

MINUTES OF THE MEETING
NATURAL RESOURCES COMMITTEE
MONTANA STATE
HOUSE OF REPRESENTATIVES

March 18, 1985

The meeting of the Natural Resources Committee was called to order by Chairman Dennis Iverson at 4:45 p.m. in Room 312-1 of the State Capitol.

ROLL CALL: Representatives Asay and Krueger were excused; all other members were present.

SENATE BILL 273: Sen. Gene Thayer, District 19, introduced SB 273, which he sponsored at the request of the department of natural resources and conservation. Sen. Thayer explained that the department administers various water projects around the state, and has requested a statutory clarification of its authority to enter contracts regarding those water projects. SB 273 sets out specific authority and contract requirements, he said.

PROPOSERS: Larry Fasbender, director of the department of natural resources and conservation, spoke in favor of the bill. He said SB 273 will aid the department in carrying out its responsibilities regarding state-owned water projects.

There were no further proponents, and no opponents to SB 273.

Rep. Miles asked for an explanation of the new language in Section 3, part (2), which states that the provisions of that part do not apply to contracts for state water projects if the proposed construction costs are less than \$25,000, and was told that the Legislative Council recommended that the language be added to make the bill consistent with existing law.

Rep. Harp asked how many state-owned water projects are begun each year that cost more than \$25,000, and how many are begun that cost less than \$25,000. Mr. Fasbender said he had no figures in that regard, but Rick Bondy, a DRNC employee, said that approximately six projects are begun each year in each of those categories.

Sen. Thayer closed by asking for the committee's endorsement, and noted that the bill met no opposition in the Senate.

Rep. O'Hara agreed to carry SB 273 on the floor of the House.

SENATE BILL 369: Senate Bill 369 was introduced by the sponsor, Sen. Ted Neuman, District 21. Sen. Neuman explained that the bill is known as the "Dam Safety Act," and revises current statutes relating to the operation and maintenance of dams and reservoirs in the state.

Sen. Neuman told the committee that under current Montana law, if a dam fails, the operator of the dam may be held personally liable for any injury or loss of life that occur. However, that operator does not have the benefit of regular inspection by qualified state personnel to make certain the dam is safe, said Sen. Neuman. Under HB 369, clear regulations governing the frequency and nature of dam inspections are set forth, and the state assumes responsibility for the safety of dam and reservoir operations. Sen. Neuman told the committee that HB 369 provides a "workable and clearly defined system of dam safety."

Sen. Neuman said the key definitions included in the bill are those in Section 2, parts (4) and (9), which define the size of dams to be covered and what constitutes a "high-hazard dam."

Sen. Neuman outlined the obvious need for a dam safety program to prevent loss of property and life, and noted that under federal law, the Soil Conservation Service will no longer be able to provide assistance to states without a dam safety act. Without SB 369, he said, Montana will lose its cost-share benefits from the SCS. A copy of his testimony is attached as Exhibit 1.

PROPONENTS:

Ken Kelly, of the Montana Water Development Association, rose in support of SB 369. He said it is vital that Montana have a dam policy, and that SB 369 provides an excellent framework. He presented informational material compiled by the Cooperative Extension Service at Montana State University, attached as Exhibits 2 and 3, and a letter of support from the state conservationist, attached as Exhibit 4.

Ted Doney, an attorney speaking for the Montana Water Development Association, said he helped draft SB 369, which was modeled after previous house bills that had been killed in earlier sessions. SB 369 is superior to those bills, he said. He noted that SB 369 limits the liability of the dam owner or operator in case of failure. He explained that if an operator receives state approval after an inspection, the state, and not the operator, should bear the cost of failure.

Rodger Foster, a consulting engineer, told the committee that Montana has a strong stance for public safety in other legislation, but that stance has been absent in the issue of regulating dam safety. Existing law is reactive, and not preventive, he said. Routine inspection and maintenance

reduce emergency costs, he said. Mr. Foster went on to say that most dams fail as a result of lack of maintenance or other operational problems, and SB 369 would address that problem. The bill would not allow deferral of costs at the expense of public safety, he said.

Dave Donaldson, representing the Montana Association of Conservation Districts, said that group supports SB 369, but said that water-spreading systems should be included in the bill. A copy of his testimony is attached as Exhibit 5.

Rick Bondy, representing the department of natural resources and conservation, said the department supports the bill.

There were no further proponents, and no opponents. The floor was opened to questions from committee.

Rep. Addy asked Mr. Doney to comment on whether SB 369 would in fact be weaker than existing law. Rep. Addy said it appeared that if someone wanted to file a complaint about an unsafe dam under the terms of SB 369, that complaining party would be required to post a bond in order for the state to investigate the problem. Further, there would be no penalty against the dam operator under SB 369, said Rep. Addy. Mr. Doney responded by saying that DNRC currently has no authority to require correction of dam problems, and that SB 369 is in fact more forceful than existing law because it allows for DNRC enforcement. He added that the weakening of liability on the part of the operator or owner is intentional, and that such liability should rest with the state.

Rep. Miles asked Mr. Doney why SB 369 exempts dams connected to mines, and Mr. Doney explained that those dams and reservoirs are already covered by more stringent existing regulations through the DSL permitting process.

Rep. O'Hara asked what problems existed with the earlier bills to which Mr. Doney referred and was told that those bills were criticized for infringing on private property rights.

In answer to a question from Rep. Grady, Mr. Bondy said that state-owned dams are inspected annually now, so there would be no additional fiscal impact for the inspection of those dams.

There were no further questions, and Sen. Neuman closed by asking the committee to approve SB 369 "in some form" because it is needed legislation.

EXECUTIVE ACTION:

SENATE BILL 369: Rep. Grady moved that SB 369 BE CONCURRED IN. Rep. Addy moved to amend the bill on page 12, line 4, by striking "insufficient" and inserting "sufficient." To leave the present wording, he said, allows a loophole that "you can drive a freight train through" in the event of litigation. Rep. Addy's amendment was unanimously approved.

Rep. Cobb asked for an explanation of the repealer clause on page 14. Mr. Bondy said the clause would reinstate a limited procedure exercised by county attorneys, but that the bill would not otherwise be affected if the repealer were not included.

Rep. Raney asked why Sen. Neuman would want the repealer included in the bill, and Mr. Bondy said some small dams might be ignored as a consequence of leaving out the clause.

Rep. Raney moved to repeal only section 85-15-103, and that motion was approved with Rep. Iverson voting no.

On O'Hara's motion of DO BE CONCURRED IN AS AMENDED, the bill was unanimously approved.

SENATE BILL 273: Researcher Hugh Zackheim contacted the Legislative Council immediately following the hearing on SB 273 to confirm the need for the new language inserted in Section 3, part (2) of SB 273. A representative of the Legislative Council said that new language was mistakenly added by the Council, and that the new section would make the bill do more than the department had intended. For that reason, Rep. Kadas moved to strike Section 3 of SB 273, and to amend Section 1, part (4) to make it consistent with the exclusion of Section 3.

Rep. O'Hara moved that SB 273 BE CONCURRED IN. Rep. Kadas's proposed amendments were approved unanimously. Rep. Addy moved that page 1, line 14 be amended to include the words "state-owned" preceding "works." That amendment was approved unanimously. Rep. O'Hara moved that SB 273 BE CONCURRED IN AS AMENDED, which passed unanimously.

