

MINUTES OF THE MEETING OF THE JOINT APPROPRIATIONS  
SUBCOMMITTEE ON LONG RANGE BUILDING  
March 14, 1981

The meeting was called to order by JACK K. MOORE, Chairman at 1:05 p.m. in Room 108 of the Capitol Building. All committee members were present except Sen. Etchart. Also in attendance was BOB ROBINSON, Fiscal Analyst.

Testimony was given by Ray Grossman, Townsend Rotary; Pat Ragen, Townsend County Commissioner; Kurt Mann, Economic Stabilization Corp; Ron Holliday, Fish Wildlife and Parks; W. E. Murray, Cascade D.E.S.; Captain Cottrill, Helena National Guard; Gil Gilbertson, Administrator for Disaster and Emergency Services; Jack Walsh, Montana National Guard; Tom Nopper, Director of Administration at Montana State University; Dr. Ray Wimberly, Montana State University; Dr. Blacketter, Mechanical Engineer at Montana State University; Gary Fritz, Department of Natural Resources; and Rick Bonding.

THE CHAIRMAN stated the bills would be heard in the following order: House Bill 564, House Bill 826, House Bill 532 and House Bill 603.

REP. HURWITZ, sponsor of HB 564, stated he was the representative from District 45 and he gave a brief overview of the purpose of the bill. He stated people in the nearby counties use this area and it receives heavy use. They asked for the proponents to this bill to give their testimony.

PROPOSERS:

MR. GROSSMAN, member of the Rotary Club in Townsend, stated in 1977 he was appointed to a committee of interested people in developing the Silo area at Canyon Ferry. At that time the Fish and Game Department came out with a management and development plan, but his committee felt this plan neglected the southern portion of the Dam. As a member he became interested in developing the southern area, and subsequently the Fish & Wildlife have come up with a new plan that his committee feels is the proper amount of attention for that area. He would like to go on record in support of this bill.

MR. RAGEN, Townsend County Commissioner, read a letter to the committee from the Commissioners in Montana stating their support of HB 564. (See Exhibit A) They stated their support in expanding the Silo Recreational Area. The Broadwater County maintains the road from U.S. Highway 287 to the cattle-guard.

MR. MANN, a member of the Economic Stabilization Corp. stated

they were interested in seeing this project develop in the Townsend area because the Silo recreational facility is a year around facility and would be able to accommodate more people.

MR. HOLLIDAY, Administrator for the Parks Division, stated his department supports this appropriation. (See Exhibit B) He stated this appropriation at its full amount would make developments available at the Silos, and would also build two trailer or boat dump stations at the north end of the reservoir. He wanted it noted on March 10, President Reagan asked Congress to not appropriate land and conservation money for state and local governments in FY 82, and one-half of the funding for this project is suggested to come from this source. He stated at this time no one is certain whether or not Congress will go along with this. He stated if the legislature wants to make absolutely certain the full scope of work contemplated in HB 564 is accomplished, then he suggests appropriating the \$249,000 from state sources, otherwise he suggests passage of the bill as written with the understanding that if the federal funds are not forthcoming, the scope of the work will be halved. He stated his support of HB 564.

THE CHAIRMAN asked Mr. Holliday if the Parks Department had any money that was not earmarked.

MR. HOLLIDAY stated there was money in the accounts, but no money that he is aware of that is not appropriated in the earmarked revenue accounts, all the money requested is for operations. He stated all the Long Range Building requests are for capital projects.

REP. BARDANOUE asked if there was any local money put into this development project, which has been done by other areas in this regard.

MR. GROSSMAN stated in this particular case they are dealing with land owned by the Bureau of Reclamation, rather than private land, but at this time there has been no local effort to raise funds. He felt the community would support this project, but the area also gets a lot of people from Butte, Whitehall, Three Forks and Belgrade.

REP. BARDANOUE asked Mr. Holliday if the full amount requested was not allocated, could he give a plan as to how this money would be used.

MR. HOLLIDAY stated he assumed the first priority would be the

road work, but he would be happy to give a plan for priority. He explained the history of the reservoir. He stated it was a federally funded reservoir funded and built in the mid-50's. In the 50's the Bureau of Reclamation made an agreement with the State of Montana for management of the land surrounding the reservoir. The state manages the land, but it is owned by the Federal government. He felt the government would need to give permission if the development was drastically changed, but it is merely a formality at this time.

MR. RAGEN stated it was difficult for him to say at this time if the Commissioners felt the roads were the biggest priority, and he did feel it was his position to state the priorities.

#### HB 826

REP. PHILLIPS, sponsor of HB 826, from District 43, explained the main idea of his bill was to have an emergency operation center for the National Guard Armory. This center would be the central operational center for the State of Montana for the Civil Defense and the National Guard. He stated one always hopes they do not have to use an emergency center, and it is important to see how badly the State of Montana needs the Center.

#### PROPONENTS:

MR. MURRAY stated from the 1953 disaster to the recent Mt. St. Helen's, the governor convenes a task force to find out why the state does not respond in a timely, efficient, effective and economical manner. The conclusions of these task forces is the lack of a major area for all state agencies to gather and share information and arrive at common decisions. He felt it was unfortunate that no major disaster has occurred during a legislative session, so it is easy to overlook how bad it was during the disaster time. He feels an honest assessment of the past disasters will show that more money was spent through the lack of coordination during emergencies than what is requested in HB 826. He wanted to stress that this is a one time expenditure with low maintenance, and this is the type of building that will be used in day to day functions and not just sit idly waiting for an emergency. He feels the state is living on borrowed time by not having a facility such as this.

REP. BARDANOUVE stated that many people in Montana feel the biggest national disaster is when the legislature is in session.

MR. GILBERTSON gave a brief overview of what the Emergency Services have in mind and how it should work. The building referred to is the State National Guard Armory built in the 30's. He stated a portion of the basement has been upgraded for the State Emergency Office. He noted the present space has not been finished, has no ventilation, no heating and no fire escape. This space in the past has not been used as an emergency operation, because of the lack of communications and other facilities that are needed in an emergency operation. Through a supplemental the communications have been upgraded. It is just the space and the facility that need the help now. He noted there are many other agencies that could make use of this available space when not being used for a disaster. He explained a drawing to the Committee regarding the required space being requested. He noted at the present time they do have the items necessary for an emergency operation center, such as emergency power, water well, kitchen and latrines, etc. He stated what the request would allow them to do is to upgrade the facilities with heat and proper ventilation, exits and entrances and thus enable the state to have a more day to day responsibility. He invited the committee to see what the current emergency set up is. They have not had any plans drawn up by an architect and the drawing shown was just a suggestion as to how it could be layed out.

CAPT. COTTRILL stated the National Guard would plan to utilize this center when completed as their operation center during State emergencies in which the National Guard participates. One of the greatest problems they have when called to state active duty by the Governor, is to place an operation center into effect and control program and at the same time not interfere with the normal operating procedures of the agency. This center would also be used as a training space during weekend drills and annual training. He stressed this center would be widely used besides an emergency center.

MR. WALSH, representative of the Montana National Guard Assoc. stated his association would like to go on record in support of an emergency operation center, and with the central control, the association can provide a more effective and efficient defense for the state of Montana.

REP. BARDANOUVE asked if there were any federal dollars available for a project such as this.

REP. PHILLIPS stated he has been told there might be 50% matching money from the Federal government. He noted the climate is more favorable in Washington for military defense.

