

2015 Funding Opportunities for Supporting the Jurisdictions Development of Enhanced BMP Verification Programs

The Chesapeake Bay Program's *Chesapeake Bay Basinwide BMP Verification Framework* sets the path forward for the partnership, challenging our jurisdictional partners to enhance their existing BMP tracking, verification, and reporting programs. The *Basinwide Verification Framework* also calls for the commitment of resources needed to support enhanced and expanded BMP verification. There are currently four specific sets of financial and technical support resources available to jurisdictional partners to help support their ongoing efforts to enhance and document their BMP verification programs.

Chesapeake Bay Regulatory and Accountability Grants—EPA established the Chesapeake Bay Regulatory and Accountability Program (CBRAP) grants to provide the seven Chesapeake Bay watershed jurisdictions with the funds needed to establish, strengthen and expand their jurisdictions' regulatory, accountability, assessment, compliance, and enforcement capabilities in support of reducing nitrogen, phosphorus, and sediment loads delivered to Chesapeake Bay to meet the water quality goals of the *2014 Chesapeake Bay Watershed Agreement* and the 2010 Chesapeake Bay Total Maximum Daily Load (TMDL). These grants are awarded non-competitively. EPA is confident that the CBRAP grant program will continue for the foreseeable future. EPA has received funding for this grant program every year since 2010, and EPA does not have any reason to expect funding for the CBRAP grant program to discontinue. Within its *2014 Chesapeake Bay Program Grant and Cooperative Agreement Guidance* and the draft 2015 Grant Guidance recently distributed to partners for review and comment, the EPA took extra steps to clearly spell out that these CBRAP grants can be used to fund all aspects of the jurisdictions' BMP verification programs—from design and enhancement to documentation to ongoing implementation (Attachment A).

Chesapeake Bay Program Watershed Implementation Plan Assistance Funds—Since 2011, EPA has made funding available to the seven Chesapeake Bay watershed jurisdictions to initially develop their Phase I and then their Phase II Watershed Implementation Plans (WIPs). This funding then transitioned to WIP Assistance Funds to provide programmatic, technical, and resource support towards high priority needs that can be directly linked to implementation of the jurisdictions' Phase II WIPs, meeting their two-year milestones, and/or addressing related midpoint assessment needs under the Chesapeake Bay TMDL.

EPA plans to continue to provide WIP Assistance Funds annually, with each year's funding targeted towards specific WIP implementation priorities selected by EPA in collaboration with the jurisdictions, working through the partnership's Water Quality Goal Implementation Team. In 2015, at the request of the jurisdictions, these funds will be directed at providing support for jurisdictions' efforts to enhance existing and develop new BMP verification procedures and programs, document those procedures and programs, and clean up their historical BMP data. The final 2015 WIP Assistance Funds request for proposals is provided (Attachment B) along with example proposals (Attachments C and D). When awarded, WIP Assistance Funds can be: 1) added to a jurisdiction's existing 2015 CBRAP grant or Chesapeake Bay Implementation Grant (CBIG) funding award; 2) applied for use in the EPA Chesapeake Bay Program Office's Tetra Tech contract (see below); or 3) applied to another applicable existing EPA contract, cooperative agreement, or grant.

EPA Chesapeake Bay Program Office’s Virginia Tech Cooperative Agreement—In 2014, EPA awarded a six-year cooperative agreement with Virginia Tech with the express purpose of providing technical assistance to the Chesapeake Bay Program partners. This technical assistance can be directed towards:

- Developing or revising the technical basis for nitrogen, phosphorus, and sediment load reduction values or efficiencies for new or existing nutrient and sediment controls or other pollutant load reduction/prevention treatments or technologies within the Chesapeake Bay region;
- Development of expert-based recommendations for other modeling-related topics such as land use loading rates, watershed response to varying inputs, or scale effects; and
- Supporting verification of implemented practices, treatments, and technologies.

The Virginia Tech Cooperative Agreement establishes a process whereby jurisdictions can work with Virginia Tech to develop requests for proposals (RFPs) to solicit technical assistance from a provider that would work with each jurisdiction as they design the statistical approaches, or other suitable procedures and protocols, to aid with verification of implemented nutrient and sediment pollutant load reducing or preventing practices, treatments, and technologies. The Virginia Tech cooperative agreement relies on a team of representatives from land grant universities in the seven watershed jurisdictions—Cornell University, Penn State University, West Virginia University, University of Maryland, Virginia Tech, University of Delaware, and University of the District of Columbia to select feasible, technically-sound technical assistance proposals.

Funding for technical assistance provided through the Virginia Tech cooperative agreement will be distributed by Virginia Tech using existing EPA funds already awarded for that year to Virginia Tech’s via the cooperative agreement between Virginia Tech and the EPA. The applying jurisdiction will not have to provide funding from its CBRAP grant or awarded WIP assistance funds. An example request for technical assistance in the form of a specific request for proposals (RFP) is provided (Attachment E). All requests for technical assistance through the Virginia Tech cooperative agreement should be directed to Jeremy Hanson, Project Coordinator, Expert Panel BMP Assessment, Virginia Tech/Chesapeake Bay Program Office, at jchanson@vt.edu by **February 13, 2015**.

EPA Chesapeake Bay Program Office’s Tetra Tech Contract—EPA awarded a five-year Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support contract to Tetra Tech in 2013. As part of this contract, jurisdictions can request and receive technical support for the development, design, enhancement, and documentation of their BMP verification programs. A jurisdiction can ask the EPA to apply part of their CBRAP grant funds or awarded WIP assistance funds to the Tetra Tech contract to fund the jurisdiction’s requested technical support. All jurisdictions seeking technical support from this contract will be asked to draft up technical direction (see Attachment F for an example to follow). Once the jurisdiction’s technical direction is approved, they will receive their allocated hours of Tetra Tech contractor support and proceed to work directly with their assigned Tetra Tech team. Please provide your requests for Tetra Tech support, in the form of draft technical direction, to Lucinda Power, Chesapeake Bay Program Office, power.lucinda@epa.gov, by **February 13, 2015**.