HOUSE BILL 899: Rep. Kadas moved that the committee reconsider its action of March 15, at which time it recommended that HB 899 be passed as amended. He said he had conferred with the department of revenue regarding the amendment No. 9 that he had submitted to the committee, and which was approved on March 15. He submitted a substitute amendment for No. 9, along with additional amendments proposed

by the department of revenue to establish enforcement authority consistent with existing statutes. Rep. Kadas moved those amendments, which were approved with Reps. Harp, Grady, Garcia, Smith, Jones and Peterson voting no. Rep. Kadas then moved DO PASS AS AMENDED, which passed 10-7. Rep. Kadas moved that the statement of intent be attached, and that motion was approved 10-7.

There being no further business before the committee, the meeting was adjourned at 6:10 p.m.



Rep. DENNIS IVERSON, Chairman

DAILY ROLL CALL

HOUSE NATURAL RESOURCES

COMMITTEE

49th LEGISLATIVE SESSION -- 1985

Date

3/10/85

NAME	PRESENT	ABSENT	EXCUSED
IVERSON, Dennis (Chairman)	X		
KADAS, Mike (Vice-Chairman)	X		
ADDY, Kelly	X		
ASAY, Tom	X		X
COBB, John	X		
DRISCOLL, Jerry	X		
GARCIA, Rodney	X		
GRADY, Edward	X		
HARP, John	X		
JONES, Tom	X		
KRUEGER, Kurt	X		X
MILES, Joan	X		
MOORE, Janet	X		
O'HARA, Jesse	X		
PETERSON, Mary Lou	X		
RANEY, Bob	X		
REAM, Bob	X		
SMITH, Clyde	X		

STANDING COMMITTEE REPORT

.....March 13, 1985..... 19.....

MR.SPEAKER:.....

We, your committee onNATURAL RESOURCES.....

having had under considerationHOUSE BILL..... Bill No.399.....

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AN ACT ESTABLISHING A RECYCLING EDUCATION AND PROMOTION PROGRAM

Respectfully report as follows: That.....HOUSE BILL...399..... Bill No.....

BE AMENDED AS FOLLOWS:

- 1) Page 2, line 3.
Following: "beverage,"
Insert: "wine,"
- 2) Page 2, line 4.
Following: "carbonated"
Insert: "or noncarbonated"
- 3) Page 2, line 7.
Following: "beverage"
Insert: ", but does not include any container for which
a deposit is collected"

CONTINUED ON FOLLOWING PAGE

RDQ PASS
XXXXXX

March 13

1935

4. Page 3, line 6.

Strike: "beverage"

Insert: "beer"

5. Page 3, line 9 and 10.

Following: "the"

Strike: "beverage" on line 9 through "container" on line 10

Insert: "soft drink bottling and distribution"

6. Page 3, line 12.

Strike: "and"

7. Page 3, line 13.

Following: "organization"

Insert: "; and (h) a representative of the retail grocery industry"

8. Page 5, line 24.

Strike: "under [section 9]"

9. Page 7, line 12.

Following: "material"

Insert: " -- penalty"

10. Page 7, lines 18 through 21.

Strike: "remitted" on line 18 through line 21 in its entirety

Insert: "paid by any entity taxable by the State of Montana which distributes beverages in such containers to retail outlets in Montana. The tax on newspaper must be paid on the initial distribution in Montana by an entity taxable by the State of Montana of a publication made from newspaper."

11. Page 3.

Following: line 1

Insert: "(4) Failure to remit taxes required under this section is subject to the penalties and procedures provided for in 16-1-409 subsections (2) through (4)."

NEW SECTION. Section 11. Confidentiality of tax information -- penalty for violation. (1) Except in accordance with proper judicial order or as otherwise provided by law, it is unlawful for the department or the department of revenue or any employee or agent to divulge or make known in any manner the amount of sales of beverage containers or newspaper by any specific individual or corporation subject to the tax provided for in [section 10].

(2) The department may publish cumulative statistics in a manner that maintains as confidential all information on the amount of sales by any specific taxpayer and that prevents the identification of or attribution of identifiable reports or statistics to any specific taxpayer.

XXXXXX

CONTINUED

March 18 95

(3) A person who violates the provisions of this section is guilty of a misdemeanor.

NEW SECTION. Section 12. Program termination scheduled -- review by legislative audit committee required. (1) The recycling education and promotion program terminates on July 1, 1991, unless the legislature reauthorizes the program following the review provided for in subsection (2).

(2) The recycling education and promotion program must be reviewed by the legislative audit committee during the biennium ending July 1, 1991, following the procedures for such review established in Title 2, chapter 8, part 1."

Remember: subsequent section.

12. Page 8.

Following: line 6

Insert: **NEW SECTION.** Section 14 Severability. If a part of this act is invalid, all valid parts that are severable from the invalid part remain in effect. If a part of this act is invalid in one or more of its applications, the part remains in effect in all valid applications that are severable from the invalid applications."

Remember subsequent section.

AND AS AMENDED,
DO PASS
STATEMENT OF INTENT ATTACHED

March 19

85

STATEMENT OF INTENT
HOUSE BILL 899

A statement of intent is required for this bill because it delegates rulemaking authority to the department of health and environmental sciences to provide and administer programs that promote recycling.

The intent of this bill is to:

- (1) make one agency responsible for the recycling education and promotion program and to expend funds for this purpose;
- (2) utilize educational and public relations programs to encourage recycling;
- (3) provide grants to develop and produce educational and promotional programs concerning recycling;
- (4) develop and produce information about this act and programs implemented under it; and
- (5) fund surveys of public awareness and the public's desire to recycle.

The recycling education and promotion advisory council is expected to review the progress of all programs developed by the administering agency and those funded with grants.

Rules to be promulgated and adopted under this act include standards for persons performing contractual work under this act for the department; requirements and guidelines for grant applicants and grant administration; and other rules determined by the department to be necessary for effective administration of the recycling education and promotion program.

STANDING COMMITTEE REPORT

.....MARCH 19..... 19 35.....

MR.SPEAKER:.....

We, your committee on.....NATURAL RESOURCES.....

having had under considerationSENATE BILL..... Bill No. 273.....

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AN ACT ESTABLISHING CONTRACT REQUIREMENTS FOR THE CONSTRUCTION,
REPAIR, ALTERATION, IMPROVEMENT, MAINTENANCE, REHABILITATION,
OR RECONSTRUCTION OF A STATE WATER PROJECT

Respectfully report as follows: That.....SENATE BILL 273..... Bill No.....