MR. GILBERTSON stated there has been emergency operating center

money available to the Defense Civil Preparedness Agency and the last two years Congress has failed to fund that fund. FY 81 money has been put back into that fund but at this time the state has not been informed what the share will be for additional funding.

THE CHAIRMAN read from his book, page 215, in regard to the funding and asked why the discrepancy of wanting to take from the General Fund \$523,000.

MR. GILBERTSON stated the proposal in the Long Range Building Fund was prepared by his office, and they did consider that Federal funds would be available when they made their proposal. The presenters of the bill asked for 100% General Fund in case the Federal funding was not available. He stated the price in the Bill is an estimated cost prepared for his Agency, by the Office of Administration. The only piece of equipment the proposal includes is an emergency generator, and does not include any communication equipment.

THE CHAIRMAN stated there is a call in the House and Senate for a study of the telecommunication system in the state, and this would be done within the next two years. He was not aware of what the status was on this, but asked Mr. Gilbertson if this would tie in with the emergency operation centers.

MR. GILBERTSON stated he would like to think that it would. The present communication systems they now have are systems that other state agencies have on a day to day basis. They depend on Mountain Bell systems, the law enforcement teletype system, the highway maintenance system, as well as the highway patrol, plus the national guard system and the emergency broadcasting system. He hoped a telecommunication system would enhance their capabilities, but at this time they have no direct input into it.

MR. MURRAY asked to respond to the Chairman's question regarding the difference in the amounts requested in the book as compared to the bill. He noted they tried to take a realistic look at what it would truly cost to make this functional, and the \$523,000 was arrived at. The second point is they did not cut that amount in half because they have always waited at the local level for the Federal money which either does not show up, or when it does show up the match is not there. He stated if the government did pay for half of that then only half would be paid for by the State, and this could be written into the amendment appropriation.

SEN. HIMSL asked if the center would meet specific bomb shelter criteria.

MR. GILBERTSON stated this meets all the federal criteria, and the protection factor for the building is better than 1000+, and a study has been done regarding its ability to withstand earthquakes.

REP. PHILLIPS summed up that he was amazed that the State of Montana did not have a real disaster proof center. He felt they had all the proper communications to tie in with all the other networks, but the fact that all the equipment is not in one spot further hinders the efficiency and coordination purposes. He stressed the State of Montana is in dire need of a decent control center to handle any natural disaster that may occur and would like to have the Committee give this their favorable consideration.

#### HB 532

REP. NORDVEDT, sponsor of HB 532, stated that this year there were \$16,000,000 in supplemental heating costs for the State. He feels this makes HB 532 particularly timely. What this bill summarizes is to develop a garbage burning power plant at MSU to use steam heat to heat the MSU facility, and possibly in the spring months put in a co-generation steam turbine to generate electricity to sell the excess steam heat generated back to Montana Power to gain further revenue from this facility. He stated this is not an experimental or research facility, but is an existing state of the art plant of burning garbage to produce steam. The bill as constructed is a mixture of front end money of \$1 million and \$6 million bonds to produce the steam facility at MSU and also to construct some landfill transfer stations in the different communities. He explained to retire the bonds, the intent would be during the life time of the bond the full amount of the utility cost would be appropriated to MSU as if they did not have this facility at the ongoing gas rates. He stated that because of this facility MSU would actually be consuming less gas and electricity from the utility company. This difference between the actual appropriation and the actual expenses is that money would be used to retire the bonds. Upon retiring of the bonds there would be a permanently lower utility cost to the state, and the appropriations to MSU could be correspondingly lower for the lifetime of the plant. He understood there were studies done at Dillon to put in a similar plant on a smaller scale. He summarized this not only helps the landfill problems in several communities, but it will reduce the utility costs to MSU.

#### PROPONENTS:

TOM NOPPER, Director of Administration, MSU, stated MSU is very

concerned about energy problems in the day to day operations and would like to maximize all the energy resources. He stated some time ago the Department of Natural Resources funded a feasibility study done by Dr. Blackketter, and Dr. Wimberly, who are both present. (See Exhibit D) He feels this co-generation unit will allow MSU to become more independent in their energy needs. He stated not only will these funds be reimbursed from the normal operation budget, but the auxiliary facilities such as dormitories etc. would also help pay off the bond. He feels as this project progresses, there may be other fuels that can be used in this plant, so they would like to consider this as Phase I. He stated if the legislature approves this bill, nothing would happen until they worked with the Department of Administration and had satisfied the Board of Regents it was feasible to retire the bonds they are requesting.

DR. WIMBERLY stated with the 5.15 million BTU per ton of solid waste material, this unit can provide from 50% to 60% of energy to the campus, and in a long range plan provide a benefit to the state of \$30 million by 1997. Operation expenses would go up to 10%, and with operational costs and capitalization of the bonds would still provide the 30 million of savings.

DR. BLACKKETTER, Mechanical Engineer MSU, stated another aspect of this project is that there are 5 landfills in the vicinity of Bozeman and 4 of those are unlicensed because of the landfill problems in the area. He noted Ennis has to be included in the incinerator program, and this would prevent them from opening another landfill. It would take only 3% of the total energy in the waste from Ennis to transport the waste, and would be cheaper to haul the waste than to open a new landfill. He stated he is currently doing a feasibility study for Western Montana College, and they are projecting they would need no front end money because the local people are willing to transport a significant amount of the fuel to the plant at no cost to WMC. They would need to be bonded around \$1 million, and they would burn about 16 tons of wood in that plant. He explained to the Committee how they were able to estimate the \$30 million savings. He stated these high pressure boilers have been around 100 years, and are independent of what type of fuel source is used. They are suggesting instead of natural gas, to use solid waste. He noted they have talked to Montana Power regarding this proposal.

THE CHAIRMAN asked how many co-generation plants in the U. S. use solid waste.

DR. WIMBERLY stated there is only one that he is aware of and that is in Blackfoot, Idaho. He stated the convergent of energy and steam into a form of electricity is a standard process and is not a new technology. There are around 100 systems that use solid waste in heating system, they simply do not co-generate. He stated the solid waste is reduced by 80%, the remaining beaded up ash is conveyed to a local landfill dump.

REP. BARDANOUE asked about the pollution.

DR. BLACKKETTER stated the commercial power plants on the market meet the Montana Clean Air standards borderline. Ten parts to a million is allowed and the environmental constraints are at that point where it does if a cleanup restraint isn't put on the backend. The pollution output will be reduced to 90% with this filter attached to the back. He stated it was not an impossibility to have an inversion factor, where the operation would not be able to be used. The landfills would still remain open. The plant will actually be located on the MSU campus and behind the heating plant is a location consideration. Transfer stations will be located around the participating landfills, so the refuse will be brought into the central plant. The waste will be transported to the campus in closed containers and will be put directly into the incinerator.

THE CHAIRMAN asked what the start up costs would be, and how much would be necessary for operation.

DR. BLACKKETTER stated they are currently estimating if this is in process in 1982 there would be \$800,000 cost the first year. After that there will be a 10% increase, and this will include the hauling of the refuse from the transfer stations, and the salaries of the people running the transfer stations. The population for Gallatin County is 50,000 and there would be 15,000-20,000 additional population if Madison County uses this also. He wanted to restate there are plenty of natural gas co-generation plants, but he only knows of one co-generation plant that uses solid waste.

MR. NOPPER stated he feels what is unique about this, is the steam is provided by the burning of municipal waste for the co-generation plants. There are now 19 co-generation units throughout the U. S. that burn fuel oil, natural gas, coal etc., but not municipal waste. He stated the co-generation aspect is not new, nor is the burning of the municipal waste, but the combination of these two aspects is new.

