Vermont Dam Safety Program
Waterbury Dam Spillway Project Update

Waterbury Dam

House Committee on Corrections and Institutions

February 5, 2026

Neil Kamman
Deputy Commissioner
VTDEC

Ben Green, PE
Dam Safety Engineer
VTDEC Dam Safety Program

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Preface

- Dam Safety is more important than ever due to increasing severe storms
- Vermont has invested in Dam Safety in recent years.
  - Staffing in 2017 – 2
  - Staffing in 2025 – 9
- Your DSP owns and operates three major flood controls facilities right here the Winooski River Valley
- The largest is the Waterbury Dam.

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Wrightsville Dam Performed As Designed, But What's Next?

August 4, 2023 · by Jenny Blair

While heavy rains pounded Vermont on Monday, July 10, Collin O'Neil was monitoring water levels at Wrightsville Detention Reservoir.

As manager of Wrightsville Beach Recreation District, it's something he routinely keeps track of, since high water can submerge the beach and other facilities there. Normally, the water in the reservoir sits at about 634 feet above sea level.

Wrightsville Reservoir, full from shore to shore. Tuesday afternoon July 11.Photo by John Lazenby

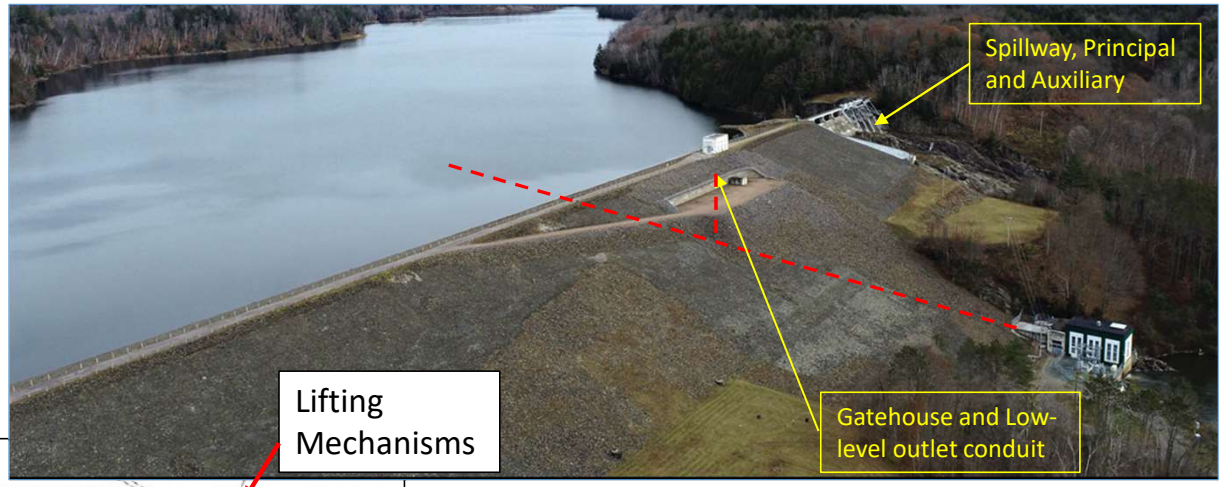
But that night, the water rose behind Wrightsville dam faster than it could drain into the swollen North Branch of the Winooski River.

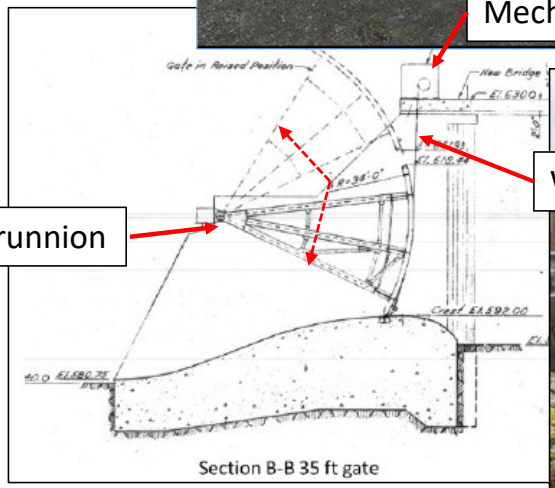
When water reached just 16 feet below an emergency spillway, O'Neil contacted Montpelier officials with a warning.

