



# Pickpocket Dam Removal

Public Information Session

December 10, 2024

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*Town Engineer*

**Jacob San Antonio, PE**

*VHB – Chief Engineer*

**Peter Walker**

*VHB – NH Director of Environmental Services*

**Stephanie Hudock, PE**

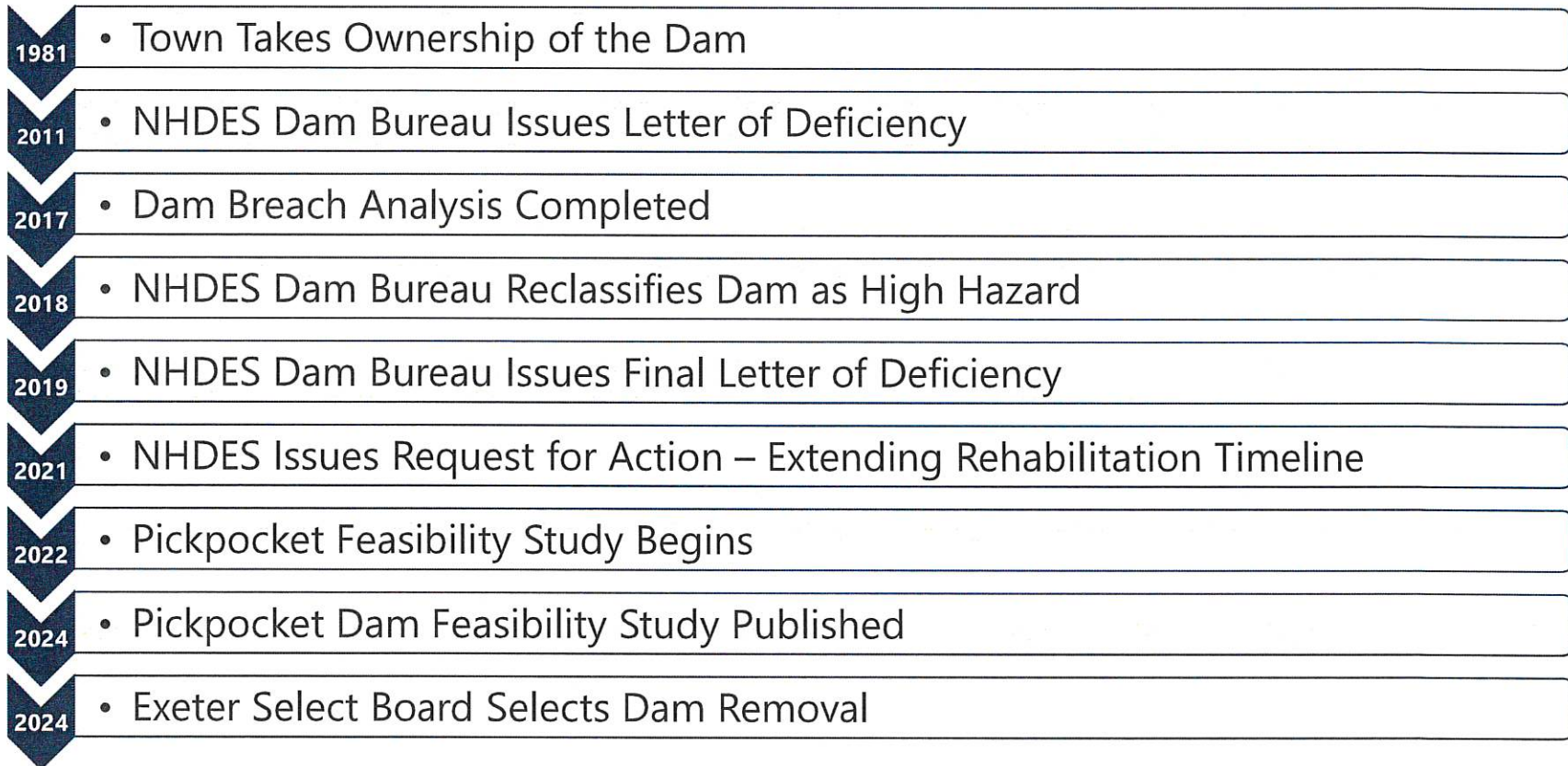
*VHB – Water Resources Engineer*

# Agenda

- Project History & Decision-Making Process
- Overview of Feasibility Study
- Next Steps
  - Funding
  - Design
  - Permitting
  - Public Engagement
- Breakout Sessions



## Project History

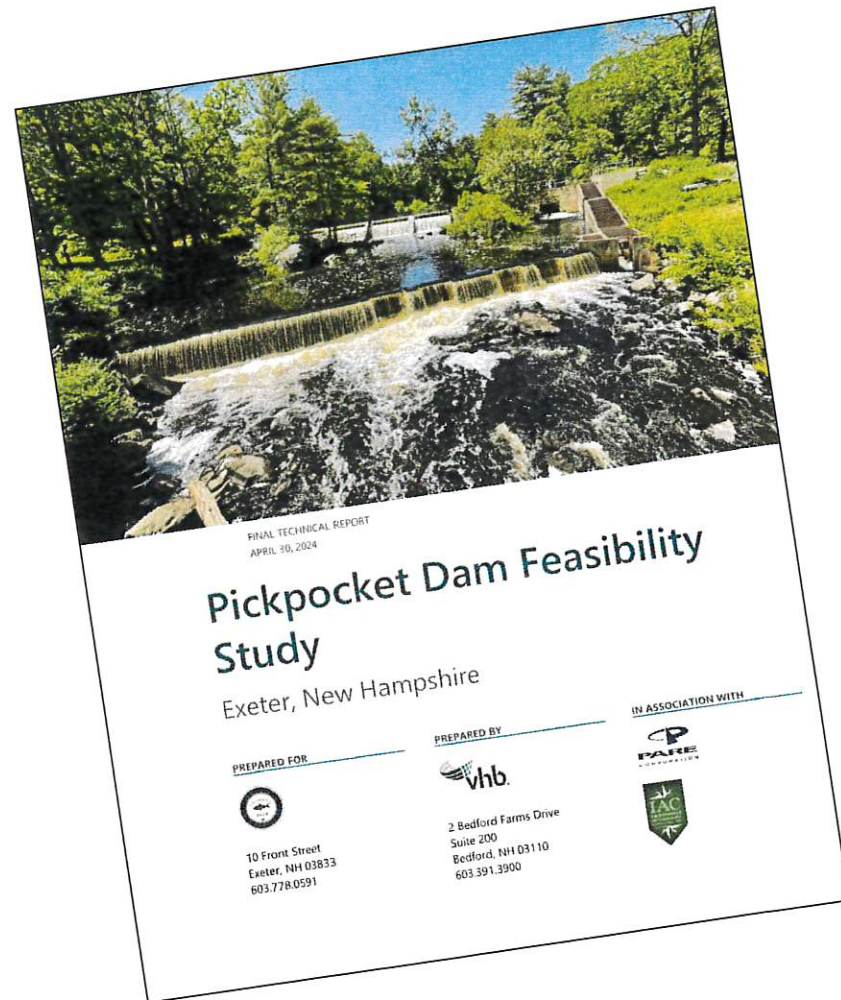




## Feasibility Study

## Pickpocket Feasibility Study

- Feasibility study completed April 30, 2024
- Evaluated several alternatives
- Following slides provide recap



## Feasibility Study Funding



- NHDES & NOAA – New Hampshire Coastal Program – Coastal Resilience Grant
- NHDES – Clean Water State Revolving Fund – Planning Grant (ARPA Funds)

*"This project was funded, in part, by NOAA's Office for Coastal Management under the Coastal Zone Management Act in conjunction with the New Hampshire Department of Environmental Services Coastal Program."*

