

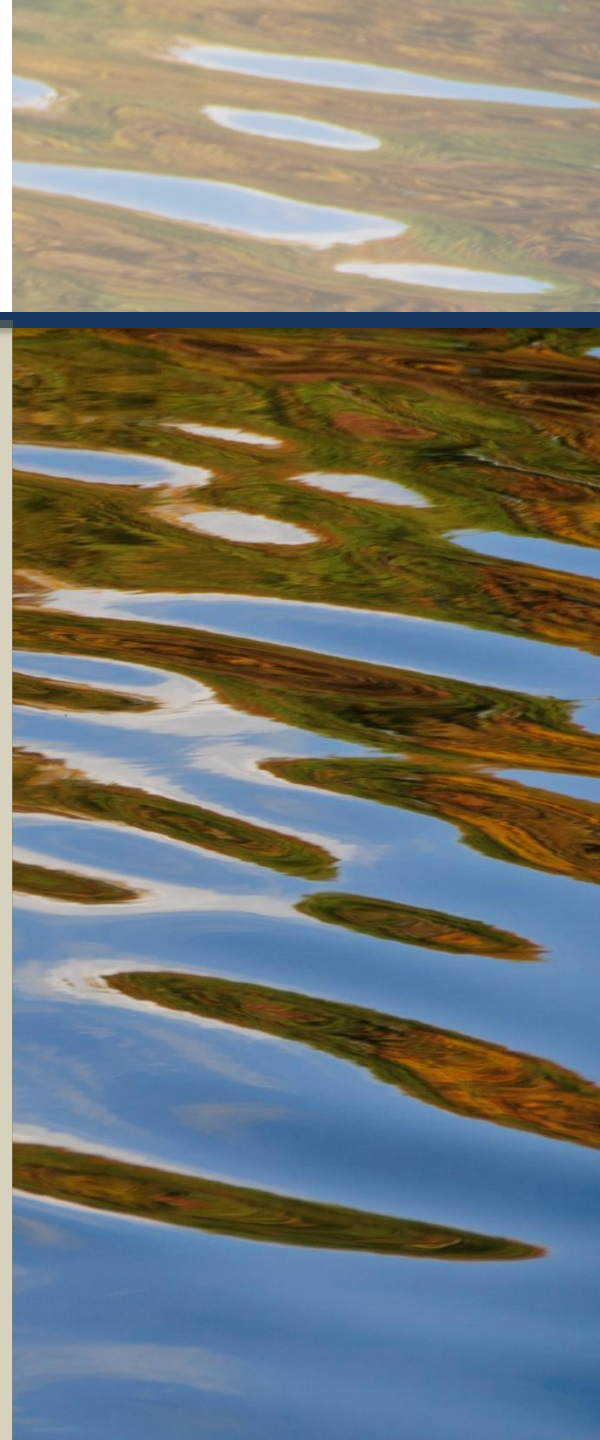
LAKE ACCOTINK PARK MASTER PLAN REVISION

LAKE MANAGEMENT OPTIONS
COMMUNITY DISCUSSION

April 30, 2018



LAKE MANAGEMENT OPTIONS



Lake Accotink Management Option “A”

NO DIRECT MANAGEMENT

Description

- No specific action taken to address the influx of silt within the lake (although Stormwater Planning will continue to work to improve upstream conditions)
- Allow lake to continue to fill with silt
- Anticipated loss of recreational value of the lake by 2025

Primary Cost Elements

- Existing dam structure would require yearly maintenance and repair
- Existing dam structure would likely require significant repair and upgrades on an estimated 30-year cycle



Yearly Dam
Maintenance
\$13,000 annually

Major Dam Repairs
**\$4,700,000 every
30 years**



Lake Accotink Management Option "B"

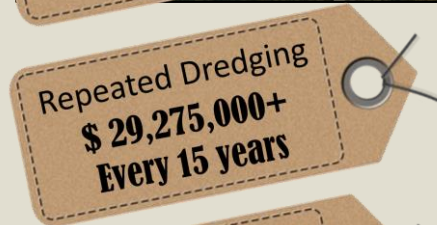
CONTINUE CURRENT DREDGING METHOD

Description

- ❑ This approach would continue to provide major dredging of the main body of the lake at roughly 15-year intervals
- ❑ Sediment removed from the lake would need to be hauled from the park, requiring approx. 35,000 truck trips routed through adjacent neighborhoods
- ❑ Retains recreational value of the lake

