

TOWN OF CROMWELL  
RFQ/RFP  
Digital Orthophotography and Photogrammetric Mapping  
January 19, 2024

PLEASE TAKE NOTICE that the Town of Cromwell requests submission of Proposals to provide Digital Orthophotography and Photogrammetric Mapping at 1" = 100' and 2' contours for the entire boundary limits of the Town of Cromwell, CT. (13.5 square miles), and 200' beyond the boundary.

The RFQ/RFP can be found at [www.cromwellct.com](http://www.cromwellct.com) on both the main Town of Cromwell web page in the Bids/RFQ/RFPs section and the Engineering page. All Qualifications/Proposals must be on the Proposal forms obtained from the Town of Cromwell submitting non-price and price proposals. The non-price and price proposals must be packaged in two separate sealed and marked envelopes, addressed to the Department of Public Works, Town of Cromwell 41 West Street, Cromwell, CT 06416 and may be delivered by hand or overnight courier no later than 3PM on February 23, 2024. The envelope, must be received by the Town of Cromwell by the date and time set forth above. No emailed submissions or late Proposals/Qualifications will be accepted.

All proposers are responsible for checking the Town of Cromwell website for any addendums that may arise during the time of this solicitation.

Questions regarding this request for qualifications and proposals shall be directed by email to Mike Shewokis, Engineering Technician – [mshewokis@cromwellct.com](mailto:mshewokis@cromwellct.com). The deadline for questions will be February 16, 2024 at 3:00 PM. All relevant questions will be answered in addendums to be posted on the town website.

The Town of Cromwell reserves the right to waive any minor irregularities in or to reject any or all Proposals.

TOWN OF CROMWELL  
RFQ/RFP  
Digital Orthophotography and Photogrammetric Mapping

The Town of Cromwell, CT Engineering Department invites proposals to provide Digital Orthophotography and Photogrammetric Mapping at 1" = 100' and 2' contours for the entire boundary limits of the Town of Cromwell, CT. (13.5 square miles), and 200' beyond the boundary. The general scope of services shall include:

- **Planimetric Mapping**-Development of planimetric mapping to be developed in accordance with stated accuracy standards and the layer specifications will be provided by the Town of Cromwell.
- **Topographic Mapping**-Development of topographic mapping in the form of 2'-foot contours and spot elevations in accordance with stated accuracy standards. Layer specifications will be provided by the Town of Cromwell.
- **Digital Orthoimagery**- Town-wide digital Orthoimagery development with 3-band RGB true natural color deliverables. Imagery to be delivered with a 4-inch pixel resolution and shall meet applicable ASPRS standards for the stated accuracy requirements.
- **Mapping Upgrade Option**-As an option, the Town may consider the development of mapping that meets or exceeds the 4-inch (2 pixel) RMSE accuracy class per the ASRPS Positional Accuracy Standards for Digital Geospatial Data (Edition 2, Version 1.0 - August 23, 2023). As part of this process, the selected contractor would be responsible for developing new planimetric, topographic mapping at 1" = 50' (1' contours), and 2" pixel resolution digital Orthoimagery. **This option is subject to the project budget.**

**RFP RESPONSE REQUIREMENTS**

The proposal must contain sections I through III in **sealed envelope labeled #1**.

I. BUSINESS AND TECHNICAL PROPOSAL

A. Introduction

B. Corporate Profile (including all subcontractors)

C. Prior Project Experience Summary

1. A minimum of five references, including name, position, address, and telephone numbers, for prior or ongoing projects conducted by the Contractor, with a brief description of the relevant work performed for each client that highlights the elements that are similar to the

Cromwell project. (The proposal evaluation team, at its option, may request further references to clarify specific claimed experience.)

2. Documentation to support the Contractor's ability to provide the deliverables requested in accordance with the technical specifications, including resumes and past project descriptions.
3. Documentation to support that the Contractor meets the minimum requirements as specified in Minimum Evaluation Criteria.

