TOWN OF GLASTONBURY
PROFESSIONAL SERVICES PROCUREMENT NOTICE
REQUEST FOR PROPOSAL
GIS BASE MAP DEVELOPMENT
RPGL-2014-17

The Town of Glastonbury, Connecticut will be accepting proposals to select a qualified contractor to produce new town-wide 4-band color and CIR orthophotography, detailed 40-scale planimetrics and 1-foot contours based on new Spring 2014 aerial digital photography.

Interested individuals or firms should request the complete RFP and related information from Mary F. Visone, Purchasing Agent, 2155 Main Street, Glastonbury, CT 06033 or via the Town's website at www.glastonbury-ct.gov.

Proposals must be submitted to the Purchasing Agent no later than **February 13, 2014 at 11:00 AM**. **LATE PROPOSALS WILL NOT BE CONSIDERED.**

Mary F. Visone
Purchasing Agent

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RFP for
GIS Base Map Development
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1 GENERAL INFORMATION

1.1 Introduction

This Request for Proposals (RFP) is intended to provide contractors with a common, uniform set of instructions to guide them through the development of their proposals. Terms used and conditions imposed in this RFP are not intended to imply or denote a particular contractor nor are they to be construed as restrictive in any way.

In responding to this RFP, contractors must follow the prescribed format, where specified, and use the included forms, where provided, or reasonable facsimiles thereof. By so doing, each contractor will be providing the Town with information comparable to that submitted by other contractors and thus be assured of fair and objective treatment in the Town's review and evaluation process.

1.2 Project Overview

The Town of Glastonbury ("the Town") requires production of new town-wide 4-band color and CIR orthophotography, detailed 40-scale planimetrics and 1-foot contours based on new Spring 2014 aerial digital photography to be performed as part of this project. The base map deliverables shall overlap the town boundary 100 feet in all directions and include the west shore of the Connecticut River adjacent to the Town.

1.3 Glastonbury Vital Statistics

The Town of Glastonbury is located east of the Connecticut River southeast of Hartford. Its total land area is 52.4 square miles. The population is approximately 33,000. Existing Town GIS data can be viewed on the Town's GIS website located at:
http://gis2.glastonbury-ct.gov/SLV/Viewer.html

A shapefile of all of Connecticut's municipal boundaries is available to interested contractors on the UConn MAGIC website:
http://magic.lib.uconn.edu/connecticut_data.html

1.4 Submission of Proposals

This request for proposal does not commit the Town of Glastonbury to award a contract or to pay any costs incurred in the preparation of a proposal to this request. All proposals submitted in response to this request for proposal become the property of the Town of

Glastonbury. Submission of a proposal indicates acceptance by the firm of the conditions contained in this request for proposal, unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the Town and the firm selected. The Town of Glastonbury reserves the right to accept or reject any or all proposals or parts thereof for any reason as a result of this request, to negotiate with the selected respondents, the right to extend the contract for an additional period, or to cancel in part or in its entirety the request for qualifications, and to waive any informality if it is in the best interests of the Town to do so.

By submitting a proposal, you represent that you have thoroughly examined and become familiar with the scope of services outlined in this RFP and you are capable of performing the work to achieve the Town's objectives.

All contractors responding to this RFP will submit **a technical proposal and cost proposal**, packaged in a sealed envelope with a clearly marked original and 7 copies of the following:

A. Technical Proposal
B. Plan for Services
C. Evaluation Criteria Forms (Attachments A and B) with Specifically-Justified Responses
D. Cost Proposal (Attachment D)
E. Non-Collusion Affidavit (Attachment F)

The content of each of the sections of the technical proposal must be as described in the instructions in Section 1.5.

Responses shall be organized and presented in the order listed to assist the Town in reviewing and rating proposals. Responses should be presented in appropriate detail to thoroughly respond to the requirements and expected services described herein and presented and clearly marked in the order within this written proposal.

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 contractor. The transmittal letter should not exceed two pages in length.

The proposal must be submitted in a sealed envelope or package and the outside shall be clearly marked:

SEALED REQUEST FOR PROPOSAL
GIS BASE MAP DEVELOPMENT
RPGL-2014-17
DATE – FEBRUARY 13, 2014
TIME - 11:00 A.M.

<CONTRACTOR NAME> PROPOSAL

The proposal must be delivered no later than the date and time indicated to the following person and location:

Town of Glastonbury
Mary F. Visone, Purchasing Agent
2155 Main Street
Glastonbury, CT 06033

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

All proposals will be opened publicly and recorded as received. Proposers may be present at the opening; however, there will be no public reading of Proposals.

1.5 RFP Response Requirements

The proposal must contain the following sections:

I. 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 Glastonbury project. (The proposal evaluation team, at its option, may request further references to clarify specific claimed experience.) These references and project descriptions will be used to confirm and validate the responses made in the Comparative Evaluation Criteria form.
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's GIS project manager in coordination of this project's activities. Particular care should be made to introduce the contractor's project manager.

   b) Be responsible for the delivery of any work product (i.e., "deliverable"), including any presentations.

2. Qualifications and work experience with comparable clients for all personnel on the prime and any sub-contractors. In particular, the Town is interested in determining if the personnel proposed for this project worked on the projects that are used as references.

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 contractor 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 under the Description of Services, 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. EVALUATION CRITERIA FORMS WITH JUSTIFIED RESPONSES

A. **Minimum Evaluation Criteria** (Attachment A) - Criteria which must be met by contractors in order to be considered responsive.

B. **Comparative Evaluation Criteria** (Attachment B) - Criteria which will be applied to responsive contractors who have met the Minimum Evaluation Criteria.

IV. COST PROPOSAL FORM (ATTACHMENT D)

The Cost Sheet 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.

Contractor must also acknowledge receipt of any addendums as part of the cost proposal form.

V. CODE OF ETHICS ACKNOWLEDGEMENT

Respondent is required to review the Town of Glastonbury Code of Ethics adopted July 8, 2003 and effective August 1, 2003. Respondent shall acknowledge that they have reviewed this document in the area provided on the attached Code of Ethics Acknowledgement on Attachment D.

The selected contractor will also be required to complete and sign a Consultant Acknowledgement Form prior to award. The Code of Ethics and the Consultant Acknowledgement Form can be accessed at the Town of Glastonbury website at **www.glastonbury-ct.gov**. Upon entering the website click on **Bids & RFPs** which will bring you to the links for the **Code of Ethics** and the **Consultant Acknowledgement Form**. If the respondent does not have access to the internet, a copy of these documents can be obtained through the Purchasing Department at the address listed within this bid/proposal.

VI. STATEMENT OF NON-COLLUSION (ATTACHMENT F)

The Statement of Non-Collusion Form included as Attachment F must also be returned as part of the RFP response.

VII. WASTE REDUCTION

The Town of Glastonbury is dedicated to waste reduction and the practice of using and promoting the use of recycled and environmentally preferable products. Respondents are encouraged to submit RFP responses that are printed

double-sided (except for the signed proposal page) on recycled paper, and to use paper dividers to organize the RFP for review. All proposal pages should be secured with a binder clip, staple or elastic band, and shall not be submitted in plastic binders or covers, nor shall the proposal contain any plastic inserts or pages. We appreciate your efforts towards a greener environment.

