

Comment – Response Document for the Four Mile Run TMDL Implementation Plan

Comment

Response

The following comments were submitted by the

Arlington Forest Civic Association.

1) As previously stated, AFCA is opposed to ~~against~~ making the water quality standards less stringent as many children have full body contact with these waters. While the report makes the point clear that conducting a Use Attainability Analysis (UAA) - necessary for making the water quality standards less stringent - is not the intended purpose of the report, I worry that people could read into this report that this is the next step. As shown in Figure 7.1, the Four Mile Run TMDL-shed is heavily urbanized. Nearly all discharges to Four Mile Run are from municipal separate storm sewer systems (MS4s). Therefore, there may be other “controllable” sources of bacterial pollution not addressed in the draft IP. For example, MS4 outfalls are used by raccoons for habitat and raccoons are a major part of the bacterial pollution. Over the next ten years I would like the IP to continually re-evaluate whether other sources of bacterial pollution are “controllable.” For example, could MS4 outfalls be retrofitted to eliminate this manmade habitat for raccoons? We need to examine and exhaust all options before starting a UAA. Finally, it should be noted from the data (see Figures 4.4 and 4.6) that Four Mile Run would likely fail water quality standards for secondary contact. Clearly, bacterial pollution in Four Mile Run is such that even a UAA regulatory ‘fix’ won’t work.

The definition chosen in the implementation plan (IP) for “anthropogenic” or “human caused” bacteria was limited to only human and canine sources. These sources are believed to be the most “controllable” without wide-scale elimination (extermination) of wildlife. This position was stated in EPA’s decision rationale for approval of the Four Mile Run TMDL study. The IP reflects this fundamental base.

While it may be true that there are more rats in the watershed because of the human presence there or there may be more raccoons living (and defecating) within immediate access of the water than there would be without the human-built storm drain network and thus these sources may be perceived as “human-caused” elimination of these sources is not included in this plan. That said, some of the measures included in the plan, e.g. stormwater infrastructure maintenance will affect bacteria levels caused by these sources.

Through the ten-year life of this IP effort, VADEQ and the IP partners (localities, stakeholders, etc.) will meet regularly (NVRC has committed to orchestrating annual meetings in the General Outreach and Education Section.) to discuss adding new measures and expanding the definition of what is controllable. Additionally, Virginia’s water quality standards state in section 9 VAC 25-260-10. Designation of uses., that “ D. At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under ‘ ‘ 301(b) and 306 of the Clean Water Act and cost-effective and reasonable best management practices for nonpoint source control.” Therefore, no UAA is planned until such cost-effective and reasonable BMPs have been installed

<p>2) I would create a short appendix which briefly summarizes the different major regulatory programs (e.g., MS4 requirements, CBP) and local ordinances (e.g., pet waste ordinances) which are directly referenced in the draft IP. This would allow the reader to more readily understand how these established regulatory programs will assist the Four Mile Run TMDL IP. You may also wish to include text and pictures from the EPA website which describes municipal separate storm sewer systems and combined sewer overflows.</p>	<p>There has been a substantial effort for clarity in the written document. Citations to local ordinances are included, e.g. page 6-11 "...section 45 of Chapter 26, The County's Utilities Ordinance..." etc. To define all programs touched on by this document is beyond the scope of this effort. However, the guidance manual for TMDL IPs does include general descriptions of the program areas. An appropriate link will be added to the document. Information regarding each of the programs utilized in the Four Mile Run IP can be found at the responsible agency. Contact information for each agency and department will be added to the report.</p>
<p>3) Under Stream Corridor Restoration, I would also note Arlington County's attempt to reduce invasive species (e.g., English Ivy) in its Parks and neighboring properties. Arlington County is engaged in a invasive species removal in its parks including the spraying of English Ivy in Lubber Run park. These invasive species transform natural areas into monocultures which do not provide habitat for indigenous wildlife and a healthy, sustainable and productive ecosystem. It suffocates ground cover, smothers native plant seedlings, overwhelms shrubs, destroys trees, provides no food for native wildlife, but rather provides habitat for undesirable rodents. Since the Norway Rat is identified by the DNA study as a source of FC (sometimes as the dominant source, see Station 22), it would make sense to make reference in the IP to these existing Arlington County programs (including the Urban Forestry Master Plan) and include the continuation of these programs among their list of commitments. This discussion could be integrated into the text on Page 6-33 and the list of commitments on Page 6-36.</p>	<p>Verbiage has been added to the section on stream corridor restoration concerning invasive species removal.</p>
<p>4) Under <i>General Education and Outreach Commitments</i>, I would also include possible extensions to civic associations, and the local chambers of commerce. I would suggest that the IP include a map showing the TMDL-shed with an overlay of civic associations (Arlington has this in their GIS system and should be able to get this to you with little problem). This will help local communities better understand their place in the TMDL-shed. On a couple of occasions I've seen employees at local restaurants dump their mop water down the storm sewer. Working with the local chambers of commerce could help provide outreach to these businesses to help educate them on the proper disposal of this wastewater.</p>	<p>Not all jurisdictions have such mapping. A map has been added to section 4 that includes the TMDL watershed boundaries and the road network. In order to make the map fit on an 8X11 inch page only the arterial roadways have been labeled.</p>

