MINUTES OF THE MEETING
LONG RANGE PLANNING SUBCOMMITTEE
50TH LEGISLATURE SESSION

The meeting of the Long Range Planning Subcommittee was called to order by Chairman Rep. Robert Thoft on February 2, 1987 at 8:00 a.m., in Room 202B of the State Capitol.

ROLL CALL: All members of the Long Range Planning Subcommittee were present except Rep. Donaldson who was excused.

Tape 51:A:000

STATE OWNED WATER PROJECTS

Glen McDonald, Department of Natural Resources and Conservation (DNRC), said most of the state owned water projects were built in the 1930's and 1940's and have been in use for over 50 years. Mr. McDonald stated the dams are deteriorating due to age. He said since 1981 water development funds have been used to rehabilitate projects.

Overview of 1987 Biennium Projects

Yellow Water Dam: (118)

Glen McDonald, DNRC, said the dam was built in 1938. Mr. McDonald showed various pictures of the dam, which is near Winnett, Montana.

Mr. McDonald said the total cost of the dam was $117,000. Of that $117,000 $32,000 was the five water users contributions. Mr. Bondy said the $32,000 represents $2 acre foot + $1 for operation and maintenance.

Chairman Thoft asked if the Army Corp. of Engineers are going to approve this dam. Rick Bondy, DNRC, said no they won't, but there is not much downstream from this dam. Mr. McDonald said the Soil Conservation Service can not provide assistance on high hazard dams.

Mr. McDonald stated there is a significant amount of recreation on this dam, even though it was dry for two years (1984 and 1985).

Mr. McDonald said the water is used for irrigating 1,500 - 2,000 acres of alfalfa and hay. Mr. Bondy said the storage capacity of the dam is 4,400 acre foot.

Rep. Bardanouve asked if this dam will ever be of a profit status. Mr. McDonald said no.

Cottonwood Dam: (274)

Mr. McDonald said the dam was built in 1953. He said the cost of the dam was $175,000, $30,000 of that was paid by the seven water users.

Mr. McDonald showed pictures of the dam work that begun in 1986 and is now completed.

Chairman Thoft asked what the cost is per water user. Mr McDonald said $3 acre foot.

Mr. McDonald said the capacity of the dam is 1,900 acre foot.

Mr. Bondy said Wilsall is four miles downstream, but the dam does not pose a liability to the people.

Chairman Thoft asked what kind of insurance do they have. Mr. McDonald said they have emergency warnings downstream and evacuation plans. (364)

Rep. Bardanouve asked if they have considered breaching some of the dams. Mr. McDonald said that is an alternative to look at if it is the cheapest option.

Martinsdale Dam: (405)

Mr. McDonald said there are two dams at this sight; North Dam which is 93 ft. and East Dam which is 53 ft. The two equal 23,000 ft. of water storage.

Mr. McDonald said the cost of rehabilitating dam was $264,650 and the water users paid $222,650. Construction of the dam began in 1985.

Rep. Bardanouve asked if the dam has any recreational value. Mr. McDonald said yes there is.

Rep. Bardanouve asked what the costs were per water user. Mr. McDonald said $1.15 acre foot.

Mr. McDonald said the state has the ultimate authority to release the water, but the water users control the release unless there is an unusual circumstance.

1989 Biennium State Owned Water Projects

Project #1 Middle Creek Dam: (500)

Mr. McDonald presented the Long Range Planning Subcommittee with a fact sheet on proposed projects (Exhibit #1).

Sen. McLane asked how many water users there are on this project. Mr. McDonald said there are 112 water users that includes the city of Bozeman.

51:B:000

Mr. McDonald said DNRC received a state grant of $500,000 for recreation.

Mr. McDonald said the water users will pay $5 acre foot. Under the Bureau of Reclaimation program agricultural users only have to pay the principal, but the municipal users have to repay with interest.

Mr. McDonald said they will raise the dam 10ft.

Rep. Bardanouve asked if there is any recreational value. Mr. McDonald said the request of $500,000 from the federal government and $500,000 from the state is in order according to their studies.

