

Northern Virginia Coastal Resources Technical Assistance Program

Annual Report

October 1, 2009 – September 30, 2010

NOAA Grant #NA09NOS4190163

Grant Year 2009, Task 46



Northern Virginia Regional Commission



Virginia Coastal Zone
MANAGEMENT PROGRAM

In Grant Year 2009, the Northern Virginia Coastal Resources Technical Assistance Program was funded in part by the Virginia Coastal Zone Management Program at the Department of Environmental Quality, through Grant #NA09NOS4190163 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

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The Northern Virginia Regional Commission (NVRC) is a regional council of local governments in Northern Virginia.

NVRC serves as a neutral forum where representatives of the member governments can discuss and decide how to approach problems that cross county, city and town boundaries.

NVRC helps member governments share information about common problems; recognize opportunities to save money or to be more effective by working collaboratively; and take account of regional influences in planning and implementing public policies and services at the local level.

NVRC's programs and polices are established by a 25-member Board of Commissioners. The Board is composed of elected officials appointed by the governing bodies of NVRC's 14 member localities that include the Counties of Arlington, Fairfax, Loudoun, and Prince Williams; the Cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park; and the Towns of Dumfries, Herndon, Leesburg, Purcellville, and Vienna.



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*On the cover – The Potomac River shoreline at Hallowing Point, Fairfax County, VA, January 2009
(photo credit: Laura Grape)*

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The following individuals were instrumental in assisting and participating in the Northern Virginia Regional Commission's (NVRC) Coastal Resources Technical Assistance Program projects:

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Coastal Resources Technical Assistance Program Manager:
Laura Grape, Senior Environmental Planner, NVRC

Introduction & Summary

This report fulfills the product requirements set forth in the 2009 Virginia Coastal Zone Management Program Grant, Task 46 (NOAA Grant #NA09NOS4190163) for:

- Product #1 – Report on Northern Virginia Coastal TA Program
- Product #2 – Summary of Regional Stormwater Education Campaign

Throughout fiscal year 2009, NVRC continued to provide technical assistance and coordination on coastal resource issues among state, local, federal, and regional parties involved in coastal resource management in Northern Virginia. Particular efforts conducted by NVRC focused on effort to improve water quality by providing training for homeowners and through the coordination of government agencies. These efforts include:

Technical Workshops: Four technical workshops for individual homeowners, public and private planners and engineers:

- Residential Rain Gardens
- Chesapeake Bay Phase III Program's Advisory Review
- Regional Coordination on Bay TMDL and Stormwater Programs

Northern Virginia Clean Water Partners – Regional Stormwater Education Campaign: Continued management and expansion of the Northern Virginia Clean Water Partners – Regional Stormwater Education Campaign – www.onlyrain.org to change pollution-causing behaviors of Northern Virginia residents and evaluate the success of doing so.

Additional Technical Support: In April 2010, entered into a formal partnership with NoVA Outside – An Alliance for Environmental Educators in Northern Virginia, to provide technical service in the development of a web presence for this emerging umbrella organization. In addition, NVRC is providing support in the development of a teacher's training which will share the value of schoolyard habitats and available online tools to integrate into classroom lesson plans.

Additionally, NVRC co-sponsored a mini-grant program for the development of residential rain gardens, facilitated by NoVA Outside (www.novaoutside.org). Three awards were given to participants of past NVRC-sponsored rain garden workshops for a total of \$1,000.

Chesapeake Bay Implementation: NVRC continues to serve on the Potomac Watershed and Northern Virginia Urban Forestry Roundtables and participate as requested in tributary strategies, watershed planning strategies, and related programs to protect water quality.

EIS/EA/EIR and Permit Reviews: NVRC continues to participate in the EA/EIS and permit intergovernmental review process. Over the fiscal year, NVRC responded to 24 EA/EIS requests as part of the intergovernmental review process.

