MONTANA UNIVERSITY SYSTEM

Montana University System LRBP Requests

Montana Technological University
Heating/Steam Distribution System Upgrade

Eighty percent of the Montana Tech campus receives heat and hot water from a network of steam tunnels and buried pipes that range from 80 to 100 years old.

The leaking and corroded network is at the end of its useful life, requiring frequent repairs and leaving the heat delivery system in danger of catastrophic failure.

With the needed repairs and upgrades, the system will remain efficient and cost-effective means of meeting the campus' heating needs for the long term. The heating plant's boilers are in excellent condition and have excess capacity.

- **Total Request**: $6 million
- Funds would repair the 80-to 100-year-old network of tunnels and buried lines providing heat and hot water to 80 percent of the Montana Tech campus. The steam heat delivery system is in danger of catastrophic failure.
- The 6 to-12-month project would commence immediately upon receipt of funding

W.A. Franke College of Forestry and Conservation

Timber mills, lumber yards and value-added workshops drive the economy in many communities across our state.

A new Forestry, Conservation and Lab Science Complex at UM will be more than just a building, it will be largely constructed of Cross-Laminated Timber (CLT) grown, harvested and manufactured in Montana, serving as a showcase for the world about the future of wood-based, mass-timber construction.

This facility will provide Montana's wood-products industry with the structure it needs to **expand production and create new business opportunities for our mill workers, manufacturers, engineers, builders and transporters**, revitalizing Montana's proud timber heritage.

- **Total Request:** $25 million in legislative funding; Authority to raise $20 million.
- The College has outgrown its nearly 100-year-old building and must utilize space in seven other campus buildings to maintain regular classroom instruction.
- UM has secured significant private funding, as well as in-kind lumber donations from many of Montana's mills. Construction would begin immediately upon receipt of funding.

Montana Agriculture Experiment Station

The Montana Agricultural Experiment Station (MAES) and its research centers have worked for over 127 years to help increase the profitability of Montana agriculture.

Funding will update, expand and enhance lab facilities to enable research that will **keep Montana's agriculture industry competitive in today's market:**

- Enhanced DNA analysis of crops
- Expanded chemical and microbiological research
- Safer handling of hazardous materials
- Doubling the capacity of the Montana Wool Lab

Total request
$11 million in legislative funding; Authority to raise $1.3 million

- WARC horticultural lab/office:
  - $1.2 million funding
  - Authority to raise: $300,000
- Chemistry and instrumentation labs at five of MAES' research centers: $4.8 million
- Wool Lab:
  - $5 million
  - Authority to raise: $1 million

MONTANA
TECHNOLOGICAL UNIVERSITY

HEATING/STEAM DISTRIBUTION SYSTEM UPGRADE

Montana Technological University is in dire need of an upgrade to its steam heat distribution system.

The 80-to 100-year-old system uses a combination of tunnels and direct buried lines that are corroded campus-wide, with numerous pipe failures on the south and west side of campus. The system provides general heating and domestic water heating to 17 campus buildings.

Annual repairs have kept the system operational and reduced steam and condensate losses. However, they are in danger of catastrophic failure, which would leave 80 percent of the campus without heat and hot water.

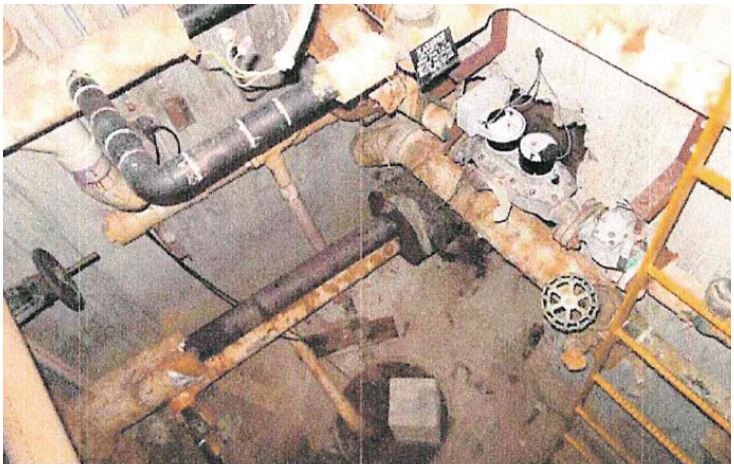
An October 2019 study of the system by Three Rivers Engineering recommended immediate capital investment to improve safety and reliability.