D. Names and Resumes of Key Personnel

1. The name(s) of the individual(s) who will:
  - a. Be responsible to work with the Town appointed project manager in coordination of this project's activities. Particular care should be made to introduce the vendor's project manager.
  - b. Be responsible for the delivery of any work product (i.e., "deliverable"), including any presentations.
2. Qualifications and work experience for all the personnel, prime and sub-contractors, proposed on the project. Comparable projects they have worked on should be listed, including the clients for reference.

E. Required Support from the Town

1. A description of any support needed from the Town, other than availability of appropriate individuals to meet with the consultant(s) for coordination purposes.

## II. PLAN FOR SERVICES

The following is a listing of text that must be included in the Plan for Services. Any proposer who does not include the requested information may be disqualified from consideration.

- A. A concise but responsive description of methods and equipment to be used, including specifics requested later in this RFP, for all tasks identified within this RFP, including a description of any proposed technical alternatives.
- B. List of Contractor's in-house equipment and other equipment that will be utilized for this project. The list should indicate clearly which equipment is owned and which is leased.
- C. A clear description of activities to be subcontracted, including the name and address of subcontractor.
- D. A work schedule and timeline with proposed major delivery milestones.
- E. Quality Assurance/Quality Control procedures.

### III. STATEMENT OF NON-COLLUSION

The Certificate of Non-collusion (Attachment 1) must be completed and returned as part of the RFP response.

The proposal must contain section IV in a separate **sealed envelope labeled #2**.

### IV. COST PROPOSAL FORM (Attachment 2) submitted in a separately sealed envelope, **sealed envelope #2**.

The Cost Proposal Form provided with this RFP must be completed and submitted. For any additional alternatives that might be proposed which would have a cost impact an additional copy of the relevant cost sheet with appropriate descriptive heading and prices must be included if the cost impact cannot be included on the Cost Form.

#### A. Clarification of Proposals

The vendor of any proposal may be required to discuss or clarify its proposal with the Town any time during the evaluation and selection process. A proposer may correct, modify or withdraw a proposal by written notice received prior to the time set for receipt of proposals.

#### B. Evaluation of Proposals

The Town will first examine all proposals in comparison to the requirements of this RFP. Any proposal determined to be non-responsive to any element of this RFP will be disqualified without further evaluation. The Town may determine that the non-responsiveness is not substantial and can be clarified, as provided in the above paragraph. In such cases, the Town may allow the vendor to make minor corrections, except to the Cost Proposal, and apply the change in the evaluation. Subsequently, the Town will examine all proposals that meet the minimum criteria in comparison to the RFP. Each proposal will be given a score and a ranking based on the comparative evaluation criteria prior to the prices being opened.

#### C. Rejection of Proposals

The Town reserves the right to reject any and all proposals received in response to this RFP. A vendor's proposal may be rejected if the vendor:

1. Fails to adhere to one or more of the provisions established in the RFP;
2. Fails to supply the minimum information requested herein, or fails to submit its proposal at the time or in the format specified herein;
3. Fails to meet the minimum criteria as specified in this RFP;
4. Fails to submit its proposal to the required address on or before the specified submission deadline;
5. Misrepresents its services or provides demonstrably false information in its proposal, or fails to provide material information;

6. Fails to submit required costs on the enclosed Cost Proposal form.

#### D. Vendor Selection

Following the procedures previously described, the Town will decide regarding selection of the vendor with whom it wishes to enter into a contract. The supplier of these services will be selected based upon weighing the relative merits of proposals submitted by competing vendors, taking into consideration the proposals' relative merits and prices. The selected vendor may not necessarily be the low bidder. If appropriate, the Town may identify a short-list and ask that short-listed vendors to participate in an interview/presentation to the selection committee.

#### E. Schedule of Events for RFP

The Town intends to progress in this procurement in a series of orderly steps. The schedule that follows has been developed in order to provide adequate information for vendors to prepare definitive proposals and to permit the Town to fully consider various factors that may affect its decision. These dates will be observed. However, should conditions warrant any changes to proposed dates, proposing vendors will be notified. The following schedule is presented for the prospective Bidder.

