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# **Martin Dunham Reservoir Dam**

**at Grafton Lakes State Park**

## **Community Meeting #1**



New York State  
Parks, Recreation and  
Historic Preservation

June 2025



# Goals of this meeting

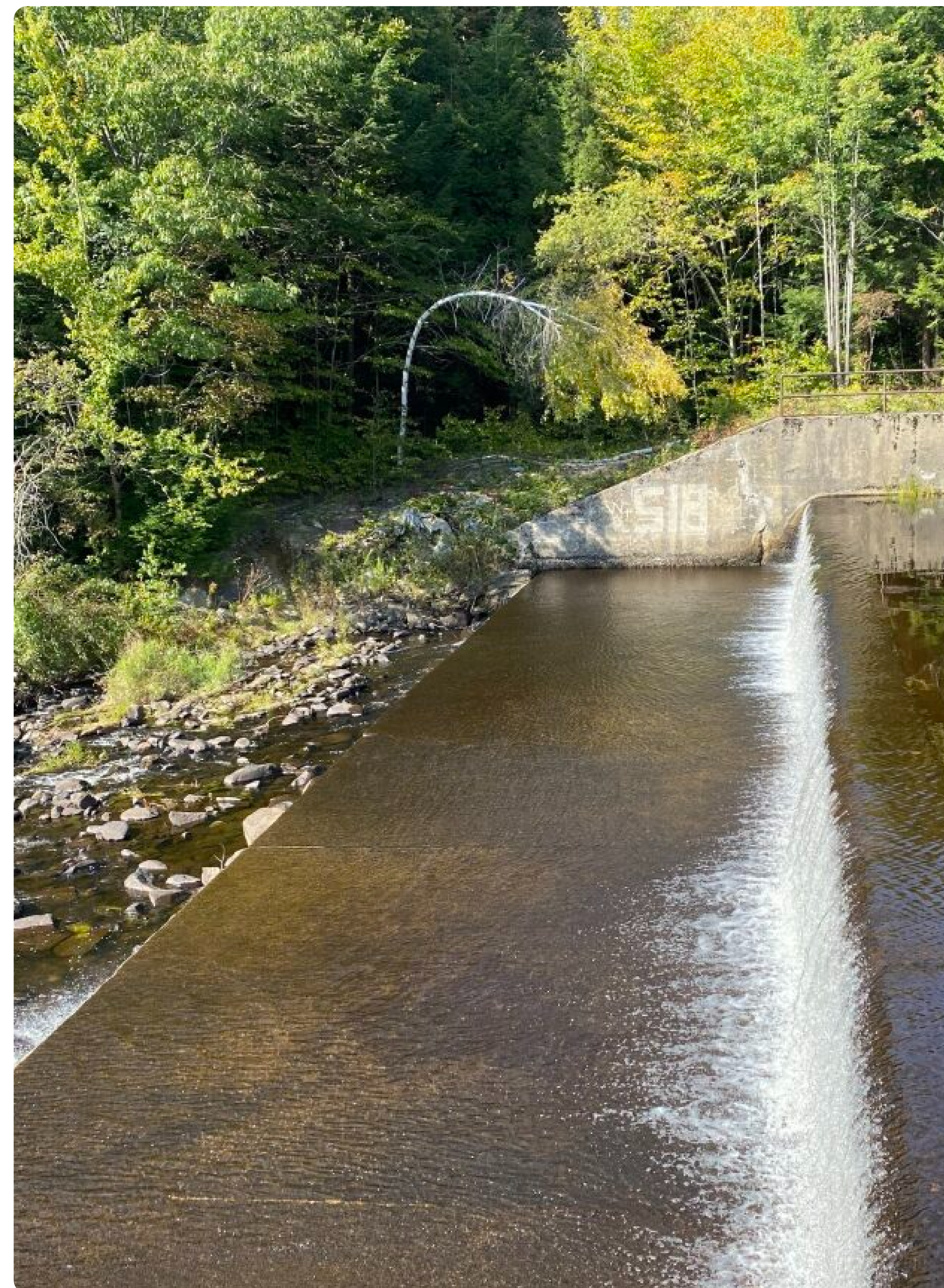
- Share information:
  - *Why was this feasibility study completed?*
  - *What were key take-aways?*
  - *What are next steps?*
- Opportunity for you to ask questions
- Opportunity for you to share input (ideas, concerns, opportunities)





