

For the House Committee on Fish, Wildlife and Water Resources  
a summary of:

# Dam Failures in Vermont

By Andrew Marchev,  
Vermont Natural Resources Council

# Research Questions

- Have dams broken in VT?
- Have they caused damage?
- Should we worry about the age of our dams?
- Should we worry about the condition of our dams?

# Rutland 1947 :Chittenden Dam





A Chittenden house dragged down stream to sit squarely in the brook

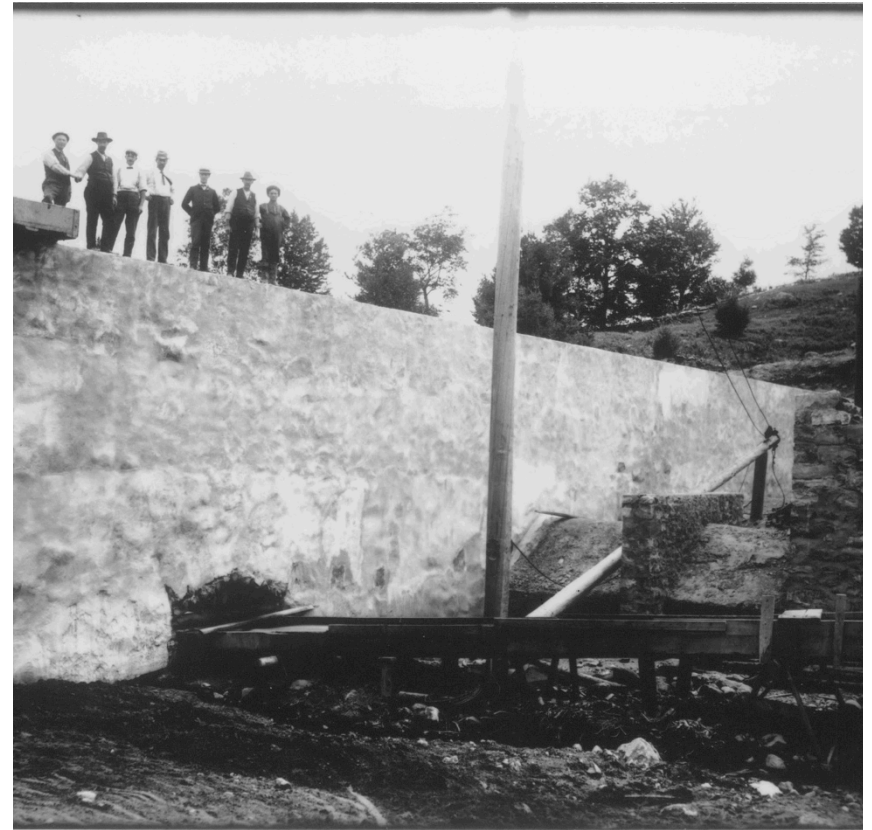
--Rutland Historical Society

# East Pittsford Dam

**RESERVOIR**



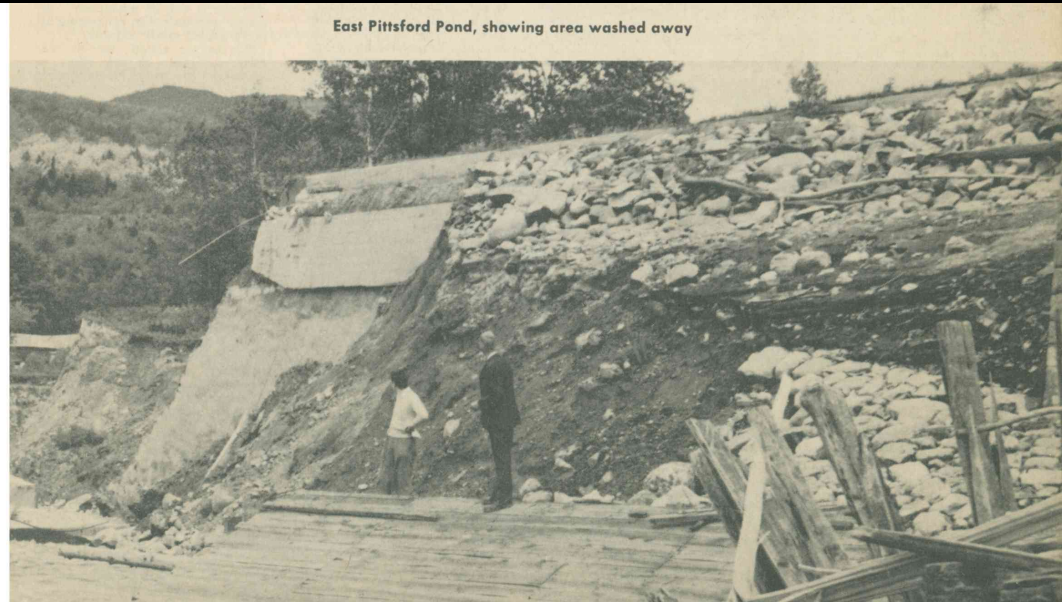
**AT CONSTRUCTION**



# Chittenden Spillway Erosion



# Damage of East Pittsford Dam



--Rutland Historical Society



# Patch Dam

DURING FLOOD



POST FLOOD



*Rutland Vermont Flood - - Patch Dam*





EVACUATING AT MAPLE ST. NEAR SUMMER ST 6/3/47

# Rutland Flood Aftermath



*Rutland Vermont Flood - Homes On Cleveland Ave.*

# Rutland Flood Aftermath



# Rutland Flood Aftermath



## Rumor of Dam Break Starts Panic in Stricken City



Their truck loaded with what possessions they could salvage, these evacuees look back once more before driving away

Two motor vehicles buried in debris



# Aftermath by the Numbers

- 300 homes, businesses and industrial buildings damaged
- Train lines, Route 7 and many other roads closed for 7 days
- Water out for 2 days.
- Most Infrastructure took one week to bring back
- Damage totaled 5 million\$

Water, water everywhere,  
but not a drop to drink  
