



THE RESOURCE PROTECTION GROUP, INC.

REQUEST FOR PROPOSALS

**RFP #E9 – Total Phosphorous (TP), Total Nitrogen (TN), and
Total Suspended Solids (TSS) Loadings in Runoff**

WSSI #25000.01E9

Due Date/Time: October 1, 2018; 5:00 PM

Location: U.S. Mail/Messenger/Fed Ex/UPS

Resource Protection Group, Inc.
c/o Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive, Suite 100
Gainesville, Virginia 20155
ATTN: Michael S. Rolband, P.E., P.W.S., P.W.D

CONTENTS

	PAGE
I. Background	1
II. Research Topic	1
A. The Basic Issue	1
B. Initial Testing	2
C. Objective of this RFP	2
D. Scope of Work	3
III. Submission of Proposals	3
A. Deadline and Delivery	3
B. Questions	4
C. Registration of Proposers	4
IV. Program Funding	4
V. Proposal Review Process	5
VI. Subcontractors	5
VII. Review Criteria	6
VIII. Submission Requirements	6
A. Solicitation Offer and Award Form	6
B. Table of Contents	6
C. Executive Summary	6
D. Project Team	6
E. Project Description	6
F. Scope of Work	7
G. Budget	7
H. Budget Backup	7
I. Proprietary Information	8
J. Organizational Chart	8
K. Curriculum Vitae (CV)	8
L. Research Schedule	8
IX. Payment and Reporting Requirements	8
A. Reporting Requirements	8
B. Payment Requirements	9
X. Budget Sheet	10
XI. Solicitation Offer and Award Form (SOAF)	13

Attachments:

- A. **Solicitation Offer and Award Form**
- B. **Fields-Johnson, Christopher W.; Rolband, Michael. 2017. Exploratory measurements of rainfall concentrations of nitrogen and phosphorous in Northern Virginia. Unpublished report from the Davey Institute and Wetland Studies and Solutions, Inc. pp. 1-2.**

Referenced Documents:

Davenport, Melanie D. 2016. Guidance Memo No. 16-2001 Updated Virginia Runoff Reduction Method Compliance Spreadsheets Version 3.0. Publication of Commonwealth of Virginia Department of Environmental Quality Water Permitting Division. pp. 1-92.

District Department of the Environment. 2014. Selection of Event Mean Concentrations. Consolidated TMDL Implementation Plan – Comprehensive Baseline Analysis. Publication of the Government of the District of Columbia. pp. 1-1 – 4-6.

Fields-Johnson, Christopher W.; Rolband, Michael. 2017. Exploratory measurements of rainfall concentrations of nitrogen and phosphorous in Northern Virginia. Unpublished report from the Davey Institute and Wetland Studies and Solutions, Inc. pp. 1-2.

Stuart, Richard 2011. General Assembly of Virginia. 2011. Chapter 353 (S 1055) <http://leg1.state.va.us/cgi-bin/legp504.exe?111+full+CHAP0353>. December 29th, 2017.

Schueler, Thomas R. 1987. Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs, Appendix A: Technical Documentation of a Simple Method for Estimating Urban Storm Pollutant Export. Publication of the Metropolitan Washington Council of Governments. pp. A.1-A.12.

Schueler, Thomas R. 2011. CSN Technical Bulletin No. 9. Nutrient Accounting Methods to Document Local Stormwater Load Reductions in the Chesapeake Bay Watershed Version 1.0 Review Draft. Publication of the Chesapeake Stormwater Network. pp. 1-89.

Scott, Edward T. 2011. HB 1831 Fertilizer; regulation of application and labeling. <http://leg1.state.va.us/cgi-bin/legp504.exe?111+sum+HB1831S> December 29th, 2017.