Technical Workshops

NVRC is responsible for hosting four workshops annually. Past examples include: onsite wastewater systems operations and maintenance, blue/green infrastructure planning, factors affecting the delivery of pollutants to downstream waterways, and Chesapeake Bay Local Assistance trainings. Summaries of the workshops hosted in fiscal year 2007 are below. Their corresponding agendas, attendance list, and feedback responses, if available, are provided in Appendix A.

New Chesapeake Bay Regulation Guidance and Requirements

In partnership with the Virginia Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance (DCR-CBLA), NVRC hosted two workshops promoting the Division's Phase III Program to the local Chesapeake Bay Program Managers throughout the region. DCR-CBLA staff presented information regarding the review and revisions required of the tidewater jurisdictions' ordinances as they relate to minimizing land disturbance, preserving indigenous vegetation, and minimizing impervious cover. Participant feedback revealed an overwhelming desire to continue semi-annual meetings with DCR-CBLA staff on the Chesapeake Bay Regulations. Participants appreciated the open dialogue forum which provided the opportunity to ask questions and receive responses directly from DCR-CBLA staff.

Beautifying Your Yard for Clean Water – Rain Gardens for Residents

On Saturday, October 17, 2009, 35 individuals attended a 4-hour workshop at Virginia Tech's Northern Virginia Center in Falls Church, VA. The workshop featured presentations by

representatives from the Northern Virginia Soil and Water Conservation District, Arlington County, and the Northern Virginia Regional Commission. Presentation topics covered the following aspects of rain gardens: Designing and Building a Rain Garden; Selecting Plants and Landscaping a Rain Garden; and Maintaining a Rain Garden, Lessons-Learned. Seminar participants each received several handouts including copies of *Rain Garden Design and Construction – a Northern Virginia Homeowner's Guide* produced in partnership by the Northern Virginia Soil and Water



Figure 1: Participants at the field tour huddle around a rain garden placed in the front yard of a residence in Falls Church, Virginia. This project was part of a comprehensive effort to capture over 600 cubic feet of stormwater that would otherwise run off the property.

Conservation District and Fairfax County Park Authority. Additional plant lists and web-based resources for watershed-friendly gardeners were provided.

An optional field tour of a nearby residential property that includes a variety of conservation landscaping techniques, including a rain garden, concluded the workshop.

Shoreline Management

Two workshops featuring representatives from the Virginia Institute of Marine Sciences (VIMS) focused on integrated shoreline management and shoreline management planning. Julie Bradshaw (VIMS) spoke with NVRC and eight staff liaisons representing Fairfax and Prince William County's Wetland and Chesapeake Bay Review Boards and the Town of Occoquan. Representatives from the Department of Conservation and Recreation – Chesapeake Bay Local Assistance and the Virginia Marine Resources Commission (VMRC) were also invited.

Julie presented a series of PowerPoint slides that focused on coastal processes and jurisdictional boundaries; shoreline management practices; VIMS integrated shoreline management approach; and Joint Permit Applications considerations.

The impetus for this workshop is due to a change in the way that VIMS will do business regarding their development review process. VIMS staff will no longer visit Northern Virginia to review every development proposed along the shoreline. However, they may participate on a case-by-case basis. This change is particularly due to the permitting process in which staff members from VIMS are often involved too late in the development planning process for their suggestions to be considered – the homeowners have already invested significant money in planning and design by the time VIMS is involved. Instead, VIMS will work to be more proactive by increasing the knowledge of local staff and homeowners on various shoreline management techniques. Local staff mentioned the important advisory role that VIMS staff played in the past and raised concerns regarding their limited involvement in the future. During the discussion, local staff mentioned various tools that would be helpful in filling the gap, including informational brochures, shoreline management plan, and stabilization recommendations for waterfront properties upstream of the Occoquan Dam. This discussion and the concerns raised by local staff resulted in VIMS pursuing a grant to develop a shoreline situation report for Alexandria, Fairfax, and Prince William Counties, awarded September 2009.

