Chesapeake Bay Trust

REQUEST FOR PROPOSALS

CONSULTANT SERVICES
TECHNICAL ASSISTANCE TO SUPPORT CHESAPEAKE BAY PROGRAM GOALS AND OUTCOMES - FISHERIES, HABITAT, STEWARDSHIP, LEADERSHIP, AND CLIMATE

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SECTION I - INTRODUCTION

1.1 **Purpose**: The purpose of this Request for Proposals ("RFP") is to invite entities experienced in various aspects of fisheries, watershed science and policy, watershed stewardship, climate change, toxics, and other watershed issues to submit proposals to the Chesapeake Bay Trust ("the Trust"). The Trust has been designated to receive federal funds from the U.S. Environmental Protection Agency as part of the Chesapeake Bay Program ("CBP") Goal Implementation Team Project Initiative. The work to be supported will advance specific outcomes from the 2014 Chesapeake Bay Watershed Agreement that have been identified as top priorities to address, and these stretch across all Goal Implementation Teams ("GITs") and workgroups. The funding is supplied by the United States Environmental Protection Agency ("EPA").

This program and RFP includes thirteen (13) projects that have been separated into thirteen (13) individual scopes of work. Offerors can bid on one or more of the individual scopes of work, with each scope of work addressed in a separate proposal. The thirteen (13) individual scopes of work are listed below, and scope details and qualifications of Offerors are described in more detail in Appendix A. A maximum bid amount is listed for each project scope. Cost will be a factor in evaluation of bids as described in Section IV.

1.2 Services/Scopes of Work and Offeror's Minimum Qualifications

Find below the list of the thirteen scopes of work, expected deliverables, and minimum qualifications of Offerors.

Please note, where applicable, draft reports, data, and deliverable products should be provided to the technical leads sufficiently in advance of the end of the contract date such that an effective iterative process can take place before the contract terminates. These materials, depending on the nature of the deliverable, should be provided in draft report form or in the form of a Goal Implementation Team or workgroup summary presentation. This will allow technical leads, Goal Implementation Teams, workgroups and other CBP partners to review, provide comments, ask questions, and get clarification related to the project directly from the awardee. The draft review process should be reflected in all RFP responses where applicable; awardee

hours should be allocated to the oral presentation of final draft results to the CBP via one webinar. The appropriate CBP lead, in cooperation with the awardee, will determine when that presentation would be most advantageous. Any substantive comments, questions or edits received through this process should be incorporated into the final deliverable products. Please develop a timeline that will account for this iterative process.

A list of the Scopes of Work is provided below with details for each scope of work including the maximum bid and minimum qualifications provided in Appendix A.

List of Scopes of Work:
Scope of Work 1: Quantification of the Value of Green Infrastructure Hazard Mitigation Related to Inland and Coastal Flooding (Maximum Bid: $75,000)
Scope of Work 2: Behavior Change Training & Submerged Aquatic Vegetation (SAV) Pilot Implementation (Maximum Bid: $70,000)
Scope of Work 3: An ecosystem approach to living shorelines project design
Scope of Work 4: Support for Inventory & Evaluation of Environmental and Biological Response Data for Fish Habitat Assessment (Maximum Bid: $90,000)
Scope of Work 5: Development of improved methodology for data collection of a Chesapeake Bay Protected Lands indicator (Maximum Bid: $50,000)
Scope of Work 6: Culvert Assessments for Fish Passage and Sediment in the Opequon Watershed of West Virginia (Maximum Bid: $50,000)
Scope of Work 7: Pavement Sealant Protocol Development: Identifying New High-Polyaromatic Hydrocarbons (PAH) Pollution Sources (Maximum Bid: $85,000)
Scope of Work 8: Pilot a cost effective, real-time dissolved oxygen vertical monitoring system for characterizing mainstem Chesapeake Bay hypoxia (Maximum Bid: $80,000)
Scope of Work 9: Turf to Buffers Stewardship Campaign for Bay Counties (Maximum Bid: $75,000)
Scope of Work 10: Chesapeake Watershed Conservation Finance Intensive Workshop (Maximum Bid: $20,500)
Scope of Work 11: Quantify and support Best Management Practice (BMP) installation and restoration at schools to contribute directly to Bay restoration goals (Maximum Bid: $69,900)
Scope of Work 12: Scenic Landscape Impact Assessment Methodology (Maximum Bid: $75,000)
Scope of Work 13: Social Marketing to Improve Shoreline Management (Maximum Bid: $75,000)

SECTION II – ADDITIONAL SERVICES

Additional Services. The Contract Officer may request ancillary or additional services within the capacity of the Contractor as may be useful or necessary in the interests of the Trust and the Project for any of the Scopes of Work.

Add/Deduct: The Trust reserves the right to add or remove items from the base bid proposal during the contract and modify or adjust scope of work and payment as needed.

SECTION III - PROPOSAL FORMAT AND SUBMISSION INFORMATION

3.1 **Principal Solicitation Officer and Issuing Office**:

Contract Officer:	Sadie Drescher
Telephone Number:	410-974-2941, ext. 105
E-Mail	ahuntzinger@cbtrust.org
Address:	Chesapeake Bay Trust 60 West Street, Suite 405 Annapolis, MD 21401

The sole point of contact for the purpose of this RFP is the Contract Officer.

3.2 **Prospective Offerors**: An "Offeror" is a person or entity that submits a proposal in response to this RFP.

3.3 **Cancellation; Discretion of Contract Officer**: This RFP may be canceled in whole or in part and any proposal may be rejected in whole or in part at the discretion of the Contract Officer. In addition, the Contract Officer has the right to negotiate separately with any Offeror in any manner which will best serve the interests of the Trust. The Contract Officer may waive any mandatory condition or minimum qualification if the Contract Officer determines that such action is in the best interest of the Trust.

3.4 **Submission Instructions/Proposal Closing Date**: Offerors must submit proposals using our Online Application System, located at: https://www.GrantRequest.com/SID_1520?SA=SNA&FID=35071 no later than **4:00 p.m.** on **January 31, 2019** (the "**Closing Date**"). Requests for extensions will not be granted, late applications will not be accepted, and the online funding opportunity will close promptly at 4:00 pm. **Offerors are strongly encouraged to submit at least a few days prior to the deadline** given potential for high website traffic on the due date. The Trust cannot guarantee availability of Online Application System technical assistance on the deadline date. You will receive immediate email confirmation upon successful submission of your proposal.

Proposals are irrevocable for 90 days following the Closing Date.

3.5 **Proposal Format**: An Offeror may bid on more than one scope of work outlined in Appendix A in separate proposals. Each proposal (i.e., a submission in response to each Scope of Work) must include responses to a-f in a concise (≤5 pages) description. Items g) and h) may be addressed

outside of the 5 page limit and may be attached as additional pages. All material must be submitted in one electronic file.

a) Names of individuals providing the services and number of years of experience in such areas
b) Scope on which the Offeror is bidding: Scopes #1-13
c) The individual's proposal for how to address the elements of the Scope(s) of Work and required outcomes described in the deliverables section (in Appendix A)
d) Response to the qualifications section: a description of the experience to provide services in the topics described above as described in Appendix A
e) Names, phone numbers, and email addresses of three references
f) **The Offeror shall submit a budget including total number of hours and hourly rate of compensation for the services to be performed during the term of the Contract broken down by direct rate, benefit rate, indirect rate, profit, and direct expenses; any additional costs required to complete the project; and total compensation.** Under this program, food and beverage costs will not be supported. Use the Application Budget worksheet in the Financial Management Spreadsheet accessible at www.cbtrust.org/forms, and if needed, provide additional justification or explanation as an attachment to the proposal. The proposed rates of compensation will be irrevocable for a period of 90 days from the Closing Date, or if modified during negotiations, for a period of 90 days from the date such modified rates are proposed by the Offeror. If your proposed indirect rate is higher than 10% of the direct costs and your proposal is selected for funding, you will be required to provide the Negotiated Indirect Cost Rate Agreement (NICRA) documentation.
g) The resume or CV of the individual(s) providing the service
h) Any other information which the Offeror considers relevant to a fair evaluation of its experience and capabilities

3.6 **Professional Liability Insurance**: The Offeror shall agree to maintain in full force and effect during the term of the Contract usual and customary amounts of liability insurance coverage in connection with the performance or failure to perform services under the Contract.

3.7 **Eligible Organizations:** No entity may enter into a Contract with the Chesapeake Bay Trust under this funding opportunity if the entity is listed in www.sam.gov as debarred, suspended, or otherwise excluded and unless the entity has provided its DUNS (Dun & Bradstreet) number to the Trust. You will be asked to submit your DUNS number in the online application form.

3.8 **Subcontracting Opportunities and Procurement**: It is assumed this solicitation will result in one small procurement(s) per bid that will not provide realistic opportunities for subcontracting, though multiple organizations may apply as a collaborative or partnership with an identified project lead. If, however, an Offeror considers subcontracting of services to be available, it is assumed that all subcontracting service procurements should be under the threshold of small procurement, which is $150,000, given the scope of the work and maximum bid amounts. The Offeror should specify the intent to procure subcontracting services and demonstrate compliance with federal procurement guidelines for all subcontracting services between $3,000 and $150,000:

a) obtain three estimates for subcontracted work and show Good Faith Efforts to

engage minority/disadvantaged/women/small business enterprise (MBE/DBE/WBE/SBE) by reaching out to DBE/MBE/WBE/SBE firms to submit estimates/bids, documenting Good Faith Efforts and estimates. The following website may be helpful in identifying firms: https://mbe.mdot.maryland.gov/ OR

b) obtain services through a competitive bid, documenting Good Faith Efforts and estimates.

All subcontractors must be verified by checking at www.sam.gov to ensure that they have not been suspended, debarred, excluded, or disqualified to do work with federal government resources.

SECTION IV - EVALUATION PROCEDURE

4.1 **Qualifying Proposals**: The Contract Officer will review each proposal for compliance with the minimum qualifications set forth in "Offeror's Minimum Qualifications."

4.2 **Deviations and Negotiation**: The Contract Officer shall have the sole right to determine whether any deviation from the requirements of this RFP is substantial in nature, and the Contract Officer may reject non-conforming proposals. In addition, the Contract Officer may waive minor irregularities in proposals, allow an Offeror to correct minor irregularities, and negotiate with responsible Offerors in any manner deemed necessary or desirable to serve the best interests of the Project.

4.3 **Evaluation**: Proposals shall be evaluated by a review committee composed of technical experts and facilitated by the Contract Officer. Evaluation will be made on the basis of the evaluation criteria discussed below and may include any oral presentation that may be required by the Contract Officer, through a recommendation by the technical review committee, at his or her discretion. The Contract Officer reserves the right to recommend an Offeror for contract award based upon the Offeror's proposal without oral presentations or further discussion. However, the Contract Officer may engage in further discussion if he or she determines that it might be beneficial. In such case, the Contract Officer will notify those responsible Offerors with whom further discussion is desired. In addition, the Contract Officer may permit qualified Offerors to revise their proposals by submitting "best and final" offers.

4.4 **Evaluation Considerations**: Proposals and any oral presentation by Offerors who meet the minimum qualifications set forth in Appendix A will be evaluated by the technical review committee on the basis of the following factors:

A. Proposed Team (Specific Individual(s) Responsible for Performance of Contract). Evaluation of the qualifications, reputation, and compatibility with needs of the Trust and the Project of the individual or individuals who will perform the Contract.

B. Proposed Approach. Evaluation of the work to be performed to accomplish the goals outlined in the Scopes of Work in Appendix A.

C. Experience of Offeror. Evaluation of the quality and quantity of the Offeror's experience and expertise in the areas proposed, supported by references.

D. Capacity. Evaluation of the Offeror’s ability and commitment to meet timeline for the Project.

E. Price and Hours. Hourly rate, indirect rate, and number of hours to be devoted to the project.

SECTION V: OTHER INFORMATION

5.1 **Disclosure**: Proposals submitted in response to this RFP may be provided to government agencies and be subject to disclosure pursuant to the provisions of the Access to Public Records Act of the State Government Article of the Annotated Code of Maryland (the "Public Information Act") or equivalent for your area. Offerors must specifically identify those portions of their proposals, if any, which they deem to contain confidential or proprietary information and must provide justification why such materials should not, upon request, be disclosed by the State under the Public Information Act.

5.2 **Quality Assurance Project Plan**: Several of the scopes of work listed in Appendix A will require a Quality Assurance Project Plan ("QAPP"). General guidance on QAPP's can be found on the EPA QAPP website: https://www.epa.gov/osa/elements-quality-assurance-project-plan-qapp-collecting-identifying-and-evaluating-existing. If data originates from sources other than federal reports and peer reviewed journals, a statement on data quality suitability will be required in the final report. When submitting a proposal for a scope of work that requires a QAPP, the Offeror should understand and account for any costs associated with completing this component of the work.

5.3 **Expenses**: The Trust and the Contract Officer are not responsible for any direct or indirect expenses that an Offeror may incur in preparing and submitting a proposal, participating in the evaluation process, or in consequence of this solicitation process for any reason.

5.4 **Acceptance of Terms and Conditions**: By submitting a proposal in response to this RFP,

a) the Offeror accepts all of the terms and conditions set forth in this RFP;
b) the Offeror, if selected for award, agrees that it will comply with all federal, State, and local laws applicable to its activities and obligations under the Contract;
c) the Offeror shall be deemed to represent that it is not in arrears in the payment of any obligation due and owing the United States Government or the State or any department or unit thereof, including, without limitation, the payment of taxes and employee benefits, and, if selected for award, that it shall not become so in arrears during the term of the Contract; and
d) the Offeror, acknowledges that they are compliant with federal employment and non-discrimination laws and have not been debarred, convicted, charged or had civil judgment rendered against them for fraud or related offense by any government agency (federal, State, or local) or been terminated for cause or default by any government agency (federal, State, or local).

