

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*¹ 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.

III. Scope of Work:

This RFP solicits proposals to assemble an Expert Panel to recommend land use loading targets for tree canopy cover in urban areas, and subsequently 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

¹ (http://www.chesapeakebay.net/documents/Nutrient-Sediment_Control_Review_Protocol_v7.14.2014.pdf).

Bay Program goal areas. To meet CBP partnership needs, the Panel will make its recommendations for land use loading targets for the CBP modeling team by the end of February 2015, and deliver its full recommendations for the BMP by the end of September 2015. The CBPO staff will coordinate with the panel to deliver its recommended literature-based loading rate targets to the CBP modeling team and CBP Modeling Workgroup by the February 2015 deadline.

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 1/2" 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 Protocol¹.
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.

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.
- Land Use or BMP name/title.
- Detailed definition of the land use or 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 November 20, 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
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Questions about this RFP should also be directed to Project Coordinator Jeremy Hanson (410.267.5753; hanson.jeremy@epa.gov) or Dr. Benham.