A follow-up workshop on Shoreline Management Planning, led by Scott Hardaway, Shoreline Studies Program Director at VIMS, introduced participants to the elements of shoreline management planning and provided an overview of completed projects along the Middle Peninsula and Eastern Shore of Virginia. Following the presentations, the group engaged in a dialogue about opportunities in Northern Virginia and the benefits of shoreline management planning. With a better understanding of the benefits of a plan, along with the knowledge of the upcoming shoreline situation report, the participants asked VIMS and NVRC to identify and pursue funding opportunities to develop a shoreline management plan in Northern Virginia.

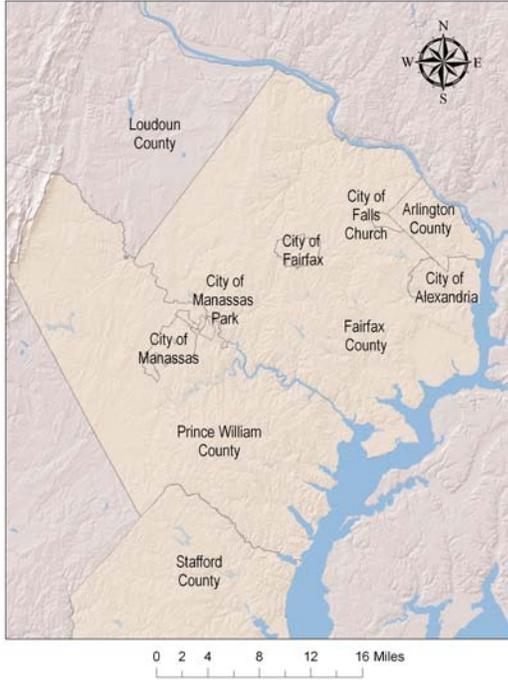


Figure 2. Northern Virginia jurisdictions located within Virginia's designated Coastal Zone.

Special Project Summary

Northern Virginia Clean Water Partners – Regional Stormwater Education Campaign

Calendar year 2009 marked the fifth year of the campaign, with a new radio public service announcement “Switching Bathwater with Stormwater” airing 651 times on six radio stations including one Spanish language station in May and June 2009. These advertisements reached approximately 355,446 unique individuals an average of 11 times.

In preparation for the airing of the advertisements, the Partners conducted pre-campaign market research with the assistance of Water Words that Work and Amplitude Research. The survey used an online panel format to discern the most effective messages for an advertising campaign that encourages individuals to take action to reduce stormwater-related pollution. Responses from the panel participants shaped the language used for website content and online advertisements to be placed in the summer. Five hundred Northern Virginians from the participating jurisdictions completed a 15-minute online questionnaire, which involved listening to and rating two radio ads under consideration.

Some questions in the online survey were written in an identical manner to past telephone surveys conducted by the partners to evaluate the impact that a shift in market research methodology has on the results.

Respondents rated different messages as most compelling for each behavior. There was no single overarching “best” message. For fertilizer web pages and advertisements, the most compelling messages are “before it’s too late,” “best for the yard,” and “working together makes a difference.” For dog doo web pages and advertisements, the most compelling messages are to alert pet owners that “dog doo pollutes,” and that “working together makes a difference.” For motor oil disposal web pages and advertisements, the most compelling messages were “even a little oil is a lot of pollution” and “you’ll pay a big fine if get caught.” Respondents are far and away most eager to sign up for an email newsletter that contains money-saving coupons they can use for their dogs, lawns, and vehicles.

Based on the results of the pre-campaign market research and survey, the Partners established a new website format based on results from the pre-campaign market research and added individual pages for each jurisdiction participating in the campaign. The website is a content management based program that allows access for each jurisdiction to make updates as needed.