I. Background

The Resource Protection Group, Inc. (RGP) is a non-profit 501(c)3. The mission of RPG is to protect, restore, enhance and increase public awareness and understanding of our natural and cultural resources, including the stormwater systems that contribute water to our aquatic resources such as streams, wetlands, lakes, and ponds. The protection, restoration, and enhancement of aquatic resources need to include the adjacent stream valleys, upland buffers, and contributing stormwater systems as much as possible in order to maximize aquatic and cultural resource values. One way RPG intends to implement its mission is through funding of scientific studies associated with the Wetland Research Initiative (WRI) – a program established by Wetland Studies and Solutions, Inc. with several of the wetland banks it has managed.

The general goal for all research projects funded by the Wetlands Research Initiative is to determine the overall effectiveness of compensatory mitigation efforts and specifically how design and construction practices should be modified to improve their performance in terms of functions and values.

The mission of the WRI is to fund applied research that makes a real and measurable difference (in terms of how compensatory mitigation sites are designed, built, and monitored) for wetland creation, restoration, and enhancement activities in the Virginia Piedmont and, where applicable, adjacent physiographic regions. In the realm of compensatory mitigation, recent emphasis on streams and riparian buffers has expanded the focus of our mission to advancing the science and practice of riparian corridor preservation, enhancement, and restoration where practicable.

This Request for Proposal (RFP) is issued to public and private universities in Virginia, accredited by the Commonwealth of Virginia, which possess established programs related to the research topic. Our goal is to support research that will advance the science and engineering and provide state-of-the-art practices for non-tidal compensatory mitigation involving creation, restoration, and enhancement activities centered on the Piedmont Physiographic Province of Virginia.

II. Research Topic

A. The Basic Issue

One basic function (and resulting societal value) provided by wetlands systems, as well as other Stormwater Management/Best Management Practices (SWM/BMPs), is improved water quality through treatment of stormwater runoff. Typically, the effectiveness of this function is evaluated by determining the pollutant¹ load reduction from flow through the system. The first element of this calculation is the

¹ In Virginia, Total Phosphorous (TP) is regulated as a “keystone” pollutant. Total Nitrogen (TN) and Total Suspended Solids (TSS) are also key pollutants of concern in Virginia due to the Chesapeake Bay Total Maximum Daily Load (TMDL).

estimation of pollutant loading, which typically is (i.e. Virginia Runoff Reduction Method (VRRM)) accomplished using the Event Mean Concentration (EMC) of the subject pollutant which is currently set at 0.26 mg/L of total-P (TP) in Virginia (Davenport. 2016). This value has been unchanged since its derivation from the 1980-81 Nationwide Urban Runoff Program (NURP) study (MWCOG, Appendix A.3). The basic issue and associated research question is whether or not the combination of Clean Air Act implementation and a state law restricting the use of phosphorous lawn fertilizer (Stuart. 2011; Scott. 2011) has reduced the EMC of TP in stormwater runoff in Virginia.

B. Initial Testing

To determine the hypothesis that the EMC of TP may have been reduced by successful public policies, staff at Wetland Studies and Solutions, Inc. (WSSI) and The Davey Institute (DI) conducted a limited sampling program at its facility in Gainesville, Virginia (Fields-Johnson and Rolband., 2017; See Attachment B). The results were one order of magnitude lower (0.01-0.03 mg/L) than the 0.26 mg/L cited previously. These collection points only covered rooftop water, which does avoid some sources of TP (fertilizer, urban debris such as leaves, pollen, pet waste, organic debris, etc.). However, this is still an order of magnitude lower than the Rooftop TP EMC of 0.12mg/L reported in CSN Technical Bulletin No. 9 (Schueler. 2011; Table 6). We found similar differences in TN levels.

To add to this dichotomy of values, more recent data from Washington, DC (District Department of the Environment, 2014) confirms the MWCOG data that TP EMC is higher in older urban areas.

