



COMMONWEALTH of VIRGINIA

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June 12, 2014

Mr. B. Clayton Goodman, III
County Administrator of Roanoke County
5204 Bernard Drive
P.O. Box 29800
Roanoke, Virginia 24018 - 0798

Dear Mr. Goodman:

The Virginia Department of Environmental Quality (DEQ) appreciates your interest in the development of the Roanoke River Watershed Clean-up Plan and thanks you for taking the time to provide comments. DEQ received your comments on April 14, 2014. The following attachment contains your comments and DEQ's responses.

DEQ welcomes Roanoke County's continued interest and participation in the Roanoke River Watershed Clean-up Plan development process. Please feel free to contact me at 540.562.6715 or mary.dail@deq.virginia.gov if you have questions.

Sincerely,

A handwritten signature in cursive script that reads "Mary R. Dail".

Mary R. Dail
TMDL Project Coordinator

Ec: Mr. Dave Henderson (Roanoke County); Ms. Liz McKercher, Ms. Jaime Bauer, Mr. Charlie Lunsford (DEQ)

Enc: DEQ Responses to Roanoke County April 10, 2014 Comments

DEQ Response to Roanoke County Comments **Comments received by DEQ on April 14, 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 County Comment: Thank you for giving Roanoke County an opportunity to participate in this process and comment on the enclosed documents. We understand that when a stream receives a Total Maximum Daily Load (TMDL) for a pollutant, DEQ is obligated to develop an Implementation Plan to provide guidance on how the TMDL might be attained. We expect that this Implementation Plan will be foundational, as Roanoke County develops its own individual TMDL Action Plans to comply with its MS4 permit.

DEQ Response: The TMDL Action Plan as required by the MS4 permit is different from a TMDL Implementation Plan developed as part of a TMDL watershed strategy. If an Implementation Plan has been developed for a TMDL, then the MS4 permittee may look to the Implementation Plan for suggested BMPs and other strategies that may assist them in developing an Action Plan. If an Implementation Plan is in the development phase, MS4 permittees are encouraged to participate in working groups to exchange ideas and knowledge on various strategies that are appropriate for the watershed. Additionally, pollutant reduction activities proposed by a permittee may be appropriate for inclusion in an Implementation Plan. However, DEQ does not intend for Implementation Plans to prescribe specific BMPs for an MS4 permittee to use in their Action Plan.

Roanoke County Comment 1: The Implementation Plan has largely been a mathematical exercise, where the amount of pollutant that must be removed and the efficiencies of various best management practices (BMPs) are a given, based on available sources. The consultant has chosen a menu of BMPs and then simply increased their coverage until the mathematics work out. There has been no ground-proofing to determine if the listed BMPs are the most cost-effective means of obtaining the wasteload allocations, or if they are even feasible given the physical watershed conditions (soils, topography, existing development patterns, etc.). We understand that this was a reasonable approach to take, because there is little or no available field information and there are not enough resources available to gather the actual field information for this study. We recommend that these limitations be explicitly listed in the Implementation Plan: "This Implementation Plan is based on very limited field information as to the actual feasibility of the proposed BMP mix. Additional study of watershed conditions (soils, topography, existing development patterns) by local stakeholders is needed to confirm the feasibility of BMP types and to develop the most feasible and cost effective BMP mix. It is expected that as the local

stakeholders perform more watershed study that the mix of BMPs that are actually used will be different, and perhaps substantially different."

DEQ Response to Comment 1: The Implementation Plan will include the following elements: 1. Executive Summary, 2. Introduction, 3. State and Federal Requirements for Implementation Plans, 4. Review of TMDL Development, 5. Public Participation, 6. Implementation Actions, 7. Measurable Goals and Milestones, 8. Stakeholders' Roles and Responsibilities, 9. Integration with Other Watershed Plans, and 10. Potential Funding Sources. The language included in the sections corresponding to the aforementioned elements are intended clearly define the purpose and expectations of the Clean-up Plan. Once the draft Clean-up Plan is available for public comment, DEQ welcomes stakeholder feedback.