While the efforts over the last five years have proven to be effective, current budget constraints are restricting the amount of funding available for radio ad placement. At the same time, the methods by which residents are receiving their information are changing at a rapid rate. Traditional media outlets (television, radio, and print media) are not seeing the widespread viewer, listener, and readership that they did five years ago. Online information is easily accessible, particularly in the techno-savvy Northern Virginia region. The May 2000

Commonwealth Internet Poll by the Virginia Commonwealth University revealed 71 percent of Northern Virginia residents access the Internet at home.

To extend the reach of traditional stormwater education through electronic formats, the

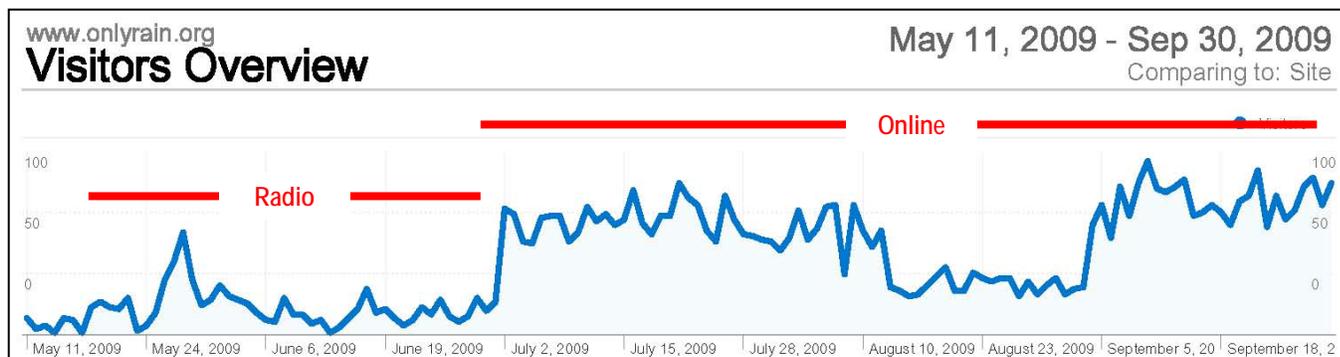


Figure 3. Comparison of ad driven visitor traffic to the onlyrain.org website between mid-May through the end of September 2009. We can only speculate that the dip in August is due to less activity on the web during the month.

Partners are conducting a pilot study to explore the use of online advertising through search engines and social networking sites. With a limited budget, the project anticipates taking advantage of the frequency of exposure to the message and precision of targeting specific audiences that can be achieved by the use of web-based advertising (Figure 2).

A post campaign survey will be conducted online using subscribers to the campaign’s new e-mail newsletter in the fall 2009. Throughout the pilot study, which occurred between June and September 2009, a total of 84 individuals subscribed to the e-mail newsletter. A summary of campaign results are included in Tables 1 and 2.

Table 1. Visits to www.onlyrain.org website and number of subscribers for e-newsletter between the months of June and September.

Month	Visits	Subscribers
June	393	8
July	1,923	30
August	1,246	9
September	2,156	37

Table 2. Comparison of the number of people exposed to the radio or online advertisement (i.e. impressions) to the number of visits to the onlyrain.org website and the amount of money spent.

Advertising Medium	Weeks Airing	Impressions	Website Visits	Cost
Radio	5/11 – 6/15	355,446	676*	\$80,000.00

Online	5/25 – 9/28	26,563,582	7,996	\$ 7,633**
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**All visits that do not directly originate from the online ads are attributed to the radio ads.*

***Based on the average observed cost per click of \$0.95.*

Also, the results of the pilot study provide an understanding of associated costs for the various online advertising channels (Table 3). Over the four months, the majority of the traffic to the onlyrain.org website came from the social networking sites, which also cost the least per click.

Table 3. Comparison of costs between online advertising channels.