# Agenda

- Open House
- Welcome
- Technical Presentation
- Q&A
- Adjourn to Open House and Comments





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# **Introduction & Overview**



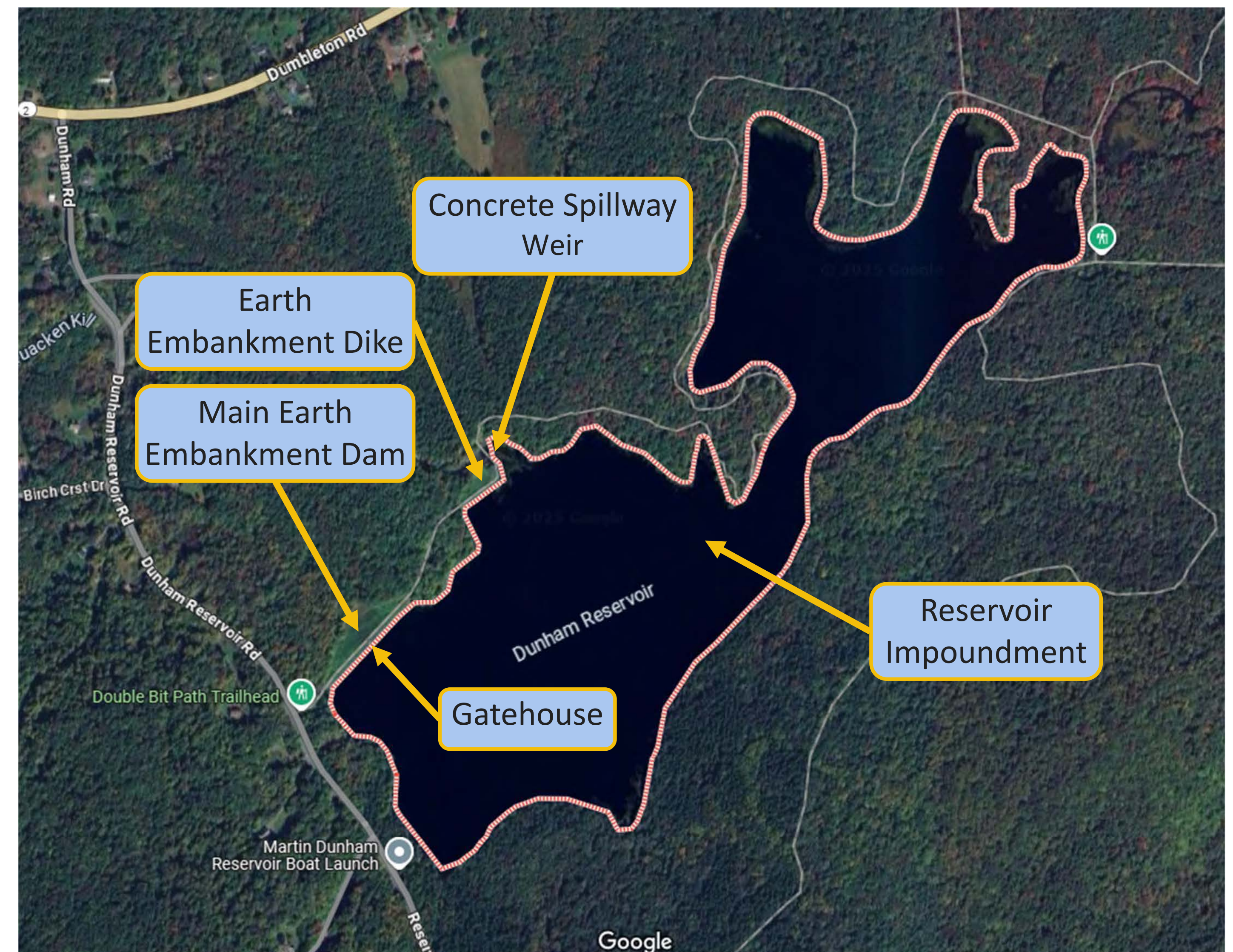
## Why a feasibility study?