With the needed repairs, the system will remain an efficient and cost-effective means of meeting the campus' heating needs for the long term. The heating plant's boilers are in excellent condition and have excess capacity sufficient to handle current and immediate future heating requirements.

The $6 million project would take approximately 6 to 12 months to complete, with work beginning immediately upon receipt of funding.

Montana Technological University Heating & Steam Distribution System Upgrade

- **$6 million**
- Funds would repair the **80-to 100-year-old network of tunnels and buried lines providing heat and hot water to 80 percent of the Montana Tech campus.** The steam heat delivery system is in danger of catastrophic failure.
- **6 to-12-month project** would commence immediately upon receipt of funding.



1300 West Park Street | Butte, MT 59701 | 800.445.8324

UNIVERSITY OF MONTANA

FORESTRY AND LAB SCIENCES BUILDING

Total Forestry Building LRBP request: **$25 million in legislative funding and authority to raise $20 million**

W.A. FRANKE COLLEGE OF FORESTRY AND CONSERVATION

WORLD-CLASS WORKFORCE TRAINING IN WESTERN MONTANA

UM's Franke College of Forestry and Conservation is a global leader in the fields of natural resource management, forest health, ecology, fire science and many other disciplines – including the nation's No. 1 Wildlife Biology Program. The Franke College of Forestry and Conservation is a critical resource for Montana's wood products industry, FWP, DNRC, DEQ and business partners. There is growing demand across the nation for the degree programs offered by the Franke College of Forestry and Conservation, and the college consistently has the highest rate of student retention at UM.

97% OF **GRADUATES** are **employed** or in **graduate school**

85% OF **GRADUATES** work in the fields of **forestry** and **wildlife management**

RANKED FIFTH out of 316 institutions **worldwide** for **scholarly productivity**

Network of over **150 EMPLOYERS** students can **partner** with upon **graduation**

UNIVERSITY OF MONTANA

A DYNAMIC EDUCATION IN A CENTURY-OLD BUILDING

UM's Franke College of Forestry and Conservation has significantly outgrown its current building – which is nearly 100 years old. In fact, the college is forced to utilize space in seven other campus buildings just to maintain regular classroom instruction. The current building that houses the college was built in 1923 and has helped to foster some of the nation's most influential foresters and wildlife managers. But in order to build on the successful history of the college, **future students deserve to learn in a facility that reflects their contribution to our state's economy and natural resource industry.**

A SHOWCASE FOR MONTANA'S WOOD PRODUCTS INDUSTRY — CROSS-LAMINATED TIMBER

Montana has a rich history of timber production and manufacturing. Our state's timber mills, lumber yards and value-added workshops drive the economy in many communities across our state. A new Forestry Building at UM will be more than just a building, it will be constructed with Cross-Laminated Timber (CLT) and other wood products that are grown, harvested and manufactured in Montana. This building will serve as a showcase for the world about the future of wood-based, mass-timber construction in keeping with the governor's executive order to promote the use of Montana wood products. This building will be framed and built with lumber that is local, sustainable, cost-effective and manufactured in northwest Montana. A high-tech building constructed with CLT on the UM campus will provide Montana's wood-products industry with the showcase structure it needs to expand production and create new business opportunities for our mill workers, manufacturers, engineers, builders and transporters. **This building can revitalize Montana's proud timber heritage.**

PRIVATE FUNDS TO MATCH PUBLIC SUPPORT

UM has already secured $383,000 in private funding and has a high likelihood of obtaining gifts of in-kind wood products from Montana's mills. **With an appropriation from the state, this made-in-Montana building will be ready for construction immediately.**

MONTANA Wood Products ASSOCIATION

UNIVERSITY OF MONTANA

Montana Agricultural Experiment Station

ENSURING A STRONG AND SUSTAINED ECONOMY THROUGH RESEARCH

MONTANA AGRICULTURAL EXPERIMENT STATION LRBP REQUEST

The Montana Agricultural Experiment Station (MAES) and its research centers have served the research needs of Montana for over 127 years to help increase the profitability of Montana agriculture.