- Today, Chief Dam Safety Engineer Green and I would like to update you on a major partnership project to reconstruct the spillway of the dam.
- In so doing we will cover some background, certain aspects of the project design, and a complete review of the funding portfolio.

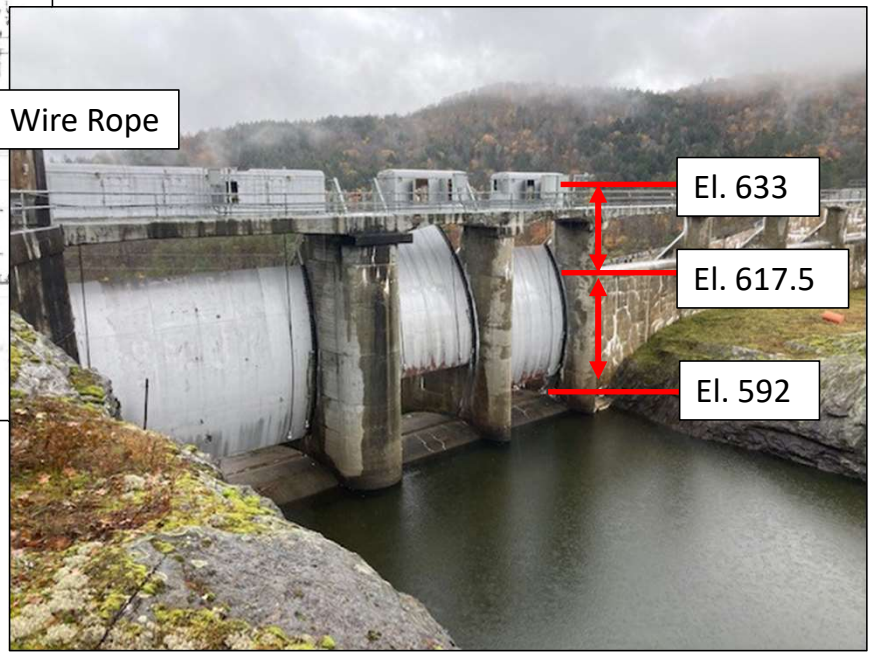
Waterbury Dam Overview

- 109 SM drainage area
- 187 ft. tall, 2,100 ft. long
- 3rd tallest, 4th largest storage
- HIGH Hazard Potential
  - PAR ~5,000
  - Est. Life Loss ~820
  - Structures inundated ~1,400
  - Damages $300M-$800M
- Flood protection
  - ~$4M Flood Damages prevented annually
- Hydropower
  - Support 5MW GMP Plant
- Recreation
  - Little River State Park
  - Waterbury Center State Park
  - Several Boat Ramps/Accesses
- History:
  - Built post 1927 Flood
  - Designed by USACE
  - Completed 1938