REP. NORDVEDT stated that energy costs are going quite high and we are still under controlled gas prices. In a few years there will be decontrolled prices, and the state will be faced with the out of control utility costs, and this project will allow the state to get some type of control over this.



HB 603

REP. BURNETT, sponsor of HB 603, stated what the bill does is reappropriate the money that wasn't spent last biennium due to the fact the construction wasn't accomplished. He asked the Department of Natural Resources to give an update on the state's Cooney Dam project.

MR. FRITZ, representative of Department of Natural Resources, gave a brief overview of the Cooney Dam. He stated this project was not only to reconstruct the spillway, but to raise the Dam 5 feet and provide an extra 4,000 acre feet for agricultural purposes. He explained the reason the construction is one year behind is because when the bill was passed they anticipated getting the 1.5 million dollar federal loan that year. The president's policy of no new starts held it up for one year, but in FY 80 they were able to secure the funds for the project. Since the federal funds are secured they have gone ahead and renegotiated a repayment contract with the government and have secured the permits necessary to complete the project. They are now in the process of securing necessary land and have completed one half of the design project. They anticipate that they will spend \$150,000 of the \$591,000 this biennium, and this bill will carry over the rest of the money to be spent next biennium. Construction will begin this fall. He stated the entire \$591,000 appropriated came from interest on the R.I.T. account.

MR. BONDING stated by June 30, or the end of the biennium they would have spent around \$150,000, which leaves approximately \$450,000 remaining in the R.I.T. funds.

THE CHAIRMAN stated the legislature appropriated \$591,300 two years ago for the rehabilitation of Cooney Dam from the Resource Indemnity Trust Fund interest account. He stated through this biennium there would be \$150,000 spent. In the meantime there was \$1.5 million federal money that was delayed for a year, so he asked what amount were they requesting for state expenditures.

MR. FRITZ stated the bill is specific to the amount that the money spent so far in this biennium, be deducted and carried over so the total state expenditure would be \$591,000 through the FY 83 biennium.

THE CHAIRMAN asked when this money is expended, both state and federal, how much more is going to be required for the Dam.

MR. FRITZ stated that he had asked the same from the engineers

on the project, and the way it appears now there is not going to be a need for additional funds to complete the project. He noted due to the estimation, the project may be smaller in scope than originally anticipated. He stated one problem that may arise is the Land and Water Conservation funds for \$265,000 are committed by the Federal Government to this project. He felt these funds may be endangered by the Reagan administration, then the project would be short \$265,000. He felt they can work around this shortage somehow because the project is too important to the people in that area to stop it by this shortage. He stated they will do everything possible not to have to come in and ask for more funds.

MR. HOLLIDAY stated his Department entered into an agreement with the Department of Natural Resources in the early 70's for recreation management around Cooney Reservoir, and two appropriations have been received for improvements there.

REP. MANUEL asked if any permanent facilities would have to be moved because of the raising of the Dam.

MR. HOLLIDAY stated the original agreement with the DNR allows for a 10 foot raise, so there was quite a bit of far-sightedness in regard to this.

REP. DONALDSON asked who owns the distribution system.

REP. BURNETT stated there is a Dam Board, and the state is not involved in the distribution system.

REP. BARDANOUE stated he feels in regard to HB 260, there could be some misunderstanding in the wording of the bill.

THE CHAIRMAN stated the bill would have to be amended regarding the reappropriation of the money at a stated amount through the FY83 biennium and reappropriate the federal monies, and this would be written up with that intent.

REP. BARDANOUE moved that a proper amendment be drawn up regarding HB 603. THE MOTION PASSED.

REP. BURNETT stated he would be willing to cooperate any way they wanted to work the bill out.

THE CHAIRMAN asked to discuss some of the items that the Committee was not able to get to, such as Warm Springs toilet facilities, and the residential living units at Boulder.

MR. HAUCK stated there is a lack of male toilet facilities in

the Spratt building in Warm Springs. The only ones put in the building was for the staff, and with the double occupancy in that building the male facilities are necessary.

THE CHAIRMAN stated during the Subcommittee hearings he discussed the conditions of the buildings at Boulder, and nothing has been done to these for quite some time. The type of resident there now is causing the buildings to be in disrepair. He stated he asked A & E to check the 6 living units and see what it would take to bring these units up to health and safety codes.

MR. HAUCK handed out EXHIBIT F. He stated there are 6 buildings approximately 11 years old, most of the structural damage is cosmetic. He noted due to the type of occupancy there will be needed extensive repairs about every 10 years. One of the main problems is the windows are always broken, and even plexiglass does not work. There is a new type of glass developed called Lexan that is used in prisons, and is quite expensive, see Page 2. He went through the remaining items on the list. He stated regarding items 8 and 9, most of the rooms have sheetrock and many holes are put into these walls, so masonite will be put over these walls.

REP. BARDANOUE objected to the architecture fees that were being put on this project.

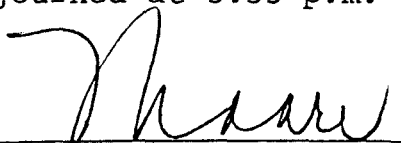
MR. HAUCK stated he has a bill that has the specific wording to remove Repair and Maintenance projects needing architect fees from construction projects.

THE CHAIRMAN asked if they could pull this request from Long Range Building and put in into the Repair and Maintenance budget for Boulder, if this was done would this save the architectural cost.

MR. HAUCK stated this could be done, but he was not sure if they had the sufficient staff to do this type of work. He explained to the committee if they were interested in a mechanical ventilation system designed to remove the odors from the Boulder units, this would cost an additional \$234,788.

REP. BARDANOUE stated he did not feel this was necessary and felt the committee agreed with him on this.

There being no further discussion or comments, the meeting was adjourned at 3:35 p.m.



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JACK K. MOORE, Chairman

# VISITORS' REGISTER

HOUSE LONG RANGE BUILDING COMMITTEE

BILL HB 564

Date 3/14/81

SPONSOR \_\_\_\_\_

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPO
Paul H. Hickey	Helena	Fish Wildlife: PARICS	✓	
Kay Anderson	Townsend, MT	Townsend Rotary	✓	
Pat Ryan	" "	County Commissioners	✓	
KURT T. MAW	Townsend, MT	Economic Stabilization Coop	Yes	
Carol McKin	Townsend MT	Townsend Chamber Comm.	✓	
J A Fuller	" "	Goose Bay	✓	
Don R. Heald	Townsend MT	Goose Bay	✓	
<del>W. H. Hickey</del>	<del>Montpelier, VT</del>	<del>Board of Educ.</del>	<del>✓</del>	
P. S. 36				
L. E. MURRAY	Casport Falls, MT	Passenger D.E.S.	✓	
E. E. Caldwell	Helena, MT	Natural Area	✓	

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

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

*Revised 1987 - R*

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HOUSE BILL NO. 564

INTRODUCED BY HURWITZ

BY REQUEST OF

THE DEPARTMENT OF FISH, WILDLIFE, AND PARKS

A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE \$249,000 TO THE DEPARTMENT OF ADMINISTRATION FOR THE DEPARTMENT OF FISH, WILDLIFE, AND PARKS FOR DEVELOPMENT OF RECREATIONAL FACILITIES AT CANYON FERRY STATE RECREATION AREA."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:

Section 1. Appropriation. There is appropriated to the department of administration \$124,500 from the long-range building program bond proceeds and insurance clearance account and \$124,500 from the state parks federal and private revenue account for the biennium ending June 30, 1983, for the department of fish, wildlife, and parks for the purpose of expanding and developing the recreational facilities at Canyon Ferry state recreation area.

