in its review of the project deliverables.

The City of Springfield, through Pinck & Co., has requested that GZA perform an addendum to the hydropower Feasibility Study to investigate a renewable energy project at the Elias Brookings School, with a power output that is suitable to offset the school's power consumption partially or completely.

SCOPE OF SERVICES

Based on our discussions with the City and our history of assistance with the City's successful Phase II NDRC Grant application submitted in October 2015, GZA understands that the professional services to be provided to the City under this Proposal specifically include completion of a study which will provide an evaluation of the viability (including such factors as financial, technical and logistical considerations) of installing a solar photovoltaic (PV) system and/or a wind generating system at the Elias Brookings School. In general, the proposed Scope of Services follows the outline of Pinck & Co.'s recommended scope.

GZA is intimately familiar with the Brookings School Site, having provided pre-development assessment and evaluation services to the City prior to building design and engineering services related pre-construction site preparation. GZA also provided the geotechnical investigation for the school and site civil engineering and landscape design services for the Site's development as the Brookings School. To supplement our qualifications, GZA will subcontract with firms specializing in solar and wind feasibility analysis and with additional specific knowledge of the Site. GZA will subcontract with GreenSpark Solar to enhance our capabilities to analyze the renewable energy resources and potential power generation capability at the Site. GreenSpark Solar is a corporation with a mission to provide diverse renewable energy solutions that produce meaningful cost savings, local economic benefits, and a better balance with our planet for homeowners, business owners, community partners, and more. GZA will also subcontract with Drummey Rosane Anderson, Inc. (DRA), the architecture firm who previously designed the Elias Brookings School and who is intimately familiar with the building facility and electrical configuration. DRA will also provide structural engineering services in support of the evaluation of potential renewable systems options.

Task 1. Preliminary Evaluation of Potential Renewable Energy Options

GZA will evaluate the potential for implementing two options for renewable energy on the property of the Elias Brookings School. Options that will be presented in the evaluation include:

1. Photovoltaic Generation (Solar Panels)
2. Wind Generation (Wind Turbine(s))

The evaluation will include the various key considerations to address when installing a solar PV array or wind turbines at the Elias Brookings School. This study will include advice on the possible array / turbine size, electrical performance and financial payback while also identifying barriers to the scheme development. The objectives of the study will be to:



- Identify site options for potential array configurations
- Undertake a constraints analysis to assess the technical, economic and logistical (e.g., zoning, FAA, interconnection, etc.) viability of each configuration
- Identify any issues that may compromise the installation of a renewable energy system or limit its performance, whether these issues are technical, financial or logistical in nature
- Develop a roadmap for the City for the next steps going forward

GZA anticipates evaluating three options for installation of solar panels including building integrated, ground mounted, and carports. GZA anticipates evaluating multiple wind systems at the Site; however, GZA does not anticipate that small-scale wind will ultimately be a viable option at the Site.

Task 2. Site Visit and General Assessments

GZA and its subconsultants will perform a Site visit to evaluate the potential for systems installation. The key elements of the Site Visit(s) are listed below.

- Discuss the electricity use of the building(s)
- Confirm space allocations for system components
- Review any site access issues that may impact on the installation (e.g. scaffolding requirements, site access routes, deliveries, etc.)
- Confirm any array shading or wind barrier issues, including shading on the roof from existing equipment
- Carry out a shading survey
- Assess site layout and confirm scheme design
- Identification of suitable grid infrastructure in the local vicinity
- For roof mounted, review the condition and loading of the roof including:
 - Analyze the existing roof structure to assess its reserve capacity to support photovoltaic panels;
 - Written report summarizing findings; and
 - Provide sketches, if necessary, to identify areas where photovoltaic panels can be supported without requiring reinforcement of the existing roof structure.
- For ground mounted, review ground conditions and evaluate existing geotechnical information, including a written report of findings.

The findings of the site visit will be summarized within a memorandum, detailed in Task 4. GZA will photo document the site visit and provide a summary of photos and descriptions.

Task 3. Evaluate Existing Electrical Configuration

GZA will evaluate the existing electrical configuration at the Elias Brookings School and the existing connection from the local utility distribution system. GZA is familiar with the general site layout and electrical configuration as a result of our involvement in the design of the Elias Brookings School. GZA will subcontract with GreenSpark Solar and DRA as part of this scope of work, as DRA performed the design of the school and is intimately familiar with the school systems,



including the electrical configuration.

