April 11, 2024

Testimony of Jared Carpenter, Lake Champlain Committee
In Support of S.213 'the Flood Safety Act.'

It is important to remember while dams such as Waterbury and Winooski One are often top of mind, there are over 1,000 dams in Vermont, many of them smaller that serve little or no purpose and could potentially harm health and property as well as impact water quality and aquatic habitat. In this case, the safest dam is one that has been removed.

Overview

Dam Safety – Two Key Terms

The first is condition rating. This is the physical condition of the dam based on an inspection and is a measure of whether the dam is being well-maintained or is neglected. Dams are rated good, fair, poor, or unsatisfactory.

The second term is the hazard potential classification, which is based on an evaluation of the impacts on human life, property, lifelines, and the environment if the dam fails or is improperly operated. Two questions to ask are: "What's downstream, and what will happen if the dam fails?" It is independent of the dam's condition rating.

Hazard Potential Classifications – impacts below the dam if the dam fails:

- High Hazard = probable or certain direct loss of life
- Significant Hazard = major or extensive property losses and disruption of essential or critical facilities and access
- Low Hazard = minimal damage

About Dams in Vermont

There are nearly 1,000 dams under the jurisdiction of DEC owned by municipalities, private property owners, and others.

- 44 are high hazard, meaning if they fail there is likely to be loss of life downstream.
- 133 are significant hazard, meaning that failure would result in major or extensive public and private property losses, lifeline disruptions and extensive environmental damage.
- The remaining 800 or so are lower hazard, meaning downstream damage could occur but would be less severe.
- Only 2% of these dams are for flood mitigation, many of the others pose significant flood risk to our towns.

In addition, the Public Utility Commission (PUC) regulates 22 hydroelectric dams, including 4 high and 4 significant hazard structures.

Further, there are about 100 other dams regulated by the Federal Energy Regulatory Commission (FERC) and other federal agencies. Dams regulated by FERC generate hydroelectric power.

ANR itself owns about 100 dams, including the three Winooski River flood control dams at East Barre, Wrightsville, and Waterbury. Eighteen of the dams owned by ANR are high or significant hazard.

- Approximately 40% of ANR-owned Dams are in poor/unsatisfactory condition.
- About 80 % are more than 50 years old.
- A rough estimate is that $20-25 million is needed to rehabilitate ANR dams (This estimate does not include the three Winooski River flood control dams.

As an example of a flood control dam, Waterbury Dam is the largest at 187 ft tall and 2,100 ft long. It was completed in 1938. The primary purpose is flood protection, but also used for hydropower and for recreation, including state parks and campgrounds. It is a high hazard dam – a dam failure is estimated to put 5,000 people at risk downstream, with a potential loss of life between 800 – 900 people, $850 million in monetary damages, including 1,400 structures, and put downtown Waterbury under 40 feet of water.

Dam Failures in the 2023 Flood

In July 2023 flood, 5 dams failed and more than 50 were overtopped. Two of the failed dams were significant hazard, and 3 were low hazard.

One of the failed dams, Hands Mill Dam in Washington, released a lot of sediment into the Jail Branch, contributing to sediment in downtown Barre. The other failures contributed to property damage and disruption, including closure of Route 116 in Middlebury. VT Digger https://vtdigger.org/2023/07/30/historic-flooding-puts-a-spotlight-on-vermonts-dams/

Dam Safety Sections of S.213

Overview: Sec 18 – 24 (pgs. 30 – 57)

S.213 provides DEC with more enforcement authority and creates a Dam Safety Revolving Loan Fund to provide financing for emergency and non-emergency removals and repairs.

The 2022 State Auditor's Report pointed out several shortcomings with the Dam Safety Program, some of which are the consequence of limited staffing. These include difficulty carrying out timely dam inspections and following up with dam owners on problems identified during the inspections.