VIII. **DISQUALIFICATION**

Failure to include any of the above-referenced items in the submitted proposal may be grounds for disqualifying said proposal.

1.6 Questions during Bid Period

Any technical questions regarding this RFQ shall be made in writing and directed to Stephen M. Braun, Assistant Town Engineer, 2155 Main Street Glastonbury, CT 06033 or by email at stephen.braun@glastonbury-ct.gov. For administrative questions concerning this proposal, please contact Mary F. Visone, Purchasing Agent, at (860) 652-7588, or by email at purchasing@glastonbury-ct.gov.

All questions, answers, and/or addenda, as applicable, will be posted on the Town's website at www.glastonbury-ct.gov (Upon entering the website click on Bids & RFPs). It is the respondent's responsibility to check the website for addenda prior to submission of any proposal. Note: Responses to requests for more specific contract information than is contained in the RFQ shall be limited to information that is available to all respondents and that is necessary to complete this process. The request must be received at least seven (7) business days prior to the advertised response deadline.

It is the responsibility of the contractor to check the Town website for any Addendums prior to submitting their proposal.

1.7 Clarification of Proposals

The contractor of any proposal may be required to discuss or clarify its proposal with the Town any time during the evaluation and selection process.

1.8 Evaluation of Proposals

The Evaluation Criteria are contained in attached forms (Attachments A and B) to be filled-out and submitted with the proposal.

The Town will examine all proposals in comparison to the Minimum Evaluation Criteria. Any proposal determined to be non-responsive to any of the Minimum Evaluation Criteria 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 contractor to make minor corrections, except to the Cost Proposal, and apply the change in the evaluation. The

Town will then examine all proposals that meet the minimum criteria in comparison to the Comparative Evaluation Criteria.

1.9 Contractor Selection

Following the procedures previously described, the Town will make a decision regarding selection of the contractor with whom it wishes to enter into a contract. Selection will be based upon weighing the relative merits of proposals submitted by competing contractors, taking into consideration the proposals' relative merits, their score on the comparative evaluation criteria and prices. The selected contractor *may not necessarily* be the low bidder. If appropriate, the Town may identify a short-list and ask that short-listed contractors to participate in an interview/presentation to the evaluation committee.

1.10 Term of Service

The selected contractor will be expected to commence services within 15 days of contract execution or on such other schedule as may be agreed to with the Town. The Town anticipates allocating up to 8 months for the project described herein, as outlined in Secction 6 of this RFP. The Town of Glastonbury reserves the right to cancel this proposal process at any time should any of the following conditions exist:

- Funds are not appropriated to allow continuance of this contract.
- The Town, through changes in its requirements or method of operation, no longer has a need for this service.
- The Town is not satisfied with the level of services provided under the contract or the contractor fails to comply with any of the terms and conditions outlined in the contract.

1.11 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 contractors 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 changing any of them, proposing contractors will be notified.

Event	Date
RFP Advertisement	January 24, 2014
Proposal Due Date	February 13, 2014 @ 11 a.m.
Shortlist for Interviews (as needed)	March 3, 2014
Contract Awarded by Town (est.)	March 10, 2014

1.12 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.

1.13 Confidentiality

Under the Connecticut Freedom of Information Laws, the Town cannot assure the confidentiality of any materials or information that may be submitted by a contractor in response to this RFP. Thus contractors who choose to submit confidential or proprietary information do so at their own risk.

1.14 Execution of Contract

Upon the acceptance of a contractor's proposal, the Town will incorporate into its standard contract form, appropriate specifics for this procurement and submit the contract to the successful contractor for signing. In the event that the successful contractor 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.

Incorporated by reference into the contract which is to be entered into by the Town and the successful contractor pursuant to this RFP will be:

A. All of the information presented in or with 1) this RFP and 2) the contractor's response thereto. In the event that the RFP language and the contractor's proposal-response language conflict, the RFP language will be interpreted as binding.

B. All written communications between the Town and the successful contractor whose proposal is accepted.

1.15 Insurance

The contractor shall, at its own expense and cost, obtain and keep in force during the entire duration of the Project or Work the following insurance coverage covering the contractor and all of its agents, employees, sub-contractors and other providers of services and shall name the Town and the Board of Education, its employees and agents as an Additional Insured on a primary and non-contributory basis to the bidders Commercial General Liability and Automobile Liability policies. These requirements shall be clearly stated in the remarks section on the contractors Certificate of Insurance. Insurance shall be written with Carriers approved in the State of Connecticut and with a minimum Best's Rating of A-. In addition, all Carriers are subject to approval by the Town of Glastonbury. Minimum limits and requirements are stated below:

1) Worker's Compensation Insurance:

- Statutory Coverage
- Employer's Liability
- $100,000 each accident/$500,000 disease-policy limit/$100,000 disease each employee

2) Commercial General Liability:

- Including Premises & Operations, Products and Completed Operations, Personal and Advertising Injury, Contractual Liability and Independent Contractors.

- Limits of Liability for Bodily Injury and Building Damage
  Each Occurrence $1,000,000
  Aggregate $2,000,000 (The Aggregate Limit shall apply separately to each job.)

- A Waiver of Subrogation shall be provided

3) Automobile Insurance:

- Including all owned, hired, borrowed and non-owned vehicles

- Limit of Liability for Bodily Injury and Building Damage:
  Per Accident $1,000,000

4) Errors and Omissions Liability or Professional Services Liability Policy
- Provide Errors and Omissions Liability or Professional Services Liability Policy for a minimum Limit of Liability $1,000,000 each occurrence or per claim. The Town, its employees and agents are Additional Insured for this specific project. The certificate shall specify that the Town and Board of Education shall receive 30 days advance written notice of cancellation or non-renewal specific to this project.

The contractor agrees to maintain continuous professional liability coverage for the entire duration of this project, and shall provide for an Extended Reporting Period in which to report claims for five (5) years following the conclusion of the project.

The contractor shall provide a Certificate of Insurance as "evidence" of General Liability, Auto Liability including all owned, hired, borrowed and non-owned vehicles, and statutory Worker's Compensation and Employer's Liability coverages.

The contractor shall direct its Insurer to provide a Certificate of Insurance to the Town of Glastonbury before any work is performed. The Certificate shall specify that the Town of Glastonbury shall receive 30 days advance written notice of cancellation or non-renewal.

The Certificate shall evidence all required coverage including the Additional Insured and Waiver of Subrogation.

1.16 Indemnification

To the fullest extent permitted by law, the Respondent shall indemnify and hold harmless the Town/Board of Education and their respective consultants, agents, and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Respondent's work, provided that such claim, damage, loss or expense is caused in whole or in part by any negligent act or omission by the Respondent, or breach of its obligations herein, any person or organization directly or indirectly employed or engaged by the Respondent to perform or furnish either of the services, or anyone for whose acts the Respondent may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

As to any and all claims against the Town or any of its consultants, agents or employees by any employee of the Respondent, by any person or organization directly or indirectly employed by contractor to perform or furnish any of the work, or by anyone for whose acts Respondent may be liable, the indemnification obligation stated herein shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for Respondent under worker's or workman's compensation acts, disability benefit acts or other employee benefit acts.

The above insurance requirements are the Town's general requirements. Insurance requirements with the awarded respondent are subject to final negotiations.