Project #2 North Fork of Smith River Dam: (104)

Mr. McDonald said the dam is 9 miles north east of White Sulpher Springs and was declared unsafe by the Army Corp. of Engineers because of inadequate spillway capabilities.

Mr. McDonald said the $275,000 request is for a feasability study. Chairman Thoft asked why the cost is so high. Mr. McDonald said the composition of the original dam has to be determined, there will be an economic analysis, and a hydrology study to see if the dam can store more water, and there are environmental issues to be dealt with.

Chairman Thoft asked what the water users pay now. Mr. McDonald replied $1 acre foot.

Mr. McDonald said the spillway is inadequate. Chairman Thoft said why don't you just fix the dam instead of doing all the studies. Mr. McDonald said because in order to get federal monies we have to do a study.

Sen. Aklestad asked how many homes are below the dam. Mr. Bondy said there are several dwellings below the dam.

Sen. Walker asked how many water users are there. Mr. McDonald said 36.

Rep. Bardanouve asked how many acres are involved. Mr. McDonald said 12,000.

Project #3 Petrolia Dam: (284)

Mr. McDonald said the equipment cost is $35,000 and the engineer design costs are $50,000.

Mr. McDonald said the project is south east of Winnett and is 55 feet high with a 9,000 acre foot storage capacity.

Mr. McDonald said they will apply for a Bureau of Reclaimation loan because the spillway is in poor condition.

Project #4 Tongue River Dam:

Mr. McDonald said the project is north east of the Wyoming border, and has a 79,000 acre foot storage capacity.

Mr. McDonald said $60,000 would go for a model studies of the dam.

Mr. McDonald said the dam was built in 1939, and in 1978 a flood caused more than $1 million worth of damage.

Mr. McDonald said the 1985-1986 biennium cost were $119,850, and the water users cost was $41,850.

Rep. Bardanouve asked how much it will cost to repair the spillway on the Tongue River Dam. Mr. McDonald said it will cost $15-$25 million.

52:A:000

Project #5 Ruby Dam:

Mr. McDonald said the Ruby Dam in Madison County has 200 water contracts at the 111 ft high dam.

Mr. McDonald said there is recreational value at the Ruby Dam.

Mr.McDonald said the 1985 Legislature funded feasability studies for the Yellow Water Dam, Cottonwood Dam, Petrolia Dam, and Middle Creek Dam.

Sen. Aklestad asked by these projects do not have bids. Mr. McDonald said they go through a different procedure when hireing engineers, they have to do it according to the governors rules.

Project #6 Nevada Creek Dam: (199)

Mr. McDonald said the Nevada Creek Dam is almost identical to the Ruby Dam.

Sen. Aklestad asked how many state dams do we have. Mr. McDonald said we have 25 state dams.

Matt Thelan presented a fact sheet on the South Sandstone Project (Exhibit #2). He stated he just wanted to share his experience with the Long Range Planning Subcommittee.

ADJOURNMENT: There being no further business the Long Range Planning Subcommittee adjourned at 10:00 a.m.

Bob Thoft
Chairman Rep. Bob Thoft

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DAILY ROLL CALL

LONG RANGE PLANNING SUBCOMMITTEE

DATE February 2 , 1987

NAME	PRESENT	ABSENT	EXCUSED
Rep., Thoft, Chairman	✓		
Sen., Van Valkenburg, Vice-Chairman	✓		
Rep., Bardanouve	✓		
Rep., Donaldson			✓
Sen., Aklestad	✓		
Sen., McLane	✓		
Sen., Walker	✓		

Form CS-30A
Rev. 1985

EXHIBIT 1
DATE 2/2/87
HB

CAPITAL OUTLAY (4000)

State-owned water project rehabilitation is the sole entry in this second-level category.

FY88 (Biennial Appropriation)

OBPP	4,241,000
LFA	-0-

The projects for which we need a biennial appropriation in the 1988/89 biennium include the following projects and amounts.

