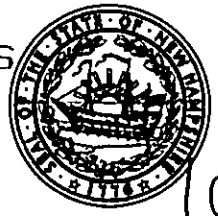




The State of New Hampshire
Department of Environmental Services

AUG28'19 PM 1:59 DAS



Robert R. Scott, Commissioner

August 12, 2019

His Excellency, Governor Christopher T. Sununu
and The Honorable Council
State House
Concord, NH 03301

REQUESTED ACTION

Authorize the Department of Environmental Services (DES) to enter into a **SOLE SOURCE** Joint Funding Agreement with the U.S. Geological Survey (USGS), National Geospatial Technical Operations Center, Rolla, Missouri (VC # 175772), in the amount of \$300,000.00 for acquisition of airborne light detection and ranging (LiDAR) elevation data, effective upon Governor and Council approval through December 31, 2022. 100% Capital (General) Funds.

Funding is available in the account as follows:

	<u>FY 2020</u>
03-44-44-440030-12740000-034-500161	\$300,000.00
Dept. of Environmental Services, 19-146:1VIE – IT Upgrades, Capital Projects	

EXPLANATION

A capital budget appropriation was requested and approved to match federal funds awarded under the USGS 3D Elevation Program (3DEP) to acquire airborne LiDAR elevation data for an approximately 1,278 square mile area in southern New Hampshire. Federal funding contributors include the USGS and the Natural Resources Conservation Service. This agreement is **Sole Source** because USGS, with its federal partners, is funding 38 percent of the cost of the project. Furthermore, in order to be eligible for funding under the USGS 3DEP grant, LiDAR data are subject to nationally prescribed standards. USGS uses pre-qualified contractors and administers data quality assurance and quality control (QA/QC) to insure that all deliverables meet or exceed these specifications. See Attachment A for the Statement of Work and a map of the area being scanned.

The LiDAR data currently available for the Seacoast region was the first data acquired in the state nearly 10 years ago using what was new technology, and now fails to meet present minimum USGS standards due to the age of the mapping and subsequent advances in technology. Since then, all LiDAR data acquired within New Hampshire is consistent with the 3DEP standards. As a result, the elevation data for the Seacoast region is less able to support the kinds of GIS analyses that are possible throughout the remainder of the entire state.

www.des.nh.gov

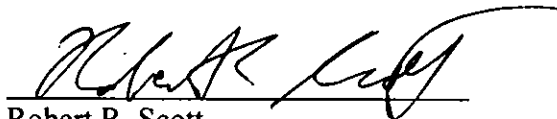
29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095
(603) 271-3503 • (603) 271-2867 • TDD Access: Relay NH 1-800-735-2964

Greater population density and development activity in southern New Hampshire result in a greater exposure to flooding hazards from rivers and vulnerability to increasing impacts from rising sea level and coastal storms. Furthermore, the relatively flat landscape compared to the rest of the state means that more accurate elevation data are needed to predict what areas of the landscape will be inundated by even small rises in water levels. Acquisition of new LiDAR data with greater overall resolution and accuracy is therefore justified because of the specific characteristics of this landscape. These data are critical for mapping the extent of areas impacted by river flooding as well as numerous other economic development and natural resource applications.

Under this agreement, the USGS will utilize the established USGS Geospatial Products and Services Contracts (GPSC) as the vehicle to accomplish the LiDAR mapping for the identified area in southern New Hampshire (Attachment A). The contracts include acquisition, processing, and quality assurance of LiDAR and other source geographic data. These federal contracts are already in place and have been awarded through a competitive process, consistent with the Competition in Contracting Act and the Brooks Act. Firms on GPSC have been selected based on their qualifications and performance in providing the professional services needed for LiDAR mapping.

This Agreement has been approved by the Department of Justice as to form, content and execution.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert R. Scott", is written over a horizontal line.

Robert R. Scott
Commissioner



United States Department of the Interior

United States Geological Survey
National Geospatial Technical Operations Center

U.S. Geological Survey U.S. Geological Survey
1400 Independence Road PO Box 25046 MS 510
Rolla, MO 65401 Denver, CO 80225

Customer #:

Agreement #:

TIN#:

02-6000618

Fixed Cost: No

Joint Funding Agreement

For

Next Generation Lidar for Coastal New Hampshire

This agreement is entered into as of the _____ day of _____, 2019 by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF INTERIOR party of the first part, and the New Hampshire Department of Environmental Services, party of the second part.