Wire Rope



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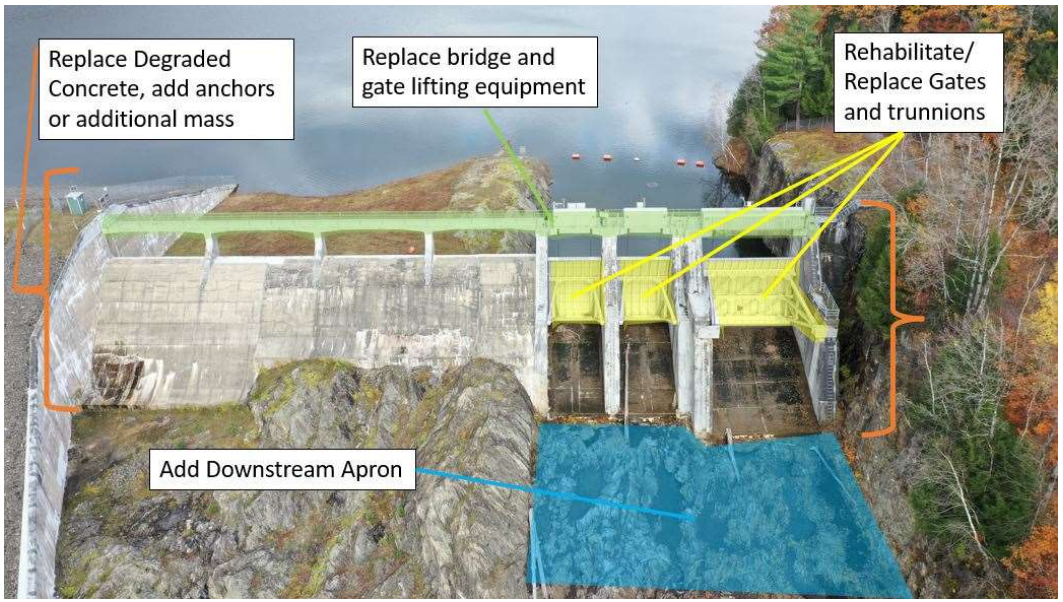
Waterbury Dam Spillway Project

- In 2000s, Radial Arm Flood Gate jamming, lead to Flood load restrictions on gates
- Project scope includes:
  - Replacement of Gates 1 and 2, restoration of Gate 3.
  - Downstream toe/apron/stabilization
  - Removal and replacement of bridge over spillway and new gate lifting equipment
  - Concrete repairs
  - Mod. Study Draft under review, Design underway ~2025/2028, Construction ~2028/2030 (pending funding)
- https://dec.vermont.gov/water-investment/dam-safety/dec-owned-dams/waterbury-dam-spillway-project



Waterbury Dam Spillway Project

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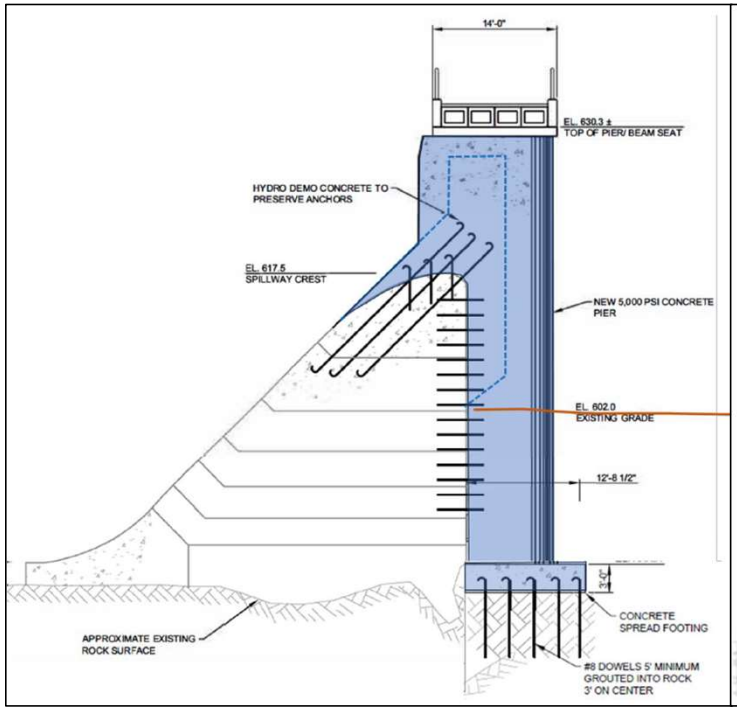
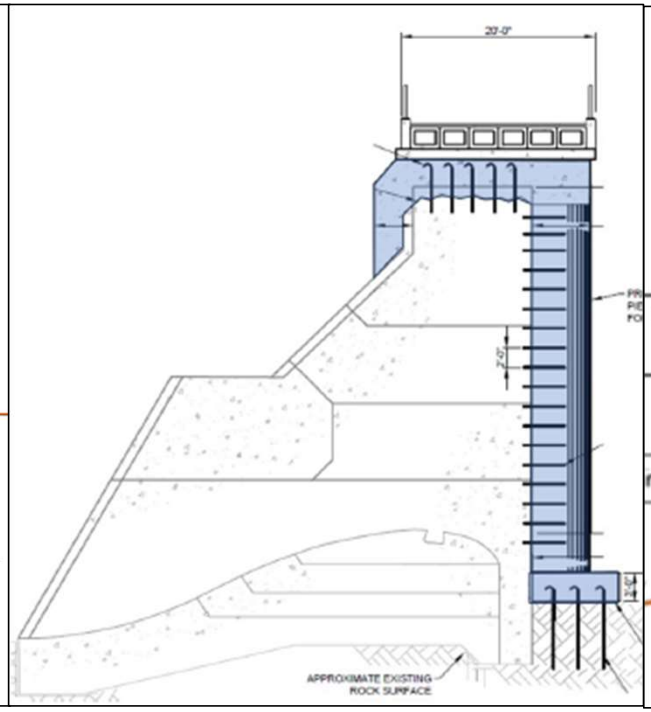
- Conceptual Construction Access, laydown, work platforms and crane pads to perform the work