5.5 **Minority Business Enterprise (MBE) Program, the Disadvantaged Business Enterprise (DBE) Program, Women Business Enterprise (WBE), and Small Business Enterprise (SBE) Program Participation**: This RFP encourages the participation of MBE/DBE/WBE/SBE firms (members of a group as defined in the State Finance and Procurement Article of the Annotated Code of Maryland (the "Procurement Article"), Section 14-301(f)(i)(ii)). The Trust encourages MBE/DBE/WBE/SBE firms who meet the minimum qualifications to respond to this RFP.

5.6 **Parties to the Contract**: The contract to be entered into as a result of this RFP (the "Contract") shall be between the successful Offeror (the "Contractor") and the Trust.

5.7 **Contract Documents**. The Contract shall include the following documents: this RFP, the Contractor's Proposal (to the extent not inconsistent with the RFP or the Contract), and the Contract. In the event of an inconsistency, the Contract shall have priority over the other documents and specific conditions of the Contract shall have priority over General Conditions.

5.8 **Contract Term**. The Contract term shall commence as of a date to be specified in the Contract and, unless sooner terminated in accordance with the Contract, shall end when all work authorized under the Contract has been successfully completed by the project end date, unless the Contract is renewed or extended at the sole option of the Contract Officer.

5.9 **Billing Procedures and Compensation**.

a) Method: The Contracts to be entered into as a result of this RFP will not exceed the small procurement threshold set by Federal Acquisition Regulation at 48 CFR Subpart 2.1 (Definitions) and in accordance with 41 U.S.C. 1908. The Contractor(s) must comply with billing procedures as may be required by the Contract Officer and US EPA. These may entail monthly reporting of time and eligible expenses, or may be based upon satisfactory completion of benchmark tasks.
b) Records: The Contractor(s) shall submit invoices no more than once per month but no less than once per quarter in a form acceptable to the Contract Officer and maintain records relating to the costs and expenses incurred by the Contractor(s) in the performance of the Contracts for a period of two years from the date of final Project payment under the Contracts.

5.10 **Certification.** The Offeror shall certify that, to the best of its knowledge, the price information submitted is accurate, complete, and correct as of the Closing Date, and if negotiations are conducted as of the date of "best and final offer."

5.11 **Branding.** All products (outreach materials, events) will be branded with EPA and Chesapeake Bay Trust logos.

FFY18 Goal Implementation Team Projects
APPENDIX A: Scopes of Work

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Overview of Scopes of Work

Find below descriptions of the thirteen (13) scopes of work, including but not limited to expected deliverables and minimum qualifications of Offerors.

Each scope of work is presented in table format with the following sections:

Goal Implementation Team (GIT)	This section indicates the GIT team that is presenting the scope of work for bid.
Purpose and Outcomes	This section provides the purpose of the work and the expected outcomes of the work. This section provides background information and context for potential Offerors.
Maximum Bid Amount	This section identifies the maximum bid amount allowed for the scope of work.
Project Steps and Timeline	This section outlines the specific steps and proposed timeline of work that should be accounted for by the Offeror. The Offeror should also account for and provide detail regarding any additional steps or work that may be undertaken to deliver the final products as listed in the "Deliverables" section of the table for that scope of work. Additional project steps and extended timelines may be added throughout the project as agreed upon by the chosen Contractor, the GIT team, the Chesapeake Bay Program (CPB), and the Chesapeake Bay Trust (Trust).
Stakeholder Participants	This section lists the project participants that the Offeror will need to engage throughout the project to meet the deliverables of that scope of work.
Deliverables	This section outlines the specific final products that will need to be submitted and approved by the GIT and Trust teams in order to successfully meet the terms of the contract. Additional deliverables may be added throughout the project as agreed upon by the chosen Contractor, the GIT team, the CPB, and the Trust.
QAPP Requirement	This section identifies if there is a need for a Quality Assurance Project Plan (QAPP). General guidance on QAPP's can be found on the Environmental Protection Agency (EPA) QAPP website: https://www.epa.gov/osa/elements-quality-assurance-project-plan-qapp-collecting-identifying-and-evaluating-existing. If data originates from sources other than federal reports and peer reviewed journals, a statement on data quality suitability will be required in the final report. When submitting a proposal for a scope of work that requires a QAPP, the Offeror should understand and account for any costs associated with completing this component of the work. Additional information about QAPP's can be found in the following documents: 1. *EPA Requirements for Quality Assurance Project Plans,* QA/R-5, March 2001 *2. Guidance for Quality Assurance Project Plans,* QA/G-5, December 2002 (http://www.epa.gov/quality/qs-docs/g5-final.pdf) In some cases when secondary data is used, a Quality Assurance (QA) Project Plan is required.

	Guidance for developing a QA plan for secondary data can be found at https://www.epa.gov/quality/quality-assurance-project-plan-requirements-secondary-data-research-projects. If data originates from sources other than federal reports and peer reviewed journals, a statement on data quality suitability will be required in the final report.
Qualifications of Offeror	This section outlines the experience required by the Offeror's personnel assigned to perform under the Contract.

Please note, if awarded funding, where applicable, draft reports, data, and deliverable products should be provided to the GIT technical leads (GIT point of contact for the scope of work) sufficiently in advance of the end of the contract date such that an effective iterative process can take place before the contract terminates. These materials, depending on the nature of the deliverable, should be provided in draft report form or in the form of a GIT or workgroup summary presentation. This will allow technical leads, GITs, workgroups and other CBP partners to review, provide comments, ask questions, and get clarification related to the project directly from the Contractor. The draft review process should be reflected in all Requests for Proposals (RFP) responses where applicable; Contractor hours should be allocated to the oral presentation of final draft results to the CBP via one webinar. The appropriate CBP lead, in cooperation with the Contractor, will determine when that presentation would be most advantageous. Any substantive comments, questions or edits received through this process should be incorporated into the final deliverable products. Finally, Offerors should develop a timeline that will account for this iterative process.

Scope of Work 1: Quantification of the Value of Green Infrastructure Hazard Mitigation Related to Inland and Coastal Flooding (Maximum Bid: $75,000)

Goal Implementation Team (GIT)	Cross-goal team proposal
Purpose and Outcomes	Demonstrate how to quantify or monetize value of natural assets (best management practices or BMPs) to help planners realize this value and make decisions to optimize for considerations beyond cost effectiveness of a BMP. Improve ability to identify and quantify ecosystem services associated with natural green infrastructure and with Watershed Agreement Outcomes (https://www.chesapeakebay.net/what/what_guides_us/watershed_agreement). Identify method(s) for quantifying and valuing ecosystem services in such a way that values can be associated with BMP implementation levels in the Chesapeake Assessment Scenario Tool (CAST) and use for future CAST optimization models. Delineate a process or methodology by which the Bay Program can identify ecosystem services associated with Watershed Agreement Outcomes or with other goals or priorities, identify which of these services can be quantified and/or valued, associate services with nutrient and sediment reduction BMPs, quantify and/or value services associated with BMPs for use in CAST, and identify other Outcomes or goals/priorities that are also connected to identified ecosystem services. Process can utilize existing frameworks but must create original work specific to the Chesapeake Bay watershed. Articulate how the Chesapeake Bay Program (CBP) can identify, quantify and value ecosystem services with management outcomes

	(https://www.chesapeakebay.net/who/group/management_board). Complete pilot project/case study that demonstrates how to quantify ecosystem services for use in CAST, using hazard mitigation as the example ecosystem service and the green infrastructure subset of BMPs. The Bay Program would like to eventually get to a place where partners and stakeholders are enabled to use this information and talk in terms of tangible economic and natural resource values and benefits. The analysis and methodology, when replicated in the future, should ultimately allow multiple outcomes to be quantified with a common currency or metric and expand optimization beyond cost-effectiveness for water quality BMPs.
Maximum Bid Amount	$75,000
Project Steps and Timeline	Proposed Project Steps: 1) Quantify the hazard mitigation ecosystem services associated with green infrastructure. • Quantify the reduction in stormwater runoff (in volume) or storm surge (in depth) due to green infrastructure BMPs on a per unit basis specific to the Chesapeake Bay watershed. 2) Quantify the value of hazard mitigation associated with the quantified reductions in stormwater runoff and storm surge found in #1. • Quantify the range of risk to infrastructure in damage $/year caused by inland or coastal flooding, aggregated by CAST modeling segment. 3) Identify and quantify the relationship between green infrastructure BMP implementation levels and the values determined in #2 for hazard mitigation. • Determine and quantify connection between BMP implementation levels and decreased stormwater runoff volume and storm surge depth (identified in #1) with reduced risk in damage $ from inland and coastal flooding (identified in #2). 4) Develop lookup table reporting quantified values from #3 for any given CAST modeling segment, land use, and BMP unit. Bay Program office staff will provide the format for the lookup table. Timeline: *(assume start March 2019 with duration of about one year. Detailed schedule will be developed with Contractor): • First month: Familiarize contractor with hazard mitigation for flooding efforts at the Bay Program by providing written materials and holding a kick-off meeting. Scope BMPs to study at the kickoff meeting. • Support contractor with information from Goal Implementation Team (GIT) members and experts identified by those GIT members. Other experts may be cited by the contractor. • Require monthly check-ins with the GIT lead for this project and quarterly check-ins with other GIT leadership members. It is anticipated that multiple GITs will provide information and receive updates since

	this is a cross-GIT project. • Month 9 or 10: Draft final report allowing time for comments and review prior to project completion. • Presentation of the draft final materials to the appropriate GITs and Bay Program Workgroups which are to be defined/outlined in the project kickoff meeting. • Final report including revisions based on feedback from EPA, Bay Program Partners and staff by project end date. • Deliverables include the products highlighted below in the deliverables section and should be informed by the outcome statements outlined above.
Stakeholder Participants	* Review Board including representatives from the following: • Members of the GIT leadership team • Watershed Implementation Plan (WIP) leads from state agencies and small number of their chosen colleagues, when possible, and CAST expert users (very time limited for beginning of project duration) • Bay Program's Scientific and Technical Advisory Committee (STAC) executive board or individual STAC members • Bay Program's STAC, Local Government Advisory Committee and Citizens Advisory Committee or designated individual members, to extent possible *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	Deliverables will include a final report that includes: (1) Quantification of hazard mitigation for inland and coastal flooding as it relates to BMPs and/or nutrient and sediment reductions on various land uses and geographic areas throughout the Chesapeake Bay watershed in a format that can be integrated into CAST. (2) A defined process, methodology and rationale used in this case study (original work specific to the Chesapeake Bay watershed), tailored for use by the Bay Program and incorporation into CAST, connecting these services to BMP impact. A summary on lessons learned, including recommendations for ways to replicate this process for other outcomes, from completing the first deliverable. The intention is to perform similar analysis in the future for other BMPs and Watershed Agreement goals and outcomes. Deliverables will also include the lookup table reporting the quantified values for green infrastructure BMPs and hazard mitigation associated with reductions for stormwater runoff and storm surge for CAST modeling segment, land use, and BMP unit using the format provided by CBP.
QAPP Requirement	No QAPP needed for this scope of work.
Qualifications of Offeror	Qualification 1: Offeror must have demonstrated work within the past five years on which they performed similar analyses or were author or co-author on similar work. Qualification 2: Offeror must have demonstrated experience and familiarity with one or more established frameworks for ecosystem service quantification (see Additional Resources). Acceptable frameworks include, but are not limited to, the

	Final Ecosystem Goods and Services Classification System (FEGS-CS), National Ecosystem Services Classification System (NESCS) and Stressor–Ecological Production function–final ecosystem Services (STEPS). Other, or original, ecosystem service frameworks that were developed or adapted for unique contexts are also acceptable if demonstrated to be highly relevant to this project. Examples provided toward Qualification 1 should include one or more of these frameworks. Preference will be given to those with experience working on projects at the regional scale. Qualification 3: Offerors should have, at minimum, a basic or working knowledge of the Chesapeake Bay Program, the 2014 Chesapeake Bay Watershed Agreement and the Chesapeake Bay Agreement Total Maximum Daily Load (TMDL) goals. For more about TMDL goals, please see this website: https://www.epa.gov/chesapeake-bay-tmdl. Such experience is strongly preferred to improve project outcomes, but not required if the Offeror meets other qualifications. The Offeror should provide one short paragraph summarizing their experience or familiarity with the stated subjects since 2013. If Offeror has no direct experience, provide a short paragraph summarizing transferrable experiences since 2013, ideally in the context of regional watershed programs. In addition to the paragraph provided, examples provided for Qualification 1 can also be considered for Qualification 3, if relevant. Qualification 4: Offerors must have demonstrated experience with regional watershed models or related tools that estimate pollutant loads or serve similar purposes in the context of watershed management and restoration. Acceptable models or tools are not limited to water quality or contaminants such as nutrients or sediment. Familiarity with the Phase 6 Chesapeake Bay Watershed Model and CAST specifically are strongly preferred to improve project outcomes, but not required if the Offeror meets other qualifications. The Offeror should provide one short paragraph summarizing their experience or familiarity with the stated subjects since 2013. If Offeror has no direct experience, provide a short paragraph summarizing transferrable experiences since 2013, ideally in the context of regional watershed management models or tools. In addition to the paragraph provided, examples provided for Qualification 1 can also be considered for Qualification 4, if relevant.

