

**DAM SAFETY PROGRAM  
 FACILITIES ENGINEERING DIVISION  
 DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 AGENCY OF NATURAL RESOURCES  
 March, 2014**

**1. Number of Dams**

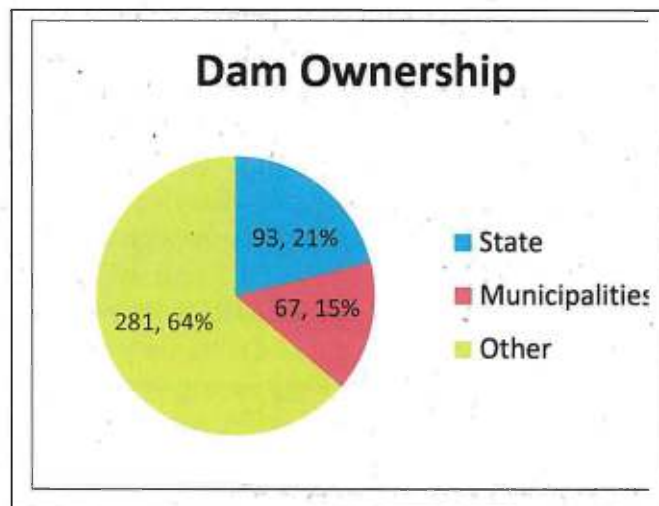
- There are 1249 inventoried dams in Vermont
- 534 of these are subject to 10 V.S.A. Chapter 43 (Dams) §1082 (dams capable of impounding more than 500,000 cubic feet or 3,740,000 gallons requiring authorization to construct, alter, or remove).
- 441 of the 534 are under jurisdiction of the Department of Environmental Conservation (DEC), 90 by PSB and 3 by NRCD.
- Of the 441 under jurisdiction of DEC Dam Safety, 39 are high hazard, 113 are significant hazard, and 289 are low hazard.

		<u>Loss of life</u>	<u>Economic loss</u>
39	High hazard:	More than few	Excessive
113	Significant hazard:	Few	Appreciable
289	Low hazard	None expected	Minimal

**2. Ownership**

Of the 441 under jurisdiction of the DEC:

- State of Vermont owns 93 dams
  - ANR 90 – 64 DFW, 14 DEC, 12 FPR
  - AOT 2
  - State College System 1
  - Of the 93 state owned dams, 8 are high hazard
- Municipalities own 67 dams
  - Of these, 20 are high hazard
- The remaining 281 owned by:
  - Ski areas
  - Individuals
  - Foundations or Trusts
  - Trout Clubs
  - Homeowner Associations and Fire Districts



**3. What the Dam Safety Program does**

Staff of 2 full time Engineers in Dam Safety, 1 or 2 summer interns (typically mid-May to mid-August). Primary objective is to protect public safety through permits, inspections, and informing dam owners of responsibilities, liabilities, and proper operation and maintenance of dams.

- Review applications and issue permits (Chapter 43 orders) for construction, alterations, or removal of jurisdictional size dams.
  - Determine authorization per §1082
  - Review applications per §1083, §1087
  - Notice of application per §1085

- Determination of public good per §1086
- Fish and Wildlife investigations per §1084
- Issue 5 to 6 permits in average year
- Inspections per §1105
  - Goal is to do >100 per year, concentrate on jurisdictional size first
  - Ideally, all of the high hazard (39) yearly
  - Ideally, Significant hazard every 3 to 5 years (111 of 113 have been inspected within last 3 years)
  - Low hazard every 5 to 10 years (181 of 289 have been inspected within last 10 years)
  - As time allows, we will inspect smaller dams (<500,000 cubic feet) if requested by owner
- Unsafe Dam proceedings per §1095
  - Initiated by petition of interested persons or municipality, or agency having jurisdiction
  - Requires investigation, hearing, and order directing repairs or other actions if dam is found unsafe.
  - Used infrequently (14 times since 1955). Program strives to educate, recommend repairs or maintenance through inspection program, but will use unsafe dam proceeding if necessary.
  - Unsafe Dam Revolving Loan Fund Rules effective February 2014
- Emergency Action Plans (EAP)
  - Ongoing project, plans are developed for monitoring protocol, inundation mapping, and notification procedures in the event of severe storms or imminent dam failure.
  - Approximately 87% of high hazard dams have EAPs, working towards having a plan for all high hazard dams.
  - Renewed interest in this project, mostly due to downstream development and homeland security.
- Educate dam owners and the public
  - Send out packets of information pertaining to program.
  - Telephone conversations or site visits.
  - Meet with dam owners, committees, Town officials.
- Monitor and Operate the three Winooski River flood control dams owned by DEC
  - Wrightsville, East Barre, Waterbury
  - Waterbury is inspected weekly, monitored daily due to recent completion of seepage control project
  - East Barre, Wrightsville levels monitored daily, inspected monthly
- Provide engineering services for the 90 dams owned by the Agency of Natural Resources.
  - Identify deficiencies through inspection program
  - Identify projects on 5 year action plans
  - Identify projects suitable for the Federal Water Resources Development Act (Section 543)
  - Request capital funding for projects
  - Do in house engineering or consult
  - Obtain permits and manage the project

#### 4. Recent projects/expenditures

- Silver Lake Dam, Barnard. Fall 2010 – Spring 2011. Slip lined outlet pipes, repairs to concrete and steel grating.
- Lake Groton Dam, Groton. Fall 2011. Replaced 50 feet of deteriorated spillway, including stop log channels.
- Great Hosmer Pond Dam, Craftsbury. Summer 2012. Replaced deteriorated dam.
- Waterbury Dam, Waterbury. Summer 2012. Major maintenance cycle (cleaning of dewatering wells and conduit filter drain pipe).
- Wolcott Pond Dam, Wolcott. Design underway to replace outlet barrel and repairs to principal spillway structure. 30% design completed, hope to reconstruct fall of 2014 or spring/summer 2015.
- Dufresne Pond Dam, Manchester. Dam removed summer 2013.
- Lake Sadawga design. Replacement spillway under design. To be replaced 2014 or 2015.