C. Objective of this RFP

1. To determine and document the EMC for TP and TN currently used for modeling urban/suburban stormwater in Virginia by DEQ and in the latest EPA Chesapeake Bay Model.
2. To develop and implement a limited, but statistically significant, sampling and analytical protocol for determining EMCs for TP and TN in stormwater runoff in 2018 in at least one urban/suburban area of Virginia within the Chesapeake Bay Watershed.
3. To analyze and report what EMC for TP and TN was derived from the Objective 2 sampling/analyses.
4. To recommend whether or not the results from this project warrant additional sampling/analyses and potential revisions to the VRRM (0.26 mg/L TP and 1.86 mg/L TN) and EPA's Chesapeake Bay Model (Phase 5.3 model used EMCs of 0.27 mg/L TP and 2.0 mg/L TN).

D. Scope of Work

The successful applicant will submit a proposal that includes a detailed scope of work to accomplish the four objectives provided above. Particular attention should be placed upon:

1. Methodology of sample collection and analysis, including QA/QC protocols.
2. Number and location of proposed sampling sites.
3. Statistical methods utilized for the selected sites relative to achieving objective #2 while minimizing costs.
4. Total suspended solids (TSS) may also be assessed as long as its cost is proposed as an “Add Alternate”.

III. Submission of Proposals

A. Deadline and Delivery

The proposal application must be received by **5:00 PM on October 1, 2018**. Each proposal should be submitted as four (4) bound paper copies and an electronic copy in PDF format on a USB Flash Drive. Send proposal applications to the following address:

Michael S. Rolband, P.E., P.W.S., P.W.D., President
Resource Protection Group, Inc.
c/o Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive, Suite 100
Gainesville, Virginia 20155

Telephone: 703 679 5602
E-mail: mrolband@wetlands.com

Please note that misdirected proposal applications will be deemed late and returned to the applicant. All proposal applications must be complete at the time of submission. Later changes or addenda will not be accepted.

FAXED OR E-MAILED APPLICATIONS WILL NOT BE ACCEPTED

B. Questions

Questions that arise during the proposal preparation should be directed by e-mail or U.S. Mail or overnight service² to:

Jennifer Van Houten, PWS, PWD, Vice President
Resource Protection Group, Inc.
c/o Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive, Suite 100
Gainesville, Virginia 20155

Telephone: 703 679 5641
E-mail: jvanhouten@wetlands.com

All responses and related responses shall be distributed to all registered proposers.

C. Registration of Proposers

If you desire to be informed of all questions and answers addressed during the proposal preparation process, as well as any RFP amendments, you must notify (via e-mail or U.S. mail) the following for registration:

Jennifer Van Houten, PWS, PWD, Vice President
Resource Protection Group, Inc.
c/o Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive, Suite 100
Gainesville, Virginia 20155

Telephone: 703 679 5641
E-mail: jvanhouten@wetlands.com

IV. Program Funding

- A.** The RPG shall fund 100% of the accepted proposal's budget pursuant to an agreed upon payment schedule based upon research progress.
- B.** Applicants are *not* expected to provide any cost-share towards the research budget. However, cost-share or matching funds are encouraged and will improve the scoring of your proposal.
- C.** The Indirect Cost rate shall be limited to 35% of Total Direct Costs. This is a maximum rate; proposers may offer a lower rate. Matching funds may be used to offset higher Indirect Cost rates.

² Telephone calls are not preferred, as all registered proposers must be informed of all questions, answers, and clarifications.

- D. Tuition for graduate students *is allowable* as a Direct Cost on a proportionate basis to the percentage of their research time dedicated to the proposed work.
- E. The estimated cost range for this project is \$50,000 to \$100,000, with a 9 to 15-month duration. If you do not expect this budget or timeframe to be adequate to perform the work, please notify us as soon as possible during your preparation of the proposal so we can consider an amendment.