Roanoke County Comment 2: During the meeting, the various local stakeholders made a number of comments that are contained in the draft meeting notes. Please ensure that these comments are incorporated into the Implementation Plan or responded back to the localities, as appropriate. Of specific concern to Roanoke County are:

Roanoke County Comment 2.A.: DEQ Responses from DEQ to Roanoke County's written comments and questions that were submitted with its 2013 MS4 Annual Report and resubmitted during this meeting.

DEQ Response to Roanoke County Comment 2.A.: DEQ and the Roanoke River Clean-up Plan Project Team (Project Team) appreciate the comments and discussion that occurs during the Working Group meetings. DEQ will make every effort to ensure that stakeholder input is appropriately integrated into the Clean-up Plan. DEQ provided a response to Roanoke County regarding its 2013 MS4 Annual Report on April 14, 2014.

Roanoke County Comment 2.B: Roanoke County's wasteload allocation needs to change to reflect its changing MS4 regulated area, due to changes in its urban area due to the 2010 census.

DEQ Response to Roanoke County Comment 2.B.: Localities are responsible for meeting wasteload allocations (WLAs) assigned in Environmental Protection Agency (EPA) and State Water Control Board (SWCB) approved TMDLs. DEQ recognizes the need to modify the existing sediment, bacteria and PCB TMDLs for the Roanoke River. The modification process is resource intensive and will be prioritized accordingly. A date for modifying these TMDLs has not been established. Until an approved modification is in place, current WLAs apply.

Roanoke County Comment 2.C.: Localities need specific guidance on what is expected for non-Chesapeake Bay TMDL Action Plans. DEQ needs to recognize that these action plans need to allow more time for study before going to full implementation, because there is very limited watershed information currently available. This DEQ guidance is needed in the very near future to give localities adequate time to efficiently and effectively prepare the TMDL Action Plans required by their MS4 permits.

DEQ Response to Comment 2.C.: DEQ MS4 staff is currently developing guidance for localities outside of the Chesapeake Bay watershed. Localities are encouraged to discuss MS4 permit requirements, including TMDL Action Plan Guidance documents and timelines for development, with DEQ MS4 Staff.

Roanoke County Comment 2.D.: In the meeting, DEQ stated that the Implementation Plan will have a timeline for pollutant reductions and a goal date where the pollutant reductions will be complete;

however, the timeline and schedule contained in the Implementation Plan will not be binding on MS4 permitted localities. MS4 permitted localities will develop their own timelines and schedules and present them in their TMDL Action Plans. Please ensure that this is stated in the Implementation Plan.

DEQ Response to Comment 2.D.: TMDL Implementation plans are designed to meet TMDL pollutant reduction goals within a watershed based on landuse. IPs may be utilized by localities for pollutant reduction strategies; however, they are not considered a requirement for permit compliance. Further, IPs do not prescribe specific BMPs for localities to implement to meet their MS4 permit requirements. A timeline identifying measurable goals and milestones for implementation of BMPs needed to meet pollutant reduction goals (as defined in applicable TMDL Reports) is one of the elements required in a TMDL Implementation/Clean-up Plan.

Roanoke County Comment 3: If Pet Waste Stations are going to be used as a BMP, they must be given a pollutant removal credit. This could be done by assuming the number of dogs that use each station, the mass of waste collected by each station, and the resultant bacteria that is not deposited on the ground.

DEQ Response to Comment 3: The Project Team is currently re-evaluating pet waste station location and bacteria removal efficiencies. Updated BMP handouts will be posted on DEQ's website once revisions are complete.

Roanoke County Comment 4: The plan should mention the possibility of localities enacting a more stringent dog waste ordinance, with reference to some localities around the country that have done this, and the resultant possible pollutant removal credit. Two possible options: One, require dog owners to pick up after their dogs on any property that is not theirs. Second, require dog owners to pick up after their dogs, even on their own property. If these ordinances were enacted and enforced, what pollutant removal credits would be reasonable for each ordinance option?