<p>5) I would create a short discussion after Section 4.6 on the relationship (or lack of relationship) between monitoring data and streamflow or rainfall. As the draft IP makes clear, stormwater can be a major source of bacterial pollution. I am curious to see whether there is a direct correlation between bacterial pollution and streamflow (or relative streamflow above the 7Q10) or rainfall.</p>	<p>This type of question is addressed in the TMDL study and beyond the scope of the implementation plan.</p>
<p>6) Page 1-5. “Currently, VADEQ does not have a dedicated system in place for reporting TMDL implementation efforts.” VADEQ should develop a tracking system and website for reporting TMDL implementation efforts. This would help ensure all know what steps need to be taken and provide an important link to the users of this waterbody. I would strike this sentence and replace it with: At the end of IY-1, VADEQ will develop a tracking system and website for reporting TMDL implementation efforts. This website will also house monitoring data and VA DEQ and local government contacts.</p>	<p>Although no reporting system exists today, the IP proposes that the MS4 reporting be that mechanism. By approving the IP, the State Water Control Board would accept this plan as the reporting system. Regarding the website issue, in the IP, as written, NVRC has committed to maintain the Four Mile Run TMDL website throughout the 10-year project. That site will be kept up-to-date with IP efforts. Additionally, VA DEQ is already maintaining a statewide TMDL web site that includes information on TMDL implementation (e.g. draft and final TMDL IPs). VADEQ is currently developing a format for periodically reporting progress in TMDL implementation to the public.</p>
<p>7) Page 2-2. See General Comment #1 on the need to add this sentence. “Although the TMDL cites many sources of bacteria in the watershed and allocates loads to those various sources only bacteria specifically from human and canine sources are targeted by this plan. Throughout implementation of this plan, VA DEQ will continue to evaluate whether other sources of bacterial pollution are also controllable and the appropriate control measures. If at a later date these sources are deemed controllable they will be incorporated into this implementation plan. The targeting of anthropogenic (or human-caused)...”</p>	<p>This will be incorporated as follows: Throughout implementation of this plan, VA DEQ and the local governments will continue to evaluate whether other sources of bacterial pollution are also controllable and the appropriateness of control measures. If at a later date additional sources are deemed controllable they will be incorporated into this implementation plan.</p> <p>This is consistent with the TMDL itself that states “While managing over-populations of wildlife remains as an option to local stakeholders, the reduction of wildlife or changing a natural background condition is not the intended goal of a TMDL..”</p>
<p>8) Page 2-2. To avoid confusion, I recommend the following clarification: “A secondary use designation would mean less stringent lower the water quality standards in place for Four Mile Run.”</p>	<p>This will be incorporated as follows: “A secondary use designation would mean protecting water quality in Four Mile Run for such activities as wading but not for swimming. If such a use designation change was successful, this would result in less stringent water quality criteria for Four Mile Run.”</p>
<p>9) Figure 4.3 is illegible on my PDF print-out.</p>	<p>This is a function of reducing the original electronic file to a file size accessible to all users online. Effort will be made to find a better compromise between file size and readability.</p>

<p>10) Page 5-2. "It is expected that these partnerships will remain throughout the IP's ten year term." How will these partnerships remain? Will NVRC remain the lead? As stated earlier, I found the TAC meeting very useful and I would recommend that they continue on a biannual basis. This will help track IP commitments and identify potential new methods of reducing bacterial loads in Four Mile Run. I would like to remain on the TAC.</p>	<p>This is a very important issue. Page 6-50 has the following commitment addressing this concern:</p> <p><i>"Northern Virginia Regional Commission will act as a clearing house for outreach & education materials. NVRC will also orchestrate meetings annually with watershed jurisdictions to discuss implementation progress, coordinate education & outreach and maintain a focus on the IP effort. (IY-1 thru IY-10)"</i></p>
<p>11) Page 6-1. Check the numbering on the bullets on this page and throughout the document.</p>	<p>A correction will be made to renumber the bullets 1, 2 & 3.</p>
<p>12) Page 6-20. "Arlington County Department of Environmental Services will review the County's enforcement tools (ordinances, etc.) to ensure that those tools are consistent with one another and with the goals of the TMDL. <i>In particular, Arlington County will review, clarify, or modify Section 2-5(b) of the County Code (Animals and Fowl) to ensure that the language is clearly understood to not allow the legal disposal of dog's excretion between the edges or curbs of public streets.</i>"</p>	<p>Although this specific issue was discussed during the TAC meeting and Arlington County staff have taken note of the particular concern the County did not want to rashly commit to this single specific change without fully vetting the proposed change. The particular change suggested is not precluded by the current language. Additionally, without such specific language the County will not be asked to focus on this one item but will be free to look for additional beneficial changes.</p>
<p>13) Page 6-21. "Northern Virginia Regional Commission will produce a map that overlays the Four Mile Run DNA Study, Municipal Parks and Trails and Dog Parks to help guide implementation efforts. <i>This map will also indicate the magnitude (or contribution) of fecal coliform loads to Four Mile Run. (IY-1 thru IY-10).</i>"</p>	<p>The following language will be added: The mapping will include information regarding monitoring data including DNA source tracking information as it is available.</p>
<p>14) Page 6-40. There is likely free labor and money as UVA and VaTech have nearby environmental graduate programs (Falls Church, VA). At a minimum NVRC should contact these programs to see if they might wish to participate or run a demonstration project now or in the future. "Northern Virginia Regional Commission will on behalf of the Four Mile Run jurisdictions continue to monitor UV Disinfection technologies as projects are installed around the country. If at a later date these are deemed appropriate for use in the Four Mile Run watershed they will be presented for incorporation into this implementation plan. <i>NVRC will investigate whether local universities or schools might be interested in providing funds or services to explore demonstration projects within the TMDL-shed. (IY-1 thru IY-10).</i>"</p>	<p>The following language will be added:</p> <p><i>NVRC will investigate whether local universities or schools have interest in providing funds or services to explore demonstration projects within the TMDL-shed.</i></p>

<p>15) Page 6-41. See Specific Comment #9. “Northern Virginia Regional Commission will on behalf of the Four Mile Run jurisdictions continue to monitor Ozone Treatment technologies as projects are installed around the country. If at a later date these are deemed appropriate for use in the Four Mile Run watershed they will be presented for incorporation into this implementation plan. NVRC will investigate whether local universities or schools might be interested in providing funds or services to explore demonstration projects within the TMDL-shed. (IY-1 thru IY-10).”</p>	<p>The following language will be added.</p> <p>NVRC will investigate whether local universities or schools have interest in providing funds or services to explore demonstration projects within the TMDL-shed.</p>
<p>16) Page 6-42. See Specific Comment #9. “Northern Virginia Regional Commission will on behalf of the Four Mile Run jurisdictions continue to monitor flocculant technologies as projects are installed around the country. If at a later date these are deemed appropriate for use in the Four Mile Run watershed they will be presented for incorporation into this implementation plan. NVRC will investigate whether local universities or schools might be interested in providing funds or services to explore demonstration projects within the TMDL-shed. (IY-1 thru IY-10).”</p>	<p>The following language will be added.</p> <p>NVRC will investigate whether local universities or schools have interest in providing funds or services to explore demonstration projects within the TMDL-shed.</p>