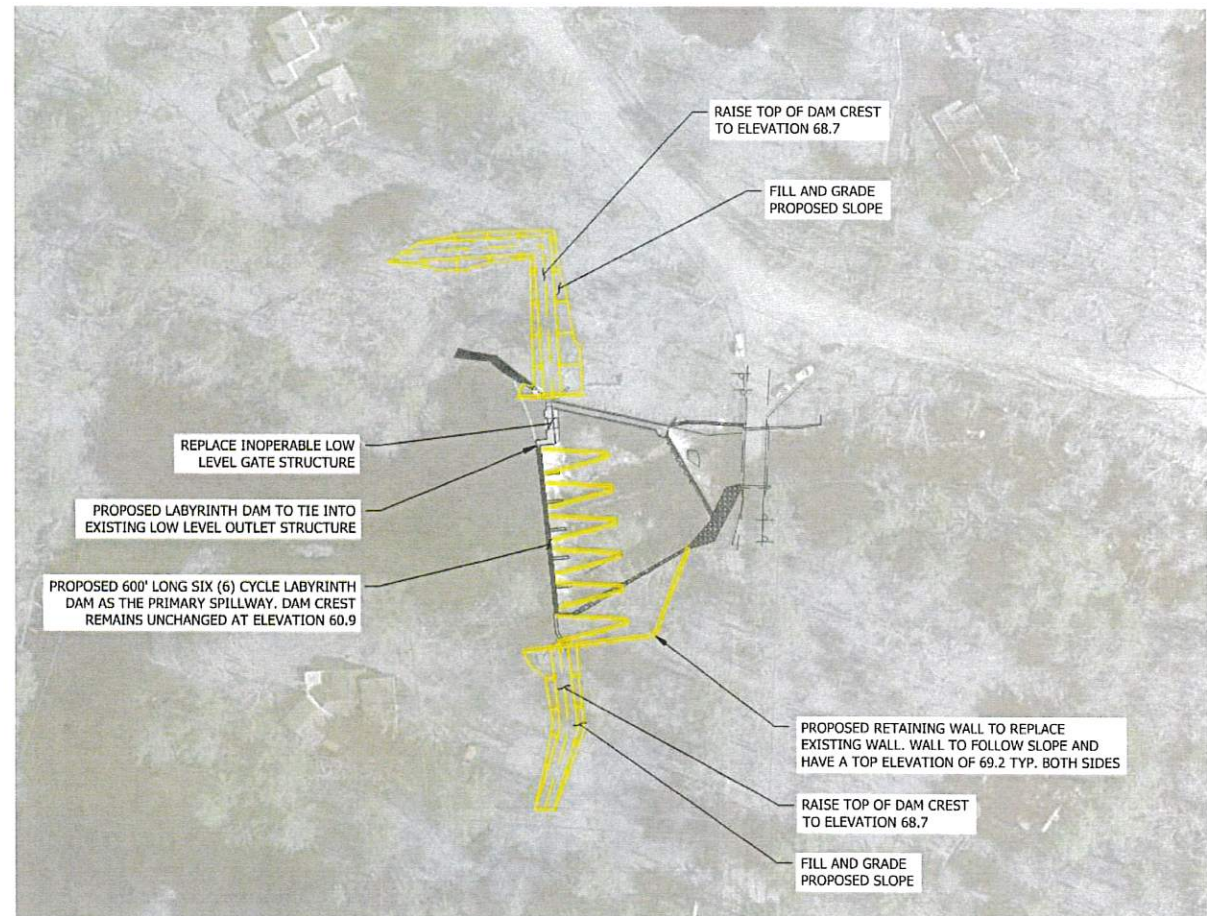
## Alternative 1 – Raise Top of Dam

- Maintain existing primary spillway
- Raise and extend the earthen embankments to contain design storm with 1' of freeboard
- Left & right training walls raised and extended
- Replace low level gate



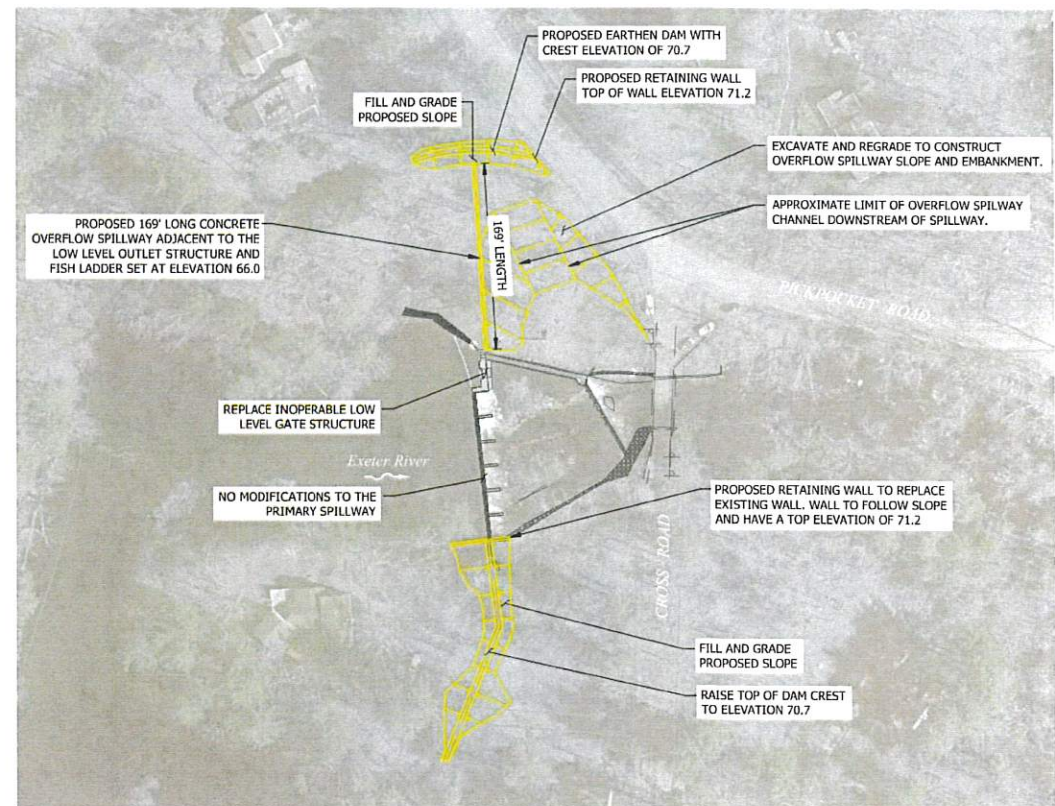
## Alternative 2 – Spillway Replacement

- Replace primary spillway with labyrinth spillway
- Raise and extend the earthen embankments to contain design storm with 1' of freeboard
- Training walls raised and extended
- Replace low level gate