1.17 Non-Discrimination

No person shall be denied or subjected to discrimination on account of any services, or activities made possible by or resulting from this agreement on the grounds of sex, race, color, creed, national origin, age (except minimum age and retirement provision), marital status or the presence of any sensory, mental or physical handicap. Any violation of this provision shall be considered a violation of a material provision of this agreement and shall be grounds for cancellation, termination or suspension in whole or in part of the agreement by the Town of Glastonbury and may result in ineligibility for further Town of Glastonbury contracts. The Respondent shall at all times in the proposal and contract process comply with all applicable Town of Glastonbury, state, and federal anti-discrimination laws, rules, regulations and requirements thereof.

2 DESCRIPTION OF REQUIRED SERVICES

2.1 Coordinate System

All deliverable data products should be delivered in the Connecticut State Plane Coordinate System, US Survey Foot. The horizontal datum shall be NAD1983. Vertical Datum shall be NAVD1988.

2.2 Aerial Data Collection

The Town requires new Spring 2014 digital aerial imagery to be created to serve as the basis of the required deliverables. The contracted contractor shall comply with all Federal Aviation Administration (FAA) regulations and obtain all necessary flight clearances.

2.2.1 Conditions for Imagery Flight

The contractor shall take the aerial photographs, free of clouds, cloud shadows, atmospheric haze and severe sun glare reflections. All photographs shall be taken during Spring 2014, under a cloudless sky, while deciduous vegetation is free of leaves, when streams are within their normal banks and when the ground is free of snow. The project requires the imagery to be collected at a minimum sun angle of 45 degrees.

2.2.2 Aerial Imagery with Digital Camera

The Town requires the use of a professional digital aerial camera for this project. The source imagery shall be collected using a large format aerial camera such as the Leica ADS40 or the Zeiss/Intergraph Z/I DMC. The camera must be capable of making 4-bands simultaneously. The contractor should make the case for the use of the proposed camera. Airborne GPS shall be used with the camera as part of the image capture flight. On-board and ground-based GPS and Inertial Measurement Unit (IMU) equipment and methodologies shall be described.

The sensors shall be properly calibrated to insure that data are of the highest radiometric quality and are consistent across the project area. All data bands shall be collected at a minimum depth of 8-bits per band.

The imagery shall be collected using the appropriate blue, green, red and near infrared bands required to create natural color and color infrared (CIR) data sets. Band to band alignment of the sensor must be of sufficient accuracy to eliminate any fringing effects in the final imagery that are related to sensor array offsets.

Specifications and Standards for Photographic Image Capture

Spacing of Photographs - Overlapping images in each flight line shall provide full stereoscopic coverage of the area mapped. Image overlap must be adequate to develop true-orthophotography. Image crab in excess of 3 degrees may be cause for rejection of a flight line or any portion thereof in which excess crab occurs.

Tilt - Tilt of the camera from the vertical plane at the instant of exposure shall not exceed 3 degrees, nor shall it exceed 5 degrees between successive exposure stations. Average tilt over the project shall not exceed 1 degree.

Flight Plan/Boundaries - The imagery shall cover a minimum of one full stereo-model beyond each end boundary. Flight plans for imagery capture should be included in the proposal.

Flight Height – Because large format aerial cameras have different sensor sizes and camera focal lengths, a specific flight altitude is not mandated in this RFP. The altitude should be low enough to allow the creation of the data sets to ASPRS Class 2 accuracy and very clear and detailed orthophotography. Pixels in the raw photography should cover less than a 3" square on the ground. The proposed flight height should be stated and examples of orthophotography from similar projects should be supplied with the proposal.

Image Quality – All imagery shall be free from artifacts or imperfections due to the sensor system or subsequent handling.

2.3 QA/QC for Aerial Photography, Airborne GPS

As soon as the aerial imagery has been captured, it must be inspected for any defects, e.g. cloud shadow, density, clarity, completeness, sidelap, endlap and crab. Successful capture of airborne GPS shall also be confirmed. A QC summary report shall be provided to Town within one week of the date of aerial photography.

2.3.1 Reflights

Unacceptable coverage resulting from deviation from flight plans for imagery and, image and data quality or any other conditions of the raw imagery that prevents the development of the required deliverables shall be corrected at the contractor's expense.

2.4 Ground Control

The Town of Glastonbury has CT Licensed Land Surveyors on staff who maintain a geodetic control network capable of creating ASPRS Class 2 standards for 40-scale mapping. The plan included as Attachment G depicts the location of 10 high accuracy survey points that are intended to be used for this project. Each point consists of a PK nail in a paved area centered in a white painted cross, with each leg of the cross 4 feet long. Each PK nail will be located by the Town at the required accuracy using GPS equipment prior to the aerial flight.

Contractors shall review the extent of the existing control network and include as part of their proposal response a narrative describing any needs for modification or expansion of the existing Town control network to meet the requirements of the project.

2.5 Fully Analytical Aerial Triangulation (FAAT)

Fully Analytical Aerotriangulation (FAAT) will be used to densify control. The Plan for Services should describe the expected positional accuracy of the horizontal and vertical control. A step-by-step discussion of the procedures, equipment, and staff used for the FAAT should be included in the Plan for Services. This discussion should also describe quality control procedures.

2.6 Tiling and Delivery Areas

A logical tile grid for the GeoTiff imagery shall be proposed and created based on the Connecticut State Plane Coordinate System (NAD83 feet) and the Town's existing 100 scale mapping grid. This shall be submitted to the Town for review and acceptance.

The Town anticipates a pilot project followed by two or three delivery areas, followed by a seamless Town-wide delivery. The pilot and delivery area draft submittals of planimetric and topographic data must be delivered as seamless file geodatabases covering the entire delivery area. The final planimetric and topographic data shall be delivered as seamless file geodatabases.

In order to streamline QAQC, the draft orthophoto submissions shall be delivered as a seamless MrSID format file for each delivery area. Each delivery area data set must be edgematched to its adjacent delivery areas so that at the completion of the project the planimetric and orthophoto MrSID data shall be integrated into a seamless project-wide data set. In addition the individual GeoTiff tiles shall be delivered when all orthophotography has been accepted.

2.7 Pilot Project: Planimetric, Orthophoto, and Topographic Products

In order to assure that the contractor can successfully create all required deliverables, a pilot project will precede the creation of any final deliveries. The pilot area will be an area of approximately 4 to 6 tiles in size, selected by the Town in consultation with the contractor. The pilot is intended to test all production methodologies and establish successful procedures to follow throughout the rest of the project. While it is understood that ground control, aerial photography, and FAAT will likely be conducted for the entire project prior to the pilot, the rest of the project tasks that are contracted will be initially conducted only for the pilot area before authorization for full production is authorized.

During the pilot, the contractor and Town will also:

- Finalize the database design for the geodatabase with any required minor modifications.
- Finalize the delivery schedule based on the results of the pilot.
- Determine compression of MrSID orthophotography deliverable based on testing.

The above tasks will be undertaken with input from the Town and its authorized representatives. Upon successful completion of the pilot, the Town will authorize full production of all orthophoto, planimetric and topographic products described in detail below. It is imperative that the pilot project be completed on-time, according to the selected contractor's schedule.