BE AMENDED AS FOLLOWS:

- 1) Page 1, line 14.
Following: "all"
Insert: "state-owned"
- 2) Page 2, line 18.
Following: "section"
Strike: ", "
Insert: ". "
- 3) Page 2, line 19.
Strike: "except"
Insert: "The provisions of Title 13, chapter 2, parts 2 and 3,
do not apply to"
- 4) Page 4, line 13, through page 6, line 13.
Strike: Section 3 in its entirety
Renumber: Subsequent sections

~~DO PASS~~ AND AS AMENDED,
BE CONCURRED IN

ROLL CALL VOTE

HOUSE COMMITTEE NATURAL RESOURCES

DATE 3/18 BILL NO. HB 899 TIME 3

NAME	AYE	NAY
IVERSON, Dennis (Chairman)	X	
KADAS, Mike (Vice-Chairman)	X	
ADDY, Kelly	X	
ASAY, Tom		
COBB, John		X
DRISCOLL, Jerry	X	
GARCIA, Rodney		X
GRADY, Edward		X
HARP, John		X
JONES, Tom		X
KRUEGER, Kurt	X	
MILES, Joan	X	
MOORE, Janet	X	
O'HARA, Jesse	X	
PETERSON, Mary Lou		X
RANEY, Bob	X	
REAM, Bob	X	
SMITH, Clyde		X

Secretary _____

Chairman _____

Motion: DPAA

Ted Neuman
March 18, 1985

Mr. Chairman and members of the committee:

Senate Bill 369 is the Montana Dam Safety Act.

Under current law if a person constructs or operates an unsafe dam and the dam fails the individual responsible can be fined, sentenced to jail or if loss of life occurs, the responsible party for the dam may be charged with homicide.

"Unsafe" is however not defined under current law and a panel of experts must determine if a dam is "unsafe." Since there is no provision in current law for inspection the only way to find whether a dam is unsafe is through a complaint or a failure as has happened all too frequently in the last several years. Swift Dam and lower two Medicine Dam failed in 1964 killing 28 people. Browns Lake Dam in Beaverhead County failed in 1984. There were 36 unsafe dams in Montana in 1981. Since that time two dams have been cracked, five are recommended for repair and the others are still in need of repair.

SB 369 will put in place a more workable and clearly defined system of dam safety. The goals of SB 369 are these:

1. Provide minimum safety standards for a structure not covered by existing building and safety codes or laws. (Excludes Federal dams of Federally Licensed dams.)

2. Provide a long term program which assures safety through the life of a project. Program to consist of:

- a. Hazard (risk) classification system. Sec. 6
- b. Approval and Permit System. Sec. 7
- c. Inspection (review) Program. Sec. 8, 9, 10, 11

Ted Neuman
March 18, 1985

- d. Emergency provisions. Sec. 12
- e. Enforcement. Sec. 15, 16, 17, 18, 19, 20
- 3. Provide protection to dam owners from liability except in negligence.
- 4. Provide relief to existing dam owners from potential litigation until rehabilitation plans can be made and funding found for present inadequate dams. (sec. 5, P6) (85-15-104)
(Sec. 14, P11)

Let me take you through the bill section by section.

Section 1 - Title Montana Dam Safety Act

Section 2 - Definitions

The key definitions are Dam - The Montana Dam Safety Act does not apply to Dam or Reservoir with an impounding capacity of less than 50 acre feet. High Hazard - means any dam or reservoir the failure of which would be likely to cause loss of life.

Section 3: Dams and reservoirs must be so constructed as to hold safety any water therein.

Section 4: Construction must be in a secure manner. SB 369 strikes the old language dealing with the authority of the department and the judicial review.

Section 5: SB 369 does not apply to dams inspected by FERC (federal energy regulatory commission) sections 6-20 do not apply to dams inspected by corps of engineers pursuant to PL 92-367 until July 1, 1990.

Section 6: High Hazard dam determination by the department.

Section 7: Preparation and approval (of plans).

Section 8: Inspection and reports during construction. Part 5 is

important in that if the construction does not conform to the permit the construction can be stopped until conformity is insured or the department alters the permit.

Section 9: Operating permits of high hazard dams or reservoirs.

The permit must set for (a) operation procedure (b) maintenance procedure for the dam and appurtenant works. (c) Emergency procedures and warning plans.

Section 10: Periodic inspections must be done at least every 5 yrs on High Hazard dams.

Section 11: Unscheduled inspections. This section deals with complaints and gives the department authority to take action if an immediate hazard to life or property is involved.

Section 12: Emergency repairs or breaching gives the department authority to take immediate and necessary action in an emergency if the owner fails to act and makes the owner responsible for the costs incurred in the emergency action.

Section 13: Limited jurisdiction of municipality or county.

Section 14: Liability of owners - Owner is not liable for discharges that do not exceed the 100 yr. flood or he may pass any inflow w/o diminution.

Section 15: Permit cancellation for non-compliance with High Hazard section of this law (sec's 6-11)

Sec. 16: Penalty for violation is a misdemeanor with maximum penalty of 6 months in jail or 500 fine or both.

Section 17: Deposit of Penalties and costs in general fund.

Section 18: Department may enter land after reasonable notice to carry out this act.

Ted Neuman
March 18, 1985

Section 19: Legal assistance is required by the county attorney when requested by the department.

Section 20: The department may adopt rules to implement the Dam Safety Act.

In addition I have a letter from the State conservationist of the soil conservation service stating that SCS cost share and assistance will be phased out unless Montana adopts a dam safety law.

Thank you Mr. Chairman and members of the committee.

Ted Neuman

Senator - District 21

Does Montana Need a Dam Safety Program?

EXHIBIT 2
3/18/85

by Mary LaFrance, Extension Associate
and Verne House, Extension Economist

Dams play a vital role in Montana's economy. Montana is fifth in the nation in number of dams inventoried by the Corps of Engineers with 3,518 (not including another 3,000 small irrigation and stock dams). Montana has a minimal dam safety program.

Why the concern about dams?

People have lost their lives from dam failures in Montana, the most died when Swift Dam and Lower Two Medicine Lake Dam failed in 1964 killing 28 people.

Dams have failed in Montana, the most recent was Browns Lake Dam in Beaverhead County in June 1984.

Risks have increased where we have development below dams.

How safe are Montana's dams?

There were 36 dams declared unsafe in the state in 1981. One has since been repaired. Two have been breached. Recommendations for repair are being developed on five.

These dams are owned by various groups: state, county and municipal; water user organizations and private individuals. None are federal.

The unsafe dams are located throughout the state in 19 counties.

What is the dam safety program now?

Constructing and operating an unsafe dam is illegal in Montana.

The law does not define "safe." For example, what guidelines need to be met in order for a dam to be considered safe?

The law does state that anyone owning or operating a dam whose failure results in loss of life can be charged with homicide.

Almost anyone with a water permit can build a dam in Montana.

What are some alternatives?

Stay with the status quo.

Designate an agency or committee to seek more opinions.

Analyze alternatives in terms of their consequences.

Develop an education program on construction and maintenance.

Develop emergency warning plans.

Encourage insuring against risks.

Require insuring against risks.

Limit development in floodways.

Notify homeowners in floodways of risks.

Establish standards for dam construction.

Establish an advisory inspection service.

Establish a mandatory inspection service.

Appropriate funds to repair state dams.

Appropriate funds to help repair private dams.

Strive to coordinate all interested agencies.