Scope of Work 2: Behavior Change Training & Submerged Aquatic Vegetation (SAV) Pilot Implementation (Maximum Bid: $70,000)

Goal Implementation Team (GIT)	Stewardship GIT and Communications Workgroup

Purpose and Outcomes	Increase the knowledge, understanding and use of social science frameworks and strategies among Chesapeake Bay Program (CBP) partners that can be applied to change the behavior of priority audiences. Foster understanding of best practices, tools, and technical assistance in order for the CBP workgroups to develop projects and programs that more effectively change behaviors that are based in social science research. Development of a pilot behavior change campaigns that the Submerged Aquatic Vegetation (SAV) Workgroup can implement to reach their target audiences.
Maximum Bid Amount	$70,000
Project Steps and Timeline	**Part 1: Partnership Training and Consultations** *Task 1: Kick off Meeting / Develop Detailed Scope of Work.* 1.1 Hold kick off meeting with CBP Project Team to discuss and determine the best way to deliver behavior change / social marketing training to the CBP Partnership. 1.2 Develop training plan / scope of work, in consultation with CBP Project Team, that should include (Deliverable #1): • Strategy on the most effective way to reach the greatest number of CBP partners (including but not limited to GITs, workgroups, and/or advisory committees). • Recommendations for content and duration of training sessions. • Methodology for selecting and conducting consultation projects. Review management strategies, work plans and other organizational needs to develop recommendations on which groups demonstrate a need for behavior change campaigns. Determine in consultation with CBP which groups will receive one-time consultation. • Methodology for evaluating effectiveness of training and recommendations and next steps for CBP Partnership. • Timeline (not to exceed 18 months) for development and implementation of training and consultation. *Task 2: Conduct Partnership Training* 2.1 Conduct and facilitate training session(s) for CBP partners. Provide transferability package that will enable additional partners to access training (PowerPoint, manual, recording of training session, etc.). (Deliverable #2) 2.2 Evaluate effectiveness of training with an immediate post training evaluation as well as recommendations for a longer-term training effectiveness evaluation. *Task 3: Conduct Select Follow Up Consultations* 3.1 Conduct a one-time consultation (one-day total or up to 2 hours for each project) consultation (as a follow-up from the training) for up to four selected projects within the CBP organization structure to provide a starting point for developing their own future social marketing and/or behavior change campaigns.

Task 4: Evaluation and Final Report

4.1 Develop Part 1 of a final report that summarizes an evaluation of the training and consultations as well as recommendations for future engagement and implementation of behavior change protocol into partnership actions and activities. (Deliverable # 3)

Part 2: SAV Pilot

Task 1: Kick-off Meeting

1.1 Meet with SAV Workgroup, and selected members of Communications and Stewardship Workgroups to understand specific needs for a behavior change campaign related to stopping tidal property owners from removing underwater grasses and adopting behaviors that impact underwater grasses at the local scale.

Task 2: Behavior Change Strategy Development

2.1 In consultation with the above-mentioned groups, design a social marketing strategy geared toward residents of the Chesapeake Bay watershed who remove underwater grasses from their property. This strategy should be based on the components from Community-Based Social Marketing or other similar behavior change approach. At a minimum, the social marketing strategy should cover the following (Deliverable #4):

- Behavior prioritization: Outline the methodology that will be used to identify and prioritize target behavior(s). This methodology should include a description of methods used to identify and prioritize behavior(s), a copy of any research tools used, and a summary of key outcomes.
- Barrier/benefit research: Identify the barriers and benefits to the selected target behavior(s). This should include a description of methods used to determine barriers/benefits for engaging in prioritized behavior(s), a copy of any research tools and materials used (e.g. survey templates, focus group results), an analysis showing how results support selected target behavior(s) and audience(s), and a strategy table for each target audience and a summary of key outcomes.
- Strategy design: Develop at least two strategies to target selected behavior(s). These should work to overcome target audience(s) barriers and motivate them to engage in the selected behavior(s). This includes strategy materials, identification of key messages, materials, channels and messengers, metrics to evaluate the strategies, and next steps for implementation of the social marketing strategy.

Task 3: Outreach Materials

3.1 Assist SAV Workgroup and Communications Workgroup on implementation of pilot, which may include development of behavior change products. (Deliverable #5)

Task 4: Evaluation and Final Report

4.1 Develop Part 2 of a final report that summarizes the development and refinement

	of the pilot project components as well as provides suggestions, direction, and lessons learned for future iterations of building behavior change campaigns into CBP outcomes. (Deliverable #3)
Stakeholder Participants	• Communications Workgroup • Citizen Stewardship Workgroup • SAV Workgroup • CBPO partnership staff and members *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	1. Partnership Training Plan / Scope of Work 2. Conduct Training and Provide Transferability Package 3. Evaluation and Final Report (Combined Report for Partnership Training / Consultations and SAV Pilot Tasks) 4. SAV Pilot Behavior Change Strategy Development 5. SAV Pilot Outreach Materials
QAPP Requirement	No QAPP will be needed under this scope of work.
Qualifications of Offeror	1. Offeror should demonstrate knowledge of social marketing and/or community based social marketing concepts, theory, and practice. 2. Offeror should demonstrate experience working with governmental and non-governmental agencies, assisting them in developing and implementing social marketing, and/or community-based social marketing initiatives. Offeror should provide two examples of plans/initiatives developed in the past 2 years to a mixed audience of governmental and non-governmental agencies. 3. Offeror should demonstrate experience conducting workshops, seminars, and training sessions on developing and implementing social marketing and/or behavior change campaigns. Offeror should provide two examples of training program deployment in the past 2 years to a mixed audience of governmental and non-governmental agencies. 4. Offeror should demonstrate basic knowledge of underwater grasses and Chesapeake Bay SAV status and trends and issues surrounding the recovery of underwater grasses in the Bay.

Scope of Work 3: An ecosystem approach to living shorelines project design (Maximum Bid: $50,000)

Goal Implementation Team (GIT)	Sustainable Fisheries GIT and Vital Habitats GIT

Purpose and Outcomes	As sea level rises and coastal development increases, living shorelines offer a nature-based alternative to traditional hard structures like seawalls or bulkheads, which can negatively impact nearshore habitat and impede wetland migration. Research funded by National Oceanic and Atmospheric Administration (NOAA) National Centers for Coastal Ocean Science demonstrated that shoreline hardening often has negative effects on fish, shellfish, plants, and birds in nearshore waters. Incorporating natural habitats into a shoreline stabilization technique maintains connectivity at the land-water interface and may increase species diversity compared to hardened shorelines. Habitats like submerged aquatic vegetation (SAV) and oyster reefs are known to support juvenile finfish and invertebrate populations, and to provide water quality benefits. Natural and nature-based features (NNBF) are landscape features that are used to provide engineering functions relevant to flood risk and erosion management, while producing additional economic, environmental, and/or social benefits, such as beaches and dunes, saltmarshes, freshwater wetlands, and fluvial flood plains. Examples of successful projects that have incorporated such native vegetation and shellfish are located at the NOAA lab in Beaufort, North Carolina and at the Hermitage Museum and Gardens in Norfolk, Virginia. Efforts to restore and stabilize nearshore environments are hindered by challenges in accessing funds and permits without restoration plans in place. Consulting with stakeholders and local planners throughout the process is also key. The goal of this project is to develop a shovel-ready living shoreline restoration plan and monitoring protocols. This will remove barriers to project implementation and increase the capacity of planners to conduct nearshore habitat restoration. The York River falls into a geographic priority area identified in the US Army Corps of Engineers Chesapeake Bay Comprehensive Water Resources and Restoration Plan, and provides several opportunities to collaborate with public landowners interested in enhancing management of their shorelines. Additionally, the Lower York River has been designated by the Sustainable Fisheries GIT as a tributary targeted for oyster restoration in Virginia as part of the oyster restoration outcome in the 2014 Chesapeake Bay Watershed Agreement. The goal of this project is to design a living shoreline application appropriate for a selected site on the lower York River that integrates natural features, like marsh grass or an oyster reef sill, to maximize habitat benefits. Incorporating alternative structures, such as derelict crab pots used as an artificial oyster reef base, may represent a creative solution to simultaneously stabilize shorelines, support oyster recruitment, and reduce effects of marine debris. A project design that reduces wave energy and erosion while providing nearshore habitat is desired. Additionally, project proposals should: • explain how results of this work will be transferable to other comparable locations with oyster, salt marsh, and/or SAV habitats; • Provide guidance for future restoration projects within the Chesapeake Bay region and beyond; and • Include project designs appropriate/eligible for grants such as NFWF Coastal Resilience Funding. This project could contribute to multiple Chesapeake Bay Program (CBP) outcomes, including blue crab, oyster, forage fish, fish habitat, wetlands, SAV, and climate resiliency.
Maximum Bid Amount	$50,000
Project Steps and Timeline	1. After selection of a Offeror, a project advisory team will be established to oversee development of the restoration plan (March-April 2019). Team will meet quarterly with the successful Offeror throughout the project to monitor progress and provide feedback. 2. Working collaboratively with the project advisory team and other interested stakeholders, the successful Offeror will recommend a site for the design (May 2019),

	collect pre-restoration baseline data at a candidate restoration site and summarize justification of site selection (June-July 2019). a. Baseline data should include information on proximity and size of adjacent water bodies (fetch, wave field, currents), elevation and slope (survey data), sediment type, and existing dominant biota. 3. Complete draft design document set based on field observations and results of stakeholder engagement (October 2019). a. In addition to reviewing resources already known/recommended by the contractor, the following resources should be consulted in developing a restoration plan: i. NOAA Guidance for Considering the Use of Living Shorelines ii. The Delaware Estuary Living Shoreline Initiative b. Efforts should be made to engage local community officials and residents to increase awareness and support for the project and discuss potential challenges. Stakeholder feedback should be incorporated into the final document. 4. Report out to Fisheries and Habitat GITs, Chesapeake Bay Trust, and other relevant partners on refined final design, including recommendations for implementation, cost, potential funding sources, post-construction monitoring, and probable outcomes (December 2019). 5. Communication and outreach on the design to local planners and relevant stakeholders: may include presentations to the Fisheries and Habitat GITs, webinars, presentation to local non-profit or community group, development of brochure or factsheet (March 2020). The contractor may work with Chesapeake Bay Program staff as needed.
Stakeholder Participants	• Sustainable Fisheries and Vital Habitats GITs • Virginia Marine Resource Commission • Local government planners and engineers • waterfront landowners, recreational fishermen, and boaters *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	A final written report of the project restoration plan to include the following: • Literature review of design applications and effectiveness • Description of chosen site and rationale for methodology chosen based on physical characteristics of the site • Design/construction document set with scale and scope of restoration, engineering requirements of sufficient detail to carry out construction activities, and construction implementation materials list with estimated quantities • Monitoring protocol with timeline of pre-construction monitoring, implementation, post-construction monitoring • Key partner recommendations and feedback • Budget and potential funding sources • Potential ecological and physical outcomes of restoration • Recommendations for future maintenance/adaptive management • Plan for permitting application process based on site selection
QAPP Requirement	Yes. Secondary data will be used requiring a plan for ensuring data quality. Guidance for developing a QA plan for secondary data can be found at https://www.epa.gov/quality/quality-assurance-project-plan-requirements-secondary-data-research-projects. If data originates from sources other than federal reports and peer reviewed journals, a statement on data quality suitability will be required in the final report.

Qualifications of Offeror	• Familiarity with designing nature/natural based infrastructure restoration projects • Experience working in lower Chesapeake Bay and/or other estuarine nearshore environments • Knowledge of oyster reef, SAV, and marsh habitats • Connections to lower York River stakeholders/partners preferred • Strong oral and written communication skills • Preference will be given to Offerors who have the ability to implement the project if resources are available

Scope of Work 4: Support for Inventory & Evaluation of Environmental and Biological Response Data for Fish Habitat Assessment (Maximum Bid: $90,000)

Goal Implementation Team (GIT)	Sustainable Fisheries and Vital Habitats
Purpose and Outcomes	In 2018, the Scientific and Technical Advisory Committee (STAC) funded a workshop to develop a Fish Habitat Assessment Framework for the Chesapeake Bay watershed that helps to identify the condition and primary stressors to fish habitat. A team of United States Geological Survey (USGS) and National Oceanic and Atmospheric Administration (NOAA) scientists determined the availability of most of these data for the Chesapeake Bay watershed (nontidal and tidal waters) and compiled the relevant metadata (e.g., generator, provider, timeframe, extent, summary scale, and web link) prior to the workshop. The Microsoft Excel spreadsheet file of 441 stressor variable records was used to facilitate presentation, analysis, and summary of the data compilation effort during the workshop. This project will provide additional stressor and biological data in the spreadsheet file and data analysis necessary for assessing fish habitat condition in tidal waters of Chesapeake Bay. Concurrently, USGS will be completing a similar effort of the nontidal waters of the watershed. Results of the larger effort will include: • an increased knowledge of quality and quantity of fish habitat throughout the Chesapeake Bay and • guidance for a Chesapeake Bay Watershed Fish Habitat Assessment given available data, data gaps, and scale.
Maximum Bid Amount	$90,000
Project Steps and Timeline	The database development work will use the data inventory compiled by USGS and NOAA for the April 2018, STAC Fish Habitat workshop as a starting point (http://www.chesapeake.org/stac/workshop.php?activity_id=288). There will be iterative interactions with NOAA and USGS to guide the inventory development and the metadata analyses to be performed by the successful Offeror. The contractor will meet weekly with the project lead at NOAA Cooperative Oxford Lab or NOAA Chesapeake Bay Office. Contractor will meet with the Project Advisory Committee quarterly. A written progress report will be submitted monthly to the Project Advisory Committee. The project Advisory Committee will consist of at least one representative from USGS and NOAA, and the Fish Habitat Action Team Coordinator. **April 2019 (or within 2 weeks of contract award) –** Kickoff meeting with contractor and Project Advisory Committee. Discuss work plan and needs, including specifics on coordination with USGS on data collection of nontidal waters. Concurrently, the contractor

	will gain familiarity with habitat stressor and condition inventory used at the April 2018, STAC Fish Habitat Workshop. **First 3 months (2019):** Contractor begins collection of habitat and stressor metadata and biological sample data relevant to Chesapeake Bay tidal waters. These datasets may reside with state agencies, academic researchers, federal agencies, and nonprofit agencies. Collected datasets will be added to the existing data inventory compiled by USGS and NOAA for the April 2018, STAC Fish Habitat Workshop. Collection of data may require select in-person meetings with the data holders. Biological data will be collected and assessed for: 1. Purpose of study 2. Location of study 3. Period of study 4. Sampling method 5. Life stages sampled 6. Whether collection was species specific or community sampling 7. Whether existing data not allowed for public release Contractor will also begin to populate a metadata record of habitat, stressor, and biological data. **Second 3 months:** Continue inventory of environmental data and collection of biological data. Contractor begins Quality Assurance and Quality Control (QA/QC) assessment of biological data to: 1. Ensure accuracy of spatial information (will require plotting data in Geographic Information System or GIS); 2. Ensure standardization of species names between data collectors; and 3. Identify restricted data. Contractor begins metadata analysis of all data: 1. Spatial and temporal extent of data 2. Match-mismatch between habitat, stressor and biological data. **Third 3 months:** Conclude most data analyses. Conclude supplementation of existing inventory. **Final 3 months (2020):** Includes specific milestones noted below for January, February, and March. Focus of final three months is on seeking feedback on database and results of data analyses; and making adjustments based on feedback. In addition, the contractor will review database and metadata analysis with parties identified at the kickoff meeting. The milestones for the final three months include: • **January 2020:** Review database and data analyses results with Project Advisory Committee. • **February 2020:** Make adjustments based on feedback. • **March 2020:** Deliver final database and metadata analyses information products.
Stakeholder Participants	• Fish Habitat Action Team Lead • Habitat and Sustainable Fisheries GIT leads *Contacts for all stakeholders will be provided by GIT lead at the start of project.

