

Dam safety... a many-sided problem

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Audrey Handelman photos

A view across Lake Williams.

Federal inspection program

The problems surrounding the issue of dam safety are problems common to many issues which involve interaction among many groups and many different levels of government. Although the road to improving dam safety in the United States has been paved with good intentions, too often lack of money and political impasses have slowed progress to a standstill.

Dam safety gained national attention between 1972 and 1977, when failures around the country claimed 500 lives, injured many people and caused an estimated \$2 billion in damages. Among these failures were the collapses of the Buffalo Creek coal wastebank in West Virginia, the Kelley Barnes Dam in Toccoa, Georgia, and the Teton Dam in Idaho.

The high costs and devastating aftereffects of these

failures prompted President Nixon to sign the National Dam Inspection Act of 1972. This bill called for the Army Corps of Engineers to inspect every dam in the nation over 25 feet in height, or with a capacity to impound more than 50 acre-feet of water.

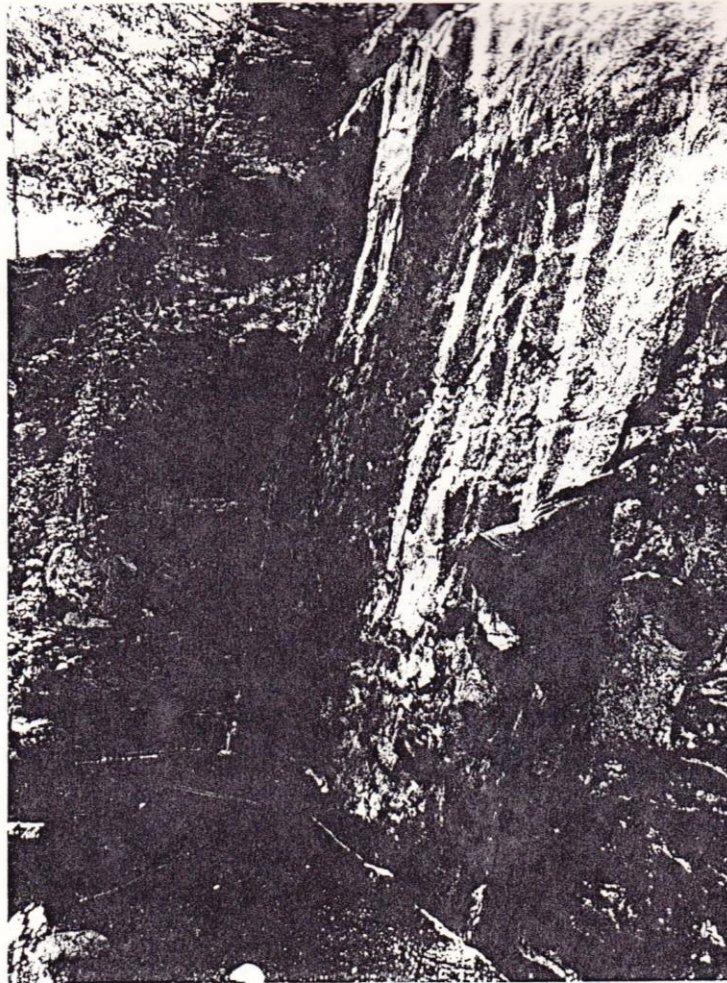
Neither Nixon nor President Ford, however, approved funding for the National Dam Inspection Act, and it was not until mid-1977 that Congress, under Pres-

ident Carter, voted \$15 million for the project. A four-year program of inspection by the Army Corps of Engineers then began and should be completed by the end of the 1981 fiscal year. The program is to include inspection of approximately 9,000 non-federal dams designated "high hazard." ("High hazard" or "high damage potential" ratings are based only upon the degree of development downstream, not actual safety testing of individual structures.)

As of October 31, 1980, 6,692 dams had been inspected, of which 2,008 (30 percent) were determined unsafe, and 101 (5 percent) were felt to require emergency action. Upon completion of the federal inspection program, states are supposed to conduct their own dam safety programs, following up on federal findings with repair and maintenance measures.

The expectation that states will continue to improve dam safety by following up on inspections made under the federal program presents several problems. Once the Corps of Engineers has identified an unsafe dam, further action rests with the dam's owner, which may be an individual, a corporation, a city, or a state. According to Victor Galgowski, Connecticut's Superintendent of Dam Maintenance, who is in charge of State dam inspections under DEP's Water Resources Unit, lack of funds is the major obstacle to improving unsafe dams. Federal funds for continuing safety inspections and improvements have not been made available. "And now, with recent budget cuts under the new administration, it's going to be even more difficult," Galgowski says.

There are a number of options available to a dam owner who has been notified that his dam is unsafe. Each option, though, has its drawbacks. The lake or reservoir may be lowered or emptied or the dam breached, alleviating the potentially hazardous situation. But in many cases, the public depends upon the impoundment for water or power supplies.