V. Proposal Review Process

- A. Submission of Response to the Piedmont Wetlands Research Program in care of WSSI.
- B. RPG shall provide a recommendation to Virginia’s Inter Agency Review Team (IRT) for an award.
- C. The IRT Chair shall have ten (10) days to (based upon IRT comments): (i) concur with the RFP Award Recommendation, (ii) select an alternative proposal, or (iii) reject all proposals. The IRT Chair shall provide one (1) signed original “Solicitation Offer and Award” form confirming its decision to RPG.
- D. *More than one (1) response may be selected* if the reviewers determine that significantly different research approaches are proposed that separately have the strong possibility of yielding a different, yet practicable, solution.
- E. Timing: We expect the review process to take 30-60 days.

VI. Subcontractors

One academic institution must be the prime research contractor and designate a Principal Investigator (PI) as both the point of contact and the party responsible for performing the work. Other entities may be subcontractors to the prime research contractor subject to the following conditions:

- A. They are an academic institution or a federal government entity with research capabilities (such as USGS), and
- B. No more than 49% of the work (measured in dollars of Direct Cost) shall be undertaken by academic personnel from a non-Virginian academic institution or federal government entity.
- C. The Prime Research Contractor cannot apply any indirect rate markup to the subcontractor’s total cost except if that subcontractor’s indirect rate is lower than that allowed for the prime. In such case, the prime contractor may charge the difference. In no case can the subcontractor charge more than the indirect rate allowed by the prime.

VII. Review Criteria

The proposals will be reviewed and scored based upon the following criteria, with the weighting noted below showing the likely value of each criterion in the award decision:

	Criteria	Weight
1.	Level of interest, experience, and expertise of the Principal Investigator(s) in the research topic	15%
2.	Overall proposal quality, innovation, and viability	25%
3.	Statistical support for proposed sampling effort	25%
4.	Cost	10%
5.	Matching funds / University contributions	25%

The reviewers and ultimate decision makers reserve the right to modify, at any time during the review process, the weighting of each criterion or simply make a unilateral decision to not follow said weighting in the extraordinary circumstance that the weighting does not result in a practicable outcome. For example, if one proposal was triple the cost of all others, even if it was deemed superior in every other manner, we may determine that it is not an economically viable approach and not select that proposal or contact the proposer to discuss a modification to its proposal to address the cost issue.

VIII. Submission Requirements

Your response to this RFP must not exceed ten (10) single-spaced, typed pages³, using 12-point font size and one-inch margins (all sides) and include the following sections:

- A.** Solicitation Offer and Award Form (referenced in Section XII and provided in Appendix A): You must complete all sections on this form and obtain signatures of the appropriate officials.
- B.** Table of Contents: Please include major sections and the corresponding page numbers.
- C.** Executive Summary (limit to one page single spaced): Explain what you plan to do, why your team should be selected, and what your proposed budget is.
- D.** Project Team: Describe which institutions and, specifically, the people who will be involved (and to what degree) in this project. Explain why this team is best suited for this project.
- E.** Project Description:
 - 1. Objectives: List the specific objectives of the project.

³ Text Section (i.e., does not include resumes, budgets, cash flow projection, schedules, or SOAF)

2. Background: Explain the relevance of the project.
3. Preliminary Studies (if applicable): Describe any precursor research you have conducted or are aware of that applies to the project topic and what was determined from those preliminary results.
4. Experimental Procedures/Methodologies: Describe any laboratory or field testing to be performed referencing analytical methods used and commercial products planned to be used or assessed in this program. List and describe each type of device that you will test and evaluate.
5. Description of Resources (i.e., laboratory facilities and/or field sites): Describe the laboratory facilities, testing equipment, field sites, etc. available for conducting the tasks associated with this project. If WSSI field sites are desired for use, describe which ones and how large an area is needed for access, etc.
6. Literature Cited: List all sources used.

