House Committee on Natural Resources, Fish and Wildlife

Testimony of Jessica Clark Louisos, MS, PE
on
H.92, An act relating to the registration of dams

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Thank you for considering this very important issue. Dams are one type of infrastructure that are often overlooked, but when not maintained property can cause severe injury and damage. Some may argue that may of the dams in Vermont are small or low hazard. It is extremely important to understand that these dams **are not no-hazard**.

Introduce Report Card – Provided handout of Dams Section

- Civil engineers are responsible for the design, construction, operation and maintenance of our vital public works, including dams.
- **With that responsibility comes the obligation** to periodically assess the state of the infrastructure, report on its condition and performance, and advise on the steps necessary to improve it.
- VTASCE published *2014 Report Card for Vermont's Infrastructure* in October 2014, an update from the 2011 version. I coauthored the section reporting on Dams.
- Using a simple A to F school report card format, the 2014 Report Card for Vermont's Infrastructure provides a comprehensive **assessment of current infrastructure conditions and needs**, assigning grades and making recommendations for how to raise the grades. **Dams received a C, the same grade as 2011.**
- The Report Card was written by ASCE members in Vermont who assigned the grades according to the following **eight criteria**: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation.
- H.92 would address several of the issues identified by this report.

The discussion today is not a reflection on the **dedicated people of ANR who are working hard** within their limited budgets. We are here today to determine what we can do to **improve the work that can be done in the future**. And this bill does do many things to improve the future condition and safety of our dams.

In 2013, 35 percent of the dams inspected by the State of Vermont were found to be in poor condition. There could be more…

What we do not know can impact us….

- The **definition of dam** in the state is an important first step towards a comprehensive assessment of dams. I agree with the definition as written in H.92 to include most on-stream structures.
- The second step is **the registration of dams**, as would be implemented as part of this bill.
    - We know that there are dams in the landscape that are not in the current database. During a study done in 2001 in the White River Basin, researchers found 13 dams that were not even in the state inventory. Many of them did not require a permit when they were built, and they had never been assessed.
    - Stream geomorphic assessments often turn up dams that have long been forgotten. Many of these dams are past their useful lives, and no longer serving a purpose. With these dams being **out-of-sight and out-of-mind, many are not maintained, and therefore are more vulnerable toward failure**.
    - The discovery of these dams shows that the existing inventory is clearly not complete and would also suggest there could be even more dams in other parts of the state that are still not accounted for.
    - We need a mechanism to **include all dams in a registry so that the risk to public safety and the condition of the dam can be properly assessed**.
- Inspections for all dams based on hazard classification.
    - Small dams, many of which may **be low hazard – but that is not no-hazard**.
    - Many small dams had no regulatory oversight when built - unless built after the Stream Alteration general permit was in place in 2011.
    - There are examples of these failing and causing damage to downstream driveways, roads, and environmental harm.
- Requires information to be available on the Natural Resource Atlas. This is a wonderful tool that is often used by designers and planners. It is helpful to have this information available and this would ensure that it continues to be available.

Design and Operation Standards

- The bill would require adoption of rule standards for design and other activities that would modify a dam.
- The official guidance given to engineers and owners is minimal.
- It would be helpful to have a better understanding of what the Dam Safety Engineers use in their reviews.
- The process should be clear for all parties including the owner so the expectation and outcomes can be anticipated.

Call to Action

- Several dam failures have occurred in our region and our state over the past decade and Vermont's aging population of dams is a growing risk.
- The large floods that have hit the state over the past several years are a reminder of the importance of **creating resilient infrastructure**. As a Water Resource Engineer I have been intimately familiar with the other infrastructure failures and recovery efforts that we have responded to and the clear trend that large floods are happening at a **higher magnitude and more often.**
- I recommend Vermont be **proactive prior to a catastrophic event** to avoid the extensive damage and loss of life that could occur in a failure.
- Uncontrolled dam failures can be devastating and cause a chain reaction of downstream impacts which can include loss of life, damage to infrastructure, property damage, and other economic losses. Often overlooked is the damage that **uncontrolled sediment releases** can do to smother habitat, destabilize river channels, and cause bank erosion and other future risks.
- This bill is important even for the small dams or **low hazard dams, all of which have some risk associated with them**.
- The proposed legislation will get us on the right track for doing a better job managing dams to create **a better place to work and live and a safer place for our kids**.