Channel	Total Cost	Total Impressions	Cost per Impression	Total Ad Clicks	Cost Per Click
Google	\$884.08	1,138,033	\$0.0008	953	\$0.93
Yahoo!	\$1,565.71	886,330	\$0.0018	1,072	\$1.46
Facebook	\$3,330.05	13,709,106	\$0.0002	3,779	\$0.88
MySpace	\$1,853.44	10,880,118	\$0.0002	2,192	\$0.85
TOTAL	\$7,633.28	26,563,582	\$0.0030	7,996	\$0.95

In addition to the radio and online advertisements, the partners continue to promote complementary print, video- and Web-based products (www.onlyrain.org) to aid in raising the awareness of Northern Virginia residents about behaviors leading to non-point source pollution and the actions residents can take to protect local and regional water quality.

By pooling outreach funds to reach a wider audience, Northern Virginia jurisdictions hope to change pollution-causing behavior of those who allow contaminants such as fertilizer and dog waste to be washed down storm drains. The total cost of the 2009 campaign is \$124,000, which is funded by 13 local governments and sanitary and drinking water authorities. In addition to the local contributions, the Partners received approximately \$150,000 in negotiated unpaid media from the participating radio stations.



At the July 2009 Virginia Planning District Commission Summer Conference, NVRC received the first deVoursney Best Practices Award for the Commission's management of the Northern Virginia Clean Water Partners – Regional Stormwater Education Campaign. The deVoursney Best Practices Award is given in recognition for initiating innovative regional activities that have contributed significantly to effective operation and regional cooperation in a multi-jurisdictional area.

(l to r) Joyce French, Executive Director with Southside Planning District Commission; Aimee Vosper, Director of Planning and Environmental Services with NVRC; Mark Gibb, Executive Director with NVRC, Hon. Martin Nohe, NVRC Commissioner (Prince William County).

Intergovernmental Reviews

In FY2008, NVRC reviewed and responded to 47 documents as part of the intergovernmental review process. NVRC has not received notice of significant changes in projects due to comments provided by NVRC staff.

Additionally, NVRC staff responsible for responding to reviews attended the Federal Consistency Workshop hosted by NOAA in Dover, DE on April 21, 2009. Their participation resulted in a better understanding of the overall process of the program.

Coastal and Chesapeake Bay Implementation

NVRC continues to support state and local groups engaged in watershed planning initiatives, tributary strategies, and other Chesapeake Bay-related efforts including the following projects:

- *Coastal Planning District Commissions Planning Meetings*
 - *January 12, 2009*
 - *June 11, 2009*

- *Virginia Coastal Policy Team*
 - *February 18, 2009*
 - *September 30, 2009*

NVRC staff participates in and supports the implementation of meetings and conferences for the following organizations that meet quarterly:

- *Potomac Watershed Roundtable*

A regional government – citizen forum whose purpose is to promote collaboration and cooperation on environmental concerns, especially water quality issues, among the various local governments and stakeholder interest groups residing within the Virginia side of the middle and lower Potomac River watershed. Meetings attended include:

 - October 3, 2008
 - January 9, 2009
 - April 3, 2009
 - July 10, 2009

- *Northern Virginia Urban Forestry Roundtable*

Citizen members of tree boards and commissions, elected officials, urban foresters and arborists, landscape architects, builders, developers, and planners desiring to enhance and protect Virginia's urban forest. Meeting attended include:

 - November 14, 2008
 - February 12, 2009
 - April 16, 2009

NVironment Newsletter

Every year, the Commission produces the NVironment newsletter highlighting environmental topics of interest to Northern Virginia jurisdictions. Approximately 1,100 planners, engineers, interested residents, and elected officials throughout Virginia and the mid-Atlantic region receive a copy of the newsletter. NVRC also posts it on their website at www.novaregion.org.

The 2009 issue includes articles on:

- The development of the Loudoun County Energy Plan;
- The Sustainable Shorelines and Community Management Project;
- Efforts by public schools in Northern Virginia to improve the efficiency of their facilities;
- Pilot study on the use of online advertising to prevent stormwater pollution;
- Virginia Coastal Zone Management Program's Coastal GEMS
- The Potomac Heritage National Scenic Trail
- Implementation of the Four Mile Run Stream Restoration Master Plan
- The Chesapeake Bay Executive Order.