Amount Requested:

1. Middle Creek Dam — $4,540,000

   State Funds: $ 500,000
   Federal Funds: $4,040,000

   A feasibility study to bring the dam into compliance with current state-of-the-art dam safety design standards was completed in February, 1985. The preferred alternative for rehabilitating Middle Creek dam is to raise the dam crest 10 feet, raise the reservoir level by 8.2 feet, rebuild the existing spillway structure and install a second spillway to channel the water to Hyalite Creek, and construct a new emergency spillway in the left abutment. The estimated total project cost is about $4 million. The Department has made a draft application to the Bureau of Reclamation for a Small Reclamation Projects loan. The final application for the Small Reclamation Projects loan is to be submitted in January, 1987. The amount requested will allow the Department to proceed with final design and construction of the preferred alternative.

2. North Fork of Smith River Dam

   Rehabilitation Feasibility Study — $ 275,000

   The Corps' inspection report of May, 1981, stated that the spillway is seriously inadequate by Corps guidelines, and subsequently declared the project unsafe. As the first step in rehabilitating the project to current dam safety standards, the Department plans to begin an engineering pre-feasibility study to determine if a complete engineering feasibility study is warranted. If warranted, the feasibility study would begin in 1987 and would develop alternatives to solve the safety problems at the dam. The estimated cost of the study is $275,000.

3. Petrolia Dam

   Finalize Emergency Warning and Evacuation plan, including radio warning and remote sensing equipment to alert residents downstream of project.

   Equipment Cost — $ 35,000

Plan would be conducted in-house.

As rehabilitation feasibility study was completed in December, 1986, the study identified a preferred alternative to update the project to current dam design standards. The estimated cost to construct the preferred alternative is $2.6 million. Negotiations with the water users' associations have show that they do not have the repayment capability to participate in the rehabilitation of the project. The preferred alternative, therefore, is technically but not economically feasible.

The spillway is structurally in very poor condition and in need of repair. The Department is requesting additional funding to study scaled-down rehabilitation options.

Engineering Design = 50,000

4. Tongue River Dam

The feasibility studies for the rehabilitation of the Tongue River Dam are now complete. The preferred alternative is technically but not economically feasible. Two scaled-down rehabilitation alternatives were identified and studied. To satisfy a state goal to select the alternative that would result in the least cost to the state, a risk analysis was performed. The objective of the risk analysis was fourfold: 1) quantify the ability of the dam to withstand flooding; 2) assess downstream damage costs due to flooding and a dam failure; 3) determine the least cost alternative of repair; and 4) determine the risk to life if dam failure occurs. Major conclusions of the risk analysis are:

a) The acceptable least cost alternative is to repair the spillway to pass 60,000 cfs, which is 16% of the PMF.
b) Testing, updating and maintaining the emergency warning system provides the greatest protection and beneficial reduction in the risk of life loss.
c) Based on results from the uncertainty and sensitivity analysis, the relative ranking of the alternatives remained the same.
d) The benefit to cost ratio was the highest (.74). This means that for every dollar spent on rehabilitation, the state would realize a benefit of seventy-four cents.

With model studies, we can refine the design of the least cost alternative and produce a project with a B/C of which, in turn, provides a better opportunity for funding. To accomplish this goal, the Department asked for assistance from the Montana State University Engineering Department to conduct the model studies. They responded with a proposal to do the work for $60,000. An additional $40,000, then, is needed to make final adjustments to the least cost alternative, which would include design, materials, methods and cost estimates. Finally, we would make a recommendation to the next legislature to construct the project.

5. Ruby Dam

Rehabilitation Feasibility Study $ 400,000

The Corps' inspection report of August, 1980, found that the spillway capacity is seriously inadequate by Corps guidelines, and subsequently declared the project unsafe. As the first step in rehabilitating the project to current dam safety criteria, the Department plans to begin an engineering pre-feasibility study to determine if a detailed engineering feasibility study is warranted. If warranted, the detailed feasibility study would begin in 1987 and would develop alternatives to solve the safety problems at the dam. The estimated cost if $400,000.

