



# COMMONWEALTH of VIRGINIA

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June 2, 2014

Mr. Christopher Blakeman, MS, REM  
Environmental Administrator

SENT VIA EMAIL

Dear Mr. Blakeman:

The Virginia Department of Environmental Quality (DEQ) appreciates your interest and participation in the development of the Roanoke River Watershed Clean-up Plan. Thank you for taking the time to provide comments to the information presented at the February 2014 working group meetings. DEQ received the combined comments by the City of Roanoke Department of Public Works on April 7, 2014. The following attachment contains your comments and DEQ's responses.

I look forward to working with you as we move closer to the completion of the Clean-up Plan. Please feel free to contact me at 540.562.6715 or [mary.dail@deq.virginia.gov](mailto:mary.dail@deq.virginia.gov) if you have questions.

Sincerely,

A handwritten signature in black ink that reads "Mary R. Dail".

Mary R. Dail  
TMDL Project Coordinator

Ec: Ian Shaw and Danielle Bishop, City of Roanoke

Enc: DEQ Responses to Roanoke City Department of Public Works comments

## DEQ Responses to Roanoke City Department of Public Works Comments

Received via email on 7 April 2014

**DEQ Note:** The Roanoke River Watershed Clean-up Plan is a Total Maximum Daily Load (TMDL) [Implementation Plan](#) (IP). The Clean-up Plan is being developed in two parts. Part 1 includes the subwatershed that drain to the mainstem Roanoke River between the confluence of the North Fork and South Fork Roanoke Rivers downstream to Niagara Dam and downstream to the backwaters of Smith Mountain Lake for sediment and bacteria, respectively. Part 2 will include the North Fork Roanoke River and South Fork Roanoke River and the subwatersheds that drain to the North and South Forks.

Applicable TMDLs include the following:

- [Bacteria TMDLs for Wilson Creek, Ore Branch and Roanoke River Watersheds, Virginia](#) (EPA approved 2006 and State Water Control Board approved 2007)
- [Benthic TMDL Development for the Roanoke River, Virginia](#) (EPA and State Water Control Board Approved 2006)
- [Fecal Coliform Total Maximum Daily Load Development for Glade Creek, Tinker Creek, Carvin Creek, Laymantown Creek and Lick Run](#) (EPA and State Water Control Board approved 2004)

**Roanoke City Comment:** Why is the "Educational Campaign" given only one unit per watershed with a total cost of \$3,750 per impaired watershed? The proposed cost of \$3,750 would barely cover printing and distribution of a single flyer for a single watershed, and that effort would need to be refreshed periodically. We do not believe that the proposed cost is sufficient to educate citizens in several jurisdictions, and it's certainly inadequate to run an entire educational campaign.

**Roanoke City Question 1.a.:** Are these values merely estimates or maximums per watershed? A budget estimate recently performed by the City ranged in costs from \$25K to \$100K per year depending on size, scope, and media utilized.

**DEQ Response to Question 1.a.:** DEQ appreciates Roanoke City's comment regarding pet waste educational campaign costs and will evaluate the cost assigned to pet waste educational programs across the watershed. The "Educational Campaign" refers to Pet Waste Educational Campaigns which target reducing bacteria loads from pet waste. The Pet Waste Educational Campaigns are intended to inform residents about the water quality benefits of picking up after pets. The cost estimate is based on other TMDL Implementation Plan estimates and includes educational packets, signage, and disposal stations in public areas. These cost estimates do not typically include mailings to individual residences. Additional water quality education could be built into the Technical Assistance costs whereby funding is allocated to hire staff to administer educational and outreach efforts.

**Roanoke City Question 1.b.:** Presumably a densely populated urban basin like Lick Run should cost more than a rural basin like Back Creek. Perhaps consider a range of costs based on population or a per capita cost? Basically, this cost is not a one size fits all number. Some areas will cost considerably more.

**DEQ Response to Question 1.b.:** Roanoke River Watershed Clean-up Plan Project Team (Project Team) will consider Roanoke City's suggestions and ensure that the discrepancies among subwatersheds are realistic. Original estimates of pet waste bacteria contributions were based on pet populations. Pet

populations were derived from average pet density per household. Consequently, bacteria reductions called for from residential areas should, in part, reflect pet density in various subwatersheds.

**Roanoke City Question 1.c.:** Is this an annual or one-time cost estimate?

**DEQ Response to Question 1.c.:** One-time cost estimate is included.

**Roanoke City Question 1.d.:** Need also to address frequency of this expense. If a campaign is maintained over “X” number of years does that still equal one unit? In other words how often is the BMP’s benefit credited?

**DEQ Response to Question 1.d.:** Documented pollutant reduction credits for a given educational program are credited towards the total pollutant load reduction for the source load that is being addressed by the educational program (e.g. properly disposing of dog waste on residential and urban land). There is a pollutant reduction efficiency assigned to the educational program based on any structural practices that may be implemented and changes in human behavior.

**Roanoke City Question 2:** How is bioretention different from a rain garden or an infiltration basin?

**DEQ Response to Question 2:** Bioretention facilities are engineered to treat and infiltrate a specific amount of stormwater while rain gardens are typically smaller systems that do not need to be engineered. Rain gardens are typically associated with residential properties; whereas bioretention areas are commonly found on commercial or public properties. Bioretention facilities are also part of a stormwater treatment system, having exact design criteria along with operation, maintenance and inspection requirements.

**Roanoke City Question 2.a.:** Need to provide definitions of each BMP and what makes seemingly similar practices different from one another?