NVRC houses past issues of the NVironment from 2003 in electronic and paper format. They are available via the Commission's website at www.novaregion.org/newsltr.htm. Prior issues are also available in PDF format, upon request. A copy of the Fall 2009 NVironment is included as Appendix E.

Appendix A

Northern Virginia Clean Water Partners Regional Stormwater Education Campaign 2009 Campaign Plan

Regional Stormwater Education Campaign 2009 Plan

The 2009 Plan details the efforts to be completed throughout Calendar Year 2009 for the Regional Stormwater Education Campaign.

Project Background

Since 2003, Northern Virginia's local governments and several water and sanitary sewer authorities have contributed both in-kind and financially to the planning and implementation of the Regional Stormwater Education Campaign. The campaign is a collaborative social marketing effort, with an overarching goal of improving the region's water quality by changing the pollution-causing behaviors of our residents.

The Regional Stormwater Education Campaign leverages funds to achieve common goals regarding stormwater education and outreach and promote consistent messages for fertilizer and pesticide use, pet waste disposal, and motor oil recycling.

The campaign satisfies MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior. The campaign results have shown that residents hearing the campaign radio ads report a reduction in pollution causing behaviors.

2009 Plan

The 2009 Campaign will include a pre-campaign survey, improvements to the campaign's website, traditional radio advertising and a pilot study to test online advertising in the Northern Virginia market.

The Partners will work with Water Words That Work, LLC and Media Vision, Inc.

Pre-Campaign Survey - The pre-campaign survey is a critical step in ensuring the campaign's messages and products are hitting the right targets. The survey will take advantage of existing online marketing and surveying companies. The information gleaned from this process will be used to steer the campaign's efforts over the next several years.

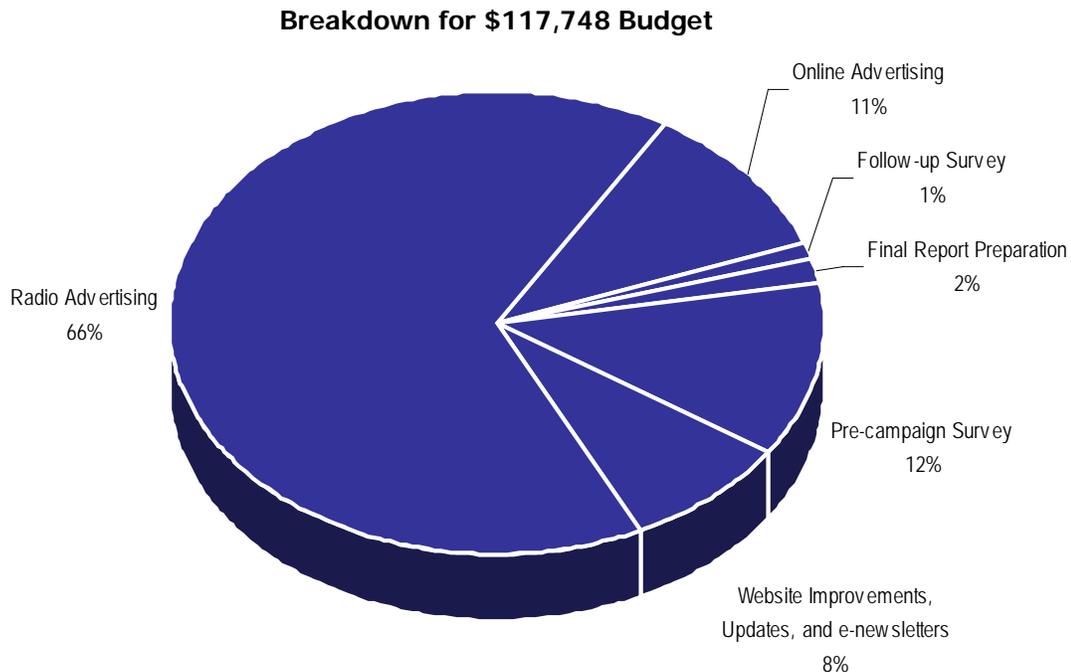
Website Design Improvements - The campaign's website (www.onlyrain.org) will become significantly more dynamic and direct visitors to take action. Through our marketing consultant, the Partners will work with a professional web developer to map out the site and provide content for uploading. The Partners will also determine what actions they would like visitors to take.

