

An aerial photograph of a lake with a dam, surrounded by trees with autumn foliage. The sun is setting in the background, creating a warm glow.

Arrowhead North Lake Dam

Project Update

June 14, 2025



Arrowhead Lake Community Association

Arrowhead North Lake Dam Project



Background:

- The North Lake dam was never permitted by ALCA at the time of its construction in 1970.
- Circa 2015 ALCA – ALCA was advised by Pennsylvania Department of Environmental Protection (DEP), Division of Dam Safety (DEP) that a permit was required.
- ALCA has since been working with the DEP to explore compliant solutions.
- The current dam and spillway do not meet current requirements - adjustments are required in order to obtain a permit.
- DEP's safety requirements have changed over the years, particularly regarding the volume of stormwater a dam must safely handle.
- As it stands, if water levels rise significantly during heavy rains ("100 Year Storm Event"), North Lake could overflow into nearby residential properties, posing a risk to homes and infrastructure.
- In order to obtain a permit and ensure safety, ALCA must undertake one of several corrective construction projects.

What are the options?



The engineers presented us with three options:

- **#1 Berm Option (CURRENT PLAN):**
 - Raises the lake's edge in specific areas by constructing berms.
 - Less costly than a full spillway rebuild.
 - North Lake would **not** need to be drained.
 - Requires legal easements from a small number of homeowners along the shoreline.
 - Was explored in the past but not achieved due to lack of agreement with affected owners.
 - Currently being re-examined as a viable solution as properties have changed hands since last exploration of this option.
- **Tentative Schedule:**
 - The ultimate schedule is yet to be confirmed
 - High level expectations:
 - Dec 2025: Designs complete and agreed upon
 - Dec 2026: Permit Approved (current DEP expectation is AT LEAST 12 months for approval)**
 - Fall 2027: Construction Start
- ** The DEP permit approval process could be longer than 12 months

What are the options?



- **#2 Spillway Replacement Option:**
 - Rebuilds the spillway to increase drainage capacity during storm events.
 - High Level Cost: Estimated at \$4–6 million.
 - North Lake would need to be drained during construction (~2 years).
 - Previously investigated but cost and disruption were major concerns.
- **#3 Spillway Replacement Labyrinth Option (Double Cofferdam):**
 - Rebuilds the spillway to increase drainage capacity during storm events.
 - High Level Cost: Estimated at \$4–6 million + Additional cofferdam expenses (TBD)
 - Would allow construction to proceed without draining the lake.
 - Technically feasible but requires the construction of a double cofferdam system to isolate the work zone.
 - Extremely expensive, likely cost-prohibitive, but is considered an option.

Why Now?

- ALCA has deemed this a critical infrastructure project to protect the North Lake and surrounding homes.
- As long as ALCA is actively pursuing a permitted solution with DEP, DEP has indicated they will not enforce removal of the dam. Continued transparency, engagement with engineers and impacted owners, and progress on final design are essential.
- If ALCA does not ultimately comply with DEP requirements and secure a permit, DEP has the authority to mandate removal of the dam and draining of North Lake.

Where are we now?

ALCA is pursuing **Option 1**

The BERM OPTION:

- Updated engineering designs, costs, and scope are under review with Gannett Fleming (dam engineering firm).
- Discussions with impacted homeowners are ongoing to secure necessary agreements and easements.
- Assessment of PennVEST funding options is underway.

Schedule:

The ultimate schedule is yet to be confirmed

High level expectations:

Dec 2025: Designs, cost estimates, and easements completed.

Dec 2026: Permit Approved (current expectation is AT LEAST 12 months for DEP approval)**

Fall 2027: Construction Start

*****Important: DEP cannot begin the permit approval process until the easement documents have been signed by all affected homeowners and final design documents have been submitted.***

Without these, DEP will not review or approve any proposal—this is a key reason the permitting process has not officially started yet.