

SEEKING A SUSTAINABLE FUTURE FOR WATERBURY DAM

SUMMARY SHEET APRIL, 2014

How we got here: Waterbury Dam was constructed between 1935 and 1938 by the Civilian Conservation Corps under the supervision and technical guidance of the U.S. Army Corps of Engineers (USACE). It is one of three flood control dams built in the Winooski River Basin as a result of the 1927 flood. The original cost of construction was funded by the U.S. government, although the State of Vermont acquired the lands and rights for construction. In 1956 and 1985 the dam underwent modifications to increase flood storage capacity and address stability issues. Both of these modifications were paid for by the government and designed and supervised by the USACE. In 2000, further stability issues were identified and the USACE once again designed and supervised the repair. However this repair, known as the Seepage Control Modification, took from 2003 until 2010 and required a State share of 1.065 percent, or about \$375,000 of the total \$22,600,000 cost.



Where we are now: The Seepage Control Modification project left the State of Vermont with a complex system of dewatering wells, monitoring wells, a computer control system, and data collection system, all of which must be operated and maintained by the State for perpetuity (or as long as Waterbury Dam exists). The system requires continual monitoring, periodic maintenance, dewatering well cleaning, and replacement of worn or malfunctioning components. Annual maintenance costs are approaching \$100,000 per year for the Seepage Control



Modification system. This cost will continue to increase over time as more of the complex components such as computers and controllers need to be replaced in the near future.



A major capital project in the near future:

During the construction of the Seepage Control Modification System, the USACE did a nationwide study of Tainter Gates (the large flood control gates located on the dam). They found that recent failures of some gates were due to inadequate design to withstand extreme events. Waterbury Dam was identified as needing to have the Tainter Gates replaced, at a cost of \$40,000,000. To add insult to injury, the



old concrete spillway at the dam is swelling, essentially making the existing gate openings smaller, which means the replacement project will need to get started within the next five years. To make matters worse, the days of the Government paying total or most of the project costs are over, and the State has been put on notice that its share will most likely be 35% of total cost, or at least \$14,000,000.

Total Cost: In today's dollar, the State of Vermont is spending \$100,000 a year on the maintenance of the Seepage Control Modification system. This adds up to at least \$1,000,000 every ten years. Add to that the \$14,000,000 needed within five years and the obligation becomes staggering! And this doesn't include current personnel costs associated with the dam or future repair costs (based on the repair history of Waterbury Dam, it's likely another major repair will be needed in 20 years or so).

THE SOLUTION: There is a solution to this high cost, labor intensive situation at Waterbury Dam. Back in 2006, as a critical phase of the seepage control modification system was being completed, the former dam safety engineer started an initiative to have the USACE take over the responsibility of the annual operation and maintenance of the dam, including full responsibility for all future repairs. This initiative was moving forward during Senator James Jeffords last term in office, and unfortunately Senator Jeffords retired before the initiative was completed. However, it was recognized at that time that the situation at Waterbury Dam was not sustainable, and the State of Vermont would be better served by having USACE assume responsibility. A similar initiative took place in Rhode Island in 2008 when Senator Jack Reed successfully transferred the Woonsocket local flood control project to the USACE via an act of Congress. The Rhode Island initiative was described as saving the City of Woonsocket hundreds of thousands in annual maintenance costs and millions of dollars in future repairs.

The State of Vermont, Dam Safety is now proposing that the initiative started in 2006 and proven to work in 2008 be completed. The savings to Vermont are significant, and transferring responsibility to the USACE, which has been in existence since 1775, assures that the dam will be properly operated, maintained, and repaired in perpetuity. Besides, the USACE already has full responsibility for five flood control dams in Vermont and about 30 more in New England.