Primary Cost Elements

- ❑ Removal of approx. 350,000 cubic yards of sediment with each dredge
- ❑ Trucking of dredge material offsite for disposal
- ❑ Existing dam structure would require yearly maintenance and repair
- ❑ Existing dam structure would likely require significant repair and upgrades on an estimated 30-year cycle



**REPEAT
EVERY ±15
YEARS**



Lake Accotink Management Option “C”

ANNUAL DREDGING WITH FOREBAY

Description

- ❑ This approach would initially provide a major dredge of the lake, removing 350,000 cubic yards of sediment, plus an additional 150,000 cubic yards of sediment to create a forebay at the upper end of the lake
- ❑ All 500,000 cubic yards of sediment removed from the lake would need to be hauled from the park, requiring approx. 50,000 truck trips routed through adjacent neighborhoods
- ❑ After the initial dredge and forebay construction, smaller dredges would remove approx. 12,000 cubic yards of sediment from the forebay every year or two, routing an additional 1,200 truck trips through the community
- ❑ The existing dam structure would remain in place



Lake Accotink Management Option "C"

ANNUAL DREDGING WITH FOREBAY

Primary Cost Elements

- ❑ Removal of approx. 500,000 cubic yards of sediment with the initial dredging operation
- ❑ Biennial removal of approx. 12,000 cubic yards of sediment material
- ❑ Trucking of all dredge material offsite for disposal
- ❑ Existing dam structure would require yearly maintenance and repair
- ❑ Existing dam structure would likely require significant repair and upgrades on an estimated 30-year cycle

**SMALL
DREDGE
EVERY YEAR
OR TWO**

**REPEAT FULL
DREDGE EVERY
±35 YEARS**



FAIRFAX COUNTY PARK AUTHORITY



Lake Accotink Management Option “D”

INSTALLATION OF UPSTREAM “BEAVER DAMS”

Description

- ❑ Installation of sheet pile “walls” within the channel to encourage sediment deposition.
- ❑ Will convert the existing forested wetland areas to “beaver swamps” over time
- ❑ This features are not accessible for maintenance
- ❑ This approach provides only short term benefit to sediment reduction and, ultimately does not serve to resolve the overall condition of Lake Accotink
- ❑ This approach would entail significant disturbance of relatively stable upstream areas.



Although included in the study, this option has been removed from consideration due to the extent of impacts with only limited benefit.



Lake Accotink Management Option "E"

SINGLE CHANNEL WITH RECLAIMED LAND

(Modification of Existing Dam)

Description

- ❑ This management approach would seek to restore Accotink Creek to a condition reflective of the original stream that existed prior to the stream being dammed.
- ❑ The recreated stream channel would be sized to accommodate future storm flows
- ❑ Surrounding land area would be reforested to create wetland habitat to support area wildlife and increase biodiversity
- ❑ Recreational value of the lake would be eliminated; however, opportunities for trails and nature observation areas would be increased
- ❑ Eliminates concern for dam safety and potential downstream impacts if the dam were to be breached.



Project Establishment
\$11,176,815

Annual Maintenance of Vegetation
\$26,000



Lake Accotink Management Option “F”

SINGLE CHANNEL WITH SMALLER LAKE

(Modification of Existing Dam)

Description

- ❑ Similar to Option E, this management approach would modify the existing dam to allow creation of a single thread stream channel through “sculpting” of the existing sediment.
- ❑ Sediment would be sculpted to create a rise on the north side of the stream channel, creating a space to retain a smaller lake for recreational purposes.
- ❑ Reclaimed land area would be revegetated, creating new habitat areas
- ❑ Trails might be expanded into the vegetated area for nature observation
- ❑ Recreational value of the lake would be retained but within a reduced footprint (Approximately 20 acres, about 8 feet deep)
- ❑ Smaller lake will be off-line from the main flow of water. Flag Run, the primary tributary of the smaller lake, is being restored, minimizing the influx of sediment to the new, smaller lake