Waterbury Dam Spillway Project

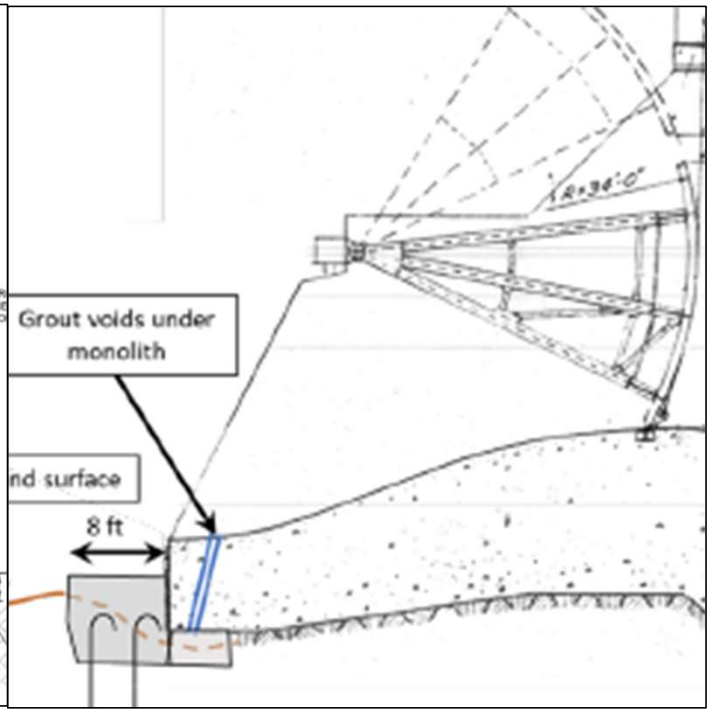
- New Pier and Bridge Sections, Downstream Toe Protection Detail