F. Scope of Work:

1. Issue Identification: Identify and briefly describe the issue this project is addressing.
2. Work Tasks: Break the project into specific work tasks and describe each work task individually.
3. Time Allocation: Describe how much time (by months) is to be allotted for each work task and when each task is to begin and end.
4. Resource Allocation: For each work task, list the personnel who will be working on that task and specifically what each person will be doing.
5. Quality Assurance/Quality Control: List measures planned to ensure that high quality results are achieved, such as descriptions of statistics to be used to evaluate data and to compare data to controls; field and lab QA/QC, data handling and security, and how to deal with the potential that graduate student tenures may not coincide with the research schedule.
6. Determination of Goals: Identify the means to be used to determine that project goals are met.

G. Budget for requested funding summarizes the entire scope and costs into one lump sum total cost using a format similar to the one provided in Section X.

H. Budget Details: The budget may include salaries, travel, equipment, materials, and services *not including fees or profit*. It is imperative that you specify any Indirect

Costs or fringe benefits rates, as well as which budget categories are affected by those rates. (For example, Indirect Costs defined as “Facilities and Administration” = 25% of Total Direct Cost less tuition and equipment). In addition, salaries must include personnel descriptions (i.e., faculty, graduate student, hourly worker, etc.), the number of hours expended on the project, and the hourly rate (or as a % of FTE where one FTE = 2050 hours). Supplies must be listed in general terms (i.e., field supplies, general office supplies, etc.). Travel must include a description (trips to field site, conference, etc.), estimated number of hours for travel, and estimated cost per trip. In addition, for travel to conferences, estimate proposed expenses in the budget. For travel to conferences, specific information on conference title, dates of conference, and purpose in attending (i.e., presenting paper, poster session, etc.) must be supplied to WSSI for approval prior to travel. Other Direct Costs must include a general description (i.e., contractual analyses) and include units and unit cost. As stated in Section IV. C., Indirect Costs are fixed at 35% of Total Direct Costs. No cost-share funding is required.

Major pieces of equipment (>\$2,000 with lifetime >2 years) are not eligible for purchase with funding from this program unless (i) they are clearly essential to the conduct of the proposed work, (ii) their documented use will be primarily for the proposed work, and (iii) they will be made available for use by future consortium research programs after the funding program is completed.

- I. Proprietary Information: No information provided in proposals responding to this RFP shall be deemed proprietary. All information in each proposal could be subject to public disclosure or disclosed to other parties.
- J. Organizational Chart: Provide an organizational chart depicting the structure of your team.
- K. Curriculum Vitae (CV): Provide CV for each senior investigator involved in the proposed project. Resumes should be no more than two pages with an attachment listing all relevant publications within the past 20 years (limit to two pages). Senior investigators include the principal investigator and any other faculty or senior-level personnel involved in the project. CV of lower level researchers may be included at your option.
- L. Research Schedule: Provide a projected schedule for your research activities. This schedule should be logically related to the budget's cash flow projections.

IX. Payment and Reporting Requirements

A. Reporting Requirements Shall Include:

- a. Quarterly (i.e., March 31, June 30, September 30, December 31) Progress Reports with reports submitted within thirty (30) days after the end of the quarter

describing (one or two paragraphs) your progress relative to the Proposal Schedule, Budget, and Scope of Work tasks.

- b. An invoice for each payment milestone when achieved.
- c. Lab results Summary.
- d. Draft Report for RPG review.
- e. Final Report incorporating RPG comments.
- f. One short article for Wetland Studies and Solutions, Inc. (WSSI) newsletter, Virginia Municipal Stormwater Association, Inc. (VAMSA) newsletter, and Stormwater Magazine.
- g. One peer reviewed publication article shall be prepared and submitted to an appropriate journal.
- h. One seminar at WSSI's office which will be open to VAWPS and academics, as well as the consulting and regulatory community at large.

