Camp Pond Dam Engineering Study
Raleigh, NC

Project Drivers:

- Camp Pond Dam is regulated as a high hazard dam by North Carolina Dam Safety based on the potential for downstream property damage and loss of life in the event of dam failure.
- The dam currently does not meet North Carolina Dam Safety regulations.
- An engineering study is needed to find solutions for the deficient conditions.

Project Goals:

- Evaluate design options to bring the dam back into compliance with NC Dam Safety regulations.
- Provide roadway safety and meet Dam Safety requirements for overtopping while maintaining safe access.
- Design options should meet city, state, and FEMA standards.
- Success of project depends on collaboration between City and private owners.

Current Conditions

Figure 1: Aerial view of Camp Pond Dam.

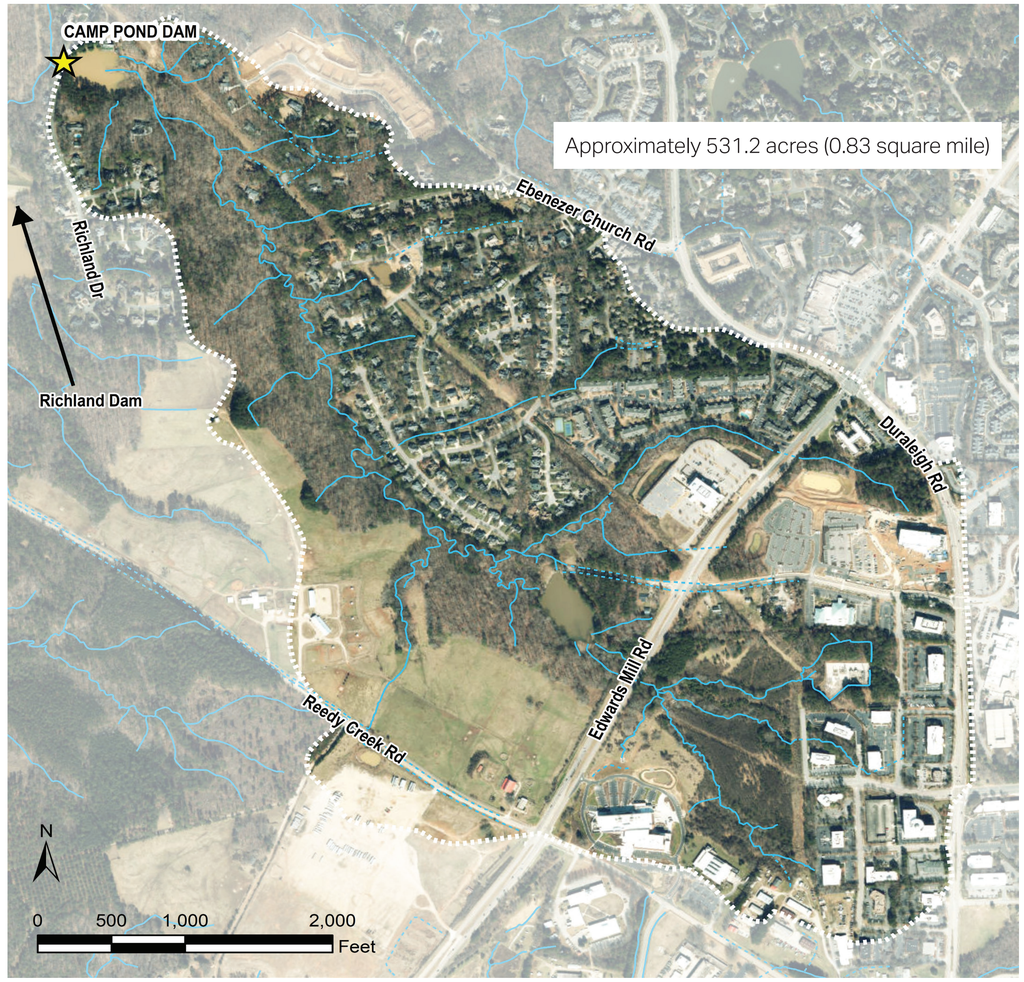
Figure 2: Loss of bedding material.

