



Lake Accotink Development: Some alternative thoughts.

As a downstream neighbor who thoroughly enjoys Lake Accotink, I am writing to complement the Park Authority Board for its thoughtful approach exploring various paths forward for the lake. I would recommend an evolution of the lake with a strong emphasis on how Lake Accotink can guide our community to care for healthier streams where we live.

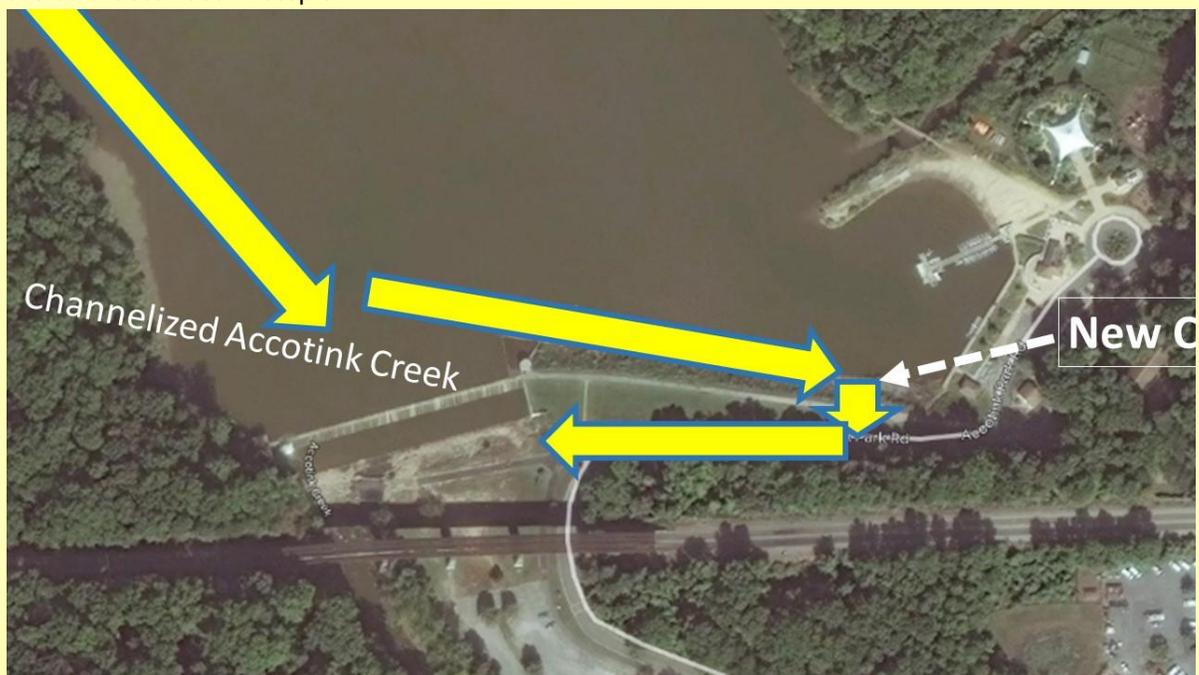
I recommend exploring this hybrid of the various paths presented at the May 14 meeting, emphasizing these goals:

- Reduce silt runoff into the Lake to make it sustainable for generations, not just decades.
- Provide opportunities to reclaim and repurpose the silt that still flows into Accotink Creek at the lake, ideally for projects to mitigate erosion in hills and gullies from which it erodes.
- Emphasize Nature's forces over time to shape the silt laydown in Lake Accotink, avoiding dredging, thereby preserving precious aquatic habitat as it evolves.
- Make the evolved Lake Accotink a flood control feature, thereby reducing the erosion in the lower Accotink Creek that results from floods as it currently stands (Note: There is no detention of flood water, because non-flood inflow keeps the water level at the sill of the dam, so flood input immediately flows on downstream. We who live near the lower Accotink Creek are painfully aware of this, having seen our backyards threatened in several floods that went right over the Lake Accotink dam.)
- Seize opportunities to build into the plan water play features to encourage play in small falls and pools, complete with habitat for aquatic creatures.
- Make the evolution of Lake Accotink a highly visible process that enhances the education value of the Master Plan.

The steps of the evolution could be in this order, but I would love to discuss with expert hydrologists to refine it:

1. Build "beaver ponds" in Accotink Creek as it enters the current lake, but make them sustainable by building them with multiple falls and pools from which silt can be reclaimed by volunteers each year. If these detention features are built with recreation in mind, they can be excellent water plan areas, reminiscent (in a smaller scale) of the sorts of water parks that downtown Denver enjoys on the Platte, and Reno on the Truckee. The recent Fairfax County Storm Water projects are also good examples of what I'd recommend: They are fun play areas for little citizens already!
2. Select the part of Lake Accotink that will continue to be a recreational lake, and identify the small streams that can sustain water level in that volume without being fed by the main Accotink Creek flow. This part is necessary to support the end result of segregating the remaining lake from the Accotink Creek channel.
3. Build detention ponds in the mouths of all brooks that feed the remaining lake area, including pools in each to facilitate silt reclamation.
4. With minimum possible destruction of aquatic habitat, divert the Accotink around the selected lake area to the west side, towards the dam.
5. At this point, if the creek is channelized along the current western shore, I believe that over a period of several years, remaining silt running in Accotink Creek would build banks, one of which would be a substantial part of the remaining lake's western boundary. This may require reinforcement by rip-rap along the east side of the Accotink new channel.

6. Build into the eastern part of the earthen dam a gated sluice, a few inches below the level of the concrete dam permanent lip. The gate should be topped to limit volume to no greater than the maximum non-flood level. This gate will become the normal outlet for the Accotink Creek flow, aside from flood waters. Attached picture shows the recommended gate location with a short yellow arrow.
7. Before opening the gate in item 6, build a gently sloping hard-bottomed channel along the earthen dam base, perhaps using the existing driveway, with multiple pools, falls, play areas, built to facilitate migration of indigenous aquatic creatures between the lake level and the lower Accotink below the dam.
8. Remove (or allow to deteriorate) the wooden top of the dam, allowing the water level to descend to the lip of the concrete dam. The Accotink will then cut through silt above the dam towards its new exit elevation.
9. Open the gate at the exit described in step 6. From this point on, constant volume will exit through the gate, and flood waters will be detained up to the level of the concrete dam lip. Only in extreme floods would water top the lip of the concrete dam.
10. Planning must include mitigation against the loss of the remaining lake by erosion of its banks. One step would be to build a hardened exit point diverted towards the sluice in the east part of the dam described in step 6.



What I envision with these steps is that, within the time remaining before Lake Accotink would otherwise need to be dredged again, and well within the budget for just one dredging, the area of the current lake can become even more valuable, evolving into: a living example of how to 'retire' old lakes (many of whose original purposes as reservoirs and hydroelectric producers are long since obsolete) while enhancing their value; a sustainable recreational lake area, non-silting, with a healthy bottom hosting native aquatics; a park with fun water play and education areas, replete with small waterfalls, pools, and colonies of native habitat; an effective storm control tool, protecting the lower Accotink Creek from much of the ravages of suburban runoff; and a source of repurposed silt, from which the community can benefit, while teaching future generations why we must reduce erosion in Fairfax County terrain.