- 1) The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation a project to acquire and process quality level 1 lidar data according to USGS Lidar Guidelines and Base Specification, v 1.3 for 1278 square miles in coastal New Hampshire

herein called the program, see attached statement of work. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.

- 2) The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of: \$ 0.00

- a) by the party of the first part during the period

Amount	Date		Date
<u>\$ 0.00</u>	<u>Date of Last Signature</u>	To	<u>December 31, 2022</u>

- b) by the party of the second part during the period

Amount	Date		Date
<u>\$ 300,000.00</u>	<u>Date of Last Signature</u>	To	<u>December 31, 2022</u>

- c) Additional Information on other potential partners contributing to this program through separate agreements (Participants and funding amounts are projected and are subject to change):

Participant	Amount
Natural Resource Conservation Service - NH	\$ 51,578.00
Natural Resource Conservation Service - NCGE	\$ 16,103.00
USGS-NGP	\$ 114,713.00
Estimated Total of Separate Agreements:	\$ 182,394.00

- d) All contributions are subject to the 5% on NET GPSC special rate assessment which will be deducted from the dollar figure in section 2b. This assessment is to cover GPSC (Geospatial Products and Services Contract) program management and oversight.
- e) The National Geospatial Program provides leadership for USGS geospatial coordination, production and service activities. The Program engages partners to develop standards and produce consistent and

accurate data through its National Map Liaisons. Operational support is provided by the National Geospatial Technical Operations Center. These and other Program activities that are essential to the National Spatial Data Infrastructure (NSDI) are managed as a unified portfolio that benefits geospatial information users throughout the Nation.

- f) This Agreement can be changed or amended only by a written instrument signed by the Parties. This Agreement may be terminated by either Party on sixty (60) days written notice to the other Party. In the event of an early termination, USGS shall be reimbursed for any completed work or work in progress on the effective date of termination (i.e., when the Agreement actually terminates following the receipt of written notice from the other Party). Any unspent advanced funds will be returned to Partner. The USGS shall provide a copy of the outcomes completed as of the effective date of termination in the event of an early termination of the Agreement.
- 3) The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
- 4) The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
- 5) The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
- 6) During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party with compensation to USGS for work performed to that point.
- 7) The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.
- 8) Each Party is free to publish the information and data developed in the performance of the statement of work (SOW). The Parties acknowledge that scientific information and data developed using USGS funds or contracts as a result of the SOW are subject to applicable USGS Fundamental Science Practices (FSP) review, approval, and release requirements, which are available in Survey Manual Chapter 502.4, Fundamental Science Practices: Review, Approval, and Release of Information Products. The USGS is required to provide timely public access to the results of scientific information and data that does not contain sensitive protected information. Data and associated metadata will be open format and publicly accessible. The data and metadata will also be open access and machine readable in accordance with USGS FSP requirements available in Survey Manual Chapter 502.7, Fundamental Science Practices: Metadata for USGS Scientific Information Products Including Data and Survey Manual Chapter 502.8, Fundamental Science Practices: Review and Approval of Scientific Data for Release.
- 9) USGS will issue billings utilizing Department of Interior Bill for Collection (form DI-1040). The USGS will submit invoices on a monthly basis, based on actual expenses, independent of product delivery.

Payments of bills are due within 60 days the billing date. If not paid by the due date, interest will be charged at the U.S. Treasury Current Value of Funds Rate for each 30-day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983.)"

- 10) The Task Order issued by USGS to the selected GPSC Contractor provides full details regarding project collection requirements and resulting deliverables. A copy of the Task Order will be provided to the partner prior to the Request for Proposal.
- 11) Every effort will be made to award contract(s) to complete the objective of this program. However, if the total funding amount is not sufficient to complete the work as described, then adjustments will be made to either obtain additional funding or the project will be re-scoped to the mutual satisfaction of all stakeholders. Partners will be notified of any excess funds after task award. Upon notification, partners have 30 days to choose, in collaboration with USGS, to have excess funds applied to a re-scoped or new task order. If Partners do not make a decision within 30 days, the excess funds will be returned to the Partners.