ATTACHMENT A
BMP Verification Related Text Extracted from the
2015 Draft Chesapeake Bay Program Grant and
Cooperative Agreement Guidance

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3.) CWA Sections 117(e)(1)(A) – Chesapeake Bay Regulatory and Accountability Program Grants (CBRAP)

These grants help each of the six watershed states and the District of Columbia to:

- Develop/review regulations, design and implement WIPs and two-year milestones;
- Implement regulatory, tracking, reporting, verification, assessment, and/or monitoring commitments of the jurisdictions' WIPs and/or two-year milestones or in response to EPA's evaluation of these documents;

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In September 2014, the Chesapeake Bay Program partnership's Principals' Staff Committee approved and adopted the [Chesapeake Bay Basinwide BMP Verification Framework](#).¹ This framework commits the partners to a set of five BMP verification principles and comprehensive sets of BMP verification guidance. Based on the schedule agreed to by the CBP partnership, as embodied within the framework report, the expectation is clear that during 2015 all seven jurisdictions will develop, document, and submit for EPA review and approval, enhanced BMP tracking, verification, and reporting programs. These programs will need to be fully consistent with and supportive of the Chesapeake Bay Program partnership's adopted BMP verification principles. CBRAP grant funding can be used directly by the jurisdictions to support the development or enhancement of their BMP verification programs and their continued operation.

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"d. Improved Tracking, Reporting, Verification, and Accountability Consistent with WIPs and/or Two-Year Milestones for Water Quality

- Development and implementation of National Environmental Information Exchange Network (NEIEN) BMP data flows to report practices to the Chesapeake Bay Program;
- Improved verification of point and nonpoint sources of pollution and management actions (e.g., procedures for verifying that agricultural conservation practices – both cost-shared and non-cost shared – are properly designed, installed, and maintained) consistent with the November 4, 2009 and December 29, 2009 expectations letters, as well as the *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans* issued April 2, 2010, as amended or clarified by subsequent EPA or Chesapeake Bay Program partnership communications, including the CBP partnership's September 2014 Chesapeake Bay Basinwide BMP Verification Framework;
- Development and implementation of protocols and staff resources to report data that meet EPA expectations for tracking and verification into NEIEN, Scenario Builder, the Chesapeake Bay Watershed Model, ChesapeakeStat, and/or Chesapeake Bay Tracking and Accountability System (BayTAS), and are consistent with the November 4, 2009

¹ Chesapeake Bay Program, 2014. *Strengthening Verification of Best Management Practices Implemented in the Chesapeake Bay Watershed: A Basinwide Framework*. Annapolis, Maryland. Accessible at: [give web site URL]

and December 29, 2009 expectations letters, as well as the *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans* issued April 2, 2010, and subsequent EPA and Chesapeake Bay Program communications;

- Development and/or improvement of procedures for verifying practices that were designed, implemented, and maintained properly, including as specified in permit or contract conditions; and/or
- Reporting of available state data for the 12 outcome measures contained in the EO 13508 Strategy.”

ATTACHMENT B
2015 Watershed Implementation Plan Assistance Funding
Request for Proposals from the Seven Watershed Jurisdictions

BACKGROUND

Every year, EPA provides funds available to the seven Chesapeake Bay watershed jurisdictions to provide programmatic, technical, and resource support towards high priority needs that can be directly linked to implementation of the jurisdictions' Phase II Watershed Implementation Plans (WIPs), meeting their two-year milestones, and/or addressing related midpoint assessment needs under the Chesapeake Bay Total Maximum Daily Load (Bay TMDL). These Watershed Implementation Plan (WIP) Assistance funds are used to address common themes identified in EPA's evaluation of the jurisdictions' WIP implementation milestones that require enhancement and/or increased implementation.

2015 FUNDING PRIORITIES

Each year, EPA, working in collaboration with its seven Chesapeake Bay watershed jurisdictional partners through the partnership's Water Quality Goal Implementation Team, selects specific WIP implementation priorities on which to target the funding towards. In 2015, at the request of the jurisdictions, \$400,000 in WIP Assistance Funds will be directed at providing support for jurisdictions' efforts to enhance existing and develop new BMP verification procedures and programs, document those procedures and programs, and clean up their historical BMP data.

Recognizing that jurisdictions have programmatic and resource needs beyond those identified in this request for proposals, future WIP assistance funds will continue to be targeted towards an evolving set of priorities established through the partnership every year.

REQUEST FOR PROPOSALS

EPA is requesting a descriptive narrative, cost estimate, and schedule for one or both of the following activities so that funds may be provided to initiate this work (Attachment C is an example of the most simple proposal). EPA strongly recommends that you structure your proposal using the format and content of your intended funding vehicle—e.g., CBRAP grant work plan objective (Attachment D), Tetra Tech contract technical direction (Attachment F)—to save time in the process to award these funds. EPA also asks that you identify the key tasks and their associated cost estimates under each selected activity so that partial funding can be provided in the event that the proposed work cannot be fully funded. Priority will be given to proposals which not only benefit a single jurisdiction, but have utility and possible use by other jurisdictions.

The jurisdictions' proposals should include narrative, cost estimates, and schedules for one or both of the following activities:

BMP Verification

At the Principals' Staff Committee's September 11, 2014 meeting, the PSC approved and adopted the Chesapeake Bay Basinwide BMP Verification Framework on behalf of the partnership. The framework demonstrates our collective commitment to ensure that our accounting of implemented pollution reduction and prevention practices is reliable and

transparent. At the Management Board's November 13, 2014 meeting, the Partnership approved the Chesapeake Bay Basinwide BMP Verification Framework: Year One Implementation Plan accessible at: <http://www.chesapeakebay.net/bmpverification>. Part of this Year One Implementation Plan included a detailed schedule calling for the jurisdictions submission of draft documentation of their proposed BMP tracking, verification, and reporting programs within their existing Chesapeake Bay Implementation Grant Quality Assurance (QA) plans (or Chesapeake Bay Regulatory and Accountability Grant QA plans).

Jurisdictions are encouraged to submit proposals to support any aspects of their planned work to enhance existing and develop new verification protocols, procedures, and programs as part of their larger BMP tracking, verification, and reporting programs. This planned work can include documentation of existing, enhanced, or new verification protocols, procedures, and programs as well as the statistical design of survey techniques for verification of BMPs.