Deliverables	1) A final report that includes an Executive Summary, Methods, Procedures, Results and Key Findings sections. The final report will include the following: a) Report on biological data availability b) Map showing sites for biological data c) Identification of match-mismatch in biological data (temporal gaps and spatial gaps between data layers) d) Where possible, guidance for further study/monitoring necessary to support a Bay-wide (tidal waters) assessment e) Technical guidance on assessment approaches for tidal rivers of the Chesapeake Bay given available biological data and data gaps f) Key findings from a comparison of Chesapeake Bay available data to that used in the regional Gulf of Mexico, and Southeast Regional Assessments 2) Other, specific deliverables include: a) Monthly progress reports b) Detailed metadata for additional datasets to add to existing inventory, including metadata fields used in USGS datasets so data in future may be assembled into a single inventory c) Digital collection of QA/QC'ed biological data
QAPP Requirement	No QAPP will be needed under this scope of work.
Qualifications of Offeror	1. Familiarity with coastal or estuarine ecological concepts 2. Familiarity with habitat assessments preferred 3. GIS proficiency 4. Microsoft Excel and/or database software proficiency 5. Experience with data QA/QC and analysis: to describe and illustrate, condense and recap, and evaluate data 6. Strong writing and verbal communication skills 7. Ability to listen well to varied audiences and derive requirements meaningful for habitat assessments Preference for contractor staff to reside at the NOAA Cooperative Oxford Laboratory where the project lead is located.

Scope of Work 5: Development of improved methodology for data collection of a Chesapeake Bay Protected Lands indicator (Maximum Bid: $50,000)

Goal Implementation Team (GIT)	GIT 5 Stewardship and GIT 4 Healthy Watersheds
Purpose and Outcomes	This project will **develop an improved and potentially automated process for collecting consistent and accurate protected lands information for the Chesapeake Bay watershed.** An accurate Chesapeake Bay watershed protected lands geospatial dataset is essential for tracking progress toward multiple Chesapeake Bay Watershed Agreement goals, including the land protection goal itself. It is also crucial for ensuring state and local governments and non-governmental organizations have accurate annual land protection data on which to base projections. This information was used to create local Watershed Implementation Plans (WIPs) and helps meet the Chesapeake Bay Agreement's Total Maximum Daily Load (TMDL) goals. For more about TMDL goals, see this website: https://www.epa.gov/chesapeake-bay-tmdl. Currently, information regarding land protection within the Chesapeake Bay Watershed is

	only updated biennially due to the laborious work in assembling the data (https://www.chesapeakeprogress.com/conserved-lands/protected-lands). Since 2010 and every two years after, US Geological Survey staff in the Chesapeake Bay Program have undertaken a comprehensive data collection and aggregation process to create one complete Geographic Information Systems (GIS) based dataset representing all of the permanently protected lands in the Chesapeake Bay watershed. Data is aggregated from multiple federal, state, and non-governmental organizations and the attribute tables are standardized to have consistent fields. More recent updates rely heavily on the Protected Areas Database (PAD_US) and National Conservation Easement (NCED) databases and their advances in the coordination and standardization of protected areas and easement property datasets. However, the Chesapeake Bay Program still relies on obtaining data directly from jurisdictions and other authoritative data sources to supplement national datasets and ensure the most accurate and timely Chesapeake watershed dataset. Land conservation partners in the Chesapeake Conservation Partnership have repeatedly expressed the need to have more frequent reporting or even real-time information to better understand changing land conservation patterns and opportunities. Recent developments have made the importance of accurate, more frequent tracking even more evident. The Chesapeake Bay Program has moved toward crediting conservation and planning in the Bay TMDL. In developing WIPs, and in evaluating progress, the states and Chesapeake Bay Program partners need access to accurate data on annual rates of land protection. To properly "account" for land conservation in the Bay TMDL context, it is imperative that incoming geospatial land conservation data contain key standardized attributes. Of particular importance is the **"Date of Protection"** field specifying the date the property was legally protected through fee simple acquisition or permanent conservation easement. Advances in protected lands database reporting, visualization, and web services may allow for an opportunity to automate the protected lands data collection process. The goal of this project is for a contractor to work with Chesapeake Bay Program Staff, the Chesapeake Conservation Partnership and authoritative jurisdictional and federal data providers to: (1) ensure consistent, accurate, and timely collection of geo-spatial land protection data and key standard data attributes; (2) determine the process and feasibility of automating key procedures to allow for a "real time" or more frequently updated, web accessible protected lands indicator. This project will result in: • Improved standardization and collection of key data attribute information related to land protection, including date of protection. • An improved and potentially automated process for collecting protected lands information from partners and federal database providers. • More accurate and timely information necessary for establishing future goals, needs, financing, and gaps related to land conservation. • Essential information for calculating annual rates of conservation – a critical input for accurate projections and monitoring of Conservation Plus BMPs in WIPs.
Maximum Bid Amount	$50,000
Project Steps and Timeline	Task 1: Recurring consultations with project team. (Timeline: Throughout duration of project) 1.1. The project technical lead(s) will assemble a project team comprised of the contractor, technical leads and members from the Chesapeake Conservation Partnership, Landscope (Natureserve), and key data leads, as appropriate. The purpose of the group will be to provide expert advice and optimize partner engagement in methodology development and ultimately adoption. The technical leads will assist in convening the project team group at all key milestones during the project.

1.2. The contractor will prepare agendas and any necessary presentation materials for briefing and engaging the project team at each key project milestone, as specified in this task list. Project team work-sessions may occur through web-meetings, though at least one in person meeting should be planned.

1.3. The contractor will participate in a project start-up work-session with the project team in the first month of the project. (Timeline: Month 1 following contract execution.)

Task 2: Dataset and data collection process assessment. (Timeline: Month 1 following contract execution through month 5)

2.1. The contractor will review and become familiar with the current protected lands indicator, data, and methods. (https://www.chesapeakeprogress.com/conserved-lands/protected-lands)

2.2 In consultation with the project team, the contractor will collect information from jurisdictional protected lands database managers on factors including:

a. Each of the individual datasets used to assemble the Chesapeake Bay watershed protected lands indicator
b. The schedule (frequency and timing) of individual dataset updates.
c. Attributes collected on each property for each individual dataset
- Crosswalk for all attributes and how they relate to the PAD_US format as well as missing information for each dataset

d. Web-hosting service and primary data contacts for each individual dataset
e. Perceived data gaps, issues or capacity constraints influencing ability to get complete land protection data in standardized CBP and PAD_US format
f. Other information as determined necessary

2.3 The contractor will assess the information collected in task 2.2 and prepare a summary of data issues, gaps, services/contacts, capacity issues and other relevant findings, by jurisdictional data source and overall.

2.4 The contractor will provide and present the summary developed in 2.3 to the project team for discussion, feedback, additional guidance, and input into task 3 below.

Task 3: Principles, objectives, and guidelines development. (Timeline: Month 5 following contract execution through month 6)

3.1 Based on the results of task 2, the contractor will develop a draft set of principles, objectives and guidelines for improved: (a) data standards; (b) data collection processes for jurisdictional dataset managers; and (c) the indicator methodology. These principles, objectives, and guidelines should also guide development of task 4.

3.2 The contractor will provide and present the draft principles, objectives, and guidelines to the project team for discussion, feedback, and additional guidance.

3.3 The contractor will share the results of task 3.2. In addition, the contractor will prepare a final report with the status, progress and assessment of individual datasets and progress toward the CBP/PAD_US format. The final report will also include recommended next steps and approximate timeline for jurisdictions to meet the standards.

Task 4: Streamlined approaches to data collection, management, analysis and display of

	Chesapeake Bay Watershed Protected Lands Indicator data. (Timeline: Month 6 through month 7) 4.1 The contractor will investigate alternative and streamlined approaches for future data collection such as, expanding the existing functionality of Landscope Chesapeake, the existing National Environmental Information Exchange Network (NEIEN) framework for collecting best management practice information from jurisdictions, utilizing ArcGIS online or other potential technology and resources to meet the needs outlined. Ideally two to three options will be developed with the following information for each: a. Overview of approach and method b. Assessment of advantages/disadvantages c. Data or capacity caps d. Cost estimate for development and maintenance 4.2 The contractor will work in close consultation with the technical lead to translate manual ArcPro methodology including data collection, attribute crosswalks to PAD_US format, and analysis of indicator results to create tools or code (using python or other "off the shelf" ArcGIS online tools) to generate the indicator values in an automated/online format. 4.3 The contractor will provide and present the options to the project team for discussion, feedback, and additional guidance. Task 5: Pilot protocol for streamlined data collection. (Timeline: Month 7 through month 12) 5.1 The contractor will develop a pilot protocol (using a jurisdiction that is most ready) for streamlined data collection based on guidance obtained through task 4.3. 5.2 The contractor will provide and present the pilot protocol to the project team for discussion, feedback, and additional guidance. The contractor will incorporate the refinements based on work group guidance to improve the product and its usefulness (number of refinements and updated to be agreed upon in task 1.3 during the start-up work-session). Task 6: Presentation and report. (Timeline: Month 12 through month 14) 6.1 The contractor will develop materials for supporting training of practitioners in use of the protocol. Materials should include: presentation(s), "how to" guide, procedural steps, case example(s), etc. 6.2 The contractor will provide and present the training materials to the project advisory group for discussion, feedback, and additional guidance. 6.3 The contractor will deliver at least one training session for practitioners. The project team will facilitate scheduling, attendance, and facilities for the session. Holding the session as a webinar is a possible option. 6.4 The contractor shall submit a final report that summarizes the development and refinement of the project deliverables.
Stakeholder Participants	1. Renee Thompson (Chesapeake Bay Program 2. Jonathan Doherty (National Park Service) 3. Workgroup staffers and coordinators 4. Project team (members to be identified by project technical leads)

	5. Chesapeake Conservation Partnership *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	1. A **summary of data issues, gaps, services/contacts, capacity issues, and other relevant findings**, by jurisdictional data source and overall. 2. A **set of principles, objectives, and guidelines** for improved: (a) data standards; (b) data collection processes for jurisdictional dataset managers; and (c) the indicator methodology. 3. A set of **options for alternative and streamlined approaches for future data collection**. 4. A **pilot protocol** for streamlined data collection. 5. **Training materials** supporting training of practitioners in use of the protocol. Materials should include: presentation(s), "how to" guide, procedural steps, case example(s), etc. 6. **One training sessions** for practitioners. 7. A **final report** that summarizes the development and refinement of the project deliverables.
QAPP Requirement	QAPP will likely be needed under this scope of work. If a requirement of the project, the contractor will develop and submit a QAPP for approval to the EPA Chesapeake Bay Program prior to collecting or using environmental data. Each subsequent year the contractor will review and update the QAPP if necessary. The QAPPs will provide detailed information for implementing the components of this RFP/workplan. EPAs guidance documents:
Qualifications of Offeror	Qualification 1: Offeror should demonstrate expertise in the area of working with diverse partners, data providers, state, and federal project team members. In addition, the Offeror must be willing to include the technical lead a key member of the development team in coordination with the Offeror to conduct this scope of work. Qualification 1: Offeror should demonstrate expertise in the area of complex geo-spatial data development and management. Offeror should provide five examples of geo-spatial dataset development and management by Offeror in past five years. Qualification 2: Offeror should demonstrate expertise in the area of sound methodology design. Offeror should provide three examples of geo-spatial data management methodology design in the past seven years.

