

HB 12
STATE BUILDINGS ENERGY PROGRAM PROJECTS
March 2005

PROJECTS

- 1) **Department of Administration, Mitchell Phase2/Museum -- Helena -- \$150,000**
Currently the phase I energy project is under construction. Phase I uses water from the central chiller and cooling tower in the Capitol Complex and then recycles the water back to the chiller. It replaces the old system of using City of Helena water, which is metered and charged to the State, and then discharging it directly to the sewer system. This is a cost savings and water savings measure.

Phase II of the Mitchell Building project will include installing a direct digital control system for equipment and upgrading the air handling system to include variable frequency drives. These upgrades will improve comfort and provide energy savings. Replacing the old boiler in the Museum building will also be completed, if found feasible, as part of this project.

- 2) **FWP Regional, Headquarters -- Miles City -- \$25,000**
Currently FWP uses older incandescent and low voltage light fixtures to illuminate their educational displays. This project will include a lighting study and an upgrade of the fixtures and lamps. This project will improve visual appeal, reduce maintenance time for changing lamps, and reduce energy consumption. The remaining interior and exterior lighting in the building will also be made more efficient.

- 3) **MSU-Northern, Pershing & Brockman -- Havre -- \$250,000**
Pershing Hall was built in 1933 and is the oldest building on MSU-Northern campus. It has been identified to be included in the Long Range Building Program for an upgrade to its heating system. The existing system provides little or no ventilation. This project will augment the LRBP funds for replacing the old steam system with a new hydronic hot water system and to providing ventilation and cooling to the occupants.

Brockman Hall has a failing cooling system and the building use has changed with the times. The cooling system will be evaluated for connection with the ground water cooling well recently installed at the Advanced Technology Center.

- 4) **UM-MT Tech, Petroleum Building -- Butte -- \$35,000**
This project will improve the lighting in the Petroleum building. Old, inefficient egg crate style lighting will be replaced with new pencil thin high efficiency T5 lighting.
- 5) **DPHHS, Mental Health Nursing Care Boiler Phase 2 -- Lewistown -- \$60,000**
A boiler upgrade is needed at this facility. A feasibility study will be conducted to determine the applicability of the project for a grant program from the USDA in conjunction with a boiler upgrade at the Fergus County High School. Bond funds would provide match for the federal funds.

6) MSU-Billings, Academic Support Center & McMullen Hall -- Billings -- \$800,000 - \$1,000,000

Currently, the McMullen Hall boiler is 75 years old and was originally sized to heat both McMullen Hall and the original gym. It is oversized and under efficient. The existing boilers in nearby buildings are only 50 to 55% efficient and have reached the end of their useful lives. An analysis will be done to look at alternatives to improve heating, including heating more than one building with a single boiler. This would greatly increase efficiency and free up valuable storage space. Different building use patterns may allow for a modulating boiler that would capture savings by heating a primarily occupied classroom during the day as well as heating a building primarily occupied in the evening and at night.

7) DOC, High Side Kitchen Men's Prison -- Deer Lodge -- \$124,000

The current air handling system is over 20 years old and was not designed for the current operation of the building. The building is cold and hard to heat in the winter and hard to cool in the summer. This project is part of the LRBP and will include lighting upgrade, control systems, and new HVAC system.

8) UM, Health Science Phase 2 --Missoula -- \$128,000

The first phase of this project was for cooling in just the basement lab portion of the Health Sciences Building. Phase II is to provide the remaining 5 floors of the building cooling through the ground water system and to upgrade the HVAC.

9) School for Deaf & Blind, Irrigation and Aspen Building --Great Falls -- \$100,000

Currently the school uses treated city water for irrigation. This is expensive and puts an extra load on the cities treatment facilities. A well will be considered to serve the approximately 6 acres already irrigated and 5 additional acres of native grasses that are currently watered by hoses. This project should promote irrigation efficiency as well as help with maintenance.

Aspen hall is an older structure used as a classroom. It is very poorly insulated and has a furnace that is at the end of its useful life. This project will augment LRBP funding to help improve the building envelope and install a new high efficiency furnace.