2.8 Photogrammetric Compilation

The Town requires a robust set of planimetric features on which to develop its GIS database. The planimetric and topographic data schema are an attachment to this RFP. Planimetric features will be compiled in digital format to meet ASPRS Class 2 standards for large scale maps at 40-scale. Each type of feature will be coded in conformance with the Esri geodatabase design that will be finalized during the pilot project. The design also specifies the digital feature type requirements (e.g. points, lines, polygons), as well as those features that are expected to have elevation attributes.

The Town intends to also use both the planimetric and topographic data in AutoCAD, and is therefore requesting an optional price for the contractor to convert the Esri geodatabase to AutoCAD DWG format using the National CAD Standard layering convention.

Certified Photogrammetrist - An ASPRS Certified Photogrammetrist must supervise and certify the photogrammetric tasks and deliverables.

2.9 Planimetric Features

All mapping will be compiled using direct digital data capture on precision softcopy stereoplotters that utilize the relative and absolute orientation derived from the FAAT results. contractors are encouraged to provide relevant information on their experience with planimetric feature compilation and data layer formatting for Esri geodatabases in their technical proposal.

2.9.1 Planimetric Attributes

A geodatabase design is attached to this RFP. The Town and the contractor will develop a final database design structure into which attributes will be placed, following the attached geodatabase design and based on the results of the pilot. This structure will be reviewed and approved by the Town as the standard for all data deliveries in the project. Any files that contain incorrectly coded data or data that does not adhere to the standard will be returned to the contractor for correction. The Town will provide attribute and/or place name source materials to the contractor where appropriate, e.g. road and hydrographic features.

Impervious Surface Area Data

The Town requires a combination of all impervious areas into a single feature class with the following type attributes: Paved Surfaces, Structures and Other Impervious.

2.10 Digital Orthophotography

The Town requires true-color and CIR orthophotography be created from the Spring 2014 flight. The orthophotography shall be comprised of .25' pixels. The accuracy shall be to ASPRS Class 2 accuracy standard. It is expected that the digital images will be clear, carefully mosaicked, and have standardized color balance throughout the project area.

2.10.1 Methodology and Equipment

The Plan for Services must concisely but thoroughly explain the methodology to be followed to develop the digital orthophotography, as well as list the equipment to be used. The following points must be covered in the Plan for Services:

1. Specifications and methodology for ensuring accurate-orthophotography
2. DEM/DTM breaklines
3. Image resolution
4. Image mosaicking
5. Radiometric verification
6. Image source and camera description
7. Quality Assurance/Quality Control process (QA/QC)
8. Data delivery formatting
9. The team member and staff performing the digital orthophotography

Due to the utility of orthophotos for conducting QA/QC on the planimetric data products, the Town requires that the orthophotos be delivered before or at the same time as all other products. Final delivery format must be in both geo-tiff and MrSID formats, with delivery area paneling to be decided at the project kick-off meeting.

2.11 Topography

Contractors should propose their methodology for creating topography at 1-foot contour intervals. Elevation points must also be captured, at a minimum, for the following features: local high points (ridges, summits), local low points (basin bottoms, saddles), stationary water bodies, street intersections and at other appropriate points. See the attached geodatabase design attachment for the required attribute coding.

2.11.1 Methodology and Equipment

The Plan for Services must concisely but thoroughly explain the methodology to be followed to develop the topography, as well as list the equipment to be used. The following points must be covered in the Plan for Services:

1. Creation of breaklines
2. Digital Terrain Model generation
3. Quality Assurance/Quality Control
4. The team members performing the work

2.11.2 Edgematching

All data files will be edgematched with data from adjoining files. No data elements will be repeated in two files. All coding of features will be consistent from one file to the next.

2.12 Draft Data Deliveries

Upon completion of the pilot and each draft delivery area, the contractor will submit 2 digital copies of all deliverables for review, one to the Town and one to the Town's designated project management/QC consultant. The draft data will include area-wide seamless Esri file geodatabases of the planimetric data, and the raster orthophotography data in seamless MrSID format.

These data will be examined by the Town and its consultant for conformance to the database design and quality specification. Any errors in the data will be noted in a report, and will be returned to the contractor for correction and resubmission to the Town.

2.13 Final Data Delivery Formats

When all delivery area data is approved by the Town, the contractor will assemble the planimetric and topographic vector geodatabase data into a seamless data set and deliver the data to the Town for review and final acceptance.

The MrSID format orthophotography will be grouped into 20-1 subsets for delivery and in addition grouped into one seamless town-wide 100-1 compressed MrSID final deliverable. All GeoTiff format orthophotography tiles will also be delivered at the conclusion of the project.

3 PROJECT MANAGEMENT AND MEETINGS

The contractor will indicate in the Plan for Services who the main contact person – Project Manager - for the project will be. The Town requires a minimum series of meetings with the Project manager and other key personnel, as follows:

1. Project kick-off meeting and pilot project planning meeting
2. Pilot review meeting
3. Review meeting to resolve any significant problems.

The Plan for Services shall include these meetings as milestones in the project schedule and timeline (Gantt chart). In addition, the dates for all proposed "delivery area" deliveries should be specified in the project schedule and timeline. If the contractor feels that more or less meetings are necessary, this should be indicated in the Plan for Services. Conference calls and/or on-line webinars may substitute for in-person meetings at the discretion of the Town.

4 DELIVERABLES

The following describes the required deliverables. All final digital data will be delivered on DVD or portable hard drive which will remain the property of the Town. Two copies are required. The following describes the required deliverables.

4.1 Metadata

All GIS data deliverables shall have Federal Geographic Data Committee (FGDC) compliant metadata in File Geodatabase and/or XML format readable within ArcCatalog.

4.2 Aerial Photography Deliverables

1. Aerial Photography Report: As soon as the aerial photography has been completed, the products shall be inspected by the contractor and an aerial photography/Airborne GPS quality report issued to the Town.

2. Geodatabase data of the actual flightlines and photo centers from the flight.

4.3 Ground Control Deliverables

The results of the project ground control work will be delivered to the Town as a Ground Control Report to document all ground control that were used for the project. This report shall include:

1. The ground control field notebook(s), including swing-tie sketches to all points (to be provided by the Town for inclusion in the report).

2. A digital data layer in Esri file geodatabase format containing the ground control points along with pertinent attributes including calculated X, Y and Z coordinates, type of point, etc.).

4.4 FAAT Deliverable

The contractor will submit an aerotriangulation report at the completion of the FAAT development.

4.5 Digital Orthophotography Deliverables

1. True-color and CIR data shall be delivered in both georeferenced .tiff format and seamless MrSID compressed format. These data must be readable in ArcGIS.

2. Tile grid in Esri file geodatabase format.

3. File geodatabase of orthophoto seam lines showing where the images were stitched together.

4.6 Planimetric Data Deliverables

Final seamless digital vector data shall be delivered in Esri geodatabase format on DVD or portable hard drives.

If the option listed in Attachment D is selected by the Town, this data shall also be delivered in AutoCAD DWG format using the National CAD Standard layering convention.

4.7 Topographic Data Deliverables

The final digital terrain model (DTM) used to create elevation data will be delivered in ASCII, Esri geodatabase, and AutoCAD .tin file formats.

Final seamless digital vector topographic data shall be delivered in Esri geodatabase format on a DVD or portable hard drives.

If the option listed in Attachment D is selected by the Town, this data shall also be delivered in AutoCAD DWG format using the National CAD Standard layering convention.

