MEMORANDUM

TO: University Facilities Planning Board: Nancy Cornwell - Chair, Walt Banziger - Vice Chair, Kurt Blunck, Allyson Brekke, Jeff Butler, ASMSU President, Michael Everts, Chris Fastnow, Greg Gilpin, Brett Gunnink, Neil Jorgensen, Dana Dale – ASMSU, Terry Leist, Chris Kearns, Martha Potvin, Fatih Rifki, Tom Stump, Julie Tatarka, Jim Thull, Brenda York

FROM: Victoria Drummond, Assoc. University Planner; Campus Planning, Design & Construction

RE: **September 22, 2015,** meeting of the University Facilities Planning Board to be held in the **Facilities Meeting Quonset** at **3:30 pm**

ITEM No. 1 – APPROVAL OF NOTES
Draft notes from August 11, 2015 to be distributed before next meeting.

ITEM No. 2 – EXECUTIVE COMMITTEE REPORT
Report on any current Executive Committee actions.

ITEM No. 3 – CONSENT AGENDA - **No items**

ITEM No. 4 –INFORMATIONAL - **End of Summer Project Update**
Presenters – Walt Banziger and Randy Stephens

ITEM No. 5 –INFORMATIONAL - **Draft LRBP – Bozeman Project Priority List**
Presenters – Walt Banziger

HORIZON ITEMS

- **Freshman Residence Complex Name Recommendation**
- **Turf Fields Facility Concept**
- **Renne Library Spaces & Technology Renovation**
- **External Building Signage Policy**
- **Seminar Materials**
- **Master Planning Issues**
- **Revisit and Update Policies**

VCD/lsb
PC:

President Cruzado
Adam Arlint, President's Office
Maggie Hammett, President's Office
Julie Heard, Provost Office
ASMSU President
Diane Heck, VP Admin & Finance
Heidi Gagnon, VP Admin & Finance
Jennifer Joyce, VP Student Success
Linda LaCrone, VP Research Office
Tony Campeau, Registrar
Robert Putzke, MSU Police
Becky McMillan, Auxiliaries Services
Julie Kipfer, Communications
Jody Barney, College of Agriculture
Susan Fraser, College of Agriculture
Robin Happel, College of Agriculture
JoDee Palin, College of Arts & Arch
Victoria Drummond, Campus Planning

UNIVERSITY FACILITIES PLANNING BOARD
September 22, 2015

ITEM # 4	**End of Summer Project Update**

PRESENTERS:

Walt Banziger, Director CPDC
Randy Stephens, University Architect

PROJECT PHASE:	**PLANNING**		**SCHEMATIC**		**DESIGN DOCUMENTS**		**CONSTRUCTION DOCUMENTS**	

VICINITY MAP:

General Campus information

STAFF COMMENTS:

Walt Banziger and Randy Stephens will give an update on projects that have been in construction over the summer or have been discussed at UFPB recently. The following projects will be covered:

-MT Hall Holiday Lights
-Renne Library
-Miller Dining Hall
-Dining Hall
-Freshman Residence Complex
-Parking Maintenance
-Cheever TEAL
-NEON Tower
-Testing Center
-NAIC & Parking Garage
-Reid Hall
-Garfield Street
-12th Street

COMPLIANCE:	**YES**	**NO**
MSU POLICIES		
COMMITTEE OR APPROPRIATE REVIEW		
MASTER PLAN		

BOARD ACTION REQUIRED:

Informational only – no action required

UNIVERSITY FACILITIES PLANNING BOARD
September 22, 2015

ITEM # 5	**Draft LRBP – Bozeman Project Priority List**									
PRESENTERS:										
Walt Banziger, Director CPDC										
PROJECT PHASE:	**PLANNING**		**SCHEMATIC**		**DESIGN DOCUMENTS**		**CONSTRUCTION DOCUMENTS**			
VICINITY MAP:										
General Campus										
STAFF COMMENTS:										
The Long Range Building Program (LRBP) is a cyclical capital projects funding process. Each campus, including MAES, prepares a list of priority projects. UFPB will review the Bozeman priority projects list, attached.										

COMPLIANCE:	**YES**	**NO**
MSU POLICIES		
COMMITTEE OR APPROPRIATE REVIEW		
MASTER PLAN		

BOARD ACTION REQUIRED:
Informational only – no action required

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MSU-Bozeman LRBP Project Priority List 2018-19 Biennium
Sept 1, 2015 Version 5

MSU-Bozeman Campus

1. Romney Hall- Renovate to Optimize Student Use .....$28 M
Bozeman Campus - (Adaptive Re-Use/Renovation/Deferred Maintenance/Code/Life Safety)
Constructed in 1922 as MSU's original state-funded health and physical education building, (~53,074gsf) Romney Hall is now obsolete. Most of the health and physical educations programs have migrated to the Marga Hosaeus Fitness Center. The swimming pool was closed and decommissioned in 2006 and the main locker/shower facilities were closed and decommissioned in 2008. Some spaces are currently in use, while others remain unusable, such as the pool; or have low utilization, such as the basketball court and elevated running track. Romney is historically significant and structurally sound which makes the building a good candidate to be adapted for reuse. Romney's current FCI Deficiency Ratio is 13.6% which is considered poor. The renovation project will facilitate a comprehensive adaptive reuse of the building, reduce or eliminate areas of critical deficiency in the building's HVAC, plumbing and electrical systems, and address safety issues including fire and ADA code compliance regarding access/egress and interior circulation, and increase capacity for higher use of prime space.

The renovation must sensitively address the historic character of the building's interior and exterior. A well-conceived, comprehensive renovation will make beneficial use of the building's prime location on campus and adjacency to student centers, improve spaces that are currently underutilized and capitalize on the space and openness of the former gym and pool spaces.

In 2012, President Cruzado approved a strategic campus investment proposal ($150,000) to fund the programming effort to develop a project scope, schematics, and cost estimates as the first step in a comprehensive adaptive reuse and renovation of the facility which will directly impact MSU students by improving space for programs that serve students.