-End-

INTRODUCED BILL  
HB 564

BROADWATER COUNTY

# Board of County Commissioners

TOWNSEND, MONTANA 59644

March 13, 1981

Legislature of the State of Montana

RE: House Bill 564

The Board of Commissioners, Broadwater County, Townsend, Montana are in support of House Bill 564 which is a bill for an act entitled: "An Act to Appropriate \$249,000 to the Department of Administration for the Department of Fish, Wildlife, and Parks for Development of Recreational Facilities at Canyon Ferry State Recreation Area."

We are in support of expanding the recreation area at the Silo Recreational Area near Townsend, Montana.

Broadwater County maintains the road from U. S. Highway 287 to the cattlegaurd at the recreation area.

Board of County Commissioners  
Broadwater County  
Box 489  
Townsend, Montana 59644

TESTIMONY OF RON HOLLIDAY  
ADMINISTRATOR, PARKS DIVISION  
DEPARTMENT OF FISH, WILDLIFE & PARKS

BEFORE THE JOINT APPROPRIATIONS COMMITTEE  
March 14, 1981

Mr. Chairman:

For the record, my name is Ron Holliday, Administrator of the Parks Division, Department of Fish, Wildlife & Parks. I speak in favor of House Bill 564.

Canyon Ferry Reservoir lies between Helena and Townsend on the Missouri River. It is the heaviest fished lake in the state and receives very high camping, boating, and other recreational use. Most users come from Silver Bow, Gallatin and Lewis and Clark Counties. People from the rest of Montana make up about 46% of the use.

Currently there are no facilities around the reservoir for disposing of sanitary wastes from camp trailers or boats. This has created considerable inconvenience to the users and has the potential of creating a health problem. Unfortunately, people have a tendency to discharge their wastes along the roads, in camp sites or fields.

The proposed dump stations would be installed at Goose Bay Marina and at Kims Marina. This will allow the concession operators at the marinas to closely monitor and maintain the facilities at their expense. They will probably charge a nominal fee for use of the dump stations.

The proposal also provides for improvements at Silos Recreation Area. Silos is located about 10 miles north of Townsend, just off U.S. 12.

Exhibit B

Silos receives heavy year round use. The heavy winter activity there is due to its popularity as an ice fishing spot. During 1980 over 46,000 people utilized the site. Indeed the heaviest times of use at Silos occur when the ice goes off the reservoir, usually during Feb. or Mar. The use of the site will probably increase in the future.

The existing facilities at Silos are very minimal and were not designed nor intended to sustain the high use it is receiving. Proposed improvements include primarily road work, drinking water, and boat launching facilities.

The people of the Townsend area are very interested in and supportive of improvements at Silos. Public meetings were held in Townsend and informational surveys have been conducted. As a result of this public involvement, the proposed site plan has been developed.

On March 10, 1981, President Reagan asked Congress to not appropriate Land and Water Conservation Fund money for state and local governments in FY 1982. One half the funding for the Canyon Ferry project, \$124,500, is slated to come from this source. Because the President suggests \$150,000,000 to be appropriated for federal land acquisition and other federal projects from this source in 1982, and because Congress has strongly supported the state/local share in the past, Congress may not fully agree. We won't know for several weeks or months.

If the legislature wants to make certain the full scope of work contemplated in House Bill 564 is done, I suggest appropriating \$249,000 from state sources.



Otherwise, I suggest passage of the bill as it is now written, understanding that if the federal funds are not forthcoming, the scope of work will be halved.

Canyon Ferry is an important recreation source of the state and I urge you to pass House Bill 564.

HOUSE BILL NO. 826

*Shelley Mott*

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2 INTRODUCED BY  
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4 A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE GENERAL  
5 FUND MONEY FOR THE COMPLETION OF THE EMERGENCY OPERATING  
6 CENTER IN THE NATIONAL GUARD ARMORY IN HELENA."  
7  
8 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:  
9 Section 1. Appropriation. There is appropriated from  
10 the general fund to the department of military affairs  
11 \$523,000 for the biennium ending June 30, 1983, for the  
12 purpose of completing construction of the emergency  
13 operating center in the lower level of the state armory in  
14 Helena.

-End-

INTRODUCED BILL  
HB 826

WITNESS STATEMENT

NAME William E. Murray BILL No. 8-26

ADDRESS Rm 248 Casco Bldg, Great Falls DATE 3/17/81

WHOM DO YOU REPRESENT CASCADE CO. DISASTER CHARGE FUND

SUPPORT  OPPOSE  AMEND

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

Comments:

EXPERIENCE HAS PROVEN THE INCREASED COST OF EMERGENCY RESPONSE DUE TO LACK OF STATE COORDINATION OF COMMAND AND CONTROL. USE AT LOCAL LEVEL FIND IT IMPOSSIBLE TO HOLD WITH A PORTION OF STATE AGENCIES AT VARIOUS LOCATIONS AND TELEPHONE NUMBERS DURING EMERGENCY CONDITIONS.

C

HOUSE BILL NO. 532  
 INTRODUCED BY *Norbert Mike Ludwig Bozeman*  
*Bob VINCENT Warren - EMU*

1 A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE FUNDS TO  
 2 THE DEPARTMENT OF ADMINISTRATION FOR PLANNING, SITE  
 3 PREPARATION, AND CONSTRUCTION OF LANDFILL TRANSFER STATIONS  
 4 IN BOZEMAN, LOGAN, AND ENNIS AND FOR PLANNING AND SITE  
 5 PREPARATION OF A REFUSE DISPOSAL AND COGENERATION FACILITY  
 6 AT MONTANA STATE UNIVERSITY FOR ENERGY SUPPLIES; TO  
 7 AUTHORIZE THE BOARD OF EXAMINERS TO ISSUE AND SELL  
 8 LONG-RANGE BUILDING BONDS; AND TO APPROPRIATE THE PROCEEDS  
 9 FROM THE BONDS FOR THE CONSTRUCTION OF THE COGENERATION  
 10 FACILITY."  
 11  
 12 RE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:  
 13  
 14 Section 1. Appropriation for landfill transfer  
 15 stations and planning for cogeneration facility. There is  
 16 appropriated \$1,000,000 to the department of administration  
 17 from the general fund for planning, site preparation, and  
 18 construction of landfill transfer stations in Bozeman,  
 19 Logan, and Ennis and for planning and site preparation of a  
 20 refuse disposal and cogeneration facility at Montana state  
 21 university for production of electricity and steam heat. The  
 22 money is appropriated contingent upon the sale of the bonds  
 23 authorized in section 2 by the state board of examiners. The  
 24  
 25 money appropriated in this section is in addition to the  
 26 money appropriated in section 2.  
 27 Section 2. Bond authorization and appropriation for  
 28 cogeneration facility. (1) The board of examiners is  
 29 authorized to issue and sell long-range building program  
 30 bonds upon the conditions and in the manner stated in  
 31 17-5-402 and 17-5-403, in an amount not exceeding  
 32 \$6,000,000, over and above the amount of the long-range  
 33 building program bonds outstanding on January 1, 1981, for  
 34 the purpose of paying costs of constructing and equipping a  
 35 refuse disposal and cogeneration facility for and to be  
 36 located at Montana state university for the production of  
 37 electricity and steam heat. The issuance and sale of the  
 38 bonds shall be subject to an undertaking by the board of  
 39 regents to pay to the state treasurer for deposit in the  
 40 sinking fund account established pursuant to 17-5-405, from  
 41 the sources listed in this subsection, amounts sufficient to  
 42 pay as due the principal of and interest on the bonds. This  
 43 undertaking is enforceable only by the state treasurer and  
 44 is not enforceable by the holders of such bonds. The  
 45 payments by the board of regents shall be made from  
 46 available revenues derived from the proceeds of the sale to  
 47 Montana state university of the electricity and heat output  
 48 from the facility for consumption at the university and sale  
 49 of excess electricity to Montana power company or other

-2- INTRODUCED BILL  
 14 B R 132

1 persons.