4.8 Data to be Provided by the Town

The Town will provide the following data to the contracted contractor to enable creation of the required attributes for the geodatabase deliverables:

- Openspace map and names
- Road centerline and names
- Hydrography names
- Existing street tree inventory in shapefile format

4.9 Product Ownership

All material produced and used for the development of the delivered products will become the sole property of the Town. Permission must be obtained from the Town for uses of this data other than as specified herein.

5 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The contractor should conduct quality assurance/quality control checks during all phases of the project. The Plan for Services should describe each of these checks, and which team member or staff person will be conducting the QA/QC. The proposal should be specific and not generalize the QA/QC “philosophy” of the firm.

5.1 Acceptance of Deliverables and Town QA/QC Procedures

In addition to QA/QC performed by the contractor, the Town will subject interim and final deliverable products to a series of visual, digital, and data accuracy checks as described in Attachment E. In general, products with missing data, gross errors, poor edgematch, etc. will be returned to the contractor for correction.

6 ANTICIPATED SCHEDULE

The following table displays the anticipated schedule for this project. The contractor should supply a detailed schedule in the form of a Gantt chart timeline as part of their Plan of Services. If this timetable cannot be met, an explanation of factors precluding this schedule should be supplied:

Milestone	**Desired Completion Date**
Contract award notification	March 10, 2014
Flyover completed (est.)	April, 2014
Pilot completed (est.)	June 15, 2014
Majority of project completed (est.)	August 15, 2014
Project completed (est.)	November 15, 2014

7 ATTACHMENTS

A. Minimum and Evaluation Criteria Form: to be completed and returned with proposal

B. Comparative Evaluation Criteria Form: to be completed and returned with proposal

C. Planimetric-Topographic Database Design

D. Price Proposal Form: to be completed and returned with proposal in a separate envelope.

E. Data Acceptance Criteria

F. Statement of Non-Collusion

G. Ground Control Network Layout

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ATTACHMENTS A AND B

Evaluation Criteria

The following minimum and comparative evaluation criteria, combined with responses from references contacted, will be used by the proposal evaluation team.

The proposer's response to each criteria, except where noted, is to be indicated by placing an "X" to the right of the correct response. The proposal evaluation team will expect to find justification for each response elsewhere in the proposal (particularly in the "Prior Project Experience Summary"). The Client reserves to right to be the final judge of each proposer's rating for each criteria not clearly justified in the proposal, also considering client verification.

For the comparative evaluation criteria, a rating will be assigned to each response. The rating categories, not all of which are used for each criteria, are as follows:

- **Unacceptable (UA)**: This represents a response that is unsatisfactory or non-responsive with respect to the specification. One or more ratings of UA will disqualify a vendor from further consideration by the Client.
- **Not Advantageous (NA)**: This represents a response that fails to meet the standard for a satisfactory response to the RFP, but is responsive.
- **Advantageous (A)**: This represents a response that satisfies the evaluation standard specified in the RFP.
- **Highly Advantageous (HA)**: This represents a response that offers more than the specification and provides a particularly impressive or advantageous response to the RFP.

In each case, the proposer's response on these forms must be elaborated upon in an appropriate (i.e., other) section of the proposal. For some criteria the name of the specific project referred to by the proposer is requested as part of the response on these forms.

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ATTACHMENT A:
Minimum Qualification Criteria Form

Form should be filled out in its entirety by respondent. If additional space is required, supplemental pages can be attached. Project name and reference information must be consolidated in the form.

Contractor Name:_____ Date Submitted: ___/___/2014

The Contractor, and pertinent subcontractors, must meet each of the following qualifications to be eligible to perform this work for the Town:

1. The Contractor, or sub-contractor must have at least 3 years experience in high-accuracy softcopy photogrammetry. This must be substantiated elsewhere in the proposal.

Yes_____ No _____

2. The Contractor must have successfully performed at least 3 projects involving **Town, or Countywide planimetric mapping** with the delivery of photogrammetric products in an Esri Geodatabase format.

Yes_____ No _____

Provide here specific project names, each of which identifies a project whose references and description are provided in the "Prior Project Experience Summary" section of the proposal:

Project/Client Name Page# in proposal with Description	Project Scale	Data Delivery Format	Client and Project manager's Name	Reference Phone

3. The Contractor must have successfully performed at least 3 projects where 4-band imagery from a digital sensor was used to create natural color and CIR orthophotography. One of those projects must have also delivered a seamless MrSID final deliverable.

Yes_____ No _____

Provide here specific project names, each of which identifies a project whose references and description are provided in the "Prior Project Experience Summary" section of the proposal:

Project/Client Name Page# in proposal with Description	Color (Y/N)	Data Delivery Format	Client and Project manager's Name	Reference Phone

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ATTACHMENT B:
Comparative Evaluation Criteria Form

Form should be filled out in its entirety by respondent. If additional space is required, supplemental pages can be attached. However, project name and reference information must be on the form.

Contractor Name:_____ Date Submitted: ___/___/2014

For each category on the form, reply by circling the response which is most accurate for the proposer.

1. Photogrammetric/Planimetric/Topographic Mapping Experience

HA: The project team has successfully performed comparable digital planimetric and topographic mapping for at least 7 comparable projects with geodatabase deliverables and 4 of these have been to 40-scale or larger

A: The project team has successfully performed comparable digital planimetric and topographic mapping for at least 5 projects with Esri geodatabase deliverables and 2 of these have been to 40-scale or larger.

NA: The project team has successfully performed at least 3 comparable digital planimetric and topographic mapping projects in Esri geodatabase deliverables.

UA: The project team has successfully performed comparable digital planimetric and topographic mapping for 2 or fewer comparable project.

Provide here specific project names, each of which identifies a project whose references and description are provided in the "Prior Project Experience Summary" section of the proposal:

Project Name	Proposal page #	Client & Reference Name	Reference Phone

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2. Orthophotography Experience

HA: The project team has successfully produced and delivered comparable 4-band orthophotography created from the proposed camera system to at least 5 clients and at least 3 must have been with 3" pixels at a project scale of 1":40' .

A: The project team has successfully produced and delivered comparable 4-band orthophotography created from the proposed camera system to at least 3 clients and at least 2 must have been with 3" pixels at a project scale of 1":40'.

NA: The project team has successfully produced and delivered comparable 4-band orthophotography created from the proposed camera system to at least 2 clients and at least one must have been with 3" pixels at a project scale of 1":40'.

UA: The project team has not successfully delivered comparable 4-band orthophotography to a client at a project scale of 1":40'.