The project includes construction of appropriate facilities (~$5 million) for the relocation of some of the current Romney occupants including the Movement Sciences/Human Performance Lab and the Army ROTC Field Storage space. The Human Performance Lab uses specialized equipment, such as the 8 foot wide and 10 foot long Nordic ski treadmill – the largest in the Pacific Northwest, requiring substantial floor area and ceiling height clearance. The program is growing and requires more than its current area to continue advanced performance testing and research. To ensure continuity of Army ROTC programs, a new ~8,000 sf facility is needed to provide classroom, offices, combat room, cannon garage, field equipment storage, uniform storage, and uniform assignment areas currently housed in Romney. These facilities should be built before the Romney renovation to ensure continuity for the all programs currently housed in Romney.

2. Campus ADA Projects Phase 1 .....$5,000,000
Bozeman Campus - (Codes, Planning, Health and Life Safety)
MSU is committed to improving accessibility to campus facilities in an effort to meet Americans with Disability (ADA) standards and comply with Office of Civil Rights and Department of Justice campus reviews. The purpose of this project is to perform specific renovations, upgrades, and modifications to existing campus facilities based on the Capital Projects Compliance Report and MSU ADA Transition Plan. The projects will improve accessibility to and within buildings and include site work

upgrades, improved building entrances and stairwells, install /upgrade elevators and restroom modifications, ADA signage, and technology upgrades. Projects will have minimal disruption to building occupants during construction. The integrity and architectural features of the historic buildings will be protected. The project addresses academic buildings impacting most if not all students and many faculty and staff and will make buildings fully accessible and in compliance with current ADAAG standards.

3. Campus Key System Upgrade Phase 1 .....$2,500,000
Bozeman Campus - (Adaptive Re-Use/Renovation/Deferred Maintenance/Code/Life Safety)
Update key lock systems with a newer patient (30 years guarantee) lock-set keying system. Include a system of electronically locking building main entrances from a designated location within the building or centrally within the campus; locksets or security systems to enable locking classrooms from within during an emergency.

4. Montana Hall Renovation $28,000,000
Bozeman Campus - (Deferred Maint/Code/Life Safety)
Construction on Montana Hall (39,725gsf/ 32,144nasf) was begun in 1896 and completed in 1898. Although not the oldest structure on campus, Montana Hall continues to be MSU's flagship historic structure and focal point of the campus. The building originally housed classrooms, laboratory spaces, offices for the president, registrar, library, and an assembly hall. Even though numerous (and sometimes insensitive) alterations have occurred, the building retains its character and most of the original detailing. The iconic building is in the center of the university's historic core and while not the largest building on campus – its location and recognizable façade position it as the most prominent building on campus. A comprehensive study was performed on Montana Hall in 2001, and demonstrated that the building is in need of significant repairs and upgrading including deferred maintenance, adaptive renovation, life safety corrections, structural repairs, building code and ADA renovation. Montana Hall's current FCI Deficiency Ratio is 17% - considered in the poor range by APPA, and the renovation project will significantly reduce or eliminate areas of deficiency in the building and address safety issues including fire and ADA code compliance regarding egress and interior circulation. A comprehensive renovation project will include major structural repairs, installation of mechanical HVAC system, and replacement of the electrical systems to provide up-to-date ventilation, power and data distribution and replacement of the obsolete plumbing system. Adaptive renovations will provide modern offices and administrative areas including restoring elements of the historically significant building.

5. Campus – Classrooms Renovation Phase 1 ..... $3,000,000
Bozeman Campus - (Deferred Maint/Code/Life Safety)
The project will renovate and modernize classrooms as determined by recommendation from the UFPB Classroom Committee and based on deficiency audits of Registrar-scheduled classrooms (i.e. badly outmoded and dysfunctional in terms of configuration, accessibility, electrical and audio/visual capabilities, finishes and lighting). A classroom renovation project will change configuration of some classrooms for current teaching methods and code compliance, make alterations for ADA accessibility, provide additional electrical outlets, upgrade data access, upgrade writing surfaces,

upgrade finishes, update HVAC components and replace lighting with energy-efficient fixtures with variable level capabilities.

a) Reid Hall Rm 105 $ 700,000 large 115+ classroom
b) Roberts Hall Rm 101 $ 700,000 large 115+ classroom
c) Roberts Hall Rm 321 $ 500,000 medium 51-114 classroom
d) Roberts Hall Rm 113 $ 500,000 medium 51-114 classroom
e) AJMJ Hall Rm 230 $ 150,000 small 1-50 classroom
f) Wilson Hall Rm 1-141 $ 150,000 small 1-50 classroom

6. Campus – Utility Infrastructure Upgrades (Water and Sewer) $6,800,000

Bozeman Campus- (Planning/Major Main/Code Compliance/Life Safety/Operational Efficiency Savings)

MSU's water and waste water systems have substantial deferred maintenance and code required deficiencies. Components of this infrastructure are nearing 100 years old. Approximately 6,600 linear feet of sanitary waste pipe has been identified as being in poor or very poor condition. About 14,000 linear feet of water main has been identified as requiring replacement or installation due to pipe condition, low fire flow rates, and failed components. Several buildings on campus do not have backflow prevention installed to protect the drinking water quality in our public water system. This project may be phased in three phases with each phase approximately $2-2.5M.

Recommendations for MSU-Bozeman **Sewer System Improvements** (taken from MSU Sanitary Sewer Facility Plan – 2004, Morrison Maierle):
The MSU sanitary waste sewer system consists of approximately 10 miles of gravity sewer mains and 216 manholes. Various pipe materials ranging in size from 4" to 12" comprise this system. Aging infrastructure is a general problem throughout the system. Project includes:

a. By exploratory video, approximately 6,600 feet of sewer in poor to very poor condition with off-set joints, heavy root intrusion, high infiltration, and other problems were identified. Thirteen sewer projects have been identified and prioritized to address the rehabilitation needs.
b. Hydraulic modeling of the wastewater collection system identified 2,300 feet of sewer in several sewer segments with capacity problems under existing and future peak flow conditions.
c. Operational improvements were identified that are not relevant to the capital planning of improvements.
d. Seven existing sewer segments exceed their design capacity and their full flow capacity at peak wastewater flows. These segments would be up-sized to increase capacity.