except that obtained at  
springs or brought in large  
milk tankers

## Gibson Tours Flood Area


Governor, in Second Trip  
Here, Praises Rehabilitation  
Job.

Gov. Ernest W. Gibson completed his second personal canvass of the flood, stricken area when he arrived here yesterday afternoon to inspect both the Chittenden Dam and the site of the washed-out East Pittsford dam.

Arriving here by car at 2 p. m., the Governor was accompanied on his tour by Murdock A. Campbell, adjutant general, Lt. Col. Francis W. Billado, executive officer of the 172d Infantry, National Guard, and Paul A. Chase of Ludlow, chairman of the Vermont Public Service commission, who arrived here last week to open investigation of the condition and pre-flood handling of Chittenden and East Pittsford dams.



The wreckage of the destroyed steel bridge provides a frame for this picture, showing train passing over temporary West Street trestle



## Army Bares Plan To Evacuate City

Huge 'Tent City' Capable of Housing 6000 Would Have Been Established in Event Chittenden Dam Broke; Supplies Were Marshalled.

# Damaging Dam Breaks in Vermont Since 1984

- N. Montpelier Pond 1984
- Wards Pond,  
Morristown 1984
- Noonan, Norwich 1986
- N. Montpelier Pond 1990
- Wolcott Reservoir 1995
- Rinse, Dorset 1995
- Golf Course Pond,  
Warren 1998
- Clay Brook W.S., Warren  
1998
- Day Farm, Sharon 2000
- West Pawlet F.D. 2000
- Bald Mountain Pond,  
Townshend 2003
- Horwitz, Williamstown,  
2006 & 2007
- Cloud Brook, Barnet 2008