GZA and our subconsultants previously engaged with Eversource during the hydropower feasibility analysis to discuss electrical systems integration. We will use information previously collected for the site and adjacent properties in our evaluation of the local utility distribution system. GZA will present the findings of the evaluation within figures and text within a summary memorandum detailed in Task 4.

Task 4. Memorandum Detailing Preliminary Evaluation of Renewable Energy Options

GZA will summarize our evaluation of the renewable energy options within a memorandum to be submitted to the City and it's Project Management Consultant for review. The memorandum will consider multiple factors for renewable energy options at the school including:

- Site and resource assessment
 - Renewable resources assessment at the school (Sun, wind)
 - Location/building suitability assessment
 - Potential grid connection issues
- Renewable Energy System Considerations
 - Options appraisal on different array configurations (e.g., ground mounted, building integrated etc.)
 - Approximate array / turbine sizes
 - Any shading / wind barrier implications
 - Wind loading considerations
 - Array maintenance and cleaning issues
- Performance assessment
 - Cost of the Project
 - Generation Capacity
 - Simple financial appraisal and payback calculations
- Practical aspects
 - HUD Requirements
 - In-Service Date
 - Construction
 - Safety/Fire Prevention
 - Risks

The memorandum will include a recommendation for the best renewable energy option, type and configuration to be implemented at the Site which meets the City's objectives and HUD requirements. GZA will attend a single meeting with the City and it's Project Management Consultant to discuss the findings and recommendations. Following determination of a preferred option by the City, GZA will continue to provide further investigation of the option as detailed in Task 5.



Task 5. Further Investigation of Preferred Option

GZA will perform further investigation into the selected project option by performing the below subtasks. The resulting report will detail potential risks or barriers along with advice on those risks or barriers that can be mitigated and those which could prove to be insurmountable. The study will also consider how financial benefits will be achieved and provide advice on a range of potential business models, indicating the strengths and weaknesses of each.

Investigation will include, but not be limited to:

- a. Create Preliminary Project Electrical One Line Diagram
 - i. Identifying existing equipment, and new project equipment
 - ii. Include from generation point to interconnection to school/grid
- b. Create Preliminary Major Equipment List
- c. Create Preliminary Project Site Plan
- d. Analyze Existing Structures (if used as part of project)
 - i. Perform structural analysis of existing systems
- e. Perform Category IV Cost Analysis with Contingency
- f. Generation Analysis
 - i. Preliminary annual output (kWh)
 - ii. Estimated annual savings at school
- g. Project Risks Analysis
- h. Preliminary Arrangement Plan with the Local Utility (Eversource)
 - i. Metering Arrangement
- i. Identify Necessary Permits and Agency Approvals.
- j. Provide a high-level schedule for all phases of the project including permitting, design, construction and startup.
 - i. Identify if the proposed project can meet HUD requirements for completion/operational dates.

Task 6. Cost Estimate, Schedule, and Final Report Preparation

GZA will summarize the detailed cost estimate of project components including: permitting, engineering, labor, equipment, construction and operation and maintenance costs. The cost estimate will identify potential costs through completion of construction to provide a budgetary estimate to aid in the City's future planning. The cost estimate will include back-up data to support the cost estimates which may include sketches and/or concept plans, previous project data and/or experience, and cost estimating programs.

GZA will develop a high-level schedule for all phases of the renewable energy development project including permitting, design, construction, and startup/commissioning. The sequence and schedule will include the scope of work necessary to license and construct the proposed project and will incorporate the findings of the Feasibility Study. Timeline development will be discussed with the City and its NDRC Grant implementation team prior to finalizing the schedule. It is anticipated that the intent of the City is to commission the Project as soon as possible; however, the



reasonableness of such timelines will be discussed with the City during development of the Project Schedule.

GZA will develop a comprehensive Feasibility Study that summarizes the evaluation and analysis performed throughout Tasks 1 through 5 and including the above-described cost estimate and schedule. GZA will submit a draft of the Feasibility Study in electronic (PDF) format, for review by the City and its consultants. GZA will respond to one round of comments, after which the Feasibility Study will be finalized and produced. GZA will provide two (2) bound hard, color copies of the Feasibility Study, along with an electronic copy of the complete study with all attachments and appendices in unlocked, searchable PDF (compatible with Adobe Reader Version 6.0 or later) format.