Recommendations for MSU Bozeman **Water System Improvements** (taken from MSU Water Facility Plan – 2005, Allied Engineering):
MSU's domestic water distribution system consists of approximately 9 miles of water mains from 4 to 12 inches in diameter and one mile of services ranging from ¾" to 3 inches. The original system was constructed in the 1910's. Replace mains and services that are in poor condition and aged (100 years old by 2025). About 6% of the distribution system will be 100+ years old by the year 2025. Aging pipe increases the chance of leaks and water main breaks. Project includes recommended improvements to the water mains and service totals 4,002 lineal feet of water mains as follows:

a. Add mains to provide redundancy to dead end areas. Redundancy issues were discovered for five areas on campus. A total of 2150 lineal feet of water mains and two hydrants are recommended for additions to the existing system.

b. Meter Family and Graduate housing and open closed valves on campus. MSU divides its campus into two meter groups which are divided by closed valves. The closed valves allow the water utility to be accounted for and costs apportioned. However, the valves that need to be closed cause dead legs and hydraulic loss issues in the system. Dead legs are a health concern and hydraulic constrictions could be detrimental to fire flow.
c. Provide a redundant water source to McIntosh Court. Present a single source from the City of Bozeman's water system supplies this complex. Addition of a second feed would prevent lost domestic water service and fire protection in the event of a system failure within the COB system. Addition of 270 LF of main is required.
d. Replace mains that restrict necessary fire flow and add new hydrants. MSU's system, when modeled in a water model, did not meet needed fire flow (NFF) as determined by then NFPA. Total length of pipe is 7,182 LF and 21 new hydrants are proposed.
e. Meter additional buildings outside of Family Graduate Housing area. With FGH metered (as described in #4) there will remain 24 buildings left. This will meter all building loads on campus.

No other alternatives are available and without this project, substantial failure of water or sewer systems is likely causing some operations to cease.

7. Campus Code/Deferred Maintenance.....$9,000,000

Bozeman - (Deferred Maintenance/Code/Life Safety/)

State funding is needed to address life safety, code and accessibility problems that have been identified during thorough Facilities Condition Inventory inspections performed at each campus, and by various state and city agencies. These projects are necessary to meet requirements of the International Building Code, Americans with Disabilities Act. ANSI Guidelines, Uniform Fire Code, Life Safety Code, citations from OSHA, citations from the Department of Labor and Industry, etc. They include items such as fire alarms, fire sprinklers, fire doors and separation assemblies, stair enclosures, guardrails, emergency lighting, egress lighting, ventilation systems, and other noted deficiencies.

8. Renne Library Expansion Phase I $6,000,000

Bozeman Campus- (Adaptive Renovation/New Construction/Deferred Maintenance/Code)

Built in 1949, Renne Library received its first and only substantial addition in 1961. It is ~142,000gsf, and houses MSU's central library facilities and ITC services. MSU's student to library square footage ratio is significantly lower compared to peer institutions and upgrades are necessary to provide appropriate services in support of teaching and research. Phase I of the renovation includes adding approximately 12,000gsf to the 4th floor of the existing facility. Goals for the addition include; group and collaborative learning space, dual-use classroom and technology lab space, additional stack space, enhancing workspace, improving utilization of existing space, expanding library services, and improve wayfinding. In 2015, the Dean of Libraries engaged consultants to create a Library Master Plan to guide the expansion and renovations.

9. Hamilton Hall Renovation 3rd and 4th Floors $4,000,000

Bozeman Campus - (Major Maintenance/Code Compliance/Health and Life Safety)

Constructed in 1910 by Fred Willson, Hamilton Hall has significant value as a historic structure. This project will stabilize the upper levels and complete the renovations similar to the lower levels; and retire significant deferred maintenance identified and tracked in the Facilities Condition Inventory (FCI) process. This project will includes building infrastructure upgrades, Fire and Life safety improvements, corridors and stair well modifications, as well as ADA considerations. Exterior and 1st

and 2nd floors renovation were completed in 2010, ADA compliant elevator addition construction underway (June 2011), leaving upper two levels and attic (~13,900nsf) requiring renovation.

10. Campus Infrastructure (Streets) Phase 1 (Garfield Street and 12th Avenue) $4,200,000
Bozeman Campus- (Planning/Code Compliance/Life Safety/Operational Efficiency Savings)
Upgrade street systems – Garfield Street $2.8M; 12th Avenue $1.4M)

11. Gallatin College Phase I $16,500,000
Bozeman Campus- (Combination Renovation /New Construction)
Since the Board of Regents established Montana State University Gallatin College in May 2010, the Two-Year College has been the fastest growing unit in the Montana University System. The college has implemented the Comprehensive Two-Year Mission which has resulted in rapid enrollment growth and the creation of many certificate and degree programs to meet local workforce needs. Additional applied workforce programs are in development. The college also offers the Associate of Arts and Associate of Science degrees for students interested in eventual transfer to a Four-Year University. The students at Gallatin College come from the local community and are typical two-year education students, in that they are often older, working in the community and have family responsibilities. The classroom needs of the growing college are currently being met by the renovation and lease of three different facilities around the community and by utilizing some classroom space on the MSU campus. The college's growing enrollment and additional programs require an increased and customized space, currently estimated at approximately 50,000 square feet for a first phase. A local needs assessment projects that the college could eventually serve 2,000 students which would require a facility in the 175,000-200,000 square feet range, like MSU Billings City College or Great Falls College MSU.

12. Linfield Hall Electrical Upgrades $2,500,000
Bozeman Campus - (Deferred Maint/Code Compliance/Life Safety)
The electrical systems serving Linfield Hall North and South buildings are obsolete, poorly arranged, and have inadequate capacity for current and future needs. There are several systems and arrangements that do not meet current electrical codes, including high voltage primary electrical systems located in the basement and knob-and-tube branch circuit wiring throughout much of the north building. This project would replace most of the building electrical systems downstream of the main distribution panels, branch panels, panel feeders, and branch circuit wiring. The project would also include new systems to reduce safety concerns associated with the high voltage primary systems in the basement.
The current estimate for this work, including design, construction, administration, and contingencies based on a preliminary design and estimate performed by Scott Ritter in 2008 (report in PPA#07-0098). No other alternatives exist.

