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New Hampshire DOT
Department of Transportation

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

Victoria F. Sheehan
Commissioner

William Cass, P.E.
Assistant Commissioner

Bureau of Materials & Research
May 5, 2021

His Excellency, Governor Christopher T. Sununu
and the Honorable Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

Authorize the Department of Transportation to enter into a **SOLE SOURCE** Joint Funding Agreement with the U.S. Geological Survey (Vendor 175772), Pembroke, NH for a total fee not to exceed $170,000.00, for a cooperative investigation to test a number of established geophysical techniques and their correlation with established geotechnical assessments used by the New Hampshire Department of Transportation, effective upon Governor and Council approval or June 16, 2021, whichever is later, through September 30, 2023. 100% Federal Funds.

Funds to support this request are available in the following account for FY 2021 and is contingent upon the availability and continued appropriation of funds in FY 2022, with the ability to adjust encumbrances between State Fiscal Years through the Budget Office, if needed and justified.

04-96-96-962015-3036	FY 2021	FY 2022
SPR Research Funds		
046-500464 General Consultants Non-Benefit	$85,000.00	$85,000.00

EXPLANATION

The following research study will address an immediate Department need; is unique to New Hampshire's environment and conditions, thereby requiring substantial local experience; and is directly aligned with a particular area of U.S. Geological Survey (USGS) expertise. In addition, the Principal Investigator is a nationally recognized expert in his field. As such, the proposed work does not lend itself to a selection process that includes private industry or out-of-state organizations, and it is in the Department's and the State's best interest to work directly with the USGS, creating a **sole source** agreement.

This work is part of the Department's Statewide Planning and Research (SPR) program. The Department of Transportation and the USGS have a long-standing cooperative relationship in transportation research. This relationship has been mutually beneficial, culminating in savings to the State while enhancing work force development and maintaining New Hampshire's position on the leading edge of new technology. Research studies conducted by USGS for the Department have led to numerous innovations in the highway and bridge industry, research related to determining sources of nitrate in wells near blasting sites in New Hampshire, bridge scour, investigations of flood magnitude and frequency, development of the web-based New Hampshire StreamStats tool, and a statistical model

to predict the occurrence of iron fouling in wet areas adjacent to roadways where rock-fill from nearby rock cuts was used in roadway construction.

Statewide-SPR 42372G, Advancing Subsurface Investigations Beyond the Borehole

Geotechnical site characterization sometimes fails to fully characterize the below-ground bedrock surface and hydrologic conditions using conventional borings. By combining passive Horizontal-to-Vertical Spectral Ratio (HVSR) seismic and multi-frequency electromagnetic induction geophysical methods and boring data analysis, a more thorough and accurate representation of geotechnical subsurface conditions can be produced. This effort will contribute to the overall goal of improving efficiency of the Department by reducing the disruption work plans, forced revision of designs, and cost increases from schedule delays, claims, or change orders.

The funding is 80% Federal Funds with 20% state match. Turnpike toll credit is being used for the match requirement, effectively using 100% Federal Funds. The Capital Budget Overview Committee approved the use of Turnpike Toll Credits on April 2, 2021.

This Agreement has been approved by the Attorney General as to form and execution. Copies of the fully-executed Agreement are on file at the Secretary of State's Office and the Department of Administrative Services, and subsequent to Governor and Council approval will be on file at the Department of Transportation.

It is respectfully requested that authority be given to enter into these sole source Agreement for consulting services as outlined above.

Sincerely,

Victoria F. Sheehan
Commissioner

Attachments

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000000094
Agreement #: 21LGJFANH000008
Project #:
TIN #: 02-6000618

Fixed Cost Agreement YES[X] NO[ ]

THIS AGREEMENT is entered into as of the June 16, 2021, by the U.S. GEOLOGICAL SURVEY, New England Water Science Center, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the New Hampshire Department of Transportation 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 titled advancing subsurface investigations beyond the borehole (per attached proposal), herein called the program. 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) Include In-Kind-Services in the amount of $0.00

(a) $0.00 by the party of the first part during the period June 16, 2021, 2021 to September 30, 2023

(b) $170,000 by the party of the second part during the period June 16, 2021, 2021 to September 30, 2023

(c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of:

Description of the USGS regional/national program:

(d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

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.