EPA asks that the proposals describe support needed to develop/enhance BMP verification programs to ultimately meet the principles and adhere to the guidelines contained within the partnership's Chesapeake Bay Basinwide BMP Verification Framework report and accompanying appendices, accessible through the partnership's website at <http://www.chesapeakebay.net/bmpverification>.

Historical Data Cleanup

As part of the Chesapeake Bay TMDL's 2017 Midpoint Assessment, the seven Chesapeake Bay watershed jurisdictions are expected to "clean up" the information on best management practice (BMP) information and wastewater treatment plant discharges that they have submitted to the Chesapeake Bay Program Office (CBPO). CBPO must receive complete, quality-assured, and final information in proper formats by September 30, 2015, in order to remain on track with the Midpoint Assessment schedule. The partnership's Watershed Technical Workgroup has agreed that draft historic BMP data for non-wastewater sources needs to be submitted through the National Environmental Information Exchange Network (NEIEN) by June 30, 2015, to allow enough time for processing and jurisdictions' review to work through issues of data quality and completeness.

Information on BMP implementation and wastewater plant discharges that is as accurate as possible is integral to: calibrating the Phase 6 Chesapeake Bay Watershed Model; planning and reporting future actions; using monitoring data to assess the impacts of past efforts; and assessing the critical period for the Chesapeake Bay TMDL.

Jurisdictions are encouraged to support proposals to support their work on cleaning up their historical BMP and wastewater treatment facility data consistent with the guidelines, schedule, and overall direction presented to and adopted by the partnership's Watershed Technical Workgroup at their December 4, 2014 meeting. These guidelines can be directly accessed at http://www.chesapeakebay.net/channel_files/21403/historic_bmp_and_wastewater_data_cleanup_12_4_14.pdf. The supporting briefing presentation can be directly accessed at: http://www.chesapeakebay.net/channel_files/21403/historic_bmp_cleanup_rules_of_the_road_12032014.pdf.

SCHEDULE

Please provide your requests for funding and associated estimates to Lucinda Power, EPA Chesapeake Bay Program Office, at power.lucinda@epa.gov by **February 13, 2015**.
Jurisdictions will be notified of the award of funds for their proposals by **February 25, 2015**.

EPA will then work with each of the jurisdictions to determine the appropriate funding mechanisms through which proposed projects may be funded. Funding mechanisms could include the jurisdictions' CBIG and CBRAP grants, EPA's Tetra Tech contract, and other existing EPA grants, cooperative agreements, and contracts.

ATTACHMENT C
Example Watershed Implementation Plan Assistance Funding
Proposal—Simple Format and Content

Virginia Department of Environmental Quality
MS4 Guidance and Training Proposal

Virginia completed the issuance of the Phase 2 MS4 General Permit and one Phase 1 individual permit in 2013. The general permit includes the addition of 16 new MS4 areas identified from the 2010 census along with 87 existing Phase 2 MS4s. Virginia anticipates the remaining 11 MS4 individual permits will be issued by the end of 2015. These permits include specific provisions related to the Bay TMDL. In order to maintain high levels of compliance with these new permit provisions, additional funding is needed to provide training and tools to MS4 permittees.

Guidance and Tool Development - \$50,000

Virginia's Bay MS4 permittees have expressed the desire for more information and tools to assist in program development, reporting, self evaluation, and compliance. Work would be performed by qualified contractor in coordination with the Department of Environmental Quality.

- **Program Implementation Guidance** – This guidance would direct permittees in the implementation of their program plans.
- **Annual Report Template** – This template would serve as the starting point for the annual report narrative. MS4s would benefit by having a prepared template laid out to address all required reporting elements with clear descriptions of the required content. DEQ would benefit by having reports submitted in a common format, facilitating effective review.
- **Self Evaluation Compliance Checklist** – One of the best tools for advancing program compliance is a thorough self evaluation checklist. This tool would facilitate self assessments by permittees as well as clearly laying out expectations for compliance.

MS4 Training – \$37,500

Virginia's Bay MS4s are concentrated in Northern Virginia, Hampton Roads and the Richmond Metropolitan area. These areas would serve as training locations for each of the proposed training topics. This training would be developed and provided by qualified contractors in coordination with the Department of Environmental Quality and be available to permittees free of charge. The following training topics are proposed:

- **Understanding Expectations** – Compliance depends on a clear understanding of programmatic and administrative requirements. This session would discuss required program elements, timelines, expectations for demonstrating compliance and enforcement options.

- **Incorporating Measurable Components in MS4 Program Plans** - Measurable requirements are being incorporated into Phase I permits on an individual basis, but since the Phase II permittees are covered under a general permit, the permit is not specific about measurable goals. This training would instruct permittees in the development of SMART (Specific, Measurable, Attainable, Realistic and Timely) goals for inclusion in their MS4 program plans.
- **Tools for Program Development and Compliance** – Demonstrate how new and existing guidance and tools can be used to aid permittees in program plan development, reporting, self evaluation, and compliance.

Schedule

Generally, MS4 permittees have until July 2015 to develop their Chesapeake Bay Action Plans. To maximize the benefit of these tools and trainings to permittees, this project should be completed no later than March 2015. The tools and guidance development portion of the project should be completed by January 2015.

ATTACHMENT D
Example Watershed Implementation Plan Assistance Funding
Proposal—CBRAP Format

WORK PLAN

Name of Organization:	Maryland Department of the Environment (MDE), Water Management Administration (WMA), Sediment, Stormwater, & Dam Safety Program (SSDSP)
Program Grant Title:	FFY2014 Chesapeake Bay Regulatory and Accountability Program (CBRAP) grant signatory jurisdiction, funded under Section 117 of the Clean Water Act (CWA): the Chesapeake Bay Program
Project Title:	Stormwater Management Program Enhancements to Perform Training and Outreach and Provide Technical Support for Implementation of GIS Municipal Stormwater Permit Data Tracking System
Funding period:	October 1, 2014 – June 30, 2016
Objective # 19:	

Introduction: The SSDSP is responsible for administering Maryland's erosion and sediment control, dam safety, and stormwater management programs. A major part of this responsibility is issuing National Pollutant Discharge Elimination System (NPDES) municipal stormwater permits. The Environmental Protection Agency (EPA) has delegated MDE the authority to issue these and other stormwater permits under the Clean Water Act 402, 33 USC 1342; 40 Code of Federal Regulations (CFR) Parts 122, 123, 125, 403; and other relevant federal regulations.