## Alternative 3 – Auxiliary Spillway

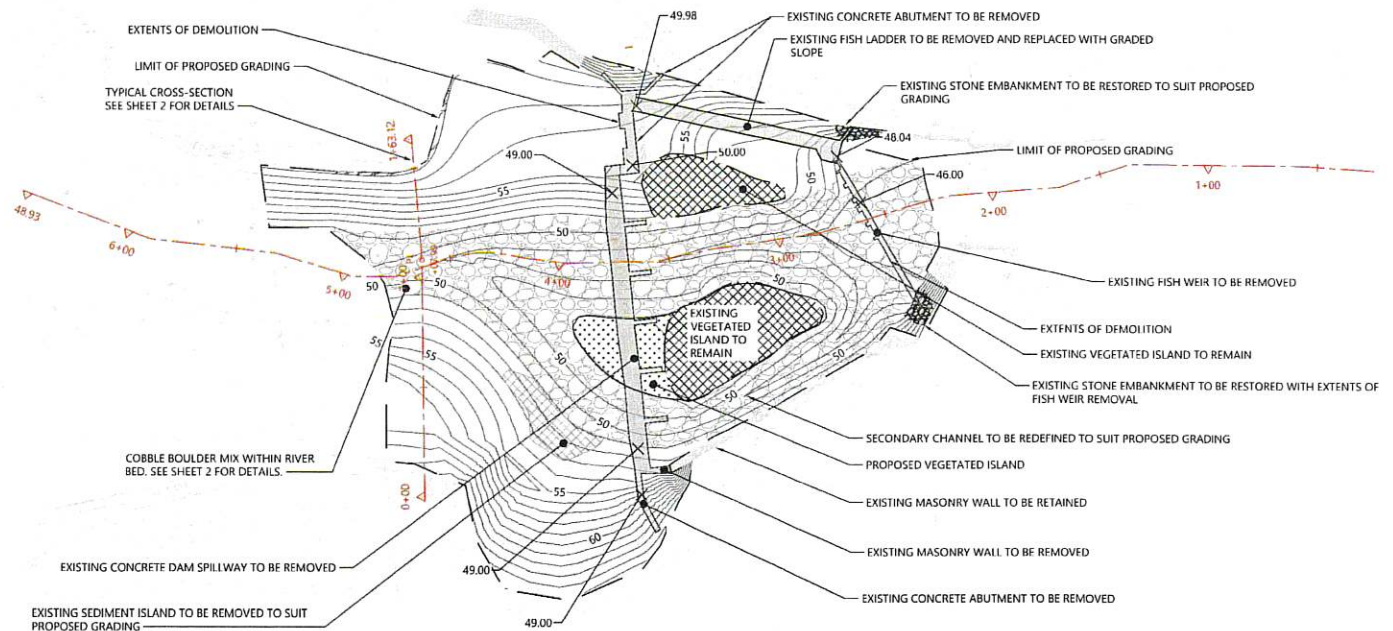
- Construct overflow auxiliary spillway through left abutment
  - Construct containment berm
  - Excavate exit channel
- Maintain existing primary spillway
- Increase height of right training wall
- Raise and extend earthen embankments
- Replace low level gate



## Alternative 4: Dam Removal

- Complete demolition and removal of dam, fish ladder, low level gate and associated appurtenances
- Preserve islands downstream of dam
- Reconstruct channel
- River channel rehabilitation

**Figure 2.5-1 - Dam Removal Plan**  
Pickpocket Dam Feasibility Study | Brentwood & Exeter, New Hampshire

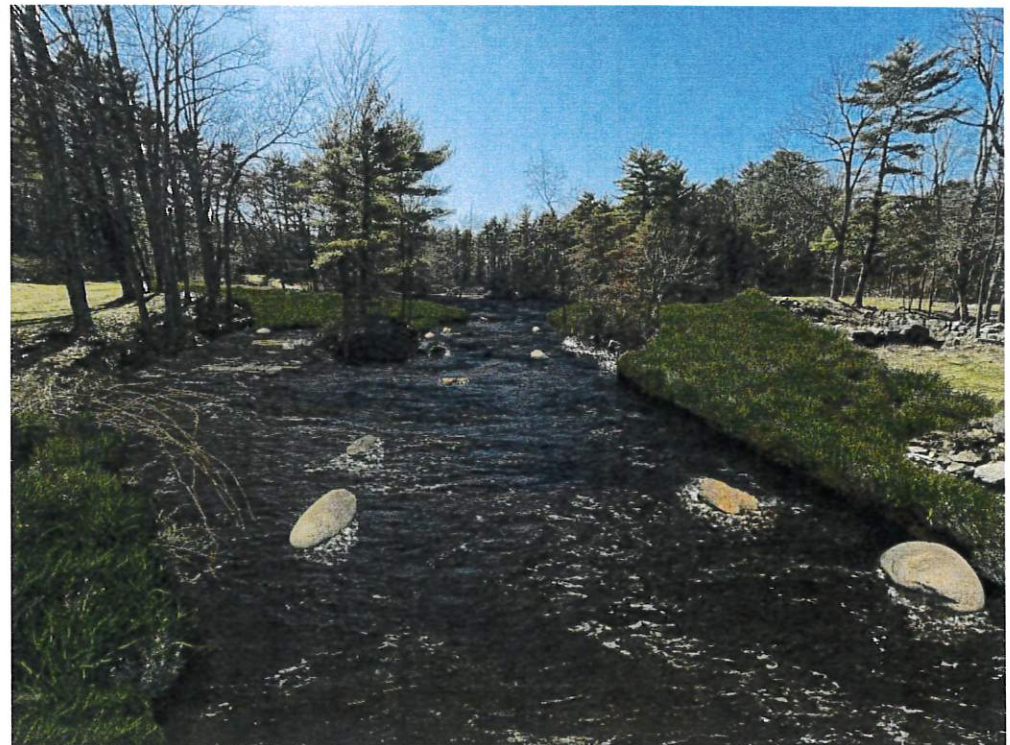


**Existing**



*A view of Pickpocket Dam, looking upstream*

**Rendering**



*A view of Pickpocket Dam removed, looking upstream*

**Existing**



*An Oblique view of Pickpocket Dam primary spillway, looking from the right bank*

**Rendering**

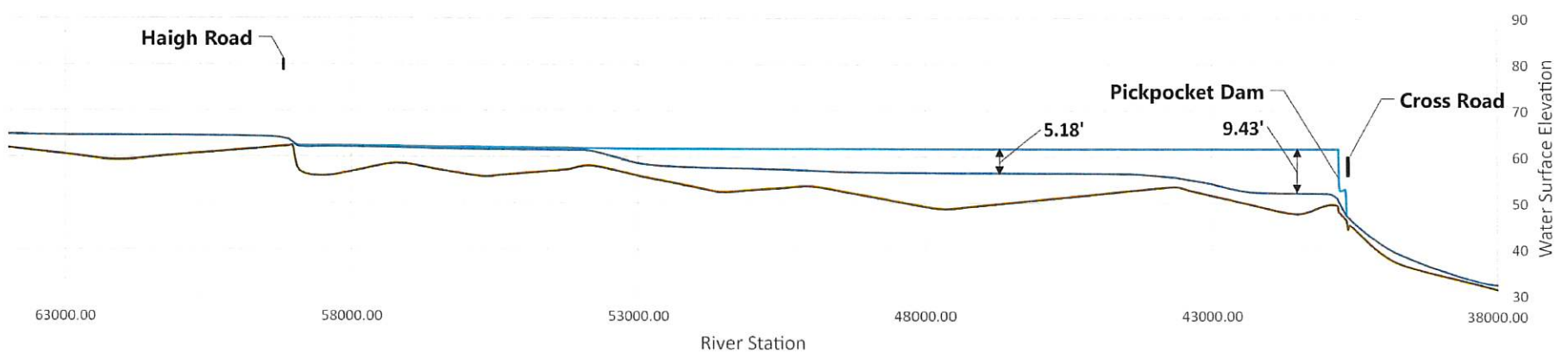


*An Oblique view of Pickpocket Dam removed, looking from the right bank*

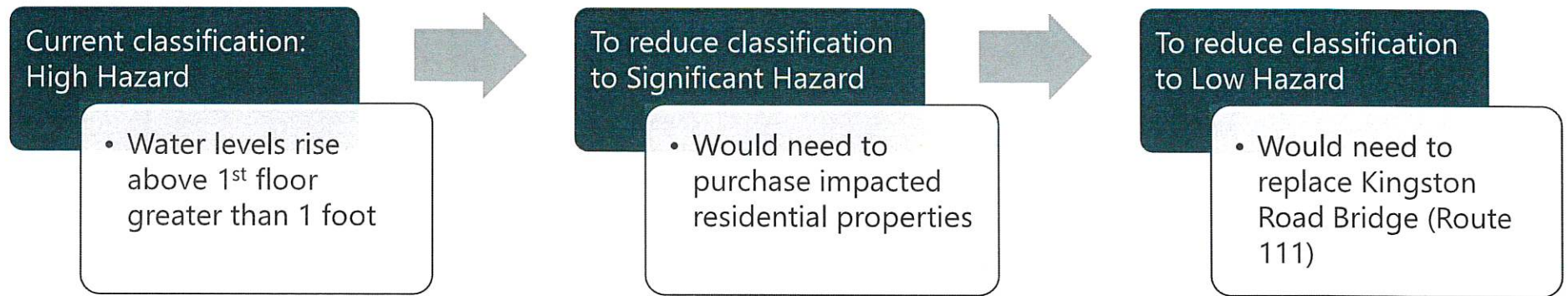
Figure 3.2-5: Alternative 4 - Dam Removal Normal Flow Water Surface  
Pickpocket Dam | Brentwood and Exeter, New Hampshire