Provide here specific project names, each of which identifies a project whose references and description are provided in the "Prior Project Experience Summary" section of the proposal:

Project Name	Proposal page #	Client & Reference Name	Reference Phone

Other Items to be Judged by the Evaluation Team:

3. History of On-Time Performance

4. Quality Assurance/Quality Control (QA/QC)

5. Overall Quality of the Proposal Package

6. Overall Quality of References

ATTACHMENT C **RPGL-2014-17**

Glastonbury, CT

GeoDatabase Specification for GIS Planimetric and Topographic Data

LAYER	Feature Class	Feature Class Description	Feature Types (required topology)	"Z" elev	Attribute Column Name(s) & Definition	Attribute Value Domain	Attribute Value Description	Notes
		BASIC PLANIMETRICS						
1	ROAD	Edge of Pavement	Poly		**TYPE**	Paved	Paved road	
					Text	Unpaved	Unpaved road	
						Bridge	Bridge decking and structure	
						Alley	A very narrow road typically in urban area	
						Traffic Island	Traffic Island	
						Runway	Paved Runway	Runway or Heliport landing area
2	ROAD_CL	Street Centerlines	Line		**TYPE**	Paved	Paved road centerline	Client has existing centerline with attributes.
					Text	Unpaved	Unpaved road centerline	Vendor should do mire accurate centerlines and transfer
						Bridge	Bridge decking and structure	selected other attributes from old centerline file
						Alley	A very narrow road typically in urban area	
					NAME	"feature name"	Road name of each segment	
					Text			
3	CURB	Curbs	Line		**TYPE**	Curb	Hard curb structure to be coincident with edge of	should be coincident with edge of pavement/sidewalk
					Text		pavement and/or sidewalk where appropriate	where appropriate
4	SIDEWALK	Sidewalks	Poly		**TYPE**	Sidewalk	Sidewalks break at driveways, parking lots, etc.	
					Text	Stairs	Stairs in sidewalk	
						Crosswalk	Crosswalk	
						Pedestrian Ramp	Pedestrian Ramp	
						Footbridge	Footbridge	
					MATERIAL	Concrete	Concrete sidewalk	
					Text	Bituminous	Bituminous sidewalk	
						Brick	Brick sidewalk	
						Gravel	Gravel sidewalk	
						Unknown material	Unknown material	
5	IMPERV_OTHER	Other Impervious	Poly		**TYPE**	Patio	Patio	
					Text	Transformer Pad	Pad Mounted Transformer	
						Tower Pad	Transmission Tower Pad	
						Pad	Equipment Pad	
						Plaza	Plaza	
						Traffic island	Paved traffic island	
						Other Impervious	Other impervious surface	
6	BUILDINGS	Buildings footprints	Poly	**Z**	**TYPE**	Building	Building	Minimum size 64 sq. ft. Z = Roofline
				Z	Text	Outbuilding	Outbuilding (shed,detached garage etc.,)	
				Z		Mobile Home	Mobile home, trailer	
						Foundation	Building foundation	
						Ruin	Ruined building or structure	
						Construction area	Area under construction	
					BASE-ELEV	Elevation value	Elevation of structure (NAVD88)	one decimal place
					Number			

ATTACHMENT C **RPGL-2014-17**

Glastonbury, CT

GeoDatabase Specification for GIS Planimetric and Topographic Data

	Feature Class	Feature Class Description Description	Feature Types (required topology)	"Z" elev	Attribute Column Name(s) & Definition	Attribute Value Domain	Attribute Value Description	Notes
					ELEV-SL	Elevation value	Elevation of roofline edge above sea level (NAVD88)	one decimal place
					Number			
7	STRUCTURES	Structures foot/roofprints	Poly		**TYPE**	Water Tank	Water storage tank	
					Text	Fuel Tank	Fuel storage tank	
						Misc Tank	Miscellaneous tank	
						Smokestack	Smokestack	
						Porch	Porch	Porches, decks, and stairs should be snapped to building
						Deck	Deck	ot other features when appropriate
						Stairs	Flight of Stairs - 3 or more treads	more than 3 stairs
						Inground Pool	Swimming pool inground	
						Aboveground Pool	Swimming pool above ground	
						Bus Shelter	Bus Shelter	
						Generator	Generator	
						Plaza Structure	Urban Plaza Structure, e.g. large planters	Like big planters in urban plazas
						Misc Structure	Miscellaneous Structure	
				Z		Dam	Dam Structure	Z = top of wall
				Z		Floodwall	Headwall, wingwall, etc.	Z = top of wall
8	DRIVEWAY	Driveways	Poly		**TYPE**	Paved	Paved Driveway	All driveways will be represented as continuous line
					Text	Unpaved	Unpaved Driveway	that snap to appropriate features, e.g. building, road, etc.
9	PARKING	Parking areas	Poly		**TYPE**	Paved	Paved parking area with 4 or more spaces	Parking areas of more than 4 spaces should be delineated
					Text	Unpaved	Unpaved parking area with 4 or more spaces	Less that 4 spaces may be classed as driveways
10	HYDRO_POLY	Hydrography	Poly	**Z**	**TYPE**	Pond	Pond or Lake	Elevations to be put in SPOT_E feature class
					Text	River	River polygon	Rivers and streams > 4 ft wide. Streams <4 ft wide will be captured in HYDRO_LINE.
				Z		Fresh Wetland	Freshwater Wetland	river
				Z		Forested Wetland		Vendor shall map to far shore of CT River
				Z		Retention Pond	Retention pond / Flood basin	
					NAME	"feature name"	The name of pond/lake feature	
					Text			
11	HYDRO_LINE	Hydrography	Line		**TYPE**	Stream	Stream	Stream < 4 ft wide. Streams > 4 ft wide will be captured in HYDRO_POLY.
					Text	Open Culvert	Uncovered ditch, channel, or swale	
						Covered Culvert	Sewer or drain crossing under surface	
					NAME	"feature name"	The name of stream/river features	Client will provide a manuscript of hydrography names
					Text			
12	INFRA	Street furniture/infrastructure	Point	**Z**	**TYPE**	Catch Basin	Catch basin	Features only to be captured within city public ways and properties.
					Text	Fire Hydrant	Fire hydrant	Client will provide some locational information
				Z		Manhole	Manhole	24" diameter or greater

Glastonbury, CT

GeoDatabase Specification for GIS Planimetric and Topographic Data

	Feature Class	Feature Class Description Description	Feature Types (required topology)	"Z" elev	Attribute Column Name(s) & Definition	Attribute Value Domain	Attribute Value Description	Notes
				Z		Outfall	Stormwater outfall	
						Utility Pole with light	Utility Pole with street light	Features only to be captured within city public ways and properties.
						Utility Pole w/o light	Utility poles without street light	Features only to be captured within city public ways and properties.
						Light Pole	Light Pole	Features only to be captured within city public ways and properties.
						Traffic Signal	Traffic Signal Pole	
						Walk Signal	Walk Signal Pole	
						Electric Box	Electric Box for traffic signals	Usually found near traffic signals
						Bollard	Bollard blocking vehicle traffic	
						Pylon	Transmission or Cellphone Tower	
						Bicycle Rack	Bike rack within city public ways and properties	Single pole and clustered bike racks
						Bench	Bench within city public ways and properties	
						Unknown	Unknown infrastructure feature	
		OPTION: Traffic Sign				Traffic Sign	Traffic Sign	Only within Public Ways
					ELEV	Elevation value	Elevation of features with Z values above ground level	one decimal place
					Number			
13	FENCE	Fences	Line		**TYPE**	Fence	Fences	
					Text	Hedge	Hedges	
						Guardrail	Guardrail along road	
						Jersey Barrier	Jersey Barrier along roads	along Rte 2, Rte 3
14	WALL	Walls and retaining walls	Line	**Z**	**TYPE**	Wall	Wall	Z = top of wall
					Text	Retaining Wall	Retaining wall	2' min height
						Stone Wall	Stone Wall (not retaining)	
						Sitting Wall	Wall in urban area for sitting	
15	TRAIL	Trails	Poly		**TYPE**	Trail	Trails > 3 ft. width foot/bike path, golf cart path, trail, etc.	Trails/footpaths greater than 3 ft. width
					Text			
15	PATH	Narrow path	Line		**TYPE**	Path	Trails < 3 ft. width foot/bike path, golf cart path, trail, etc.	Trails/footpaths less than 3 ft. width
					Text			
16	TREES	Trees	Point		**TYPE**	Deciduous Street Tree	Deciduous Street Tree	Trees only to be captured within city public ways and properties. City will provide locations.
					Text	Coniferous Street Tree	Coniferous Street Tree	Trees only to be captured within city public ways and properties. City will provide locations.
						DeciduousTree in Park	DeciduousTree in Park	Client will provide map of public parks
						Coniferous Tree in Park	Coniferous Tree in Park	Client will provide map of public parks
17	LANDCOVER	Large vegetation and land covers	Poly		**TYPE**	Trees	Tree and forest vegetation area	Areas in excess of .25 acres to be captured.
					12,12,C	Brush	Brush and scrub vegetation area	
						Crop	Cultivated field	
						Quarry	Quarry	