13. Campus Central Emergency Generation (Second Campus Feed from South)..... $8,000,000
Bozeman Campus- (Planning/Code Compliance/Life Safety/Operational Efficiency Savings)
Includes electrical upgrades to establish a critical Second Power Feed from the South $3.5M; South side substation feeder $250,000

14. Campus Fire Suppression Installment/Upgrade.....$6,800,000
Bozeman Campus - (Life Safety/Code Compliance)

Install new or upgrade and expand current fire suppression system to cover the entire building as required by code. Projects will have minimal disruption to building occupants during construction. The integrity and architectural features of the historic buildings will be protected. The project addresses academic buildings impacting most if not all students and many faculty and staff.

a)	Leon Johnson Hall	$1,200,000 (sprinklers in basement, 1, 2, 6th floors)
b)	AJM Johnson Hall	$ 260,204
c)	Cobleigh Hall	$ 591,857
d)	Culbertson Hall	$ 308,189
e)	Herrick Hall	$ 56,385
f)	Leon Johnson Hall	$ 255,808
g)	Lewis Hall	$ 748,202 (sprinklers in basement)
h)	Linfield Hall	$ 266,448 (update older sprinklers in building)
i)	McCall Hall	$ 420,742
j)	Montana Hall	$ 606,032
k)	Plew Building	$ 119,707
l)	Roberts Hall	$1,090,586
m)	Romney Gym	$ 348,082
n)	Traphagen Hall	$ 232,008
o)	Visual Comm Bldg	$ 245,105
		$6,749,335

15. Campus Masonry Repair $1,500,000

Bozeman Campus- (Planning/Health/Life Safety/Operational Efficiency Savings)

1. Cobleigh Hall - repair roof parapet on south side; seal brick wall/precast window shroud joints: $80,000.
2. Taylor Hall - tuckpoint and repair historic brick; rebuild brick arches at windows: $50,000.
3. Wilson Hall – repair bridge and exterior stairs; repair retaining wall on north side: $460,000.
4. Renne Library - tuckpoint brick and stone joints; replace mortar joints at precast front entry: $45,000.
5. Romney Gym - tuckpoint brick, granite and terra cotta joints: $165,000.
6. Roberts Hall - tuckpoint brick, granite and terra cotta joints: $80,000.
7. Heating Plant - tuckpoint brick, granite and terra cotta joints: $35,000.
8. Herrick Hall – tuckpoint brick, granite and terra cotta joints: $40,000.
9. Investigate failing conditions of Heating Plant north elevation and Gatton Gate

16. Reid Hall - Renovation $30,000,000

Bozeman Campus - (Major Maintenance/Code Compliance/Life Safety)

Originally constructed in 1957, Reid Hall (~91,167gsf) houses the College of Business (COB) and the College of Education, Health & Human Development (CEHHD) as well as several of the largest and most intensely utilized registrar-scheduled classrooms and lecture halls on campus. Improvements will have a positive impact on the ~1,100 COB students, and on ~1,000 students enrolled in CEHHD. The renovation of the entire building includes replacing the building elevator and altering the restrooms to comply with the Americans with Disabilities Act, installing a fire suppression system and fire alarm system, upgrading the secondary electrical system (including branch panels and select

circuits) to handle required current load and expansion capability, replacing the building heating and ventilation system, providing building cooling, addressing code deficiencies and deferred maintenance as well as modernizing building finishes and improving space utilization. Alternatives include addressing individual systems/components issues separately and over time; but, this may result in costly overlapping of construction and longer periods of disruption to the buildings occupants and programs that will be relocated temporally during construction. Reid Hall's current FCI Deficiency Ratio is 14% - considered in the poor range by APPA, and the renovation project will significantly reduce or eliminate areas of deficiency in the building's envelope, HVAC, and electrical system; and address safety issues including fire and ADA code compliance regarding egress, interior circulation of the four-story building and accessible restrooms.

17. Marsh Labs HVAC Retrofit $2,500,000
Bozeman Campus- (Deferred Maint/Operational Energy Efficiency Savings)
This project replaces Marsh Labs HVAC systems and controls that are well beyond their service life, operate inefficiently, and represent significant deferred maintenance. This project would remove the steam fire heating system, replace and/or upgrade air handling systems, add mechanical cooling, and replace control systems for the building. This project will require electrical system upgrades including control systems and additional panels.

18. Campus Utilities Infrastructure Master Plan..... $250,000
Bozeman Campus- (Planning/Code Compliance/Life Safety/Operational Efficiency Savings)
(An MSU-Bozeman Energy Conservation project)
The Utilities Infrastructure Master Plan is a high priority and required for planning, evaluating site requirements and is an essential tool to budget and construct utilities in an efficient and comprehensive manner instead of haphazardly locating infrastructure as buildings are being built. MSU is at a crossroads in its energy evolution. While MSU-Bozeman is the largest consumer of natural gas of all State agencies and, as a research institution, emits over 77,000 metric tons of carbon dioxide annually, there is tremendous opportunity for substantial reduction of energy use. MSU's infrastructure preparation through the last two decades has positioned the campus to implement a unique and powerful energy strategy to dramatically reduce energy expenditures while reducing environmental impact. This planning effort would quantify the conceptual synergy of establishing a geothermally based infrastructure while developing a high efficiency cogeneration system. These strategies may be combined with the purchase of low carbon energy and aggressive energy conservation to achieve dramatic emissions reduction and economic benefit. This plan would be the basis for implementation of energy related infrastructure projects.

19. Campus Roof Priority Replacements and Maintenance $4,000,000
Bozeman - (Deferred Maintenance)
These roofs are out of warranty and have lived considerably beyond their intended service life. They are beyond repair and are failing. These roofs must be replaced to avoid continued damage to the interiors of these facilities. The failure of these roofs was documented by the MSU Facilities Condition Inventory. Examples of possible roof priority projects and replacement estimates:

a. McCall Hall $ 300,000
b. EPS Building $ 700,000
c. Hamilton Hall $ 400,000
d. Tietz Hall $ 200,000
e. Wilson Hall $ 500,000

20. Renne Library – Expansion Phase II $18,000,000
Bozeman Campus- (Planning/Deferred Maintenance/Code/Life Safety)
Constructed in 1949, addition in 1961. Phase II of the renovation includes adding a ~27,500gsf four-story addition along the south side of the building. Goals for the addition include: expansion of ITC support space, ITC customer service facility, group and collaborative learning space, dual-use classroom and technology lab space, improved public space and ADA access, additional stack space, enhancing workspace, improving utilization of existing space, expanding library services and space, and improve wayfinding. In 2015, the Dean of Libraries engaged consultants to create a Library Master Plan to guide the expansion and renovations.