<p>17) Page 6-45. <i>Stream volunteer activities</i>. This section should be more explicit about how Arlington’s volunteer program can help provide monitoring data for the IP. As I mentioned in the TAC meetings and in my November 21, 2003, written comments to you, Arlington County has a volunteer monitoring program which can be expanded to include monitoring for optical brighteners, caffeine, or another indicator of anthropogenic fecal coliform. This seems like a natural link to an existing program which can more cost-effectively collect data to assess the effectiveness of the TMDL. I would ask that you contact Aileen Winquist, Arlington County, awinquist@co.arlington.va.us, for more insight on how this might work. In short, the IP needs to document how monitoring data will be collected and used to ensure that our efforts are working or need improvement.</p>	<p>The stream volunteer activities mentioned are included Arlington County’s MS4 Monitoring Program. That program is weaved into the IP through several points. Two specific locations where the volunteer monitoring is mentioned explicitly in the plan are found on page 6-14 :</p> <p><i>“Arlington County Department of Environmental Services will build upon their previous MS4 Outfall monitoring program to target 21 suspect outfalls for follow-up monitoring in the Four Mile Run watershed. Optical brightener monitoring will be used in coordination with visual and odor inspections and grab sampling. Additionally biological monitoring data collected by volunteer teams will be analyzed in coordination with regular outfall monitoring. Any discovered inappropriate discharges will be eliminated from the storm system. (IY-1 thru IY-10)”</i> Can we add language on “exploring additional opportunities for utilizing citizen monitoring programs?”</p> <p>And on page 8-5:</p> <p><i>“The County also administers a volunteer stream monitoring program that includes three teams that monitor quarterly in the Four Mile Run watershed.”</i></p> <p>Arlington County Department of Environmental Services staff participated on the TAC and were integral in composing this plan. Aileen Winquist was consulted specifically regarding stream volunteer monitoring in Arlington County.</p>
<p>18) Page 8-2. See General Comment #1 on the need to add this sentence. “While the intent of the plan is to target only the anthropogenic bacteria sources in the watershed many of the mitigation measures will reduce all bacteria levels in the water column irrespective of the source of the bacteria. It is hoped that substantial progress or even achievement of the bacteria water quality criteria will be made through the efforts prescribed by this plan. Throughout implementation of this plan, VA DEQ will continue to evaluate whether other sources of bacterial pollution are also controllable and the appropriate control measures. If at a later date these sources are deemed controllable they will be incorporated into this implementation plan.”</p>	<p>The following language will be added:</p> <p>Throughout implementation of this plan, VA DEQ will continue to evaluate whether other sources of bacterial pollution are also controllable and will continue to evaluate the appropriateness of additional control measures. If at a later date additional sources are deemed controllable they will be incorporated into this implementation plan.</p>

<p>19) Page 8-5. See Specific Comment #1. Replace “Currently, VADEQ does not have a dedicated system in place for reporting TMDL implementation efforts.” with “At the end of IY-1, VADEQ will develop a tracking system and website for reporting TMDL implementation efforts. This website will also house monitoring data and VA DEQ and local government contacts.”</p>	<p>Although no reporting system exists today, the IP proposes that the MS4 reporting be that mechanism. By approving the IP the State Water Control Board accepts this plan as the reporting system. Regarding the website issue, NVRC has committed to maintain the Four Mile Run TMDL website throughout the 10-year project. That site will be kept up-to-date with IP efforts. See comment 6</p>
<p>20) Page 8-6. “If at the end of the ten year project timeframe the water quality standard for bacteria has not been met, a new DNA source tracking study would need to be performed to help distinguish the incremental successes and failures of this IP.” An additional DNA source tracking study should be conducted at the mid-way point (at end of IY-5) to get a better sense of how the IP is working. Relying on one study at the end of ten years seems too little and too late in the process. I recommend deleting the above sentence and replacing it with, “During the implementation, two new DNA source tracking studies will be conducted, one at end of IY-5 and the other at the end of IY-10. This will help monitor the performance of the IP and suggest changes for improving bacterial pollution control.”</p>	<p>VADEQ is committed to funding the reassessment during the fifth year and an assessment at the end of the ten-year project.. Monies will be made available as resources allow to perform a DNA or other appropriate source tracking study.</p>
<p>The following comments were submitted by the <u>Arlington Environment and Energy Conservation Commission (E2C2)</u></p>	
<p>21) E2C2 does not agree with any attempt to downgrade Four Mile Run from primary to secondary contact recreation. Downgrading the use category of Four Mile Run is tantamount to acknowledging that the water is never going to be clean. This also means that education and posting are necessary, all of which may create a negative public perception of our streams.</p>	<p>As is stated on page 2-2 of the IP, <i>“No attempt is made by this IP to promote a Use Attainability Analysis study nor does this IP suggest that a change in the water quality standard applicable for Four Mile Run is warranted. Only after implementing Phase 1 actions and evaluating those successes or failures shortcomings will such an analysis be considered.”</i></p>
<p>22) Given the lack of data connecting bacteria (either fecal coliform or E. coli) contamination in streams with negative human health effects, the plan should focus efforts to increase coordination between public health agencies and private healthcare providers to better track potential waterborne disease outbreaks. Outbreaks of waterborne diseases may not be linked to stream water quality because no mechanism exists within the public health agencies to document and track these cases.</p>	<p>The USEPA and VADEQ, VDH have collaborated on this very issue. It was through that collaborative effort that the State has developed an E. coli criteria and is moving away from the fecal coliform criteria. Examination of the merits of the current standard is beyond the scope of this effort.</p>

