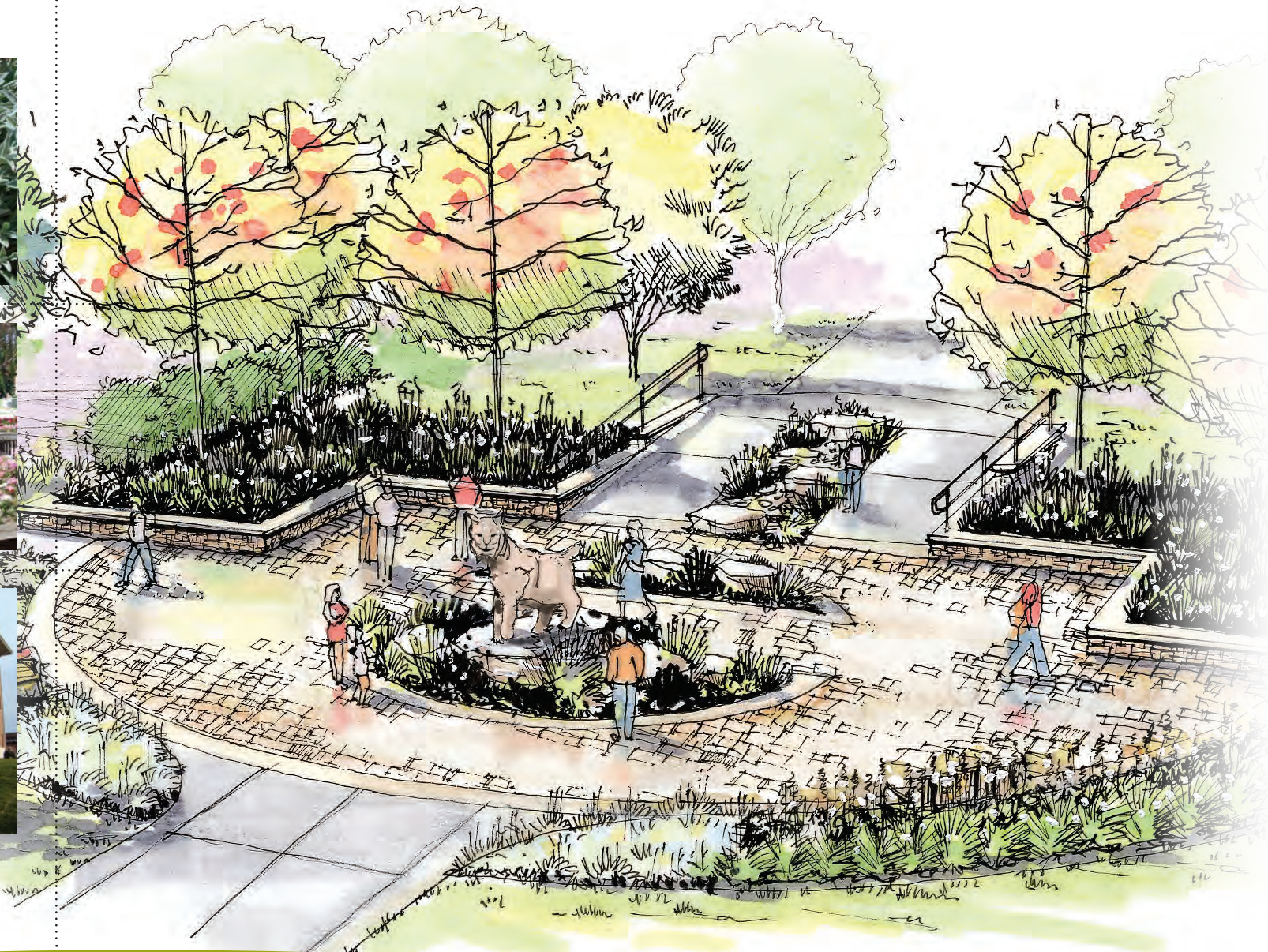


# Landscape Master Plan



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*The appearance of campus is highly influential on student, faculty and staff recruitment and retention.*



# 1 Introduction

Campus landscapes and exterior spaces are a fundamental piece of Montana State University's social, aesthetic, cultural, and facilities infrastructure. They serve as spaces for gathering, outdoor classrooms and recreation. Campus landscapes are important to the mission and experience at MSU. It is imperative there be a guiding plan for future development, improvement and maintenance.