Radio Advertising - Results from the spring 2008 campaign survey showed a significant increase in the number of people who recalled hearing the advertisement. This statistic encourages the Partners to continue placing the radio advertisement on air. Over the previous campaign years, the top two radio stations, which survey respondents state listening to, are news stations - NPR and WTOG. The Partners received significant unpaid media services through WARW (The Globe) that continued beyond the four weeks of the ad airing. The region's Spanish-speaking station, WLZL, continues to get widespread listenership from the region's Latino community. It is suggested that efforts focus on these four radio stations. In spring 2008, the Partners received approximately \$300,000 in negotiated unpaid media through interviews, web banners, and additional PSAs. Unpaid media is an important facet to the campaign and will continue to be sought after.

Pilot Study – Online Advertising - The methods by which residents are receiving their information is changing at a rapid rate. Traditional media outlets (television, radio, and print media) are not seeing the widespread viewer, listener, and readership that they did five years ago. Online information is generally free to readers and is easily accessible. Google and Facebook are recommended as the two web portals to place advertisements as they continue to be in the top five for web traffic and advertising on them is “pay per click”. This method allows the Partners to pay only if the viewer clicks on the advertisement. The ads can be strategically targeted to the user based on zip code and other user data, allowing for a more refined campaign marketed solely to our selected target audience in the Northern Virginia region.

Budget

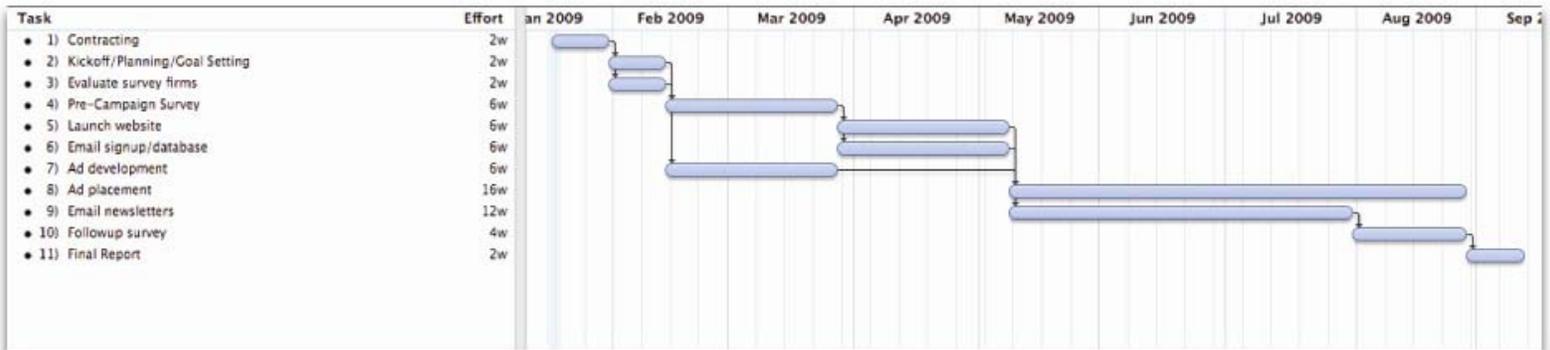
NVRC proposes a total budget of \$117,748 for the 2009 campaign. This is a 36 percent decrease from the 2008 budget (\$181,500). A budget of this size will allow the Partners to continue a scale-down version of the traditional radio campaign, while also exploring a cutting edge approach to social marketing, through the pilot study.



