Technical Advisory Committee Meeting #6
Accotink Creek Benthic TMDL Study

Wednesday June 7, 2017 – 1:00 pm
Richard Byrd Library Meeting Room
7250 Commerce Street
Springfield, VA 22150-3499

Meeting Attendees

Buckeye Partners (Carl Pires)
Fairfax County Department of Public Works and Environmental Services (Kate Bennett)
Fairfax County Department of Vehicle Services (Marguerite Guarino)
Fairfax County Park Authority (Gayle Hooper, Tony Vellucci)
Fort Belvoir Department of Public Works (Pamela Couch, Sybille Vega)
Friends of Accotink Creek (Philip Latasa, Kris Unger)
Friends of Lake Accotink Park (Harold "Chip" Krivell)
GKY & Associates, Inc. (Doug Fritz)
Interstate Commission on the Potomac River Basin (Ross Mandel)
Northern Virginia Community College (David Trimble)
Stantec (Ashley Hall)
Town of Vienna (Christine Horner)
Virginia Department of Environmental Quality (Bryant Thomas, Will Isenberg, Sarah Marsala, Dave Evans)
Virginia Department of Transportation (Tracey Harmon)

Meeting Minutes

The purpose of this meeting was to present and discuss draft Total Maximum Daily Load (TMDL) reports for sediment and chloride in the Accotink Creek watershed. The meeting started out with introductions and the Virginia Department of Environmental Quality (DEQ) giving a brief overview of the agenda. Next, DEQ explained the process for finalizing the TMDL reports. The process starts with a brief comment process for Technical Advisory Committee (TAC) members that will end on 6/14/2017. Following that DEQ will then address comments as appropriate before 6/21/2017, which is when the 30-day public comment period is set to begin. After 30 days, the public comment period will end on 7/21/2017. DEQ stated a public meeting will be held to present the draft reports to the general public at the Kings Park Library on 6/28/2017. Following the 30-day public comment period, DEQ and the Interstate Commission on the Potomac River Basin (ICPRB) will work to address comments as appropriate and prepare the final documents that will be reviewed by the U.S. Environmental Protection Agency (EPA) and the State Water Control Board (SWCB).

As described in the meeting, the process begins with EPA reviewing the TMDL reports and submitting comments. Once DEQ finishes addressing EPA's comments, the TMDL reports are submitted to the SWCB for review and approval. Following SWCB approval, the TMDL reports are re-submitted to EPA for final review and approval. Once the SWCB and EPA have approved the TMDL reports, the wasteload allocations (WLAs) are then incorporated into permits as appropriate and with the next permit cycle.

After the TMDL finalization process was described, DEQ reminded the TAC of the allocation principles presented at the last meeting. These principles included the fact that allocations for different TMDL watersheds do not overlap, MS4 allocations are based on the percent area within one service area or another, and that in both TMDL reports the MS4 allocations were aggregated.

Sediment TMDLs

Lake Accotink Sediment Trapping Efficiency

The presentation continued into the sediment TMDL report, and started with an update on the sediment trapping effects of Lake Accotink. At the last TAC meeting in October 2016, a TAC member expressed concern over the 54% trapping efficiency that ICPRB had calculated using a time period of 1987-2002 since more recent trapping efficiencies were available. DEQ explained that, since that meeting, ICPRB, Wetland Studies and Solutions, Inc. (WSSI), the Fairfax County Park Authority (FCPA), and DEQ met to reconcile the different trapping efficiencies. In that meeting it was identified that ICPRB and DEQ were using the same method as WSSI and FCPA; however, the time periods were not the same resulting in different efficiencies. DEQ explained that all parties agreed to use the new averaging period of 1996-2015 as it coincides with the modeling period for the sediment TMDL. Using that new averaging period, the new trapping efficiency was set at 47%. DEQ explained that this 47% reduction in sediment loads was applied to loads coming from the Upper Accotink Creek watershed in addition to the areas within the Lower Accotink Creek watershed that drains directly to Lake Accotink. Also, as was discussed at the last TAC meeting, a trapping efficiency was not applied to the all-forested scenario of the AllForX calculation.

Sediment TMDL Allocations

DEQ then presented the individual watershed baseline loads, both as a total load and broken out by source categories. These baseline loads were presented along with the TMDLs and the percent load reductions for the individual watersheds. The load reductions necessary to meet the TMDLs were explained to be similar for Upper Accotink Creek and Long Branch; however, they were lower for Lower Accotink Creek due to the trapping effect of Lake Accotink.