Section at Ungated Spillway Pier



Section at Gate Spillway Pier



Downstream Toe Protection

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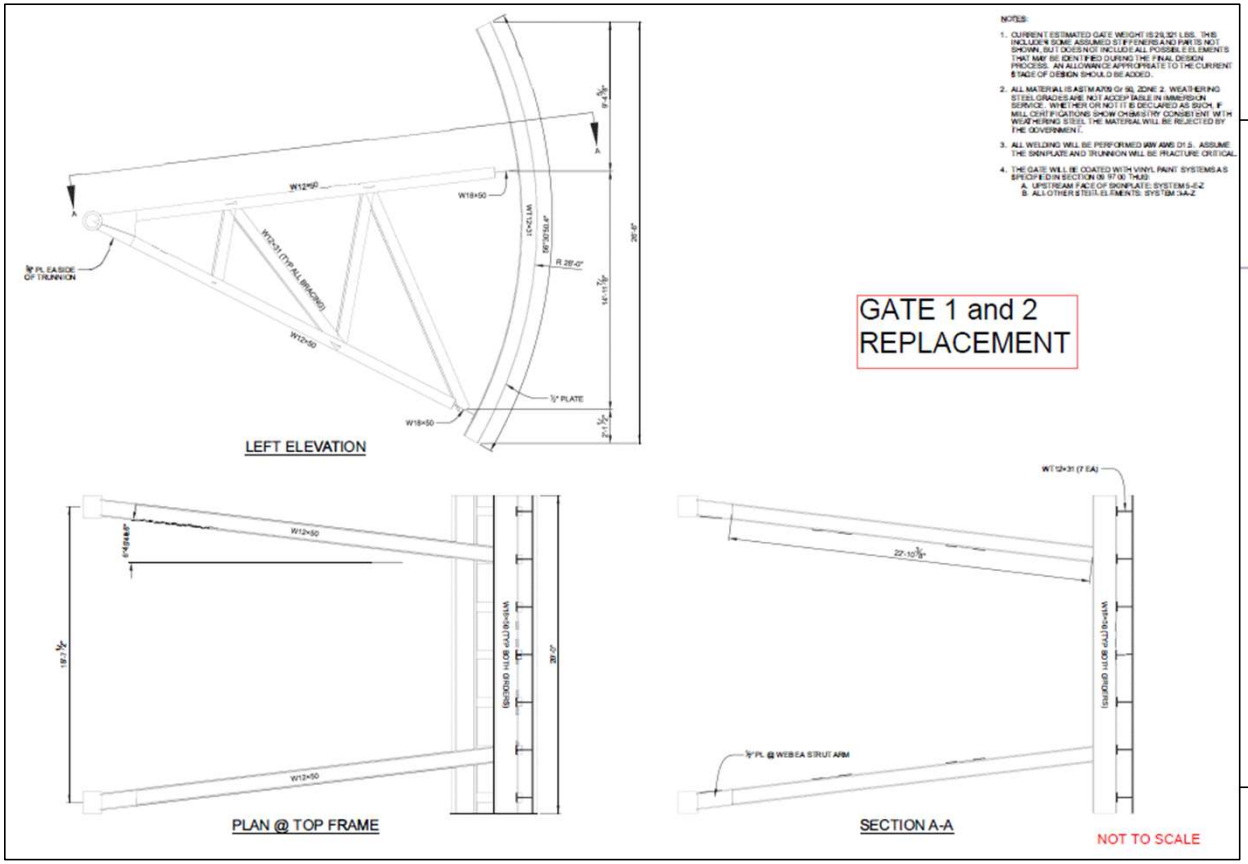
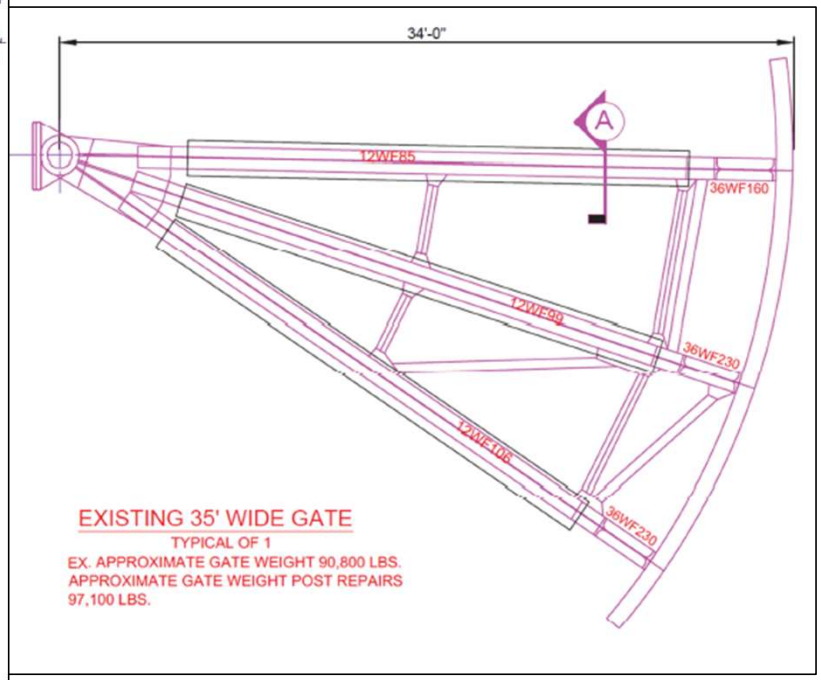
Waterbury Dam Spillway Project