21. Campus Energy Conservations Projects (Campus Core Buildings) $10,000,000
Bozeman Campus - (Operational Savings/Deferred Maintenance/Code/Life Safety)
About 90% of MSU-Bozeman's state-operated building energy is consumed in 23 campus core buildings. Several of these buildings have recently undergone some level of energy conservation; however, significant operational efficiency and unaddressed potential savings still exists. This project would further implement energy related projects in MSU's continuing effort to reduce operating cost and reduce deferred maintenance. A list of buildings to be addressed in this phase is being developed.

22. Campus ADA Projects Phase 2 .....$4,000,000
Bozeman Campus – (Code/Life Safety/Planning)
MSU is committed to improving accessibility to campus facilities in an effort to meet Americans with Disability (ADA) standards and comply with Office of Civil Rights and Department of Justice campus reviews. The purpose of this project is to perform specific renovations, upgrades, and modifications to existing campus facilities based on the MSU ADA Transition Plan, from the 2011 survey of the campus. The projects will improve accessibility to and within building and include site work upgrades, improved building entries, elevator and toilet room modifications, ADA signage, and technology upgrades. Projects will have minimal disruption to building occupants during construction. The integrity and architectural features of the historic buildings will be protected. The project addresses academic buildings impacting most if not all students and many faculty and staff.

23. Campus Central Energy Management System $1,500,000
Bozeman Campus- (Planning/Deferred Maint/Operational Energy Efficiency Savings)
The CEM system is a high-priority project is achieving MSU-Bozeman's energy conservation efforts. The CEM system consists of a centralized campus energy metering/management system that completes the current campus metering with the installation of a central automated real time meter reading and data management system that includes built-in expansion capacity for future interface with building management systems. The new system will automate and improve monitoring and management of energy consumption and generate energy savings.

24. ROTC Field Facilities (Air Force).....$1,500,000
Bozeman Campus - (New Construction)
ROTC's field functions currently occupy space on the lower level of Romney Hall and must be relocated to a new facility prior to renovating Romney. A facility for ROTC would comprise ~8,000 square feet and include a classroom, office, combat room, cannon garage, field equipment storage, uniform storage, and uniform assignment areas. ROTC practices field exercises can appear threatening

to onlookers and therefore need to be situated away from the main university campus and its neighbors. Construction of this replacement space is imperative prior to renovating Romney. This request is deleted if the full Romney renovation is funded under priority #1 above.

25. Campus Master Plan Update $700,000
Bozeman Campus- (Planning/Code/Life Safety)
The Long Range Campus Development Plan was developed through an inclusive and participatory process. Since its adoption, planning efforts have already extensively drawn on the elements and principles of the framework plan and begun implementation. Built into the LRCDP is a scheduled review in five years. The regular review and updating of the master plan is essential to keep the plan relevant and viable in guiding the decisions pertaining to the campus' physical environment. The university will benefit by having more carefully planned development and expansion that is in keeping with the overall vision as well as being flexible enough to adapt quickly to changing environments in the university's aspirations, state direction, economic markets, campus community needs, and community trends. The update will require similar planning processes including consultant involvement.

26. Campus – Service Drives/Access Network Upgrades – Phase I..... $4,000,000
Bozeman Campus- (Planning/Deferred Maintenance/Code/Life Safety)
To reconstruct those streets and service drives which are approaching or have exceeded their life expectancy. MSU streets require redesign and enhancements to improve their safety, accessibility and efficiency as transportation for vehicles, bicyclists, transit, and pedestrians. Service drives require similar consideration as well as improvements for efficient building operations and maintenance use and as staging areas for construction projects. Example of possible projects:

Streets

a) 7th Street, from Kagy to Grant
b) Garfield Street, from 11th to 19th
c) 15th Street, from Garfield to College
d) College Street, from 8th to 19th - - possible cost sharing with City
e) Lincoln Street, from 11th to 19th - - possible cost sharing with City
f) 6th Street, from Grant to Cleveland- - possible cost sharing with City
g) 11th Street, from Kagy to Lincoln- - possible cost sharing with City

Service Drives

a) Gaines/Vis Com/Traphagen/Reid/Sherrick
b) Renne/SUB/AJM
c) Fieldhouse/Tennis/Fitness Center
d) Herrick/Hamilton/Wilson
e) Creative Arts Complex

27. Campus Utility Upgrades - Facilities Complex $750,000
Bozeman Campus- (Deferred Maintenance/Code/Life Safety/Operational Efficiency Savings)
Facilities Complex includes land and structures of the former Faculty Court area that cannot have any more facilities added until the utilities are upgraded to meet the service demands. Current priority could escalate to high priority depending on land use decision for that area.

28. Linfield Hall - Renovation $29,000,000
Bozeman Campus - (Deferred Maintenance/Code/Life Safety)
Constructed in 1910, Linfield houses the College of Agriculture Division of Agricultural Education, Department of Agricultural Economics, other small units, and the COA Dean and Montana Agricultural Experiment Station Director offices. Originally designed for a male-dominated curriculum, the building has woefully inadequate and malfunctioning restroom facilities which are now significantly deteriorated. The four-story building (~65,563gsf) has no elevator. MSU has commissioned the design-only of new restrooms to meet modern gender demographics and a new elevator using university major maintenance funds. This project will construct new restrooms and install a new elevator to meet codes and accessibility requirements and adapt the building to accommodate modern teaching needs. Linfield Hall's current FCI Deficiency Ratio is 15% - considered in the poor range by APPA, and the renovation project will significantly reduce or eliminate areas of deficiency in the building's HVAC, plumbing and electrical systems, and address safety issues including fire and ADA code compliance regarding egress, interior circulation of the four-story building, as well provide gender-sufficient and accessible restrooms.