Next, DEQ described the different parts of the TMDL equation and how they were all calculated. The Margin of Safety (MOS), which reserves a part of the allocation to account for natural variation and uncertainties in the modeling effort, was set at 10% of the TMDL. The WLA was described as the portion of the TMDL equation that is allocated to permitted sources. For the sediment TMDLs, the WLA included individual WLAs for industrial stormwater sources and process water sources, in addition to aggregated WLAs for Municipal Separate Storm Sewer Systems (MS4s) and an allocation for future growth that accounts for any new or expanding dischargers in the future. The MS4 WLAs were aggregated by localities since they are interconnected systems. Finally, it was noted that the load allocation (LA) is the load allocated to non-permitted sources of sediment.

DEQ continued the presentation by going into more detail on how the allocations were calculated. DEQ explained that after the MOS was subtracted from the TMDL, the non-MS4 WLAs were calculated based on the product of a benchmark or permit limit concentration and an estimate of flow. DEQ directed TAC members to a handout (see attachments) showing a table extracted from the sediment TMDL report that listed the different concentrations and basis for flow estimates organized by permit type. For the MS4 WLAs, DEQ explained that the land based loads were determined from the percent of the watershed that the MS4 service area covers, while the streambank erosion loads were allocated to MS4s based on the percent of the watershed's impervious surfaces that are within the service area.

Future growth allocations were calculated as 5% of the TMDL for Upper and Lower Accotink Creek watersheds, and 1% of the TMDL for the Long Branch watershed. DEQ explained that the sources of sediment are primarily stormwater driven, and since there is little room for stormwater sources to grow in the Long Branch watershed (i.e., the watershed is mostly covered by MS4 service area), there was no need to reserve 5% of the TMDL for future growth. DEQ then explained that the LA was based on the TMDL minus the MOS minus the total WLA. After describing the allocation calculations, DEQ then presented the sediment TMDL tables for Upper Accotink Creek, Lower Accotink Creek, and Long Branch.

Following a review of the TMDL tables, the floor was opened up for discussion. A member of the TAC asked whether there were plans to put sediment traps around Lake Accotink and DEQ responded that the decisions on management actions would be made by the MS4s, which in this case would be Fairfax County. Another TAC member asked why an Enterprise Car Wash permit was not included in the individual WLA tables provided in the handout and also included in the TMDL report. DEQ stated that it believed it had all of the car wash permits included and that an Enterprise Car Wash permit recently went offline while another one was added. DEQ also noted that one of the car washes being discussed may be in the neighboring Pohick watershed.

Chloride TMDLs

The presentation from DEQ then moved on to the chloride TMDLs. This portion of the presentation started with a brief review of the approach for the chloride TMDLs. DEQ reminded the TAC that the chloride criteria exceedances are observed in a manner that strongly suggests the source of the chloride is from winter stormwater. Therefore, the sources considered in the chloride TMDL are focused on stormwater based sources.

DEQ then briefly reviewed the approach for setting TMDLs through the use of load duration curves that set an acceptable load for the entire TMDL watershed. DEQ explained that while no load reductions were set using this modeling approach, there were estimated reduction targets based on chloride estimates from instream continuous monitoring. DEQ stated the intent is that the chloride TMDLs be implemented through best management practices (BMPs) and that more information on the collaborative development of the implementation strategy will be discussed later in the presentation.

Chloride TMDL Allocations

Next, DEQ went over the allocation calculations for the chloride TMDLs. Like in the sediment TMDLs, the MOS is set at 10% of the TMDL. Since the chloride criteria exceedances are related to wintertime stormwater, DEQ explained that only stormwater sources were given WLAs, which consists of industrial stormwater and MS4s along with an allocation for future growth. DEQ explained how the WLAs for industrial stormwater and MS4s were aggregated at the watershed level and were based on the percent of the watershed that is covered by industrial stormwater and MS4 drainage areas. Similar to the sediment TMDL, DEQ explained how the chloride future growth allocations were set at 5% of the TMDL for Upper and Lower Accotink Creek and 1% for Long Branch. Also, just like the sediment TMDL, chloride LAs were equal to the TMDL minus the MOS minus the total WLA. After discussing the allocation calculations, the chloride TMDL tables for Upper Accotink Creek, Lower Accotink Creek, and Long Branch were presented along with pie charts illustrating the pieces of the TMDL equation for each watershed.

At this point, a TAC member asked how the Virginia Department of Transportation (VDOT) fits into the allocations. DEQ explained that since VDOT has a MS4 permit, they are included in the watershed aggregate MS4 WLAs and therefore will be responsible for implementing BMPs to reduce chloride loads.