Scope of Work 6: Culvert Assessments for Fish Passage and Sediment in the Opequon Watershed of West Virginia (Maximum Bid: $50,000)

Goal Implementation Team (GIT)	Habitat Goal Implementation Team (GIT)
Purpose and Outcomes	• Further achievement of the Chesapeake Bay Program's Fish Passage (https://www.chesapeakebay.net/managementstrategies/strategy/fish_passage), Brook Trout (https://www.chesapeakebay.net/managementstrategies/strategy/brook_trout), and Stream Health Outcomes (https://www.chesapeakebay.net/managementstrategies/strategy/stream_health) by identifying high priority fish passage projects to increase the number of reconnected high-quality river segments for brook trout in the Opequon Watershed of WV. • Further achievement of local water quality goals the Chesapeake Bay Program's Water Quality (https://www.chesapeakebay.net/managementstrategies/strategy/2017_and_2025_watershed_implementation_plans) and Stream Health

	(https://www.chesapeakebay.net/managementstrategies/strategy/stream_health) Outcomes through the focus on sediment reduction. • Increased capacity of environmental agency staff ability to identify fish passage projects in other watersheds through North Atlantic Aquatic Connectivity Collaborative (NAACC) culvert assessment training (https://streamcontinuity.org/). • Increased understanding of fish-friendly culvert design by state highway agencies through "Lessons Learned" document.
Maximum Bid Amount	$50,000
Project Steps and Timeline	Task 1: Conduct Culvert Assessment 1.1. Conduct a project kickoff meeting; web-based if in-person is impractical (within 1-month post-project). • A project timeline will be established during this meeting and based on the monthly estimates listed below. 1.2. Contractor prepares Quality Assurance Project Plan (QAPP) that is acceptable to Chesapeake Bay Program (within 1-month post-project). 1.3. Contractor reviews relevant existing studies including Cacapon Institute's 2014 analysis of the dirt and gravel roads in Tuscaora Creek watershed (http://www.cacaponinstitute.org/PDF/CI%20D&GR_Final_Report%20with%20Appendices.pdf). 1.4. Hire four (4) individuals for a period of 12 weeks to conduct culvert assessment in one priority watershed in WV using the protocol developed by the NAACC. Culverts may be located on private land. Assessment will be conducted in the Opequon Watershed of WV. Two individuals are required at each location to meet safety requirements while conducting culvert assessments in the field (https://www.streamcontinuity.org/assessing_crossing_structures/index.htm). The work associated with this task includes: • Training individuals in the NAACC method (at 2-months post funding receipt). • Culvert assessments for two watersheds (at 4 months post funding receipt). • Culvert assessments entered into regional database www.streamcontinuity.org/cdb2 (at 5 months post funding receipt). • Contractor will meet with Technical Project Lead during the data collection phase to review preliminary results and expectations for the analysis phase. 1.5 Analysis • Identification of future fish passage projects with recommendations for Best Management Practice (BMP) implementation involving culverts that reduce sediment and benefit aquatic habitat (at 5 months post funding receipt). • Develop a lessons-learned for culvert design document (at 5 months post funding receipt).
Stakeholder Participants	• Vital Habitats GIT • Tuscarora Creek Project Team • Private landowners • NAACC scientists or program administrators • WVDOH Hydraulic & Drainage Unit *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	• List of road crossings identified by assessment as high priority for future fish passage projects with recommendations for BMP implementation involving culverts that reduce sediment and benefit aquatic habitat. • A lessons-learned for culvert design document to make sharing across jurisdictions (e.g. Highway Departments) easier.

QAPP Requirement	Quality scores for culverts will be entered in a database based on NAACC standards. A QAPP is needed to address the following issues: • Outline of standardized procedures to be followed in order to minimize variability • Use of available sediment/other environmental data in the final report writing • Description of the Quality System that will be employed including Data Quality Indicators • Summary of documenting/reporting procedures
Qualifications of Offeror	Preferred: • Experience in NAACC protocol. • Experience recommending culvert specifications to improve aquatic organism passage and/or reduce sediment. Required: • Demonstrated successful completion of a similar project in the past seven years. • Experience leading a field crew. • Demonstrated successful interactions with private landowners (e.g., past project(s) involving private landowners to implement practices in cooperation with them). • Able to complete field work in harsh environments including very hot summer days, rainy weather, and walk one (1) miles distances per day (e.g., during field assessments). • Strong written and oral communication skills.

Scope of Work 7: Pavement Sealant Protocol Development: Identifying New High-Polyaromatic Hydrocarbons (PAH) Pollution Sources (Maximum Bid: $85,000)

Goal Implementation Team (GIT)	Toxic Contaminants Work Group
Purpose and Outcomes	The Environmental Protection Agency (EPA) has established goals for reducing pollutants that are entering the Chesapeake Bay and its rivers and tributaries. The goals are referred to as the Chesapeake Bay Total Maximum Daily Load (TMDL). Polycyclic Aromatic Hydrocarbons (PAHs) are a known toxic contaminant in the Anacostia River and several tributaries, where TMDLs have been established to address these pollutants. An ongoing source of PAHs is pavement sealants. Washington, D.C., and Anne Arundel, Prince George's, Howard, and Montgomery Counties in Maryland have banned coal tar pavement sealant, a product type known to have high PAH concentrations, in order to protect local waterways from PAHs. New, coal tar-free products are now available that are not subject to the current bans, but contain PAH levels high enough to pose a risk to human health and aquatic life. These new sealants are byproducts of petroleum distillation (Ethylene Cracker Residues or ECRs). Several U.S. jurisdictions have introduced legislation that include PAH limits in an effort to prevent these high-PAH products from use, including Washington, D.C., (proposed limit of 0.1% PAHs) and Howard County, MD (passed limit of 1% PAHs). Fifteen southern Michigan townships have passed laws with a 0.1% PAH limit, Milwaukee, Wisconsin, has passed a 1% limit, and pavement sealant bans with PAH limits have been proposed in six states, including Virginia (although the ban was later withdrawn). There is no established system for determining PAH concentrations in pavement sealants. PAH concentration is either not tested or not made public by manufacturers. By establishing a standardized, national certification program, jurisdictions within the Chesapeake Bay watershed interested in including PAH limits in current or proposed legislation or in incentive-based programs will be able to enforce and educate the community more easily than currently possible. Certified products will be a matter of public record and businesses,

	contractors, and residents in the Chesapeake Bay watershed interested in making environmentally-friendly choices will be able to make informed decisions when sealing their properties, regardless of whether sealant products are regulated in their area. The outcomes of this work are as follows: 1. Establishment of a standardized system for determining PAH concentrations in pavement sealants. 2. Establishment of a list of certified low-PAH products as a publicly available resource. 3. Increased access by Chesapeake Bay and national environmental regulators, organizations, and residents to information on environmentally safe sealant products. 4. Increased ability to enforce PAH-specific legislation. 5. Increased ability to reach local PAH TMDL goals.
Maximum Bid Amount	$85,000
Project Steps and Timeline	**Task 1:** Develop standard protocol, including standard operating procedures (SOPs), for the testing of pavement sealants to determine PAH content. **Timeline: April 1-September 2019** • Task 1.1: Contractor to form a review committee comprised of Washington, D.C.'s Department of Energy and Environment (DOEE) and other regulators, EPA and other technical experts, Huron River Watershed Council (HRWC) and other environmental stakeholders, and industry representatives to help guide SOP design and guarantee quality control. o Contractor will set a regular schedule of meetings to review progress and provide updates to project leads. Schedule for review committee meetings is dependent on needs of contractor developing SOP. o Contractor will enlist assistance from EPA, DOEE and HRWC to determine best additions to the review committee. • Task 1.2: Contractor will develop testing protocols and procedures for a pavement sealant certification program. o Contractor will work with DOEE and other review committee members to determine best standardized process for sample collection and testing (e.g.. best method for collecting and shipping sealant samples, whether to test dry or wet samples, number of replicates per product to determine PAH concentration, etc.) o Sealant certification design to be reviewed and approved by review committee. One possibility is to include two levels: Gold (products with PAH concentrations below 0.1%) and Silver (products with PAH concentrations greater than 0.1% but less than 1%). • Task 1.3: Contractor to confirm ability to test sealant samples according to EPA method 8270C to determine PAH concentration, either in house or subcontracted to a lab with appropriate equipment and experience. • Task 1.4: Contractor to develop a Quality Assurance Project Plan (QAPP). **Task 2:** Validate standard operating procedures (SOPs) and quality assurance/quality control (QA/QC) mechanisms specific to the lab responsible for processing samples of pavement sealants and testing for PAH content. **Timeline: September 2019-January 2020** • Task 2.1: Contractor to create SOPs for lab responsible for testing products for certification. • Task 2.2: Contractor to acquire range of available pavement sealant products for testing SOPs. • Task 2.3: Contractor to run test samples through protocols for quality control, ensuring samples are handled consistently and correctly. • Task 2.4: Contractor to finalize QAPP and have it approved by EPA prior to the start of product certification

	Task 3: Develop an outreach plan for recruiting manufacturers to test and certify PAH content of pavement sealant products. **Timeline: November 2019-January 2020** • Task 3.1: Contractor responsible for notifying sealant manufacturers of new certification program and recruiting products for testing. o DOEE staff responsible for enforcing the coal tar ban will simultaneously conduct an outreach campaign to notify local residents, contractors, businesses, etc. of a certification program as a resource and legislative amendments (if passed to include PAH limits). DOEE will also work with contractor to notify other Chesapeake Bay watershed environmental regulators and stakeholders of the new certification program through Toxic Contaminants Workgroup, Metropolitan Washington Council of Governments' (MWCOG) Chesapeake Bay Policy Committee and Anacostia Restoration Partnership, and other venues as appropriate. **Task 4:** Conduct and execute outreach plan, process product samples, and post list of certified sealant products (iterative list; to be edited and expanded as needed by contractor). Project QAPP must be finalized and approved by EPA before work begins. **Timeline: January 2020-April 2020**: • Task 4.1: Contractor will conduct outreach to pavement sealant manufacturers, soliciting products for certification. • Task 4.2: Contractor will test pavement sealant products using the standard developed previously. • Task 4.3: Contractor will maintain a public list of certified products. **Task 5**: Contractor and review committee to develop strategy for maintaining program beyond scope of this funding. **Timeline: September 2019-April 2020:** • Task 5.1: Contractor will research pavement sealant markets and determine appropriate cost for per-product certification (to be paid by the sealant manufacturers) to allow for ongoing maintenance of program beyond end of funding. • Task 5.2: Routine retesting of certified products will be required at the cost of the manufacturer in order to remain on certified list (frequency of retesting to be determined by contractor and review committee). • Task 5.3: Contractor will ensure public list of certified sealant products is routinely reviewed for accuracy. • Task 5.4: Contractor will provide a plan for approval by the Technical Lead for continued ability to execute testing protocol and lab SOP that was developed with this funding using adequately trained staff and functioning equipment to conduct the work. • Task 5.5: Contractor will develop and provide plan for continuing to work with industry to recruit new businesses and products for certification as they come on the market, and engage previously untested or uncertified products and manufacturers.
Stakeholder Participants	1. Toxic Contaminant Workgroup staffers and coordinators 2. District of Columbia Department of Energy and Environment 3. Chesapeake Bay environmental regulatory agencies, including Montgomery County, Maryland's Department of Environmental Protection, and Prince George's County, Maryland's Department of Environment 4. Huron River Watershed Council and other environmental stakeholders 5. PAH and sealant technical experts 6. Sealant producers and manufacturers *Contacts for all stakeholders will be provided by GIT lead at the start of project.

Deliverables	1. A procedure for certifying pavement sealants to Gold (≤0.1% PAH) and Silver (>0.1%-≤1% PAH) standards, or appropriate equivalent as determined by review committee. 2. A laboratory SOP for testing sealant samples. 3. A QAPP, to be reviewed and approved by EPA. 4. Outreach to sealant manufacturers about the certification program and routine recruitment. 5. An initial round of testing and certifying of sealant products. 6. A public list of sealant products meeting proposed Gold and Silver standards. 7. A final report summarizing development and administration of the certification program, including a detailed plan for ongoing maintenance.
QAPP Requirement	Contractor is required to complete a QAPP under this scope of work.
Qualifications of Offeror	Qualification 1: Contractor must have experience in developing environmental certifications and protocols and must have a nationally recognized seal/logo/certification system Qualification 2: Administering and maintaining environmental certification programs must be a key responsibility of the contractor's business or organization. Qualification 3: Contractor must have experience coordinating a wide range of stakeholders (regulators, technical experts, industry professionals, etc.) in the context of developing protocols and certification programs. Qualification 4: Contractor must have the ability to test and process PAH sealant samples according to EPA method 8270C, or provide proof of a subcontractor capable of sample processing. If a subcontractor is used, contractor must provide documentation showing subcontractor has agreed to participate in this certification program. Qualification 5: Contractor must have experience engaging industry and business stakeholders to promote certification participation.