Lake Accotink Management Option “F”

SINGLE CHANNEL WITH SMALLER LAKE

(Modification of Existing Dam)

Primary Cost Elements

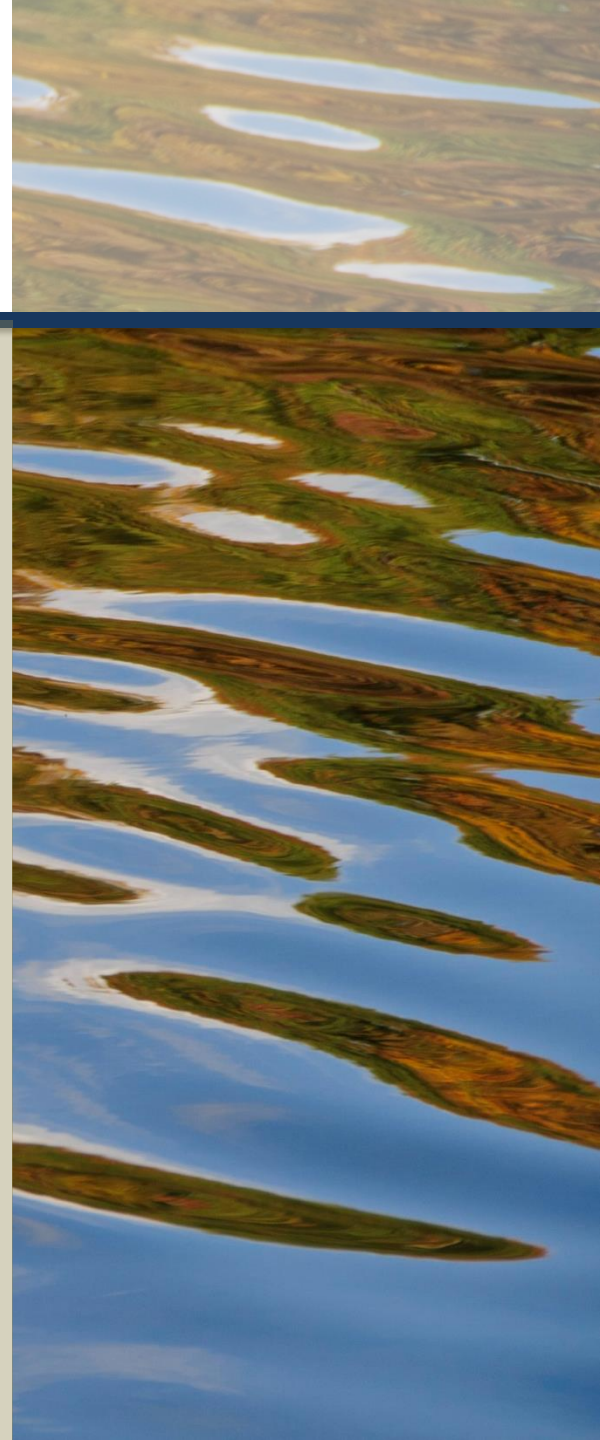
- ❑ The primary cost factor is the initial establishment of the management plan (revision to the dam structure, “sculpting” of sediment to establish the stream channel, reforestation)
- ❑ Annual maintenance would focus on insuring the vegetation is established well and addressing any invasive species that seek to infill. This cost would reduce some over the years as the vegetation becomes better established.