29. Heating Plant Boiler/Burner and Backup Heat Improvements $4,000,000
Bozeman Campus - (Deferred Maintenance/Operational Energy Efficiency Savings)
MSU's Heating Plant was upgraded, including two new boilers, in the mid-1990's. As MSU's campus has become more energy efficient, the smallest boiler is not able to turn down low enough to produce the small amount of heat now required in the summer months. This project would replace the burner on this boiler with a more highly modulating burner that would allow the boiler to turn down appropriately. In addition, this project would replace the existing propane backup fuel source with a fuel oil source. The present propane back up fuel system was installed in the late 1980's and is near the end of its service life. This system is used when MSU's natural gas delivery from the Utility is constrained and is a critical component of the heating system. Failure of this system during extreme cold weather, or during an interruption of natural gas supply can cause a significant disruption of campus operations up to and including campus closure. Propane fuel has safety/security concerns that can best be addressed by replacing the system with a lower risk fuel such as fuel oil in double containment.

30. Campus Wayfinding and Directory Signage System..... $750,000
Bozeman Campus- (Planning/Code/Life Safety)

31. Campus Site Work/ Landscaping..... $3,000,000
Bozeman Campus- (Planning/Deferred Maint/Code/Life Safety/Operational Resources Efficiency Savings)
The aesthetic and functional aspects of campus landscaping are directly related to the experience while on campus and the positive interaction with the university community and surrounding community. Comprehensive, interconnected, attractive and well maintained landscapes and exterior spaces/places are critical to recruitment and retentions. Exterior spaces require site work to develop logically placed and safe pedestrian plazas and outdoor classrooms. Site work and site specific landscape plans will follow the LRCDP (completed in 2008) and the Landscape Master Plan, in its early development by Facilities Planning.

32. Campus Utility Upgrades – West of 19th Ave $5,000,000

Bozeman Campus- (Planning/Deferred Maintenance)
Install utility infrastructure on MSU property west of South 19th Street. The MSU property west of 19th Street has historically supported agriculture-related activities and was surrounded by County-regulated lands; however, in recent years the adjoining private properties have been annexed into the City of Bozeman, and through the LRCDP process some of the land (at the MSU/private property boundaries) has been identified as feasible for future development. Before any additional facilities can be built in that area the utilities need to be installed. Installation would be in phases.

33. Haynes Hall Ventilation Upgrades Phase 2 ..... $500,000
Bozeman Campus - (Deferred Maint/Code/Life Safety)
Originally constructed in 1974, Haynes Hall – one of three buildings that forms the Creative Arts Complex (combined ~135,012gsf) houses the School of Art. Phase two is balance of ventilation upgrades – Phase 1 after $700K projects in 2015. The mechanical ventilation system required upgrades for code compliance and occupant safety due to the nature of the instructional activities.

34. ITC Building and Server Farm (New Facility) $40,000,000
Bozeman Campus - (New Construction)
Relocate ITC server operations out of the campus core to a peripheral site, possibly a designated enterprise zone. Explore private-public collaborative alternatives for the new data center that expands computer services to MSU and beyond. Design may include elements from the Enterprise Systems Services Center (ESSC) Project elements constructed in Helena. New facility will have raised floors, enhanced security, limited access, future expansion capacity, and since these types of facilities generate heat – include a waste heat recovery system to reuse the heat. Will include some office space, but most public interface operations and service center would remain located in campus core.

35. AJM Johnson Hall – Renovation (~41Kgsf) $15,000,000
Bozeman Campus- (Deferred Maint/Code/Life Safety/Operational Resources Efficiency Savings)

36. Leon Johnson Hall Fire Sprinkler Upgrades $1,200,000
Bozeman Campus- (Deferred Maint/Code/Life Safety/Operational Resources Efficiency Savings)

37. Campus – Classrooms Renovation Phase 2 ..... $10,000,000
Bozeman Campus - (Deferred Maint/Code/Life Safety)
Continuation of projects to renovate and modernize classrooms as determined by recommendation from the UFPB Classroom Committee and based on deficiency audits of Registrar-scheduled classrooms (i.e. badly outmoded and dysfunctional in terms of configuration, accessibility, electrical and audio/visual capabilities, finishes and lighting). A classroom renovation project will change configuration of some classrooms for current teaching methods and code compliance, make alterations for ADA accessibility, provide additional electrical outlets, upgrade data access, upgrade writing surfaces, upgrade finishes, update HVAC components and replace lighting with energy-efficient fixtures with variable level capabilities.

38. Gaines Hall – Whole Building Heat Recovery $400,000
Bozeman Campus- (Deferred Maint/Code/Life Safety/Operational Resources Efficiency Savings)

As a laboratory intensive building with multiple ventilations systems there is an opportunity to modify the existing systems to recover heat from the high volume of air exhausted from the building. In general exhausted laboratory heat is one of the largest energy uses on campus and the best opportunity for waste heat recovery. This project is an innovative way to reclaim energy.

39. Campus FEMA Tier II Studies..... $750,000
Bozeman Campus- (Deferred Maint/Code/Life Safety)
Continue the evaluation of campus facilities according to FEMA seismic guidelines and develop a priority list of projects by building ratings.

40. Biomedical & Health Sciences (New Facility) $40,000,000
Bozeman Campus - (New Construction)
The need for biomedical and health sciences academic programs has grown significantly over the past decade. There is a large and expanding student interest in pursuing careers in biomedicine and health professions, whether it be MD's, nursing, biomedical R&D, graduate school, biotechnology or other allied health professions. Academic offerings in biotechnology, immunology, microbiology, pre-med and pre-vet have increased significantly. In addition MSU is working to expand the WWAMI program to include covering the second year of medical school training at MSU instead of at UW. MSU is the biomedical campus of the MUS.

In addition to the large health sciences teaching programs, MSU also has the largest biomedical related research enterprise in the state. Of the approximately $100 million in research expenditures annually each of the last five years, more than 40% (over $40 million per year) is spent on biomedical research on campus. However, MSU has a critical shortage of space for biomedical academic programs, and of the space that is available, much of it is outdated or occupied on a temporary basis.