2 (2) The university shall include in its appropriation  
3 request funds necessary for purchase of the electricity and  
4 steam heat, using a conversion factor and prevailing utility  
5 rates to determine the value to the university of the  
6 electricity and steam heat and pay those funds to the  
7 sinking fund account. The sale to Montana power company of  
8 the electricity must be at prevailing rates for comparable  
9 sales of electricity.

10 (3) The proceeds of the bonds authorized by subsection  
11 (1) shall be deposited in the clearance fund account created  
12 by section 17-5-403. There is appropriated to the department  
13 of administration from the clearance fund account the sum of  
14 \$6,000,000 for the purpose of paying costs of constructing  
15 and equipping the facility described in subsection (1).

16 Section 3. Other sources of funding. If funding is  
17 available from other sources, the funds provided by this  
18 appropriation shall be decreased by the amount of the funds  
19 received from the other sources if the decrease does not  
20 jeopardize the receipt of the funds to be received from  
21 other sources. The amount shall revert to the fund or  
22 account from which it was appropriated.

23 Section 4. Severability. If a part of this act is  
24 invalid, all valid parts that are severable from the invalid  
25 part remain in effect. If a part of this act is invalid in

1 one or more of its applications, the part remains in effect  
2 in all valid applications that are severable from the  
3 invalid applications.

--End--

A STUDY OF THE FEASIBILITY OF A SOLID WASTE RECOVERY AND  
ENERGY GENERATION SYSTEM FOR THE MONTANA STATE  
UNIVERSITY AND BOZEMAN AREA

PHASE I

by

D. O. Blackketter

and

C. R. Wimberly

Final Report

Submitted to the Montana Department of Natural  
Resources and Conservation  
Alternate Renewable Energy Sources Program

September 1, 1980

Exhibit D  
HB 532

## I. Introduction

This is the final report of Phase I of the study of the feasibility of establishing a solid waste recover and energy generation system facility on the campus of Montana State University. Contained in this report is a description of the systems and operational procedures for utilizing municipal solid waste (MSW) collected in Gallatin and Park Counties for energy recovery and utilization as a fuel to heat the MSU campus and to supply electricity in a cogeneration network. In particular, the report addresses questions concerning participants, site selection, processing concepts, transfer stations, incineration, energy recovery, financial projections and cost estimates.

It is important to note that the quantity of MSW collected in the two counties varies from an estimated maximum of 200 tons per day in August to an estimated minimum of 120 tons per day in February; this estimate indicates that MSW can potentially furnish only 40% of energy needed for heat in February and exceeds the demands needed for heat in August. The fact that potential and demand are out of phase is a major factor in system selection. The various methods for evaluating the worth of energy is a major variable in estimating the economic parameters which control economic feasibility of the system. This information is presented in detail in Section II.

## II. Energy Value

The value of energy in its various states - chemical (MSW, natural gas, coal, etc.), steam and electricity - is of major concern. The factors which are of prime importance for determining the value of chemical energy include energy density, environmental impact of combustion, availability at a consistent rate and cost of incineration for conversion to steam energy. It is important to note that the higher the temperature of combustion the more

valuable the chemical energy source.

The value of energy sold by Montana Power Company (MPC) is dependent on a large number of factors which can be categorized as generation, distribution, investment and management. Table I presents the cost of energy to MSU in 1979 in the forms of electricity and natural gas, and the value of energy if generated by MSU in the form of electricity and sold to power companies at the avoided cost. MPC has indicated a willingness to cooperate in the development of the proposed system and to pay the avoided cost (as dictated by the federal government), which is considered the proper market value of electricity generated using a renewable energy source.

The value of MSW as a fuel is an indicator of the capital investment that is appropriate to construct an incineration and collection system. A recent test conducted at a North Little Rock incineration plant and reported in an EPA report revealed that for typical municipal solid waste, the heat that could be transferred to steam would be about 5.15 million BTU per ton. A recent visit to North Little Rock revealed that a more realistic energy value for their MSW is 6.6 million BTU per ton. Using the latter number in calculations for the extraction of energy from MSW the funds available for operating and capitalizing an energy extraction system would be about \$23 per ton of MSW when replacing natural gas, about \$21 per ton if it replaces the energy in the form of electricity at 20% efficiency (1979 prices) and heating, and about \$32 per ton of MSW when replacing energy by generating electricity at the avoided cost (MPC at 4.3¢ per KWH) and heating, respectively. The section of this report titled "Financial Projection and Cost Estimates" discusses the consequences of various decisions.



TABLE I

Energy Source	Energy Cost to MSU (Dollars per million BTU)
December 1979 price from Montana Power Company to Montana State University for natural gas	3.18
December 1979 price from Montana Power Company to Montana State University for electricity at 1.32¢ per KWH	3.80

Energy Source	Energy Value to MSU (Dollars per million BTU)
Avoided cost of electricity paid by Montana Power Company at 4.3¢ per KWH (MPC has requested a reduction of the avoided cost to 2.3¢ per KWH)	12.75
	(6.82)
Avoided cost of electricity paid by the State of Oregon is 6¢ per KWH	17.79

Participants

As described in the proposal various groups were approached concerning participation in phase one of the feasibility study. Those groups contacted for participation are listed in Table II, including the average tons-per-day that they can deliver. Discussions with participants have indicated that the MSW flow is not steady, requiring an incineration system that is flexible in order to dispose of all the MSW and to provide for appropriate energy extraction.

To date, each group has been asked to participate and to enter into an agreement with MSU to assure participation in the program at the completion of the facility. The Cities of Bozeman and West Yellowstone have each passed resolutions at regular City Council meetings indicating their intentions to participate. Logan has indicated their continued interest. Livingston has not decided. Consideration by participants have centered on actual construction of the facility, economic factors affecting them, reliability, and continued operations. Each landfill group expressed concern for knowing the cost to the user should a long term commitment be made to utilize an incinerator-energy recovery system. Each participant was asked to support the program by paying a tipping fee equal to the savings they would realize by their participation.