Glastonbury, CT

GeoDatabase Specification for GIS Planimetric and Topographic Data

	Feature Class	Feature Class Description Description	Feature Types (required topology)	"Z" elev	Attribute Column Name(s) & Definition	Attribute Value Domain	Attribute Value Description	Notes
18	SPORT	Sports facilities/areas	Poly		**TYPE**	Athletic Field	Athletic fields (baseball, football, etc.)	
					Text	Golf	Golf courses	
						Tennis	Tennis courts	
						Basketball	Basketball courts	
						Playground	Playground	
						Park	Park for passive recreation	Client will provide map of parks
19	CEMETERY	Cemeteries	Poly		**TYPE**	Cemetery	Cemetery	there are 13 cemeteriess
					Text			
					NAME	Cemetery Name	The cemetery name	Client will provide map and name information
					Text			
20	DOCK	Docks and piers	Poly		**TYPE**	Dock	Floating marine structure	
					Text	Pier	Fixed marine structure	
21	BUOY	Marine Buoys	Point		**TYPE**	Mooring Buoy	Mooring Buoy	some on shore of Connecticut River
					Text	Navigational Marker	Navigational Marker	
22	UNDER_CONST	Areas under construction	Poly		**TYPE**	Under Construction	Area Under Construction	
					Text			
23	SPOT_ELEV	Spot Elevation	Point	**Z**	**TYPE**	Road Intersection	Elevation of the road intersection	Spot elevations will be captured at all street intersection
					Text	Water	Elevation of Stationery water body	locations, water bodies, hilltops, and in other key points.
						Hilltop	Elevation of hilltop	
						Other	Elevation of other spot	
					ELEV	Spot Elev. value	Elevation of the spot	one decimal place
					Number			
24	DTM_POINT	Digital terrain model points	Point	**Z**	**TYPE**	DTM	DTM masspoints	
					Text			
					ELEV	Elevation value	Elevation of the DTM point	one decimal place
					Number			
25	DTM_BREAKLINE	Digital terrain model breaklines	Line	**Z**	**TYPE**	Breakline	Breaklines	
					Text			
					Double			
26	CONTOUR	Contour lines	Line	**Z**	**ELEV**	Elevation value	Contour line @ 1 foot intervals	
					Number			
					TYPE	Contour	1 foot contour line	
					Text	Hidden	Hidden under feature	
						Obscured	Obscured by vegetation, etc.	
						Depression	Depression contour line	
						Hidden Depression	Hidden depression contour line	
						Obscured depression	Obscured depression	

	Feature Class	Feature Class Description Description	Feature Types (required topology)	"Z" elev	Attribute Column Name(s) & Definition	Attribute Value Domain	Attribute Value Description	Notes
						Index -2	Index contour every 2nd interval (even number contours)	
						Index -5	Index contour every 5th interval (5', 10', etc…)	
						Hidden Index	Index contour hidden	
						Depression index	Depression index contour	
						Depression hidden index	Depression hidden index	
						Obscured index	Obscured index	
						Depression obscured index	Depression obscured index	
27	ORTHO_GRID	Ortho imagery boundaries	Poly		**TILE**	"Tile ID"	Tile identification for ortho tiles	
					Text			
28	ORTHO_SEAMLINE	Ortho seam lines	Line		TYPE	Ortho Seamline		edges where photos are merged to create the orthophoto
								to aid QAQC of orthophotography
29	CONTROL	Ground control	Point		**TYPE**	New Horizontal	Newly created horizontal point	
					Text	New Verticle	Newly created vertical point	
						New Horiz and Vert	Newly created horiz. and vert. point	
						FAAT	FAAT point from stereomodel	
						CHD	CT DOT point used	
						USGS	USGS point used	
						Town	Town monument point	
						Other	Other existing monument point	
					MATERIAL	Spike	A spike marks the point	
					Text	Cement	Cement object marks the point	
						Other	Other object marks the point	
					VISIBLE	Y	Point is visible on photograph	
					Text	N	Point is NOT visible on photograph	
					X	X coordinate	Value of the X coordinate	
					Number			
					Y	Y coordinate	Value of the Y coordinate	
					Number			
					Z	Z coordinate	Value of the Z coordinate	
					Number			

ATTACHMENT D
COST PROPOSAL RESPONSE PAGE

TOWN OF GLASTONBURY
PROPOSAL **RPGL #** **2014-17**
DATE ADVERTISED **1/24/2014** **DATE / TIME DUE** **2/13/2014 @ 11:00 A.M.**

NAME OF PROPOSAL **GIS BASE MAP DEVELOPMENT**

Line #	Item Description	Proposed Price
1	Image acquisition, Ground Control , FAAT	$
2	Topographic data deliverables (Esri geodatabase format)	$
3	Planimetric data deliverables (Esri geodatabase format)	$
4	Digital orthophotos at .25' pixel resolution (true color and CIR) deliverables	$
5	Total of Lines 1 - 4	$
6	Add Option 1 – Additional cost for Traffic Signs (within Public Ways)	$
7	Add Option 2 – Additional cost for AutoCAD DWG format deliverables as described in Sections 4.6 and 4.7	$

CODE OF ETHICS:
I / We have reviewed a copy of the Town of Glastonbury's Code of Ethics and agree to submit a Consultant Acknowledgement Form if I /We are selected. Yes _____ No _____ *

***Respondent is advised that effective August 1, 2003, the Town of Glastonbury cannot consider any proposal where the respondent has not agreed to the above statement.**

The Respondent acknowledges receipt of the following Addendums:

Addendum #1_____ Date:_____
Addendum #2_____ Date:_____
Addendum #3_____ Date:_____

Type or Print Name of Individual	**Doing Business as (Trade Name)**
Signature of Individual	**Street Address**
Title	**City, State, Zip Code**
Date	**Telephone Number / Fax Number**
E-Mail Address	**SS # or TIN#**

RPGL-2014-17
ATTACHMENT E

Town of Glastonbury, CT
Acceptance Criteria for GIS Basemap Project Deliverables

1 Overview
All digital data must pass the following sequence of tests -- to be performed by the client, or client's consultant -- before they are accepted for payment. Acceptance tests are designed to provide criteria for judging whether the specifications contained in the RFP have been met. The following describes the QA/QC tests that may be applied to all project deliverables.