MDE has issued NPDES municipal stormwater permits to 11 Phase I MS4 jurisdictions. Since the issuance of the first round of permits in 1993, annual reporting submissions from all permitted jurisdictions have increasingly become more data intensive. The scope, extent and magnitude of the data required to be submitted has rendered SSDSP existing GIS capabilities inadequate to accept, maintain, or analyze the information provided.

To remedy this shortcoming, MDE has been working with the Maryland Environmental Service (MES) to plan, develop, and implement a GIS Municipal Stormwater Permit Data Tracking System (NPDES geodatabase). The NPDES geodatabase will allow the analyses of watershed restoration work completed for meeting local water quality goals, addressing EPA approved total maximum daily loads (TMDL), and fulfilling commitments specified in Maryland's Phase II Watershed Implementation Plan (WIP). The NPDES geodatabase supports comprehensive GIS analyses, allows for important statewide data collection processes and assessments to be automated, and will be used by MDE to aide in the assessment of MS4 management programs. Most importantly, however, this NPDES geodatabase will provide the necessary stormwater BMP data for modeling watershed implementation plans in response to TMDL stormwater WLAs and the Chesapeake Bay Program (CBP) milestones.

The NPDES geodatabase will collect, analyze, store and report on the following:

- stormwater system physical features (location, size, drainage area, landuse, year installed);
- stormwater BMP physical features (location, size, type, drainage area, hydrologic and hydraulic design parameters);
- monitoring site attributes and monitoring data;
- MS4 jurisdictions' stormwater management and erosion and sediment control permit activity;
- MS4 BMP inspection and maintenance activity;
- MS4 IDDE activity;
- MS4 WLA restoration activity; and,
- MS4 program expenditures.

The purpose of this work plan is to provide outreach and education to Phase 1 NPDES MS4 users of the NPDES geodatabase to ensure the accuracy of the stormwater BMP implementation data. This work plan also will provide the mechanism to provide on-going technical support for the NPDES geodatabase to assist with trouble shooting and enhancement development.

Work Plan Objective/Project Descriptions

Objective # 19	Stormwater Management Program Enhancements to Perform Training and Outreach and Provide Technical Support for Implementation of GIS Municipal Stormwater Permit Data Tracking System	Budget for this Objective:	Total:\$ 150,000 EPA Share: \$75,000 Non Federal Share: \$75,000
Narrative Summary of Outputs for this Objective:	This project builds on the outputs previously approved under Objective #6. The development of the NPDES geodatabase tool will be completed under Objective #6 of the FY2011 CBRAP grant funding. The NPDES geodatabase tool, once completed will enable MDE to improve its ability to accept, maintain, and analyze data provided through the NPDES municipal stormwater permitting process. This will ultimately enhance municipal stormwater permit compliance tracking and improve reporting to EPA, the Chesapeake Bay Program and Maryland's BayStat process.		

Objective #1: Historical Data Cleanup

To assist the CBP calibrate and run the Watershed Model, MDE will utilize the NPDES geodatabase to better reflect load reduction efficiencies through historical data cleanup. The NPDES geodatabase incorporates built in data quality checks at both the web-based application level and the internal ArcGIS based application level. MDE will utilize the NPDES geodatabase to help identify new BMPs that were omitted from the current BMP inventory, and verify and correct BMP implementation dates, locations and

drainage areas. The NPDES geodatabase will provide the tool MS4 jurisdictions will use to ensure the accuracy of historical BMP implementation records.

MDE recognizes ongoing, additional support will be necessary to generate geodatabase enhancements based on recently CBP approved stormwater management BMPs and to address any geodatabase bugs or issues that may arise. To accomplish this need, MDE proposes to leverage MES to provide technical support, troubleshooting, and/or application enhancements per available budget to address a given issue and/or supplemental request. Further, MDE will utilize MES to provide one-on-one technical support to Phase I jurisdictions in the event an issue arises by a given end user (i.e., applicant), while utilizing the NPDES geodatabase once the tool is live. Other examples of work that may be performed, based on available budget, include but are not limited to the following:

- Updating and/or modifying MDE reporting functionalities for data export to the Chesapeake Bay Program as well as other stakeholders
- Upgrading the application to be compliant with the latest version of ESRI software when a new release is distributed
- Integrating data from NPDES Phase II MS4 jurisdictions' annual reports into MDE's master stormwater relational database management system
- Developing an automation procedure to integrate an NPDES MS4 Jurisdiction's annual report submission into MDE's publicly available stormwater management implementation GIS web application, StormwaterPrint
- Establishing better integration between Science Services Administration's modeling needs regarding the Maryland Assessment Scenario Tool (MAST) and the MS4 NPDES master database

Objective #2: MS4 Guidance and Training

As the development of the NPDES geodatabase nears completion, a successful roll out to NPDES Phase I MS4 jurisdictions will be critical. Vital to the success of this project roll out is an effective outreach campaign to assure all NPDES Phase I MS4 jurisdictions can adequately comply with new data-based annual regulatory reporting requirements. The current version of Attachment A that accompanies all NPDES Phase I MS4 permits has changed significantly based on the technical requirements that were documented during the development of the NPDES geodatabase. Due to the level of sophistication and overall complexity of the NPDES geodatabase structure, a more comprehensive training and outreach