The question of plant reliability is discussed in the literature from each company proposing to build the type system appropriate for the participants. Each manufacturer claims excellent reliability for disposal of waste, but addresses the question of energy extraction on a continuing basis only indirectly. Of the plants being considered, all allow for modular construction, thus the potential for all being down simultaneously is relatively small. A very important matter related to reliability is that the price of electricity

TABLE II

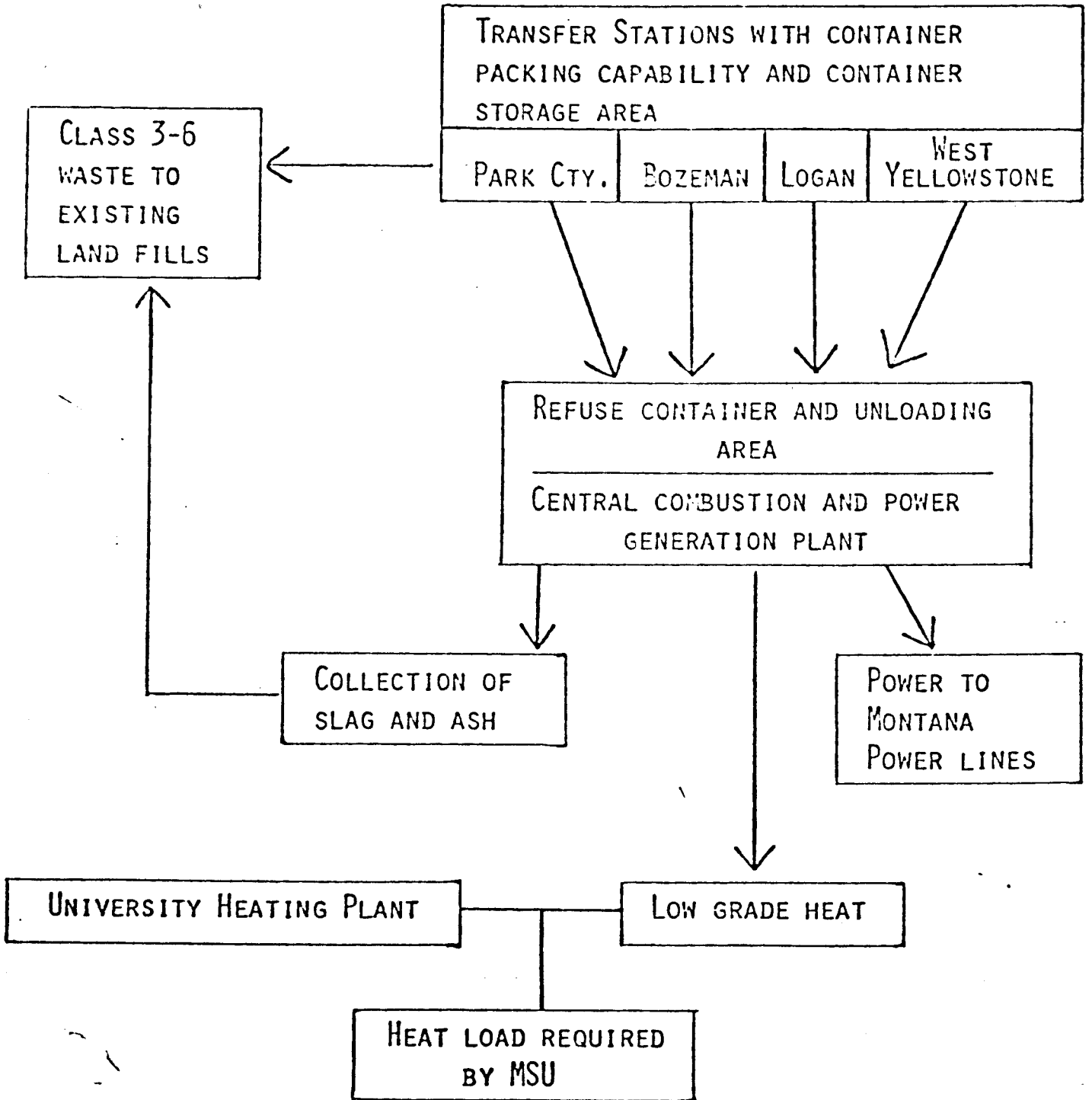
Groups contacted for participation in MSW program feasibility study and quantity of MSW potential from their participation.

Participation/Entity	MSW Generation Tons/Day Average
Bozeman Landfill Users City of Bozeman	76
Park County Landfill Users City of Livingston, Park County	37
West Yellowstone Landfill Users City of West Yellowstone, Forest Service Park, (Landfill Board)	6
Logan Landfill Users (Logan Landfill Board)	40
Total Average Tons Per Day	159

Figure 1

# BOZEMAN REFUSE DISPOSAL SYSTEM

## OPERATION CONCEPT



is strongly dependent on reliability. Thus, the economic evaluation will require estimates of operation potential which are accurate in order to determine economic feasibility.

### Site Selection

Meetings were held with the Bozeman City Engineer and the City Manager to discuss the site selection of the cogeneration plant and with several Montana State University officials on available sites on the campus. Five prospective sites were selected, including four on University property and one in the City of Bozeman (landfill site). Because of the energy distribution, access and potential environmental and traffic considerations, three of the sites were eliminated. The two remaining sites, both on the campus, are located: 1) east of 19th Street and west of the campus, and 2) directly behind the current heating plant. Either could be used; however, the location off 19th Street would require additional plumbing, be more expensive, yet would provide a more environmentally protected site. The site behind the heating plant would be cheaper to install, be more convenient as an instructional demonstration plant and easier access from engineering and the physical plant. However, its location, near many buildings, introduces a potential environmental and traffic problem. Visits to incineration plants in Bellingham, Washington and Coos Bay, Oregon, transfer stations in Seattle and elsewhere revealed that the odor from such facilities is not excessive. This information indicates that either of the on-campus sites for the cogeneration plant would be acceptable. Additional information concerning traffic and environmental impact will be obtained prior to a final decision on the facility site.

### Processing Concepts

All of the manufacturers that have offered to bid on the proposed system have proposed controlled air incinerator systems. Details concerning

each of the potential advantages for each of the different brands will be discussed in the section titled incineration. It is, thus, anticipated that the incinerator will be of the controlled type with the alternative of an integral steam generator or with an uncoupled steam generator. With either type of steam generator, steam can be generated such that steam turbines can be run for electrical power generation with the low grade heat being used for heat. A study of the systems available and the willingness of the manufacturers to guarantee performance lead to the conclusion that the proposed incineration plant is technically feasible.

Of significant importance is the site and thus, the method for transporting, storing and feeding the MSW must coordinate with site parameters. The cleanliness and lack of odor at both transfer stations and incineration plants leads to the conclusion that MSW can be transported to and stored at the incineration station such that neither traffic problems, nor odor, nor trash condition are created which will be considered unacceptable. The processing of MSW from a transfer station (located at or near the participants) to the MSU incineration site is expected to be done in 13 ton containers. Several containers will be stored at the incinerator site until time for burning, then be unloaded directly into the incinerator hopper. Transporting containers from transfer stations can be done two at a time, resulting in about 6 trips per day in the winter and 10 trips per day in the summer. Removal of ash and other waste will require about one container per day. The City of Bozeman has agreed to accept the ash and other items from the incinerator at no cost to MSU.

The transfer stations that were visited were located in Seattle and in the industrial area of south San Francisco. All were relatively clean and odor free. Nothing in the vicinity of the station appeared to be affected by the presence of the transfer station. One 80 ton-per-day plant was located

on a 50 foot-by-50 foot downtown lot. The total MSW in this building was less than two cubic yards; the balance was in the transfer container. Only two containers (trucks) were used by this station. It is expected that one transfer station will be built at or near each of the participating landfill sites. The MSW will be hand separated as appropriate, the portion to be incinerated will be compacted into containers for transfer.