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. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program, and if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties. The Parties acknowledge that scientific information and data developed as a result of the Scope of Work (SOW) are subject to applicable USGS review, approval, and release requirements, which are available on the USGS Fundamental Science Practices website (https://www.usgs.gov/about/organization/science-support/science-quality-and-integrity/fundamental-science-practices).

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000000094
Agreement #: 21LGJFANH000008
Project #:
TIN #: 02-6000618

9. Billing for this agreement will be rendered quarterly. Invoices not paid within 60 days from the billing date will bear interest, Penalties, and Administrative cost at the annual rate pursuant the Debt Collection Act of 1982, (codified at 31 U.S.C. § 3717) established by the U.S. Treasury.

USGS Technical Point of Contact

Name:	James Degnan Hydrologist
Address:	331 Commerce Way Suite #2 Pembroke, NH 03275-3718
Telephone:	(603) 226-7826
Fax:	(603) 226-7894
Email:	jrdegnan@usgs.gov

Customer Technical Point of Contact

Name:	Krystle Pelham Geologist
Address:	5 Hazen Drive Concord, NH 03302-0483
Telephone:	(603) 271-1657
Fax:	
Email:	krystle.pelham@dot.nh.gov

USGS Billing Point of Contact

Name:	Amanda Arsenault Budget Analyst
Address:	196 Whitten Rd. Augusta, ME 04330
Telephone:	(207) 626-6617
Fax:	(207) 622-8204
Email:	aluszczk@usgs.gov

Customer Billing Point of Contact

Name:	Deirdre T. Nash P.E. Assistant Research Engineer
Address:	5 Hazen Drive Concord, New Hampshire 03302-0483
Telephone:	(603) 271-8995
Fax:	
Email:	Deirdre.t.nash@dot.nh.gov

U.S. Geological Survey
United States
Department of Interior

Signature

By JOHNATHAN BUMGARNER Digitally signed by JOHNATHAN BUMGARNER Date: 2021.05.04 11:10:44 -04'00' Date: 05/04/2021

Name: Johnathan Bumgarner
Title: Director

New Hampshire Department of Transportation

Signature

By [signature] Date: 5/18/2021

Name: Peter E. Stamnas
Title: Director of Project Development

New Hampshire Office of the Attorney General

Signature

By [signature] Date: 6/2/21

Name: Allison Greenstein
Title: Asst. Attorney General

New Hampshire Governor & Executive Council

Signature

By _____ Date: _____

Name:
Title:

USGS

Advancing subsurface investigations beyond the borehole in New Hampshire

U.S. Geological Survey, New England Water Science Center
May 5, 2021

Introduction and Problem

Geotechnical site characterization guided by conventional borings used to initiate roadway projects by departments of transportation sometimes fails to fully characterize the below-ground bedrock surface and hydrologic conditions such as a locally shallow water table. This failure can disrupt work plans, force revision of designs, and lead to cost increases from schedule delays or change orders (Boeckmann and Loehr, 2016). Typically, split spoon samples and water levels are obtained from the subsurface during borings to characterize geotechnical properties but often borings are spaced hundreds of feet apart. Additional detail from geophysical surveys between borings will help provide a more thorough characterization. By combining analysis of geophysical and boring data, transportation projects can produce a more comprehensive representation of geotechnical subsurface conditions than can be determined using conventional borings alone. The need to bring more geophysics into transportation projects is recognized by the Federal Highway Administrations EDC-5: Advanced Geotechnical Methods in Exploration (A-GaME) initiative (U.S. Department of Transportation, Federal Highway Administration, 2020).

Objectives and Scope

The project has the following specific objectives designed to help evaluate the rapid application of geophysical reconnaissance in the vicinity of geotechnical borings:

1. Test the ability to improve geotechnical characterization with geophysical survey data interpreted in the context of site and regional data.