<p>23) The costs of meeting a primary standard may be very expensive. Cost sharing with existing programs such as the County's ongoing sanitary sewer rehabilitation program should be explored and utilized to the fullest extent. This will allow potential water quality improvements without additional public expenditures.</p>	<p>Cost for the commitments of this IP has played a significant role in the formation of this plan. Every effort has been made to ensure that synergies can be developed with ongoing efforts in the watershed and the corrective actions described by this plan. To meet that end, local staff from all departments relating to these efforts were interviewed and invited to participate in the development of this plan. All of the 156 commitments included in the IP will require some level of resource allocation, be it staff or financial resources. In order for those efforts to be included in the IP some level of security was required that those resources could be found and once found allocated to the described actions. This has meant that each of the municipal staff involved in project has had to examine their portions of their municipal budgets and evaluated how the IP actions will affect those budgets. No one was willing to commit to actions that either were not feasible or cost-effective or could only be accomplished at the detriment of other valuable municipal programs. We believe that the IP presented addresses your concern.</p>
<p>24) Any pollution mitigation plans should be focused on the areas where one particular source is significant.</p>	<p>As resources for all efforts in the watershed are limited all parties concerned: the state, localities, and public will want and expect that all efforts made regarding this IP are done in cost-effective and timely manner. To this end, all efforts will be made to target easiest-to-address and most significant source loads first.</p>
<p>The following comments were submitted by the: <u>Virginia Department of Conservation and Recreation (VADCR),</u></p>	
<p>25) What is the estimated total cost to fully achieve the TMDL? The IP provides costs for various implementation components but does not provide a total cost amount. The cost estimates for the Stream Restoration component are incomplete.</p>	<p>This IP only addresses phase 1, anthropogenic, efforts of the IP. It is hoped that this will have the effect of reaching the water quality criteria but regardless of outcome no attempt is made by this IP to plan for or estimate costs associated with addressing wildlife sources. As the localities are to bear significant portions of the costs to implement the IP those costs are difficult if not impossible to parse from the localities existing programs. Thus, costs associated with programs in the Four Mile Run watershed for each of the localities are included in Chapter 7.</p> <p>The "Estimated Costs for a Hypothetical 'Ultimate Design', are those that reflect implementation throughout the entire watershed. The costs for Stream Restoration will be incorporated in the final version of the IP.</p>

<p>26) What is the total expected technical assistance cost? The IP does not address the technical assistance needs to carry out the implementation actions.</p>	<p>Most if not all efforts employed by this IP require no technical assistance from VADCR. All four localities have strong existing stormwater and sewer programs that require little assistance from VADCR. If VADCR sees a specific need for technical assistance that should be addressed, then such input is welcome and will be incorporated into the plan as it is received.</p>
<p>27) Most of the funding sources and program descriptions in Chapter 11 are not applicable to the implementation plan since as is stated they are, “mostly aimed at agricultural activities which are not found in the Four Mile Run watershed.” The only ones that are applicable to an urban watershed without septic systems is 319 and the Water Quality Improvement Fund.</p>	<p>The plan will be modified to reflect only the 319 and WQIF funding sources. Much of the costs inherent to this plan will be borne by the localities through there related programs. If VADCR can provide information on other funding sources that could be applied in the Four Mile Run watershed during the implementation phase, such information can be incorporated as it is received.</p>
<p>28) NRCS should not be included as a federal government stakeholder in Section 9.2 because of no real agricultural presence in the watershed.</p>	<p>The plan will be modified to reflect that NRCS is not a watershed stakeholder.</p>

29) A TMDL IP must demonstrate what is needed to achieve and maintain water quality standards. This plan develops various mitigation measures, but there are no quantifiable load reductions expected from the implementation actions. It is realized as stated in the IP, that it would be difficult to quantify load reductions for a number of the measures.

Overall, it is hoped that by implementing the actions outlined in this IP the bacteria levels in Four Mile Run will be reduced to a level compliant with the Virginia water quality criteria for bacteria. With lower bacteria levels the risk of human disease associated with contact with the water will also be reduced.

The pollution prevention measures included by this plan have the potential to remove 100% of the bacteria source contributions where employed (i.e. if a sanitary sewer does not overflow then all bacteria laden material is carried to the waste water treatment plant for proper disposal.) By preventing the release of sewage to the environment all of the contaminants associated with untreated sewage are shielded from the environment.

Mitigation measures are less directly tied to specific bacteria sources and have the potential to substantially reduce the bacteria levels in the water column passing through the device (i.e. a sand filter BMP may remove 75% of the bacteria in the water column reaching the filter.) Most of the IP mitigation measures will reduce not only bacteria levels in the water column but also sediments, nutrients, and other stormwater pollutants.

Indirect measures have multiple benefits that in varying degrees can affect bacteria levels in Four Mile Run. Outreach efforts often focus on changing the behaviors of people and those behavior changes reduce bacteria levels in the run, e.g. a poster campaign in metro stops that encourages people to pick up after ones pets. Those same outreach efforts also have the potential to raise a broad concern over bacteria and nonpoint source issues in the watershed. With more concern and attention given to nonpoint source pollution it is hoped that more resources can be brought to bear on the issue.

In general, the actions included in this IP strive to lower bacteria levels in Four Mile Run but the breadth of those actions offer more than a singularly focused strategy. For example, by preventing sewage from being released to the environment through sanitary sewer overflows all of the myriad of contaminants attributed to sewage are also shielded from the environment and the risk of human exposure is minimized. By way of another example, a stream restoration or daylighting project not only may lower bacteria levels but can provide a natural wildlife habitat and offer the public a stronger connection to the stream.