2009 Financial Commitments per Partner

Partners	2009 Financial Commitments
City of Alexandria	\$3,000
City of Fairfax	\$1,500
City of Falls Church	\$1,050
Arlington County	\$12,000
Fairfax County	\$50,000
Loudoun County	\$16,275
Stafford County	\$5,000
Town of Vienna	\$1,000
Town of Herndon	\$1,800
Town of Dumfries	\$500
Town of Leesburg	\$2,000
Loudoun Water	\$2,500
Fairfax Water	\$5,000
Carryover from 2008 Campaign	\$17,923
Total	\$117,748

General Timeline for 2009 Campaign
Prepared by Water Words that Work



Appendix B

Northern Virginia Clean Water Partners Regional Stormwater Education Campaign and Pilot Study Final Report

Appendix C

Northern Virginia Clean Water Partners Planning Meeting Agendas and Presentations

Appendix D

Technical Workshop Materials

October 17, 2009 Rain Garden Workshop

EVALUATION FORM RESPONSES Total number of responses – 12

1. How would you rate today's seminar

Excellent (9)
Good (3)
Fair
Poor
No Response

Comments: NONE

2. Which session(s) was most informative and useful?*

Designing and Building a Rain Garden (8)
Selecting Plants and Landscaping a Rain Garden (6)
Maintaining a Rain Garden, Lessons Learned (5)
Rain Garden Tour

Comments:

- All were very helpful!

**Participants checked all sessions that applied. Also, many completed the form before attending the rain garden tour.*

3. Which session was least informative and useful?*

Designing and Building a Rain Garden
Selecting Plants and Landscaping a Rain Garden (2)
Maintaining a Rain Garden, Lessons Learned (2)
Rain Garden Tour (1)

Comments:

- n/a
- They were all great!
- All were very informative
- n/a

**The majority of respondents did not provide a response to this question*

4. Please describe how today's seminar could be improved.

- The workshop was excellent & accommodating (I wasn't registered). I am a bit vague on the maintenance though.
- Probably not something you can address, but the room at VT was cold.
- Speakers were a bit too monotone for a room with little/fluorescent light – deliberately change volume occasionally. Instill some deliberate humor – a cartoon or vignette about something funny that can/has occurred.
- Minimize overlap...but minor issue.
- Building a rain garden – give info on where to find some of the materials used to build. E.g soil, fabric to prevent seepage from sides of retaining wall, etc.

5. How did you learn about today's seminar?

Medium
Arlington County (2)
Northern Virginia Regional Commission
Northern Virginia Soil & Water Conservation District (2)
Organization newsletter
Email listserv (2)
Newspaper (2)
Website

Other

Sources (if specified):

- Friends
- My significant other told me
- Work (City of Falls Church)
- Washington Post
- Green Springs
- E-news from Dan Schwartz

6. Other Comments?!

- Excellent presentations.
- Very informative all around.
- I am interested in the possibility of arranging a presentation for students at Marshall High School where we have a teaching garden (that doesn't yet have a rain garden area). We also have a partially completed rain barrel that we'd like to setup – I see now that it could be used in conjunction with a rain garden. I'll contact you...Thanks! Barbara Brown (bdbrown@fcps.edu)
- THANK YOU!
- Very good session/workshop, very informative. I really liked the before and after photos from Aileen. The best workshop I've attended. Congrats!
- Thank you – it was wonderful! Handouts were great. Thank you.
- The room was chilly enough to disturb my concentration – but I recognize that probably isn't something the presenters could control.
- Great intro to RG's.
- I started my backyard rain garden about 15 years ago to capture and retain runoff from 3 downspouts. It is successful but many plants need to be removed. High maintenance + ground covers. Ugh!
- Received via email on Oct 19 – I just wanted to thank you for one of the most informative and well arranged seminar/workshops that I have attended. Please pass on my appreciation to all the other participants in making this a success.

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Appendix E

Gardening for Clean Water Workshop Series Follow-Up Survey of 110 Participants