	<p>campaign is necessary to assure that MS4 jurisdictions submit their annual report data to MDE in an accurate and compliant manner. This will assure a given jurisdiction's data are properly integrated into the master GIS database prior to electronically submitting the content to the MDE. To provide this added support, MDE will leverage MES to guide applicants through the process of loading their respective data into the new NPDES geodatabase structure. Time will be taken to describe the overall workflow process including the protocols applicants will follow to electronically submit their annual report data through MDE's NPDES web intake application. A combination of onsite meetings with the NPDES Phase I MS4 jurisdictions as well as conference calls and webinars will be scheduled to assure all applicants have the opportunity to receive supplemental outreach and training.</p>
Description of Objective:	<p>Answer these questions.</p> <p>1) What is the ultimate goal of the project? The ultimate goal of this proposed project is to provide comprehensive training and outreach to assure a given NPDES MS4 jurisdiction's data are properly integrated into the master GIS database prior to electronically submitting the content to the MDE. This effort is critical to ensure accurate stormwater BMP implementation accounting to evaluate progress towards meeting local water quality goals, addressing EPA approved total maximum daily loads (TMDL), and fulfilling commitments specified in Maryland's Phase II Watershed Implementation Plan (WIP).</p> <p>2) What will be accomplished during the current grant cycle? This project is intended to continue work completed under Objective #6. This project will begin with development of training materials followed by implementation on on-site comprehensive application training for 11 NPDES Phase 1 MS4 jurisdictions. In addition, NPDES geodatabase trouble shooting and enhancement development will be ongoing throughout the life of the project.</p> <p>3) If a multi-year project, what has been completed in previous years? The development of the NPDES geodatabase schema is nearing completion and work continues on development of the local government web intake tool. Work on outreach material development can occur simultaneously with development of the web intake tool and the testing and debugging of the pilot system.</p> <p>4) Is the project on track? Yes.</p>
Tasks Under this Objective:	MDE will procure and manage contractual services to educate and provide on-site outreach and training on the GIS Municipal Stormwater Permit Data Tracking System. The following tasks and timeframes are anticipated:

	<ul style="list-style-type: none"> ➤ Develop a suitable QAPP and seek EPA approval (3 months) ➤ Development of on-site training material. (3 months) ➤ Perform 11 on-site training and outreach visits. (9 months) ➤ Update MDE reporting functionalities for data export to the Chesapeake Bay Program as well as other stakeholders. (on-going) ➤ Provide as needed trouble shooting and updates to NPDES geodatabase. (on-going)
Specific Outputs for this Objective The extent that outputs are accomplished will serve as the EPA Evaluative Criteria for this project/program.	<p><u>Programmatic</u></p> <p>The primary output of this proposed project is to provide on-site training to each of 11 NPDES Phase 1 MS4 jurisdictions. This training will be tailored to each NPDES Phase 1 MS4 jurisdiction's current data management system. This training will describe the overall workflow process and protocols to follow to electronically submit annual report data through MDE's web intake application. Each NPDES Phase 1 MS4 jurisdiction will be guided through the process of loading their respective data into the new NPDES geodatabase structure. A combination of onsite meetings with the NPDES Phase I MS4 jurisdictions as well as conference calls and webinars will be scheduled to assure all applicants have the opportunity to receive supplemental outreach and training.</p> <p>This project will also include as-needed NPDES geodatabase trouble shooting, updates and enhancements.</p> <ul style="list-style-type: none"> ➤ Training materials completed, 3 months ➤ Training of the first set of 11 jurisdictions, within 6 months after completion/roll out of the NPDES database ➤ Training of the second set of 11 jurisdictions within 12 months after completion/roll out of the NPDES geodatabase. ➤ Technical support for debugging and trouble shooting, as needed ➤ Technical support for NPDES geodatabase enhancement development, as needed. <p><u>Administrative</u></p> <ul style="list-style-type: none"> ➤ Semi-annual reports will be submitted to MDE's SSA Grant Manager and to EPA CBPO.
Outcomes for this Objective: (Refer to Attachment 3)	<u>Chesapeake 2000 Commitment: 3.1 Nutrients and Sediments</u> <u>Chesapeake Action Plan Goal: 3 Protect and Restore Water Quality</u> <u>Chesapeake Action Plan Topic Area: 3c Developed Land; 6d Organization Management</u> <u>Chesapeake Action Plan Activity Category: Information Management, Targeting; Information Technology</u>

<p>Link to EPA's Strategic Plan (all funding issued by EPA CBPO falls under this strategic link) (This is pre-populated info)</p>	<p><u>EPA Strategic Plan Goal</u> Goal 4: Healthy Communities and Ecosystems <u>EPA Strategic Plan Objective</u> 4.3: Ecosystems <u>EPA Strategic Plan Sub-objective</u> 4.3.4: Improve Aquatic Health of the Chesapeake Bay</p>
<p>Link to Jurisdiction's WIP Commitment(s) (Applicable only to CBIG, Headwater State grants, and CBRAP. All others list N/A.)</p>	<p>Maryland's Phase I WIP emphasizes the need to develop and document the WIP progress at the local level of government. The goal of this Phase II task is to provide better statewide tracking of counties' progress to implement BMPs related to stormwater. It will serve both a reporting and tracking function to demonstrate load reductions as a result of implementation.</p>
<p>Link to Priority Practices and/or Priority Watersheds</p>	<p><u>Please include the following, as applicable:</u></p> <p>Priority Practice(s)</p> <ol style="list-style-type: none"> 1.) Which priority practice(s) will be implemented in this objective? GIS tracking of urban stormwater BMPs will be done at the county scale, and aggregated up to the statewide scale. 2.) Please provide a short justification as to why the practice(s) is a priority for the location it is to be implemented. Information from the counties will be accessible and can be tracked within the five major basins of Maryland, as well as at a statewide scale, providing better assurance of the TMDL implementation and loads reductions to restore the Chesapeake Bay. 3.) Which priority strategy(s) will be implemented in this objective? The state and county milestones will be coordinated so that progress can be made at the local level and rolled up to a larger scale, e.g., basin and Statewide. <p>Priority Watershed</p> <ol style="list-style-type: none"> 1.) Which priority watershed will be addressed by this objective? All of the major basins. 2.) Watershed considered priority by (please check one): <ul style="list-style-type: none"> <input type="checkbox"/> COAST http://chesapeake.usgs.gov/coast/index.html <input type="checkbox"/> SPARROW http://www.chesapeakebay.net/recoveryinvest.aspx?menuitem=34712 <input type="checkbox"/> USDA Core 4 <input type="checkbox"/> Other (please include a short justification as to why this watershed is considered a priority) 3.) Which priority strategy(s) will be implemented in this objective?