Scope of Work 8: Pilot a cost effective, real-time dissolved oxygen vertical monitoring system for characterizing mainstem Chesapeake Bay hypoxia (Maximum Bid: $80,000)

Goal Implementation Team (GIT)	Scientific, Technical Assessment and Reporting Team (STAR) in cooperation with the Sustainable Fisheries GIT
Purpose and Outcomes	The Chesapeake Bay experiences low oxygen or hypoxic zones each summer. These areas of low oxygen have adverse impacts on fish, shellfish and benthos. The outcomes of this pilot work will demonstrate the viability of using cost-effective technology to provide reliable data of water column structure and chemistry. Key outputs will include: 1) lessons learned regarding a reliable infrastructure that sustains the deployment; 2) reliable/dependable infrastructure assessment of the gear deployed; 3) successes and challenges of the piloted equipment in collecting, storing, and providing reliable data in the summer season in the mainstem Chesapeake Bay; and 4) details of protocols that can be adopted and invested in for deployment of vertical profiling infrastructure. Completion of these outcomes is critical steps to improved monitoring and ultimately estimates of hypoxic volume and hypoxia forecasts for the Chesapeake Bay.
Maximum Bid Amount	$80,000

Project Steps and Timeline	Task 1: (Timeline: 1st month, March -April 2019) An initial meeting between contractor and project leads to: a) go over the winning proposal to align timelines and ensure mutual understanding regarding deliverable expectations; b) review current hypoxia monitoring efforts; and c) agree on one or more potential locations for the pilot study. A minimum of two locations for long-term monitoring of bay hypoxia are recommended by Beaver et al. (2018) "Estimating Hypoxic Volume in the Chesapeake Bay Using Two Continuously Sampled Oxygen Profiles." However, one test site location with at least two vertical data points will be sufficient if the contractor can produce a proof of concept for the system design. Task 2: (April- May 2019) Establish the details of the scope of work. Develop the written monitoring design, an operation protocol. Include data collection/management/delivery with a Quality Assurance Project Plan (QAPP) for the vertical profile station(s) (selected in task 1). In addition, task 2 will include: a) Identifying sensor type; b) Identifying existing or new monitoring platform required; c) Finalizing sampling protocol; d) Final review of comments on operation and maintenance protocol (protocols will also be reported on in QAPP); and e) Convening project leads and contractor to review overall project design. Task 3: (May 2019 - June 2019) Acquire sensors and prepare for deployment. This task includes: a) Purchasing sensors; b) Building and/outfit pilot platform and profiler; c) Testing sensors, pilot platform, and profiler; and d) Deploying sensors, pilot platform, and profiler at one or more stations. Task 4: (June 2019 - September 2019) Implement, maintain and operate; pilot monitoring design and protocol. This task includes: a) Regular monitoring and maintenance of pilot sensors and platform(s) per protocol; b) Regular communication of performance by contractor with project leads; c) Establish sensor and platform removal date with project leads; and d) Biweekly or Monthly check-in calls for 30-60 minutes to discuss project performance and adapt programming as necessary to address any significant issues in achieving success of the effort. Task 5: (October 2019- December 2019) Assemble dataset, analyze results, provide project leads with a draft midpoint report by December 15, 2019 for review/comment to brief project leads and stakeholders on pilot deployment performance. This task includes: a) Holding at least one meeting with project leads and stakeholders to review pilot deployment results and performance b) Providing a presentation to the Chesapeake Bay Program's (CBP) STAR, Water Quality and Sustainable Fisheries GITs on draft performance, experience, and findings Task 6: (December 2019-March 2020) Complete and deliver final project report. This task includes: a) Meeting with project leads regarding review/comments to identify and agree

	on final report content; b) Drafting final report and deliver by March 1, 2020, with lessons learned about the equipment used in the study, the effort, the costs for infrastructure, its maintenance and data collection, management, and delivery. Including recommendations that address these areas of lessons learned applied to establishing a system of at least two vertical profiles for measuring vertical habitat conditions impacting living resources and involves the annual hypoxia cycle expressed in the deep waters of Chesapeake Bay; and c) Briefing report to project leads and other stakeholders identified by the project leads, including a final presentation to the CBP STAR.
Stakeholder Participants	• CBP STAR Team (with specific input from NOAA's Chesapeake Bay office, US Geological Survey, US Environmental Protection Agency, Maryland Department of Natural Resources, and University of Virginia); • Water Quality, Vital Habitats, and Sustainable Fisheries GITs • Experts involved in hypoxia monitoring, forecasts and research (for example NOAA National Centers for Coastal Ocean Science and regional academic institutions Virginia Institute of Marine Science, University of Maryland, Old Dominion University, and University of Delaware) *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	1. Identification of existing platforms of opportunity that can be sued at the selected locations (e.g., Chesapeake Bay Interpretive Buoy System). Platforms of opportunity could include existing platforms such as the Chesapeake Bay Interpretive Buoy System that can be leveraged as appropriate with a partner to support a long-term vertical profiler monitoring program into the future. 2. Identification of appropriate sensors taking into account the balance of operations and maintenance (O&M) time and costs with producing data of sound quality and integrity (e.g., sensor calibrations, their frequency, any swap out of instrumentation that might be necessary on a schedule shorter than the seasonal deployment, etc.). 3. Sensor deployment design, monitoring protocol (e.g., identify depth intervals of data collection, data collection frequency per profile (e.g., a good target is 15 minute to hourly data target for water quality standards attainment assessment)), O&M plan, and life cycle cost projections. 4. Documentation of the pilot deployment targeting a test period during spring that may provide insight on adjustments needed, then targeting a full summer season (June-September) deployment with data collection, management and delivery. 5. Presentations for CBP teams/workgroups (as agreed to in Task 1). 6. Mid-point report presented to project leads and identified stakeholders. 7. Final report including lessons learned and recommendations delivered to project leads identified stakeholders.
QAPP Requirement	Hourly water quality profiles for the full water column of at least dissolved oxygen, salinity, and temperature. The goal is for producing a full four month summer season (June-September) of data. Starting earlier in the year to test gear may be advisable. Sensor calibration results must be included. Data storage, retrieval, and delivery in an approved format are expected.
Qualifications of Offeror	• Offeror should provide one short paragraph summarizing their experience or familiarity with the stated subjects. If Offeror has no direct experience,

	provide a short paragraph summarizing transferrable experiences. The stated subjects are: o Demonstrated experience designing and maintaining oceanographic observing systems and sensors o Experience working in Chesapeake Bay and/or similar estuarine systems o Familiarity with current hypoxia monitoring and forecasting protocols and products in the Chesapeake and other regions

Scope of Work 9: Turf to Buffers Stewardship Campaign for Bay Counties (Maximum Bid: $75,000)

Goal Implementation Team (GIT)	Water Quality GIT-Forestry Workgroup
Purpose and Outcomes	Riparian forest buffers are ranked #2 in the list of important best management practices (BMPs) that are key to achievement of the Chesapeake Bay clean up goals. Non-agricultural buffers provide a myriad of social benefits (recreation opportunities, real estate values, etc.) and these buffers can be accomplished by communities and volunteers with modest amounts of training, skill, and funding. For all these reasons, many local governments want to increase their buffers and tree canopy which they recognize will also help them meet their Chesapeake Bay Agreement Total Maximum Daily Load (TMDL) goals. For more about TMDL goals, please see this website: https://www.epa.gov/chesapeake-bay-tmdl. This project builds buffer and canopy restoration capacity by working with successful existing programs such as Virginia's Master Naturalist and Tree Steward Programs, which are established partnerships between Virginia Department of Forestry, Virginia Tech University Cooperative Extension, and the Virginia Urban Forestry Council designed to train citizen volunteers to lead environmental projects and education in their communities. The target area for this study is the quickly developing region of Virginia called the Bay Counties. The goal of this project is to develop a Turf to Buffers Citizen Stewardship Training program that can be used by communities and local governments across the watershed to recruit, train, and deploy volunteers effectively in this endeavor. The outcomes of this work are as follows: 1. Increased capacity of local governments to recruit, train, and deploy tree stewardship programs. 2. Increased buffers and urban tree canopy throughout the Chesapeake Bay watershed. 3. Increased capacity of local governments to meet watershed implementation plan and TMDL goals.
Maximum Bid Amount	$75,000
Project Steps and Timeline	Task 1: Development of a Turf to Buffers Citizen Steward Training Manual (Timeline: April 2019-August 2019) 1.1. The training manual should include training in both technical elements of buffer planting/maintenance, as well as social/marketing aspects of landowner outreach and engagement, e.g., the importance/benefits of healthy tree canopy, how to engage community/landowner in tree planting projects, how to identify proper tree planting locations, how to monitor and care for new and existing urban trees, and any other relevant information as the contractor deems suitable and necessary.

1.2. The target audience for the training manual is adult citizens without any technical knowledge of tree planting or care background. Therefore, the contractor should frame the training manual language and topics accordingly.
1.3. Manual should be developed in conjunction with Virginia Dept of Forestry (DOF) and Virginia Cooperative Extension.
1.4. In addition to resources already known/recommended by the contractor, Virginia Dept of Transportation tree planting protocols and resources from chesapeakeforestbuffers.net and chesapeaketrees.net should also be used.
1.5. The contractor should expect to meet, discuss, and review the work under this task with the GIT lead and/or other identified stakeholders and receive feedback at regular intervals (monthly or 3 times, whichever is greater) during the development of the Manual.

Task 2: Recruitment and Training of Citizen Stewards for inaugural class of Turf to Buffers Stewardship Campaign (Timeline: April 2019-August 2019)

2.1. With the help of DOF, the contractor will develop relationships with the following VA groups in order to facilitate recruitment:
   a. Master Naturalists
   b. Tree Stewards
   c. Virginia counties with greatest opportunity for tree planting (these can be proposed but may be refined during the first weeks of the contract).
   d. Others as identified during Task 1.5.
2.2. The objective will be to identify upwards of 50 possible Citizen Stewards across two counties interested in being trained.
2.3. In the end, the inaugural class will have at least 20 trained Citizen Stewards.

Task 3: Implement Turf to Buffers demonstration projects Fall 2019 and Spring 2020

3.1. Individual demonstration project(s) will be led by each trained Citizen Steward with appropriate assistance by contractor and DOF.
3.2. The goal is to have at least 10 of the 20 Stewards lead and complete one demonstration project.
3.3. Stewards will be responsible for landowner outreach/negotiation, project planning and design, implementation and initial post-planting care.
3.4. DOF will provide resources to cover the cost of trees and materials needed for planting and post-planting to support this effort
3.5. This is a cost-share project so the landowner will be expected to pay 25% of the project cost, which could be paid with funds or with volunteer hours.

Task 4. Refinement of Turf to Buffers Citizen Steward Training Manual (Timeline: December 2019-February 2020)

4.1. Based on the outcomes of the pilot program, the contractor should refine the Turf to Buffers Citizen Steward Training Manual to incorporate any lessons learned, resource additions, etc. to ensure the final deliverables reflect a usable and effective training program.
4.2. This refinement period will take place between the end of the pilot program and before the final draft review meeting. Therefore, the contractor does not need to account for any additional meetings under this task.

Task 5: Development of a Transferability Package (Timeline: December 2019-February 2020)

5.1. The transferability package should outline the steps and resources necessary for a local government agency to recruit, train, and deploy an Urban Tree Canopy Stewardship program in their urban areas using the Turf to Buffers Citizen Steward Training Manual developed in under this contract.
5.2. The contractor should be prepared to meet, discuss, and review the work under this task with the GIT lead and/or other identified stakeholders once towards the end of

	the project at the same time as the final draft of the training manual and recruitment strategy are being reviewed. Therefore, the contractor does not need to account for any additional meetings under this task. Task 6: Submission of a Final Report (Timeline: June 2020) 6.1. The contractor shall submit a final report that that summarizes the development and refinement of the project deliverables and provides suggestions/directions/lessons learned for future iterations of urban tree canopy stewardship programs. 6.2. The contractor does not need to account for any additional meetings under this task. Note: The contractor is responsible for initiating, organizing, and scheduling all required meetings with the GIT lead and/or other identified stakeholders.
Stakeholder Participants	1. Forestry Workgroup staffers and coordinators 2. DOF Staff *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	1. A Turf to Buffers Citizen Steward Training Manual for the Bay watershed. 2. Graduating an inaugural class of at least 20 Citizen Stewards in Bay counties of Virginia. 3. At least 10 completed Turf to Buffer projects based on the Training and Manual. 4. A Transferability Package that will outline how local governments across the Bay watershed can recruit, train, and deploy Turf to Buffer Citizen Steward Trainings. 5. A final report that summarizes the development and refinement of the project deliverables as well as provides suggestions/direction/lessons learned for future iterations of tree stewardship programs.
QAPP Requirement	No QAPP will be needed under this scope of work.
Qualifications of Offeror	Qualification 1: Offeror should demonstrate expertise in the area of training manual development. Offeror should provide three examples of training manuals with an environmental focus that have been developed by Offeror in past seven years. Qualification 2: Offeror should demonstrate expertise in the area of training program deployment including participant recruitment and training delivery. Offeror should provide two examples of training program deployment in the past seven years. It is preferable that examples have an environmental focus. Qualification 3: Offeror should demonstrate expertise in creating transferability packages that aid other organizations in the deployment of training programs that the Offeror creates. Offeror should provide two examples of transferability packages that have been developed over the past ten years. It is preferable that examples have an environmental focus.

Scope of Work 10: Chesapeake Watershed Conservation Finance Intensive Workshop (Maximum Bid: $20,500)

Goal Implementation Team (GIT)	Maintain Healthy Watersheds Goal Implementation Team (GIT 4); Stewardship GIT (Land Conservation Goal) (GIT 5)
Purpose and Outcomes	Land conservation delivers enormous benefits to people and communities, including cleaner drinking water, reduced air pollution, habitat for fish and wildlife, scenic and historic resources, recreational opportunities, resilience to drought and flood, reliable food and fiber, and much more. The 2014 Chesapeake Bay Watershed Agreement set forth an ambitious goal for new land protection, in part to protect many of these public benefits and values, including cleaner and healthier water (https://www.epa.gov/sites/production/files/2016-01/documents/attachment1chesapeakebaywatershedagreement.pdf). Meeting this goal requires increasingly strategic, focused, and ambitious land conservation projects for which

	land conservation practitioners *must successfully access existing, new, innovative, and more complex sources of land protection and watershed restoration funding* from both public and private sources. Established national-scale conservation finance training courses have helped increase the ability of land and resource conservation professionals nationwide to access existing and new funding sources, to package, leverage, and match funding and financing resources, and to apply innovative financing strategies to their work. In the Chesapeake, some of these innovative strategies are already being deployed but need to be disseminated as models, scaled up, and replicated by others. The intensive training outlined in this Scope of Work is envisioned as a Chesapeake-specific workshop based on these previously successful national models—but focused on those financing strategies most relevant and promising for the Chesapeake watershed's unique circumstances. The goal of this multi-day course is to *increase the knowledge, skills, and ability of land conservation practitioners to tap existing, new and more complex sources of public funding and private capital* to accelerate strategic land conservation efforts and undertake more ambitious projects that provide even greater public benefit. This workshop will offer in-depth information about innovative, sophisticated land conservation and watershed restoration funding sources and finance mechanisms in both the public and private spheres. Participants—practitioners of land conservation in both nonprofit land trusts and local, state, and national agencies—will *learn about and begin to plan for implementation of the most relevant existing and new funding/financing strategies* for their land conservation efforts overall and to meet specific project challenges. The outcomes of this work are as follows: 1. Increased knowledge, skills, and ability of land conservation practitioners in the Chesapeake watershed to access existing, new, and innovative sources of public and private funding to support land conservation and watershed restoration on conserved lands. 2. A peer network of workshop participants who can share future resources, ideas, and mentor and support one another in the application of new knowledge gained through the workshop. 3. Increased rate and strategic focus of land conservation to accelerate progress towards the: • Chesapeake Conservation Partnership (http://www.chesapeakeconservation.org/index.php/our-work/goals-progress/) and • Chesapeake Bay Watershed Agreement goals (https://www.chesapeakeprogress.com/conserved-lands/protected-lands). Note: The Chesapeake Bay Program Partnership has identified two approaches (among others) in its Management Strategy to achieve the Protected Lands goals in the Bay Agreement that are: 1) increasing funding, incentives, and mechanisms for protecting conservation priorities and 2) increasing the capacity and effectiveness of land trusts. This workshop will also support both of these approaches (https://www.chesapeakebay.net/documents/22065/5_protected_lands_public_3-13-15.pdf).
Maximum Bid Amount	$20,500, including consultant time, faculty participation costs (if applicable), travel, and materials. It is anticipated that matching grants in the amount of up to $15,000 will also be secured to cover costs of training venue, food, and other logistics, in addition to in-kind outreach/implementation services provided by the project advisory group. (Workshop participants will cover their own lodging and travel.)