- 12) If data acquisition cannot be completed during a single season due to unacceptable capture conditions, then it is possible that the remaining AOI would be acquired during the next suitable collection window which may or may not be in the same calendar year.
- 13) If data is to be collected over military properties then DoD clearance may be required. Should unexpected restrictions affect access to data over military properties, then only federal funds will be applied to these areas.
- 14) Data acquired concerning federally recognized Tribal lands may not be published by the USGS if the Tribe objects in writing to public release of any products identified by the Tribe as sensitive protected information resulting from the lidar acquisition over their lands. All other project area data outside of the Tribal lands boundaries will be published. Collected sensitive protected information may be released to specific third parties where written permission is granted to the USGS by affected Tribes conditioned upon that Party agreeing not to distribute the identified sensitive data and (or) information publicly.
- 15) For agreements that are associated with, or become associated with Broad Agency Announcement (BAA) proposals for 3DEP projects prior to BAA selection, the execution of this agreement does not guarantee any commitment of USGS funds, nor does the execution of the agreement constitute greater consideration of any related proposal under the BAA selection process.

**U.S. Geological Survey United States
Department of the Interior**

**New Hampshire Department of
Environmental Services**

USGS Point of Contact

Name:	Dan Walters
Address:	USGS 196 Whitten Rd Augusta, Maine 04300
Telephone:	(207) 776-1293
Email:	danwalters@usgs.gov

Partner Point of Contact

Name:	Rick Chormann
Address:	New Hampshire Geological Survey 29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
Telephone:	(603) 271-1975
Email:	Frederick.Chormann@des.nh.gov

USGS Billing Contact

Name:	Janet Anselm
Address:	1400 Independence Road, MS 323 Rolla, MO 65401
Telephone:	(573) 308-3814
Email:	janselm@usgs.gov

Partner Financial Contact

Name:	Kimberly Boone
Address:	29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
Telephone:	(603) 271-3288
Email:	Kimberly.Boone@des.nh.gov

Signatures and Date

Signature: **KARI CRAUN** Digitally signed by KARI CRAUN
Date: 2019.07.30 13:27:18 -05'00'

Date: 7/30/2019

Name: Kari J. Craun

Title: Director, USGS-NGTOC

Signature: **Susan Carlson** Digitally signed by Susan Carlson
Date: 2019.07.31 07:44:17 -04'00'

Date: _____

Name: Susan A Carlson

Title: Chief Operations Officer

Joint Funding Agreement
Signature Addendum

U.S. Geological Survey
United States Department of the Interior

State of New Hampshire

Signature: _____

Date: _____

Name: Kari J. Craun

Title: Director, USGS-NGTOC

Signature: _____

Date: _____

Name: _____

Title: _____

Signature: _____

Date: _____

Name: _____

Title: _____

Signature: 

Date: 8/12/19

Name: Robert R. Scott

Title: Commissioner, NHDES

Signature: 

Date: 8/19/19

Name: Gordon P. Landrigan

Title: Assistant Attorney General

*Approval by Attorney General
(Form, Substance, Execution)*

Signature: _____

Date: _____

Name: _____

Title: _____

*Approval by the Governor and
Executive Council*

ATTACHMENT A

STATEMENT OF WORK AND MAP OF LIDAR ACQUISITION AREA

STATEMENT OF WORK

2019 New Hampshire LiDAR Acquisition

1. Purpose

The US Geological Survey and the State of New Hampshire will collaborate to acquire and process QL-1, tidally-coordinated LiDAR data for coastal areas of New Hampshire, and QL-1 LiDAR data for the part of the Nashua River Watershed that is in New Hampshire. Data collected will adhere to the US Geological Survey LiDAR Base Specifications V1.3. The size of the project is approximately 1278 square miles (see Section 5). The data will be acquired during the fall of 2019 and deliverables will include highly accurate classified bare-earth LiDAR data in LAS format as well as raster digital elevation models (DEMs). Anticipated data uses include community planning, geologic mapping, sea level rise assessments, engineering design and design reviews, conservation planning, research, floodplain mapping, and hydrologic modeling.

