## MEMORANDUM

- TO:University Facilities Planning Board: Nancy Cornwell Chair, Walt Banziger Vice Chair, Kurt Blunck, Allyson<br/>Brekke, Jeff Butler, ASMSU President, Anne Camper, Glenn Duff, Michael Everts, Chris Fastnow, Greg Gilpin,<br/>Mandy Hansen, Carsten Kirby ASMSU, Terry Leist, Robert Marley, Martha Potvin, Fatih Rifki, Tom Stump, Julie<br/>Tatarka, Jim Thull, Brenda York
- FROM: Victoria Drummond, Assoc. University Planner; Planning, Design & Construction
- RE: July 29, 2014, 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**

Approval of the draft notes from July 1, 2014.

## **ITEM No. 2 – EXECUTIVE COMMITTEE REPORT**

Report on any current Executive Committee actions.

## ITEM No. 3 - CONSENT AGENDA -

ITEM No. 4 - RECOMMENDATION -	National Ecological Observatory Network (NEON) Tower Site Presenters – Victoria Drummond and EJ Hook, FPDC and Facilities Services Andy Hansen and Sarah Eastin from NEON
ITEM No. 5 - INFORMATIONAL -	Residence Hall Update
	Presenter – Andy Allen
ITEM No. 6 - INFORMATIONAL -	Classroom Design Guidelines Revision
	Presenter – Randy Stephens
ITEM No. 7 - INFORMATIONAL -	Campus Planning Overview-Upcoming Project Considerations
	Presenter – Walt Banziger
ITEM No. 8 - INFORMATIONAL -	Garfield St & S. 19 <sup>th</sup> Ave Intersection
	Presenter – Bob Lashaway

### HORIZON ITEMS

- External Building Signage Policy
- Seminar Materials
- Master Planning Issues
- Revisit and Update Policies
- HBO5 Amendment for Lab Facility

VCD/lsb PC: President Cruzado Heid Melissa Hill, President's Office Jenni Maggie Hammett, President's Office Linda Keely Holmes, Provost Office Bonn ASMSU President Robe Diane Heck, VP Admin & Finance Beck

Heidi Gagnon, VP Admin & Finance Jennifer Joyce, VP Student Success Linda LaCrone, VP Research Office Bonnie Ashley, 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, Planning D&C

## MEETING NOTES OF THE UNIVERSITY FACILITIES PLANNING BOARD July 1, 2014

Members Present:	Nancy Cornwell - Chair, Walt Banziger - Vice Chair, Jeff Butler, Tom Stump, Julie Tatarka, Carsten Kirby,
Proxy:	Walt Banziger for Bob Lashaway, Brenda York and Ritchie Boyd, Victoria Drummond for Allyson Brekke
Members Absent:	Terry Leist, Renee Riejo Pera, Kurt Blunck, Michael Everts, Fatih Rifki, Jim Thull, Glen Duff, Martha Potvin, Robert Marley, Brett Gunnick, Greg Gilpin, Chris Fastnow
Staff & Guests:	Randy Stephens, Victoria Drummond, Ryan Diehl

The University Facilities Planning Board met beginning at 3:30 pm to discuss the following:

## **ITEM No. 1 – Approval of Meeting Notes**

Butler moved to approve the meeting notes from June 17, 2014. Drummond seconded the motion. The meeting notes were approved unanimously.

### **ITEM No. 2 – Executive Committee Report**

There was no action from the Executive Committee to report.

## ITEM No. 3 - Consent Agenda - No items

## ITEM No. 4 – Recommendation- Outdoor Recreation Fence Screening

Victoria Drummond presented the blue tarp that has been added to the chain link fence surrounding the parking area of ASMSU Outdoor Recreation Building. The tarp was installed as a temporary security measure to deter theft of equipment, including large rafts which are expensive and not insured. Ryan Diehl is the Director of Outdoor Recreation and has been in the position for about a year. He immediately identified security of this area as a concern, and made the decision to install the tarp as a temporary solution. Outdoor Recreation would also like to expand their program and equipment inventory in the future, as there is not enough room indoors to store the equipment.