**Total: 13 breaks in 30 years**

# Break of North Montpelier Pond, and Wards Pond '84

## The Flood Of '84 Storm Deluges Central Vermont



The broken dam at Ward's Pond that sent water gushing into people's home on the Randolph Road. About 23 people were displaced as a result. Tillotson photo



Members of the Allen family on Randolph Road inspect the severed road near their home. Tillotson photo



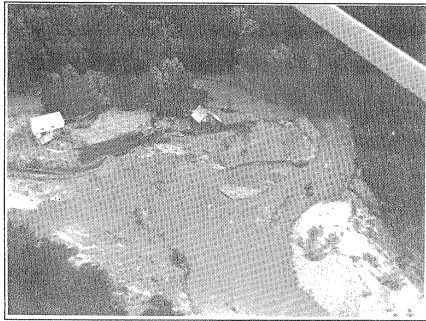
The Kingsbury branch moves around the dam in North Montpelier. (Pirle photo - From Times Argus)

Courtesy of News and Citizen



# 1998 Flood of Mad River Valley

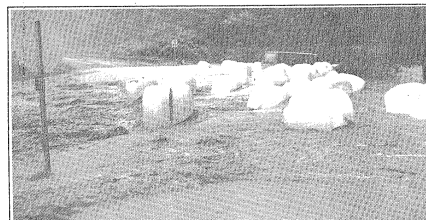
## Flash flooding leaves mess, mud, no lives lost



An aerial view, made possible by Warren pilot Jim Parker, shows the degree to which the Mad River breached its banks. Shown on the left is the wreckage of Jeff Allen's house and Laura Peterson's trailer. The Corbell home on the right also suffered flood damage. Photo: LAL



Bridge Street in Waitsfield became a lake when flood waters stretched from the marketplace shopping center up to the back of the white Waitsfield house and spread across Bridge Street. This photo was taken at 6:30 a.m. when the water had begun to recede. Photo: LAL



Hay bales and an abandoned van adorn the bottom of the Tremblay Road in Waitsfield where flood waters crossed Route 100 on June 27. Photo: LAL

by Lisa Loomis  
Last weekend's flash flood was the equivalent of a 500-year flood, according to Barry Cahoun, stream bank alteration engineer for the Vermont Agency of Natural Resources. Cahoun said the flooding, which has garnered The Valley and other parts of Central Vermont federal disaster status, was of a magnitude seldom seen, and never, in recent history, recorded.

Extremely heavy and pervasive rain fell on just twenty percent of the Mad River's water shed area between Friday night and Saturday morning, June 26 and 27. The rain followed many days of rain and found The Valley saturated. The heavy rains fell on Warren, Stetson Hollow, south of Warren, and in the Lincoln Mountain area. The upland streams outgrew their banks and the water rushed into the Mad River at high speeds, sending ever rising waters rushing northward.

"When we measured the volume of water at the U.S.G.S. gauge north of Moretown, it came in as a fifty year flood, but that is not really representative because it doesn't take into account that the water came from just twenty percent of the river's watershed. The water measured in Warren, was a foot above the 100 year flood level, which would make it a 500 year flood," Cahoun said.

Stream banks in the tributaries that feed the Mad River from Stetson Hollow to the Sugarbush Access Road, burst out of their boundaries, eating up and eroding roads, yards, trees, and more as the water

headed for the Mad River. In the aftermath of last weekend's flooding, local emergency workers kept an eye on the river, while local officials worked with Federal Emergency Management Agency personnel (FEMA), the Red Cross, state officials and visiting politicians, showing them the extent of the damage and where help is needed.

Road crews from throughout The Valley and Sugarbush came to the aid of the towns and roads with the greatest need while friends and volunteers helped those whose homes and businesses were damaged by the flood.

The three people who were rescued from a home amidst the flood waters in Warren are reported to be recovering and all those who were up all night seeing to their rescue and the safety of others had tried to catch up on lost sleep.