DEQ Response to Comment 4: DEQ acknowledges the suggestion to "mention the possibility of localities enacting a more stringent dog waste ordinance." DEQ does not require ordinance development for localities. The City of Virginia Beach has an ordinance (#1237) requiring pet owners to clean up after their animals. The Clean-up Plan can highlight existing ordinances and/or planned ordinance development by localities if it is relevant to water quality as would be the case if a locality in the Roanoke River watershed had such an ordinance. There is limited data available on pollutant reduction associated with pet waste ordinance enactment; however, [pet waste management](#) is listed in the [EPA stormwater menu of BMPs](#) as an effective strategy for addressing pollution attributed to pet waste (<http://cfpub1.epa.gov/npdes/stormwater/menuofbmps/index.cfm>). Localities are encouraged to use resources referenced in the BMP Reduction Efficiencies and Costs [handout](#) in order to evaluate pollutant removal (http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/ImplementationPlans/Progress/Roanoke/RoanokeRiverIP-BMP_Reduction_Efficiencies_and_Costs_022714.pdf)

Roanoke County Comment 5: Roanoke County, Vinton, and Roanoke City have more stringent erosion and sediment control requirements than the state minimum requirements. Roanoke County begins regulating land disturbing activities that disturb 2,500 square feet, rather than the state minimum standard of 10,000 square feet. Can a sediment volume reduction be attached to this practice?

DEQ Response to Comment 5: “Enhanced” erosion and sediment control practices are a viable BMP for addressing stormwater sediment contributions. The Project Team will consider including the enhanced erosion and sediment control BMP in the subwatersheds associated with the localities mentioned in Comment 5. Information that would aid in quantifying benefits from this BMP is an estimated area where this BMP is applied and/or percentage of transitional landuse where enhanced E&SC is applied.

Roanoke County Comment 6: The localities each have illicit discharge programs. Some credit should be provided for operating these programs.

DEQ Response to Comment 6: DEQ recognizes that localities have illicit discharge programs and such programs are also acknowledged in [EPA’s Menu of Stormwater BMPs](#). Pollutant reduction efficiencies from illicit discharge programs are largely unknown; however, illicit discharge programs are important for water quality and bear mention in the Clean-up Plan. The Project Team will discuss how to incorporate Comment 6 into the Clean-up Plan.

Roanoke County Comment 7: The plan should mention the possibility of localities enacting ordinances requiring property owners that are on septic tanks to provide proof of recent septic pump-out and proper septic system operation prior to property transfer. If an ordinance was enacted, what pollutant removal credit should be used?

DEQ Response to Comment 7: Septic system maintenance (including pump-outs) are recommended in the Clean-up Plan in order to reduce pollutants from residential land uses. Pump-outs provide minimal bacteria reduction efficiency (i.e. 5%) and address the bacteria source contribution from failing septic systems. A targeted number of pump-outs are included in the plan and offer the opportunity for local outreach and education on the operation and maintenance requirements for septic systems. The Franklin County area of Smith Mountain Lake currently has a septic tank pump-out ordinance (http://www.franklincountyva.gov/images/planning-comm/downloads/ordinance_code.pdf). Localities are encouraged to use resources referenced in the BMP Reduction Efficiencies and Costs [handout](#) in order to evaluate pollutant removal.

Roanoke County Comment 8: Localities periodically remove sediment from storm drains, channels, and forebays as part of their storm sewer system maintenance. The plan should mention that the sediment removal credit can be obtained by recording sediment that is removed and properly placed and stabilized elsewhere.

DEQ Response to Comment 8: The suggestion in Comment 8 will be evaluated for inclusion in the Clean-up Plan. Estimates of number of drains cleaned, maintenance frequency and sediment volume removed would be useful in determining an approach for including this practice in the Clean-up Plan. In addition, information regarding any increase in the frequency or magnitude of cleanouts since 2003 would be helpful for the Project Team to know.

Roanoke County Comment 9: Education is foundational. This is recognized by its inclusion in each watershed plan. However, there is no pollutant removal credit given. A pollutant removal credit should be given for each BMP listed. Effective education serves many functions - it builds support for other BMPs, but it also changes personal behaviors, which should have some direct pollutant removal benefit.

DEQ Response to Comment 9: Please see DEQ Responses to Comments 3 and 4. The Clean-up Plan does consider bacteria reduction efficiency for pet waste education based on a documented reference

source. DEQ has used this reduction efficiency for IPs across the state. References for other types of educational efforts to reduce bacteria or sediment loadings are lacking. As this type of information comes available DEQ will certainly consider it in IP development. There are some documented educational reductions for nutrients based on homeowners following nutrient management plans (source – [Center for Watershed Protection](http://www.cwp.org/online-watershed-library/cat_view/63-research/71-pollutants-and-pollutant-sources); http://www.cwp.org/online-watershed-library/cat_view/63-research/71-pollutants-and-pollutant-sources).