Butler asked what Diehl would ideally like to do to make the area more secure; Diehl stated he would like to extend the roof and raise the height of the fence, to make the area inaccessible through improper means. Butler explained that when the Outdoor Recreation building was being designed that a variety of security measures were discussed and cut from the project. He suggested leaving the blue tarp as a temporary solution for the duration of construction on the Freshman Residence Complex, until move in day in August 2016. Cormwell and Diehl thought this seemed reasonable. Drummond read a proxy vote from Allyson Brekke, which stated that she would agree with allowing the tarp to remain in place as a temporary measure but also recommended more permanent solutions including grey-color slats and security cameras. Banziger also suggested a camera system and signage, and that Outdoor Recreation could consult with University Police Department and Chief Putzke for security recommendations and improvements. Cornwell added that the Marching Band may be moving to practice on the Intramural Fields and install a storage area, so there might be an opportunity for Marching Band to partner together.

Drummond recommended retroactive approval of the blue tarp installed on the chain link fence located at the Outdoor Recreation yard area, through August 15, 2016, to provide visual screening of the yard during construction of the Freshman Residence Complex. During this time if the tarp deteriorates to less than original installed condition, it needs to be replaced or removed. Outdoor Recreation will consult with Facilities Planning, Design & Construction for permanent security screening solutions. Tatarka seconded the motion. The motion passed unanimously.

The vote:

Yes:	10
No:	0

This meeting was adjourned at 4:30p.m.

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## VCD: lsb

## PC:

President Cruzado Melissa Hill, 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 Bonnie Ashley, 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, Facilities PDC

# NEON NATIONAL ECOLOGICAL OBSERVATORY NETWORK

# **NEON Project - Continued**

 Core site slated to operate for the 30-year lifetime of NEON (D11- LBJ National Grassland, etc)  Relocatable site related to land use, invasive species, urban effects to operate for 7 - 10 years (Klemme Range Research Station, Wichita Mountain Wildlife Refuge, MSU, etc).

•Aquatic sites including passive monitoring systems (Klemme South Pond and Pringle Creek).

NEON – Bozeman Urban Relocatable July 29, 2014

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# **NEON Project**

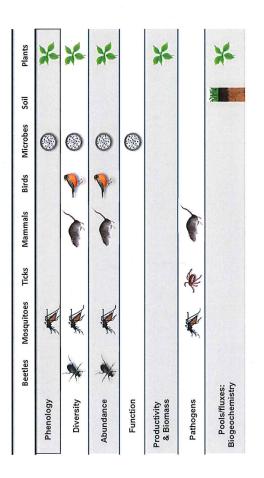
 National Science Foundation (NSF) funded project to create a new national observatory to collect ecological and climatic observations across the continental United States, including Alaska, Hawaii and Puerto Rico. •NEON partitioned the U.S. into 20 eco-climatic domains, each of which represents different regions of vegetation, landforms, climate, and ecosystem performance.

 NEON will collect site-based data about climate and atmosphere, soils and streams and ponds, and a variety of organisms.

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# TOS: Terrestrial Organismal & Biogeochemical Observations



# **NEON TOS Sampling Schematic**

Sampling is designed to facilitate linkages

-

- Between NEON systems (e.g. sensors on the towers, organismal measurements, and remote sensing data)
- Between biogeochemistry and organismal
  - observations taken at the plot scale

NLCD veg type A (dominant) NLCD veg type B

Tick plot Mammal [ Bird grid

...

Veg type C Veg type D

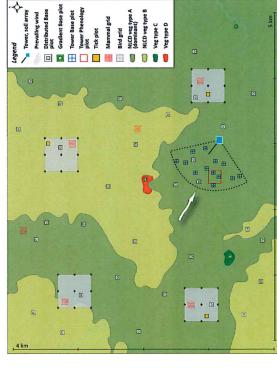
9

- Sampling includes
- Tower plots located within and potentially around the airshed (depending on airshed
- around the airshed (depending on airshed size)
- Distributed plots throughout a site using a stratified-random design.
- Gradient plots throughout site, added
  - after AOP flies the site.