- The dam and reservoir were built in 1911/1912 as a water supply for City of Troy.
  - The Martin Dunham Reservoir is now owned by NYS Parks as part of Grafton Lakes State Park.
- The dam is a “high hazard” based on its location and the risk to the community downstream if it were to fail.
  - The dam is currently considered “unsound.” It does not meet current dam safety standards based on dam safety inspections.
  - A feasibility study was completed to understand options for bringing the dam into compliance with NYSDEC Dam Safety Requirements.



# Components of the Dunham Reservoir Dam

- Reservoir Impoundment
- Main Earth Embankment Dam
- Gatehouse
- Concrete Spillway Weir
- Earth Embankment Dike





# Reservoir Impoundment



- Located along the Quacken Kill
- 98-acre surface area at normal pool





# Main Earth Embankment Dam



- Approximately 640 ft long and 53 ft high, with a concrete core wall and a 12 ft wide crest





# Gatehouse

- Located in the center of the main earth embankment dam crest
- Houses the control valves for the primary low-level outlet
- Contributes to the historic character of the dam and reservoir





# Concrete Spillway Weir



- Approximately 100 ft long
- Concrete rounded crest weir and apron slab



# Earth Embankment Dike



- Located adjacent to the spillway
- Approximately 450 ft long and 13 ft high, with a concrete core wall and a 12 ft wide crest
- Includes a secondary low-level outlet pipe extending through the dike





## **Historic Preservation**

- Based on review with the State Historic Preservation Office (SHPO), the Martin Dunham Reservoir Complex is eligible for the State and National Registers of Historic Places.
- Contributing features within the complex include the Reservoir Impoundment, Main Earth Embankment Dam, Gatehouse, Concrete Spillway Weir, and the Secondary Gate Valve.
- Impacts to the contributing features were considered in the feasibility study and mitigation will be required for any modifications to the complex.



# What are the problems with the dam?

- Spillway flow capacity
- Spillway structural stability
- Embankment stability
- Seepage at embankment
- Outlet in need of rehabilitation