2. Evaluate techniques for efficiency in determining anomalies representing bedrock, sand and gravel, silt and clay, and hydrologic conditions in areas not characterized by geotechnical borings.

The scope of the proposed research will test the utility of integrating off-the-shelf geophysical techniques with routine geotechnical assessments used by the New Hampshire Department of Transportation (NHDOT) to enhance and improve assessments.

Approach

Two primary geophysical methods will be used and tested: (1) Passive Horizontal-to-Vertical Spectral Ratio (HVSR) seismic (Cox and others, 2020; Johnson and Lane, 2016; Mack, 2020) and (2) multi-frequency electromagnetic induction (EM) (Huang and Won, 2000). Both can be rapidly deployed and are well suited to enhance geotechnical cross sections generated with conventional borings. The USGS will provide the NHDOT with data collection, processing, and interpretation training for these methods as needed. These methods will complement other geophysical methods currently in limited use by DOTs for local detailed surveying.

A literature search at the commencement of the project as part of Task 1 (Table 1) will be focused on data collection, processing techniques, and background site characterization data. Project site selection will be coordinated with a NHDOT technical advisory group (TAG). The number of sites surveyed and the number of surveys at each site will be optimized with the TAG to cover the largest variety of settings possible within the budget. Data will be collected (Task 2, Table 1) at up to five sites in the vicinity of boring locations. Sites with active or planned NHDOT geotechnical surveys with schedules that align with the project timeline will be prioritized. The flexible approach of this study allows geophysical and existing data analysis to

be adapted to a variety of NHDOT project sites and settings. The USGS Hydrogeophysics Branch equipment, data collection methods, and processing protocols will be used.

Analysis (Task 3, Table 1) will be focused on improvement in bedrock surface and saturated zone detection for geotechnical site characterization. Regional and local surface water and groundwater quality, geologic, and hydrologic data will be reviewed to help site characterization, and to categorize method efficacy in a variety of typical NHDOT settings. For example, sites where the subsurface and groundwater might be altered by road salt may limit the utility of some geophysical tools, such as EM; alternatively at some sites, such conditions might enhance the utility of geophysical tools. Similarly, it is important to consider geologic information and hydrologic data to understand how seasonal or hydrologic event-based conditions (drought or flooding) might affect data interpretation.

The HVSR method measures the resonance frequency (f_0) induced by ambient seismic noise in unconsolidated sediments overlying bedrock when there is a substantial contrast in shear-wave acoustic impedance between the two layers (> 2:1). Spectral ratio analysis of the of the horizontal and vertical components of the seismic data is used to determine f_0. Site-specific regression equations to solve for sediment thickness using a power law function fit to the HVSR-determined f_0 versus depth to rock will be developed. Regression coefficients will be determined for a site or region to use in HVSR seismic data processing equations (Johnson and Lane, 2016, Mack, 2020). The HVSR analysis will also include an examination of the improvement in methods for determining uncertainty (Bignardi, 2017) achieved with the application of these techniques.

The bulk electrical conductivity of the subsurface will be indirectly measured with EM using induced electromagnetic signals (Zohdy and others, 1974) at several frequencies. Frequencies with the clearest signal for a given survey will be selected for inverse modeling to help understand conductivity variations with depth (Abraham and others, 2006). Measurements of specific conductance of water and depth to water along with direct-current resistivity of split spoon samples from borings will be used to help develop interpretations of EM geophysical data where feasible.

The effectiveness of the proposed methods of data processing and regression equations will be documented regionally and by site. For example, coefficients determined for sites or regions will help NHDOT streamline future HVSR seismic processing and build a database of values. Enhanced cross sections of subsurface conditions will be generated with results of

borings and geophysical surveys and included in the project report (Task 4, Table 1). Data quality and cost, in terms of kilometers or points per day, will be reviewed so that methods can be considered by NHDOT for possible inclusion in geotechnical investigation specifications.