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# **NEON TOS Sampling Schematic**



# TOS Sampling at Bozeman Urban Relocatable

**Tower Plots:** 30 plots (20 x 20 m) located within the tower airshed (located within the dominant air flow near the tower site) to optimize linkages with flux and phenocam data from tower infrastructure. Protocols associated with tower plots include:

- Plant productivity, belowground biomass, aboveground biomass, litter, biogeochemistry, and large woody debris (5-20 plots)
- Soil microbes and biogeochemistry (soil cores and underground sensors in 5-20 plots)

Tower Plant phenology: (200 x 200 m) (one or two square 'loop' transects)





# TOS Sampling at Bozeman Urban Relocatable

**Distributed Plots** are located throughout the site according to a stratified random sampling design. Sampling includes the following:

Distributed Base Plots: 40 x 40 m

Distributed Mosquito: Trap

Distributed Tick transect loop: 40 x 40m

Distributed Small Mammals grid: 90 x 90 m Distributed Bird grid: 500 x 500 m





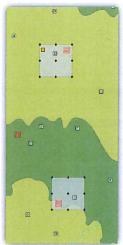
# Distributed Plot Sampling (Cont.)

Distributed Bird: breeding landbird point counts.

Distributed Small Mammals: small mammal trapping grids Distributed Mosquito: mosquito CO<sub>2</sub> light trap collections

Distributed Tick: Tick collections (drag cloth)





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# TOS Sampling at Bozeman Urban Relocatable

**Distributed Base** 

- Plant biodiversity observations
- Above-ground biomass and plant productivity measurements (woody stem mapping, sampling includes clip harvesting of herbaceous vegetation, leaf area index measurements)
- Coarse woody debris monitoring (and when necessary collection of small samples to determine biomass)
- Litter collections using baskets and soil samples
- Beetle pitfall trap collections
- Plant and soil biogeochemistry
- Soil microbe collections





# TOS Sampling at Bozeman Urban Relocatable

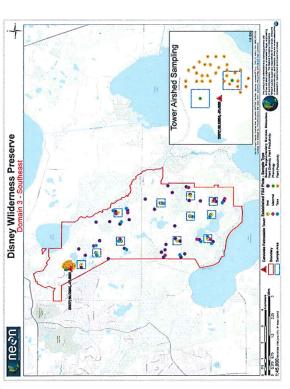
Gradient Plots:

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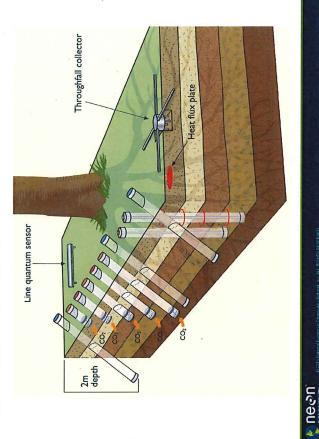
Established as needed along topographical and/or vegetation gradients in order to optimize sampling and validation of AOP data. Locations for these plots cannot be determined prior; 1-3 years of data is necessary to determine if the Distributed Plots described above sufficiently capture gradients present at a site.







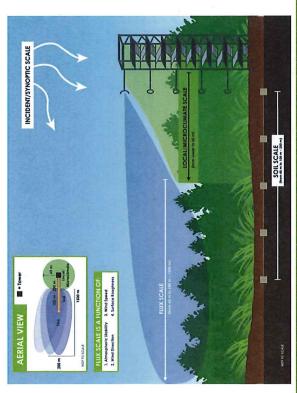
# Soil Measurements



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# **Tower Measurements**



# Sensors

- Tower and Soil Array at all 60 sites
  - 37 Instrument AssembliesOver 2000 measurements
- Over Z000 measurements per core site at frequencies of daily, and ~0.1 to 40 Hz
  - Meteorology
    Radiation
- Atmospheric Chemistry and Air Quality
- Dust and Aerosols
- Fluxes of CO2, H2O, and Energy
  - Soil Measurements



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<b>NEON Site Activities</b>	NEON Site Selection FIU Site Characterization FCC Site Characterization (Geotechnical work, survey) Site permitting efforts Completed building permit/land use permit Completed building permit/land use permit Construction initiation Tower Instrument Deployment Estimated timeframe: 1.5-2 years	<ul> <li>Foundation footprint: usually 8x8</li> <li>Foundation footprint: usually 8x8</li> <li>Foundation footprint: usually 8x8</li> <li>Foundation footprint: usually 8x8</li> <li>Instrument Hut: <ul> <li>8x20x8</li> <li>9x20x8</li> <li>9x20x8</li> <li>9x20x8</li> <li>9x20x8</li> <li>9x20x8</li> <li>9x20x8</li> <li>9x80x8</li> <li></li></ul></li></ul>
Physical Infrastructure	<image/>	AircraftAircraftAircraftAircraftAircraftAircraftAircraftAircraftNetwithSecallyNetwith

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•Data: Requires data connectivity, may use cellular depending on cell coverage.