Figure 3: Clogged riser pipe.

Figures 4 and 5: Principal spillway pipe is deteriorated due to rust.

Figure 6: Heavy tree growth.

Project Drainage Area



AECOM Raleigh Address:
5438 Wade Park Blvd, Raleigh, NC 27607

For more information on this project, go to: https://raleighnc.gov/projects/camp-pond-dam

Camp Pond Dam Engineering Study – Raleigh, NC
Proposed Alternative 1: Pond Preservation/Restoration

Key Features of Alternative 1:

- Pond is maintained at current water level, but dam and infrastructure are improved and repaired to bring the dam into compliance with NC Dam Safety rules.
- A concrete box culvert will replace the existing principal spillway pipe.
- Some large trees and shrubs on the dam will be removed as required by NC Dam Safety.

Pros:

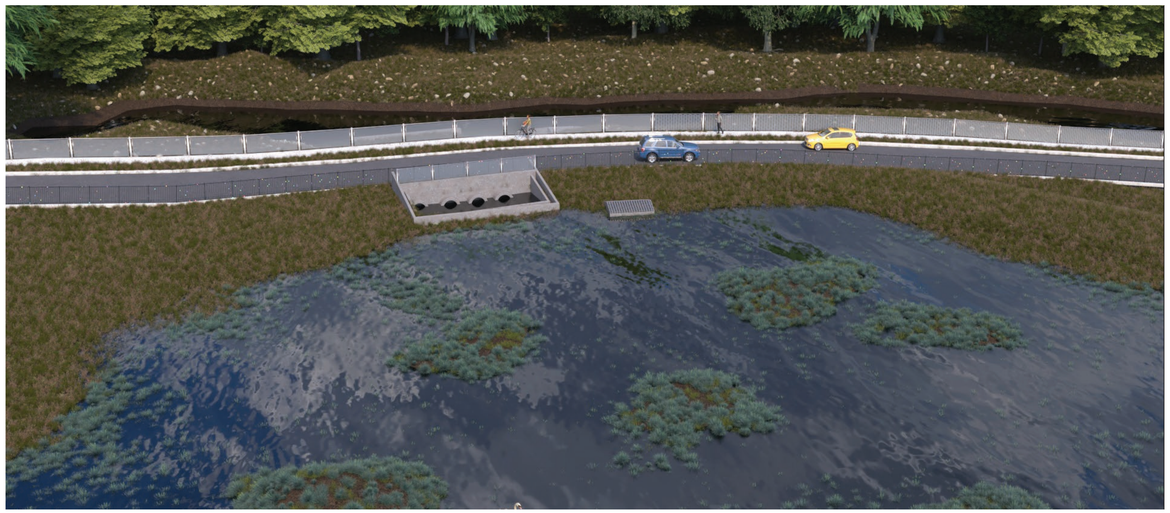
- Keeps Camp Pond at current water surface while meeting Dam Safety regulations.
- Minimizes temporary construction and permanent drainage easements.

Cons:

- Disruption to Richland Drive during construction.
- Considerable utility coordination and relocation.

During Construction

After Construction



Note: RENDERINGS ARE "FOR ILLUSTRATIVE PURPOSES ONLY"

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Camp Pond Dam Engineering Study – Raleigh, NC
Proposed Alternative 2: Replacement of Pond with Culvert/Stream Restoration

Key Features of Alternative 2:

- Dam spillways are lowered to the bottom of the current pond, allowing a natural stream and wetland system to develop in the former pond bottom.
- A concrete box culvert will replace the existing principal spillway pipe so that flows during large storm events can safely pass below Richland Drive.