January 19, 2024 (week of)	- Public Advertisement for Bids
January 19, 2024	- Bid Documents become available
February 16, 2024 no later than 3PM	- Deadline for questions
February 23, 2024 no later than 3PM	- Proposal must be received by
March 11, 2024, week of	- Award Contract

#### F. Firm Price

Prices offered by the proposer will be firm and not subject to increase during the term of any contractual agreement arising between the Town and the successful proposer as a result of this RFP, unless otherwise stated.

#### G. Confidentiality

Under the Connecticut General Laws, the Town cannot assure the confidentiality of any materials or information that may be submitted by a vendor in response to this RFP. Vendors who choose to submit confidential information do so at their own risk. Upon submission, all applications, plans and specifications will become the property of the Town and will be subject to disclosure in accordance with the Connecticut Public Records Law.

#### H. Contract Award

The Town reserves the right to award the contract to the most advantageous proposal, taking into consideration both technical and fee aspects of the proposals submitted and shall not be required to award to the firm submitting the lowest cost proposal.

#### I. Execution of Contract

1. Upon the acceptance of a vendor's proposal, the Town will incorporate into its standard contract form appropriate specifics for this procurement and submit the contract to the successful vendor

for signing. In the event that the successful vendor fails, neglects or refuses to execute the contract within a specified number of days after receiving a copy of the contract from the Town, the Town may at its option terminate and cancel its action in awarding the contract and the contract shall become null and void and of no effect.

2. Incorporated by reference into the contract which is to be entered into by the Town and the successful vendor pursuant to this RFP will include all of the information presented in or with 1) this RFP and 2) the vendor's response thereto. In the event that the RFP language and the vendor's proposal-response language conflict, the RFP language will be interpreted as binding.

#### J. Pre-bid Questions

All questions written pertaining to the RFP must be submitted in writing to Mike Shewokis, Engineering Technician, 41 West Street., Cromwell, CT 06441 or emailed (preferable) to [shewokis@cromwellct.com](mailto:shewokis@cromwellct.com) before February 16, 2024 at 3 PM. Written responses will be posted on the Town's engineering department web page under links to projects. A notification will be emailed to all applicants on record as having requested the RFP.

If any changes are made to this RFP, an addendum will be posted on the Town's website under engineering department under links to projects and all applicants on record will be notified.

It is the sole responsibility of the proposer to ascertain the existence of any addenda and/or modifications issued by the Town. As this RFP has been published on the Town's website ([www.cromwellct.com](http://www.cromwellct.com)) all proposers are responsible for checking the website for any addenda and/or modifications that are subsequently made to this RFP.

#### K. Submission of Proposals

Each proposer must furnish all requested information in the formats specified by this RFP. Promotional materials and other non-essential documents are not wanted and will not be considered as meeting any of the requirements of this RFP. Each proposal must include a letter of transmittal containing the signature of an authorized representative of the prime contractor and not more than two individuals authorized to negotiate and sign a contract with the Town on behalf of the prime contractor. The transmittal letter should not exceed two pages in length.

All vendors responding to this RFP will submit non-price and price proposals, packaged in two separate sealed and marked envelopes as outlined below:

1. Sealed Package #1, labeled "Cromwell CAD Base Mapping: Technical Proposal" with a bound original and 3 bound copies of the following- Technical and Business Proposal; Plan for Services; the required "Attachment" Forms
2. Sealed Envelope #2, labeled "Cromwell CAD Base Mapping: Price Proposal" with the original and 1 copy of the Cost Proposal. Vendors must not include any cost information in any part of the Technical and Business Proposal or Plan for Services.

The envelopes must be addressed to the Department of Public Works, Town of Cromwell 41 West Street, Cromwell, CT 06416 and may be delivered by hand or overnight courier. The envelope must be received

by the Town of Cromwell by the date and time set forth above. No emailed submissions or late Proposals/Qualifications will be accepted.

Delivery will be at the vendor's expense. Any and all damages that may occur due to packaging or shipping will be the sole responsibility of the vendor.

L. Right to Reject:

The Town of Cromwell reserves the right to reject any and all proposals received in the response to the RFP. A contract for the accepted proposal will be based upon the factors described in the RFP and to be determined at the sole discretion of the Town of Cromwell.