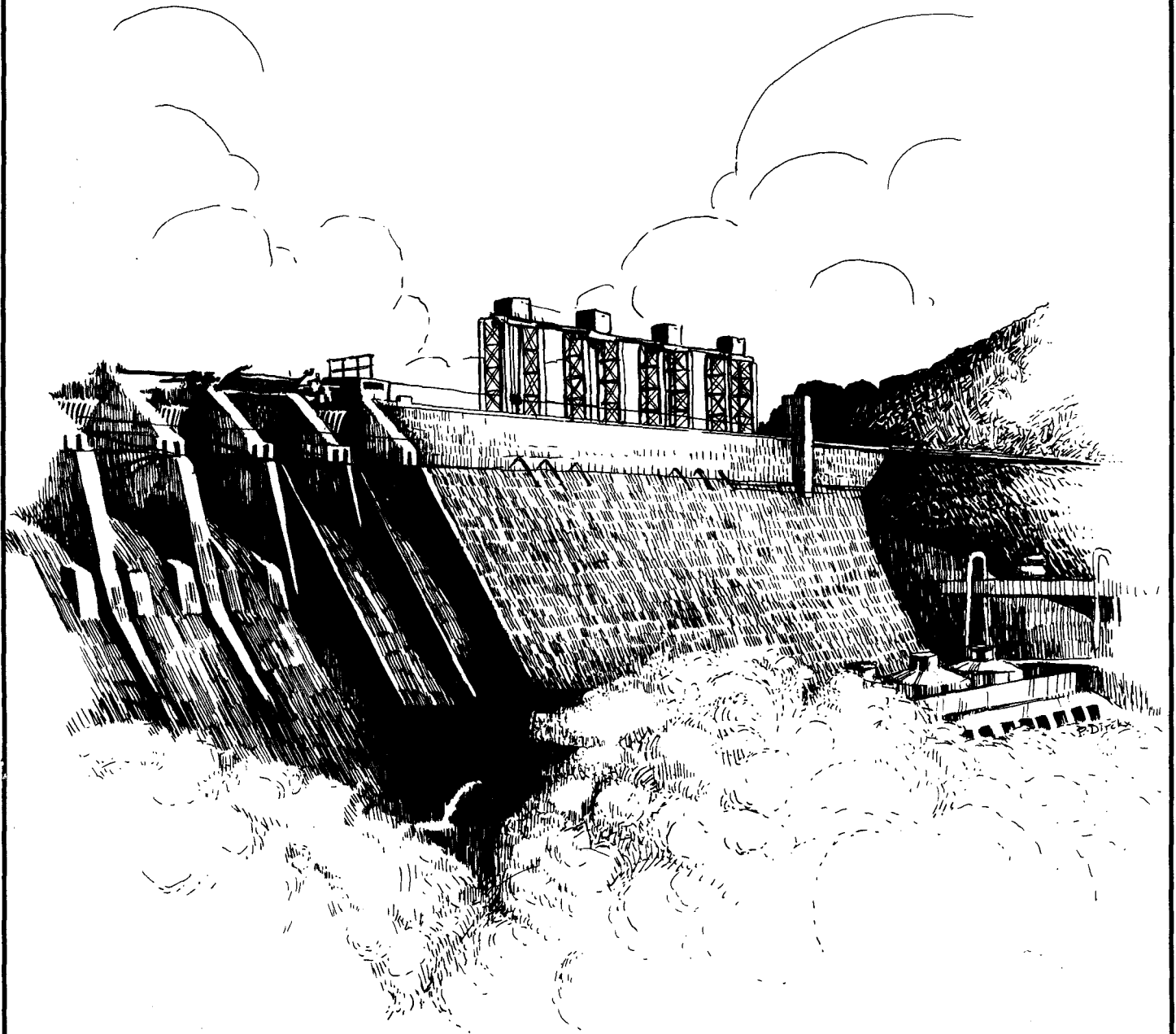
Some combination of the above and/or other ideas.

Your role?

For more information ask your County Extension Agent for CES Circular 1289, contact your SCS District Conservationist, or contact these agencies: Montana Department of Natural Resources and Conservation; Montana Department of Fish, Wildlife and Parks; the Regional Bureau of Reclamation office in Billings; the Regional Forest Service office in Missoula; the Corps of Engineers in Omaha; or the Federal Emergency Management Agency in Denver. It is up to you to choose how the risks of dam failure are to be managed.

Dam Safety

in Montana



Dam Safety in Montana

by Mary LaFrance

A History of Dams in Montana

The development of water resources has played a key role in the settling and growth of Montana. Throughout the state, particularly the semiarid regions, the lack of adequate rainfall, where and when needed, led early inhabitants to build small dams for storing water. As agricultural enterprises spread across the state and the population grew, the need for further water development was recognized. Dams and reservoirs were built to meet the needs of mining, irrigation, flood control, hydroelectric power generation, municipal and industrial water supplies, wildlife enhancement, and recreation. With assistance from the federal government, several large-scale irrigation and flood control projects were built, including Tiber Dam, Canyon Ferry Dam and Fort Peck. In addition, in an attempt to aid agriculture in the state, federal funds were made available to the former state Water Conservation Board, which enabled it to build numerous dams and reservoirs.

The confinement of water has been particularly important to farming, where irrigation is used to stabilize and increase income, and to livestock production in the state.

Mary LaFrance was associated with Extension economics for this project. Project director was Verne House, Extension public affairs specialist. Several state and federal agencies cooperated to supply data and reviews.

Together, these enterprises provide an indispensable source of income to Montana. In addition, many of the dams and reservoirs used by farming and livestock enterprises provide many other benefits, including recreation, wildlife habitat, electricity generation and flood control. Many people depend on these structures for the benefits they provide. Figure 1 presents a summary of dam ownership in the state. As Montana continues to grow, increasing demands will be placed on both state and private dams and reservoirs. Yet, people take these man-made structures for granted; however, these structures need to be properly maintained to safely meet the demands placed on them and provide long years of use.

The Issue of Dam Safety in Montana

Because dams play a vital role in the state, dam safety is an important issue facing all Montanans, not just dam owners, but anyone who benefits from dams. Unsafe dams can mean the loss of property, services and lives. Why is dam safety in Montana an issue at all? Because not all of Montana's dams are safe. In 1981, the United States Army Corp of Engineers completed an inventory of all the dams in the state that were 25 feet or more in height or impounded 50 acre-feet or more of water; there are 3,519 such dams. However, the Corp review excluded some 3,000 or more smaller dams. Of the 118 private, high-hazard dams actually inspected, 36 were determined to be unsafe.* Figure 2 presents a

*One of these, Cooney Dam in Carbon County, has since been rehabilitated at a cost of \$2.3 million. Of this, \$1.3 million was an interest-free loan from the Bureau of Reclamation.