ADDITIONAL CONSIDERATIONS

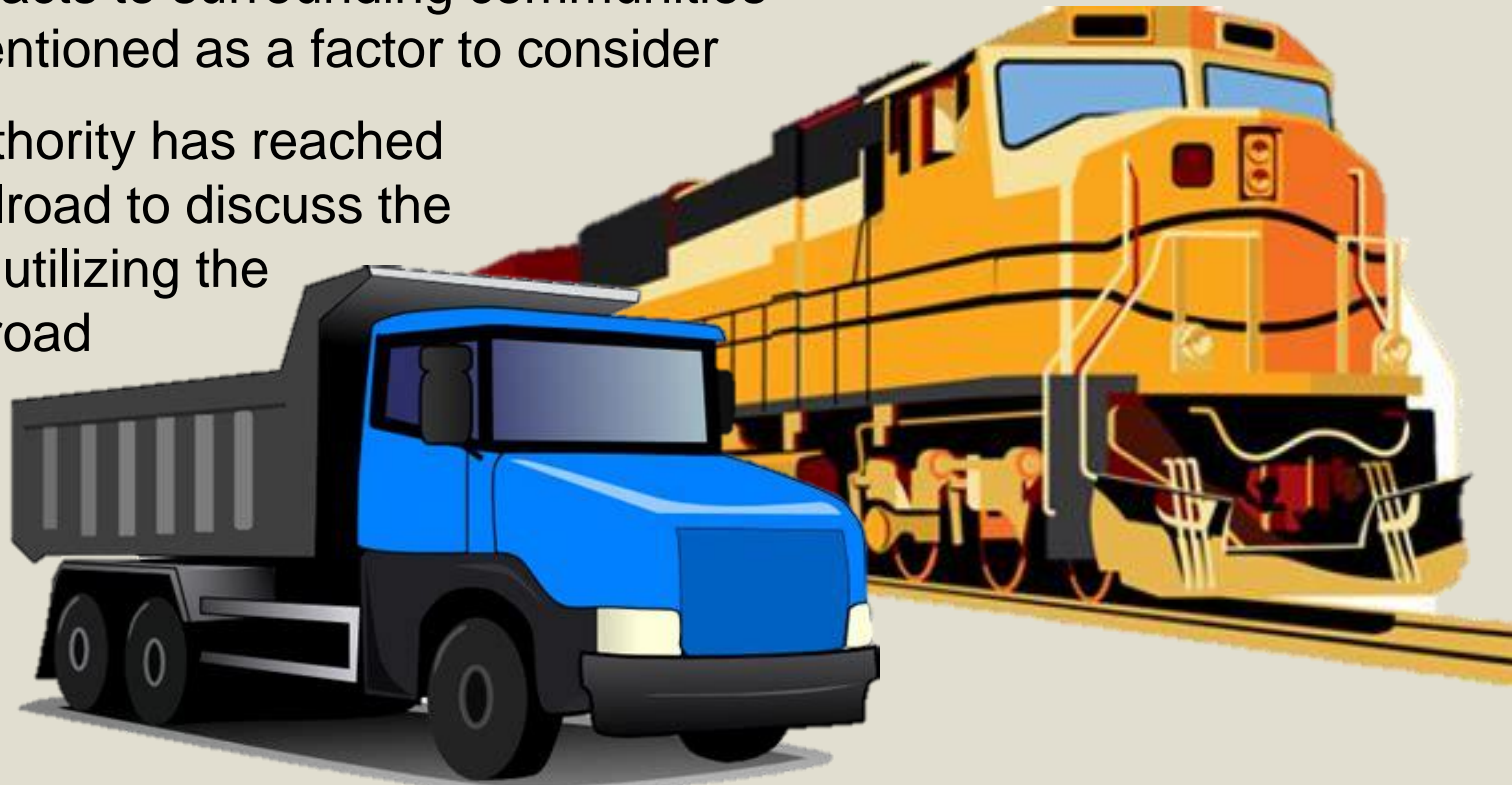


FAIRFAX COUNTY PARK AUTHORITY



USE OF RAIL TO HAUL SEDIMENT

- Dredging options will require that sediment be hauled from the park
- Possible impacts to surrounding communities has been mentioned as a factor to consider
- The Park Authority has reached out to the railroad to discuss the possibility of utilizing the adjacent railroad
- This is an ongoing discussion



SEDIMENT FOREBAY LOCATION, ACCESS, AND SEDIMENT REMOVAL CREDIT

- ❑ Several have suggested various locations to establish a forebay, particularly closer to Braddock Road to enhance access to a main road
- ❑ Additional study and engineering will be required to determine the best location
- ❑ We are continuing to explore options for how the forebay with annual dredging could be addressed



CONTACT INFORMATION



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Please visit the project website:

<https://www.fairfaxcounty.gov/parks/planning-development/lakeaccotink>

***Comments on management of
the lake are welcomed
through May 28!***



FAIRFAX COUNTY PARK AUTHORITY



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