<p>30) The TMDL approved by EPA was to meet zero violations of the 200 geometric mean standard. Why were interim milestones based on water quality goals (<i>i.e.</i>, % reduction of water quality standards violations) or implementation milestones (<i>i.e.</i>, % implementation of BMPs annually) not included in the IP? Such interim measureable goals can be used to adjust implementation strategies, monitoring strategies, illustrate progress, and final attainment of the standard.</p>	<p>Interim milestones are those items described as commitments in Chapter 6 and put into the tables in Section 8.6.</p>
<p>31) The TMDL as illustrated in the TMDL IP is the phase 1 or stage 1 reduction goals. Since wildlife reductions are required to meet this stage (actually there is no difference in the reductions required by the approved TMDL and the phase 1) how can the TMDL be achieved by only addressing the anthropogenic sources in the IP?</p>	<p>The ultimate goal for the Four Mile Run TMDL program is to bring Four Mile Run fully into compliance with Virginia water quality criteria; however, the actions described in this IP are associated only with the first phase of the staged approach proposed by VADEQ. While the intent of the plan is to target only the anthropogenic bacteria sources in the watershed many of the mitigation measures will reduce all bacteria levels in the water column irrespective of the source of the bacteria. It is expected that substantial progress or even achievement of the bacteria water quality criteria will be made through the efforts prescribed by this plan.</p> <p>Inherent to all modeling efforts and scientific studies is a certain amount of uncertainty. By their very nature models and studies rely on statistical calculations to make use of incomplete data sets or to smooth the model functions. Assumptions and approximations are the bridge between the mathematical model and actual conditions. Often these uncertainties are compensated for in the model by including a “margin of safety” in the calculations. Each model assumption can be “conservative” to fully account for the situation or an umbrella margin of safety can be applied to the model as a whole. Through either approach a conservative bias is incorporated into the model. It is expected that the conservative trends inherent in the Four Mile Run TMDL model and the indiscriminate effect on all bacteria in the water column of the mitigation measures included in this plan will combine to bring Four Mile Run into compliance.</p>
<p>32) Some of the items in the IP which are mentioned above are requirements for WQMIRA or Section 319 grant requirements. These include cost benefit analysis based on the total estimated costs, date that the water quality standard will be achieved, technical assistance needs and costs, and quantification of the numbers and types of BMPS and associated costs.</p>	<p>No response required here. Individual responses are given for those comments cited.</p>

<p>33) In Section 2.1 it is stated, “the core of this IP is a set of actions found in Chapter 6 focused on reducing the levels of fecal coliform and E. coli (Escherichia coli) bacteria in Four Mile Run from human and canine sources, with the final goal of complying with the State of Virginia water quality criteria for bacteria”. In actuality, the word “core” should be deleted and the sentence should end following the word “sources”. As stated earlier in the comments, the Four Mile Run TMDL calls for close to a 100% removal of wildlife sources and this IP does not address removal of wildlife sources only anthropogenic sources.</p>	<p>The word “core” is appropriate because there are other not as important parts to the IP. The remaining portion of the sentence, “. . .with the final goal of complying with the State of Virginia water quality criteria for bacteria,” was included to reflect two very pertinent points: 1) there are several conservative assumptions made in developing the TMDL allocation study which could mean that accomplishment of the water quality criteria may happen at a lower threshold than predicted by the TMDL study; and, 2) the goals of this IP are consistent with the overall goal for TMDL implementation as expressed in the approved TMDL: to meet the water quality criteria of interest. No change will be made to modify this portion of the sentence.</p>
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The following comments were submitted by

Michelle Prettyman

<p>34) I live in the Glencarlyn Neighborhood and my family and I are regular Glencarlyn Park users. We frequent the Glencarlyn Community Canine Area (CCA) and I am writing to express my concern and frustration. I have heard that although county officials acknowledge that the location of Glencarlyn and Shirlington Community Canine Areas (CCA) have not proven to contribute to the fecal coliform levels in Four Mile Run, there is still discussion to possibly close these parks as a means to help do something in terms of “controlling” the maximum daily load for fecal coliform bacteria in Four Mile Run. I have also heard that county officials acknowledge that human levels of fecal coliform in Four Mile Run are significantly higher than canine levels and that officials believe that the canine levels that are present are coming from residents and trail users near Four Mile Run who do not pick up their pets waste. As a member of the Glencarlyn CCA sponsoring group and former chair of ArlingtonDogs, I consider myself knowledgeable about this issue that has been discussed in Arlington for more than the five years that I have lived here.</p> <p>Glencarlyn CCA has been such a huge part of my family's life and one main reason why we have decided not to relocate to another county. We are so pleased with our county officials here in Arlington and feel that they truly listen to the community's needs. Our local CCA has been a great social outlet for us. We have met so many people in Arlington by going to our local CCA. As a result, we volunteer with organizations that we learned about from friends we met at our local CCA, we nanny share with a family that we met through our local CCA, and we have become more involved in local issues because we truly feel that we are a part of our community. The social outlet that has been met with our local CCA has had</p>	<p>The Technical Advisory Committee for the Four Mile Run IP has been consistent regarding dog parks as a Best Management Practice (BMP) in controlling bacteria in the watershed. Stated explicitly in the IP is the following:</p> <p>“Dog parks are a benefit to the community for a variety of reasons, and can be considered a water quality Best Management Practice (BMP) themselves. Chiefly, the dog park environment encourages park goers to pick up after their pets and it allows owners and outside groups to share common concerns like this TMDL effort through newsletters or bulletin board postings.”</p> <p>The IP goes on to acknowledge that the vast majority of pet owners in the watershed are not “regular patrons of the watershed's dog parks.” Most of the commitments regarding pet waste reflect this and are not focused on dog parks but are focused on the more broader scope of all pet owners in the watershed. Some of those commitments include outreach and education through signage or brochures and additional trash receptacles along the watershed's trails.</p> <p>A premise made in beginning development on this IP was that the IP would only focus on the human-caused sources of bacteria in Four Mile Run. Those were considered to be the “controllable” sources and specifically included only the human and canine sources. By the DNA source tracking study done for the Four Mile Run watershed human sources accounted for 17.9% of the bacteria loading in the run and canines accounted for 12.9% of the loading. No distinction was made for loads caused from dogs in dog parks and those outside of dog parks. Of the controllable sources human sources make up 58% of the bacteria loading leaving 42% of the</p>
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such a positive impact on our lives. We plan to make Arlington our permanent home and look forward to raising our children here. However, I worry that I will not be able to share this resource with my daughter, as she grows older due to decisions that might be made by county officials who may not be relying on all the facts.