Figure 1. Distribution of Dam Ownership in Montana

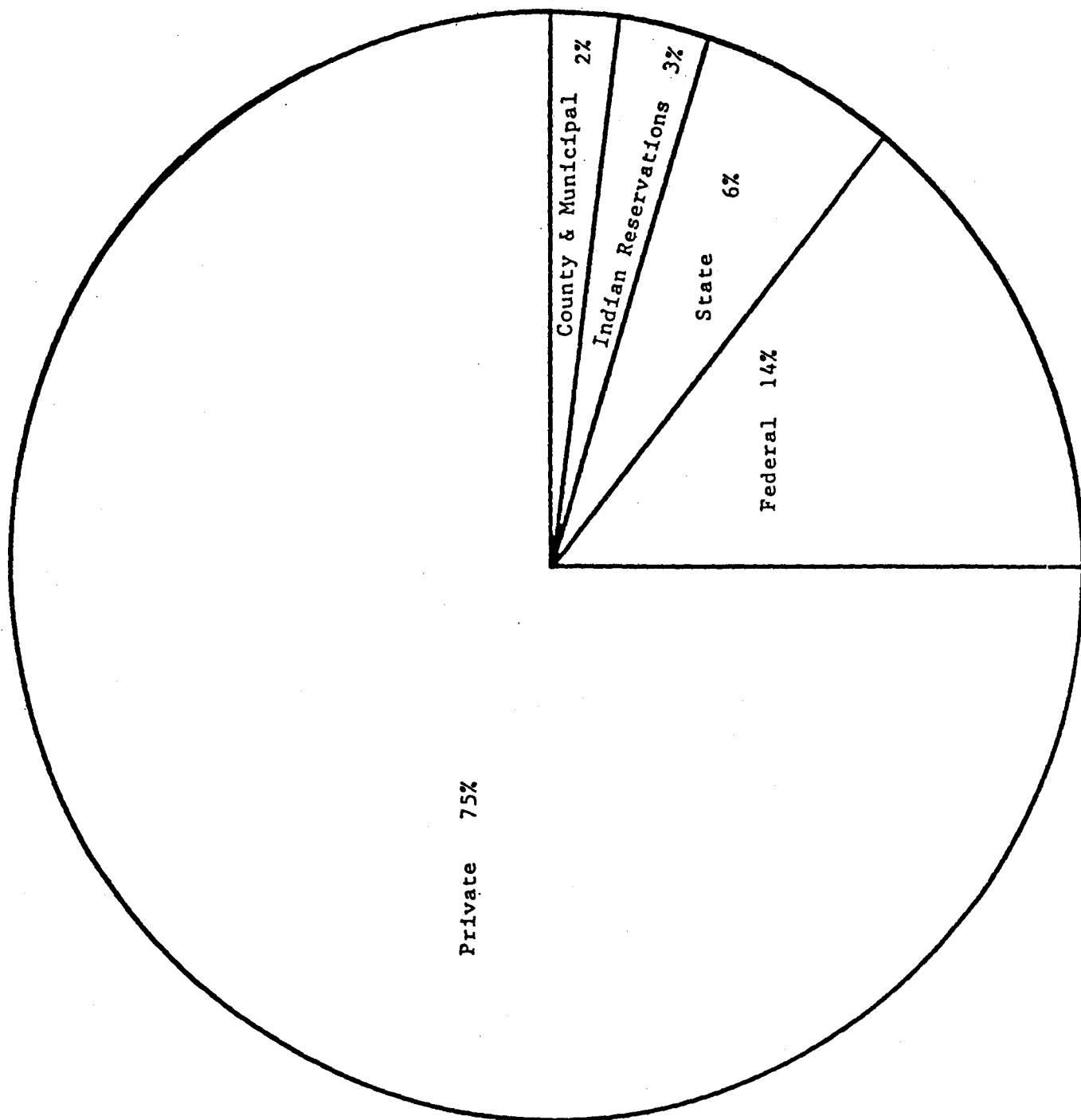
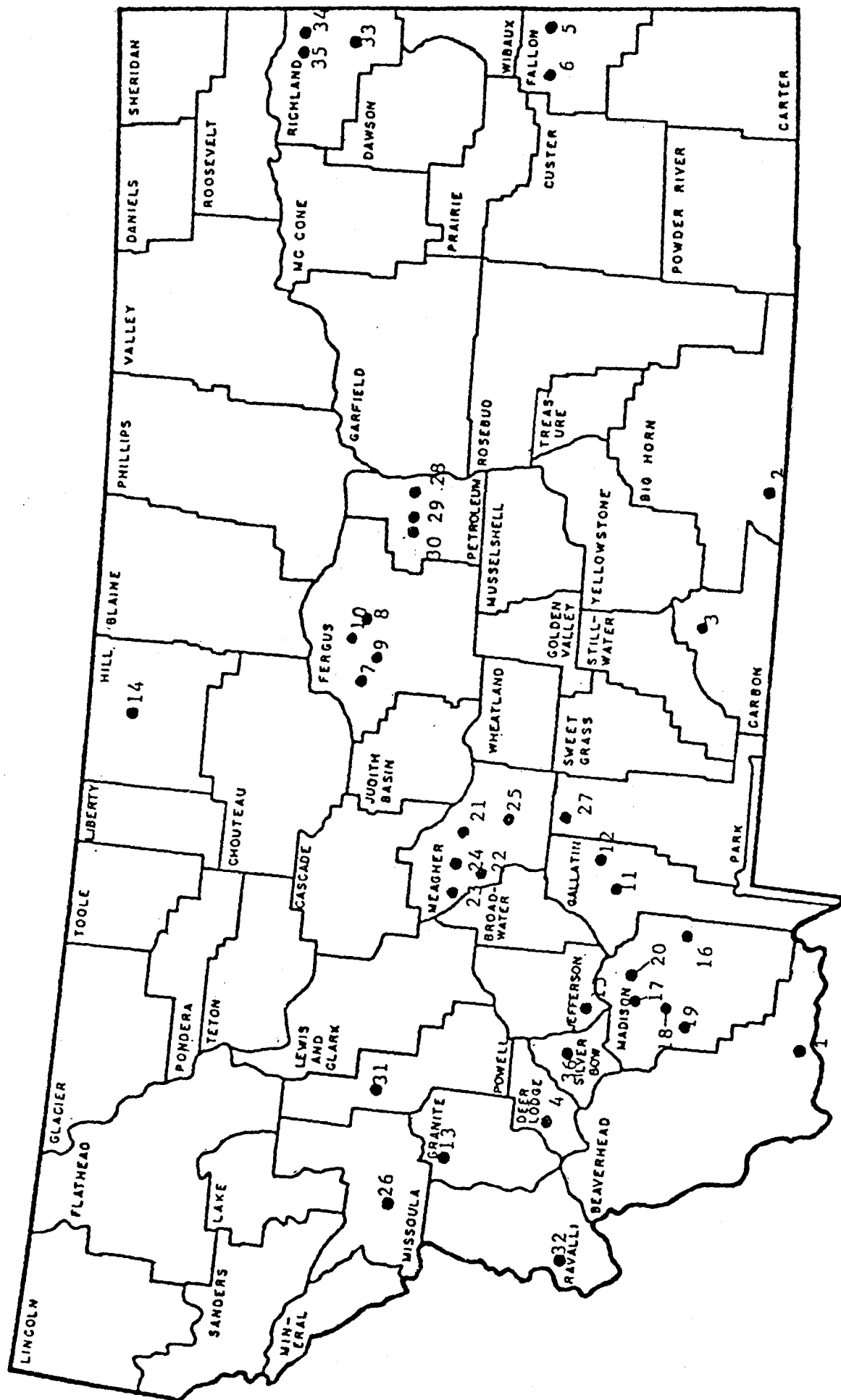


Figure 2. Location of Unsafe Dams in Montana



summary of the unsafe dams and their locations. However, because the inspection did not include all the dams of the state, and the state Department of Natural Resources and Conservation (DNRC) lacks adequate funds and manpower to keep accurate records of all state dams, there are probably many more with problems (DNRC, July 1984).