	This is a statewide function that will enhance and enable the local actions to be documented and demonstrate how they will accomplish goals identified in their draft and final WIPs at the local scale.
Progress for this Objective (to be completed and submitted to the PO with each progress report)	<p>Please indicate the following in addition to a description of the progress completed under this objective:</p> <ol style="list-style-type: none"> 1. Percentage of the objective completed 2. A comparison of actual accomplishments (outputs, outcomes) with the anticipated outputs/outcomes. 3. If applicable, problems encountered during the performance period, which may interfere with meeting program/project objectives. N/A 4. List proposed remedies if problem(s) exist (s) as indicated in item 3. N/A

Detailed Budget FFY 2014

Project Name: Stormwater Management Program Enhancements to Perform Training and Outreach and Provide Technical Support for Implementation of GIS Municipal Stormwater Permit Data Tracking System.

Agency Organization: MDE

Category	Description	Federal Grant	Non-Federal Match	Total
Other (1)	Services to perform on-site NPDES MS4 training on use of the GIS Data Tracking System (NPDES geodatabase)	\$40,000		\$40,000
Other (1)	Services to perform on-going trouble shooting, debugging and enhancement development of the GIS Data Tracking System (NPDES geodatabase)	\$35,000		\$35,000
Sub-Total		\$75,000		\$75,000
Total		\$75,000	\$75,000	\$150,000

(1) Work will be performed through interagency agreement(s) with the Maryland Environmental Service (MES).

(2) Match is from the Maryland Chesapeake Bay Restoration Fund (BRF). This match is State expenditure used to pay for Enhanced Nutrient Removal at Maryland wastewater (sewage) treatment plants that discharge into the Chesapeake Bay watershed.

ATTACHMENT E
Virginia Tech Cooperative Agreement
Example Request for Proposals for Technical Assistance

Urban Tree Canopy Expert Panel Request for Proposals

I. Summary:

The U.S. Environmental Protection Agency Chesapeake Bay Program (CBP) through its Expert Panel Management Cooperative Agreement with Virginia Tech (VT) is seeking proposals to assemble an Expert Panel to determine pollution control performance measure estimates for the best management practice (BMP) of extended urban tree canopy. Proposals should address the process of developing expert-based recommendations for nitrogen (N), phosphorus (P), and sediment reduction values from existing urban tree canopy and BMP efficiencies that result from increases in urban tree canopy, as specified in the body of this request for proposals (RFP). The awarded group will deliver a science-based, defensible report on the effectiveness of the expanded urban tree canopy BMP in reducing N, P and sediment loss to the Chesapeake Bay (Bay). When conducting their business and reporting their findings, Expert Panels are expected to adhere to the process and protocols contained in the document entitled *Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model*² hereafter referred to as the “BMP Protocol.” The selected expert panel will be assisted by Virginia Tech’s Project Coordinator for Expert Panel BMP Assessment who is located in EPA’s Chesapeake Bay Program Office in Annapolis, MD. Included in that assistance is logistical support for all Expert Panel conference calls (including providing a conference bridge) and meetings.

II. Background:

Stormwater runoff from urban areas is a growing source of nutrient and sediment loads to the Chesapeake Bay. Urban stormwater currently accounts for over 14 percent of delivered nitrogen and phosphorus loads, and 18 percent of sediment loads delivered to the Bay. Increases in urban tree canopy cover may provide many benefits to local communities, including reductions in stormwater runoff and associated nutrient and sediment reductions which are the focus of this RFP.

The new 2014 Chesapeake Bay Watershed Agreement calls for 2,400 acres of new urban tree canopy by 2025. Most states have included this practice in their Watershed Implementation Plans (WIPs) as part of the Chesapeake Bay Total Maximum Daily Load. According to some of the Chesapeake Bay jurisdictions’ Phase II WIP “input decks” to the Chesapeake Bay partnership’s Watershed Model (CBWM), planned implementation is 8 times higher than the 2,400 acres of new urban tree canopy outcome described in the Chesapeake Bay Watershed Agreement. Currently, in Phase 5.3.2 of the CBWM, urban tree canopy receives the same nutrient and sediment loading factors as forested land regardless of where they are planted or the areal extent. Currently, in the CBWM, one hundred new trees is equivalent to one acre of urban tree canopy.

² http://www.chesapeakebay.net/documents/Nutrient-Sediment_Control_Review_Protocol_v7.14.2014.pdf

III. Scope of Work:

This RFP solicits proposals to assemble an Expert Panel to determine pollution control performance measure estimates for both existing and expanding urban tree canopy. The Panel's recommendations will be evaluated for incorporation into the CBWM and associated modeling tools. The Expert Panel will define the conditions under which trees planted in the urban environment reduce stormwater runoff loads and associated nutrient and sediment loads. Such conditions may include tree placement, leaf density, soils, understory conditions, and other factors. In addition to relevant peer-reviewed scientific literature, established modeling tools (e.g., iTree-Hydro) may be used to inform the Panel's recommendations, as described in the BMP Protocol1. While the Panel's focus should be on water quality benefits that accrue to receiving waters (e.g., nutrient and sediment load reductions, stormwater retention), the panel is also encouraged to identify ancillary benefits of trees in urban settings, such as heat island reduction, and any potential unintended consequences of this practice to water quality, watershed health, habitat, or fisheries – other Chesapeake Bay Program goal areas. To meet CBP partnership needs, the Panel will deliver its full recommendations for the BMP by the end of September 2015.

Proposals to establish the Urban Tree Canopy Expert Panel should outline the proposed process of developing expert-based recommendations for N, P and sediment reduction values for existing tree canopy and BMP efficiencies for newly planted trees.