Lake Williams Dam seen from below.

The owner may choose to abandon or sell the facility. This choice, however, only transfers responsibility for the dam's repair and maintenance to another party.

If the owner does nothing, he will not only face state penalties and the possibility of heavy liability claims in the event of a failure, but he may also be endangering the lives and property of citizens downstream. The same is true if the owner decides to contest inspection results with an independent engineering review, since this procedure will involve considerable delay.

The remaining alternative—repairing or eliminating the structural deficiency which is causing the dam to be judged unsafe -- is often a task beyond the financial means of the owner. While the federal government recognizes financial need, and, as of April 1981, was working through FEMA (Federal Emergency Management Agency) on various loan plans to aid owners of unsafe dams, no plans have yet come through.

Connecticut's Inspection Program

Many states, like Connecticut, have dam safety legis-

lation of their own. Connecticut's has been on the books for about 100 years, but it was not until severe flooding in 1955 caused heavy damages that a statewide inventory was undertaken. Approximately 3,000 dams have been inventoried since then, of which 1,100 were considered large enough to merit attention. Of these, 325 are rated as "high damage potential" dams according to the Corps of Engineers' classifications.

The National Dam Inspection Act has placed a burden on Connecticut dam owners, as it has on owners in other states. After the initial inspection, further investigation and repair are not funded by the federal government, but the federal government expects that dam owners will conform to federally determined safety standards. Connecticut has agreed to enforce these standards.

Do all of Connecticut's 325 "high damage potential" dams actually merit great concern? According to Galgowski, the Army Corps of Engineers has established very stringent safety criteria. He feels that the requirements are often unnecessarily conservative and force owners into costly repairs and replacements which are not always needed.

Limited funds severely restrict the scope of Connecticut's dam safety inspection program. Galgowski works with two assistants, but because money and manpower are short, they are unable to conduct regular inspections around the State. Instead, they inspect in response to calls received from concerned citizens about particular dams.

One good thing to come out of the Federal Dam Inspection Act has been the formulation of emergency operating procedures for dam owners. These plans assure that during periods of high flood probability, such as heavy rains, dams will be closely watched. In the event of impending failure, dam owners are required to alert the proper officials who can then carry out evacuation of downstream areas.

Case study-- Williams Pond Dam in Lebanon

Williams Pond Dam is an earthen dam with a stone masonry downstream face which was constructed in 1865 by the Kent Manufacturing Company. Popularly known as Lake Williams Dam, the structure is approximately 280 feet long and 23 feet in height and impounds an area of water of about 265 acres. Because of its age, the dam was not designed or constructed according to building principles currently in use, nor does it conform to present safety regulations -- a problem among many old dams. Its present owners, Gilman Brothers, Inc., a manufacturing facility in Gilman, purchased the dam in 1905. It is now operated by them, as the Bozrah Light and Power Company, to supplement water supply and power generation for the downstream manufacturing facility.

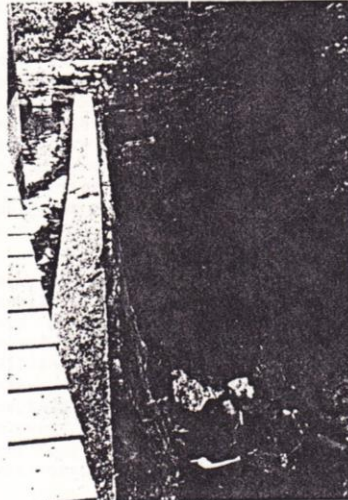
In October 1948, owners of cottages around the shore of Lake Williams found themselves "facing a mud-flat, dotted with ugly looking stumps of dead trees," according to the Bridgeport "Sunday Herald" of October 17. The lake had been drained by the Gilman Company to permit dam repairs and was not expected to refill until the following autumn.

The cottage owners then formed the Lake Williams Beach Association, an organization chartered by the legislature and given the power of taxation. Members of the Association attempted to meet with the President of the Boston-based company which had sold them their land in the spring of 1948. The property owners claimed that the Boston company had misled buyers with a hard selling campaign, informing one woman that the lake was 35 feet deep and naturally formed and failing to inform buyers that the Gilman Company, which remained the owner of the dam, retained the right to drain the lake at any time. The property owners felt helpless to protest.

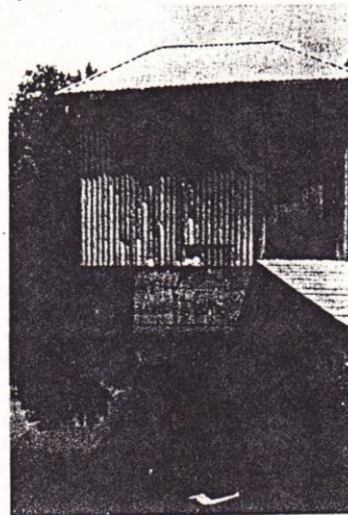
Today, the citizens around Lake Williams again face the

prospect of a drained lake. Gloria Hanczar, currently President of the Lake Williams Beach Association, explains the situation.