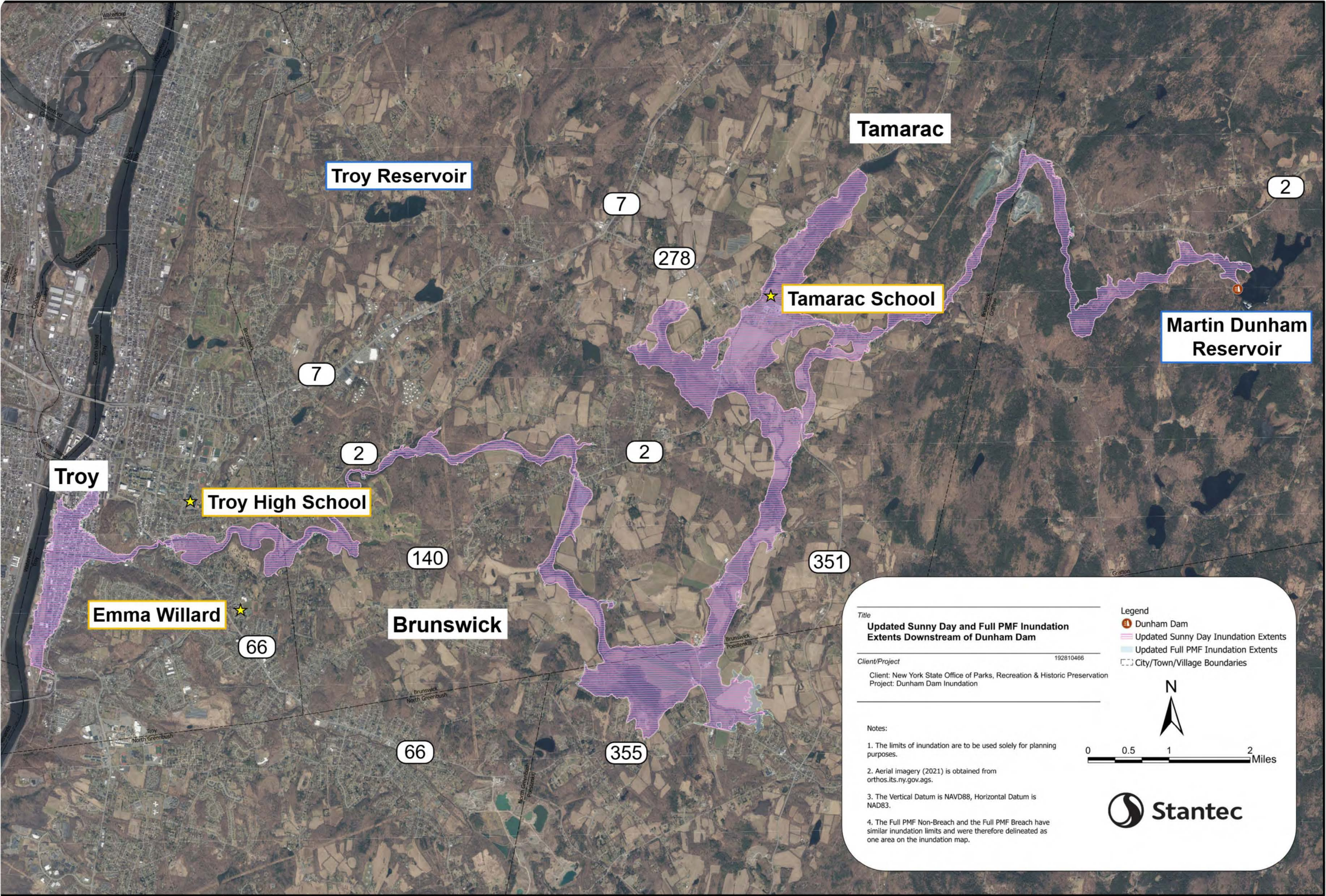


# Dam Classification

- The Martin Dunham Reservoir Dam is a Class “C” or “High Hazard” dam.
  - This classification is assigned when a dam failure may result in widespread or serious damage to home(s); damage to main highways, industrial or commercial buildings, railroads, and/or important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; or substantial environmental damage; such that the loss of human life or widespread substantial economic loss is likely.
  - This is based on **location** and **downstream risk** and not condition
  - A new dam built in this location meeting current standards would still be classified as a “High Hazard” dam.