Research at MAES and its centers include: Montana-adapted winter and spring wheat varieties; barley, corn, and sugar beet production; pest control methods for wheat-stem sawfly, wireworm, wheat midge, alfalfa weevil and pea leaf weevil; beef cattle nutrition and reproduction; grazing range production; pulse crop and oilseed research; crop nutrient and water use efficiency; soil nutrient management; reduced tillage systems; foundation seed of crop varieties; and other research.

Total MAES LRBP request
$11 million in legislative funding; Authority to raise $1.3 million

- **WARC horticultural lab/office:**
  $1.2 million
  Authority to raise: $300,000
- **Chemistry and instrumentation labs at five of MAES' research centers:** $4.8 million
- **Wool Lab:** $5 million
  Authority to raise: $1 million

Western Agricultural Research Center (WARC) — Corvallis

A new facility will contain three labs for chemical/microbiological research, a covered loading dock, cold storage for crops and seed, and meeting spaces with updated technology for communicating to producers.

Central Agricultural Research Center (CARC) — Moccasin

The current research space is undersized and can only accommodate one or two experiments at a time. Sensitive research equipment has to be constantly moved due to space constraints.

Northern Agricultural Research Center (NARC) — Havre

No wet chemistry or advanced biological lab exists, limiting research capacity.

Northwestern Agricultural Research Center (NWARC) — Creston

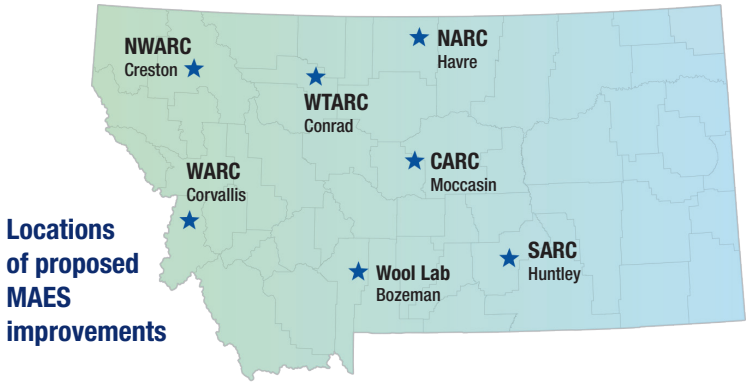
Outdated chemistry and wet lab hinder research.

Southern Agricultural Research Center (SARC) — Huntley

Poor environmental controls in the lab hinder valuable DNA/PCR analysis of crops.

Western Triangle Agricultural Research Center (WTARC) — Conrad

No facilities exist to conduct research involving hazardous or odorous chemicals.



Locations of proposed MAES improvements

WOOL LAB

The Montana Wool Lab, part of MAES, was established in 1945. The building lacks necessary space and environmental controls to expand testing and efficiently carry out modern wool testing demanded by the marketplace.

Wool Lab Capacity

- Montana currently ranks eighth in the nation in wool production with 200,000 head of sheep and lambs, producing 1.5 million pounds of wool in 2019.
- The Wool Lab runs approximately 10,000 samples per year through the lab. These samples help Montana producers develop flocks with the highest quality wool.
- There are no commercial wool labs left in the United States. Only Montana and Texas have viable university wool labs to conduct testing, teaching, research and outreach.
- With new facilities, the Montana Wool Lab could double its testing capacity.

Montana Wool Facts

- Montana wool is the highest-value agriculture commodity in the state on a per-ton basis.
- Montana growers are proud that a large portion of their fine wool is used to clothe and equip the nation's military men and women. The U.S. Army recently returned to their traditional green uniform using U.S. wool.
- International standards are evolving and growers in Montana may be forced to send their commercial samples to New Zealand for testing in order to sell their wool if the Montana Wool Lab is not improved.
- Multi-national companies will not purchase wool unless they have a certified "core" (from the bale of wool). The Montana Wool Lab needs improved facilities and more space to continue to provide International Wool Textile Organization, IWTO, certified samples going forward.

