



## DPWES Meeting on Future of Lake Accotink

March 4, 2019

Represented –

- Virginia Department of Game & Inland Fisheries
- Dept of Public Works & Environmental Services (DPWES): Charles Smith, Gayle Hooper, Matt Meyers, Suzy Foster
- Friends of Accotink Creek (FACC) - Kris Unger, Philip Latasa
- Friends of Lake Accotink Park (FLAP): Tony Vellucci
- Friends of Royal Lake - (FORL): Paul Gross
- Save Lake Accotink (SLA): Allan Robertson, Mike Field, Tyler Small, Wade Corder

### Fish Passage

Alan Weaver, VDGIF (via conference call)

Since colonial times, Virginia law has required fish passage past manmade obstacles, with some exceptions, including exceptions for all dams over 20' in height. The last revisions were 30 some years ago. See [Virginia Code 29.1-532](#). (Lake Accotink dam is 28 feet high.)

At [Chandlers Dam](#), a pool and weir fishway is near completion, designed with a 3 – 5% slope to also facilitate eel passage. This passage will be the main flow of water past the dam, to better encourage use by fish. The Chandler Dam fish passage was supported by a U.S. Fish & Wildlife Service grant for engineering. An alternative for eels is a steeper slope with a trickle of water and structure for support as they crawl upward.

VDGIF has no experience with fish passage over 20' high.

Snakeheads can be expected to find their way past the dam anyway, likely moved by humans, so they are not a reason to avoid fish passage.

Some fish passages work well, others not. At [Boshers Dam](#) on the James River 23 species of fish use the passage, including eels.

VDGIF would be interested in participating in sampling of Accotink fish populations.

Charles Smith, DPWES

GMU's Potomac Environmental Research and Education Center is to do an age study on anadromous river herring in Accotink Creek. DPWES may engage in intensified electroshocking studies.

In addition to anadromous fish, species of resident fish could also benefit from fish passage.

### Future of Lake Accotink

Charles Smith, DPWES

2025 is the target for the dredge of Lake Accotink.

Bond debt service @ 4% adds about 20% to costs. The county is trying for loan funding from the Commonwealth which is available at 3%.

Given the volume of runoff and sediment entering Lake Accotink, a forebay would not offer any financial or functional advantage over simply continuing to dredge every 10 to 15 years.

The recommended spoils dewatering location north of Braddock Road in Wakefield Park would require a pipeline, 18" or larger to run alongside the Cross County Trail, causing the loss of a swath of trees. This pipeline would be left in place permanently. The pipeline would be of HDPE and must be aboveground for maintenance, given the high wear and tear caused by coarse sediment. The pipeline would be raised off the ground, allowing smaller wildlife to pass beneath.

The open area under the power lines in Wakefield Park is subject to periodic inundation and would impinge on private property, requiring the dewatering area to be on higher ground east of Accotink Creek, causing the sacrifice of a wooded area.

Final disposal of spoils would be in two quarry pits in Chantilly and Sterling.

Stream restoration sediment reduction is calculated at a standard rate of 248 pounds per linear foot. However, it is believed the actual capture in the Accotink Creek watershed could be double that. The "bank analysis" method to measure actual sediment capture could gain more MS4 permit credits for fewer miles of restoration.

The Park Authority will resume public meetings in the spring on the future of Lake Accotink.

The Park Authority Board and Board of Supervisors have already been briefed on this updated information.

Tony Vellucci, representing FLAP

Suggested Howery Park could be a dewatering location, as its ballfields are in excess of need.

Matt Meyers, DPWES

The pipeline would also require two or three booster pump stations with about a 10' x 10' footprint. The pumps would only be in place during active dredging.

The standard calculation is that 88% of sediment is captured in the floodplain before reaching the mouth of a stream. This was recently confirmed by USGS measurements on Difficult Run.

The smaller lake option, fed by Flag Run, would take as long as 300 years to fill with sediment. This is even before the planned restoration of the full length of Flag Run. This smaller lake would have deeper, cooler, cleaner water than the current lake, and also likely have a higher fish population.

Charles Smith and Matt Meyers, DPWES

[Note: These are only impressions of parts of the conversation were surprising and confusing to this reporter.]