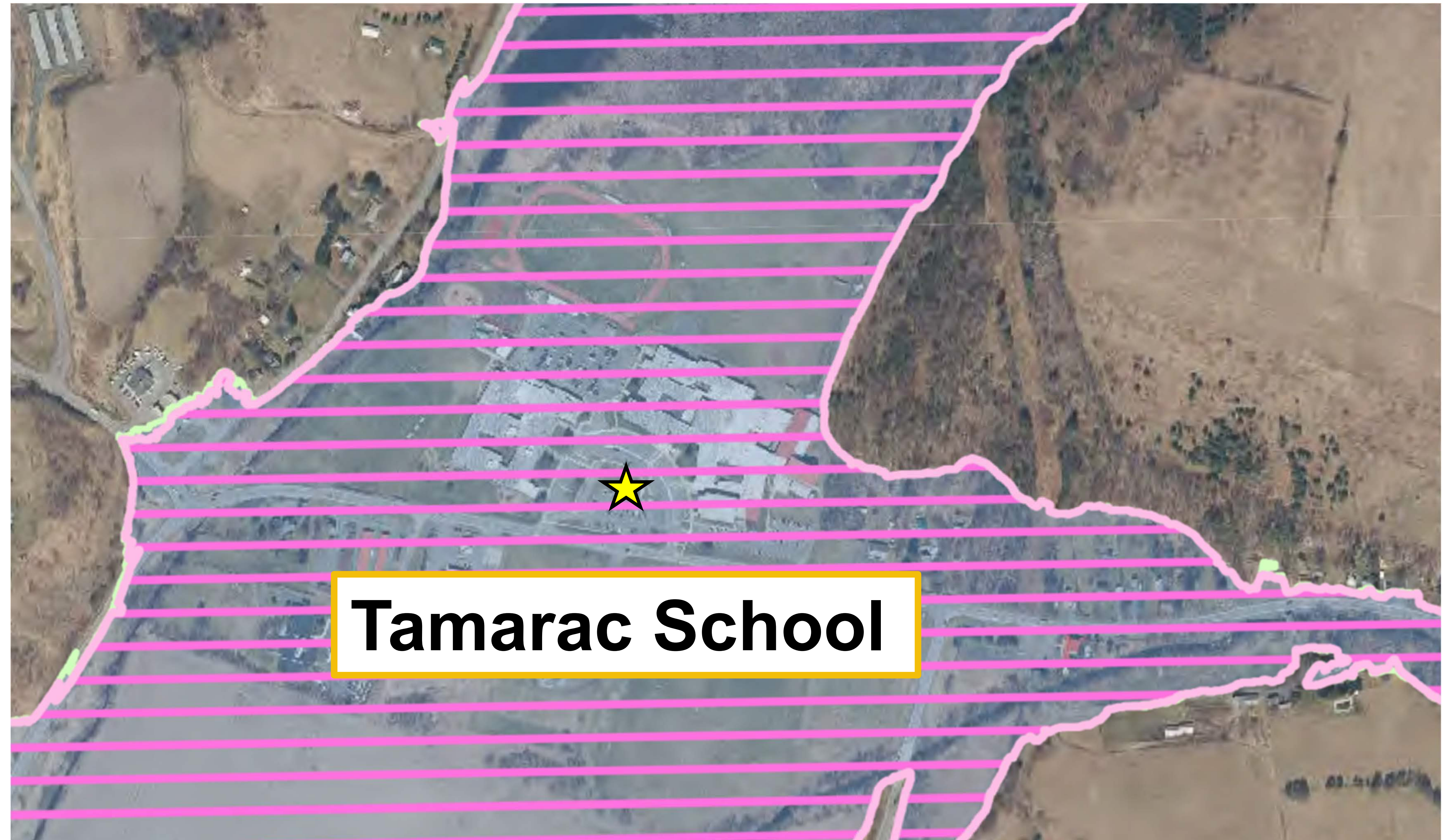
# Inundation Mapping



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# Inundation Mapping



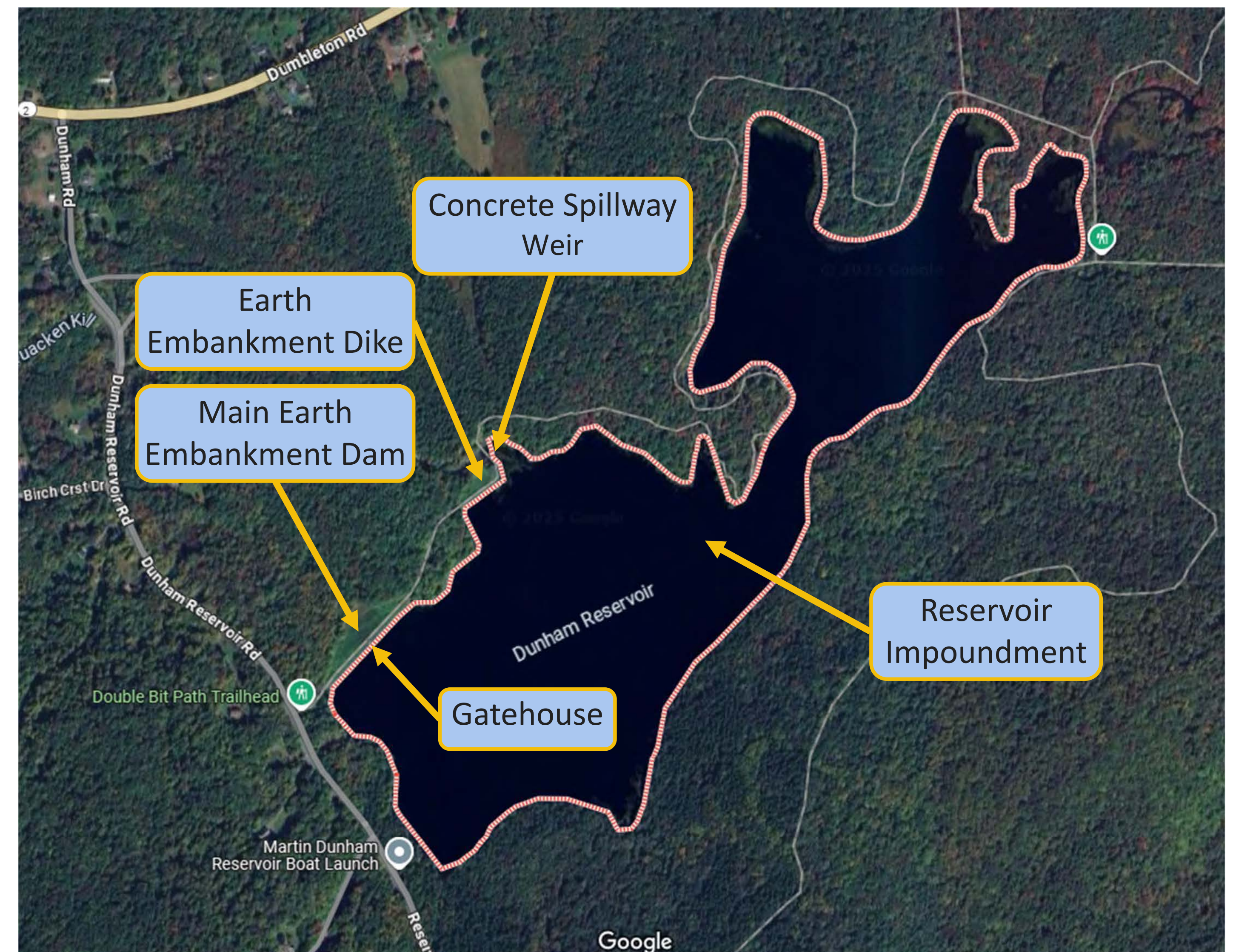
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# **Options (alternatives)**



# Options to solve the problem

1. Rehabilitate the dam
2. Partial removal of the dam with channel restoration
3. Partial removal of the dam without channel restoration





## **How were options evaluated? (evaluation criteria)**

- Safety  
(does the option remove the hazard?)
- Cost
- Impacts to existing infrastructure  
(such as historic gatehouse and spillway structures)
- Physical processes  
(how much sediment will accumulate and how does that impact water quality?)
- Impacts to wildlife and ecology
- Impacts to recreation



# Physical processes & sediment

## Why is sediment a consideration?

- Sediment accumulates in the bottom of the reservoir over time and reduces its storage volume from the bottom up. It also has the potential to cover or impede the low-level outlet.
- Sediment management options
  - Continued buildup
  - Removal / Disposal
  - Release
- Sediment impacts dependent on alternative
  - Removal / disposal cost
  - Habitat and wildlife
  - Wetlands and soil capable of sustaining wetlands