— Normal Flow - With Dam    — Normal Flow - Without Dam    — Exeter River Profile



## Alternative 5: No Action/Lower Hazard Classification

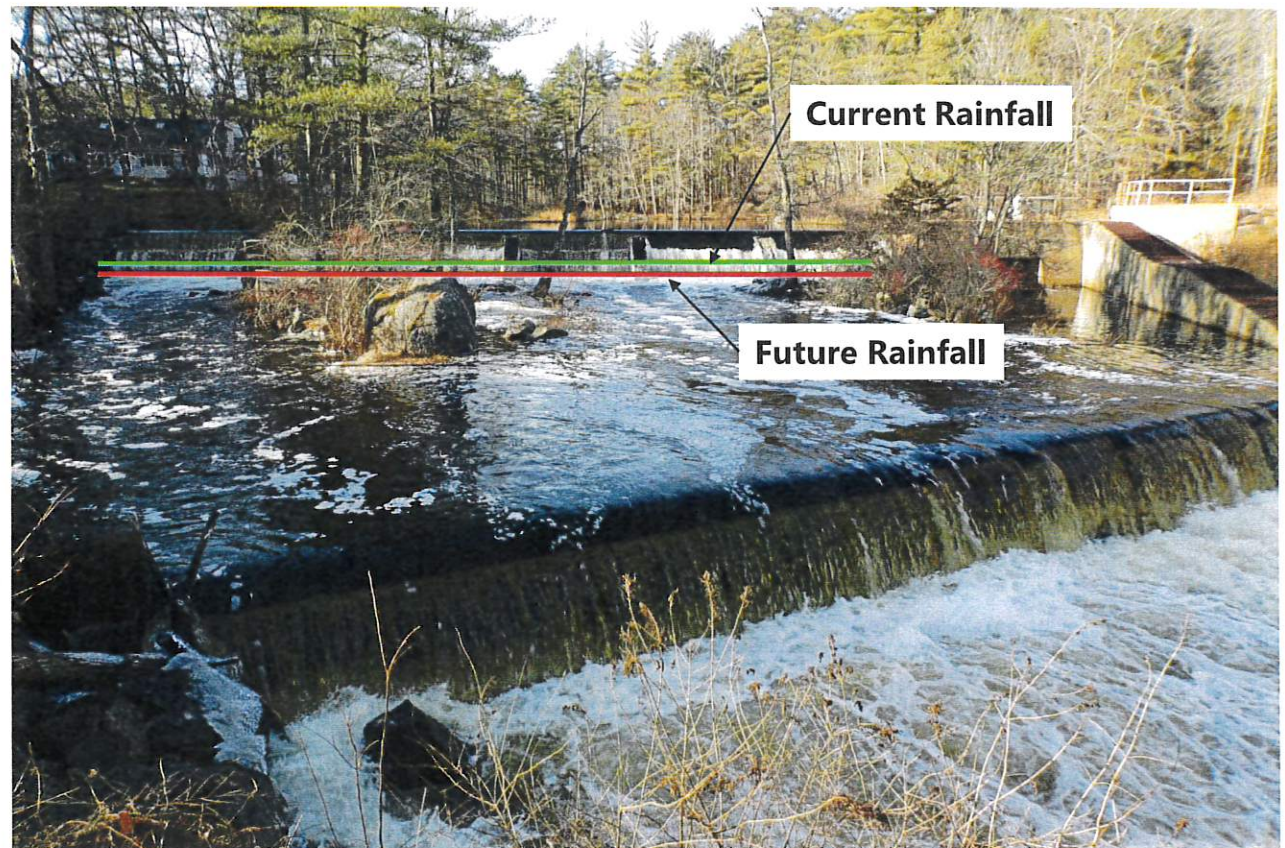


However...

Existing dam does not meet low hazard safety requirements which require the dam to pass the 50-year design storm with 1 foot of freeboard

## Alternative 6 – Lower Normal Pool

- Selective demolition of the spillway weir
- Replace low-level gate and fish ladder
- Reduced pool levels would have similar impacts as dam removal without the benefits