I don't know if county officials and opponents to CCAs understand the stress involved in not knowing whether a legal park, that has been open for over a decade in Arlington County will remain open. I know that I have personally participated in three instances where I have presented, both orally and written, justification as to the reasons why I feel this park should remain open. In every case, county officials have assured park users that in the event that they deem it necessary to close one of these CCAs another one will be opened in its place. The most recent decision has been again, to keep the CCAs open at their current location. My frustration lies in when old concerns surrounding the park get revisited by county officials or opponents to these parks, the discussion to keep the parks open begins all over again. Glencartyn CCA is a huge part of my family's daily life. With what limited time for recreation we have we choose to spend it at our local Glencartyn CCA. We don't bicycle, play ball or go jogging. Going to the CCA is our form of recreation and we are so appreciative to Arlington for acknowledging this form of recreation while other jurisdictions do not. But I have to wonder, are there any other type of recreational park users in Arlington that have to worry about repeatedly justifying why the park they frequent needs to stay open and the impact it will have if it gets closed. It seems that just as it is deemed that the park can stay open, a new meeting is called to discuss the issue. I feel that I have to be ultra vigilant in scanning for these meetings and scramble to make plans to attend the meeting or draft yet another letter. As a working parent my time is very limited and although the issue of keeping the park open is extremely important to me I find that it is a huge cause of stress too. Using a local park should be relaxing not stress inducing.

When the county needed a sponsoring group to be a liaison between park users and the county, park users formed a sponsoring group. When the county has had concerns, the sponsoring group has helped to address those concerns. When signage was necessary the sponsoring group has worked with county officials to meet that need. When issues have come up the sponsoring group has worked with the county. When park users became concerned about environmental problems, we worked together and submitted a proposal to help control environmental impacts on Four Mile Run in general. In fact, Glencartyn and Shirlington CCAs sponsoring groups were the only organizations last year that submitted proposals for a Small Parks Grant to deal with the environmental

controllable source loads attributable to dogs.

The overwhelming majority of the millions of dollars to be spent by implementing the actions in the IP are aimed to address the 58%-human sources. To get at the canine sources there are only a few avenues available:

- 1) Encourage pet owners to pick up after their pets;
- 2) Enforce pet owners to pick up after their pets;
- 3) Treat all surface waters where dogs frequent.

The vast majority of commitments regarding pet waste target the first avenue, encouraging pet owners to pick up after their pets. Mostly these efforts will include outreach and education of pet owners. This effort will also include the master planning effort Arlington County is exploring to comprehensively address dog park siting across the County. A likely outcome of such a comprehensive approach is the planning for additional dog parks within the County.

Enforcement efforts are included in the IP but are not the mainstay of IP efforts. It is likely impossible to fund enough positions in the watershed to chase down pets and owners to successfully make a significant difference through enforcement. On top of the large resources needed such an effort is not likely a sustainable practice. This said there are commitments in the IP that deal with enforcement. These include ordinance review, etc.

Treating all surface waters where dogs frequent is the crux of the entire nonpoint pollution problem. Such an effort would require treating the surface runoff from almost all areas of the 20 square mile watershed. This is not currently feasible and has been the genesis of this IP and, on a broader scale, the Chesapeake Bay Program, and the entire TMDL program nation-wide.

But here in the Four Mile Run watershed we have an opportunity that places without dog parks do not have. That opportunity resides in making our dog parks a model example of pet waste management. There are no commitments in this IP to close any dog parks in the Four Mile Run watershed. The three commitments Arlington County has made in this IP regarding dog parks are as follows:

- *Arlington County DPRCR*, in coordination with the Department of Environmental Services, VADEQ, VADCR, and NVRC will investigate funding sources to retrofit existing dog parks with BMPs. (IY-1 thru IY-10)

<p>concerns in Arlington County. Our proposal has been approved and our efforts are scheduled to begin soon.</p> <p>Is it fair to always be in the spotlight because our recreation involves dogs, no? Is it fair to close a park that is widely used simply because it is a quick solution that looks good on paper, no? Is it fair to subject a group of park users who are held to a stricter standard because of their recreational choices to a constant roller coaster of “we will close your park” or “we will keep it open”, no? Especially since there is no evidence to link the CCA with contribution to local pollution levels. It seems when a quick solution is necessary, plans to close the park seem to override the hard work that many active park users have put in to keeping and defending a local and legal park. All I’m asking is that county officials and park opponents realize that when something looks good on paper is not necessarily the best option. Many people’s lives will be impacted by the decision to close these parks. Many who may depend on these parks for reasons such as inability to exercise with their dogs due to disabilities or the need for a social outlet. The point is, these parks are legal, they are being used and closing them will have a negative impact on those who have come to depend on them and assume that they will be open permanently.</p>	<ul style="list-style-type: none"> • <i>Arlington County, DPRCR</i> will consider forming a committee consisting of DPRCR and DES staff and various stakeholder groups such as the Parks & Recreation Commission, the Environment & Energy Conservation Commission and Arlington Dogs, for the purpose of evaluating and improving current dog park standards in light of the bacteria TMDL. Items for consideration will include installation of best management practices, and the development of guidelines for education and outreach materials for park users as well as dog owners County-wide, and stream access for dogs consistent with County Pet Leash and Waste Pickup Ordinances as well as stream and riparian management programs. (IY-2 thru IY-4) • <i>Arlington County DPRCR</i> will explore a master plan approach to dog park siting to better ensure a sufficient number of parks in Arlington County that are geographically distributed within the County. (IY-1 thru IY-2) <p>It was the consensus of the TAC that the dog parks in the watershed are an asset. The commitments outlined by this effort are meant to build on that position.</p>
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The following comments were submitted by the **City of Alexandria.**

<p>35) In section 2-4, I suggest including language that describes the percentage of area that each jurisdiction has within the Four Mile Run watershed.</p>	<p>This section will be updated to include such percentages.</p>
<p>36) On page 1-5 and again on page 8-5 the IP commits the City to an additional section in its VPDES MS4 permit report to cover TMDL implementation efforts. While the MS4 Permit Timeline graphic on page 8-3 suggests that Phase II permits issued in 2003 will remain in force unchanged through 2008 and that the IP reporting element is voluntary, I would suggest making this clear in the language on page 1-5 and page 8-5. Additional language might include “The addition of this section to the MS4 permit report is voluntary on the part of the local governments involved and is not intended to cause a change in the actual MS4 permit.” My concern is simply to be explicit that the MS4 permit report is a convenient way of providing information to VDEQ, and that this is not an opportunity to re-open the permitting process.</p>	<p>Two points in responding:</p> <ol style="list-style-type: none"> 1) The proposal presented in the IP will require that until a change is made such reporting will be required of the jurisdictions. 2) VADEQ has long contended that TMDLs, IPs and MS4 permits are intertwined and VADEQ has the authority to re-open an MS4 permit at any time to ensure that the permit requirements reflect the local TMDLs and their subsequent IPs. All four municipalities participated in developing this IP and were aware of this point. With that said, VADEQ does not currently intend to open any of the MS4 permits before the end of their respective permit periods.