Relevance and Benefits

The results from this study will provide information on the performance of geophysical tools in varied hydrogeologic settings at NH sites. The information will aid in the development of local and regional HVSR seismic processing regression coefficients to improve results of future NHDOT and USGS surveys. Collection and dissemination of the information will: (1) meet the broad USGS goal of furnishing data needed by other Federal and State agencies for characterizing subsurface hydrology; (2) provide valuable information for characterizing the depth to the bedrock surface; and (3) provide further refinement of methods and procedures for assessment of other sites.

The proposed study aligns with water-science goals (Evenson and others, 2012). Specifically, data collected as part of the study will be used to assist with assessing geologic and hydrologic conditions that can affect transportation construction, water availability, and water quality, as well as for understanding the relations between water quality and the health of ecosystems. Future deployment of the tools at project sites by internal and external NHDOT geotechnical assessment practitioners will help reduce the Department's risk in design and construction phases (Boeckmann and Lochr, 2016).

Products

Provisional data will be available for review by the NHDOT in conjunction with review by the USGS. Data will be published in a USGS data release as soon as possible after collection, review, and approval. Planned activities will be discussed and preliminary results will be presented to the NHDOT technical advisory group during and after the project. Results and interpretations will be published in an appropriate USGS series report or journal article. The timeline, based on a total of 11 weeks to plan, conduct, and process data from all field investigations is shown below (Table 1). Table 2 provides a summary of costs for the proposed work.

Table 1. Timeline.

Federal Fiscal Year	FY2021		FY2022				FY2023			
Quarter	3	4	1	2	3	4	1	2	3	4
Task 1. Compile and assess literature and sites	X	X	X	X						
Task 2 Collect geophysical data		X	X	X	X					
Task 3. Conduct analysis				X	X	X	X			
Task 4. Prepare and publish a data release and report							X	X	X	X

Table 2. Summary of costs.

Element	Project Cost Federal FY21	Project Cost Federal FY22	Project Cost Federal FY23	Total Project Cost
Personnel	$13,680	$44,260	$29,360	$87,300
Travel	--	$2,000	--	$2,000
Equipment	--	$2,400	--	$2,400
Total Net	$13,680	$48,660	$29,360	$91,700
Total Indirect	$11,690	$41,560	$25,080	$78,340
Total Project	$25,370	$90,230	$54,440	$170,000

For further information contact:

James R. Degnan, jrdegnan@usgs.gov or 603-226-7826

or Joseph Ayotte, jayotte@usgs.gov or 603-226-7810

References:

Abraham, Jared, Deszcz-Pan, Maria, Fitterman, David, and Burton, Bethany, 2006, Use of a handheld broadband FDEM induction system for deriving resistivity depth images, in Symposium on the Application of Geophysics to Engineering and Environmental Problems, 19, Las Vegas, Nevada, February 10–14, 2002, Proceedings: Denver, Colo., Environmental and Engineering Geophysical Society CD–ROM, p. 1782–1799.

Huang, Haoping, and Won, I.J., 2000, Conductivity and susceptibility mapping using broadband electromagnetic sensors: Journal of Environmental and Engineering Geophysics, v. 5, no. 4, p. 31–41.

Bignardi, S., 2017, The uncertainty of estimating the thickness of soft sediments with the HVSR method: A computational point of view on weak lateral variations: Journal of Applied Geophysics, v. 145, p. 28-38., *http://www.sciencedirect.com/science/article/pii/S0926985117302422*

Boeckmann, Andrew Z. and Loehr, J. Erik, 2016, Influence of Geotechnical Investigation and Subsurface Conditions on Claims, Change Orders, and Overruns A Synthesis of Highway Practice, Transportation Research Board, National Academy of Sciences, 76 p., ISBN 978-0-309-27204-9, *https://doi.org/10.17226/21926*

Cox, B.R., Cheng, T., Vantassel, J.P., and Manuel, L., 2020, A statistical representation and frequency-domain window-rejection algorithm for single-station HVSR measurements: Geophysical Journal International, v. 221, no. 3, p. 2170-2183., *https://doi.org/10.1093/gji/ggaa119*

Evenson, E.J., Orndorff, R.C., Blome, C.D., Bohlke, J.K., Herschberger, P.K., Langenheim, V.E., McCabe, G.J., Morlock,S.E., Reeves, H.W., Verdin, J.P., Weyers, H.S., and Wood, T.M., 2012, Strategic directions for U.S. Geological Survey water science, 2012–2022—Observing, understanding, predicting, and delivering water science to the Nation:U.S. Geological Survey Open-File Report 2012–1066, 42 p.