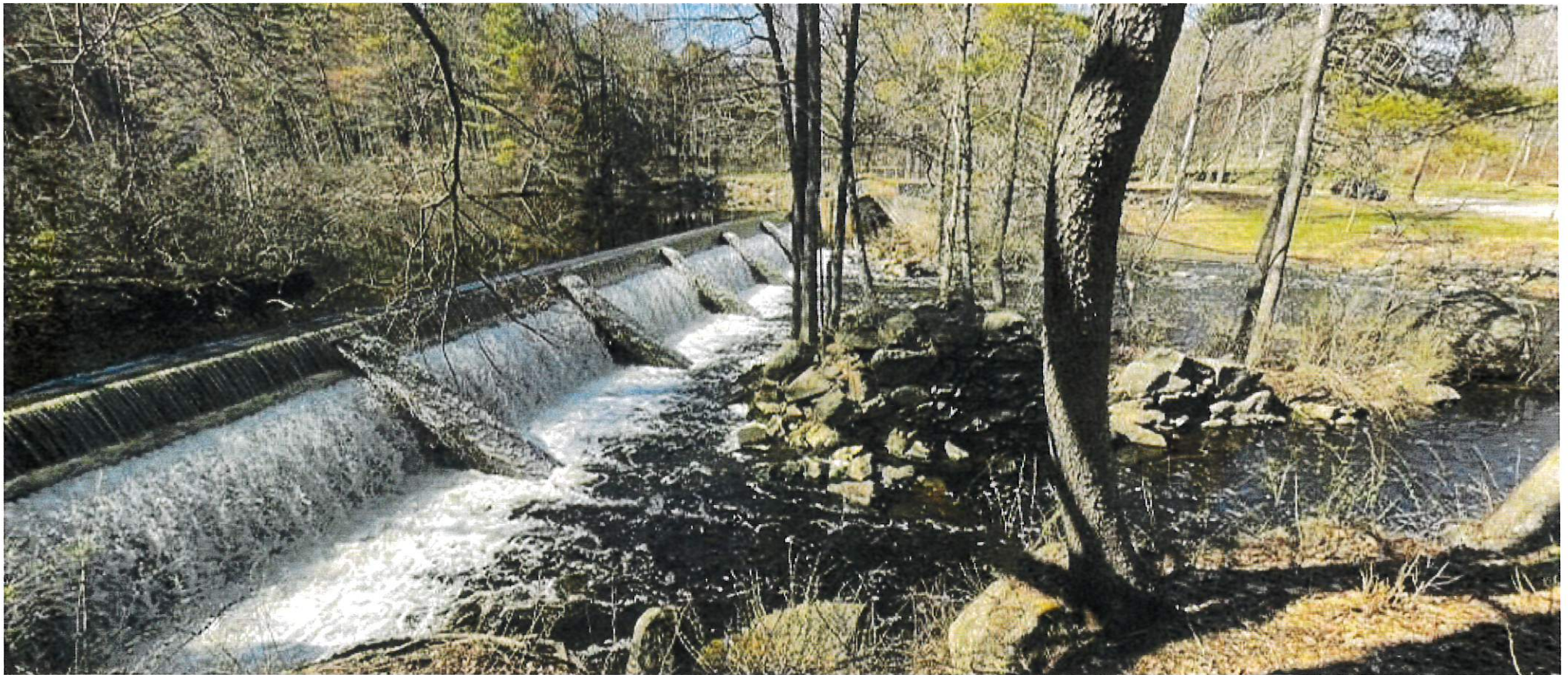
## Impact Analysis Comparison

|                         | Environmental Impact   | Social Impact   | Economic Impact  |
|-------------------------|--|---|--|
| <b>Dam Modification</b> | <ul style="list-style-type: none"> <li>• Maintains existing conditions</li> <li>• Similar sediment quality both upstream and downstream</li> </ul>   | <ul style="list-style-type: none"> <li>• Maintains existing recreational opportunities</li> <li>• SHPO "Adverse Effects"</li> </ul> | <ul style="list-style-type: none"> <li>• Continued public safety risk</li> <li>• Higher Cost</li> <li>• Ongoing maintenance costs</li> <li>• No change to water supply</li> <li>• No impact to structures</li> </ul>   |
| <b>Dam Removal</b>      | <ul style="list-style-type: none"> <li>• Improved water quality</li> <li>• Improved fish passage</li> <li>• Restores natural sediment transport process</li> <li>• Increased instream ecological diversity</li> <li>• Similar sediment quality both upstream and downstream</li> </ul> | <ul style="list-style-type: none"> <li>• Provides different recreational opportunities</li> <li>• SHPO "Adverse Effects"</li> </ul> | <ul style="list-style-type: none"> <li>• Remove public safety risk</li> <li>• Reduced flooding risk upstream of dam</li> <li>• Increased soil strength</li> <li>• Impact to slope stability</li> <li>• Lower cost</li> <li>• No change to water supply</li> <li>• No impact to structures</li> </ul> |

## Cost Comparison

|   | Alternative 1: Raise Dam |                    | Alternative 2: Spillway Replacement |                     | Alternative 3: Auxiliary Spillway |                    | Alternative 4: Dam Removal |
|---|--------------------------|--------------------|-------------------------------------|---------------------|-----------------------------------|--------------------|----------------------------|
|   | Current                  | Future             | Current                             | Future              | Current                           | Future             |                            |
| <b>Initial Capital Cost</b>                 | \$2,090,200              | \$2,365,200        | \$7,132,600                         | \$7,410,900         | \$2,153,300                       | \$2,252,200        | \$1,468,000                |
| <b>Capital Replacement Cost</b>             | \$861,200                | \$974,500          | \$2,938,600                         | \$3,053,300         | \$887,200                         | \$927,900          | \$0                        |
| <b>Operations &amp; Maintenance</b>         | \$315,000                | \$332,200          | \$222,200                           | \$273,700           | \$311,600                         | \$335,600          | \$45,000                   |
| <b>Total Present Value Cost<sup>1</sup></b> | <b>\$3,266,400</b>       | <b>\$3,671,900</b> | <b>\$10,293,500</b>                 | <b>\$10,737,900</b> | <b>\$3,352,100</b>                | <b>\$3,515,700</b> | <b>\$1,513,000</b>         |

Note: Prices shown in 2024 dollars, actual cost will vary based on construction year.



Next Steps



# Town Funding



## Town of Exeter, New Hampshire 2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding Is Requested: 2025

Project Title: Pickpocket Dam  
Project Type: Dam Modifications  
Project Cost: \$2,100,000

Project Ranking: \_\_\_\_\_ of \_\_\_\_\_  
Useful Life (Years): 50  
Master Plan (Y/N): No  
Growth Related (Y/N): No  
Service Related (Y/N): Yes  
Externally Mandated (Y/N): Yes

Department: Public Works - Engineering  
Contact Name: Paul Vlasich



### Project Description

In March 2011, a Letter of Deficiency (LOD) was issued to the Town by the NHDES Dam Bureau. The LOD required a breach analysis to be performed and submitted to the Bureau. In January 2016, the Town submitted the breach analysis and a survey performed by its consultants. In March 2018, the Dam Bureau reclassified the dam from low-hazard to high-hazard because of the downstream impacts that would result if the dam failed. This high-hazard classification required additional planning and analysis. In FY19, \$40,000 was approved to update the Emergency Action Plan (EAP) and address breach analysis comments from NHDES. In FY20, \$110,000 was approved for additional analysis work, however, due to COVID-19 projected impacts on town revenues, the consultant contract was delayed. The eventual analysis determined that the dam could not meet NHDES dam discharge capacity requirements without significant modification.

In the Summer of 2021, a request for action extension was granted by NHDES to extend the time to develop rehabilitation alternatives. The revised dates for the application to address the dam's deficiencies and complete construction were pushed to June 1, 2024, and December 1, 2027, respectively. The Town was approved for a \$40,000 Coastal Resilience Grant and a \$100,000 Stormwater SRF grant, and an additional \$165,000 of Town ARPA funds were utilized to fully fund a feasibility study to evaluate options for modification and removal. Work on the Feasibility Study commenced in October 2022 and was completed in May 2024. Following a review of Feasibility Study and public comments, the Select Board voted at their June 24, 2024 meeting to recommend dam removal as the preferred alternative.

The FY25 request for \$2,100,000 will be used to 1) supplement any additional analysis required as a result of the feasibility study, 2) fund the design, permitting, construction, and construction oversight of the approved modifications, and 3) compensate the Town's consultants for exploring and applying for appropriate grants.

### Estimated Costs:

| Activity  | Funding Amount |
|---|----------------|
| Dam Removal and Fish Passage Channel Engineering Design, Permitting, and Cultural Resources | 250,000        |
| Pickpocket Dam Removal Construction and Construction Phase Services                         | 1,550,000      |
| Adaptive Management   | 175,000        |
| FEMA Letter of Map Revisions, Post-Construction Monitoring                                  | 125,000        |
|   | 2,100,000      |

### Total Capital Cost by Fiscal Year

| FY25        | FY26 | FY27 | FY28 | FY29 | FY30 |
|-------------|------|------|------|------|------|
| \$2,100,000 | \$0  | \$0  | \$0  | \$0  | \$0  |

### Operating Budget Impact by Fiscal Year

| Total Operating Expense (estimated) by Fiscal Year |
|--|
| \$0  |

Check all that apply

2025 - 2030 Source of Funding

- ☐ GO Bond/Borrowing
- ☒ Grants
- ☒ Taxes
- ☐ Water Fees
- ☐ Sewer Fees
- ☐ Impact Fees
- ☒ Revolving Funds
- ☐ Other

### Project Benefits

- ☒ Reduces Liability
- ☒ Health or Safety
- ☐ Reduces Long Term Debt
- ☐ Other: \_\_\_\_\_

### \* Annual Operating Impact \*

Salaries & Wages:  
Employees Benefits:  
Expenses:  
Other:

Total: \_\_\_\_\_

Estimated Project Cost: \$2,100,000

### Estimated Fiscal Capital Cost

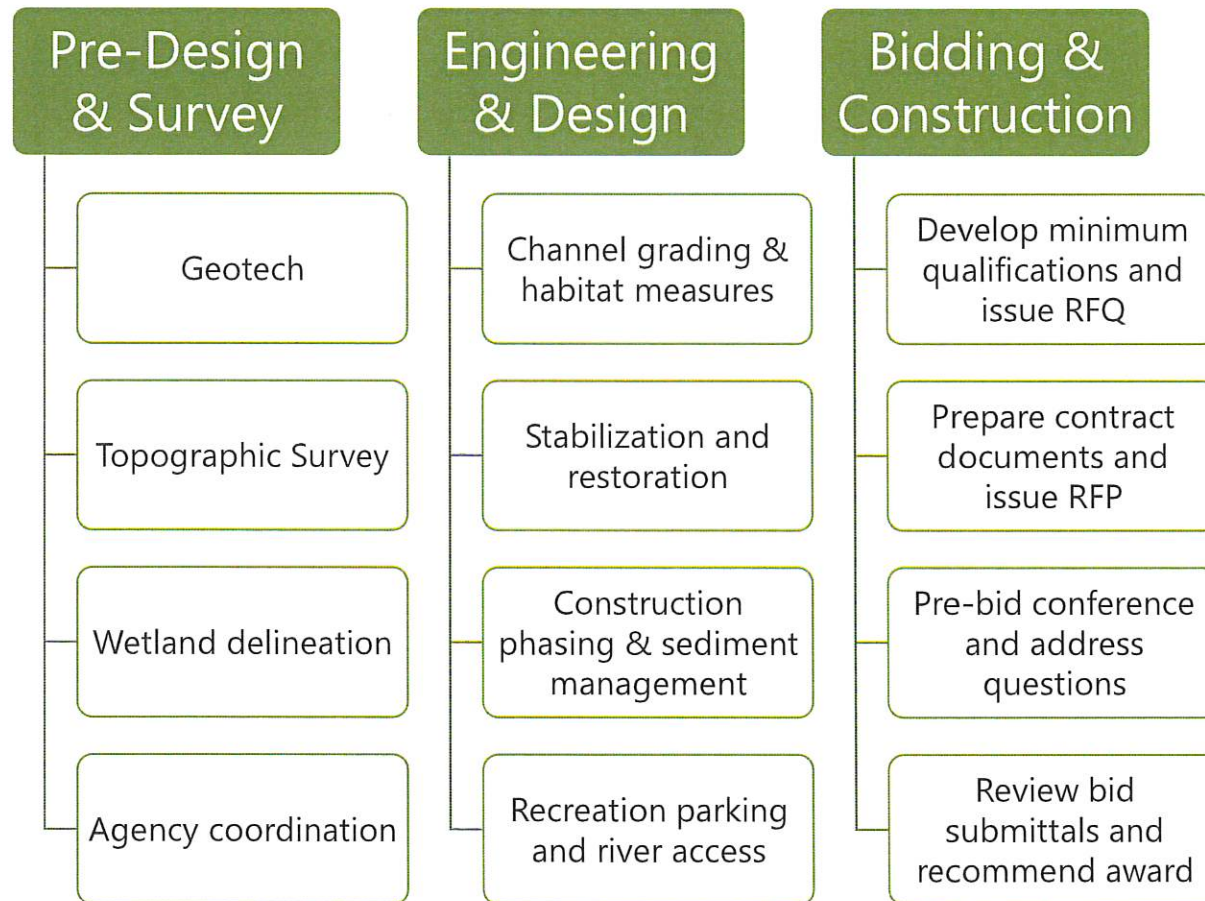
\$2,100,000

## Grant Funding

### Grant Applications

- Great Bay 2030
  - Application due December 16, 2024
  - Selection notice mid-January
- NOAA Coastal Zone Management Habitat Protection and Restoration Competition
  - Application due January 9, 2025
  - Selection notice August 1, 2025
- NOAA Restoring Fish Passage through Barrier Removal Grants
  - Application due February 10, 2025
  - Selection notice anticipated late Fall 2025

## Engineering and Design



# Environmental Permitting



## **NHDES Wetlands Permit (NH RSA 482-A)**

Required for impacts below top of bank or within wetlands

Abutter Notifications – Direct Abutters

Submissions through Exeter and Brentwood Town Clerks

Coordination:

- NH Natural Heritage Bureau (T&E Plant Species)
- NH Fish and Game (T&E Animal Species)
- Conservation Commissions
- Exeter-Squamscott River Local Advisory Committee



## **US Army Corps of Engineers (Section 404 Clean Water Act)**

Required for impacts below ordinary high water and within wetlands

Possibly authorized through the NH General Permit (NAE-2022-00849)

Coordination:

- USFWS
- NMFS
- NH State Historic Preservation Office (NHDHR)

## Additional Permitting



### **NHDES Water Quality Certification (CWA Section 401)**

Triggered by USACE Permit



### **NHDES – Shoreland Water Quality Protection Act (RSA 483-B)**

Upland construction, excavation, or filling activities within the 250 ft of river

Includes review of stormwater and clearing



### **NHDES - Alteration of Terrain (NH RSA 485-A:17)**

Project may qualify for a General Permit by Rule under Env-Wq 1503.03(g)



### **NHDES Dam Bureau Safety Review (RSA 482)**

Dam Modification: Env-Wr 400, RSA 482:9 and 482:29

Dam Removal  
Attachment to Wetlands Permit Application



### **FEMA – Letter of Map Revision**

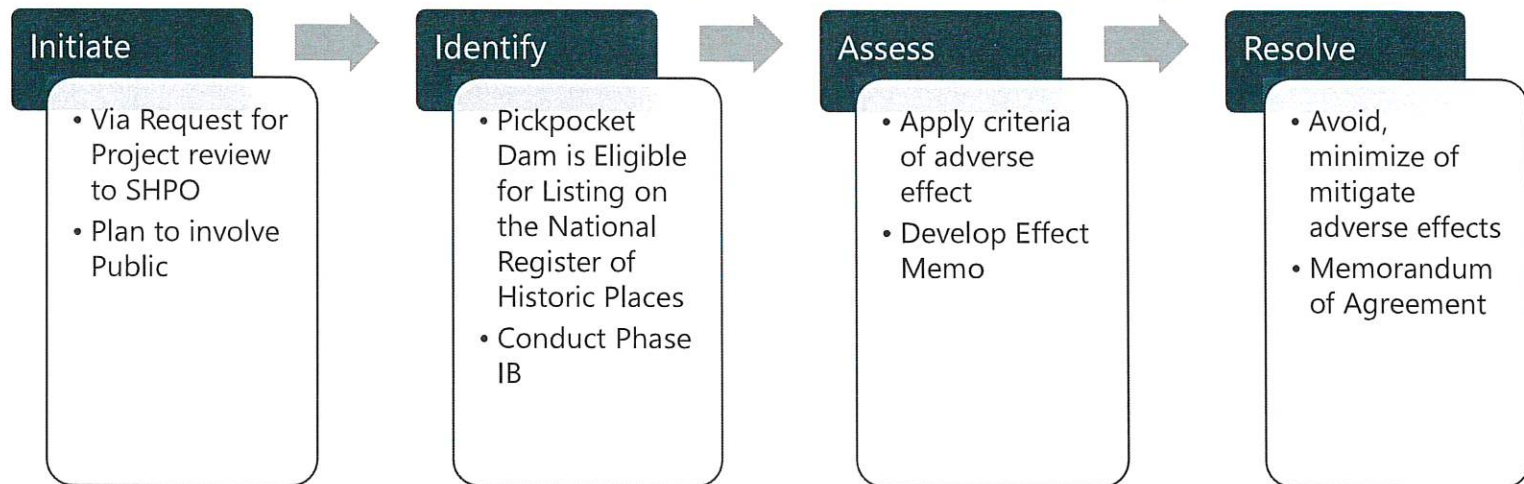
Triggered by changes to the 100-year floodplain (base flood elevation)

## Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 (NHPA): *Federal agencies must consider the effects on historic properties for projects they carry out, assist, fund, permit, license, or approve.*