Roanoke County Comment 10: There was some discussion of the use of stream restoration during the meeting. Our understanding is that stream restoration is currently believed to be one of the most cost-effective means of lowering sediment pollution. Thus, why don't the proposed sub-watershed plans presented in the handout contain stream restoration as a BMP? We believe that stream restoration should be presented in the Implementation Plan as a significant portion of the BMP mix to meet the sediment waste load allocation.

DEQ Response to Comment 10: The DEQ concurs with the assertion that stream restoration is a viable BMP and needs to be included in the subwatershed BMP lists. The working groups have discussed the topic of stream restoration extensively and a handout describing the approach is forthcoming on DEQ's website.

Roanoke County Comment 11: Significant portions of the County are underlain by karst topography and are, therefore, not suitable for infiltration practices. These areas are delineated by Publication 83 - Selected Karst Features of the Central Valley and Ridge Province, Virginia, copyright 1988, published by the Virginia Department of Mines, Minerals, and Energy. The plans for the sub-watersheds that are located in areas where the state map denotes multiple cave entrances and sinkholes (primarily the Hollins and North County areas) should only indicate the use of very limited, if any, infiltration practices.

DEQ Response to Roanoke County Comment 11: The Louis Berger Group (contracted by DEQ) is refining karst analyses using the Department of Mines, Minerals, and Energy data. The Lick Run and Tinker Creek subwatersheds appear to have the highest concentration of sinkholes compared to the other subwatersheds in the Clean-up Plan area. The Clean-up Plan will include language reflective of the need for site-specific evaluation when planning BMP construction and/or retrofitting activities.

Roanoke County Comment 12: We suggest that the following BMPs be added to the sub-watershed plans:

Roanoke County Comment 12.A.: Rain Barrels and downspout disconnections from existing homes - homeowners could voluntarily place rain barrels and perform downspout disconnections under a locality incentive program. This practice would reduce runoff and should receive pollutant removal credit.

DEQ Response to Comment 12.A.: DEQ recognizes that rain barrels and downspout disconnections are viable options for residents to utilize stormwater onsite. The Project Team will look into ways to account for pollutant reductions from rain barrel installation.

Roanoke County Comment 12.B.: Land conversion - property owners could convert lawn to a more natural landscape or remove pavement and replace with pervious pavement under a locality incentive program. This practice would reduce runoff and should receive pollutant removal credit.

Roanoke County Comment 12.C.: Tree Canopy - where property owners could plant trees such that the tree canopy would overhang paved areas and decrease stormwater runoff volume.

DEQ Response to Comment 12.B. and 12.C.: The Project Team obtained the Urban Tree Canopy Study GIS layers from the Roanoke Valley Alleghany Regional Commission. In addition, areas for conversion to pervious pavement were discussed in the February 2014 Working Group meetings. The Project Team will continue to evaluate ways to incorporate these BMPs.

Roanoke County Comment 12.D.: Instream sediment collection devices - There are devices on the market, and being developed, which may be installed in a stream to remove sediments. By removing sediment particles from the stream, downstream areas recover their cobble beds. Sediment removal may be measured directly for credit.

DEQ Response to Comment 12.D.: DEQ appreciates being made aware of instream sediment collection devices and will research said devices further. Aside from stream restoration, the focus of the Clean-up Plan is on reducing pollutant sources to waterbodies by targeting bank and upland areas.

Roanoke County Comment 12.E.: Stream flow attenuation and high flow sediment collection - Dry basins could be constructed along flowing streams with high flow diversion weirs. High stream flows would be diverted into the dry basin, attenuating stream flows and lessening downstream instream erosion. The dry basin would also serve to collect sediment from high stream flows.

DEQ Response to Comment 12.E.: The Project Team will investigate how to incorporate dry detention basin BMPs into the Clean-up Plan. Subwatershed suggestions of where dry detention basins would be appropriate are welcome.