6. Nevada Creek Dam

Rehabilitation Feasibility Study $ 300,000

The Corps' inspection report for Nevada Creek dam (January, 1981) stated that the spillway capacity is seriously inadequate by Corps guidelines, and subsequently declared the dam unsafe. As the first step in rehabilitating the project to current dam safety standards, the Department plans to begin an engineering pre-feasibility study to determine if a complete feasibility study is needed. If needed, the complete engineering feasibility study would begin in 1987 to examine alternatives to solve the safety problems at the dam. The estimated study cost is $300,000

TABLE 3

STATE-OWNED WATER PROJECT REHABILITATION

(Expected expenditures for 1986-87 Biennium)

Project (County)	Work Required	Biennium Expenditures Pre-Construction	Biennium Expenditures Construction	Funding Responsibility State	Funding Responsibility Water Users	Comments
*Cottonwood (Park)	Spillway repair	$ 47,000	$128,000	$145,000	$ 30,000 (Loan repayment)	Rehabilitation completed.
*Yellow Water (Petroleum)	Replace outlet	40,000	131,000	139,000	32,000 (Loan repayment)	Rehabilitation completed
*Martinsdale (Wheatland/ Meagher)	Repair existing spillway, construct new spillway, install seepage control drain	42,000	222,650	42,000	222,650 (Loan repayment)	Rehabilitation partially completed. New emergency spillway will be completed in 1987.
*Middle Creek	Repair existing spillway, construct new spillway, increase reservoir storage	165,000		165,000		Feasibility study completed in Feb. 1985. Total construction cost is estimated to be $4 million. Funding through U.S. Bureau of Reclamation Small Project Loan Program is being pursued.
*Petrolia (Petroleum)	Increase spillway capacity, repair dam embankment	$100,000		$100,000		Feasibility study completed in Dec. 1986. Total construction cost estimated at $2.6 million. Federal funding through the U.S. Bureau of Reclamation Small Project Loan program is being pursued.
Painted Rocks (Ravalli)	Repair existing spillway		70,500	70,500		Work will be completed by Nov. 1987.
*Tongue (Bighorn)	Increase spillway capacity, increase reservoir storage	78,000		78,000		Feasibility study completed in March 1985. Preferred alternative is to raise the spillway crest four feet and enlarge the existing spillway capacity. A special risk analysis is now being conducted to determine the most cost-effective rehabilitation alternative. Estimated cost of rehabilitation is $20 - $120 million depending on spillway size.
Fred Burr (Ravalli)	Minor repair to outlet	7,500		7,500		
Flint Creek (Granite)	Minor repair to outlet gate	3,000		3,000		
*Broadwater- (Broadwater)	Installation of	50,000		50,000		Economic feasiblity assessment of installing hydropower facilities will be completed by January, 1987.

* Expenditures for pre-construction activities have been made for these projects in previous bienniums.

SOUTH SANDSTONE

REPORT TO BE PRESENTED TO GOV. SCHWINDEN
SEPT. 25, 1985

3
7/2/87

HISTORY: The South Sandstone Irrigation Group was formed in the late 1960's to develop waterspreading irrigation upstream on South Sandstone Creek. The Group requested the Little Beaver Conservation District and the Soil Conservation Service to do the preliminary survey work to see if the project would be feasable. This work was done and with positive findings.

The South Sandstone Creek Dam was designed by the Soil Conservation Service in 1974. Construction was financed with a combination of funds from the South Sandstone Group, Fallon County, the Department of Fish, Wildlife and Parks, the Little Beaver Conservation District and Federal dollars. Construction began in the spring of 1975 and the project was completed in November 1975.

The reservoir stores 750 acre feet of water , providing 100 surface acres for recreation, wildlife habitat and fishery. The irrigation diversion benefits approximately 450 acres of waterspreading for hayland. The Department of Fish, Wildlife and Parks is the owner/operator of the dam with the South Sandstone Group as joint operators. The Department of Fish Wildlife and Parks is charged with the management and maintenance of the dam.

In compliance with agreements between the Department of Fish, Wildlife and Parks, SCS and the So Sandstone Group, and annual operation and maintenance inspection was conducted in **1983.** At this time cracks were found on the front of the concrete spillway, due to ice pressure on the spillway during spring thaws.