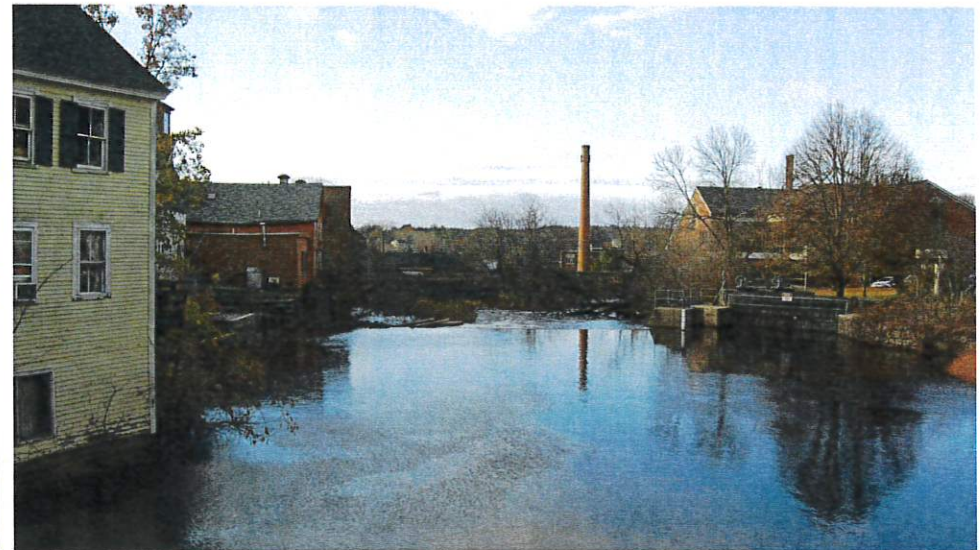
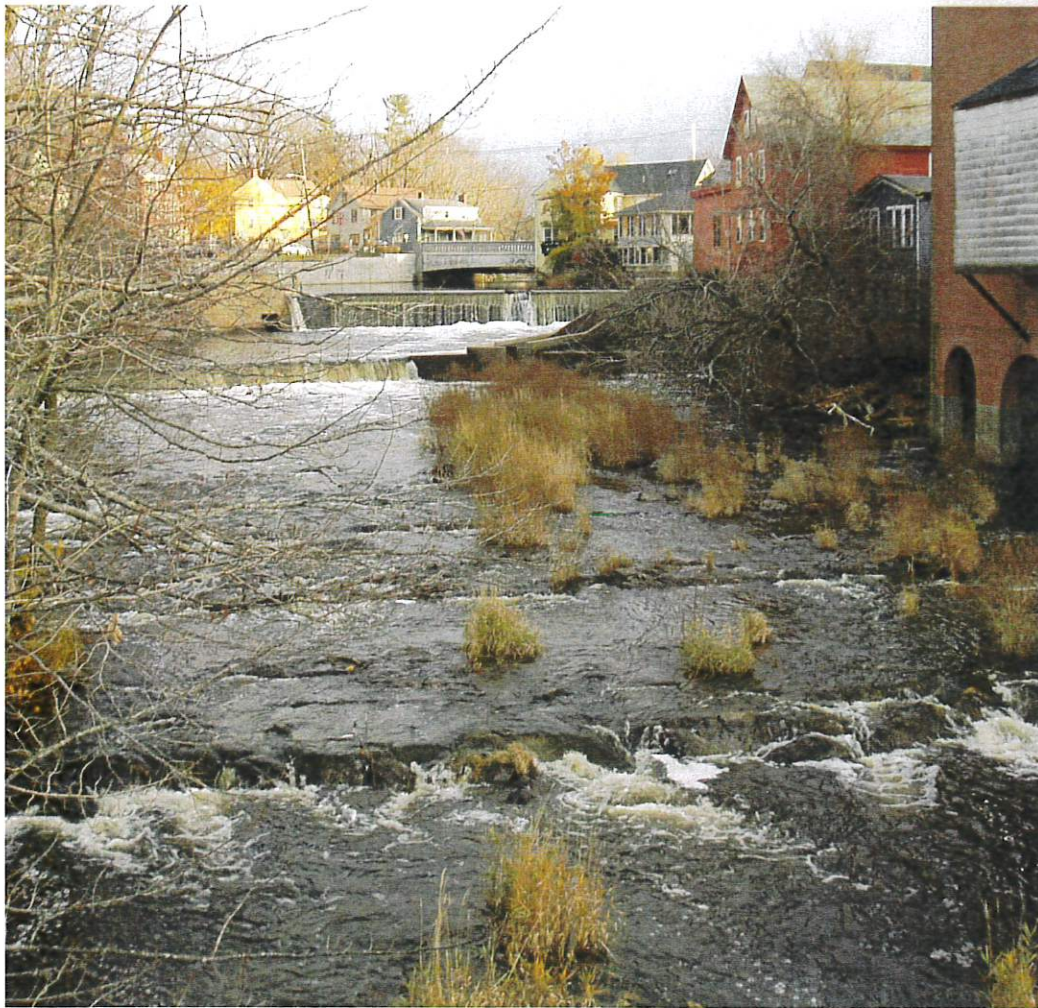
Assignment of a Lead Federal Agency – likely the Army Corps of Engineers

Process:

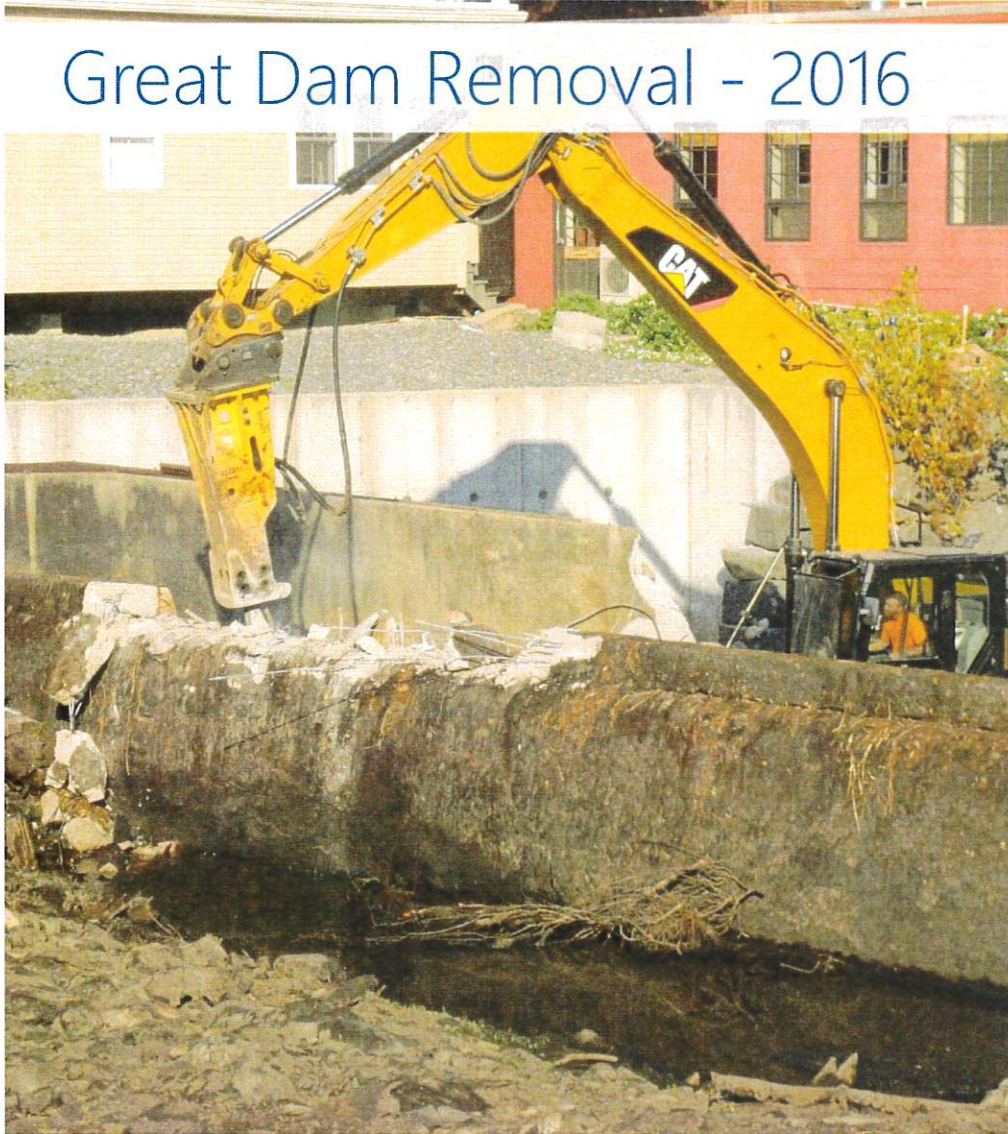


Consulting Parties may include SHPO, Tribes, local agencies, community groups, and others.

