Technical Advisory Committee Meeting #3
Accotink Creek Benthic TMDL Study

Monday, December 14, 2015 – 10:30 am
Kings Park Library – Meeting Room
9000 Burke Lake Road
Burke, VA 22015

Meeting Attendees:

Braddock District Board of Supervisors (Rosemary Ryan)
Chesapeake Bay Foundation (Joe Wood)
City of Fairfax (Christina Alexander)
EEE consulting (Ashley Hall)
Fairfax County (Kate Bennett, Emily Burton)
Fairfax County Department of Transportation (Tashi Sharngoe)
Fairfax County Park Authority (Tony Vellucci)
Fairfax County Resident (Donald Pless)
Fairfax County Resident (Janet Oleszek)
Friends of Accotink Creek (Philip Latasa, Sandy Collins)
Interstate Commission on the Potomac River Basin (Ross Mandel, Heidi Moltz)
Regency Centers (John Fitzpatrick)
Virginia Department of Environmental Quality (Bryant Thomas, Will Isenberg, Rebecca Shoemaker, Lilly Frazer)
Virginia Department of Transportation (Tracey Harmon)

Meeting Minutes:

The purpose of this meeting was to initiate the Total Maximum Daily Load (TMDL) development portion of this project. The meeting started with introductions of the meeting attendees. DEQ gave a presentation that began by reviewing the TMDL development process and summarizing progress on this project to date. It was noted that as a result of the recently completed stressor identification analysis, TMDLs will be developed for sediment and chloride. The stressor identification analysis identified sediment and chloride as the most probable pollutant stressors causing the impairment to the aquatic community. However, due to concerns expressed during the public comment period with the limited data in Long Branch central and Lower Accotink Creek for chlorides, additional monitoring of chlorides and specific conductance will be conducted this winter before any chloride TMDLs are developed. A TAC member asked if winter monitoring for chlorides would provide representative data. DEQ responded that the chloride spikes observed coincided with snow removal, so it will depend on the weather this winter and whether or not DEQ can capture data related to snow events. Another TAC member asked if a new monitoring gauge will be installed at Telegraph Road. DEQ responded that a new probe will be installed that will measure specific conductivity, temperature, and likely some other parameters such as pH and turbidity.

The presentation continued with TMDL model development and was presented by the Interstate Commission on the Potomac River Basin (ICPRB) who is the DEQ contractor developing the TMDL models. ICPRB described the two possible approaches for developing Sediment TMDLs. They included the approached used historically by DEQ called the "AllForX" approach and an approach that Fairfax County is exploring based on the County's Uniform Stormwater Design Standard.

The AllForX method uses a ratio of the existing sediment load compared to the sediment load that would exist if the entire watershed was all forested (i.e., undeveloped). This ratio is called the AllForX multiplier. The AllForX multiplier represents how many times larger the existing sediment load is than what the sediment load of the watershed would be without development. The AllForX method calculates this multiplier for the impaired watershed in addition to selected reference watersheds and then plots these AllForX multipliers against their associated Virginia Stream Condition Index (VSCI) scores. A regression line is generated and where the line crosses a VSCI score of 60 (the threshold for determination of Aquatic Life Use impairment) the corresponding AllForX multiplier is used to calculate the sediment TMDL endpoint. The selected AllForX multiplier is multiplied by the sediment load for the all forested condition of the impaired watershed, which results in the sediment TMDL endpoint. When this method was described, a TAC member asked what criteria will be used to select reference watersheds. ICPRB responded that they are still working on the criteria needed to find reference watersheds, but that it will include considerations like the VSCI scores and stream order. DEQ noted that this is one of the important next steps. When ICPRB showed an example of the regression between AllForX multipliers and VSCI scores, a TAC member noted that the line crossed a VSCI score of 60 where the AllForX multiplier was 10. This TAC member then asked if this AllForX multiplier was common for calculating TMDL endpoints for sediment. ICPRB and DEQ explained that the example shown in the presentation is only here for illustrative purposes and should not be taken as representative for this project. DEQ concluded that a separate graph will be created for this Accotink Creek project. Another TAC member asked if in-stream erosion would be a part of the AllForX calculation and ICPRB confirmed. ICPRB continued their presentation by describing the model that would be used with the AllForX method. The model is called the Generalized Watershed Loading Function (GWLF) and calculates model outputs on a monthly basis. This model is used extensively in Virginia sediment TMDLs.