The Department of Fish, Wildlife and Parks applied to the legislature for $125,000 for this repair. With the help of our Representative Hubert Abrams, $100,000 was granted.

At the request of the South Sandstone Group and FWP, SCS designed a repair for the damaged spillway. Estimated cost of the repair was $31,000. SCS agreed to provide technical assistance and supervise the construction. The remaining funds were targeted for stream bank erosion control, rip-rap on the dam and repair on the spillway drains.

Due to the amount of the repair cost, those concerned were informed that a private consulting firm was required. HKM of Billings, Montana was employed by the Department of Natural Resources and Conservation as a consultant. As a result of their preliminary research and designs, approximately 80% of the grant money has used leaving very little money left of repair of the spillway and no money for the reservoir erosion control, rip-rap on the dam, spillway drain repairs that are needed.Conflicting statements have been made regarding the quirements of hiring a private consultant by state officials.

As a result of the preliminary expenditures, only temperary repairs have been made for $12,000. The the concrete did not meet the required standards and specification of the Dept of Natural Resources, the contractor had to remove the unsatisfactory cement and replace it with cement that would meeting the requirements of the DNRC. To over-see this correction, the project was again charged approximately $4,000 for two men to inspect the concrete.

Of the original $100,000 grant money $69,000 was repeat preliminary work and administrative expenses by DNRC and HKM. Hydrology was first done by the SCS in 1973, at SCS cost, and repeated by HKM for the Army Corp of Engineers in 1981 and repeated again in 1985 for grant money. The temporary repair, amounted to $12,000 - with an additional $4,000 to inspect the repaired-repair with a balance of $15,000. This remaining funds are frozen, due to a possible law suite by Anderson Construction.
The other goals of repairing the stream banks, spillway drains and rip-rapping has not been met. The findings of the study done by HKM for a million dollar repair not feasibly for this project area.

October 14, 1986

Mr. Steve Schmitz
Department of Natural Resources
1520 East 6th Ave
Helena, Montana 59620

Dear Steve,

Enclosed is a request for $13,282.50 for the South Sandstone Dam repair. I have enclosed the statements from the contractor (Zion Construction) along with the contractual agreements with the Zion Construction and LBCD. As you will see in the rip rap agreement no amount was contracted. This was due to the fact we were uncertain as to how much money would be left for rip rap after the drains were repaired. (Both bids were let at the same time) Three hundred and one yards or 391 tons have been placed and a bill submitted. Louie Jensen, retired SCS Technician, has been the inspector during the repairs, he will have a bill to submit. Louie and I will be going out to the sight tomorrow and take some shots on the rip-rap portion of the repair and more rip rap will be placed along the face of the dam (much more is needed - but will do the best we can with the $$ left!) to use the remainder of the grant money.

If you have any questions about this project, please give me a call.

After the law suit was dropped, the frozen funds ammounting to $15,000.oo was turned over to the Little Beaver Conservation District to repair the dam.
A total of approximately 650 tons of rip-rap rock was hauled 27 miles and placed. The spillway drains were repaired to use up the balance of $15,000.
During an inspection in November, we discovered that the temporary spillway repairs had settled 2tenths of a foot in the first year.
To summarize the dollars spent:
Inspections and study by HKM- $73,000.
Temporary repair of spillway- $12,000.
Money turned over to SCS district- $15,000.

If this money had not been turned over to DNRC hire to HKM, we could have applied $85,000. more dollars to repair the dam properly and permanently.

Report prepared by Matt Thielen

Matt Thielen

VISITOR'S REGISTER

LONG RANGE PLANNING SUBCOMMITTEE

AGENCY(S) _____ DATE FEBRUARY 2, 1987

DEPARTMENT _____

NAME	REPRESENTING	SUP-PORT	OP-POSE
John Greene	Outlook, mt		

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT.
IF YOU HAVE WRITTEN COMMENTS, PLEASE GIVE A COPY TO THE SECRETARY.

FORM CS-33A
Rev. 1985