<p>37) Page 6-17: Remove the sentence “Those guidelines stipulate that new dog parks shall be located 60 feet from the top of bank from a body of water.”</p>	<p>Through collaboration with the City of Alexandria the following will be included in the plan:</p> <p>“Those guidelines stipulate that new dog parks shall be located 60 feet from the top of bank from a body of water. Additionally, those new dog parks must also meet the intent of the City’s Chesapeake Bay Preservation Ordinance (Article XIII, Environmental Management Ordinance.)”</p>
<p>38) Page 6-8: Sanitary Sewer Infrastructure Commitments. The time frame for this is IY-1 thru IY-2 since completion is scheduled for 2005. Therefore, it should also be added under IY-2 on page 8-12.</p>	<p>Although there will be sanitary sewer rehabilitation work performed in the City of Alexandria beyond the first six months, it was understood that the first contract is the only contract in the Four Mile Run watershed and that work is scheduled to be completed within 6-months and thus would be completed within IY-1.</p>
<p>39) Page 6-31: The second bullet text should read, “...as needed, catch basins on its portion of the Four Mile Run watershed.”</p>	<p>This language will be incorporated as stated.</p>
<p>40) Page 6-32: It would be nice to pin down VDOT on how they will decide when something is “environmentally justified” and “economically viable.” The fact that Four Mile Run is under a TMDL and Alexandria and Arlington are already implementing the commitments in question makes one wonder what exactly the threshold would be.</p>	<p>This is similar language to which Arlington County was willing to commit. Although guidelines are not laid out in the IP on how to analyze new technologies as being “environmentally justified” and “economically viable” the plan authors believe that with the annual meetings regarding IP progress and the similar analyses of UV, Ozone and Flocculant technologies throughout the course of the project reaching an understanding regarding these terms will not be hard to achieve. No change will be made to the document.</p>
<p>41) Pages 6-40, 6-41, 6-42: Just a general concern about using the terms “possible unintended consequences” and “high expected operation and maintenance costs” without providing any further back up. If there are unintended consequences that were discussed, it would be helpful to provide a paragraph or two about them. Also, regarding high expected operation and maintenance costs, it would be helpful to know what these are. My concern is similar to how we approach nutrient reductions. While upgrading waste water treatment facilities is expensive, you also know for certain that you are getting a specific result. Conversely, nonpoint source controls, particularly public education, may or may not achieve the desired results. As a result, in the long run, it is worth investing in waste water treatment. I don’t know that this would be true for the technologies discussed here, but I think we need to be careful about how the issue is presented, especially from a public perception standpoint.</p>	<p>These paragraphs will be modified to include a <u>brief</u> discussion of the capital and operation and maintenance costs including equipment, electrical and staffing costs.</p>

<p>42) Page 6-51: Include the following text for the City in the Directed Outreach section.</p> <p>The City of Alexandria Web site has a section titled Protecting Alexandria's Waters that describes the City's efforts to study and correct the sanitary sewers in the City that contribute pollution to local streams. This effort will directly affect the pollution levels in several streams, in particular Four Mile Run.</p> <p>The City currently publishes and distributes a brochure titled "Your Dog and the Chesapeake Bay Have More in Common Than You Think." This brochure addresses fecal contamination in our waters and proper pet waste disposal procedures.</p>	<p>This verbiage will be added as stated.</p>
<p>43) Page 7-2: Under Stream Corridor Restoration, will the "X" and "Y" be replaced with actual numbers?</p>	<p>Yes, this information was not available in time for inclusion in the draft document.</p>
<p>44) Page 7-2: It would be helpful to have citations for how the dollar amounts were derived.</p>	<p>This is a good point. Additional detail will be given for the final document.</p>
<p>45) Page 8-6: I really like the last paragraph stating that if water quality standards have not been met at the end of the ten year period that a new DNA source tracking study should be performed. Otherwise, it could be very possible for anthropogenic sources to have decreased considerably, while at the same time wildlife sources could increase. Also, the technology will be considerably more refined at that point. If possible, I would suggest bringing this language into the Summary section in the front.</p>	<p>It is the hope, that throughout the 10-year timeframe technology advances are being considered by the stakeholders. The jurisdictions will be meeting annually to discuss efforts / progress. It is expected that during this continual evaluation process such technology advances will be considered. This said, some language will be added to section 8-3.</p> <p>Both the new language regarding technology advances and existing language describing the re-evaluation at the end of the ten-year timeframe will be included in section 8-5.3.</p>
<p>46) Pages 8-7, 8-8, 8-9, 8-10: The continuous actions on these pages are identical. They could be combined as a way to demonstrate some consistency in regional programming. Otherwise, it is not clear that there is a "base level" of service being proposed here.</p>	<p>These pages have been reworked into a new summary table.</p>
<p>47) Page 8-14: Alexandria is appropriately noted as beginning an illicit discharge detection and elimination program in IY-5. However, Falls Church is missing. Was this by mistake?</p>	<p>This was an oversight in translating the commitment found in Chapter 6 (6-14) to the timeline. The timeline will reflect the Falls Church's commitment to develop such a program in IY-4 and continue that effort through the remainder of the project.</p>