Pros:

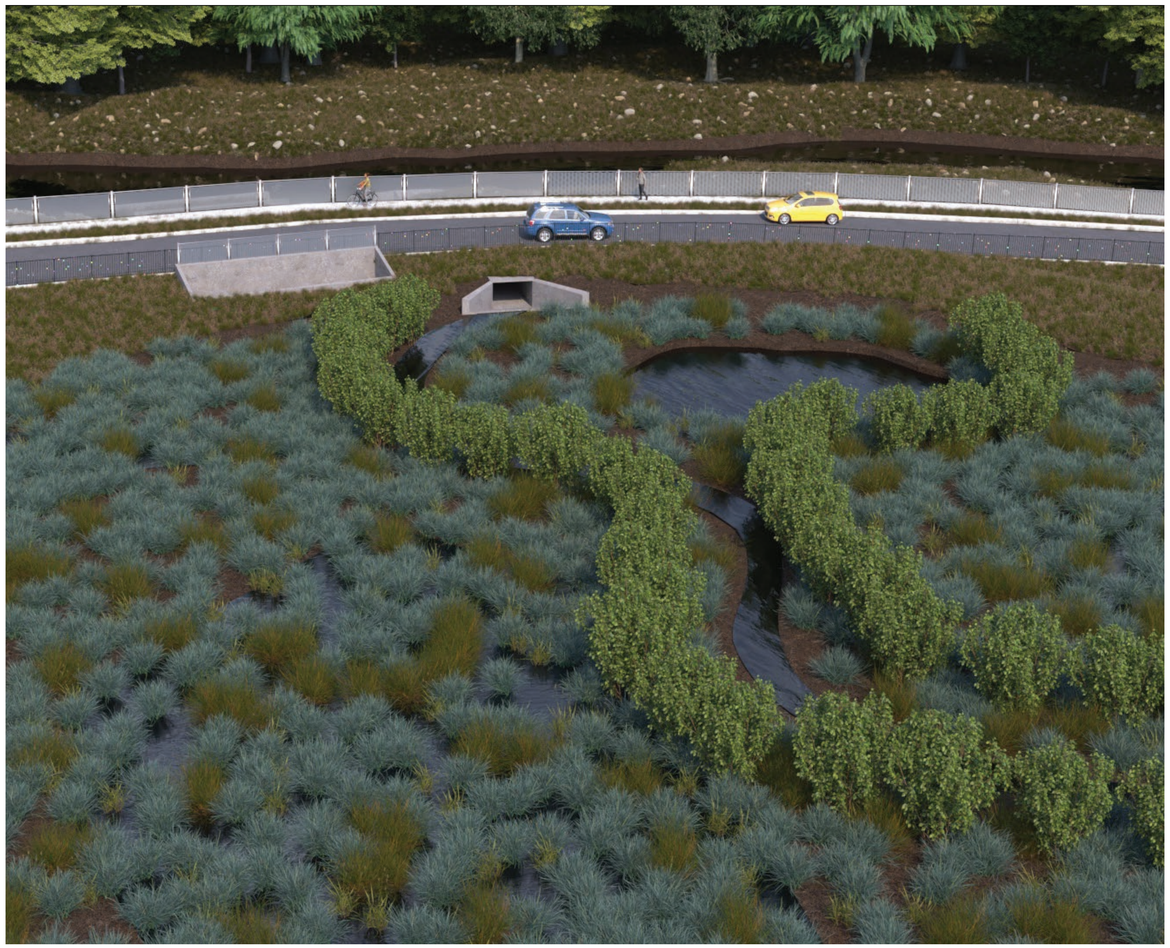
- Improves spillways to meet Dam Safety regulations.
- May allow reduction in Dam Safety requirements.
- Less long-term maintenance than Alternative 3 due to stream carrying sediment load downstream.

Cons:

- Will require intensive grading in former pond bottom to re-establish stream and wetlands.
- More extensive easement areas and more long-term maintenance needs than Alternative 1.
- Disruption to Richland Drive during construction.
- Considerable utility coordination and relocation.

During Construction

After Construction



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Camp Pond Dam Engineering Study – Raleigh, NC
Proposed Alternative 3: Partial Pond with Stream Restoration ("Hybrid Solution")

Key Features of Alternative 3:

- Dam spillways are lowered to about 2 feet above the current pond bottom.
- Design includes shorter stream with areas of marsh and open water.
- A concrete box culvert will replace the existing principal spillway pipe to bring the dam into compliance with NC Dam Safety rules.