Project Steps and Timeline	Task 1: Develop Training Workshop Curriculum, Faculty Member Identification/Recruitment, and Materials (Timeline: March 2019-June 2019) 1.4. The workshop curriculum should include presentations/instruction on conservation finance, including a "101" introduction, and those existing and new funding sources beyond traditional private grants, donations, events, etc. that are most relevant and viable for the Chesapeake watershed context, including: a. Compliance/mitigation funding, e.g., wetlands and species mitigation b. Ecosystem services markets, e.g., water quality/nutrient credit trading, and carbon storage c. Public-driven, dedicated funding mechanisms, e.g., water funds, usage fees, land conservation ballot initiatives, clean water revolving loan funds d. Pay-for-success models, e.g., environmental impact bonds, etc. 1.5. The target audience for the workshop is professional land conservation practitioners (i.e., non-profit land trust easement/acquisition staff, and local, state and federal easement/land conservation program staff) who are regularly accessing traditional sources of funding, but not yet substantially using more complex or innovative funding sources. It is expected that most of the land trusts engaged will have one or more full-time staff and a strategic conservation plan that identifies and prioritizes conservation values that would align with funding sources outlined above in 1.1. The contractor should plan the course syllabus and materials to be appropriate to this audience. 1.6. Contractor will work with project advisory group to identify and recruit faculty members with expertise in the topics outlined above and, where possible, case studies/examples of relevant projects from within the Chesapeake watershed. Contractor will be responsible for ongoing faculty communications and preparation for the workshop, as well as covering travel costs and honoraria for faculty, if needed/applicable. Faculty course lodging and workshop meals will be covered by matching grants/other funding external to this contract. 1.7. Project advisory group will assist in faculty participant and case study identification and provide periodic input as needed. Advisory group will include at least the individuals listed below in "Reviewers List," and may expand to include 1-2 additional individuals based on needs and skills of selected contractor. 1.8. Workshop materials to be developed by the contractor include: a. detailed syllabus with learning objectives identified for each section; b. background materials to be used as pre-reading for workshop participants; while no original materials are required to be developed, contractor will assemble and curate articles, websites, references, and other resources—either suggested by faculty or identified by contractor and presented to/approved by advisory group—that address workshop topics. These materials should be selected, assembled, and provided electronically to participants *no later than* one month in advance of the workshop. Note: It is anticipated that the advisory group will also have developed a catalogue of existing funding sources by the time of the workshop to be used as a reference. c. evaluation of the workshop that will assess participant satisfaction and increased confidence, and identify potential future information and training needs. Task 2: Assist in Promoting Workshop, and Managing Applications (Timeline: May-August 2019)

2.1. Contractor will develop course introductory outreach materials for circulation.
2.2. Advisory group will, with participation of contractor, identify potential participants to target for outreach, including both standard electronic course outreach and high-touch, personal outreach (to be conducted by advisory group members). Contractor will maintain central list of contacts for potential and registered participants.
2.3. Contractor may be asked to provide advice on electronic application mechanism and format to easily access participant information and facilitate communications with registrants. Advisory group members (or their home organizations) will have the lead for managing the application/registration process.
2.4. Together, contractor and advisory group will develop and disseminate an application form that interested parties will be required to complete to participate. This application will provide brief information about applicants' interest in the workshop, their experience in working with course-relevant funding/financing sources, and, if applicable, brief background information about a current project that would be facilitated or assisted by the workshop's content.
2.5. If there is greater interest in attending than there are available spots, applicants will be selected by the advisory group based on strength of their application (including applicability of the course content to their described work and readiness to deploy new knowledge on near-term projects), geographic representation in the watershed, and organizational profile, and role (seeking mix of nonprofit and agency practitioners)

Task 3: Deliver Workshop (Timeline: August 2019)
2.4. Contractor will directly manage and support faculty and curriculum flow on site at the workshop, and be briefed on and available as backup to troubleshoot logistics and other on-site concerns if needed.
2.5. Advisory group, in consultation with contractor and stakeholder participants, will identify, secure, and coordinate suitable training venue and additional logistics (e.g., meals, audio-visual needs).
2.6. The goal of the workshop will be to train up to 40 participants, from the target audiences identified in 1.2.
2.7. The workshop will take place over at least two and no more than three days, including evening instruction or discussion, with opportunity for participants to lodge overnight at or near the training venue.
2.8. Participants will cover their own travel and lodging costs; instructional costs will be covered under this contract; and venue and workshop logistics (e.g., AV, participant materials, etc.) costs will be covered with other grants.

Task 4: Post-Workshop: Evaluate workshop, conduct workshop follow-up, provide brief summary report, help establish peer network mechanism and hand off to more permanent moderator (Timeline: August 2019-October 2019)
4.1. Immediately after workshop—while participants are still on-site—contractor will solicit evaluations of the workshop's content, utility in meeting participants' needs, qualitative feedback on progress towards meeting Outcome #1 above, and whether participants identify additional interests and needs for future training. Contractor will summarize evaluation feedback and recommendations in a brief report, including recommending how stakeholder participants could evaluate longer-term outcomes 6-9 months post-training.
4.2. Contractor will provide email template for post-course follow-up, including additional materials whether provided by faculty or advisory group or identified during course discussions.
4.3 Contractor will recommend and develop initial mechanism (e.g., email, listserv, webpage) to establish ongoing peer network communications among workshop participants, to be handed off to one of the stakeholder participants to maintain and further develop.

	Task 5: Submission of a Final Report (Timeline: November 2019) 5.1.Contract will prepare a final report on the project for submission to the Chesapeake Bay Trust, the project advisory group and stakeholder participants that provided in #1 through #4 (below). Note: Consultant will meet regularly by phone with advisory group, GIT leads, and other identified stakeholders to review progress, draft work products, and report on and assign action items.
Stakeholder Participants	1. Maintain Healthy Watersheds GIT 2. Stewardship GIT (Land Conservation Goal Leadership) 3. State Land Trust Associations in the three major Bay watershed states: • Virginia's United Land Trusts • Maryland Environmental Trust • Pennsylvania Land Trust Association 4. Relevant government agency land conservation staff in three major Bay watershed states *Note: Stakeholders under #3 and #4 above, will be engaged and updated as needed by members of the advisory group who have existing partnerships with these stakeholders. *Contacts for all stakeholders will be provided by GIT lead at the start of project.
Deliverables	1. A package of curated materials for participant pre-course, background reading 2. Detailed course syllabus with learning objectives/outcomes specified 3. Faculty contact list, with bios 4. A 2-day or 3-day in-person training workshop on conservation finance, including accessing existing/new/innovative public and private funding resources, with a focus on ecosystem services markets (e.g., mitigation, water quality trading, carbon, etc.) and strategies with a private investment component (e.g., public-private partnerships, pay-for-success models, etc.) 5. Participant evaluations of the workshop that assess gains in knowledge, skills, and/or ability to access existing/new/different sources of funding 6. An initial peer network communication mechanism, and introductory content, to be handed over to a future moderator (TBD from stakeholder participants). Note: Project advisory group will also develop an inventory of existing funding/financing programs to be used as a resource in the workshop and by other stakeholders.
QAPP Requirement	No QAPP will be needed under this scope of work.
Qualifications of Offeror	Qualification 1: Offeror should demonstrate expertise in developing curriculum for experienced adult professionals, preparing and coordinating faculty, and curating and assembling background materials that are topically relevant and helpful to participants. Offeror should provide two examples (agendas, syllabi, or course descriptions) of a substantive, multi-day training workshop or other event with a substantial learning component that s/he has organized and delivered. Qualification 2: Offeror should demonstrate either working knowledge of or expertise in conservation finance tools and innovative funding approaches for land conservation and/or watershed restoration, especially with regard to market- and mitigation-based methods. Offeror should provide a description of this knowledge/expertise (up to 250 words; plus relevant attachments, if applicable) Qualification 3: Offeror should demonstrate experience in creating professional peer network communications processes or tools. Offeror should provide at least one example of peer network communications support mechanisms or processes that have been developed over the past ten years. It is preferable that examples have an environmental focus.

Scope of Work 11: Quantify and support Best Management Practice (BMP) installation and restoration at schools to contribute directly to Bay restoration goals (Maximum Bid: $69,900)

Goal Implementation Team (GIT)	Stewardship Goal Implementation Team (GIT)
Purpose and Outcomes	Development of a queryable data set to identify potential best management practice (BMP) opportunities on school grounds. Increase BMP installation at schools with an emphasis on student participation in planning and implementing when possible Measurable reduction in existing Chesapeake Bay Program (CBP) indicators/metrics because of BMP installation on school grounds Increase in school district sustainability plans that reference CBP indicators/metrics Increase in number of schools contributing to local Watershed Implementation Plans (WIPs) and restoration goals Increase students' and teachers' knowledge of environmental impacts to their local watersheds
Maximum Bid Amount	$69,600
Project Steps and Timeline	Meet with Task Lead, Education Workgroup chairs, and project team to discuss project design (January 2019) Meet with Status and Trends Workgroup and project team to introduce project and establish a procedure for engaging with representatives from the various CBP Workgroups (January 2019) Interview Workgroup representatives (8-12) throughout the CBP to better understand existing school programs and efforts, indicators and metrics that could be influenced by schools, and other related information within each workgroup under the GIT teams (for example: advance Forestry Workgroup's Urban Tree Canopy expansion goals by planting "urban trees" and "urban forests" on school grounds (Water Quality GIT-3) and create inventory of this information (February/March 2019) Interview 10-15 school and school district representatives that are currently using school buildings and grounds to meet local water quality and quantity goals (e.g Prince George's County and Newport News) to better understand best practices, challenges, and municipal allies to determine how they are tracking restoration and contributing to local water quality goals. (April/May 2019) Interview representatives and review data from 5-7 existing sustainable schools recognition programs (Green Ribbon, Leadership in Energy and Environmental Design (LEED), EcoSchools, Maryland Association for Environmental and

	Outdoor Education (MAEOE) Green Schools, VA Naturally) to better understand if/ how they are tracking related restoration/BMP data (April/May 2019) Interview a representative sample of school districts (10-15) not currently implementing broad BMP efforts to identify barriers, needs, and challenges for implementing projects (April/May 2019) Develop a findings report that details important data, existing gaps, and future opportunities to be used by GIT chairs and coordinators (including Education Workgroup) to inform their work with schools (June 2019) Present findings and recommendations to the Education Workgroup leadership team (early July 2019) Present findings and recommendations at the mid-year Education Workgroup meeting to discuss the development of an ArcGIS (Geographic Information System) online tool to help identify future school BMPs (July 2019) Collect existing data sets and create ArcGIS online tool to display existing school, demographic, environmental, and land use data (for example building square footage, acreage, impervious surface, forest cover, linear feet of streams, Title 1 status) and other relevant information resulting from the interviews and inventory with workgroup representatives and Education Workgroup (August 2019) Using the GIS analysis and inventory from workgroups, create a report that analyzes and makes recommendations for the types of BMP projects that will result in a prioritized list of the district/schools with the highest benefit to the CBP and specific school districts where this work is recommended (September 2019) Produce guidance document for state and local resource managers on how BMPs at schools can be used by states to meet Total Maximum Daily Load requirements (September/October 2019) Work with relevant GIT representatives and Education Workgroup members to develop guidelines for school district personnel on how to include BMPs in school district sustainability plans, including a discussion of barriers to BMP installation (October/November 2019)
Stakeholder Participants	• Stewardship GIT Leadership • U.S. Department of Education Green Ribbon Schools • Leadership in Energy and Environmental Design (LEED) • EcoSchools • Maryland Association for Environmental and Outdoor Education (MAEOE) Green Schools • Virginia Naturally • School Personnel Representatives from 10-15 schools/school districts *Contacts for all stakeholders will be provided by GIT lead at the start of project.

Deliverables	Summaries of stakeholder interviews, including school districts, sustainable schools certification programs, and workgroups Report that details important findings from stakeholder interviews and analysis of the data to include in future tools ArcGIS online tool that displays existing school, demographic, environmental, and land use data Report that analyzes and makes recommendations for the types of BMP projects that will result in the highest benefit to the CBP, the potential restoration opportunities on school grounds for each BMP (by state and school district), and, specific school districts where this work is recommended Guidelines for state and local resource managers (i.e. county planners, MS4 permit holders, etc.) on how BMPs at schools can be used by states to meet Total Maximum Daily Load requirements Guidelines for school district personnel on how to include BMPs in school district sustainability plans, including a discussion of barriers to BMP installation
QAPP Requirement	No QAPP will be needed under this scope of work.