Roanoke County Comment 12.F.: Stream trash collection systems -There are systems on the market to remove trash from flowing streams. These systems should receive a bacteria credit based on the tonnage of trash and debris removed. This is a non-structural BMP option that certainly improves stream health and habitat, but DEQ is not aware of any scientific information available on how to credit this option in reducing bacteria loadings in-stream.

DEQ Response to Comment 12.F.: See response to Comment 12.D.

Roanoke County Comment 12.G.: More stringent erosion and sediment control requirements - already discussed.

Roanoke County Comment 12H. Possible more stringent dog waste ordinance and enforcement - already discussed.

Roanoke County Comment 12.I.: Illicit Discharge programs - already discussed.

Roanoke County Comment 12.J.: Possible ordinance to require property owners to provide proof of recent septic pumpout and proper septic system operation prior to property transfer- already discussed.

Roanoke County Comment 12.K.: Sediment removal from storm sewer system - already discussed.

Roanoke County Comment 12.L: Stream Restoration - already discussed.

DEQ Response to Roanoke County Comments 12.G. – L.: Please see DEQ Responses to Comments 5, 3, 6, 7, 8, and 10, respectively.

Roanoke County Comment 12.M.: In general, we understand that the plan should include as many BMPs as possible, so that they may be potentially qualified for future grant funding. However, the plan should also state that other BMPs may be used, as the science of watershed restoration is continually being advanced, and new BMPs are being developed. More cost-effective Innovative BMPs may become apparent as more study occurs in individual watersheds. They should not be excluded from future grant consideration just because we cannot envision them at this time.

DEQ Response to Comment 12.M.: The Project Team welcomes additional BMP suggestions. The Clean-up Plan approach is intended to be flexible enough so as to not limit BMPs that will improve water quality in the future. The Clean-up Plan approach is non-prescriptive and the resolution is landuse-based and set at the subwatershed level (as opposed to assigning a BMP to a specific location). Virginia’s BMP Clearinghouse will be referenced in the Clean-up Plan and provides a process for evaluating BMPs.

Roanoke County Comment 13. As stated before, we have real doubts that the mix of BMPs indicated on the sub-watershed plans are technically or financially feasible. Much more study is needed. The Implementation Plan must stress that as additional information and experience becomes available and as implementation occurs, local stakeholders must have flexibility as a part of the iterative approach to change and adapt.

DEQ Response to Comment 13: DEQ welcomes specific comments on BMPs selected for the sub-watersheds in the Clean-up Plan area. The Clean-up Plan must address sediment and bacteria reductions called for in applicable TMDLs. Selected BMPs must have quantifiable pollutant reduction efficiency. The Clean-up Plan inherently allows for local flexibility and BMP installation is subject to appropriateness based on site-specific conditions. The IP is an iterative process and moving forward in time the Steering Committee should assess implementation progress and water quality improvements, and determine if the IP should be updated based on better information, new technologies, etc.

Roanoke County Comment 14: The sub-watershed plans present implementation scenarios that are extraordinarily expensive to implement. The County Board of Supervisors must balance competing community needs during a difficult economic condition. The Implementation Plan should recognize the fact that financial resources are limited and provide for a long, iterative process to reach the TMDLs. The streams have become impaired due to development that has occurred over a 100-year period. It should be expected that implementing measures to retroactively address the resultant water quality issues will take a protracted period of time.

DEQ Response to Comment 14: TMDL Implementation plans are designed to meet TMDL pollutant reduction goals and are required to show progress at various stages of implementation including violation rates of <10.5% and 0% exceedance of applicable [Water Quality Standards](#). A timeline identifying measurable goals and milestones for implementation of BMPs needed to meet pollutant reduction goals (as defined in applicable TMDL Reports) is one of the elements required in a TMDL Implementation/Clean-up Plan. The timeline has some flexibility and the measurable goals and milestones will consider stakeholder input. The Clean-up Plan’s timeline will focus on implementing BMPs that will result in the “biggest bang for the buck” first. This part of the process will be discussed with the Steering Committee and serves to guide stakeholders in prioritizing implementation. DEQ

recognizes that BMPs can be expensive and encourages stakeholders to pursue grant money to install BMPs. A completed Implementation Plan will provide a platform for stakeholders (and partnerships among groups of stakeholders) to pursue grant funding.