IV. Content and Length:

Proposals submitted under this RFP may request funding up to \$30,000 in total costs. No indirect, facilities & administration (F&A) or overhead charges are permitted on this project. The project duration is a maximum of ten (10) months from the award date. Proposals should be no longer than five (5) 8 ½" x 11" pages, single-spaced, 12 pt Arial font. Two-page (maximum) CVs that document the qualifications of each of the proposed Expert Panel members, including the expert panel chair, should be included with the proposal submission. The CVs are in addition to the five page proposal limit. Proposals must specify/identify the following:

1. Expert Panel Chair.
2. Expert Panel membership. As specified in the BMP Protocol1, the Panel must include at least eight individuals; three recognized topic experts, three individuals with expertise in environmental and water quality-related issues, a representative from the CBP's Watershed Technical Work Group (WTWG), and a representative from the CBP modeling team. The CBP will assign panel members from the WTWG and the CBP modeling team and applicants need not include the CV's of these panel members in their proposal. These assigned panelists will lend specific expertise to each panel (e.g., the CBP modeling team panel member will lend a working knowledge of the CBP Watershed Model and potential ways the model can accommodate various BMPs). Panelists' areas of expertise may overlap. Suggested areas of expertise that may be applicable to the urban tree canopy Panel include, but are not limited to: stormwater management, forestry and urban forestry, biogeochemistry, and nutrient cycling dynamics in urban systems. Panel members should not represent entities with potential conflicts of interest, such as entities that could receive a financial benefit from Panel recommendations or where there is a conflict between the private interests and the official responsibilities of those entities.

All panelists are expected to identify any potential financial or other conflicts of interest prior to serving on the Panel.

3. Project Narrative/Scope of Work that details how the Expert Panel Chair and membership plan to develop their final report. This section should document how the proposed Expert Panel will execute the process and procedures detailed in the CBP's BMP Protocol.
4. Project timeline.
5. Project Budget including a detailed budget justification.

V. Proposal Review and Selection

Proposals will be reviewed by Chesapeake Bay Watershed Research and Outreach Collaborative (CBW-ROC) Steering Committee. Current CBW-ROC Steering Committee membership includes representatives from selected land grant universities within the Chesapeake Bay watershed (Table 1). Proposals will be scored and ranked using the criteria specified below. The proposals will also be shared with and reviewed by the CBP Program Officer responsible for oversight of the Expert Panel Management Cooperative Agreement with VT. Review comments made by the CBP Program Officer will be considered when selecting the winning proposal. Upon selection by CBW-ROC, the Panel's scope of work (SOW) and list of proposed panel membership will be subject to review and comment by the following CBP partnership groups, as described in the BMP Protocol:¹ the Water Quality Goal Implementation Team (WQGIT) and relevant workgroups, the Habitat Goal Implementation Team, and the Scientific and Technical Advisory Committee. Approval of the SOW and membership will be requested from the Forestry Workgroup or WQGIT. Any changes to the SOW or membership as a result of this process will be made cooperatively between the Panel Chair and the CBP partnership. 3

Table 1. Current Chesapeake Bay Watershed Research and Outreach Collaborative (CBW-ROC) Steering Committee

Jurisdiction	Team Member	Institution
Delaware	Jenn Volk	University of Delaware
Maryland	Frank Coale	University of Maryland
New York	Quirine Ketterings	Cornell University
Pennsylvania	Matt Royer	Penn State University
Virginia	Brian Benham (Chair)	Virginia Tech
Washington, D.C.	Tolessa Deksissa	University of the District of Columbia
West Virginia	Tom Basden	West Virginia University

V.i. Evaluation Criteria:

1. Organizational Capability and Program Description (40%):

Proposals will be scored based on the overall quality of the proposal and how it demonstrates/illustrates the process/tasks that will be undertaken to successfully achieve the project's objectives by the posed deadline. Reviewers will specifically assess the extent to which proposed project acknowledges and will adhere to the BMP Protocol¹. As presented in the BMP Protocol, Expert Panels are expected to develop definitions and loading or effectiveness estimates for the nutrient- and sediment-reducing technologies and practices they have agreed to review. Each Expert Panel will work with the Project Coordinator (a VT employee stationed at

the CBP office in Annapolis, MD), the appropriate CBP source Workgroup(s) and the CBP Watershed Technical Work Group to develop a final report that documents the following:

- Identity and expertise of Panel members.
- BMP name/title.
- Detailed definition of the practice.
- Recommended N, P, and sediment loading or effectiveness estimates.
 - Discussion may include alternative modeling approaches if appropriate.
- Justification for the selected effectiveness estimates, including:
- List of references used (peer-reviewed, grey literature, etc.).
- Detailed discussion of how each reference was considered and, if applicable, which sources of potential relevance were not considered.
- Description of how best professional judgment was used, if applicable.
- Land uses to which the BMP is applied, for both Phase 5 and Phase 6 Watershed Model land uses.
- Load sources that the BMP will address and potential interactions with other practices.
- Description of pre-BMP and post-BMP circumstances, including the baseline conditions for practices.
- Conditions under which the BMP works:
 - Should include conditions where the BMP will not work, or will be less effective. An example is large storms that overwhelm the design.
 - Any variations in BMP effectiveness across the watershed due to climate, hydrogeomorphic region, or other measureable factors.
- Temporal performance of the BMP including lag times between establishment and full functioning (if applicable).
- Unit of measure for the BMP and its effectiveness estimate (e.g., feet, acres).
- Locations within the Chesapeake Bay watershed where this practice is applicable.
- Useful life; effectiveness of practice over time.
- Cumulative or annual practice.
- Description of how the BMP will be tracked, reported, and verified.
 - Include a clear indication that this BMP should be used and reported by jurisdictions;
- Suggestion for a review timeline; when will additional information be available that may warrant a re-evaluation of the estimate.
- Outstanding issues that need to be resolved in the future and a list of ongoing studies, if any.
- Documentation of any dissenting opinion(s) if consensus cannot be reached.
- Operation and Maintenance requirements and how neglect alters performance.

2. Past Performance and Programmatic Capability (20%)

Proposals should, to the extent possible, discuss how the applicant's past performance will ensure the successful completion of proposed activity (i.e., managing a panel of experts to seek out and review relevant data/information to produce a science-based, defensible report on a given topic or suite of topics).

3. Probability of success of the project (40%)

Proposals will be evaluated against the following criteria:

- a. Reasonableness of timeline.
- b. Qualifications of proposed Expert Panelists and their willingness to participate (can be demonstrated with a letter or collaboration appended to proposal).
- c. Appropriateness of requested budget and budget justification.
- d. Adequacy of available support personnel and facilities (if specified in proposal).