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# Site Construction

Scheduled to begin Summer, 2015

Duration approximately 4-6 months.

NEON Construction limits. Strict limits are delineated to restrict equipment to construction area (8 feet wide at typical NEON sites).

Construction staging : 40'x40' parking area

Construction equipment may include:

- Mini-excavators
  - Skid-Steer
- Pickup trucks

# Image of comparable NEON tower



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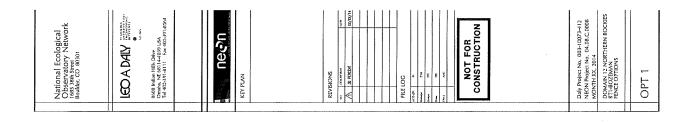
# **Rehabilitation and Reclamation**

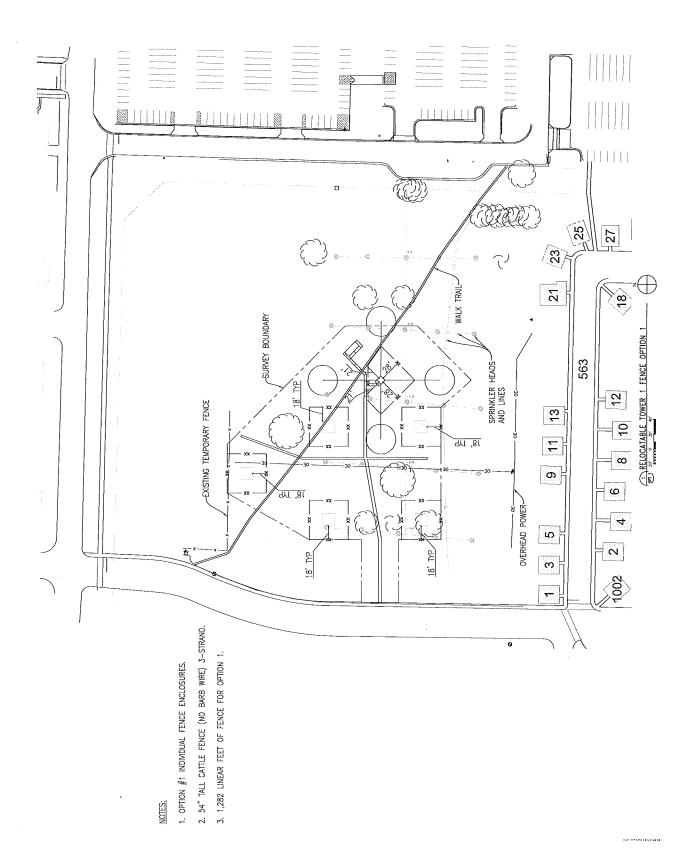
•After the 7 - 10 year life of the tower site, NEON will restore the site to MSU / Planning Board requirements.

•NEON can remove all infrastructure as well as restore the area impacted by NEON with native vegetation per site host requirements.

•The existing components described above will be removed and disassembled, any foundations removed and ground disturbance mitigated via Board / MSU direction.









ITEM # 4		NEON '	Tower Site Plan and	d Location Approval		
PRESENTER	RS:	<u></u>				
				r; EJ Hook, Manager Er es Sarah Eastin and Chi		
PROJECT PHASE:	PLANN	ING	SCHEMATIC	DESIGN DOCUMENTS	CONSTRUCTION DOCUMENTS	X
VICINITY M	IAP:					
528	102 DELVE	S. ISTH AVENUE	5 9 11 13 GLACIER COURT 503	18M	W. COLLEGE STREET	
STAFF COM						
The National F	Feological	Obcervat	tory Network (NEON	V) has been deliberating	with MSU over the next	

The National Ecological Observatory Network (NEON) has been deliberating with MSU over the past two years to expand their grant-funded research project to the campus.

On May 20, 2014 Walt Banziger updated the UFPB with the final site selected the area south of College Street and west of S 13<sup>th</sup> Avenue – in the area where the Family Graduate Houses were removed.