If a problem exists, whose is it? No law specifically states that owners of dams are liable, should their dams fail. However, under Montana codes, owner responsibility and liability seem to be implied (M.C.A., 1983, Title 85, Chapter 15). For private owners, this means that any problems that occur are their responsibility. On agency-owned dams, operated and maintained by water-user groups, the responsibility is probably shared. And for strictly state or agency-owned dams, as with private individuals, the responsibility is solely the state's or agency's. Therefore, although Montana law does not explicitly assign liability and responsibility to the owner or operator, the law explicitly makes the unsafe construction and operation of a dam or reservoir illegal. It also states that anyone owning and operating a dam that fails and causes a death can be charged with homicide.

Unsafe Dams

Some of the dams considered unsafe by the Corp of Engineers are: Lima Dam, owned by the Lima Water Users' Association; Tongue River Dam, owned by the DNRC; South Sandstone Creek, owned by the Department of Fish, Wildlife and Parks (FWP), and Wallace Creek Dam, owned by James Flansburg (DNRC, Unsafe Dam Summary,

undated).

Figure 3 presents a summary of unsafe dams by ownership. Unsafe means that the dam was designed in such a way that it could not pass half the flow expected to occur during severe flood conditions without overtopping. Overtopping would cause the dam to fail, and failure would result in loss of life. In addition, many more dams are considered unsafe because they have other problems. Often, individuals pile logs and earth across a stream to pond the water. Others may add a few feet of earth to the top of an existing dam to increase its storage capacity. In both instances, improper design and construction methods can lead to greater risk and magnitude of dam failure. However, Montana has no uniform standards or criteria concerning the safe design and construction of dams. Montana law requires that a dam be constructed safely, yet it does not specify guidelines that need to be met for a dam to be considered safe. In addition to poor design and construction, many dams in Montana are considered unsafe because improper operation and poor (or the absence of) maintenance have left them in a state of disrepair. Usually, repairs are not made because of high costs.

Dam Repair Costs

Repair costs are related to the extent of the damage and its location. For example, one critical area where damage and problems occur is the abutment, the interface between the natural surface and man-made surface. Regular maintenance-related repairs to earthen dams include clearing brush, timber and debris from in and around the dam and controlling burrowing animals.

Figure 3. Summary Statistics

	<u>Number of Dams</u>	<u>Percentage of Total</u>	<u>Number of Unsafe Dams</u>	<u>Percentage</u>
Private	2619	75 %	14	0.5 %
Federal	508	14 %	--	----
State	205	6 %	15	7.0 %
Indian Reservations	121	3 %	--	----
County and Municipal	65	2 %	7	11.0 %

These maintenance procedures are relatively inexpensive but are required frequently. Minor repairs, such as removing log jams from a spillway, can be inexpensive. More extensive repairs can be quite costly to the owner and often require the knowledge of a trained engineer. For example, repairing concrete deterioration at Deadman's Reservoir cost about \$6,000, while it cost about \$350,000 to repair the outlet tunnel at Painted Rocks Dam. Major spillway repairs can range from \$200,000 to several million (DNRC, August 1984).

Another type of repair cost, one beyond the control of the dam owner, is the cost of upgrading the dam because of land development that occurred below the dam after it was constructed. A dam that may have once been considered safe is now inadequate because of the increased risk involved, should the dam fail. Not only is there increased risk, but also increased liability to the owner. The cost of upgrading a dam --which usually requires rebuilding most of the structure-- could be prohibitive. Upgrading has been recommended for many dams in Montana because their hazard potential has increased. However, because of the high costs, dam owners have been reluctant. Some even may neglect the repair and maintenance of their dams because repair costs can be quite expensive and easy to defer, and the benefits of the repairs are often shared by other individuals. In the long run, however, repairs may cost much less than the damages incurred when a dam fails.

Dam Failure

What happens when a dam is not properly operated,

maintained, designed and constructed? The most obvious consequence is the failure of the structure and the loss of the use for which it was built. The degree and extent of damage depend on the size of the structure and the circumstances surrounding the failure. A small stock pond or irrigation pond may break with little or no consequence except for the loss of the structure itself. However, the loss of irrigation water for a season could mean extreme financial hardship for many farmers. For example, Haymaker Dam in Wheatland County washed out in 1978 because the spillway and embankment were not maintained. The dam supplied area farmers with irrigation water.

A larger dam failure could cause considerable loss of property, destruction of cropland, roads and utilities. Browns Lake Dam in Beaverhead County, which was used for irrigation and recreation, overtopped on June 20, 1984, washing out bridges and part of the road downstream. The estimated property damage was \$100,000. Before the failure, the dam was in very poor condition.

Many dams, if they failed, would cause loss of life. The failure of Pattengail Creek Dam in Beaverhead County in 1927 resulted in four known deaths and almost complete destruction of the towns of Dewey and Wise River. The failures of Swift Dam in Pondera County and Lower Two Medicine Lake Dam in Glacier County in 1964 resulted in 28 known deaths and millions of dollars in damages (DNRC, Dam Failures, 1981). In addition to the immediate problems, there are many far-reaching consequences, including loss of income, disruption of services and environmental

devastation. The risk of dam failure in Montana increases as more dams are built without supervision, more people move into areas below dams, and old, unattended dams continue to deteriorate.

Responsibility and Liability on Montana Dams

As the risk of dam failures increases or after a failure has occurred, the major question asked is, "Who is responsible?" In most instances, the owner of the dam is liable for damages. Under Montana law, the owner, whether a private individual, corporation, municipality, state or federal agency, is responsible for the safe construction and impoundment of water. If the dam fails, the owner is responsible for the damages, unless it can be shown that the failure was not the result of negligence (poor operation and maintenance). The owner's negligence in properly operating and maintaining a dam can lead to extremely hazardous conditions to downstream residents and property. Should a death result from the failure of a dam, under Montana law, the owner can be convicted of homicide (Montana Codes Annotated, 1983, Title 85, Chapter 15, Parts 1-3).

If downstream residents benefit from a dam or reservoir and face the greatest potential for harm if it fails, then they have a responsibility to make sure dams are safely maintained, particularly if downstream development took place long after the dam was constructed. However, under Montana law, downstream residents or property owners who feel they may be in danger if a dam is filled with water or if it seems likely to fail are only responsible for initiating a complaint with the DNRC. They have

no ownership or jurisdictional responsibilities, regardless of the benefits they receive from the dam and reservoir.

The dam owner continues to bear the risk of dam failure. However, some owners have minimized the risk and reduced the damages resulting from dam failures. Federal and state agencies are responsible for a number of dams in Montana. They have developed programs for inspection and maintenance, while individual dam owners and water-user associations usually just carry insurance (personal conversations with representatives from Farm Bureau Insurance, First West, Montana International, and Waite and Company, 1984).