B. Payment Requirements

- a. RPG and/or IRT representatives may inspect research facilities and discuss progress with researchers to verify invoice amounts and research progress at their discretion.
- b. Undisputed Invoices shall be paid by RPG within thirty (30) days of tender *if and only if* they are submitted in the mandated manner and schedule described above. Invoices submitted later than prescribed above shall be delayed for processing until all reporting submissions are made timely in the next quarter.
- c. Payments shall be made 30 days after completion and invoicing of the following tasks in accordance with the percentage specified below:

Task	Desired Time Period	% Paid
Start	N/A	0%
Site selection map with landowner approval of use	End of 2 nd month	5%
Completion of literature search and report submission	End of 3 rd month	10%
Equipment installation	End of 3 rd month	10%
Completion of monitoring period	End of 9 th month	10%
Lab result summary	End of 10 th month	10%
Draft Report submission	End of 11 th month	10%
Articles approved by RPG and submitted to:		
a) WSSI Newsletter and VAMSA Newsletter		5%
b) Peer Reviewed Journal		5%
c) Stormwater Magazine		5%
Final Report final articles submission	End of 12 th month	25%
One seminar at VAMSA meeting	End of 15 th month	5%

X. Budget Sheet

Your proposed budget shall be submitted in a spreadsheet in a format similar to the description depicted below (to assist you in completing this form, a sample is provided):

Budget Sheet

Project Title: _____				
Principal Investigator: _____				
Organization: _____				
Requested Duration in Months: _____				
Item	Unit Rate ⁴ (A)	Units ⁵ (B)	Quantity (C)	Cost (D = A x C)
Salaries (list each person or position separately)				
Benefits (list each benefits rate per person / position)				
Tuition				
Supplies ⁶				
Equipment ⁷				
Subcontracts (provide breakdown of salary, benefits, tuition, supplies, equipment, etc. unless it is a lump sum less than \$5,000)				
Travel				
Other Direct Cost				
Total Direct Cost				
Indirect Cost	35% ⁸	N/A	N/A	
Total Cost	N/A	N/A	N/A	

⁴ i.e., \$/hr; ¢/mile; \$/month

⁵ i.e., LS = lump sum; hr = hours; % of effort

⁶ Items costing <\$2,000.00 with a useful life <2 years

⁷ Items costing ≥\$2,000.00 with a useful life ≥2 years

⁸ This is the maximum rate. Proposer may offer a lower rate.

SAMPLE

Budget Sheet

Project Title:		Water Budget Modeling		
Principal Investigator:		Sam Jones, Ph.D.		
Organization:		University of Wetlands		
Requested Duration in Months:		18 Months		
Item	Unit Rate⁹ (A)	Units¹⁰ (B)	Quantity (C)	Cost (D = A x C)
Salaries				
Sam Jones, P.I.	8,000/month	N/A	9 ¹¹	72,000.00
Jane Waters, Research Associate	3,000/month	N/A	18	54,000.00
Benefits				
P.I.	20%	N/A	N/A	14,400.00
R.A.	16.5%	N/A	N/A	8,910.00
Tuition	5,000 / semester	semester	3	15,000.00
Supplies	10,000	L.S.	1	10,000.00
Equipment	5,000	L.S.	1	5,000.00
Subcontracts				
Computer Lab	3,000	L.S.	1	3,000.00
Geek Squad	2,000	L.S.	1	2,000.00
Travel	.50/mile	Miles	5,000	2,500.00
Other Direct Cost	N/A	N/A	N/A	N/A
Total Direct Cost	N/A	N/A	N/A	186,810.00
Indirect Cost	35%	N/A	N/A	65,383.50
Total Cost	N/A	N/A	N/A	252,193.50

⁹ i.e., \$/hr; ¢/mile

¹⁰ i.e., LS = lump sum; hr=hours; % of effort

¹¹ 50% of 18 months

XI. Solicitation Offer and Award Form (SOAF)

Include one (1) original of the SOAF, signed by the Principal Investigator and Organization's Certifying Representative, with each of the four (4) hard copy submissions, and a PDF of said signed document on a USB Flash Drive containing your proposal.

See Attachment A: Solicitation Offer and Award Form.