This site will have the full spectrum of activities for the NEON science, and will include a tower, path, hut, soils array. See the accompanying power point and proposed site plan.

NEON is a continental-scale ecological observation system for examining critical ecological issues. Enabling a Better Understanding of Continental-Scale Ecology NEON is designed to gather and synthesize data on the impacts of climate change, land use change and invasive species on natural resources and biodiversity. Data will be collected from 106 sites (60 terrestrial, 36 aquatic and 10 aquatic experimental) across the U.S. (including Alaska, Hawaii and Puerto Rico) using instrument measurements and field sampling. The sites have been strategically selected to represent different regions of vegetation, landforms, climate, and ecosystem performance. NEON will combine site-based data with remotely sensed data and existing continental-scale data sets (e.g. satellite data) to provide a range of scaled data products that can be used to describe changes in the nation's ecosystem through space and time. The MSU site is one of three planned for Montana, and is a terrestrial site, and relocatable, because it will only be in operation for 7 to 10 years collecting data.

Bozeman Creek (Sourdough Creek)	MT	Gallatin County	Relocatable Aquatic	45.63718,- 111.031868	12
Bozeman, MT	MT	Montana State University	Relocatable	45.66985,- 111.0559	12
Paradise Valley, MT	MT	Montana Department of Natural Resources	Relocatable	45.392911,- 110.7163	12

NSF has committed to funding the NEON observatory and the entire project, so there will be no cost to the Bozeman community or any other entities. NEON's standard Tower design planned for MSU is 105 feet tall (see the photo attached for a similar sized tower). The nature of the data collected dictates this height. This tower will be steel. The instrument hut dimensions are 8' W x 20' L x 9' T. Five (5) device posts will also be installed – these support a power/communication box. And there will be access paths.



NEON Education Mission: Enable society and the scientific community to use ecological information and forecasts to understand and effectively address critical ecological questions and issues. Educational Goals Promote and facilitate public understanding of ecological science (i.e., scientific literacy). Educate the next generation of scientists Enhance diversity of ecological research and education communities. Provide tools for students, educators and decision makers to use NEON data to make informed decisions about ecological issues - See more at: <a href="http://www.neoninc.org/education#sthash.eyk4sEhW.dpuf">http://www.neoninc.org/education#sthash.eyk4sEhW.dpuf</a>

Free and Publicly Accessible Resources Continental-scale environmental data Infrastructure for research (PDF) Educational tools. NEON's open-access approach to its data and information products will enable scientists, educators, planners, decision makers and the public to map, understand and predict the effects of human activities on ecology and effectively address critical ecological questions and issues. The tentative construction start date is June 2015, and construction duration will be approximately 4 months. It

decommission when the project is complete and restore the si See more at: <u>http://neoninc.org/about#sthash.Q7GuVjGl.dpuf</u>							
COMPLIANCE:	YES	NO					
MSU POLICIES	X						
COMMITTEE OR APPROPRIATE REVIEW	X						
MASTER PLAN X							
BOARD ACTION REQUIRED:							
Recommend approval of the NEON site plan and location on campus.							

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ITEM # 5	Fresh	man Residence Hall	Update		
PRESENTER	RS:				
Andy Alle	en, Project Mana	ger FPDC			
PROJECT PHASE:	PLANNING	SCHEMATIC	DESIGN DOCUMENTS		TRUCTION Z
VICINITY M	IAP:		I	<b>, ,</b>	
STAFF COM			MULER DINING HAL Hebdes Food services 341 0 Social High Hall Coskie 341 1 High Hall High Hall Hi		
~	U	pdate on the Freshman	Residence Hall.	VEC	NO
COMPLIANC MSU POLICI				YES X	NO
	E OR APPROPRIA	ATE REVIEW		X	
MASTER PLA	N			NA	
BOARD ACTI	<b>ION REQUIRED:</b>				
No action r	eeded as this is info	ormational only			
No action h					