The purpose of the Landscape Master Plan (LMP) is to provide a framework for planning, design, development, and maintenance of the exterior spaces of the MSU-Bozeman campus that is fully grounded in physical realities, maintenance and budgetary constraints.

The LMP was developed as a companion plan of the Long Range Campus Development Plan (LRCDP), which MSU adopted in 2009. The open planning process of the LRCDP and collaborative culture continued with the planning and production of the LMP. The LMP will serve as the framework for enhancing outdoor spaces of campus in alignment with the planning principles of the LRCDP.

More directly, the LMP will establish a shared vision of what campus will eventually look like for future generations. The campus landscape compliments the City of Bozeman, the beautiful Gallatin Valley and the surrounding mountain ranges (Gallatin, Madison, Bridger).

The interconnections of building and idyllic green spaces, punctuated by public art and gathering areas to observe and be seen, create a sense of place. Landscape significantly contributes to a first impression of a place and is a primary reason many prospective students choose MSU-Bozeman for their education.





*The Wind Arc, which was included in the EPS construction project in 1996, is a dynamic piece of public art, located west of the Engineering Physical Sciences Building.*

# 2 Planning Process

The LMP establishes a shared vision for future generations from campus constituency and neighboring community input. Unlike buildings, campus landscapes are unique because they are accessible and used by the entire campus community and the general public.

The campus community expressed great interest in the charrettes held early in the planning process. A planning team was formed to act as a stakeholder body, offering advice and direction to the production team on a regular basis.

## Charrettes

The planning process began with open public participation. Two public charrettes were organized and conducted in February and March of 2010 in order to gain insight, creative solutions and public opinion from those connected to the campus and those representing the neighborhood community.

Participants were divided into small groups for interactive preference activities.

Charrette participants were asked to indicate their preferences for landscapes they liked or disliked. Most participants liked the images of pedestrian plazas; creek crossings with pedestrian bridges and natural plantings; native plantings in bold arrangements; obvious and stately campus entries; outdoor seating areas for all seasons; covered bus stops; and a variety of small, intimate gathering areas in a natural setting.

In addition to the preference activity, charrette participants were asked to identify their favorite place on campus. In both charrette groups the Romney Oval's park like setting was identified as a favorite place on campus. It is an open area, surrounded by historic buildings and student activity buildings such as the Strand Union Building (SUB) and Renne Library. Romney Oval is an open, expansive lawn with evergreen and deciduous

trees that provide opportunities for unplanned interaction and spontaneous activity. It is an area of respite within the cross roads of busy pedestrian circulation routes.

By placing a dot sticker on images of the campus, charrette participants "voted" on major areas for improvement or identified positive landscape principles to include in the LMP. After the charrette participants selected their top ten areas, those priorities with the most votes were assigned importance within the plan. These priorities included:

- Defining the edges of campus
- Creating a sense of place that is unique to MSU
- Organization of campus land uses
- Creating sustainable landscapes



## Survey

An online, campus-wide survey was conducted using Survey Monkey, in February 2010. Over 90 respondents completed the survey and offered additional suggestions for improving the overall appearance of campus through planning. Fifty-seven of the respondents were faculty and staff. Students represented 11 percent of the respondents.

A majority of respondents identified similar topics as important components of the LMP. The six main topics repeated include:

1. Land use organization
2. Preservation of open space
3. Budgeting landscaping into new building construction or renovations
4. Sustainable landscapes
5. A sense of place
6. Preserve and enhance views and vistas

The respondents also felt that it was important to:

- Focus on geographical academic core and edges of campus.
- Establish native and natural landscapes, using indigenous vegetation and trees.
- Preserve and enhance special places, such as: the Duck Pond; Romney Oval; Mandeville Creek; Alumni Plaza; Wally Byam Park; Centennial Mall; and Danforth Park/Iris Garden.
- Over 50 percent of the respondents expressed that they feel the university has made positive improvements recently in the landscaping on campus.