**DEQ Response to Question 2.a.:** The Clean-up Plan will provide some discussion of BMPs and a glossary will also be included. In addition, The [\*Best Management Practice Efficiency and Costs\*](#) handout provides references with information about associated BMPs

([http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/ImplementationPlans/Progress/Roanoke/RoanokeRiverIP-BMP\\_Reduction\\_Efficiencies\\_and\\_Costs\\_022714.pdf](http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/ImplementationPlans/Progress/Roanoke/RoanokeRiverIP-BMP_Reduction_Efficiencies_and_Costs_022714.pdf))

**Roanoke City Question 3:** Does the "cost" for each BMP item address on-going maintenance costs or only installation? Need to clarify this.

**DEQ Response to Question 3:** BMP maintenance costs vary widely and are not typically included in Clean-up Plans. BMP costs represent average costs that have been vetted through the Clean-up Plan working group discussions. It is important to note that costs do not account for unique site characteristics that could potentially increase or decrease the cost of BMP installation at a specific location. Typically, agricultural, residential and stormwater BMPs that are cost-shared through state and federal grant sources require landowners to adhere to an operation and maintenance plan; landowners are responsible for the maintenance over a BMP’s lifespan.

**Roanoke City Question 3.a.:** Where did these cost estimates come from and what assumptions have been applied to reach the generalized dollar amounts provided?

**DEQ Response to Question 3:** The source(s) used to estimate BMP costs are included in the “Cost Source” column of the [Best Management Practice Efficiency and Costs](#). Cost source information will also be included in the plan. BMP information (including cost estimates) was presented at each Working Group meeting and adjusted as appropriate based on comments received from stakeholders.

**Roanoke City Question 4:** Why were BMPs listed in the Virginia BMP Clearinghouse not included in the Implementation Plan list of potential BMPs? It is our understanding that anything that reduces runoff volume will reduce the pollutants found in the runoff (i.e. bacteria and sediment). If this is correct, why would we choose to exclude other state approved BMPs like pervious pavements, water quality swales, roof drain disconnection, rainwater harvesting, soil amendments, swales, extended detention, green roofs, conservation areas along streams in non-agricultural areas, etc?

**DEQ Response to Question 4:** The Clean-up Plan will include the types and quantities of BMPs selected to address the specific pollutant source reductions (bacteria and/or sediment) for the various land uses based on cost effectiveness, soils, topography, local acceptance, etc. DEQ is willing to include specific BMPs from the Virginia BMP Clearinghouse (and other creditable sources) that are suggested by stakeholders and deemed appropriate by the Steering Committee. The Virginia BMP Clearinghouse will be referenced in the Clean-up Plan as a source of BMP ideas and supporting information regarding efficiencies. The intent of the Clean-up Plan is to allow for flexibility so that stakeholders and stakeholder partners may have the flexibility to select appropriate BMPs within a larger BMP category. If additional BMPs (not included in the Plan) are implemented in the impaired watersheds in the future, these BMPs can still be credited towards implementation progress.

**Roanoke City Question 5:** It concerns us that "manufactured BMPs," which represents a huge array of options, are given broad general approval and a large amount of funding. What if someone wants to install a "manufactured BMP" that has no documentation of run-off or pollutant reduction value and no state or federal approval?

**DEQ Response to Question 5:** Manufactured BMPs are subject to the criteria set forth by the Virginia BMP Clearinghouse (<http://vwrrc.vt.edu/swc/ProprietaryBMPs.html>). The Project Team will ensure that language is included in the Clean-up Plan such that manufactured BMPs are only eligible if they are covered under the Virginia BMP Clearinghouse and/or associated guidance.

**Roanoke City Question 5.a.:** Why are Pet Waste stations singled out, while other manufactured BMPs are not? BMPs such as inlet filters, drain socks, compost berms, sedimentation chambers, rain barrels, etc... are all “manufactured.” If we single out one (pet waste stations) are we at risk of the others being deemed ineligible?

**DEQ Response to Question 5.a.:** Pet waste stations are not considered a manufactured BMP and are proven to be effective at reducing bacteria loads by preventing bacteria from entering streams. It is generally more cost effective to remove the pollutant source from contact with stormwater runoff, as

opposed to treating the runoff after it has made contact with a pollutant source. The intent of the Clean-up Plan is to maintain flexibility while quantifying and providing cost estimates for specific sediment and bacteria reducing BMPs. The IP allows for a wide range of manufactured BMPs to be implemented.

**Roanoke City Question 6:** There ought to be a considerable listing of non-structural and/or operationally based BMPs such as: lawn or woodland care maintenance, waste management/containment/recycling or even zero waste, parking lot sweeping, septic/alternative sewage system maintenance, employee training, emergency response plans and drills, etc...?

**DEQ Response to Question 6:** Non-traditional BMPs that may assist in TMDL implementation will be referenced in the Clean-up Plan in a table labeled as “Idea Toolbox” or similar. Street sweeping is currently being evaluated as a viable BMP and will be incorporated into the revised BMP tables where applicable.

**Roanoke City Question 6.a.:** All of these practices stand to cut back on pollutant discharge, flow volumes and flow rates, which will reduce bacteria and sedimentation, and thus they should be included.

**DEQ Response to Question 6.a.:** Noted. Also, please see DEQ Response to Question 6.

**Roanoke City Question 7:** Why isn't a Stream Restoration and Maintenance considered a BMP? We absolutely want to ensure that these large scale, high impact projects are grant eligible, so they should clearly be included here or elsewhere in the IP.

**DEQ Response to Question 7:** Stream Restoration is currently under evaluation by the Project Team and will be incorporated as a BMP in the updated BMP tables.