Next, there was a question from a TAC member regarding how the LA was calculated and if there were any land use considerations when setting those loads. DEQ responded that there were no land use considerations since the load duration curve approach considered loading capacity based on flow and the chloride water quality chronic criterion. DEQ elaborated, however, that the LA was essentially calculated the same way as the WLA. Since the WLA was based on the proportion of the watershed that drained to stormwater outfalls in industrial stormwater sites and in MS4 service areas, the remaining proportion of the watershed is essentially the basis for the deriving the LA.

A TAC member asked DEQ to describe how they knew the proportion of the watershed that MS4 service areas represent. DEQ explained that it was an exercise done using files that plot the service areas of the MS4s over a

map. ICPRB combined all of the different MS4 service areas to get a combined service area map, and then plotted that combined service area over the watershed. Using this map, ICPRB was able to calculate the percentage of the watershed that the MS4 service areas covered.

Next, another TAC member noted that the chlorides seem like they would be more related to impervious surfaces than a MS4 service area that covers pervious and impervious surfaces. DEQ agreed, but stated that since the MS4s are ultimately responsible for all of the runoff that drains from their service area into their outfalls, the aforementioned approach of allocating loads based on the percent of the watershed covered by a MS4 service area is the best approach given the available data. DEQ continued by stating that among other reasons, this is why the intent is to collaboratively develop a plan to implement the chloride TMDLs.

Open Discussion of Sediment and Chloride TMDLs

The discussion then moved back to the sediment TMDL when a TAC member asked if the reductions for sediment were more stringent than other TMDLs and if those reductions are achievable. DEQ responded by stating the reductions are on the higher end of those in the northern Virginia region. DEQ continued by acknowledging that implementation of the TMDL is an iterative process that occurs over successive permit terms.

A TAC member questioned if there would be a lot of pushback to these higher load reductions given the history of this project. Similarly, a member of the public questioned if hydromodification was considered as part of the sediment TMDL. DEQ gave a brief history that summarized originally, a TMDL for flow was pursued. However, the Clean Water Act specifies that TMDLs are to be developed for pollutants and not non-pollutants like flow. As a result, DEQ restarted the TMDL process and identified that there were four most probable stressors, of which two were non-pollutants, hydromodification and habitat modification. Therefore, this process addresses the other two most probable stressors which are pollutants, sediment and chloride. DEQ explained that many BMPs used to implement the sediment TMDL can also address the non-pollutant stressors.

A member of the public asked how streambank erosion was applied as a load in the sediment TMDL. DEQ explained that it was allocated to both MS4s in their WLA and to the LA based on the proportion of impervious surfaces inside and outside of the MS4 service areas, respectively. The meeting attendee asked how the sediment load can be allocated to the WLA because it's not coming from the MS4s. DEQ explained that this is a standard practice that DEQ has traditionally employed and that it is generally accepted by MS4s because it enables flexibility in implementation of BMPs to meet the WLA. Furthermore, DEQ explained that streambank erosion is a result of the energy from the discharge through MS4 outfalls so the resulting streambank erosion loads are caused or contributed to by the MS4 discharge.

A TAC member asked what studies existed in the watershed for pollution from heavy metals and PCBs. DEQ responded by stating that the stressor analysis looked at potential pollutants like heavy metals, but based on the observed and available data, metals did not rise to a level of concern. DEQ also stated that there is a PCB TMDL for the tidal embayment that includes Accotink Bay, which is downstream of the study area for this TMDL project. DEQ continued by stating that there is a PCB impairment in Lake Accotink and in the segment of Accotink Creek below the lake, but that these are related to fish tissue concentrations that are a risk to human health and not related to the effect of the PCBs on the benthic community.

Implementation of the Chloride TMDLs

Following the presentation of the sediment and chloride TMDLs, DEQ gave a brief look into the effort to implement the chloride TMDLs. DEQ explained that because these TMDLs are the first non-mining chloride TMDLs that focus on chlorides associated with winter anti-icing and deicing, DEQ intends to facilitate a stakeholder driven process to develop an Accotink Creek Salt Management Strategy (SaMS). DEQ emphasized that

unlike the sediment TMDL that is largely addressed through permitted sources, that is not quite the case for the chloride TMDL. Therefore, the development of the SaMS is envisioned to be a collaborative effort to meet the TMDL goals.

DEQ continued by stating that chloride pollution is an emerging issue arising as a result of deicing/anti-icing activities. Furthermore, the impacts are not only to the environment, but also to infrastructure and drinking water. DEQ explained that while the SaMS will focus on the Accotink Creek watershed, it will have broad, regional application because implementation of BMPs does not end at a watershed's boundary. Nonetheless, there will be a local focus on Accotink Creek's watershed to support eligibility for available federal Section 319 funding.