In the past few years, DEC has worked to address these shortcomings, including the adoption of Phase I (administrative) rules and is currently working on Phase II (technical rules) to address gaps in oversight of dams and bring Vermont's program up to current national standards.

Additional staff positions are essential for the program to be able to ensure the new requirements are consistently met and take appropriate compliance and enforcement action. Further, the program will take on additional responsibility with the transfer of responsibility for regulating 22 dams from the PUC to DEC. And finally, the increased frequency of severe storms will place more frequent and widespread demands on the program for post-flood response.

Sec 18: PUC to DEC Jurisdictional Transfer (pg. 33)

Transfers jurisdiction of 22 dams built before the passage of the Federal Power Act in 1920 under Public Utility Commission (which does not have dam safety engineers) to DEC.

Of these 22 dams under PUC jurisdiction, including 4 high hazard, 6 significant hazard and the remainder low or minimal hazard. High hazard dams include:

- Chittenden Reservoir in Chittenden, Otter Creek Watershed.
- Marshfield Pond in Cabot, Winooski River Watershed.
- Wolcott in Wolcott, Lamoille River Watershed.
- Middlesex in Middlesex, Winooski River Watershed.

PUC does not have engineers on staff with expertise with dams. With so few state-regulated hydroelectric dams, it makes sense for all dams to be under the jurisdiction of one State agency, and DEC is the one with the necessary expertise.

As part of the transfer process, Sec 23 of the bill requires DEC, in coordination with the PUC, to file petitions with the Federal Energy Regulatory Commission as to whether the hydroelectric dams should be regulated by the federal government rather than the state.

S.213 completes this transfer in 2028, we have advocated for the four high hazard dams be transferred to DEC in 2025 due to the hazard level, and the remainder be transferred in 2028.

Sec 18: Dam Safety Revolving Loan Fund (pg. 44)

Emergency Funding:

- DEC should have flexibility with funding as it focuses on ‘critical’ ‘time sensitive’ and ‘temporary’ projects to repair dams.
- Two components: (A) the dam must be under DEC jurisdiction, and (B) the dam must be “in need of critical time-sensitive safety or risk reductions measures” to protect public safety.

Nonemergency Funding:

- The advocates have concerns that this will be used to repair dams when removal should be the prioritization. State funds should not be used to repair a private dam that does not provide any public benefit and that, after repairs, will continue to need regular inspections, maintenance, and could still pose a threat to the public or property.
- Agree with most of the criteria, including (A) dam must be under DEC jurisdiction, (B) must be significant or high hazard, (C) the dam owner must have a plan for operation and maintenance, as well as show sufficient financial resources to ensure this, and (D) have all necessary permits.
- However, under (E) the alternative analysis should focus on whether the removal is the preferred alternative to repair to ensure public safety, and under (F) that a loan subsidy (read: forgivable loan or grant) of state money will only go towards removal and not repair.
- Proposed Changes:
    - In (b)(2)(E) there should be no loan forgiveness for non-emergency repair or rehabilitation, only for engineering, analysis, and design that leads to removal.
    - In (b)(2)(F) to be eligible, there needs to be an alternative analysis review of removal options conducted by DEC, DFW or third-party contractors.

Sec 22. Study Committee on Dam Emergency Operations Planning (pg. 52)

Although not currently required by DEC (but will be soon under current DEC rulemaking), many large dam owners have an Emergency Action Plan, a 'written plan that identifies the area that would likely be inundated by dam failure and identifies Owner actions to protect life, property, lifelines, and the environment in the event of a dam incident or failure.' However, this is often just filed with the town in which the dam is located. But if a dam breaches or overtops, it will impact more than just the nearest town. Moreover, many towns do not have the expertise or the resources to implement the emergency plan.

The bill creates a Study Committee to review and recommend regional action planning for a dam failure and how to shift this responsibility from an individual town to a regional plan, and how to fund implementation of this at a regional level. The report is due to the Legislature on December 15, 2024.