M. Insurance

The selected Vendor shall carry Commercial General Liability Insurance, including Contractual Liability Insurance providing for a total limit of One Million Dollars (\$1,000,000) for all damages arising out of bodily injuries to or death of all persons in any one accident or occurrence, and for all damages arising out of injuries to or destruction of property in any one accident or occurrence, and, subject to that limit per accident, a total (or aggregate) limit of Two Million Dollars (\$2,000,000) for all damages arising out of bodily injuries to or death of all persons in all accidents or occurrences and out of injury to or destruction of property during the policy period.

## **DELIVERABLES**

1. Aerial Photography:

- a. Pilot project consisting of four digital Orthoimagery tiles.
- b. Digital Data Files-4-inch pixel resolution ortho imagery delivered in TIFF, JPEG, MrSID, ecw (AutoCAD), and ESRI Geodatabase format.

2. Control:

- a. Control Coordinates in an Excel spreadsheet, as well as in AutoCad and ESRI format.
- b. Ground Control diagram
- c. Written narrative of the results for Ground Control.
- d. Ground Control point report showing sketches and ties to located control points.
- e. Digital Analytical Aerotriangulation Report

3. Planimetric Mapping:

- a. Digital files – all maps and databases shall be delivered in AutoCAD format and ESRI Geodatabase format.
- b. Seamless town-wide coverages of plan data.

4. Topographic Mapping:

- a. Digital Data Files- All maps and databases shall be delivered in AutoCAD format, ESRI Geodatabase format
- b. Mapping shall be based on Conn. State Plane Coordinate System NAD83(latest revision) and NAVD88 Datums.
- c. Contour Interval shall be 2' (100 scale mapping)
- d. Digital Terrain Model (DTM) with masspoints, and breaklines.
- e. Seamless town-wide coverages of topo data

#### 5. Digital Orthophotography:

Digital Orthophotography data shall be delivered in TIFF, JPEG, MrSID.and. ecw Formats, on DVD or thumb drive, using a tiling scheme.

### **WORK STANDARDS:**

All work performed under the terms of this agreement shall conform to the highest industry standards as they may apply to each phase of work performed. The contractor shall comply with all applicable performance and safety requirements specifically related to work under this contract.

The contractor shall furnish sufficiently trained and competent personnel to perform the work required of the contractor under this contract.

### **PROJECT AREA**

The project includes the entire Town of Cromwell, CT

### **MINIMUM PERFORMANCE CRITERIA**

The work shall conform to the following minimum criteria:

1. Accuracy Requirements: All mapping products for the base proposal shall meet or exceed the 8" (2 pixel) RMSE accuracy class per the ASPRS Positional Accuracy Standards for Digital Geospatial Data. (Edition 2, Version 1.0 - August 23, 2023) any deviation shall be noted by the proposer.
2. Mapping products for the "Upgrade Option" shall meet of exceed the 4" (2 pixel) RMSE accuracy class per the ASPRS Positional Accuracy Standards for Digital Geospatial Data (Edition 2, Version 1.0 - August 23, 2023) any deviation shall be noted by the proposer.
3. Staff Certification: Project work will be accomplished under the direct supervision of a photogrammetrist certified by the American Society of Photogrammetry and Remote Sensing (ASPRS).
4. Project Survey: Survey work shall conform to "The Recommended Standards for Surveys and Maps in the State of Connecticut. Ground survey control for his project shall be accomplished



under the direct supervision of a Professional Land Surveyor, registered to practice in the State of Connecticut.

5. Coordinate System & Datums: Horizontal datum shall be the Connecticut State Plane Coordinate System NAD83 (latest revision) Vertical datum shall be NAVD88.

## **PROJECT SPECIFICATIONS**

Outlined in this section are detailed specifications related to the project.

- A. Ground Control: The contractor shall be responsible for establishing and surveying both horizontal and vertical control required to develop mapping that meets ASPRS 2-pixel RMSE accuracy standards per-ASPRS Positional Accuracy Standards for Digital Geospatial Data (Edition 2, Version 1.0-August 23, 2023). If adequate, Airborne GPS shall be used on this project. The contractor shall state the number of ground control points that will be acquired in the proposal.