DEQ continued the presentation by stating the two most important goals of this effort are public safety and environmental protection. Water quality concerns can be addressed while maintaining high standards of public safety during snow/ice events. Also, there is an opportunity to improve water quality and reduce costs associated with snow/ice events through the use of BMPs, which include training and more efficient and effective snow/ice management products and technologies. DEQ stated that they have started to look at the literature, which shows that the salt applied by transportation authorities is not always the largest source in a watershed. Therefore it's important to get public awareness of recommended salt application practices.

DEQ continued the presentation by breaking out the goals of the SaMS and emphasizing the need for broad stakeholder participation. DEQ outlined the SaMS goals as follows:

1. Summarize salt impacts on water quality and infrastructure
2. Identify economic benefits of proper salt management
3. Bring together diverse partners with shared interests and resources
4. Offer regulated and non-regulated entities technical resources that identify BMPs and environmentally preferred products
5. Establish a suite of best practices applicable to VPDES permits
6. Organize a process for reporting and tracking salt usage
7. Identify additional actions and measures to more fully address program goals, such as potential legislation, certification programs, and enhanced regional coordination
8. Frame monitoring recommendations to evaluate the effectiveness of the strategy over time
9. Draw upon the best applicable work by other jurisdictions and industry associations

DEQ then described the stakeholder involvement in the SaMS development as a stakeholder driven process. DEQ explained that unlike TMDL development where DEQ prepares the materials for review, more active and collaborative involvement from stakeholders is envisioned to encourage all perspectives. DEQ then outlined the potential membership of the SaMS TAC as including entities with chloride WLAs in the Accotink Creek Watershed, local municipalities, local environmental groups, commercial property owners, snow plow operators, water authorities, public safety entities, the Virginia Department of Health, the Virginia Department of Agriculture and Consumer Services, and other stakeholders that are yet to be identified.

Following this description, DEQ then asked the TAC about their thoughts on this plan. Specifically DEQ asked the TAC if there could be a broader more consensus message on the goals of this effort and what the TAC may think the biggest challenge would be.

A member of the public highlighted a challenge for implementing the chloride TMDL by stating that since a commercial property owner is not regulated by a permit, they probably won't see the financial benefit of saving some money by properly applying salts during winter weather when there is the potential for a slip and fall liability. DEQ responded by agreeing that that unregulated sector is difficult to address given the situation this attendee laid out. However, that is why DEQ hopes that the SaMS can explore some potential legislative

initiatives. Specifically, DEQ described a program in New Hampshire called the Green Snow Pro where commercial salt applicators go through a training, report their salt usage that documents their best practices, and as a result they are free from slip and fall liability. DEQ explained that the liability protection is written into law and therefore mitigates the incentive to over apply.

Another member of the TAC emphasized that public awareness will be a significant component and that the benefits need to be highlighted to gain buy in. This member followed-up by suggesting that churches be invited to contribute to the SaMS development given their large surface area and need to maintain safety for their congregation, in particular the elderly. DEQ responded in agreement and suggested that there is a lot of opportunity for public education through MS4 permits and other avenues. DEQ continued by stating that there is a lot of information that already exists to inform the SaMS development; however, it is DEQ's intent to draw on the perspectives of the regional stakeholders in order to document all perspectives and develop a shared commitment to implement these goals.

DEQ concluded by stating that the next steps for the SaMS include identifying partners within the next few months, develop some information to facilitate discussion from these stakeholders, and to kick off the development following the finalization of the TMDL public process.

Conclusion

DEQ concluded the meeting by reminding the TAC of the remaining steps in the process, which was outlined as follows:

- Comment process for the TAC
  - Comments due: 6/14/17
  - DEQ/ICPRB to address comments before 6/21 as appropriate
- Public Comment Process
  - Comment period: 6/21/17 to 7/21/17
  - Public meeting: 6/28/17, 6:30 PM at Kings Park Library
- DEQ and ICPRB address Comments
- SWCB & EPA approval process
  - EPA provisional review
  - Present to SWCB either at the December 2017 meeting or the March 2018 meeting
  - EPA final review after SWCB approval
- Incorporate into permits, as appropriate with the next permit cycle

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/AccotinkTAC6presentation.pdf

Meeting Handouts:
Handouts containing additional details on the sediment and chloride TMDLs. All information is taken from the TMDL reports.

Sediment TMDL Handout:
http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/TMDLDocumentation/Accotink/sedimenthandout.pdf
Chloride TMDL Handout:
http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/TMDLDocumentation/Accotink/chloridehandout.pdf