ITEM # 6	EM # 6 Classroom Design Guidelines Revision									
PRESENTERS:										
Randy Stephens, University Architect FPDC										
PROJECT PHASE:	PLANNING	INGSCHEMATICDESIGN DOCUMENTSXCONSTRUCTION DOCUMENTS								
VICINITY M.	AP:									
Applicable to all MSU Bozeman Classrooms										
STAFF COMMENTS:         The Classroom Design Guidelines were brought to UFPB as a draft document on May 11, 2011. The document was approved by UFPB on November 8, 2011. The Classroom Design Guidelines was brought back on January 14, 2014 to gather faculty and student input on the Classroom Design Guidelines such as what is/isn't working and what needs improvement. Comments have now been incorporated into an updated Design Guidelines. You can find the updated Classroom Design Guidelines on the web at <a href="http://www.montana.edu/us/committees/ufpb/files/classroom_committee/MSU_Classroom_Guidelines_Rev_July_2014.pdf">http://www.montana.edu/us/committees/ufpb/files/classroom_committee/MSU_Classroom_Guidelines_Rev_July_2014.pdf</a> This design guide is intended to provide information and a framework for the design, remodeling, construction and maintenance of classrooms and instructional spaces at Montana State University. It compiles the knowledge and experience of those responsible for day to day campus operations as well as those who plan for the future. Research on the latest trends in teaching in higher education was reviewed as well as design guidelines from other colleges and universities. We expect this document to continue to be refined as we learn more, grow in experience, and receive more input from those who use the spaces.         The planning and writing of this design guide was carried out by representatives from the Classroom Committee, a subcommittee of the University Facilities Planning Board of Montana State University, with										
	es (FS), Registra udent representa		office, office of the	Pro	vost, MSU Info	mati	ion '	Technology	y Center, as w	ell
COMPLIANCE							Y	<b>TES</b>	NO	
MSU POLICIE	S							X		
	OR APPROPRI	ATE	E REVIEW					X		
MASTER PLA				_				X		
	<b>DN REQUIRED</b> reded as this is int		ational only							

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ITEM # 7 Campus Planning Overview – Upcoming Project Considerations								
PRESENTEI	RS:							
Walt Ban	ziger, Project M	ana	ger FPDC					
PROJECT PHASE:	PLANNING	X	SCHEMATIC	DESIGN DOCUM		CONST DOCUM	RUCTION IENTS	
VICINITY M	IAP:	<u> </u>						
stage for the fe should be loca and developm ROTC Field S HHD Human Romney - Thi Marching Ban Student Health Outdoor Recre Athletics Indoo Student Indoo Parking Struct	elow projects are oreseeable future. ated on our campu- ent of our campu- Storage Facility – Performance Lab rd Floor Class/Da d Storage – Site I h Services Facility eation – Expansion or Practice Field r Sports Complex- ture – Site Location	The is. U is in a Site -Site ince ocat y - F n -Site	te Location uses ion Future Site Locatio	hand is where verview of th nanner rather on ons and Site L	e these poten ese projects, than a proje	tial projects to approacl	s might and h the planning	
	ocation – Existing uilding – Site Cor	Site nside	e Consideration erations					
ITC/Admin B USDA Site –	1	· ont						
ITC/Admin B USDA Site – Lease Opportu	unities – Consider	· opt	ions for any of the			YES	NO	
ITC/Admin B USDA Site – Lease Opportu COMPLIANC	unities – Consider E:	opt				YES X	NO	
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ITEM # 8	ITEM # 8 Campus Planning Overview – Upcoming Project Considerations								
PRESENTER	S:								
Bob Lasha	away, Assoc	e. VP Uni	versity Services						
PROJECT PHASE:	PLANNIN	NG X	SCHEMATIC	DESIGN DOCUMENTS	CONSTRUCTION DOCUMENTS				
VICINITY M	AP:								
			GARFII INT	ELD ST./S. 19TH ERSECTION					
				VEST REALIGNMENT O	T VALT				
STAFF COM	MENTS:								
		A	C C 1104		1				

The intersection at S. 19<sup>th</sup> Ave and Garfield St. currently accommodates full north/south traffic movements, but limits east and west bound traffic on Garfield to right-turns only onto S. 19<sup>th</sup> Ave. The Montana Department of Transportation will be installing a new traffic signal which will allow full crossing and full turning movements from all four directions. The new signal will include controlled pedestrian crosswalks.

COMPLIANCE:	YES	NO
MSU POLICIES	X	
COMMITTEE OR APPROPRIATE REVIEW	X	
MASTER PLAN	X	
BOARD ACTION REQUIRED:		
No action needed as this is informational only		

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