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Mack T.J. (2020) Passive Seismic Survey of Sediment Thickness, Dasht-e-Nawar Basin, Eastern Afghanistan. In: Guth P. (eds) Military Geoscience. Advances in Military Geosciences. Springer, Cham., *https://doi.org/10.1007/978-3-030-32173-4_12*

U.S. Department of Transportation, Federal Highway Administration, 2020, Advanced Geotechnical Methods in Exploration (A-GaME), Center for Accelerating Innovation web page, accessed 03/31/2021, *https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/geotech_methods.cfm*

Zohdy, A.A.R., Eaton, G.P., and Mabey, D.R., 1974, Application of surface geophysics to ground-water investigations: U.S. Geological Survey Techniques of Water-Resources Investigations, book 2, chap. D1, 86 p., *http://pubs.usgs.gov/twri/twri2-d1/*

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
New Hampshire - Vermont
Water Science Center
361 Commerce Way
Pembroke, NH 03275

March 22, 2007

Mr. Denis M. Boisvert, P.E.
NH Department of Transportation
Materials & Research Bureau
Box 483, 5 Hazen Drive
Concord NH 03302-0483

Dear Mr. Boisvert:

This letter is in response to your request for information concerning the United State Government and specifically, the US Geological Survey, being self insured. The following rules are equally applicable to any official governmental activity:

1. The Government is a self-insurer with respect to loss or damage to government property and the liability of government employees. In the absence of express statutory authority, appropriated funds are not available to purchase such insurance coverage. (Rule summarized in GAO B-158766, Feb. 3, 1977.)

2. The Federal Tort Claims Act (28 USC 2671 et seq.) provides the exclusive remedy for tort claims against the United States. Under it, the Government agrees to assume responsibility for negligent acts or omissions of USGS employees acting within the scope of their employment.

3. The Government may not accept "hold harmless" or "indemnification" clauses in its agreements because the law prohibits the Government from entering into agreements where the Government's liability is indefinite, indeterminate, or potentially unlimited. Such agreements violate both the Antideficiency Act, 31 USC 1341 and the Adequacy of Appropriations Act, 41 USC 11, the latter because it can never be said that sufficient funds have been appropriated to cover the contingency.

Please give me a call at 226-7807 if you need further information on this subject, but I hope this satisfies your needs regarding the USGS being self-insured.

Sincerely,

Keith W. Robinson
Director

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
A. Approve Agreements for work with States, Counties, Municipalities, and other Governmental Subdivisions; U.S. Territories; Native American Tribal Governments; DC Government [43 U.S.C. 50]		Use of the Form 9-1366 is encouraged. The USGS Checklist for Reimbursable Agreements must be completed and a copy must be maintained with the approved agreement.
A-1. Approve Standard Joint Funding Agreement (JFA) using Form 9-1366 (without change)	Office Chiefs (see Note at bottom of the last page for these positions) reporting to the Director/Deputy Director and Managers and Supervisors who report directly to Senior Executive Service (SES) Managers	
A-2. Approve Non-Standard JFA	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement.
A-3. Approve the following Non-Standard JFA Exceptions: **(a)** Non-Standard JFA where the only change to the Form 9-1366 is a statement on maintaining a drug free workplace; on abiding by Federal non-discrimination laws; or that the USGS may not contract the work to another party without the prior consent of the Cooperator in writing. **(b)** Non-Standard JFA in following years with a Cooperator if the initial JFA with that Cooperator had been reviewed by the Office of Policy and Analysis. Changes to the scope of work, amount of money, and/or period of performance are authorized. Otherwise, the agreement with the Cooperator should remain the same as that initially approved. The delegatee is responsible for ensuring that changes made are authorized.	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	OPA recommends the center submit Non-Standard JFAs that were approved for use more than 2 years ago to ensure the agreement is still legally sufficient and compliant with updated bureau policies.