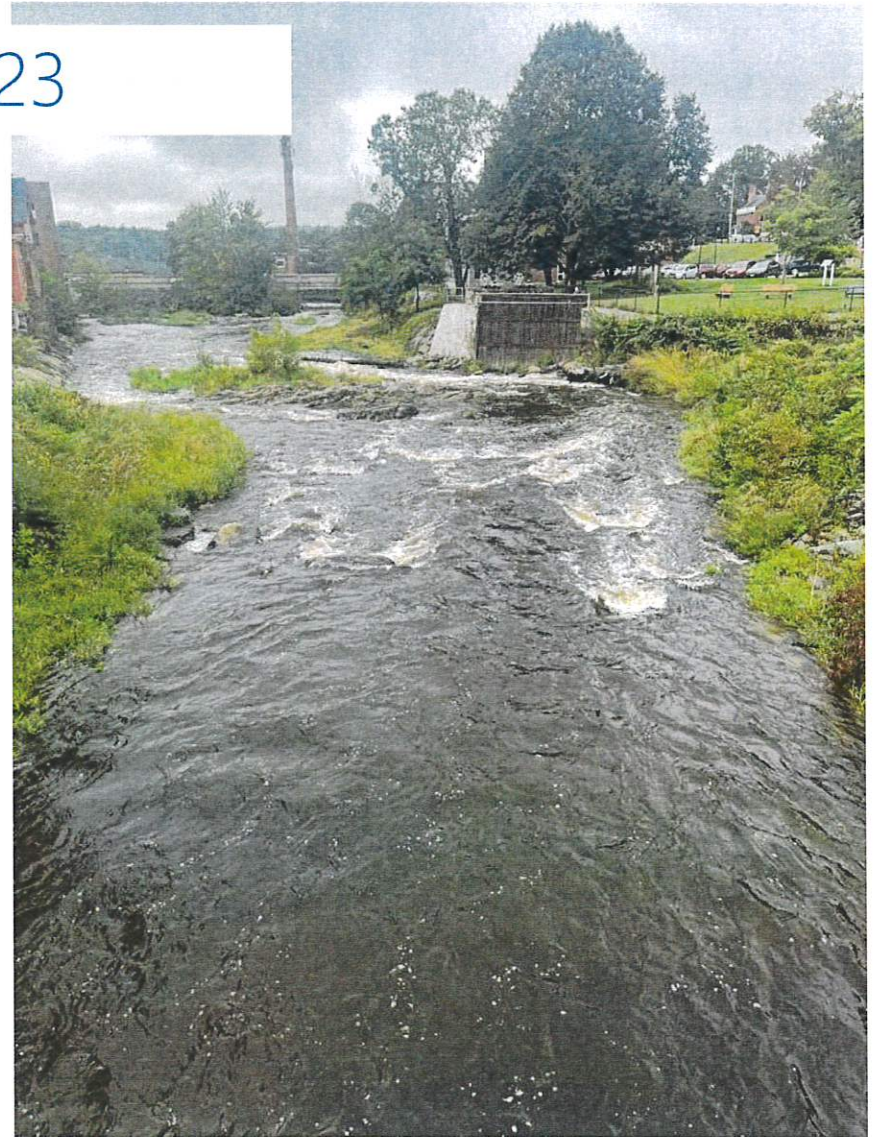
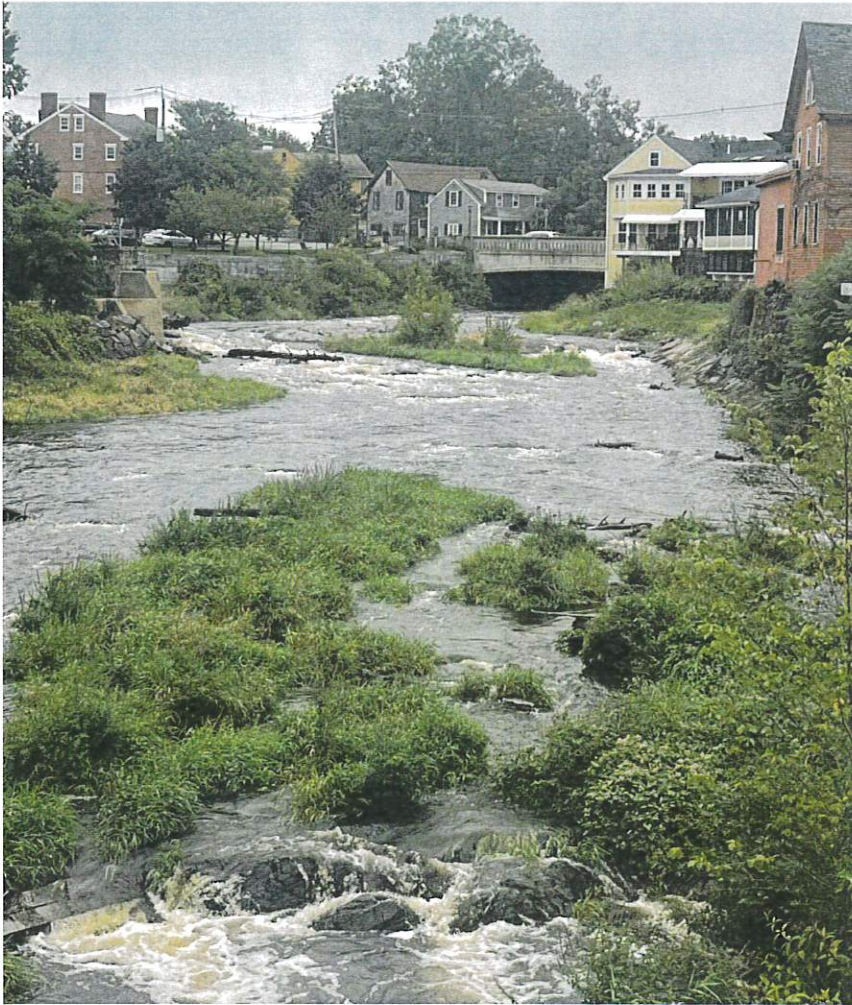
# Great Dam - 2015



## Great Dam Removal - 2016



## Great Dam Post Construction 2023



## Public Engagement

|        |   |
|--------|---|
| What?  | <ul style="list-style-type: none"><li>• Goal: Keep public informed &amp; solicit feedback</li><li>• Meetings, presentations, site visit</li></ul> |
| Where? | <ul style="list-style-type: none"><li>• Library, Town Hall, on site, RAC meetings</li><li>• Project updates also posted online</li></ul>          |
| When?  | <ul style="list-style-type: none"><li>• Generally, around design and permitting milestones</li><li>• Next meeting expected Summer 2025</li></ul>  |

For project history and updates:  
<https://www.exeternh.gov/rsc/pickpocket-dam>

## Schedule

[illegible]

## Breakout Session Instructions

- Purpose of the breakout session is to ask questions and provide feedback on scope of work for the project
- There are 3 separate tables, each assigned a focus topic
  - Environment & Permitting
  - Engineering & Design
  - Erosion & Sediment Control
- You can stay at a table or float around between tables



# Pickpocket Dam Removal

Public Information Session