2. General Terms

USGS will select a qualified contractor to perform the LiDAR collection and processing via the Bureau's Geospatial Product and Service Contract (GPSC). GPSC task orders are awarded to qualified contractors through federal government solicitation. Qualified contractors are selected for base contract award in accordance with Public Law 92-528 (Brooks Act) and FAR 36.6 - Architect-Engineering Services, which establishes a qualifications-based selection process, in which contracts for Architectural and Engineering services are negotiated based on demonstrated competence and qualification for the type of professional services required.

Contractor selection is based on the following 6 criteria:

- (1) Professional qualifications necessary for satisfactory performance of required services;
- (2) Specialized experience and technical competence in the type of work required;
- (3) Capacity to accomplish the work in the required time;
- (4) Past performance on contracts with Government agencies and private industry in terms of cost control, quality of work, and compliance with performance schedules;
- (5) Location in the general geographical area of the project and knowledge of the locality of the project and;
- (6) Acceptability under other appropriate evaluation criteria.

Level of effort is negotiated on each task order issued under the base contracts. This process is aligned with the Department's consultant RFP and selection process.

The Task Order issued by USGS to the selected GPSC Contractor provides full details regarding project collection requirements and resulting deliverables. A copy of the Task Order will be provided to the partner.

USGS will:

- Execute separate funding agreements with partners shown in Section 2 of the JFA in support of the total project cost.
- Prepare a Task Order for agreed upon products and services.
- Serve as Government Point of Contact during the full period of the agreement.
- Administer data quality assurance and quality control (QA/QC) for standard USGS v1.3 products and deliverables and manage all data deliverables.
- Require that all land surveys conducted in support of this project be performed under the supervision of a qualified professional land surveyor.
- Receive, inspect, and catalog all project deliverables.
- Prepare Quality Assessment Reports for standard USGS v1.3 products and distribute to relevant project Points of Contact.
- Return data to contractor as needed for error correction/rework.

Partner Will:

- Provide funding for the project as described in Section 2 of the JFA.
- Provide a shapefile defining the proposed project area.
- Pay contract project costs plus applicable GPSC assessment fee which is calculated by USGS as 5% of the contracted project cost, not to exceed the amount specified in the JFA.
- Assist the USGS NGTOC in resolving project issues as needed and appropriate.
- Provide available information, including informal observations from interested parties, on ground conditions to facilitate project flight planning.
- Be responsible for reviewing and publishing any additional products and services beyond USGS standard deliverables.

3. Specifications and Deliverables

Unless otherwise stated all specifications and deliverables will meet or exceed the (Quality Level 1) U.S. Geological Survey Lidar Guidelines and Base Specification, v 1.3 (<http://pubs.usgs.gov/tm/11b4/>.) To supplement USGS specifications, FEMA-specific requirements such as cross section surveys, treatment of bridges and other features appearing in FEMA Procedure Memorandum No. 61 – Standards for Lidar and Other High Quality Digital Topography, (<http://www.fema.gov/media-library/assets/documents/6998?id=2206>) may be adhered to and reflected in final product delivery as required.

General Requirements

- Data shall be of Quality Level 1 (QL 1), meeting the following accuracy requirements

Quality Level	Point Density	Vertical Accuracy RMSEz	Aggregate Nominal Pulse Spacing (ANPS)	Aggregate Nominal Pulse Density (ANPD)	DEM Post Spacing
1	8 pts/m²	10 cm	0.35 m	8 Pts/sq m	0.38 m

- Coastal areas of the project will be tidally coordinated: 120 minutes of each side of mean Predicted Daily Low Tide
- Horizontal Datum: Horizontal NAD83 (2011).
- Vertical Datum: NAVD88 using the most recent approved Geoid model from the National Geodetic Survey (NGS) for purposes of performing conversions from ellipsoidal heights to orthometric heights. Data to be delivered in orthometric heights.
- Coordinate System and Projection: New Hampshire State Plane FIPS_2800, Feet, Transverse Mercator
- Tiling Scheme: 2500 X 2500 feet, name based on concatenation of x,y coordinates of southwest corner of each image
- DEMs delivered in GeoTIFF format
- LiDAR data collected will be tied to LiDAR-derived elevations from previous adjacent projects to minimize differences in surface elevations at the seam lines. The vertical difference along a tie-edge will not exceed the Non-vegetated Vertical Accuracy and the Vegetated Vertical Accuracy in specific vegetated types.
- The deliverables will include Intensity images for each tile in GeoTIFF format