Federal and State Involvement

For example, the Bureau of Reclamation in the Department of the Interior has authority under the Reclamation Safety of Dams Act (PL 95-578) to construct, restore and maintain its structures for safe purposes. There is an implicit responsibility that Bureau dams will be designed, constructed, operated and maintained safely. Although the responsibility for operation and maintenance of facilities is carried by the project water-user organizations, the Bureau carries out inspections and makes funds available for repairs on its dams when necessary. Each Bureau of Reclamation dam includes an operation plan that documents procedures to ensure proper operation and maintenance. It includes an emergency preparedness plan that outlines exactly what measures need to be taken to avoid loss of life and property damage. The Bureau's Safety Evaluation of Existing Dams program also provides comprehensive studies and inspections for existing

dam safety purposes. The various programs of the Bureau of Reclamation are updated to include new technologies and reflect experience (USDI-Bureau of Reclamation, 1984). Although the Bureau of Reclamation only performs these functions for its own projects, it often provides knowledge about dams and technical assistance to state agencies. In Montana, the Bureau has identified several dams that need modifications to bring them up to current safety standards. The Bureau also is preparing feasibility reports and scheduling construction work.

The Soil Conservation Service (SCS) has been involved with numerous dams through various conservation programs, including the Resource Conservation and Development program (under PL 703) and the Small Watershed Protection Act (PL 566). Water-user organizations and individual owners with dams constructed under these programs are responsible for the operation and maintenance of their dams. SCS assistance is provided mainly through the state conservation districts. Although the Soil Conservation Service is neither the owner nor the party responsible for dam maintenance, the agency takes an active role in these project dams (dams built under PL 566 and PL 703 programs). SCS often provides technical and financial assistance and assists the owners in inspections. New dams built under these programs include emergency action plans, while owners of existing dams receive technical assistance in preparing these plans upon request. The SCS reviews the hazard classification of its project dams at regular intervals to see which dams might need to be upgraded. For high and moderate-hazard dams constructed under

other programs, SCS provides an initial inspection upon request from the owner (USDA-SCS, 1984).

The U.S. Forest Service (USFS) has been involved in dam safety through its special-use permits. If an individual has a dam on Forest Service land, he or she must obtain a special-use permit. The USFS will inspect a permittee's dam to assure that the dam's operation and maintenance complies with the permit. If the inspection reveals that the dam is unsafe, the dam owner is notified. If the dam owner does not comply, the special-use permit can be revoked. The Forest Service is actively trying to tell its permit holders that they are liable and responsible for the inspection and maintenance of their dams, in addition to the need for emergency plans where warranted (USDA-USFS, 1984).

The Department of Fish, Wildlife and Parks (FWP) has responsibility for only a few dams in Montana. FWP dams provide recreational opportunities and wildlife habitat, and some provide irrigation benefits. Although the DNRC carries out occasional inspections and provides technical and some financial assistance on some of their dams, FWP takes an active role in promoting dam safety. Currently, the Department of Fish, Wildlife and Parks is attempting to correct the inadequacies of two dams, South Sandstone Creek Dam in Fallon County and Gartside Dam located in Richland County (FWP, July 1984).

The Department of Natural Resources and Conservation (DNRC) has the largest responsibility for the administration of water resources in the state. However, the Department is only directly responsible for 22 state-owned dams for which they carry out

inspections and provide technical and financial assistance to the water users. As time and funds allow, emergency action plans are being prepared for each dam. The DNRC attempts to maintain an inventory of all dams in the state, particularly the ones that are unsafe. But, because no inspection or reporting is required, the number and condition of dams in the state is uncertain. Currently, the DNRC is working on several rehabilitation feasibility studies for dams around the state, including Middle Creek Dam in Gallatin County, Tongue River Dam in Big Horn County, and Petrolia Dam in Petroleum County. The total budget received by the DNRC for dam safety in Montana is about \$250,000, which is most often used for rehabilitation feasibility studies. The estimated total cost of repairs for the 35 identified unsafe dams in the state is \$1 billion (DNRC, 1984 and FEMA, 1983).

Private Involvement

Water-user groups and individuals handle risk and liability in a different fashion than state and federal agencies. While some water-user dams fall under the jurisdiction of the various agencies for inspection, most dam owners carry insurance that covers the damages caused to others, should their dams fail. However, insurance policies do not require that dams be maintained in good condition to receive coverage. The cost and extent of insurance coverage varies according to the size of the project, how much public use the project receives and the financial capabilities of the dam owner.

Individuals, water-user organizations and agencies are taking various measures to reduce the risk or minimize the

damages of dam failure in Montana. However, there are limitations to their approaches. Insurance only provides against losses after a dam breaks. It does nothing to prevent such failures. Agency powers to enforce dam safety are fragmented, limited and often indirect. In addition, there is no consensus among agencies as to what set of standards or criteria are needed to make a dam safe. Even though there is no uniform approach to dam safety in Montana, each agency deals with the problem according to its own standards and criteria.

Risk Management Alternatives

If there is no uniform approach to dam safety, what are the available alternatives to effectively minimize the risk of dam failure and reduce the damages if a dam should fail? One of the alternatives is public education to increase the awareness of dam safety problems and the real risks involved with dam failures in Montana, not only for those who own dams, but for everyone who receives and enjoys the benefits of dams. Education might include an awareness of which dams are considered unsafe, where they are located, what the leading causes of dam failure are and what can be done to prevent them. Perhaps the most important aspects of public education would be informing Montanans that a problem exists and generating public discussion of the alternatives and consequences of possible remedies.

Dam safety legislation is another alternative. Legislation could mandate the responsibilities of state agencies and private parties in the design, construction and maintenance of dams, and require that specific guidelines and standards be followed.

Legislation to create a dam safety program might include a permit and certification program for dam construction and an inspection program to keep track of dam performance. The frequency of dam inspections, how safety standards should be enforced and how deficiencies should be corrected could be included in the program. Legislation might also make provisions for the education of dam owners about safety. Both Colorado and Wyoming provide manuals for dam owners that explain operation and maintenance, and how to recognize and handle problems associated with dams. North Dakota is preparing a manual for its dam owners. A dam safety program might also require emergency warning plans for dams of a certain height, reservoir capacity or proximity to populations.

Another alternative to minimize the risk of dam failure is effective emergency warning or preparedness plans. These plans allow people to prepare for emergencies that occur when a dam fails and take measures to reduce the losses. Emergency plans are based on inundation maps showing the route floodwater would take if a dam failed. They outline in detail what measures need to be taken to avoid loss of life and property damage, including who should be notified or evacuated.

Another alternative aimed at reducing the risk and damage of dam failure is flood plain management or zoning. The purpose of such planning would be to restrict development in areas of heaviest flooding while allowing development in areas receiving minimal inundation. Homes and businesses would be located outside high-danger areas.

Group insurance plans are another alternative. Although individual dam owners usually carry insurance policies, they bear the total cost of coverage. An alternative would be to design policies that spread the insurance cost of coverage for economic losses caused by dam failure over the entire group of dam owners in a particular area.

Conclusion

Many alternatives are available to minimize the risk and reduce the damages of dam failure. They include public education, legislation, emergency plans, zoning and insurance. But they are not alternatives unless people - Montanans - know that a problem exists and want to do something about it. Montana's dams are not forever; they have collapsed and will continue to do so without proper care. That a dam has withstood 50 years of service is not sufficient to predict its future. The risk of tragedy resulting from dam failure is constantly increasing. Something needs to be done before a tragedy occurs, not as the result of one.