<p>48) Section 1.8: Change “site on the Technical Advisory Committee” to “sit on the Technical Advisory Committee.”</p>	<p>This section will be so changed.</p>
<p>49) Section 1.9: Modify “Municipal Separate Storm Sewer <u>System</u> (MS4)...”</p>	<p>This section will be so changed.</p>
<p>50) Page 2-7: Delete repeat of “water quality standards” in the second paragraph.</p>	<p>This section will be so changed.</p>
<p>51) Table 2.3: Delete under 20-Mar-2003 second column “Off Scale High, cfu/100 mL 800 cfu/100 mL.”</p>	<p>This section will be so changed.</p>
<p>52) Section 3.2: Modify “to be approved by the State Water Control Board...”</p>	<p>This section will be changed to read: “In order for an IP to be approved by the State Water Control Board the IP must meet the requirements outlined in WQMIRA.”</p>
<p>53) Section 3.4: Is there an extra USEPA after the federal case citation?</p>	<p>No, this is the name as cited on the USEPA website: http://www.epa.gov/reg3wapd/tmdl/law.htm#VIRGINIA%20LAWSUIT .</p>
<p>54) Section 4.2: Modify to official airport name “Ronald Reagan <u>Washington</u> National Airport...” See http://www.metwashairports.com/.</p>	<p>This section will be so changed.</p>
<p>55) Section 4.8: Modify “were attributed to impervious surfaces draining to Municipal <u>Separate</u> Storm Sewer Systems ...” Also suggest adding “(LA)” immediately behind the first mention of “load allocations” in line 4.</p>	<p>All three changes will be so incorporated.</p>
<p>56) Page 5-2: Comma misplaced between “Arlington County” and “Department of Parks.”</p>	<p>The comma will be adjusted.</p>
<p>57) Page 5-2: Delete the “s” from Parks in “Fairfax County Parks Authority.”</p>	<p>This change will be made as stated.</p>
<p>58) Pages 6-1 and 6-2: Numbering for bullet items is off.</p>	<p>The bullets will be renumbered to “1,2 & 3.”</p>
<p>59) Page 6-5: Modify “Two temporary sewage <u>gallon</u> holding tanks...”</p>	<p>This change will be made as stated.</p>
<p>60) Page 6-6: Two years are provided for when the Arlington County Sanitary Sewer Master Plan was adopted – 2002 and 2003.</p>	<p>The December 8, 2003 date is the correct one. The 2002 date will be corrected to 2003.</p>

<p>61) Page 6-6: It would be helpful to include in the last paragraph that the 1.5% annual replacement rate means that each line will be replaced every 66 years, which is before the average life expectancy, as opposed to every 100 years, which is after the average life expectancy. This would place the decision in better context.</p>	<p>This detail will be added to this section.</p>
<p>62) Page 6-8: Add the word “annually” between “will” and “inspect.”</p>	<p>This change will be made such that the commitment will read: <i>“City of Alexandria, Department of Transportation and Environmental Services will annually inspect all sanitary sewer crossings and sanitary trunk lines parallel to and in the stream corridors of the Four Mile Run watershed. Any parallel lines or crossings found to be failing will receive a high priority rating to ensure timely repair efforts. (IY-1 thru IY-10)”</i></p>
<p>63) Page 6-16: Missing word in first sentence of last paragraph “...with local pick-up ordinances will nearly 100 percent..”</p>	<p>The sentence will be changed to: <i>“As with the measures used to prevent sewage discharges, full compliance with local pick-up ordinances will <u>prevent</u> nearly 100 percent of <u>the</u> fecal matter <u>from</u> <u>pets</u> from being released to the surface waters of Four Mile Run.”</i></p>
<p>64) Page 6-18: Correct “Leash and pet waste pick-up rules are <u>illegible</u> (?) offenses.”</p>	<p>The word “illegible” will be changed to “eligible.”</p>
<p>65) Page 6-20: Proper Pet Waste Disposal Commitments. Delete the second “Department” in the first two bullets.</p>	<p>These changes will be made.</p>
<p>66) Page 6-20: On the first bullet second sentence, replace the word “added” with “considered.”</p>	<p>This change will be made as stated.</p>
<p>67) Page 6-28: Modify “If those sediments and attached <u>bacteria</u>...”</p>	<p>This change will be made as stated.</p>
<p>68) Page 6-36: Add a commitment that reads, “<i>City of Alexandria, Department of Transportation and Environmental Services</i> will consider stream restoration and streambank stabilization projects when allocating funds in the Environmental Restoration Account and Alexandria Water Quality Improvement Account.</p>	<p>Such a commitment will be added for IY-1 thru IY-10.</p>
<p>69) Page 6-40: Change “...how enough to ensure proper exposure <u>to</u> for irradiate the water.”</p>	<p>This change will be made as stated.</p>
<p>70) Page 6-41: Modify “...channeling water through <u>an</u> ozone injection...”</p>	<p>This change will be made as stated.</p>

<p>71) Page 6-42: Modify “Northern Virginia Regional Commission will on behalf of the Four Mile Run jurisdictions will investigate...”</p>	<p>This change will be made as stated.</p>
<p>72) Page 6-43: The second paragraph second sentence should read, “...to a specific water body.”</p>	<p>This change will be made to read: “...the inlet drains directly to a specific water body, ...”</p>
<p>73) Page 7-1: Modify in last paragraph “are far lower than that restoring. ...”</p>	<p>This change will be made as stated.</p>
<p>74) Page 7-4: Modify “Most of the IP <u>mitigation</u> measures...” Also, modify “Indirect measures have a multiple benefits...”</p>	<p>Both changes will be made as stated.</p>
<p>75) Page 8-11: Under Arlingtonians for a Clean Environment, modify “newsletter.”</p>	<p>This section was reworked.</p>
<p>76) Page 8-14: Change Virginia Department of “Trensportation” to “Transportation.”</p>	<p>This section was reworked.</p>
<p>77) Page 8-14 thru 8-16: All the sentences under the City of Alexandria under Inappropriate Discharges need to be changed to read “Begin an inappropriate <u>discharge</u> detection and elimination program in the Four Mile Run watershed.”</p>	<p>This section was reworked.</p>
<p>78) Page 9-1: The VDMME stands for Virginia Department of Mines, Minerals, and Energy (not Mines and Mineral Extraction).</p>	<p>This section was reworked.</p>
<p>79) Page 9-2: Under VADCR, insert “in” between “participant” and “the TMDL process.”</p>	<p>This change will be made as stated.</p>
<p>80) Page 10-1: Separate “in” from “developing” in the first sentence.</p>	<p>This change will be made as stated.</p>