- New Gate 1 and 2, restoration of Gate 3





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Waterbury Dam Spillway Project

- Design level subsurface explorations of embankment soils, spillway concrete, and foundation bedrock
- Planned for spring/early summer 2026 (weather permitting)

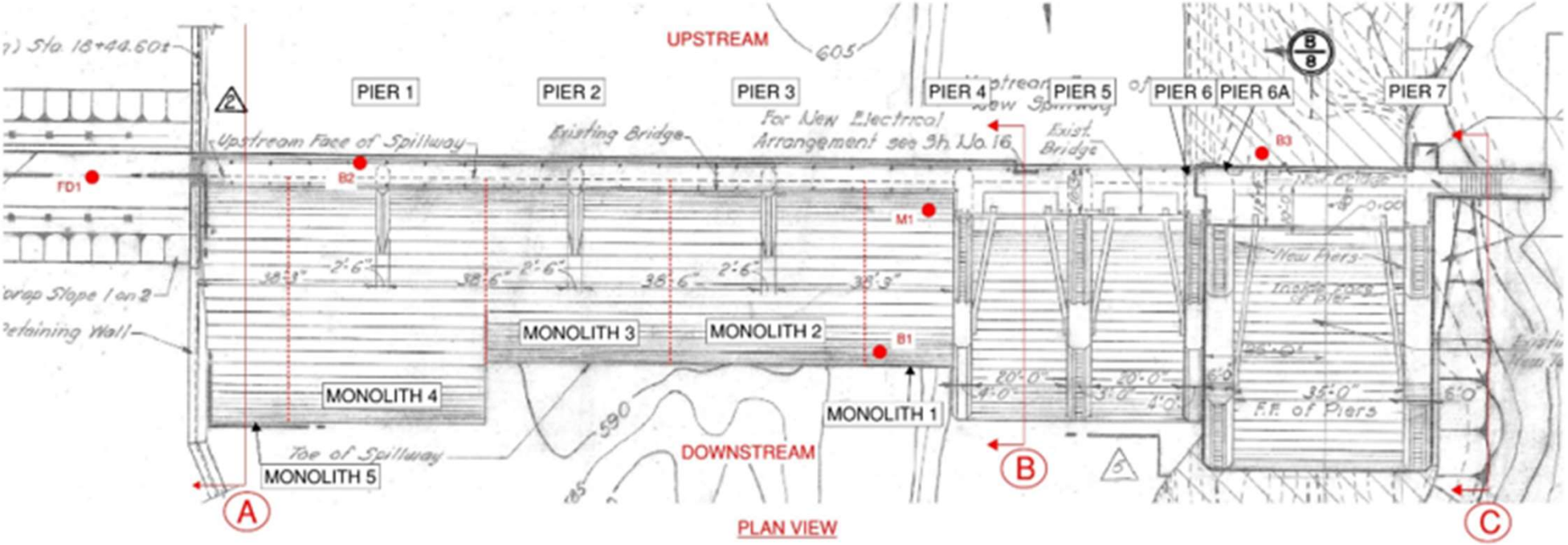

Figure 21: Plan View Showing Bedrock Core and Embankment Boring Locations

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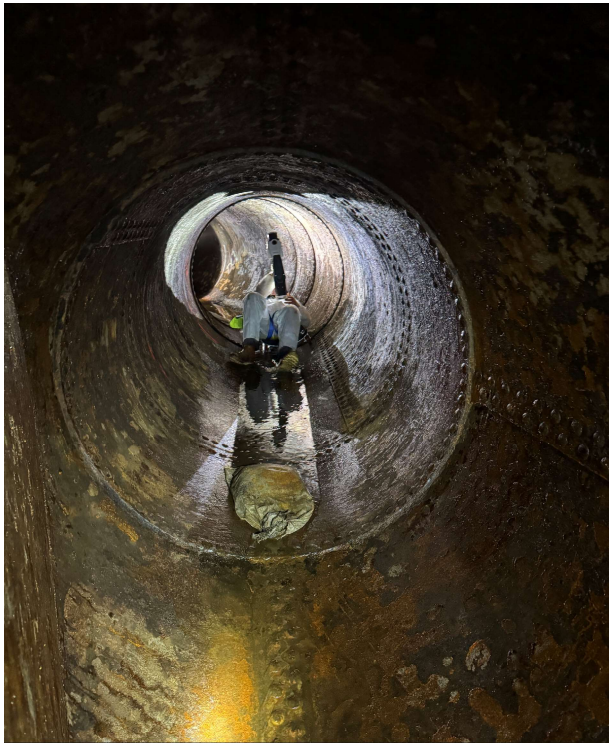
Waterbury Dam – Tunnel and Penstock Project

- Objective: Perform inspection, destructive/non-destructive testing of concrete tunnel and steel penstocks to evaluate condition and remaining service life.
- Scope included:
  - Dive Inspection and cleaning of head gate guides and seats
  - Cleaning of interior of tunnel and penstocks (management of wastewater and solids)
  - Installation of new manhole and drains in penstocks, steel work platform, and stairs.
  - Installation of jib and davit cranes for installation of equipment
  - New Air release valve, repair/replacement of Rotocone & Fixed Cone actuators