REFERENCES

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_____, Dam Failures, 1981. The material on dam failures in Montana was taken from a letter addressed to Wayne Graham, Bureau of Reclamation, Denver, Colorado. The letter was sent by Richard L. Bondy, Chief, Engineering Bureau, DNRC (March 17, 1981).

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Montana Codes Annotated, 1983. Title 85, Chapter 15, Parts 1-3. Dams and Reservoirs.

United States Department of Agriculture - Soil Conservation Service, personal conversation with Dave Jones, Environmental engineer, regarding SCS programs and their involvement in dam safety (July, 1984).

United States Department of Agriculture - United States Forest Service, personal conversation with Roger White, Regional Hydraulic Engineer, Northern Region, concerning USFS participation and responsibility in dam safety (July, 1984).

United States Department of the Interior - Bureau of Reclamation, personal conversation with Rod Ottenbreit and Howard Gunnerson, regarding the Bureau's dam safety program (July, 1984).

Personal conversations with representatives from Farm Bureau Insurance, First West, Montana International and Waite and Company (July, 1984).

UNSAFE DAM SUMMARY

#	Name	County	Owner
1	Lima	Beaverhead	Private water users assn.
2	Tongue River Dam	Big Horn	DNRC
3	Cooney (Rehabilitated 1982)	Carbon	DNRC
4	Storm Lake Dam	Deer Lodge	Private
5	Lower Baker Dam	Fallon	County
6	South Sandstone Creek	Fallon	DFWP
7	Big Casino Creek Dam	Fergus	Municipal
8	East Fork Dam	Fergus	Municipal
9	Hanson Creek Dam	Fergus	Municipal
10	Pike Creek Dam	Fergus	Municipal
11	Middle Creek Dam	Fergus	Municipal
12	Mystic Lake Dam	Gallatin	DNRC
13	Lower Willow Creek Dam	Gallatin	Municipal
14	Beaver Creek Reservoir Dam	Granite	Private Drainage Dist.
15	Delmoe Lake Dam	Hill	County
16	Big Sky Dam	Jefferson	Private water users assn.
17	Cataract Creek Dam	Madison	Private
18	Lower Branham Dam	Madison	DNRC
19	Ruby Dam	Madison	Private water company
20	Willow Creek Dam	Madison	DNRC
21	Bair Dam	Madison	DNRC
22	Hanson Reservoir Dam	Meagher	DNRC
23	Newlan Creek Dam	Meagher	Private
24	North Fork Smith River Dam	Meagher	Private water users assn.
25	Voldseth West Dam	Meagher	DNRC
26	Wallace Creek Dam	Meagher	Private
27	Cottonwood Dam	Missoula	Private
28	Petrolia	Park	DNRC
29	Yellow Water Dike	Petroleum	DNRC
30	Yellow Water Main Dam	Petroleum	DNRC
31	Nevada Creek Dam	Petroleum	DNRC
32	Tin Cup Lake	Ravalli	DNRC
33	Cartside	Ravalli	Private water users assn.
34	Vaux No. 1	Richland	DFWP
35	Vaux No. 2	Richland	Private
36	Basin Creek Dam No. 2	Richland	Private
		Silver Bow	Private

EXHIBIT 4
3/18/85



United States
Department of
Agriculture

Soil
Conservation
Service

Federal Building, Room 443
10 East Babcock Street
Bozeman, MT 59715

February 4, 1985

K.M. Kelly
Executive Secretary
Montana Water Development Association
P.O. Box 5744
Helena, MT 59604

Dear Mr. Kelly:

As you requested, following is the information pertaining to SCS policy on dam safety. The following four paragraphs are national policy:

"SCS supports strong State dam-safety programs. A strong State dam-safety program is imperative because SCS lacks operation and maintenance (O&M) authority and does not have continuing responsibility for the nonfederal dams installed under SCS programs. It is SCS policy to complement and not compete with State dam safety programs."

"Each state conservationist is to assist the State in developing a strong dam safety program as needed."

"The owner of a dam is responsible for potential hazards created by the dam. The States are responsible for safeguarding the lives and property of their citizens. SCS is responsible for making sure that the assistance it provides for dams is technically sound and meets applicable state regulations and criteria."

"Each state conservationist is to establish needed working arrangements with the State for SCS assistance in maintaining a strong State dam-safety program. It is recognized that a few years may be required for some States to implement such a program. State conservationists are to consider progress being made by their respective states in determining whether or not to continue technical and financial assistance for the installation of inventory-type dams."

SCS in Montana is prepared to institute a policy of phasing out assistance on dams if no progress is made by the State during the 1985 legislative session in instituting an acceptable dam safety program. Our policy will be: "In 1986, SCS will no longer assist in planning new dams, but will continue to provide design, repair, rehabilitation, and construction inspection assistance. In 1987 SCS will no longer provide design assistance on new construction, but will continue to provide repair, rehabilitation and construction



The Soil Conservation Service
is an agency of the
Department of Agriculture

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K.M. Kelly, February 4, 1985

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inspection assistance on dams for which SCS provided initial engineering assistance. In 1988 SCS will no longer provide any technical assistance to any dam except where a prior written agreement exists committing such assistance.

Sincerely,

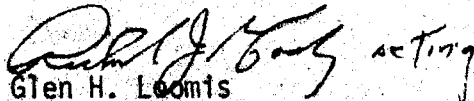
 acting
Glen H. Loomis
State Conservationist

EXHIBIT 5
3/8/85

WITNESS STATEMENT

NAME Dave Donaldson BILL NO. SB369
ADDRESS 7 Edwards, Helena, MT DATE 3.18.85
WHOM DO YOU REPRESENT? Montana Association of Conservation Districts
SUPPORT ✓ OPPOSE _____ AMEND _____

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

Comments:

The Montana Association of Conservation Districts has shown concern at the last annual meeting for Dam Safety. We feel that SB369 is a good vehicle for addressing the dam safety issue. We do have one concern. We feel that spreader dams or water spreading systems maybe included in the "dam" definition. A water spreading system may be 1' deep and still have more than 50 acre feet in them.

We would like to ask for your support for SB369

Thank you
Dave Donaldson

VISITORS' REGISTER

NATURAL RESOURCES COMMITTEEBILL NO. SB 156DATE 3/18/85SPONSOR Senator Tower

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Pat Wilson ^{Montgo/} Thermal energy	Billings	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

VISITORS' REGISTER

NATURAL RESOURCES COMMITTEE

BILL NO. SB 284

DATE 3/18/85

SPONSOR Senator Towe

[illegible]

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

VISITORS' REGISTER

NATURAL RESOURCES COMMITTEEBILL NO. SB 369DATE 3/18/85SPONSOR Senator Neuman

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Richard L. Bondy	HELENA	✓	
K.M. Kelly	Helena	✓	
Rodger Foster	Helena	✓	
Dave Donaldson	Helena	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

VISITORS' REGISTER

NATURAL RESOURCES COMMITTEEBILL NO. SB 273DATE MARCH 18, 1985SPONSOR Senator Thayer

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
LARRY FASBENDER	HELENA - DNRC	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.