The contractor shall provide the Town with a ground control report, control diagrams. And other applicable deliverables as outlined in Deliverable Products.

- B. Aerial Imagery Acquisition: The contractor shall collect new color imagery in the Spring of 2024 using a current generation, photogrammetric quality, digital aerial camera capable of simultaneously capturing all required spectral bands.

The contractor shall conduct aerial photography at a time when there is no snow cover and when deciduous trees are barren. For shorelines low tide is preferred but not mandatory. Photography shall occur when the sun angle is at least 40 degrees, generally between 10am and 2pm, and the ground is not obscured by clouds, haze, fog, dust, flooding, or other environmental conditions. The images shall not contain cloud shadows or objectionable shadows caused by relief of low solar altitude.

Unacceptable coverage resulting from deviation from the approved flight plan shall be corrected at the contractor's expense. The photography must meet prescribed specifications of ASPRS for scale, overlap, crab, tilt and other standard requirements necessary to support the development of mapping that meets 1"=100' scale ASPRS accuracy standards, (1" =50' for upgrade option). These specifications must be stated in the contractor's proposal.

The contractor shall provide an aerial photography mission report that includes details of the crew, aircraft, camera and flight. The report must include a map showing the actual flight line and photo center points.

Upon completion of the aerial photography mission, the imagery shall be inspected for cloud shadow, density and clarity. The photographs will then be checked for sidelap, endlap and crab. A QC summary report shall be provided to the Town.

- C. Aerial Triangulation: The contractor shall use fully analytical aerial triangulation (FAAT) techniques to extend and densify ground control. Upon the completion of all aerial triangulation work, the contractor shall deliver a formal aerial triangulation report to the Town of Cromwell. All aerial triangulation results must be documented in a digital file showing all control point numbers and resultant x, y, and z values.

At least twenty extra control points are to be held in reserve during the initial triangulation and used to test the accuracy of the triangulation, as described in the National Standard for Spatial Data

Accuracy (NSSDA). The extra points will be incorporated into the triangulation to further improve its accuracy. The extra points should be well dispersed around the project area.

- D. Digital Orthophotography: The contractor shall produce a set of color digital Orthophotos (3-band, 8-bit per channel, RGB) for the entire project area. Digital orthophotography must meet the required accuracy standards and must be configured in the same seamless tile layout as existing mapping (to be provided by Town). The contractor shall abide by all applicable standards for developing digital orthoimagery, reducing shadows and building lean, and correction of errors. The contractor will work with the Town to identify a pilot area to use to proof the digital orthophotos. The Orthophotos will be generated with a 4-inch or finer pixel resolution and delivered to the Town in georeferenced TIFF, JPEG, AutoCAD(.ecw), MrSID, file formats. The seamless tiled ortho-imagery must be in Connecticut state plane coordinates as described in Minimum performance criteria.
- E. Topographic Mapping: The contractor shall develop a Digital Terrain Model (DTM), consisting of masspoints, breaklines, and spot elevations from the aerial imagery, that is capable of producing contours and supporting orthorectification in accordance with the accuracy requirements set forth in this project. The contractor shall develop 2' contours and spot elevations for the entire project area. Contours generated must meet the stated accuracy standards. The contractor shall deliver the topographic mapping data in AutoCAD and ESRI Geodatabase format.
- F. Planimetric Mapping: The contractor shall develop planimetric land base mapping of the project area. Mapping developed shall meet the specified mapping accuracy standards and include all features summarized in Table 1.

**Table 1**

Summary List of Aerial Mapping Data Layers

Building Features Buildings, Out Buildings, Mobile Homes, Swimming Pools, Foundations, Decks and Porches, Fire Walls

Hydrographic Features Rivers, Streams, Ponds and Lakes, Wetlands, Ditches, Culverts, Dams, Detention Basins, Drainage Basins.