Contact Information:

Janelle Booth
Government Affairs
Montana State University
406-570-2426
Janelle.Booth@montana.edu

MONTANA UNIVERSITY SYSTEM

Authority Only: $68,300,000

- **Authority Only Projects - Approval provided by the legislature to expend funds that do not require an appropriation.**

UM Forestry Conservation & Science Lab: $20,000,000

- MUS Priority 1
- The proposed project consolidates all the forestry programs into one facility and provides state of the art science lab teaching facilities for campus.

MAES Research & Wool Laboratories: $1,300,000

- MUS Priority 2
- Requesting additional authority to raise $300,000 in funds for the Horticulture Research and Teaching Lab. Requesting additional authority to raise $1,000,000 in private funding for the MAES Wool Laboratory.

UM Music Building Renovations: $6,000,000

- MUS Priority 3
- This request for general spending authority would help secure up to six million in private funds for the remodeling of the existing facility which would address the current accreditation issue. The Music Building was built in 1953 and has not had any major improvements or modernization work done on it. This infrastructure upgrade request would provide life safety and deferred maintenance work for the Music Building.

MSU Rankin Hall Renovation: $6,000,000

- MUS Priority 4
- This general spending authority only request will cover up to six million in private funds for the remodeling of the existing facility which would address the current accreditation issue. Rankin Hall was built in 1909 and has not had any major improvements or modernization work done on it. This request would provide the necessary spending authority to cover the private gifts that will fund the renovations.

UM Mansfield Library Renovation: $6,000,000

- MUS Priority 5
- This general spending authority request will cover up to six million in private funds for the remodeling of the existing facility which would address the necessary renovations to repurpose the existing stack space for journals into beneficial instructional space.

MSU Instructional Space Upgrades: $2,000,000

- MUS Priority 6
- Requesting additional authority to upgrade and maintain instructional classrooms, labs, and computer labs across campus. The Montana State University campus is composed of a mosaic of architecture, new and old. Some older academic buildings and their instructional spaces remain untouched and in dire needs of updates to support student learning. Spaces include computer

labs, lecture halls, classrooms and various instructional labs where modern technology and pedagogies have surpassed the capacity and capabilities of the existing instructional space. This authority only request would support the continued improvements to student learning environments.

MSU Renne Library Renovations: $5,000,000

- MUS Priority 7
- Requesting authority to renovate areas in Renne Library in accordance with the Renne Library master plan. This project will substantially renovate, reprogram and modernize parts of Renne Library to support student success and meet the vision of a 21st century academic learning center. The project supports students and faculty research by transforming areas of the library into modern spaces that focus on how students and faculty learn, create, and share knowledge in the age of digital technology and collaboration.

UM Montana Museum for Art and Culture: $2,000,000

- MUS Priority 8
- This request is a supplement to $6 million in authority granted by the 59th legislative session needed due to inflationary costs and costs associated with necessary site adaptation costs.
- The museum will provide a permanent facility for one of the state's oldest and most prominent cultural reserves. The permanent collection of the museum began in 1894 and includes more than 9,000 original works.
- Current facility limits the display of works to less than one half of one percent of the collection.

MUS General Spending Authority: $20,000,000

- MUS Priority 9
- General spending authority enables the MUS to address pressing issues between legislative sessions and may include federal funds, donations, grants and other non-state funds.
- Projects could be major maintenance, new constructions, renovations ADA and code compliance upgrades or other project elements necessary to complete projects.
- OCHE distributes in accordance with Board of Regents approval and priorities.
- These projects do not require support of additional programs. (O&M)

Major Repairs: $19,695,000

- **Major Repair projects are defined as: Renovation, alteration, replacement or repair projects with a total cost of less than $2.5 million or a new facility with a total construction cost of less than $250,000**

MUS Major Repair Projects with Priority Number Assigned in HB5

TECH Heating System Upgrades – Phase 1: $2,480,000

- MR Priority 2
- This project will replace Montana Technological University's failed steam distribution system. This project upgrades existing tunnels where needed for safety and maintenance and replaces failed direct buried piping with new tunnel sections. Steam tunnels run under older buildings on the Montana Tech campus. Some of these tunnels are still open for walking from one building to another. Little or no repair work has been done on the tunnels and at some point, they will need to be repaired or at a minimum closed off from the public. The ceilings are lower than normal with steam lines and other utility pipes running below the ceiling. Adding tunnels to the remainder of the campus will protect infrastructure that is direct burial. This will allow better maintenance and inspection procedures to be used.