VI. Proposal Submission

Proposals are due by the close of business on January 5, 2014. Proposals may be submitted via email or via regular mail to:

Brian Benham
Professor and Extension Specialist
Virginia Tech
Biological Systems Engineering (MC0303)
Seitz Hall RM 209, Virginia Tech
155 Ag Quad Lane
Blacksburg, VA 24061
benham@vt.edu

Questions about this RFP should also be directed to Project Coordinator Jeremy Hanson (410.267.5753; hanson.jeremy@epa.gov) or Dr. Benham.

ATTACHMENT F
Tetra Tech Contract
Example Technical Direction

Technical Direction
District of Columbia BMP Tracking Database Phase 2

Contract #: EP-C-12-055

Contractor: Tetra Tech

Task Order #: 003

Task #: 4

Technical Direction #: 13

Technical Direction Issue Date: 11/5/13

Task Title: **District of Columbia BMP Tracking Database Phase II**

Task Description:

The District Department of the Environment (DDOE) is seeking to improve and add functionality to an online system and database developed by Tetra Tech (Phase 1), which tracks and monitors stormwater management plans, stormwater best management practices (BMPs), and land use changes occurring in the municipal separate storm sewer system (MS4) and combined sewer system (CSS) areas of the District of Columbia (District). Tetra Tech has some understanding of the requirements for Phase 2 based on their interactions with DDOE during Phase 1. In Phase 1 Tetra Tech developed a draft database to track projects, their BMPs, land-use changes, BMP verification information, and field collection. The delivery of Phase 1 did not include the functionality to generate the National Environmental Information Exchange Network (NEIEN) submission for exchange with the Chesapeake Bay Program Office as per the original Technical Direction.

System improvements will refine the underlying table structure and relationships developed in Phase 1. System enhancements will:

- Address new requirements under the District's new rule on Stormwater Management and Soil Erosion and Sediment Control, which includes retention requirements for Stormwater Management Plan (SWMP) submission and off-site compliance options including Stormwater Retention Credit trading and In Lieu Fee.
- Address the new rule on the Stormwater Fee Discount Program (RiverSmart Rewards).
- Integrate data sources residing on the District's geographic information system (GIS) servers and web services (e.g., DC GIS and Master Address Repository) from the District's Office of the Chief Technology Officer (OCTO).
- Enhance reporting capability to District stakeholders and federal agencies by generating NEIEN Non-point source Best Management Practice (NEIEN-NPSBMP) compliant XML files and synchronizing BMP records in the database with a BMP GIS data layer consistent with DDOE's Total Maximum Daily Load Implementation Plan as required under the District's MS4 Permit.

General Project Management and Approvals:

The contractor (Tetra Tech) shall carry out the activities described in this task. DDOE will provide feedback and day-to-day oversight of the tasks, and the U.S. Environmental Protection Agency (EPA) will provide oversight and high-level contract management. EPA will provide all direction to Tetra Tech that incurs billable costs. Tetra Tech shall continue to provide monthly status reports to EPA and shall also provide DDOE with bi-weekly status reports throughout the process. Status reports shall include project updates, identify technical issues related to items in the technical directive, and provide a snapshot of project performance compared to the baseline budget and schedule determined at the completion of Activity 1. Tetra Tech shall notify DDOE immediately of any impediments that would prevent them from complying with the approved schedule and approved budget. EPA may, at any time, direct Tetra Tech to stop work.

Activity 1

Requirements Confirmation

DDOE will provide Tetra Tech with a draft of business and functional requirements, access to existing databases and data layers, and documentation of the related business processes (work flows), forms, reports, and graphs. Tetra Tech shall review DDOE's draft requirements to confirm the project scope and refine the level of effort estimated at the completion of the Phase 1 effort. DDOE will assign a subject matter expert to answer questions and review use cases for Tetra Tech analysts and technical leads. Tetra Tech shall confirm and elaborate the requirements and attend 2–3 site visits at DDOE to present the refined requirements to DDOE program managers and OCTO staff. Prior to meeting with OCTO, Tetra Tech shall provide a list of anticipated hardware and software components and discuss deployment expectations for OCTO review and confirmation. After the requirements have been finalized, Tetra Tech and DDOE will jointly develop a project schedule for Activities 2–3, and pending approval, EPA shall issue Technical Direction for these Activities.

Activity 1 Subtasks
1. Confirm availability of dedicated project staff
2. Review draft requirements, work flow, and existing DDOE databases
3. Meeting/conference call to discuss requirements and constraints
4. Meeting to refine requirements
5. Meeting to confirm and finalize requirements

Deliverables:	Deadlines:
1. Status reports	Bi-weekly
2. List of anticipated hardware and software components and deployment expectations	Prior to meeting scheduled with OCTO staff
3. List of refined requirements.	Within 1 week receipt of DDOE draft
4. List of finalized requirements and PPT presentation on interaction between the modules	Within 1 week of refinement session

Deliverables:	Deadlines:
5. Scope and budget confirmation	Within 1 week of finalized requirements
6. Design and Build schedule for Activities 2–3, which will require separate Technical Direction, to be furnished by EPA at a later date.	Within 1 week of finalized requirements

Anticipated level of effort:

The anticipated level of effort is approximately 150 hours (not to exceed \$20,000).

Required Skills and Experience:

Project manager, Analyst, Technical Leads

Does this deliverable contain sensitive information (Yes/No)?

No

Contacts	
Chesapeake Bay Program Office Task Leads: Reginald Parrish Phone: (202) 566-1396 parrish.reginald@epa.gov	DDOE Project Officer: Sheila Besse, Associate Director, Water Protection Division Phone: (202) 535-2244 sheila.besse@dc.gov
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Task Order Project Officer: Tim Roberts Chesapeake Bay Program Office, EPA Phone: (410) 267-5770 roberts.timothy-p@epa.gov	DDOE Primary Technical Contact: Martin Hurd, DDOE Environmental Protection Specialist Phone: (202) 299-3344 martin.hurd@dc.gov