# Option 1: Dam Rehabilitation

## Proposed work:

- Raise the main dam crest elevation
- Build an earth fill buttress downstream
- Upgrade spillway and earth dike

## Outcomes:

- Meet NYSDEC safety standards
- Negligible to moderate impacts for wildlife resources, wetland resources and physical processes
- Preservation of the gatehouse
- Continued lake recreation
- Continued reservoir and dam maintenance
- Continued downstream risk



## Option 2: Partial removal with channel restoration

### Proposed work:

- Partial removal of main embankment
- Construct new channel through main embankment
- Remove spillway and allow for future trail foot-bridge placement

### Outcomes:

- Floodplain connection and managed sediment transport
- Aquatic and riparian habitat improvements
- Gatehouse will not be preserved in original state
- Redirection of trail across main embankment
- No lake recreation
- New recreation opportunities (trails, open areas, fishing, birding)
- Restores the “original” stream and provides opportunity for trout and other species to re-establish
- Reduced downstream risk





## **Option 3: Partial removal without channel restoration**

### **Proposed work:**

- Partial removal of main embankment
- No channel construction or additional modifications from option 2

### **Outcomes:**

- Reduced construction cost
- Increased risk compared to option 2 (via breach of partial embankment)
- Unmanaged sediment release with potential impacts on downstream habitats and wildlife
- Gatehouse will not be preserved in original state
- No lake recreation
- New recreation opportunities (trails, open areas, fishing, birding)
- Restores the “original” stream and provides opportunity for trout and other species to re-establish
- Reduced downstream risk

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# **Alternatives Evaluation**

# Evaluation



|                                                      | Reduce hazard? | Total Estimated Project Cost | Impacts to infrastructure?     | Physical processes (sediment)             | Wildlife and ecology                                              | Recreational impacts?                                     |
|------------------------------------------------------|----------------|------------------------------|--------------------------------|-------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------|
| Option 1: Rehabilitate Dam                           | Yes            | \$20.0M                      | No impact                      | No impact                                 | No change                                                         | No change                                                 |
| Option 2: Partial removal with stream restoration    | Yes            | \$9.6M                       | Gatehouse and spillway removed | Requires sediment management              | Improve habitat connectivity, fish passage, hydraulic variability | Fishing, hiking, birding would remain. Boating would not. |
| Option 3: Partial removal without stream restoration | Yes            | \$6.1M                       | Gatehouse and spillway removed | Requires less sediment management than #2 | Improve habitat connectivity, fish passage, hydraulic variability | Fishing, hiking, birding would remain. Boating would not. |



# Regulatory Review

- Required Permitting:
  - US Army Corps permits
  - NYSDEC Dam Safety Permit
  - USFWS consultation
  - NEPA & SEQRA process
  - NYS Historic Preservation Office Coordination
  - Clean Water Act WQC
  - Local floodplain permits



Additional public outreach  
and opportunities for input



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**Q&A**



# Your Feedback

## Questions to consider:

1. Evaluation criteria – are there any factors not yet considered?
2. What do you like and not like about the options presented?

The Feasibility Study and tonight's presentation will be shared online at: <https://parks.ny.gov/parks/grafonlakes>

Please send any additional comments to: [dunham@parks.ny.gov](mailto:dunham@parks.ny.gov)

Please record your comments using the comment form.

Comment Form  
Martin-Dunham Reservoir Dam  
at Grafton Lakes State Park  
Community Meeting – June 11, 2025

Please submit your comments to NYS Parks staff at the conclusion of this meeting.

Your Name (Optional) \_\_\_\_\_  
Email/Phone (Optional) \_\_\_\_\_

New York State  
Parks, Recreation and  
Historic Preservation

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# Thank you

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