The return on the investment in a new Biomedical and Health Sciences Academic Facility at MSU would be far-reaching. Beyond the impact on the quality of the academic opportunities we offer our students, there would be immense contributions to workforce development and economic enhancement of the largest sector of Montana's economy, namely biomedical/biotechnology and health sciences and all of the related industries and services.

LRBP 2018-2019 Montana State University Project List

Sept 1 2015vcd

MSU-BOZEMAN

Line	PROJECT TITLE	DESCRIPTION	COST
1	Romney Hall - Renovate to Optimize Student Use	Adaptive reuse and renovation of entire building from 1920's gymnasium	$28,000,000
2	Campus-ADA Projects Phase 1	Renovate and upgrade to meet ADA compliance pursuant to MSU's ADA Transition Plan	$5,000,000
3	Campus Key System Upgrade		$2,500,000
4	Montana Hall-Building Renovation	Renovate Heritage building to reduce code and life safety issues including HVAC	$28,000,000
5	Campus Classrooms Renovation Phase 1	Incorporate emerging technologies and furnishings into existing various instruction spaces	$3,000,000
6	Campus-Utility Infrastructure (Wtr/Swr) Upgrades	Install condition and capacity upgrades according to engineering assessment	$6,800,000
7	Campus Code and Deferred Maintenance	Various projects to improve code compliance, life safety and energy conservation	$9,000,000
8	Renne Library Expansion Phase I	Increase usable square footage of 4th floor to support teaching and research	$6,000,000
9	Hamilton Hall-3rd and 4th floor Stabilize/ Def Maintenance	Stabilize floors as part of seismic upgrades deferred maintenance upgrades on 3rd and 4th	$4,000,000
10	Campus Infrastructure (Streets) Phase 1	Includes Garfield $2.8M, 12 Street $1.4M)	$4,200,000
11	Gallatin College - Phase 1	Improve/customize instructional space for specific college programs	$16,500,000
12	Linfield Hall-Electrical Upgrades	Upgrade electrical system condition and capacity for code compliance	$2,500,000
13	Campus Infrastructure (Electrical) Phase 1	Second Campus Feed from South	$8,000,000
14	Campus Fire Suppression Installment/Upgrade	Install/upgrade fire suppression in various buildings according to Fire Marshall	$6,800,000
15	Campus Masonry Repair	Repair and seal exterior's of various buildings including heritage buildings	$1,500,000
16	Reid Hall Building Renovation	Renovate entire building including code compliance	$30,000,000
17	Marsh Labs HVAC Retrofit	Replace original laboratory HVAC system and controls that are obsolete	$2,500,000
18	Campus Utilities Infrastructure Master Plan	Develop a plan to reduce campus energy costs and improve environmental impact	$250,000
19	Campus Roof Priority Replacements and Maintenance	Replace or maintain campus building roofs - priority is failing roofs including McCall, EPS Building and AJM Johnson Hall	$4,000,000
20	Renne Library Expansion Phase 2	New Construction to increase space on 4th floor and code compliance	$18,000,000
21	Campus Energy Conservation Projects Campus Core Buildings	Upgrade various buildings to reduce and conserve energy consumption	$10,000,000
22	Campus ADA Projects Phase 2	Renovate/upgrade to meet ADA compliance pursuant to MSU's ADA Transition Plan	$4,000,000
23	Campus Central Energy Management System	Implement CEMS to improve energy consumption and central management	$1,500,000
24	ROTC Field Facility (Air Force)	New Construction for expanded program and equipment needs	$1,500,000
25	Campus Master Plan Update	Prepare an updated campus development plan as specified in the 2009 master plan	$700,000
26	Campus Service Drives/Access Network Upgrades Phase I	Reconstruct streets and service drives that have exceeded their life expectancy	$4,000,000
27	Campus Utility Upgrades (Facilities Complex)	Upgrade capacity and condition of utilities to meet service demands	$750,000
28	Linfield Hall Building Renovation	Install elevator, eliminate deficiencies in HVAC, plumbing and electrical	$29,000,000
29	Heating Plant Boiler/Burner and Backup Heat Improvements	Replace boiler burners with modulating units and replace propane backup fuel with fuel oil source	$4,000,000
30	Campus Wayfinding and Directory Signage	Install campus standard system of wayfinding and directory signage	$750,000
31	Campus Site Work/Landscaping	Install site improvements to increase aesthetic and function of campus landscaping	$3,000,000
32	Campus Utility Upgrades (West of 19th Ave)	Expand utility infrastructure west of 19th Ave for MSU development preparation	$5,000,000

33	Haynes Hall Ventilation Upgrades Phase 2	Replace original mechanical ventilation system	$500,000
34	ITC Building and Server Farm (New Facility)	New Construction at campus periphery to locate expanding ITC server operations	$40,000,000
35	AJM Johnson Hall Renovation	Improve systems and reduce deferred maintenance	$15,000,000
36	Leon Johnson Hall Fire Sprinkler Upgrades	Upgrade and complete fire suppression system	$1,200,000
37	Campus Classroom Renovations Phase 2	Various classrooms from the Classroom Committee Priority List	$10,000,000
38	Gaines Hall Whole Building Heat Recovery	Upgrade for energy efficiency	$400,000
39	FEMA Tier II Studies	Continue the structural evaluation of campus facilities according to FEMA seismic guidelines	$750,000
40	Biomedical and Health Sciences (New Facility)	A new facility to advance the university's instructional and research programs in health sciences and biomedical/biotechnology	$40,000,000
41	Campus Infrastructure (Streets) Phase 2	7th Street (Grant Street to Kagy Blvd.) $2.5M; 15 Street $1.8M	$4,300,000
42	Campus Infrastructure (Electrical) Phase 2	Third Circuit from North (South SUB) $250,000; Central Emergency Generator $8M	$8,250,000
43	Roberts Hall Window Replacement		$750,000
44	Campus Walkway Lighting Replacement/Upgrade		$250,000
45	Facilities Relocation (Vacate Existing Location)		$18,000,000
46	Campus Tier II Seismic Projects		$1,500,000
47	Harrison Dining Renovations		$5,000,000
48	International Program Remodel and Expansion		$400,000
Authority Only			
A	General Spending Authority	For all Campuses.	?