Transportation Features Roads, Road Centerlines, Street Names, Bridges, Trails, Railroads, Sidewalks, Walkways, Guiderails, Parking Areas, Driveways

Boundary Features Cemeteries, City Borders, Stone and Retaining Walls, Fences, Lot Lines (from Town GIS)

Vegetation Features Tree/Vegetation Lines, Hedge Rows, Street Trees

Recreation Features Parks and Playground, Recreation Areas, Sports Field Outlines, Golf Courses

Utility Features Fire Hydrants, Street Lights, Utility Poles, Manholes, Catch Basins, Signs, Signals

Miscellaneous Features Smoke Stacks, Silos, Storage Tanks, Monument Locations

The contractor shall edge-match map tiles visually and by coordinate reference. The connectivity of line, area, and polygon data must be mathematically exact. No “overshoots”, “undershoots”, or “offsets” are permitted. Lines and graphic entities that intersect must digitally integrate exactly.

#### Attachment 1

#### NON-COLLUSIVE BID STATEMENT

All Bidders are required to sign a Non-Collusive Statement with all public bid as follows:

1. The bid has been arrived at by the bidder independently and has been submitted without collusion with, and without any agreement, understanding, or planned common course of action with, any other vendor of materials, supplies, equipment, or services described in the Invitation to Bid, designed to limit independent bidding or competition, and
2. The contents of the bid have not been communicated by the bidder or its employees or agents to any person not an employee or agent of the bidder or its surety on any bond furnished with the bid, and will not be communicated to any such person prior to the official opening of the bid.

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(Signature)

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(Company Name)

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(Name and Title)

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(Address)

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(City and State)

Attachment 2

PROPOSAL FORM (BID)

Proposal of \_\_\_\_\_  
(Herein after called "BIDDER"), organized and existing under the laws of the State of \_\_\_\_\_  
\_\_\_\_\_, doing business as \_\_\_\_\_.

To the TOWN OF CROMWELL, CONNECTICUT (hereinafter called "TOWN"), In compliance with  
your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for

Digital Orthophotography and Photogrammetric Mapping

Schedule of Base Bid Prices

Price Submittal Form, Town of Cromwell

Digital Orthophotography and Photogrammetric Mapping

Line#	ITEM	PROPOSED PRICE
1	Aerial Photography	\$
2	Control	\$
3	Planimetric Mapping	\$
4	Topographic Mapping	\$
5	Digital Orthophotography	\$
6		\$

Total of lines 1 through 5    \$ \_\_\_\_\_

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to his own organization, that this other agreement as to any matter relating to this BID with any other BIDDER or with any competitor and that this BID is in all respects fair and is made without collusion or fraud.

BIDDER further declares that before making this BID, BIDDER carefully examined the form of BID and the RFQ/RFP SOLICITATION to the SCOPE OF SERVICES to be performed and fully understands the meaning of the same, and that the BID was based on BIDDERS own examination of the SCOPE OF SERVICES is to be done and own judgment as to the character of the conditions to be found and the difficulties that may arise in the performance of the SCOPE OF SERVICES and that BIDDER will make no claims on account of its understanding or misconceptions of the nature, character or amount of work to be done.

Bidder acknowledges receipt of the following ADDENDA and agrees to be bound by all ADDENDA whether or not listed herein.

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BIDDER agrees to perform all the work described in the RFQ/RFP SOLICITATION for the following unit prices and/or lump sums, which shall be full compensation for all costs incurred in completion of the work included under each payment item for which said unit prices or lump sums are given, including but not limited to the furnishing of all materials, labor, equipment, tools and all incidentals.

BIDDER agrees that any estimated quantities shown on this Proposal Form (BID) are only for the purpose of comparing BIDS and that BIDDER is satisfied with and will at no time dispute the said estimated quantities as a means of comparing the aforesaid BIDS. The Town reserves the right to reject any or all bids, to waive any informalities or minor defects or to accept the bid or portion of bid that, in the judgment of the Town, will be in its best interests.

Dated: \_\_\_\_\_

FIRM NAME \* \_\_\_\_\_  
(SEAL - if BID is by a Corporation)

BY: \_\_\_\_\_  
(Authorized Signature) (Title)