SCHEDULE

GZA will schedule the described work immediately upon receipt of an Accepted Proposal and amended City of Springfield Contract Agreement and associated Purchase Order. We will maintain regular communication with the City and its NDRC Grant implementation team so that issues and concerns are addressed on a timely basis.

At the present time, GZA anticipates completing Tasks 1 - 4 within 60 calendar days following execution of the amended Contract Agreement, with a draft of the Feasibility Study provided within 45 calendar days of the City's determination of a preferred option. While delays are not anticipated by GZA, we must point out that certain aspects of the work are outside of our control and may require more time, for example:

- Review and discussions with Eversource relative to interconnection, and
- Responses from regulatory agencies and other stakeholders.

Nonetheless, we will advance the draft Feasibility Study to the maximum extent practical while the longer-lead aspects of the study are under continued development.

PRICE PROPOSAL AND BASIS OF BILLINGS

GZA's Scope of Services and Price Proposal are based upon our review of the recommended Scope of Services developed by Pinck & Co. and Mott MacDonald, our team's familiarity with providing similar or related services to municipalities and other public agencies, and our team's specific knowledge of the Project Site and its history.

GZA proposes to provide the total scope of services described above, Tasks 1 – 6, on a lump sum (fixed price) billing basis amount of \$68,200.00. As an approximate schedule of values, the lump sum fee is detailed in Table 1 below. The proposed lump sum fee represents our best current estimate of the level of effort which will be needed to complete the anticipated and proposed Scope of Services and is based on a level of participation by GZA personnel plus subcontractor costs and applicable expenses as shown on **Attachment A – Fee Derivation Worksheet**, which represents our present judgment as to the level of effort required. We note that the hourly rates used in our Fee Derivation Worksheet are the same as GZA's rates under our existing City Contract No. 20180234.



TABLE 1. PROPOSAL BUDGET / SCHEDULE OF VALUES		
Task #	Description	Cost
1	Preliminary Evaluation of Potential Renewable Energy Options	\$2,700
2	Site Visit and General Assessments	\$8,900
3	Evaluate Existing Electrical Configuration	\$4,300
4	Memorandum Detailing Evaluation of Renewable Energy Options	\$6,600
5	Further Investigation of Preferred Option	\$37,100
6	Cost Estimate, Schedule, and Final Report Preparation	\$8,600
Total		\$68,200

GZA will prepare its invoices to the City so as to provide such information and documentation as required by GZA's City of Springfield Contract No. 20180234.

CONDITIONS OF ENGAGEMENT

Conditions of Engagement to be per City of Springfield Contract Agreement for similar professional services.

ACCEPTANCE

Acceptance of this Proposal may be indicated by providing GZA with a Notice to Proceed and a specific amendment to our existing Contract No. 20180234 and Purchase Order to follow. This proposal is valid for a period of 30 days from the date of issue.

Thank you for this opportunity to propose our services to the City of Springfield on this exciting Project. We are of course available to address any questions you may have—please contact Todd Monson at (781) 278-5742 / todd.monson@gza.com, or Tom Jenkins at (413) 726-2121 / thomas.jenkins@gza.com, at your convenience.

Sincerely,

GZA GEOENVIRONMENTAL, INC.

Todd E. Monson, P.E.
 Project Manager

Edward A. Summerly, P.G.
 Consultant/Reviewer

Thomas E. Jenkins, P.E.
 Principal-in-Charge

Attachments: Attachment A – Fee Derivation Worksheet (dated August 2, 2018)
 DRA Information
 Greenspark Information