The Fairfax County Uniform Stormwater Design Standard is based on the identification of threshold erosive events that cause erosion and maintain it long enough to harm biota. It considers the magnitude, duration, and frequency of erosive events in addition to the recovery time between events. The threshold event will be determined through literature review and statistical assessment of unimpaired streams in Virginia. Once developed it can be used to determine the sediment TMDL endpoint using the Hydrological Simulation Program Fortran (HSPF) model, which calculates model outputs on a daily basis. When describing this approach, Fairfax County explained that the timeline for the development of this approach may not correspond to the TMDL study's timeline. When asked by another TAC member whether or not this method is being used anywhere else, Fairfax County said it is not. Another TAC member

asked if this method was used for defining quantity, not quality of water. DEQ responded that volumes of flow come into play, but that the emphasis is on the need to understand these threshold storms. The same TAC member then stated that development can negate the results if the factors of development are not included. ICPRB responded explaining that modeling takes into account current development. DEQ then remarked that not all the technical details are necessarily known at this point for this approach, but that the interest in this approach comes from the fact that Fairfax County is one of the biggest stakeholders in this watershed and that linking this TMDL project to their stormwater design standard may therefore be a good approach. DEQ further stated that the primary method for Sediment endpoint development will be the AllForX approach, but if the Fairfax County approach can be used it will improve the project. Another TAC member offered support and appreciation for this approach and asked if this approach will only be for sediment. DEQ responded that regardless of how the approach is developed it will have to tie to sediment as that is the most probable pollutant stressor. Another TAC member asked what the probability was for using the Fairfax County Uniform Stormwater Design Standard. DEQ replied that was difficult to know, but noted that DEQ wants to consider this approach, although it may have to be abandoned if the timing does not work out.

ICPRB continued the presentation describing the development of the chloride TMDLs using the HSPF model. ICPRB explained that the modeling effort will strive to simulate deicing application on an event basis in addition to simulating the fate and transport of chloride through groundwater in order to capture year-round elevated chloride concentrations. A TAC member noted that depending on soil type, higher chloride may be present. They asked if there was a way to tease this out of the data. ICPRB explained that these levels are in Triassic lowlands and that those soils are not in the watershed. The TAC member followed up suggesting that the project should account for other non-deicing sources of chlorides and ICPRB agreed. Another TAC member then asked if there were other pollutants besides chlorides. ICPRB and DEQ explained that sediment is a year round issue and is considered the more important of the two pollutants, but that chloride is more of a winter time stressor. ICPRB then explained the data needs for chloride application rates, categorizing the forms of data into “ideal” (dates of application, application rates, application surface area and type), “useful” (annual application rates), and “better than nothing” (average annual rate). A TAC member asked if there are any record-keeping requirements for salt application. DEQ replied that there were no requirements that they know of, but that any contracts or records kept by entities may provide this information. ICPRB emphasized that they are looking for stakeholders to voluntarily participate by providing this information and DEQ added that they will also be asking permittees to provide the information.

ICPRB described some additional data needs including land use by impervious type from Fort Belvoir and the City of Fairfax, the current level of BMP implementation across the watershed, and data on Lake Accotink including bathymetry, dredging history, and management. A TAC member offered that the lake is recreational so it is not managed for water levels and another TAC member noted that the lake was last dredged 6-8 years ago.

When ICPRB concluded their presentation summarizing the TMDL development with a visual overview, a TAC member asked if the TMDL will only be for certain portions of Accotink Creek. DEQ responded stating that TMDLs are based on impairments, and that basically the entire mainstem of Accotink Creek is impaired with the lake as a divider. DEQ continued to explain that the TMDL will be developed to cover the entire watershed all the way to the downstream most portion of each impaired segment. For this project there will be 3 TMDL watersheds.

DEQ continued the presentation outlining the remaining timeline for this project. The next steps include the development of TMDL endpoints over the winter, draft TMDL allocations throughout the summer, and a draft report in the late summer. Throughout this period, DEQ plans to have two additional TAC meetings to go over the TMDL endpoints and the draft TMDL allocations. Once the draft TMDL report is prepared, the final public meeting will be held and the public comment period will begin. Following public comment, DEQ will respond to any comments and incorporate any changes to the report. Following this schedule, DEQ will have a TMDL report ready for State Water Control Board and EPA approval sometime in November 2016.

To conclude the presentation, DEQ asked the TAC members if they were interested in having regular meetings to update the TAC on progress. Initially no interest was expressed, but one TAC member said they would be interested in regular updates as information becomes available. They added that perhaps an email would be sufficient for the update. Another TAC member said they would be interested in an update following the winter chloride monitoring, noting that some of the information may be difficult to convey through the phone or an email. DEQ responded that they can do webinars, but that they will plan on sharing information as needed via email. DEQ encouraged TAC members to contact DEQ with any questions after receiving these information updates.

Following the presentation, the floor was opened for questions and discussion. One TAC member asked what types of permits exist within the watershed. DEQ explained that the permits in the watershed that are of importance to this project are all required by the Clean Water Act and include Municipal Separate Storm Sewer Systems and other relevant Virginia Pollutant Discharge Elimination System permits such as industrial stormwater permits and construction stormwater permits. When final thoughts were sought before concluding the meeting, one of the TAC members shared that their organization (Friends of Accotink Creek) paid for a professional survey of mussels in the stream. They noted that the study showed that mussels are currently only living just downstream of the dam due to sedimentation issues in other areas and that soon they will share the final report on http://www.accotink.org.

Meeting Presentation:

A copy of the presentation can be found at DEQ's website below
http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/TMDLDocumentation/Accotink/AccotinkTAC3pres.pdf