  - 3-D Scanning, UT Testing, Mag Particle Testing, coating/lining evaluation, etc.

Tunnel to Penstock Transition post cleaning, December 2025

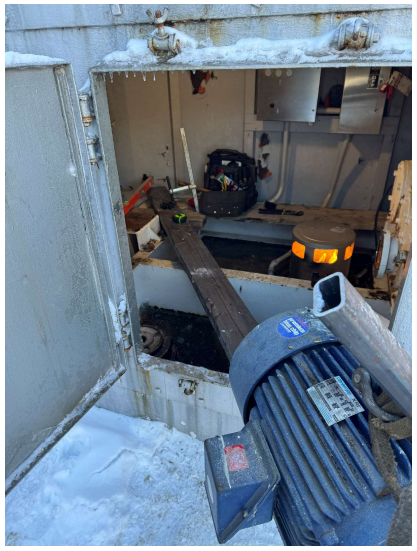
Tunnel and head gate in closed position post cleaning, December 2025



Penstock mapping post cleaning, December 2025

Waterbury Dam – Gate 3 Motor Replacement

- During routine/annual inspection in September 2025, Gate 3 was “red tagged” and placed out of service due to issues with the brake system.
- The dam’s Emergency Action Plan (EAP) was activated on the non-emergency/advisory level.
- A replacement system was designed and ordered (special order)
- Installation was completed in January 2026.
- Total project cost ~$20,000 (design, equipment purchase, logistics, and installation)
- EAP was deactivated following successful startup and testing. Gates are now all in fully operable service.
- Serves as a good reminder of the need and importance of the Spillway Project as components continue to age and are at/nearing their reliable service lives.