Pros:

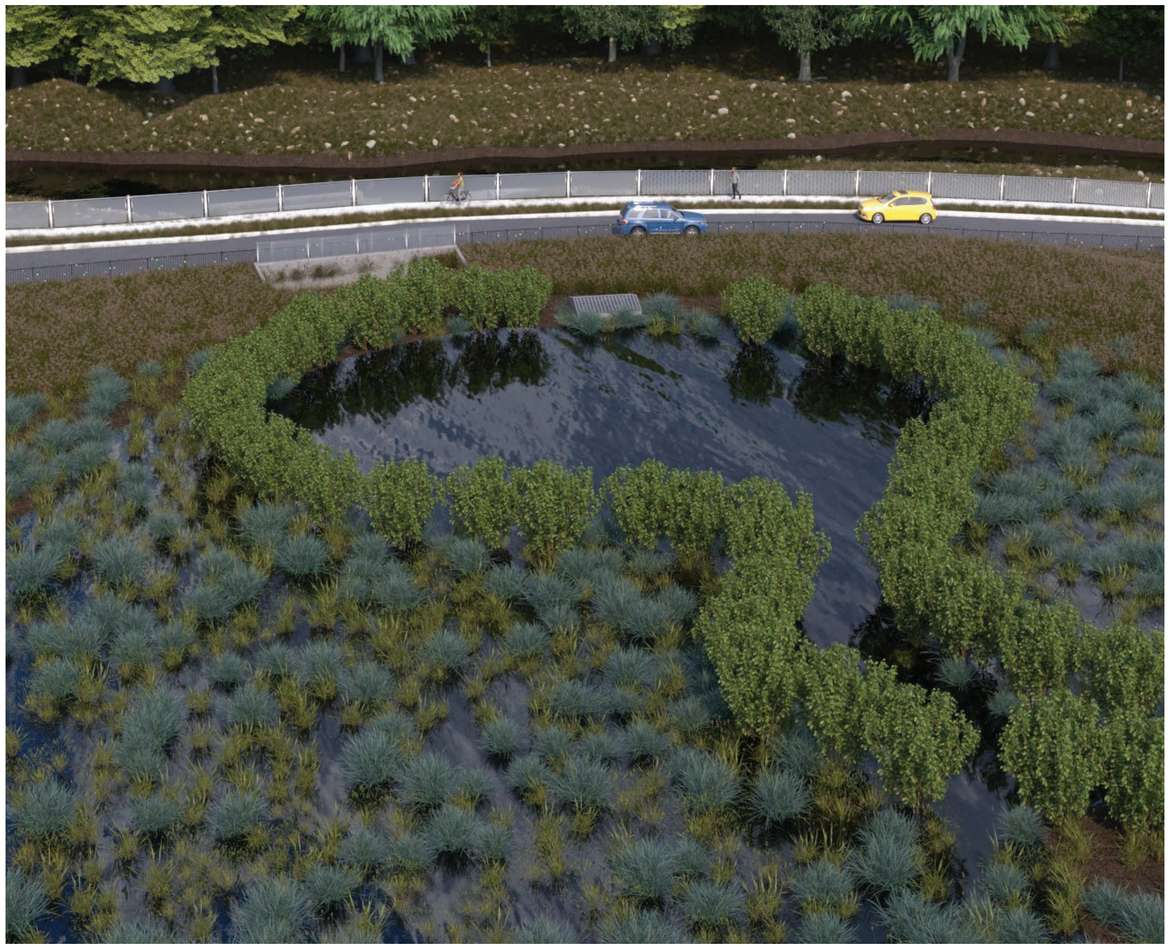
- Improves spillways to meet Dam Safety regulations.
- More open water areas compared to Alternative 2 (more "pond-like" in appearance).
- Wetland vegetation may improve water quality.

Cons:

- Will require intensive grading in former pond bottom to re-establish stream and wetlands.
- More extensive easement areas and more maintenance needs than Alternative 1.
- Disruption to Richland Drive during construction.
- Considerable utility coordination and relocation.

During Construction

After Construction



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