UM FLBS Sewer Treatment Plant: $1,750,000

- MR Priority 3
- This project will replace the existing sewer treatment facility at the Flathead Lake Biological Station. The existing sewer treatment plant is extremely old and is at risk of failing. The system has deteriorated to the point that the redundancy originally designed into the plant is no longer available. If the plant fails, the station will have to rely on pumping the collection tank daily depending on the seasonal flows.

MSU Reid Hall Fire System Upgrades: $1,700,000

- MR Priority 4
- Construct a fire suppression and alarm system to improve the life-safety and code compliance in Reid Hall, one of Montana State University's largest classroom facilities. Reid Hall is the most heavily occupied academic teaching facility on Montana State University's campus. This project proposes the construction of a fire suppression and alarm system to improve the life safety and code compliance of Reid Hall, protect property from damage and/or loss, and most importantly, protect building occupants from harm.

UM Urey Lecture Hall Roof: $350,000

- MR Priority 5
- The existing Urey Lecture Hall roof membrane is original from 1981 and is leaking. As it protects an entire 400 seat underground lecture hall, its critical to have a 100% reliable roof membrane. Replace the existing 1981 EPDM roof membrane that is below the brick pavers and rigid insulation boards. A new single-ply membrane is required. The existing roof membrane has

exceeded its life expectancy by at least 20 years. Costly damage to structure and contents could result if any of the proposed work is deferred again.

UM Mansfield Library Roof Replacement: $1,200,000

- MR Priority 8
- This project will replace the ballasted EPDM roofing membrane that was installed in 1990. The Mansfield Library roof is approximately one acre in size. The existing roof membrane has exceeded its life expectancy by at least 15 years. Costly damage to structure and contents could result if any of the proposed work is deferred again.

MSU Haynes Hall Lab Ventilation Upgrades: $1,600,000

- MR Priority 9
- Upgrade ventilation systems in instructional labs throughout Haynes Hall. There are needed ventilation improvements in the painting, ceramic, welding and sculpture instructional labs to improve air quality and safe learning environments. Upgrade mechanical ventilation system in Haynes Hall for occupant safety and code compliance. This project specifically addresses needed HVAC upgrades in the painting, ceramic, welding, and sculpture areas.

TECH Fire Alarm Upgrades: $200,000

- MR Priority 10
- This request will provide upgraded or replaced alarm systems for buildings that no longer have adequate basic protection for occupants and assets due to obsolescence of equipment. Some of these systems are 40-years old and are becoming dangerously unreliable and not repairable. This request would provide funding to replace fire alarm systems that are, in some cases, decades past their planned life, and provide critical fire access. Replacement is necessary to provide adequate protection to occupants and assets. Fire alarm panels and alarm notification is not code compliant.

MSU Montana Hall Fire System Upgrades: $455,000

- MR Priority 12
- Construct a fire suppression system to improve the life-safety code and code compliance in Montana Hall. Construct a fire suppression system to improve the life-safety code and code compliance in Montana Hall.

MSUB Art Annex Safety & System Upgrades: $1,200,000

- MR Priority 13
- Replacement of life safety building systems in the Art Annex to improve the safety and continued use of the facility. This project proposes the replacement of life-safety systems in the Art Annex Building. The existing facility that is well past its effective lifespan provides to support to academic programs. Life safety work will extend the operational life of the facility.

HC Donaldson Building HVAC Upgrades: $1,000,000

- MR Priority 14
- This project will repair and replace HVAC and building control systems in Donaldson Building at Helena College. Removing the aging fluid-based heating and cooling system from the few remaining areas of the Donaldson Building and replacing it with a roof mounted HVAC system.