The cost difference between dredging and stream restoration is so great that supervisors seem likely to ask the public to consider the options once again.

Ten miles of stream restoration upstream of the lake would reduce sediment flow by 10%, enough to satisfy the Accotink Creek TMDL requirements. The loss of sediment capture if the dam were removed, would only require about one additional mile of restoration downstream to satisfy the Accotink Creek TMDL.

Virginia DEQ doesn't ever require localities to do anything really expensive to meet TMDL requirements anyway. In effect, the county could remove the dam, giving up its sediment capture value, and simply plead it was too expensive to keep, with no enforcement consequences.

Since the floodplain will capture 88% of sediment anyway, we can shrug off the additional sediment that would pass downstream without the dam.

#### General sentiment among the invitees

The smaller lake option is sounding better.

#### Philip Latasa, FACC

The 2015 freshwater mussel survey commissioned by FACC and performed by Daguna Consulting shows conclusively that sediment capture by the dam is the sole factor enabling a mussel population to exist in the one-mile stretch downstream from the dam. Further downstream and upstream the large quantities of shifting sediments in the stream cause the mussels to be buried and smothered.

#### Meeting Presentation Materials

[Slide Show Presentation](#)

[Option "C" Additional Analysis](#)

[Costs Chart](#)

### **DPWES Provides Lake Accotink Update to FACC / FLAP / SLA**

By Tony Vellucci

On March 4<sup>th</sup> 2019, representatives from Friends of Accotink Creek (FACC), Friends of Lake Accotink Park

(FLAP) and Save Lake Accotink (SLA) met with Department of Public Works and Environmental Services (DPWES) staff to receive a briefing of a final report provided by Wetland Studies and Solutions, Inc, (WSSI) regarding Lake Accotink lake sustainability.

Prior to delving into the report, the group spent about 45 minutes discussing fish passage options around the dam with a Virginia Department of Game and Inland Fisheries (VDGIF) representative, Mr. Allan Weaver who noted that a fish passage route was not a state law requirement for dams over 22 feet (the Lake Accotink dam is 28 feet), and that the preferred method for fish passage was dam removal. Mr. Weaver provided significant information regarding the issue including several examples of fish passage options that had been implemented in other parts of the state and country.

Regarding Lake Accotink sustainability, in 2017, WSSI had been contracted for by the Park Authority to develop management options to operate the lake considering the excessive sediment loads deposited each year. To continue with the careful consideration of what is the best option moving forward, additional study of the most feasible options had been requested by DPWES, especially after several FCPA-sponsored public community meetings were held where community sentiment was voiced to both FCPA and DPWES staff regarding retaining the lake.

The briefing had been provided to the Fairfax County Park Authority Board 19 January and was briefed to district supervisors shortly thereafter. The report discusses common requirements and/or options that are involved with the dredging operation, regardless of the specifics of how it is conducted, followed by more specific information on scenarios for the actual performance of the dredging, along with associated costs.

There were three key takeaways from the briefing: First, upon more detailed analysis, the installation of upstream beaver dams in a cascading fashion (Management Option D) was removed from consideration due to the extent of environmental impacts with very limited benefit. Second, due to the size of the Accotink watershed, staff assessed that forebays considered in Option C (Dredge with Forebays) would be ineffectual since they could not be sized for the expanse of the Accotink watershed. As such, full dredges would be required every 15 years or so. They noted that forebays at other lakes such as Huntsman Lake, Woodglen Lake and Royal Lake were effective at capturing sediment because the lakes were rightly sized for the watershed. This is not the case in the Accotink Watershed. Third, staff assessed that a permanent pipeline would be required to preclude the transport of sediment by trucks through neighborhoods, and that a primary location could be along the Cross County Trail from Accotink to Wakefield Park.

DPWES staff presented the various options, with cost data having much greater fidelity than previous efforts. A detailed description of the options, costs and impacts to the community is beyond the scope of this article, however the Park Authority will soon be advertising a community meeting to make the information known to interested stakeholders. The options, costs and impacts may cause many to reconsider which option they will want to support, so attendance at the meeting to truly understand the issues to make an informed decision is paramount to all who have an interest in Lake Accotink.

## Friends of Accotink Creek

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