### Thermal Design Analysis

Two rather fixed quantities in the cogeneration system dictate much of the characteristics that must exist internally and therefore, effect the sizing and capacity of the boiler, turbine and associated hardware. The first quantity that is rather inflexible is the amount of municipal waste available. As discussed, about 120 tons/day is the probable minimum amount we can expect delivered to the system if all participate. If it is assumed that the heating value of the MSW is 12.67 million BTU per ton, the potential energy from the waste, if all hydrocarbons are burned, would be  $87 \times 10^6$  BTU/hr. From information on incinerators/boilers of the type considered for the cogeneration system, only 60% can be expected transferred to the steam. The energy absorbed by the steam therefore, would be about  $53 \times 10^6$  BTU/hr. The second, somewhat inflexible quantity in the system is the condition of the steam leaving the turbines, if we are to provide heat to the campus in the same manner as it is currently done. The heating plant now produces superheated steam at 120 psig, which is then expanded to a saturated condition of 45 psig and 292°F. The steam is distributed to the campus, initially from a 10 inch line at an average flow rate of 40,000 lb./hr. (90,000 lb./hr. at peak periods).

If energy is extracted from the steam via a turbine (see Figure 2) to produce electricity, the condition of the steam entering the turbine would have to be superheated to a condition dictated by the electric power desired. For example, if one megawatt is desirable from the turbo-electric generator, the enthalpy of the steam entering the turbine would be about 1377 BTU/lb.

This assumes that the turbine is 70% efficient and that all of the steam passes through the turbine at a rate of 22,272 lb./hr. Since the flow rate varies from 10,000 to 90,000 lb./hr., only a portion of the steam may be diverted into the turbine. At lower flow rates, which would occur in the summer, a condenser attached to the system could be used to increase the electrical power generation. Average available heating to the campus, after extracting one megawatt of electricity ( $5 \times 10^6$  BTU/hr.) would be about  $44 \times 10^6$  BTU/hr. (on the average). The system could utilize natural gas in a dual system with MSW. Further investigations will determine if multi-turbine generators and lower steam quality at the turbine can economically provide greater electric power and still heat the campus.

#### Incineration

Approximately 20 companies, each advertised capabilities to furnish incinerator systems, were contacted; of those contacted, 8 responded. The first column of Table III is a list of companies interested in furnishing incineration equipment. Five of the companies presented sufficient information to warrant further investigations, only three of the five included sufficient cost information to allow economic projections. A discussion of each manufacturer follows:

##### A. Basic Environmental Engineering

This company presented literature and a list of 14 users indicating a high performance record of potentially excellent quality. The system appears to have good environmental characteristics, an integral boiler and compact construction. They did not furnish cost information or energy recovery percentages. Additional information will be requested. A site visit may also be appropriate.

##### B. Sunbeam Comtro

This company actually submitted a bid for equipment and installation;



TABLE III

COMPANY	2 HEAT RECOVERY TO STEAM	CAPACITY FOR INCINERATOR TON/DAY	TYPE OF ENVIRONMENTAL APPROVAL	PLANTS IN OPERATION	ESTIMATED COST OF CONSTRUCTION, INCLUDING SITE, BUILDING INCINERATOR BOILER, ELECTRICAL GENERATION, 150 TON/DAY
<p>A. <b>Be Environmental Engineering</b> 1 W. 161 Street Evanston, IL 60137 (312) 469-5340</p>		65 - 150	EPA	14	
<p>B. <b>Stubburn and Granger Thermal Reduction Systems</b> 51 Fifth Avenue Battersea, NJ 07524 (201) 278-1965</p>		Max - 4			
<p>C. <b>Ambeam-Contro Division</b> 100 Mercer Street Haddonville, PA 16335 (610) 724-1456</p>	50	33 (an incinerator 2 boilers)		many	\$3,300,00
<p>D. <b>J. B. I.</b> Box 884 San Leandro, CA 94577 (415) 352-6178</p>	80	75	Bay area Air Control Board	one in process	\$2,700,000
<p>E. <b>Consumat (Widjac)</b> Box 9379 Richmond, VA 23227 (804) 746-420 ) Widjac: (206) 828-6551</p>	56	50-75	EPA	many	\$4,300,000
<p>F. <b>Morse Boujger-Camb</b> 51-09 97th Place Corona, NY 11368 (212) 699-5000</p>					

TABLE III

ESTIMATED COST OF CONSTRUCTION,  
INCLUDING SITE, BUILDING INCINERATOR  
BOILER, ELECTRICAL GENERATION, 150 TON/C

COMPANY	Z HEAT RECOVERY TO STEAM	CAPACITY FOR INCINERATOR TON/DAY	TYPE OF ENVIRON- MENTAL APPROVAL	PLANTS IN OPERATION	
<p>G. Pyro Sol, Inc. 775 Harbor Boulevard Redwood City, CA 94063 (415) 367-1191</p>	50	75	Bay area Air Control Board		
<p>H. Guarantee Performance Co. P. O. Box 748 Independence, KS 67301 (316) 331-0020</p>					

the bid included a one month operational checkout. The bid did not include buildings or an electrical generation system. It is estimated that with a 1.5 MW generation capacity, the cost of the incineration-energy recovery plant would be about 3.3 million dollars. All aspects of the plant appear to be appropriately relative to our needs. The capacity of the proposed plant was 150 tons per day with a continuous rate of 125 tons per day. A large number of these plants are in operation. It will also be appropriate to visit a Sunbeam plant.

C. Consumat (Widjac)

A series of contacts and visits to this company has provided complete information concerning their system. The projected cost for a 150 ton per day plant with electrical generation added is estimated to be 4.3 million dollars. A number of Consumat plants are in operation; Dr. Wimberly and the Bozeman City Engineer, Mr. Arthur Van'tHul have visited plant sites and found the operation appropriate for our proposed program.

D. D.B.I.

This company presented a plant based on a concept that is unique. They have a contract with Bank of America, San Francisco, to construct a 200 ton per day plant. The new plant is scheduled to be operational prior to the time we will seek bids. Specifications call for an integral cogeneration plant for a total cost of considerably less than 3 million dollars. It will be appropriate for us to maintain contact with D.B.I., request a bid and evaluate their bid in view of the operation pilot plant. If they are successful both financially and technically, this plant will afford us many advantages.

#### E. Morse-Boulger

The information furnished indicated competence but was not sufficient for evaluation. Additional information will be sought.

#### F, G, H.

Three companies (F, G, H on Table III) presented information which did not describe plants appropriate to our needs.

It is reasonable for us to pursue our investigation of plants A, B, C, D, and E with site visits and then to determine accurate cost figures. The information furnished by each manufacturer is available for review upon request. Table III presents a summary of the information concerning each system.

#### Financial Projections and Cost Estimates

A portion of the cost of the facility has been discussed. Table IV is an itemized list of probable costs of the cogeneration plant, including an energy recovery laboratory for monitoring, research and maintenance purposes. As shown, the plant system is expected to cost approximately 4.95 million dollars. If we include two trucks for refuse delivery, refuse containers, four transfer stations (one at each site) plus the cost of the land development, utilities attachments and roads, the total capital cost becomes about 6.19 million dollars. Operations of the plant, once completed and operational is expected to be about \$550,000 per year. This figure is based on the operational costs of a similar facility in North Little Rock, Arkansas. Other estimated expenses required of the facility are shown in Table V.

Cost comparisons are shown in Table VI. The second column presents a conservative estimate of the increasing costs of natural gas and electricity paid by Montana State University. As a consequence of using MSW as a fuel source, the requirement of natural gas can be reduced by 60% as indicated in the third column. The potential savings provided by installation of a turbine electric generator of four megawatts in the system and the selling

of electric power to Montana Power Company at the avoided cost figure of 4.3 cents per KW-hr., compared with the purchase price of electricity at 1.3 cents per KW-hr. is shown in Table VI.