MSU BILLINGS / CITY COLLEGE

Line	PROJECT TITLE	DESCRIPTION	COST
1	Former Computer Annex / Poly Building Demolition	Demolish ~17,231 sf of obsolete space and eliminate significant FCI deficiency and over $1M of deferred maintenance. Following demolition, the space will be rehabilitated as a green space and main entry corridor.	$1,400,000
2	Classroom / Auditorium Modernization	Upgrades to classrooms, modernize elevators, install fire sprinklers, replace windows, upgrade plumbing, remove asbestos, ADA modifications of the 80,000 sf central support building.	$3,900,000
3	Sculpture & Ceramic Arts Bldg. /Art Annex Demolition	Construct 11,000sf with appropriately sized art studios and compliant building systems and demolish single story 6,152 sf annex with significant deferred maintenance.	$5,700,000
4	Liberal Arts Bldg. Phase 2	Renovate the eight story 93,000sf campus core building with functional upgrades, new HVAC, ADA modifications, and window replacement for energy efficiency.	$8,500,000
5	Cisel Hall Renovation	Renovate the original 40,000sf constructed in 1951 with new HVAC, asbestos removal, ADA modifications, window replacement and installation of fire alarm and suppression systems.	$3,600,000
6	Reroof Facility Services Shop	Replace 30-year old original roof of 17,000sf facility.	$500,000
Authority Only			
A	Student Union Renovations Phase II	Continue the direction of the Auxiliaries Master Plan completed in 2011.	$6,000,000
B	Athletics Fieldhouse / Student Recreation Center	Construct a 60,000sf multi-purpose facility for athletics and student recreation. Facility to be located within current acquisition area west of the University. State and Auxiliary to split O&M.	$29,500,000

GREAT FALLS COLLEGE MSU			
Line	**PROJECT TITLE**	**DESCRIPTION**	**COST**
1	Restructure Data Center	Update and increase functionality of campus data center	$500,000
2	Remodel/ Expansion of Dental Clinic & Dental Hygiene Lab	Adaptive renovation to meet student demand and compliance with ADA Commission on Dental Accreditation Infection Control Standards	$3,960,000

MSU NORTHERN			
Line	**PROJECT TITLE**	**DESCRIPTION**	**COST**
1	Hagener Science Center-Renovation & Upgrade	Upgrade 1968 labs & classrooms for Nursing/Allied Programs and upgrade HVAC, lighting, fire sprinkles for code compliance	$2,750,000
2	Brockman Center -HVAC and Energy Project	Upgrade 1970 HVAC system, improve building envelope energy efficiency, replace exterior windows and doors	$750,000
3	Metals Technology Building Systems and Window Project	Replace original 1944 metal framed single-paned windows for energy efficiency, replace HVAC, upgrade electrical systems and reduce accumulated deferred maintenance	$550,000
4	Electronics Technology - HVAC & Lighting Upgrade	Replace 1968 obsolete heating and ventilation with efficient HVAC system (adding cooling)	$500,000
5	Formative Campus Wide Roof Repair/Replacement	Replace roofs of Vande Bogart Library and Cowan Hall's 1952 original roof including terra cotta parapet and brickwork repointing	$600,000
Authority Only			
A	SUB/Food Service Building Systems Improvements	Upgrade all building systems. MSUN Foundation fundraising campaign.	$3,000,000
B	Mackenzie Hall Building Systems Improvements	Install alarm and fire suppression system , upgrade mechanical and electrical systems for code compliance. MSUN Foundation fundraising campaign.	$2,800,000

MAES			
Line	**PROJECT TITLE**	**DESCRIPTION**	**COST**
1	Phase 2: Head-house/Greenhouse Laboratories	Modern plant scientist greenhouses are necessary for the statewide crop research support facilities. New construction of ~1,800sf of climate controlled, lighted greenhouse space with ~900sf heated head-house space for greenhouse research activities and related storage. Estimates are ~$150/sf or $405,000 per unit. Units are for CARC, NARC, SARC, NWARC and WTARC.	$2,025,000
2	Chemistry and Instrumentation Research Labs	Construction of new 2,400sf wet chemistry laboratories with modern fume hoods, chemical resistant countertops, sufficient electrical cover equipment and HVAC for compliant ventilation, heating and cooling at WTARC, SARC, NARC and CARC. Current use of old dairy barns do not meet worker safety standards. Each unit estimated at $580,000.	$2,320,000
3	New Office/Lab Building for WARC	As the oldest Research Center (108 year-old facility) it requires modern facilities to meet the new Horticulture Research mission. New construction of a 4,000sf office/lab building (replace existing facilities) that includes: 400sf reception area, 450sf meeting room with video conference capability, 6-7 offices @ 120sf each for faculty, technicians and farm foreman, 3 laboratories totaling ~1,500-1,800sf adjacent to a covered loading dock including a processing and washing area (one of the labs equipped as a wet lab for chemical and microbial work), a 400sf cold storage/walk-in cooler, and a 300sf storage room near loading dock.	$1,000,000
4	Unheated Facilities for secure, protected storage of farm (tractors, vehicles, combines, planters, tillage) and research equipment.	A new unheated 3,200sf new construction pole-barn for EARC and Bozeman Post Research Farm's dryland farm research equipment - each $250,000. A unheated 6,500sf new construction pole-barn for CARC and SARC for farm research equipment at $500,000 each.	$1,500,000
5	Research Infrastructural Improvement	Construct a new roof on the existing Grow Safe Pen (65'X 260') without side walls at NARC. The roof facilitates the 24 hour precision computerized intake monitoring system that allocates feed to appropriate cow during all types of weather. The roof further protects the $250,000 monitoring system investment. Should also improve the feedlot manure runoff environmental concerns.	$150,000
Authority Only			
A	Agricultural Livestock Complex	New construction to provide space for equine science, equitation, livestock judging, rodeo classes, practice and practicums. To be funded by private contributions and requested State O&M support.	$8-$12M