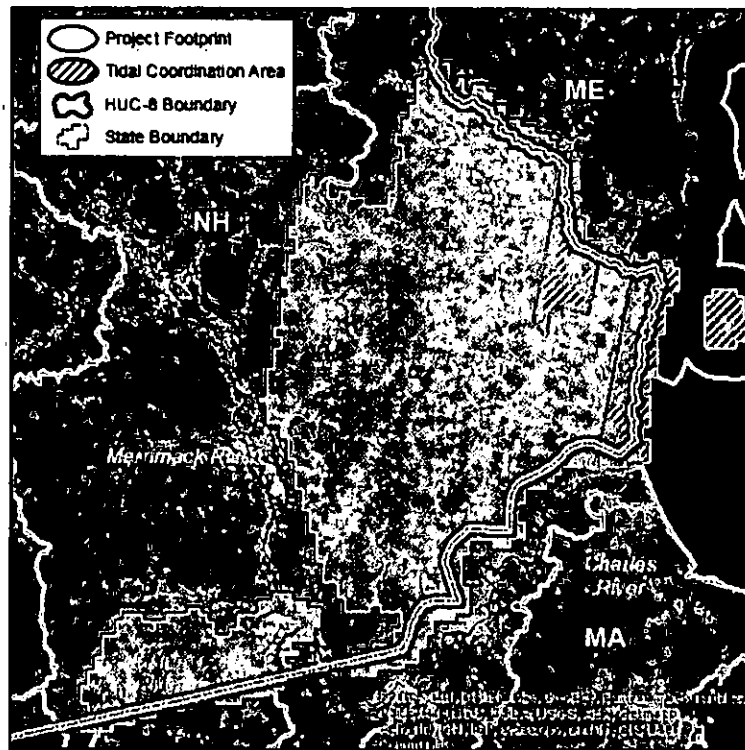
The LiDAR data will be processed to produce a classified point cloud, tile-based bare earth DEMs and related products. These elevation products will be placed in the public domain and will be made available for viewing and download through the USGS National Map and EarthExplorer.

4. Contacts

USGS Administrative Contact		Partner Administrative Contact:
Walter Kloth	Name	Rick Chormann
GPSC Project Planning		New Hampshire State Geologist
P.O. Box 25046, MS 510	Address	New Hampshire Geological Survey 29 Hazen Drive, PO Box 95 Concord, NH 03302-0095
Denver, CO 80225-0046		
303-202-4334	Telephone	603-271-1975
wkloth@usgs.gov	E-Mail	Frederick.Chormann@des.nh.gov
USGS Financial Contact:		Partner Financial Contact:
Jim Almekinder	Name	Kimberly Boone
Agreements Lead		Billing
P.O. Box 25046, MS 510	Address	29 Hazen Drive, PO Box 95
Denver, CO 80225-0046		Concord, NH 03302-0095
573-308-3549	Telephone	603-271-3288
jalmekinder@usgs.gov	E-Mail	Kimberly.Boone@des.nh.gov

USGS Technical Contact:			Partner Technical Contact:		
Brent Marz	Name	David Justice			
NGTOC Commercial Partnership Team		GRANIT Project GIS Analyst			
1400 Independence Road, MS 661	Address	ESRC, Morse Hall, 8 College RD			
Rolla, MO 65401		Durham, NH 03824			
573-308-3693	Telephone	603-862-4698			
bmarz@usgs.gov	E-Mail	david.justice@unh.edu			
USGS Liaison			Partner Data Delivery:		
Dan Walters	Name	Rick Chormann			
TNM Liaison for New England		New Hampshire State Geologist			
196 Whitten Rd	Address	29 Hazen Drive, PO Box 95			
Augusta, Maine 04330		Concord, NH 03302-0095			
207-776-1293	Telephone	603-271-1975			
danwalters@usgs.gov	E-Mail	Frederick.Chormann@des.nh.gov			

5. Project Area Map



Project AOI