Efforts are being made to obtain capital for financing the facility. If government guaranteed loans, or government obligated bonds can be obtained and averaged over ten years, the capitilization of the facility will cost about \$582,000 per year. The last column in Table VI is the tipping fee desired of participants in dollars per ton of refuse delivered. Calculations done for 1982 suggest a tipping fee of about \$28.10 per ton; however, this figure is reduced each year, primarily because of the increased cost of natural gas and electricity. Averaging these values over six years to provide a constant tipping fee reduces the desired fee from participants to \$5.83 per ton of combustible MSW delivered to their respective transfer station. Actual tipping fee cost to participants will be the dollars per ton saved by their participation in the program. Preliminary estimates of the tipping fee from participants range from a possible \$10/ton from West Yellowstone (because of hauling costs) to \$2/ton from Bozeman. The average fee paid by participants will be about \$3.64 per ton of refuse delivered to the transfer stations. Since this value is less than the desired rate, means will be sought to cover the additional income needed. A simple solution is to defer the payment for one or more years. Grants will also be sought.

Table IV  
CAPITAL COST ESTIMATES

Cogeneration Plant

Building (25,000 ft. <sup>2</sup> )	
Energy Recovery Lab and Cogeneration Plant	\$1,750,000
Incinerators and Associated Equipment	
4 (50 tons/day units)	\$1,500,000
Boilers and Lines	
3 (50,000 lb <sub>m</sub> /hr. capacity each)	\$ 300,000 - ?
Turboelectric Generator System	
Controls (\$400,000)	\$1,400,000
	\$4,950,000
Total	

Other

Trucks (2)	\$ 120,000
Compactor containers (30), \$5,000 each	\$ 150,000
Transfer stations, compactors, etc. (4)	\$ 720,000
Land, utilities, roads	\$ 250,000
	\$1,240,000
Total	
TOTAL CAPITAL	\$6,190,000

Table V  
ESTIMATED EXPENSES PER YEAR

Operations of Plant System \$ 550,000

Capital Depreciation (not trucks)  
(10%) \$ 582,000

Hauling (@ \$2.00/mile per truck) \$ 256,000

Bozeman (\$40,000)

Livingston (\$44,000)

West Yellowstone (\$60,000)

Logan (\$112,000)

---

Total \$1,388,000

Table VI

## COST COMPARISON FOR MSU

Date	Total Utilities Costs (Million \$)	Natural Gas Savings With Cogeneration	Electricity Savings* With Cogeneration	Facility Operations	Capitalization**	Tipping Fee*** \$/ton Delivered
1982	1.684	0.470	0.226	0.806	0.582	\$5.85
1983	1.937	0.969	0.260	0.889	0.582	\$5.85
1984	2.227	1.114	0.299	0.975	0.582	\$5.85
1985	2.561	1.281	0.344	1.073	0.582	\$5.85
1986	2.945	1.472	0.395	1.180	0.582	\$5.85
1987	3.387	1.693	0.455	1.298	0.582	\$5.85

\* Income differential in avoided cost income and actual cost 3¢/KW-hr. Four megawatt generator used 60% of time at 25% capacity.

\*\* Loan guarantee at 2% differential income, 10 year loan.

\*\*\* Preliminary estimate (subject to assumptions of report) and averaged over six years.



HOUSE BILL NO. 603

INTRODUCED BY BARNETT

BY REQUEST OF

THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE FUNDS TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION TO REHABILITATE THE COONEY DAM OF THE ROCK CREEK PROJECT LOCATED NEAR RED LODGE IN CARBON COUNTY."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA: Section 1. Appropriation. There is appropriated from the resource indemnity trust fund account to the department of natural resources and conservation for the biennium ending June 30, 1983, any unexpended funds remaining from the funds appropriated for the rehabilitation of Cooney Dam from the biennium ending June 30, 1981. The sum appropriated may not exceed \$591,300 for the biennium ending June 30, 1983, and shall be used for the rehabilitation of Cooney Dam as set forth in a report entitled "Rehabilitation of Cooney Dam Spillways" and submitted to the Legislature in January, 1979.

-End-

INTRODUCED BILL  
HIB 603

January 21, 1981

Jack Moore, Chairman  
Joint Appropriations Subcommittee on Institutions  
Montana State House of Representatives

RE: Residential Living Units  
Boulder River School & Hospital

Dear Jack:

We have completed our survey of the Residential Living Units as you requested.

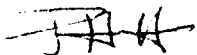
All six units are structurally sound and although designed for a less physical occupancy than the current residents, are quite suitable for residential living.

As you can see from our estimate, the work that is required is mostly cosmetic. A few items are intended to increase the durability of the structure.

I'm sure you've noticed the lack of ventilation in the cottages. This prompted us to identify the costs for installing mechanical ventilation, for your consideration. Current Building Codes require a system of this nature for new construction, but did not at the time these cottages were built. Mechanical ventilation would certainly make living conditions more pleasant for residents and staff.

If you have any questions or need further information, please call.

Sincerely,



PHILIP H. HAUCK, AIA, Administrator  
Architecture & Engineering Division

PHH/lmh

ELM + F

PROJECT ESTIMATE

FOR

REPAIRING 6 LIVING UNITS - BOULDER

1.	New Lexan Awing Units 210 units at 125.00 ea. - Include removal of existing hardware where required and removable double glazing.	\$ 26,250
2.	Replace damaged accoustical tile @ 10% of total - 4,620 sq.ft. @ 1.50/sq.ft.	6,930
3.	New security curtain rods 840 ln.ft. @ 6.00/ln.ft. + 5.00/ln.ft. for curtains	5,040 4,200
4.	Replace and repair lights - lump sum @	1,000
5.	Replace and repair door stops - lump sum @	500
6.	Add exhaust fans (6) @ 200.00 ea.	1,200
7.	Security radiator covers 1,350 ln.ft. @ 4.00/ln.ft.	5,400
8.	Install ½" masonite over existing gypsum board 8,000 sq.ft./cottage 8,000 (6) = 48,000 sq.ft. @ 1.00/sq.ft.	48,000
9.	Paint cottage interiors 10,000 sq.ft./cottage - 60,000 sq.ft. @ .50/sq.ft. =	30,000
10.	Paint exteriors 16,200 sq.ft. @ .70/sq.ft.	11,340
11.	Install new vinyl floor covering for 15% of cottage areas 6,930 sq.ft. @ 1.50/sq.ft.	10,395
12.	Provide new spring hinges as required - lump sum @	<u>500</u>
		\$ 150,755
13.	Inflation - Assume Fall "81" Bid Date @ 5%	<u>7,538</u>
	Construction Cost =	\$ 158,293
14.	A/E fees @ 11%	<u>17,412</u>
		\$ 175,705

15. Contingency @ 10% of Construction Cost	<u>15,829</u>
	\$ 191,534

Estimated Total Project Cost =	<u><u>\$ 191,500</u></u>
--------------------------------	--------------------------

NOTE:

If mechanical ventilation is desired

46,200 sq.ft. @ 4.00/sq.ft.	184,800
Inflation @ 5%	<u>9,240</u>
Construction Cost	194,040
A/E Fees @ 11%	<u>21,344</u>
	215,384
Contingency @ 10% of Construction Cost	<u>19,404</u>
	\$ 234,788
Estimated Mechanical Total Project Cost =	<u><u>\$ 235,000</u></u>

*191,500  
191,500  
12,000*