10) UM-Western, New Wood Fired Boiler -- Dillon -- \$800,000

The campus is heated by two old and inefficient boilers. The proposal is to apply for the upcoming Forest Service Fuels for Schools grant and install a wood fired boiler to serve the campus. The chipped wood would be less expensive than natural gas, help the local forest in fuel reduction, and provide local economic benefits.

PROJECTS UNDER CONSIDERATION

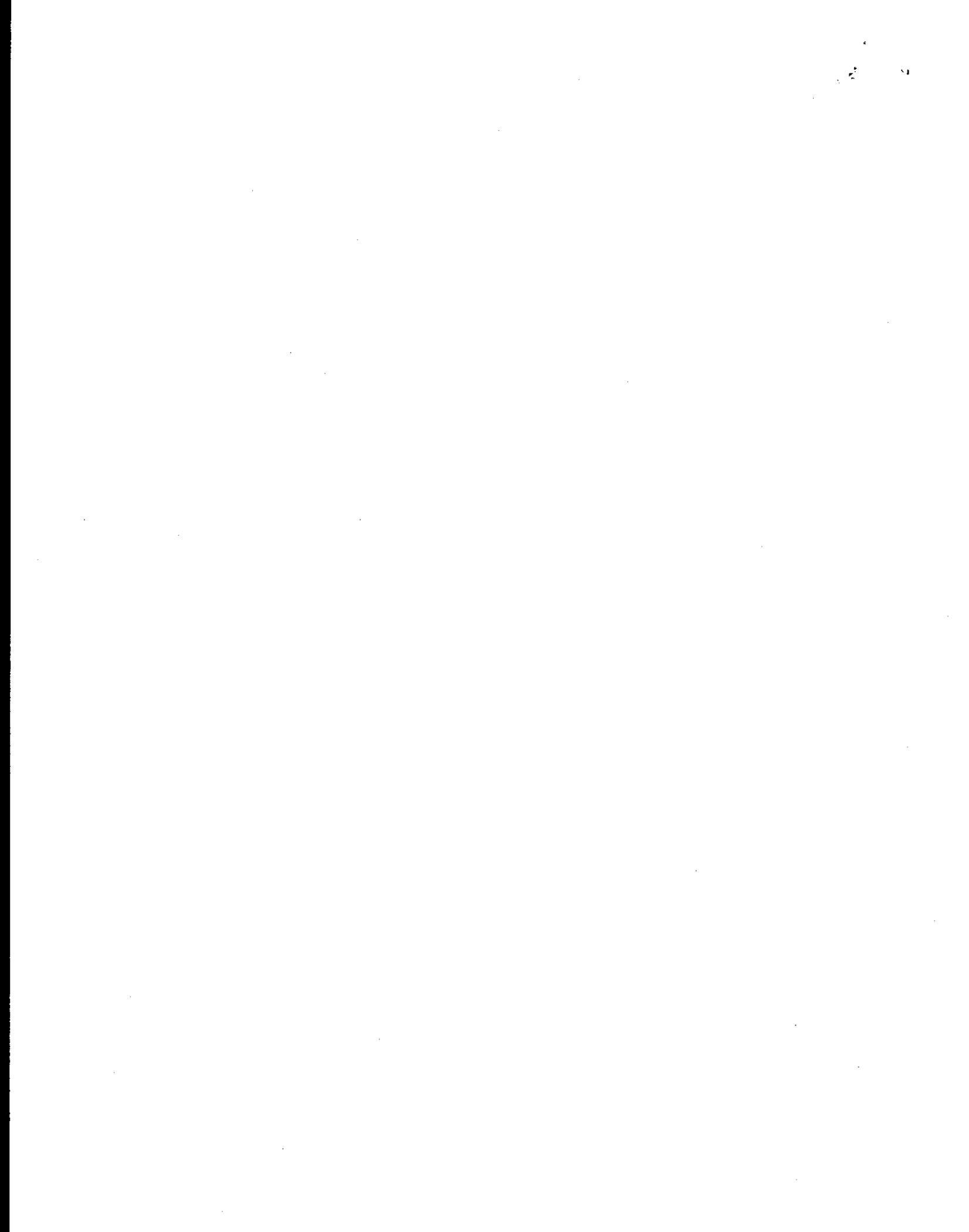
MSU-Northern, Campus Irrigation --Havre --Currently the campus irrigates approximately 28 acres with treated city water. This is expensive and it puts a load on water treatment facilities. This project will look at installing water wells and modifying existing sprinkler systems. The efficiency of the irrigation system will be evaluated to determine whether other changes need to be implemented.