GZA GeoEnvironmental, Inc.
 Springfield, MA
 413-726-2100

ATTACHMENT A

Fee Derivation Worksheet

**Feasibility Study for Renewable Energy at Elias Brookings School - 01.P000376.19
 City of Springfield**

Task	Description	Assistant Project Engineer					Sr. CAD Draft		Admin		Vendor / Subcontractor		Expenses	TASK TOTAL	USE THIS VALUE IN THE SCHEDULE OF VALUES:						
		Principal Engineer	Assoc. Principal Engineer	Senior Project Engineer	Project Engineer	Assistant Project Engineer	Eng I	Eng II	Draft	Admin	Subcontractor	Vendor /									
1	Preliminary Evaluation of Potential Renewable Energy Options	1.00	2.00		6.00				1.00		\$1,000	\$0	\$2,705	\$2,700							
2	Site Visit and General Assessments	1.00	8.00		12.00				4.00		\$4,900	\$75	\$8,900	\$8,900							
3	Evaluate Existing Electrical Configuration		1.00		2.00						\$3,600	\$25	\$4,325	\$4,300							
4	Memorandum Detailing Preliminary Evaluation of Renewable Energy Options		2.00		6.00						\$4,900	\$100	\$6,585	\$6,600							
5	Further Investigation of Preferred Option		4.00		8.00			8.00	6.00		\$31,900	\$150	\$37,135	\$37,100							
6	Cost Estimate, Schedule, and Final Report Preparation	2.00	6.00		8.00			2.00			\$4,500	\$600	\$8,565	\$8,600							
Billing Rates:													← Subtotals								
		4.00	23.00	0.00	42.00	0.00	0.00	0.00	11.00		\$50,400	\$950									
		\$240	\$220	\$175	\$150	\$125	\$95	\$120	\$75		5%	0%	Markup								
Subtotal:													\$960	\$5,060	\$0	\$6,300	\$0	\$1,200	\$825	\$52,920	\$950
Subtotal, Labor:													\$14,345								
Vendors, Subcontractors, & Expenses:													\$53,870								
Total Budget:													\$68,215								
SAY,													\$68,200								

Hourly rates are per GZA's City Contract No. 201800234.

**City of Springfield – Office of Procurement
PO Change Request Form**

Date	8/28/18	Requestor(s)	J. Hugo
Department	Capital Asset	Phone / Email	6014
Vendor Name	G3A	Vendor #	0834
Contract #	20180234	Amendment #	1
PO #	18006500	Requisition #	18007625

Justification Required: Increase PO ~~amt~~ for the additional
sumas

Change Unit Prices, Extensions, and/or Accounts to:

Identify Line # to be Changed _____ New Quantity _____ New Unit Price _____

Changes to Org, Obj & Proj Codes:

Specify Original Account: ORG 26451811 OBJ 530105 PROJ 64516

Specify New Account: ORG _____ OBJ _____ PROJ _____

Adding a new line item to the Purchase Order:

Specify New Account: ORG _____ OBJ _____ PROJ _____

Check here to Close/Cancel Purchase Order _____

Please fill out this section for processing:

Original Amount of Purchase Order: \$ 196,000.

Increase \$ 68,200

Decrease \$ _____

New Purchase Order Total: \$ 264,200



Department Head's Signature: [Handwritten Signature]

PLEASE NOTE: NO modification will be **ALLOWED** to the Vendor Field. The Purchase Order will need to be canceled and a new requisition generated.

FOR CITY CHANGE ORDERS: EMAIL FORM TO:

"PO Change Order" Group found in Outlook.



INTEROFFICE MEMORANDUM

DEPARTMENT: CAPITAL ASST ATTENTION: DEPARTMENT HEAD

FROM: OFFICE OF PROCUREMENT (OOP)

SUBJECT: REQUEST TO AMEND AN EXISTING CONTRACT
CONTRACT NO. 20180234 - G3AV#0824
DESCRIPTION: CONSULTING SVCS FOR HYDRO POWER
DATE: 8/28/18
CC: LAUREN STABILO, CHIEF FINANCIAL OFFICER

The contract noted above needs to be amended as follows:

Increase the amount of contract by: \$ 68,200

Decrease the amount of contract by: \$ _____

Original Contract Amount: \$ 196,000

Adjusted contract amount: \$ 264,200

Dept. Head Signature: _____ *[Handwritten Signature]*

[Large handwritten signature/initials]

If there are any questions or concerns please contact the Office of Procurement at 7845.

PLEASE RETURN THIS COMPLETED FORM TO THE OFFICE OF PROCUREMENT.
The Office of Procurement will notify the Department of the status of the request and when finalized a Change Order will be generated by the Department and forwarded to the Office of Procurement for processing.