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
B. Intergovernmental Cooperation Act Agreements (not for use with U.S. Territories, Native American Tribal Governments) [31 U.S.C. § 6505]		See Survey Manual Chapter (SMC) 500.27, Intergovernmental Cooperation Act Agreements with State and Local Units of Government and Figure 27-1, Intergovernmental Cooperation Act Agreement Template. The USGS Checklist for Reimbursable Agreements must be completed and a copy must be maintained with the approved agreement.
B-1. Approve Intergovernmental Cooperation Act Agreements using the USGS template (without change)	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	
B-2. Approve Intergovernmental Cooperation Act Agreements using terms and conditions other than those provided in the USGS template	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement.
C. Approve agreements to perform work for Other Federal Agencies; See SMC 500.3	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	See SMC 500.3. The USGS Checklist for Reimbursable Agreements must be completed and a copy must be maintained with the approved agreement.
D. Approve Collaborative Agreements with States, Counties, Municipalities, educational institutions, private entities, and non-profit organizations; [43 U.S.C. 36c]	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	The USGS Checklist for Reimbursable Agreements must be completed and a copy must be maintained with the approved agreement.

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
		Collaborative Agreements with private entities, non-profits, and academic organizations require a Conflict of Interest (COI) form signed by the PI(s). If certain conditions are met, the agreement will require a review by the Ethics Office (use Form 9-3142).
D-1. Approve Standard Collaborative Agreement	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	See the FOP Handbook for guidance on what constitutes a Standard Collaborative Agreement.
D-2. Approve Non-Standard Collaborative Agreement using terms and conditions other than those provided in the USGS template	Office Chiefs reporting to the Director/Deputy Director and managers and supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the non-standard Collaborative Agreements.
E. Approve Interagency Agreements involving an outflow of funds from the USGS to another Federal agency; See SMC 205.4 and SMC 405.7	This delegation remains in SMC 205.4, Procurement.	See SMC 205.4 and SMC 405.7.

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
F. Approve Technology Transfer Agreements [15 U.S.C. 3710a and 43 U.S.C. 36c]		See SMC 500.20 and FOP Chapter 4. The USGS Checklist for Reimbursable Agreements must be completed and a copy must be maintained with the approved agreement. Cooperative Research and Development Agreements (CRADA), Technical Assistance Agreements (TAA), and Facility Use/Service Agreements (FUSAs) with private entities, non-profits, and academic organizations require a Conflict of Interest (COI) form signed by the PI(s). If certain conditions are met, the agreement will require a review by the Ethics Office (use Form 9-3142).
F-1. Cooperative Research and Development Agreements (CRADA)	Associate Directors; Regional Directors	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement.
F-2. Technical Assistance Agreements	Office Chiefs reporting to the Director/Deputy Director and managers and supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement.
F-3(a). Standard Facility Use/Service Agreement	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	If the collaborator is an international or foreign-controlled entity, review and approval by the Office of Policy and Analysis is required prior to signing the agreement.
F-3(b). Non-Standard Facility Use/Service Agreement	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement.