MSU-College of Technology -- Great Falls -- This project will augment LRBP funding to address extensive deferred maintenance of the buildings mechanical system. This project will look at consolidating and replacing the many units serving the building and replace them with new energy efficient equipment.

Lewis & Clark Caverns, Montana Department of Fish, Wildlife & Parks--Cardwell -- An initial lighting study has been completed that would replace old technology flood lights with a variety of different lamp types such as Light Emitting Diodes and induction fluorescent fixtures. This would enhance the visual beauty and vistas of Montana's most visited State Park and would also reduce the electrical costs due to the efficiency of the new lighting. This project would not pay for itself with just the energy savings and is dependent on additional funding from lighting rebate programs and other sources.

Montana Veterans Home -- Columbia Falls -- The LRBP has a request for funding to do a variety of improvements at the Veterans home. This project would help finance the replacement of the old and inefficient boiler at the main hospital.

Mining and Geology Building, University of Montana -- Butte -- The Mining & Geology Building's original ventilation system failed 25 years ago and the building does not currently meet code. There is a request for funding through the LRBP to totally replace the existing system. With the installation of a more efficient mechanical system, as well as new windows and ceilings this project will reduce operating expenses as well as improve the building's comfort.



State Buildings Program Project Status

Projects Completed During Current FY 04- 05 Biennium	Location	Project Description
Pharmacy Building, Warm Springs	Warm Springs	Temperature Controls
Xanthopoulos Building, Warm Springs	Warm Springs	Temperature Controls, Lighting
Cowan Hall, MSU-Northern	Havre	HVAC, Ground Water Cooling
MSU Billings	Billings	Propane Backup
School For the Deaf and Blind	Great Falls	Boiler Power Burner
Renne Library, MSU - Bozeman	Bozeman	HVAC, Controls, Lighting
Reception Building, Men's Prison	Deer Lodge	Heat Recovery, High Efficiency Boiler
Spratt Building, Warm Springs	Warm Springs	Lighting
MT Mental Health Nursing Care Center	Lewistown	Cooling and Heating Plant Upgrades
Projects in Design or Construction		
Mitchell Building Phase 1	Helena	Water Conservation and HVAC Controls
Advanced Technology Center, MSU- Northern	Havre	Lighting
Petroleum Building, MT Tech	Butte	Lighting
Health Science, UM Missoula	Missoula	HVAC and Controls
MSU Billings Academic Support Center, McMullen Hall, Petro Hall & Rimrock Hall	Billings	Boiler Replacement & Consolidation
Women's Prison	Billings	Boiler Replacement & Back Up Power
High Side Kitchen Men's Prison	Deer Lodge	New Mechanical System and Envelope Improvements

Projects Being Studied		
Mitchell Building Phase II	Helena	New Boilers & Controls
FWP Miles City Headquarters	Miles City	Efficient Display Lighting
Campus Irrigation Project, MSU-Northern	Havre	Water Conservation
Mental Health Nursing Care Phase 2	Lewistown	Boilers (Maybe wood fired)
Pershing & Brockman, MSU- Northern	Havre	Ground Water Cooling & HVAC Improvements
School for the Deaf and Blind, Irrigation & Aspen Hall	Great Falls	Water Conservation & HVAC Upgrades
UM-Western	Dillon	New Wood Fired Boiler
College of Technology	Great Falls	HVAC Improvements
Lewis & Clark Caverns	Cardwell	Lighting
Veteran's Home	Columbia Falls	Main Hospital Boiler
Mining & Geo. Building MT Tech	Butte	HVAC Replacement
Projects Delayed/Suspended During Current Biennium		
MT Tech Heat Plant Upgrades (2)	Butte	Boiler Upgrades
Pine Hills Juvenile Detention Center (2)	Miles City	Heat Recovery
DNRC Oil and Gas Office (2)	Billings	Lighting
(2) Project completed without using energy bond funds.		