Scope of Work 12: Scenic Landscape Impact Assessment Methodology (Maximum Bid: $75,000)

Goal Implementation Team (GIT)	GIT 5 Stewardship
Purpose and Outcomes	This project will **pilot development and application of a standard methodology for assessing and quantifying visual impacts to scenic landscapes that ultimately can be broadly applied by Chesapeake jurisdictions and conservation organizations**. The project will focus on a methodology for *landscape level impact assessment* rather than on traditional visual impact assessment (VIA) based solely on analysis of a limited selection of subjective key observation points (KOPs). Recent research conducted in evaluating the Northern Pass project in New Hampshire tested a Landscape Assessment Model (LAM) alongside a more traditional VIA and found promising results. The study developed a LAM that uses a range of Geographic Information System (GIS) data for visibility analysis, extending the capacity and comprehensiveness of VIAs for addressing landscape level impacts. This project will evaluate that model, related studies, other relevant landscape character assessment models developed primarily in Europe, and recent landscape impact assessment models for other values such as Virginia's recent forest fragmentation model. The project will then develop and test a methodology for quantifying scenic landscape impacts for broad application in the Chesapeake watershed. Once developed, the Chesapeake Conservation Partnership will work with members to facilitate training and adoption of its use. Broad adoption of a consistent and efficient methodology for scenic landscape impact assessment will support the following outcomes: • Higher valuation of scenic resources in project planning and assessment; • Greater protection of scenic landscapes through better avoidance of resource

	impacts, and as a result reduced public controversy; • Better mitigation of impacts when they occur (current conditions and better conditions to be defined at project start); • Additional land protection as the result of mitigation; • Added conservation of other landscape values—water quality, habitat protection, healthy watersheds, public access, etc.—as scenic landscapes almost always overlap with multiple ecological resource values.
Maximum Bid Amount	$75,000
Project Steps and Timeline	**Task 1:** Recurring consultations with advisory group of scenic resource experts and key partners at all key milestones in project. (Timeline: Throughout duration of project) 1.1 The Chesapeake Conservation Partnership, through the technical project leads, will assemble the advisory group prior to contract execution. The purpose of the group will be to provide expert advice and optimize partner engagement in methodology development and ultimately adoption. The Partnership will assist in convening the advisory group at all key milestones during the project. 1.2 The contractor will prepare agendas and any necessary presentation materials for briefing and engaging the advisory group at each key project milestone, as specified in this task list. Advisory group work-sessions may occur through web-meetings, though at least one in person meeting should be planned. 1.3 The contractor will participate in a project start-up work-session with the advisory group in the first month of the project. (Month 1 after contract execution.) **Task 2:** Literature review and assessment of landscape assessment methodologies. (Timeline: Month 1 after contract execution through Month 3) 2.1 The contractor will research and review methodologies relevant to scenic landscape impact assessment, including but not limited to: recent research conducted in evaluating the Northern Pass project in New Hampshire through a landscape assessment approach; relevant landscape character assessment models developed primarily in Europe; recent landscape impact assessment models for other values such as Virginia's recent forest fragmentation model; and any other relevant approaches. See, among others, the following sources: a. https://www.sciencedirect.com/science/article/pii/S0169204601001414 b. https://www.sciencedirect.com/science/article/pii/0169204694900671 c. https://www.sciencedirect.com/science/article/pii/S1470160X11002615 d. https://www.sciencedirect.com/science/article/pii/S1470160X08001581 e. https://www.sciencedirect.com/science/article/pii/S1470160X13001398 f. Weber, Joseph, 2018. "Assessing Impacts of Large Development Projects on Core Forest." Virginia Department of Conservation and Recreation. PowerPoint presentation at 2018 Environment Virginia Conference. g. Palmer (in preparation). "The contribution of a GIS-based landscape assessment model to a scientifically rigorous approach to visual impact assessment." During the project start-up meeting (1.3 above), the contractor and the advisory group should discuss additional leads for models to include in the literature review. The contractor will prepare a summary of relevant models, with overall findings and proposed conceptual options/approaches for a standard methodology for quantifying scenic landscape impacts.

	2.2 The contractor will provide and present the literature review and findings to the project advisory group for discussion, feedback, additional guidance, and input into task 3 below. **Task 3:** Principles and objectives. (Timeline: Month 4 after contract execution) 3.1 Based on the results of task 2, the contractor will develop a draft set of principles and objectives to guide methodology development/adaptation. These should set out clear parameters for guiding subsequent project tasks. 3.2 The contractor will provide and present the draft principles and objectives to the project advisory group for discussion, feedback, and additional guidance. **Task 4:** Development or refinement/adaptation of methodology. (Timeline: Month 5 after contract execution through Month 10) 4.1 Based on the results of tasks 2 and 3, the contractor will develop a proposed scenic landscape impact assessment methodology or a refined or adapted version of an existing methodology. The contractor will apply the methodology to one or more real world case studies for testing. The Chesapeake Conservation Partnership, through the project technical leads, will facilitate access to existing geo-spatial data that may be useful in testing (e.g., high resolution land cover data, existing protected lands, etc.). 4.2 The contractor will provide and present the methodology, case study(ies), and testing results to the project advisory group for discussion, feedback, and additional guidance. 4.3 The contractor will revise and refine the methodology based on the discussion in task **Task 5:** Training. (Timeline: Month 11 through month 14) 5.1 The contractor will develop materials for supporting training of practitioners in use of the methodology. Materials should include: presentation(s), "how to" guide, procedural steps, case example(s), etc. 5.2 The contractor will provide and present the training materials to the project advisory group for discussion, feedback, and additional guidance 5.3 The contractor will deliver at least three training sessions for practitioners. The Chesapeake Conservation Partnership, through the project technical leads, will facilitate scheduling, attendance and facilities for the sessions. These are initially envisioned as in person sessions, one in south central Pennsylvania, one in northern or central Virginia and one in Maryland. **Task 6:** Publication(s). (Month 12 through month 15) 6.1 The contractor will develop a paper for publication in a professional journal detailing the scenic landscape impact assessment methodology. 6.2 The contractor shall submit a final report that summarizes the development and refinement of the project deliverables.
Stakeholder Participants	• Stewardship GIT Workgroup staffers and coordinators *Contacts for all stakeholders will be provided by GIT lead at the start of project.

Deliverables	1. A **literature review** with summary of relevant models, with overall findings and proposed conceptual options/approaches for a standard methodology for quantifying scenic landscape impacts. 2. A draft set of **principles and objectives** to guide methodology development/adaptation. 3. A proposed **scenic landscape impact assessment methodology** or a refined or adapted version of an existing methodology, with one or more case study tests. 4. **Training materials** supporting training of practitioners in use of the methodology. Materials should include: presentation(s), "how to" guide, procedural steps, case example(s), etc. 5. **Three training sessions** for practitioners. 6. A draft **paper for publication** in a professional journal detailing the scenic landscape impact assessment methodology (paper does not have to be published by contract end). 7. A **final report** that summarizes the development and refinement of the project deliverables.
QAPP Requirement	No QAPP will be needed under this scope of work.
Qualifications of Offeror	Qualification 1: Offeror should demonstrate expertise in the area of scenic landscape impact assessment, with experience in using geo-spatial data to identify and quantify landscape change assessment. Offeror should provide three examples of scenic landscape impact assessment by Offeror in past five years. Qualification 2: Offeror should demonstrate expertise in the area of sound methodology design development. Offeror should provide three examples of landscape assessment methodology development and/or refinement by Offeror in past seven years. It is preferable that examples incorporate scenic values.

Scope of Work 13: Social Marketing to Improve Shoreline Management (Maximum Bid: $75,000)

Goal Implementation Team (GIT)	Climate Resiliency Workgroup/Communications Workgroup
Outcomes	To develop a community-based social marketing (CBSM) strategy that will encourage property owners to adopt environmentally-sensitive practices in relation to shorelines, based on identified behaviors and barriers of shoreline management in the Chesapeake Bay. There are more than 10,000 miles of tidal shoreline along the Chesapeake Bay, and an estimated 10 million people living along or near the Bay's shores. In Maryland, Virginia, and Delaware, state and local agencies are working to improve how these shorelines are managed. Because shoreline degradation has a direct and negative impact on water quality and because natural shoreline protection (where local infrastructure does not demand the installation of sea walls) provides more resilience against climate change than simply allowing for the inland migration of coastal vegetation and tidal wetlands, these states seek to increase the adoption of practices that slow shoreline erosion and reduce the incidence of practices that harm natural shorelines, such as the mowing of salt marsh grasses and the removal of submerged aquatic vegetation. Properly managing shorelines can provide significant benefits to the environment, to coastal landowners and to those living inland. According to the National

	Oceanic and Atmospheric Administration's Office for Coastal Management, for instance, areas behind coastal salt marshes suffer 20 percent fewer damages from extreme weather events than areas without salt marshes. According to the Nature Conservancy, coastal wetlands reduced property damage during Hurricane Sandy by more than $625 million.
Maximum Bid Amount	$75,000
Project Steps and Timeline	Task One: Kick-off meeting (March 2019) • The contractor will meet with a steering group of Chesapeake Bay Program staff and partners to gain an understanding of project goals and technical skills that may be required. This meeting will also outline the schedule of regular communication with the Action Team. Task Two: Review of existing materials (March 2019) • The contractor will review relevant work to familiarize themselves with this topic, including proceedings from regional living shoreline summits; "Living Shoreline Survey: Water Words that Work Waterfront Homeowner Survey" (Elizabeth River Project); "Social Marketing Strategy to Reduce Puget Sound Shoreline Armoring" (Prepared for the Washington Department of Fish and Wildlife and Washington State Department of Natural Resources); a Wetland Program Development Grant received by Maryland's Wetlands and Waterways Program to improve shoreline stabilization decision-making through an updated analysis of shoreline conditions; and other resources known to the contractor may. • The contractor will also review social marketing research and strategies conducted and coordinated by the Chesapeake Bay Program (e.g., Fish Consumption Advisory). Task Three: Identify/refine behavior objective (March – April 2019) • We anticipate working with a behavior objective of getting coastal landowners who are planning to address erosion problems on their land to choose living shoreline solutions over hardened shorelines. The contractor will work with us to determine whether this behavior objective makes sense given their research or whether a different behavior should be chosen. To do this the contractor will: o identify key sectors and their relative contribution to the outcome; o identify behaviors that contribute to the outcome within relevant sectors; and o assess and prioritize these behaviors key to the achievement of the outcome based on a quantitative analysis of their applicability, potential impact, existing levels of penetration, and probability of engagement. Task Four: Define and research target audience (March – May 2019)

- The contractor will work with the steering group to define a target audience whose behavior could significantly impact the regional adoption of environmentally-sensitive shoreline management techniques and develop research questions to learn more about this audience. Audiences to be considered include coastal landowners, shoreline community representatives, environmental advocacy organizations, marine contractors (as "middle messengers" to the aforementioned landowners), and regulators.
- The contractor will conduct audience research to understand the demographic, geographic and psychographic characteristics, perceptions, values and priorities of our target audience relative to the adoption of environmentally-sensitive shoreline management practices.

Task Five: Provide barrier and benefit research for the identified audience related to the chosen behavior and design a behavior change strategy to overcome any perceived barriers
(May – July 2019)

- The contractor will recommend a behavior objective for our target audience, quantify this objective with a specific, measurable, achievable, relevant and time bound goal, and craft an internal positioning statement to guide our work.
- The contractor will develop strategies for overcoming barriers, providing benefits and achieving the desired behavior change in our target audience. If cost is found to be an important barrier, the contractor will research the costs of shoreline management techniques, with the intent of comparing the costs of hardened shoreline management with the costs of living shoreline management. Strategies should include: (a) a Product, Price, Place and Promotion Plan, (b) a budget, and (c) an evaluation and implementation plan.

Task Six: Inventory/audit existing communications materials
(July - August 2019)

- The contractor will compile an inventory of existing communications materials—including print- and web-based products—that were created by the Chesapeake Bay Program and/or its partners to inform and/or engage our target audience about living versus hardened shorelines. If resources allow, this inventory can be expanded to include communications materials from outside of the Chesapeake Bay Program partnership relevant to our work.
- The contractor will conduct an audit of the aforementioned materials to identify their strengths and weaknesses and determine whether their substance aligns with research results. Where materials do not align with research results, the contractor will suggest improvements and/or alternatives. While this will not yield behavior change on its own, it will help us to make sure our existing communications support does not hinder the behavior change campaign.

Note: Selected contractor is expected to regularly check in with members of the

	action team to discuss progress as determined in Task 1.
Stakeholder Participants	1. Communications GIT Workgroup 4. Climate Resiliency GIT Workgroup
Deliverables	• Thorough minutes from kick-off meeting and any status check-in meetings. • Summary of background research conducted. • Defined target audience and report detailing audience research. • Defined behavior objective and strategy that outlines the following: 1) overcoming barriers (including cost, if found to be a factor); 2) defining benefits; and 3) achieving desired behavior change. • Internal positioning statement to guide work. • Complete inventory and written audit of existing communications materials. • Gap analysis to identify outcomes for which coastal landowners are considered a priority audience and no existing social marketing research exists. • Written plan for evaluation of social marketing strategy.
QAPP Requirement	No QAPP will be needed under this scope of work.
Qualifications of Offeror	Qualification 1: Offeror should demonstrate experience in the fields of social marketing and behavior change. Qualification 2: Offeror should demonstrate expertise with the development of communications and engagement strategies. Qualification 3: Offeror should demonstrate expertise with conducting audience research. Qualification 4: Offeror should demonstrate experience with climate-related issues and engagement with landowners/property owners.