Gate 3 – Removal of old motor, January 2026

Gate 3 – new motor with integrated braking system, January 2026

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Waterbury Dam – Operation & Maintenance Costs

- Analysis of maintenance and capital costs from 1982-2025.
- Major Capital Projects, State partnered with USACE not included:
  - Mid-2000s Seepage Control Project (~$26M)
  - Planned Spillway Project (~$76.2M)
- Strive to meet all upcoming Dam Safety Rules and standards, be good stewards of the State's largest and most valued flood control facility that protects the Winooski Valley and Waterbury.
- O&M Costs from 1982 to 2025 (in current dollars):
  - Average ~$200k/year
  - Low ~$0
  - High ~$1.6M
- Need to "play catchup" over next ~10 years
- Estimated annual need is ~$500k during that period annualized (some years less, other years more)
- Extending analysis to include other flood control dams and ANR-owned dams, present findings soon.

CATEGORIES:

GENERAL – *Mowing & Brushing, Buildings*

ENG. & INST. – *Comprehensive Engineering Assessment, Instruments, Surveying*

OUTLET WORKS – *Cleaning, inspection, lining/coating tunnel/penstocks, Broome Gate*

MECHANICAL – *Actuators, Valves, Hoist Systems*

SPILLWAY –*Flood Gates, Boat Barrier, discharge channel, fixed crest weir.*

SEEPAGE –*Active and passive systems evaluation, maintenance, etc.*

ELECTRICAL – *Emergency Generator, lighting, etc.*

CONTROLS – *Dewatering Wells*

Waterbury Dam – Spring 2019 Flood Storage

Waterbury Dam Spillway Project
Federal Funding Portfolio

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- COST: cost estimate from USACE has come down, from $92M to $76M.

- COST-SHARE: Project is a partnership with USACE. DEC successfully reduced this cost-share from 50:50 for feasibility and 35:65 for design and construction, to 7.1%

- FEDERALLY APPROPRIATED AND AUTHORIZED:
  - Current: $40M in bank, $60M authorized
  - In WRDA for 2026: $80M authorization.
  - Continuous engagement with Delegation (Sanders) on additional appropriation via
    - Annual budget; or
    - USACE Annual Workplan

- MINIMUM ADDITIONAL EXPOSURE:
  - When federal authorization is adjusted in WRDA, the state will need to secure an additional ~$1m to meet the 7.1% cost share on the $76m project (~$5.4m state cost share needed, minus $4.5m already secured).
  - If the federal limit cannot be lifted, the state would need to secure an additional $13m to complete implementation of the project under the current cost estimate.

Waterbury Dam Spillway Project State funding Portfolio

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Table 6.7: Waterbury Dam Cost Sharing
Fully Funded Total Project Costs.

Total Project Costs (also known as fully funded costs)	Federal $	Non-Federal $	Total $
Percentage	92.90%	7.10%	100%
Cost-Share for Design and Implementation	58,364,200	4,460,558	62,824,758
Non-Federal Sponsor costs in excess of the Federal Participation Limit of $60,000,000	0	13,345,711	13,345,711
Total Project Costs Design and Construction	**58,364,200**	**17,806,268**	**76,170,468**

Fund	Dept ID	Dept ID Description	Original Appropriation	FY26 Starting Balance	Unexpended Balance 12/31/2025
31500 (Bonded $)	6140992103	DEC- Waterbury Dam Spillway	743,240.00	0.00	0.00
31500 (Bonded $)	6140992203	DEC- Waterbury Dam Spillway	750,000.00	193,240.00	0.00
21953 (Cash Fund)	6140972402	DEC-Waterbury Dam	4,500,000.00	4,495,501.87	4,408,291.87

Thank you!
Questions?

Neil Kamman
Deputy Commissioner
VTDEC
Neil.Kamman@vermont.gov

Ben Green, PE
Dam Safety Engineer
VTDEC Dam Safety Program
Benjamin.Green@vermont.gov

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