The current system involves routing either heated or cooled water through wall mounted fan boxes. The system does not allow for both heating and cooling options to occur without manually switching from the boiler to the chiller and then waiting for the water temperature to change which takes at least a day. The fan boxes create challenging classroom settings as they are noisy and make classroom instruction, presentations, and discussions difficult. A roof mounted forced air HVAC system would allow for more precise control of room temperature and keep background noise to a minimum.

UMW Heating System Replacement & Repair: $2,495,000

- MR Priority 15
- This project will repair and replace steam and condensate systems on the University of Montana Western campus. This project would include the addition of a second low pressure boiler and the elimination of the high-pressure biomass boiler.

UM Stone Hall Roof Replacement: $400,000

- MR Priority 17
- Replace existing sloped roofing and attic insulation of Stone Hall (formerly the Journalism Building). This building was built in 1936. This project will replace the worn-out roof, abate existing vermiculite insulation and replace with new attic insulation. The existing sloped roof shingles are beyond their life expectancy and wearing thin. The vermiculite attic insulation must be abated and replaced with new insulation. This project would replace the roof with new historic looking, long lasting shingles similar to Main Hall and Rankin Hall. The existing vermiculite attic insulation would also be replaced. The existing shingle roof has exceeded its life expectancy by at least 20 years. Costly damage to structure and contents could result if any of the proposed work is deferred again.

MSUN Vande Bogart Library Roof Replacement: $325,000

- MR Priority 18
- Replace the aging roof membrane, insulation, and repair other roof components on the Vande Bogart Library. The Vande Bogart Library's roof membrane has many blisters and has begun pulling away from the parapet wall. This project replaces the roof membrane and insulation components which are beyond their useful life spans.

MSU Lewis Hall Roof Replacement: $1,600,000

- MR Priority 23
- Reroof and roof framing upgrades to Lewis Hall. Lewis Hall has a clay tile roof that is original to the facility. This project addresses replacement/repair of missing or broken clay tiles, proper fastening of the preserved and new tiles, replacement of underlayment and insulation, and upgrades to the snow/ice fall protection and roof structure.

MSUN Auto Tech Building System Improvements: $535,000

- MR Priority 25
- Upgrade Automotive Technology Building envelope and mechanical systems to retire a series of building deferred maintenance, improve system efficiency, and provide healthier and safer instructional environments. This project replaces the failing roof deck fasteners, causing the decking to buckle in three locations. Furthermore, this project upgrades the original and

obsolete exhaust and combustion system which is currently inadequate for the current instructional activities occupying the space today.

UM Clapp Building Elevator Modernization: $300,000

- MR Priority 28
- This project will upgrade and modernize the main elevator in the Clapp Building. The existing elevator is original to the building and is currently out of compliance with the state elevator code. Parts for repair are hard to find. This elevator needs a total upgrade to meet current codes. This elevator has been well maintained over the years, but it has deteriorated to a point where it can no longer be effectively repaired. We are at risk of a major failure that could render the upper floors and the basement inaccessible.

UMW Roof Replacements: $450,000

- MR Priority 38
- This project will replace the roofs on the following buildings: Business and Technology Building, the Engineers House, and the Chancellor's Residence. The roofing projects listed have exceeded their useful life. The replacement systems will be chosen to provide maximum protection with minimum maintenance. Additionally, where historical structures are involved, preference has been given to maintaining the historical nature of the roofing system. Finally, all roofing systems will incorporate current energy standards.

TECH Roof Replacements: $800,000

- MR Priority 39
- This project will replace the roofs on the following buildings: Chancellor's Residence, Science and Engineering, Math and Computer Science, Chemistry/Biology, and Highlands College. The roofing projects listed have exceeded their useful life. The replacement systems will be chosen to provide maximum protection with minimum maintenance. Additionally, where historical structures are involved, preference has been given to maintaining the historical nature of the roofing system. Finally, all roofing systems will incorporate current energy standards.

MSUN Brockmann Center HVAC & Energy: $855,000

- MR Priority 41
- Upgrade Brockmann Center's mechanical equipment and envelope to retire deferred maintenance and improve energy efficiency. The Brockmann Center’s exterior windows and doors, and HVAC system are deficient and require replacement and upgrades to improve energy efficiency and improve occupant comfort.