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
F-4. Material Transfer	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement.
G. Approve International Agreements under the Foreign Assistance Act (FAA) [22 U.S.C. 2357]		The Office of International Programs is responsible for coordinating the review of all proposed USGS international agreements with a friendly country or an international organization prior to signature.
G-1. Sign international memorandum of understanding, memorandum of cooperation, protocol, and Exchange of Letter	Director	
G-2. Sign project annex, project annex amendment, statement of intent, memorandum of agreement, technical assistance, agreement in principal, project implementation plan, and letter of agreement (the scope of which deals with more than one USGS mission area)	Deputy Director or Director, Office of International Programs	
G-3. Sign project annex, project annex amendment, statement of intent, memorandum of agreement, technical assistance, agreement in principal, project implementation plan and letter of agreement (limited to a single mission area)	Director, Office of International Programs or Associate Director for a mission area	
H. Approve Acceptance of Contributions		All contribution offers must be documented on the Contribution Report Form (Form 9-3089). See SMC 500.19.
H-1(a). Acceptance of contributions from public and private sources—includes lands, buildings, equipment, money, other contributions [43 U.S.C. 36c and 16 U.S.C.742f(b)] Money and personal property of $5,000 or less	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
H-1(b). Acceptance of contributions from public and private sources—includes lands, buildings, equipment, money, other contributions [43 U.S.C. 36c and 16 U.S.C.742f(b)] for money and personal property of $50,000 or less	Deputy Regional Directors and Deputy Associate Directors	
H-1(c). Acceptance of contributions from public and private sources—includes lands, buildings, equipment, money, other contributions [43 U.S.C. 36c and 16 U.S.C.742f(b)] for Money and personal property exceeding $50,000, and all other contributions received under this authority	Associate Directors and Regional Directors	Consultation and coordination with the Ethics Office
H-2. Acceptance of contributions for official travel costs for meetings or similar functions [31 U.S.C. 1353]	Officials with delegated authority to approve travel authorizations	Funds can be accepted from non-Federal sources to pay for travel costs for official travel if the travel is for the purpose of attending a meeting, conference, workshop, seminar, or similar event related to an employee's duties and responsibilities. Funds cannot be accepted to carry out the Bureau's regulatory and statutory functions, such as field or site visits. Form DI-2000, "Report of Payment Accepted from a Non-Federal Source," must be completed, approved by the Ethics Office, and submitted with the employee's travel authorization.
H-3. Acceptance of contributions, awards, or payments, in connection with non-Government training [205 DM 2.1B]	Authority delegated in SMC 205.1, Personnel Management, Appendix B, I-7	

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
I. Approve Domestic Memorandum of Understanding (MOU)		See SMC 500.26, Domestic MOU.
I-1(a). Domestic MOUs that address activities that cross mission areas	Director	
I-1(b). Domestic MOUs that address an intent to work with a sovereign Indian Nation	Director	
I-2. Mission-specific Domestic MOUs of national significance	Associate Directors	
I-3. Domestic MOUs specific to assigned geographic areas of responsibility	Regional Directors	
I-4. Domestic MOUs specific to a Science or Cost Center	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	
J. Interagency Personnel Details under the Intergovernmental Personnel Act	Authority delegated in SMC 205.1, Personnel Management, Appendix B, B-33	
K. Approve Federal Energy Regulatory Commission (FERC) Agreements with non-governmental customers (private utilities) (USGS Annual Appropriations Act); States, Counties, Municipalities, Tribal Governments, and U.S. Territories [43 U.S.C. 50 and 43 U.S.C. 50b]; with USGS [Economy Act and 43 U.S.C. 36c]		See the FOP for FERC agreement template. The USGS Checklist for Reimbursable Agreements must be completed and a copy must be maintained with the approved agreement.
K-1. Approve Standard FERC Agreement	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	

USGS DELEGATIONS OF AUTHORITY TO ENTER INTO AGREEMENTS AND TO ACCEPT CONTRIBUTIONS		
AUTHORITY	AUTHORITY DELEGATED TO *(THESE AUTHORITIES MAY NOT BE REDELEGATED UNLESS SPECIFIED IN THE DELEGATION)*	DOCUMENTATION REQUIRED/REMARKS
K-2. Approve Non-Standard FERC Agreement	Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers	Review and approval by the Office of Policy and Analysis is required prior to signing the agreement for K-2.

Note:

Office Chiefs reporting to the Director/Deputy Director and Managers and Supervisors who report directly to SES Managers include positions such as:

(A) Associate Directors and Regional Directors
(B) Deputy Associate Directors and Deputy Regional Directors
(C) Chief, Office of Diversity and Equal Opportunity; Director, Office of International Programs
(D) Science Center Directors
(E) Office of Administration (OA) Office Chiefs