The fast flash flood swept through The Valley from Warren to Moretown, starting just after midnight on July 27. Flood waters peaked in Warren and Waitsfield as early as 6:00 a.m., according to some, and in Moretown, between 11:00 a.m. to 12:00 noon. By noon, clean up had begun and by Sunday, July 28, Governor

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Flood photos in this issue of The Valley Reporter were taken by John Williams, Chris Behn, Hilary McAlister, Jeffrey Rice, Russ Bennett, Ken Felderman, Barbara Bonan, Michelle Boleski, Keith Davidson, Al Benjamin, Phil King, and Lisa Loomis.

- Federally declared disaster.
- 17 million in initial damage



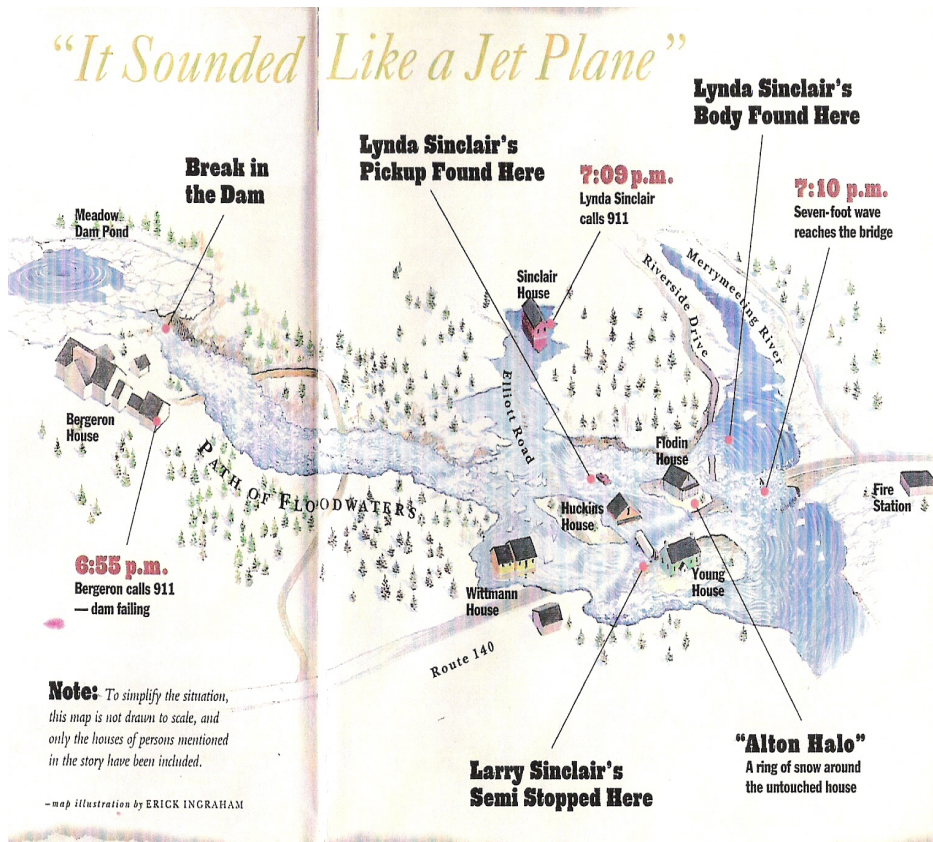
Photo by Chris Behn, courtesy of The Valley Reporter

Jim Hood hugs Mad River Valley Ambulance Service's David Clark after Hood was rescued from a precarious perch during the June 27 flood. Photo: KFD

# Recent Failures

- Manley Dam, Marlboro 2011
- Bryan dam, Morristown 2012
- Shashoua dam, Warren 2014

# Dam breaks in nearby States



## ALTON, NH 1996

- One woman killed when trying to escape.
- 10 Homes damaged
- 1/4 mile of road destroyed.
- 8 million in damage.

# Dam breaks in nearby States

## FORT ANN, NY 2005

- Over 200 people forced to evacuate.
- Burst despite a 2 million dollar renovation.
- 4 million dollars in damage.



# Questions Answered

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