2 Review Procedures
The review process will be standardized and contain the following sequence of steps for a small area pilot project a revised pilot, and subsequent delivery areas:

a. Data delivered by contractor on DVD, hard drive, or other appropriate device

b. QA/QC by client and its consultant commences

c. Data are checked for completeness and readability within ArcGIS

d. Data are digitally analyzed for conformity with database design

e. Data are visually inspected within ArcGIS for data quality, accuracy and completeness

f. Client and its consultant perform any required fieldwork to verify ground conditions

g. Client and its consultant prepare a written QA/QC memo and provide this memo to the photogrammetry contractor. The memo details all errors, omissions and questions raised during the QA/QC review. Along with each memo will be a shapefile or geodatabase of highlighted errors and/or questions back to the photogrammetry contractor.

h. Contractor reviews the memo and the GIS error file and reanalyzes it with the original imagery and other reference material

i. Contractor has conference call with the client and client consultant to discuss the review results and recalibrate the base map photointerpretation plan

j. Client and contractor agree on any required data base design modifications and other changes based on the pilot review.

k. Contractor reproduces the pilot/delivery area data and provides a written response to the QA/QC memo that answers questions, outlines corrective actions and details expected schedule of redeliveries of data.

l. Contractor performs corrections and re-delivers data

Open and honest communication between the contractor and the client are strongly encouraged throughout the QA/QC process.

3 Planimetric Mapping Acceptance

Planimetric data QA/QC may include, but is not limited to the following tests.

3.1 Planimetric Digital Data Review for each delivery area

A. Conformance with the Database Design

A set of tests will be run to ensure that planimetric data was built in accordance with the specifications agreed upon in the database design. These tests will check for correct:

- Ability to read files in ArcGIS
- Correct Map Projection
- Feature coding not in conformance to project standards
- Completion and validity of attribute data
- Strict adherence to the Database Design, including valid values in the TYPE value domain and other attribute definitions
- Ensuring coverages with a NAME attribute are given the correct Name value

B. General data quality issues

- Seamless integration between delivery groups
- Absence of slivers and other erroneous features
- Absence of pseudo nodes
- Line quality:
  - Absence of jagged appearance of smooth line features
  - Absence of extraneous vertices (particularly for straight lines)
  - Absence of dangles and overshoots
- Absence of extremely small polygon features (e.g. with an area of less than 1 foot) or extremely short arc features (e.g. with a length of less than 1 foot)
- Features with implausible shape, size or TYPE value
- Attribute values that are implausible or out of range
- Overlapping Features, such as vegetation polygons overlapping ponds
- Consistent handling of reoccurring situations, for example driveway, sidewalk and edge of pavement intersections.
- Complete capture of features

C. Production of an "error report memo"

All errors and/or omissions will be noted in a memo and a GIS file delivered to the contractor for the pilot project and all subsequent delivery areas. Along with each memo will be a shapefile or geodatabase of highlighted errors and/or questions back to the photogrammetry contractor. A memo will be prepared for each data delivery.

B: Errors and omissions will be noted in writing and reported to the contractor.

- Correct TYPE attributes of the SPOT Elevation
- Correct Elevation values including checking for zero values and contours outside of the elevation range for the community

B. Any errors found will be reported in a memo delivered to the contractor and the Client. The consultant and the client should expect comments and corrections redelivered for another round of digital inspection.

When the contractor, client and consultant have reviewed the memo and GIS error file, they will have a conference to discuss any response or other issues of concern.

4 Topographic Mapping Acceptance

Topographic digital data must pass the following visual reviews -- to be performed by the client or client's consultant -- before they are accepted for payment. Final QA/QC by the client may include, but are not limited to the following tests.

4.1 Topographic Digital Data Review

A. Digital files shall be reviewed for:

- Ability to read files in ArcGIS
- Conformance with the database design
- Correct Map Projection
- Seamless integration between delivery groups
- Completion and validity of attribute data
- Crossing contours
- Un-jagged/smooth line work
- Consistency with planimetric base map features (e.g. no contours overlapping into water bodies)
- Contours correctly coded for hidden and obscured attributes
- Consistent and proper coding of depression contours
- Contours dead-end with no corresponding ground features (Retaining Walls, Buildings, etc.)
- Accurate and appropriate annotation of index contours
- Conformance of DTM to the contours
- Conformance of Spot Elevations to the DTM and contours
- Correct Elevation values including checking for zero values and contours outside of the elevation range for the community

B. Any errors found will be reported in a memo delivered to the contractor and the Client. The consultant and the Client should expect comments and corrections redelivered for another round of digital inspection.

5 Orthophoto Acceptance

Orthophoto digital data must pass the following visual reviews -- to be performed by the client or client's consultant -- before they are accepted for payment. Final QA/QC by the client may include, but are not limited to the following tests.

5.1 Orthophotographic Digital Data Review

A. Digital files shall be reviewed for:

- Ability to read files in ArcGIS
- Projection

- Horizontal accuracy
- Correct pixel size
- Seamless integration between delivery groups or tiles
- Warping of the image
- Distortion of the ortho related to bridges or other raised feature
- Conformance with the DTM coverage
- Acceptability of tone, color balance and light/dark density
- Consistency of imagery across project
- Absence of cloud cover or other factors that obscure the ground
- Minimal shadows (within the flight specification for sun angle)
- Minimal building lean

B. Errors, omissions and conditions of non-conformance with the specifications shall be reported in writing to the vendor who will rectify problems and redeliver the data.

6 Fieldwork

Detailed fieldwork will be performed on an as-needed basis. This fieldwork may include simple spots checks for sample areas, or a comprehensive review of all tiles. The fieldwork will be conducted to check for spatial accuracy and completeness as well as to confirm the capture rates achieved during the photogrammetric processes.

A. Spatial Accuracy

A group of well-defined features may be randomly selected. An x, y coordinate pair will be acquired for each feature by either differential GPS methods or instrument survey based on a traverse commencing at a high accuracy control point. A z (elevation) value will also be measured if appropriate.
Acceptance under this test shall be granted if the photointerpreted location of each point meets the accuracy standards in place for the project (i.e. ASPRS), based on the high accuracy GPS survey.

B. Data Capture Completeness

Personnel shall compare all digital data submission to field observations of those same features. Capture rates will be calculated by comparing the number of features observed in the field to the number present in the digital data. In addition, the accuracy of attribute coding will be confirmed at this time (e.g. presence/absence of a street light on a utility pole).

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ATTACHMENT F
NON-COLLUSION STATEMENT

The company submitting this proposal certifies that it is being submitted without any collusion, communication or agreement as to any matter relating to it with any other respondent or competitor. We understand that this proposal must be signed by an authorized agent of our company to constitute a valid proposal.

Date: _____

Name of Company: _____

Name and Title of Agent: _____

By (SIGNATURE): _____

Address: _____

_____

_____

Telephone Number: _____

MANCHESTER

BOLTON

EAST HARTFORD

WETHERSFIELD

HEBRON

WETHERSFIELD

ROCKY HILL

MARLBOROUGH

EAST HAMPTON

PORTLAND

CROMWELL

GRAPHIC SCALE

2000 0 1000 2000 4000 8000

(IN FEET)

1 inch = 2000ft.

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ATTACHMENT G

TOWN OF GLASTONBURY
NAD 83 / NAVD 88
AERIAL CONTROL MAP
2012