On January 26, 1979, the Association received a letter from the Gilman Company stating that "we have orders from the people in Hartford to do some very expensive major repairs to our dam in Williams Pond." The Gilman Company was asking for a sum of \$10,000 a year from



The spillway, from top of the dam.



The gatehouse at the dam.

members of the Association to pay for the repairs.

In March of 1979, a community meeting was held, at which the Association formed the Williams Dam Study Committee, consisting of both association and non-association members. (The chartered Lake Williams Beach Association consists of 126 landowners, most of whom live on the northeast side of the lake. There are only about ten property owners on the other side of the lake, and they were not designated as Association members when the charter was made official in 1953.)

Members of the Association wanted a guarantee, in the form of a contract, that the water in the lake would be maintained at a certain level if they paid the \$10,000 annually. But the owners would not agree to this and cut off contract negotiations.

The following winter (1979-80), the dam was opened from December to February, and water flowed out from under the ice. This presented a safety hazard; as the water level dropped, the ice weakened and thinned in spots. "The lake looked like a big bowl of ice," says Gloria Hanczar. "You could skate downhill from the edges in. My husband and several other people fell in a few times."

By March of 1980, little water was left, and by April, the lake was practically empty. "We had a long list of concerns," Hanczar explains, "not the least of which were falling property values and safety, "but environmental concerns were at the top of our list. We talked to Robert Cortman, a private environmental consultant from the University of Connecticut, and found that the lake had been drained at just about the worst possible time."

The spring draining resulted in a massive fish kill that summer. "I felt so badly," Hanczar says, "The fish were lying piled up at the bottom of the dam, literally inches thick, with hardly any water around them."

Weeds began to grow on the exposed soil. There was no boating or fishing that summer.

Ray Kanter, who owns Kanter's Sales and Service as well as a boat rental and camping facility off Route 207, about a quarter of a mile west of the dam, feels that the Gilman Company is justified in requesting money from the property owners around the lake. Asked what he thought might be a possible reason for the property owners' reluctance to pay, Kanter answered, "They've been getting the lake for free all these years. I guess they figure, why should we start paying now?"

Gloria Hanczar explains the situation differently. "We would have paid the money if we had received some assurance that the lake would be maintained at a reasonable level. Ray Kanter has nothing to lose by paying the money. He's on the southwest side of the lake, where the water is deeper. Even if the lake were almost completely drained, there would probably be a bit of water at his end, although our end would be dry. He doesn't want to make waves -- the Gilman Company is well-established and powerful."

But the Lake Williams Beach Association is making waves. In November 1980, the Legal Committee of the Association voted 25 to five to go to court to prove their rights as property owners. "Until now," Hanczar says, "we had all assumed that we had no rights, that there was nothing we could do. We believe now that we do have rights, and we're willing to try to prove it in court." The situation is beginning to affect the area adversely. In the last year and a half, there have been only two sales of property around the lake. "I know that the real estate market hasn't been great lately," Hanczar continues, "But I don't think it's that bad. The whole situation is really upsetting people emotionally."

What are the rights of the property owners of Lake Williams? "It's hard to say," Galgowski comments. "It depends on exactly how their property deeds are worded. We'll have to wait until they go to court and see."

Lawrence Gilman, president of the Gilman Company, declined to comment on the situation at the Lake, but emphasized that his company's relationship with DEP, which is responsible for enforcing all actions relating to the safety of the dam, was "very good, very productive."

Making do with what exists

The case of the Lake Williams Dam is complicated, but the problems it exemplifies are similar to those raised in regard to many dams.

At stake in the issue of dam safety are the lives and property of those citizens living downstream from the dam, who might be endangered if a structure were not sound. The purpose of the Federal Dam Inspection Act and state safety programs is to protect the lives and property of such citizens.

But the considerations are numerous and complex. A statute designed to protect the lives and property of some citizens may harm others, as in the Lake Williams case. The statute may make unreasonable demands on certain citizens, such as dam owners, may be difficult to enforce, or may harm the environment.

Whether or not members of the Lake Williams Beach Association win their case in court, hundreds of other dams throughout the country face the same kinds of problems and conflicts of interests. Even if all potentially hazardous dams were restored to satisfactory condition, programs could not end there. Dams are subject to the constantly changing conditions of the natural environment and must be frequently monitored.

There are many problems with the present programs for dam safety. Modifications are needed to make state and federal inspection efforts work together more smoothly and to incorporate the wide range of financial, environmental, social, and personal concerns related to the issue. Until such modifications are made, the existing system, which has as its primary concern people's lives, seems better than no system at all. ■