The survey encouraged suggestions in a free format and many respondents emphasized sustainable practices and indigenous plantings as important as well as:

1. Establishing funding for landscaping projects
2. Having a tree replacement program
3. Reducing high maintenance landscapes
4. Continuing irrigation efficiency improvements
5. Educating the public on existing practices.

6. Installing more seating and creating a variety of resting or meeting places
7. Installing more strategically placed bike racks
8. Banning smoking to improve outdoor air quality and eliminating smoker trash

The survey and charrettes were critical in gauging the types of improvements that are important and would be supportable in the future. The plan provides the tools by which future planners, designers and university staff can create beautiful and functional landscapes and outdoor spaces that also take into consideration budget and maintenance realities and the expressed desires of the community.



# 3 Goals and Recommendations

The plan strives to establish the synergy between land uses, site development and landscape enhancements and the success of the university as a whole. Following the analysis of the programmatic needs of the university, assessment of the existing conditions, and aligning the plan with the LRCDP, a series of goals were established. These goals serve as a framework for the intentional improvement and orderly expansion of campus.

The goals describe the larger philosophical ideals of the LMP while the recommendations offer definitive ways to achieve those goals.

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## Goal 1

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Uphold the university's mission.

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## Recommendation(s)

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Design flexible and adaptable landscaping that meets current needs and anticipated future demands.

Provide MSU with a blueprint for the rational expansion of the campus while preserving and renewing existing landscapes and infrastructure.

Develop a landscape plan that compliments the Long Range Campus Development Plan, and follows a similar update schedule.

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## Goal 2

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Preserve and improve the campus image.

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## Recommendation(s)

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Establish a clear sense of entry and arrival to the campus with signage and landscape that emphasizes border elements.





# Goals and Recommendations

*continued*

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## Goal 2 - Continued

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### Recommendation(s)

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Create a cohesive wayfinding and signage plan for exterior spaces.

Establish a schedule to routinely upgrade and restore high profile landscapes and outdoor places.

Maintain and strengthen existing pedestrian corridors with lighting and seating elements.

Mitigate the visual character of parking lots and enhance connectivity to campus destinations.

Plan and design the use and placement of public art to create dynamic and interesting spaces.

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## Goal 3

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Uphold good stewardship of historic, natural and fiscal resources.

### Recommendation(s)

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Implement program of landscape designs for conservation, research and teaching.

Increase use of recycled materials and educational opportunities as part of landscapes.



# Goals and Recommendations

*continued*

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## Goal 3 - Continued

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## Recommendation(s)

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Establish effective limits of work with all new building projects to include site and landscape work that compliments the building and improves exterior spaces.

Enhance existing sites that are historically significant through association with significant individuals, student groups or programs with rejuvenated landscapes for current and continued use.

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## Goal 4

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Create a distinctive campus landscape character that acknowledges the university's land-grant heritage and dynamic future.

## Recommendation(s)

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Reinforce the University's landscape character by maintaining open vistas and entrances that venerate the surrounding natural environment of the region.

Care for and maintain campus open spaces and enhance with planned building infill and landscape planting.

Preserve meaningful outdoor spaces disbursed throughout the campus.



# Goals and Recommendations

*continued*

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## Goal 5

Develop the physical environment of the university with sensitivity, sustainable resource use and long term viability.

## Recommendation(s)

Design landscapes for conservation of natural resources, remaining sensitive to maintenance concerns and operations.

Ensure that sustainable landscape design principles are used in the planning and construction of projects.

Establish project development boundaries prior to construction to benefit future site and landscaping needs.

Align the funding for landscape construction and maintenance with the vision of campus character.

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## Goal 6

Foster a positive relationship with the surrounding community.

## Recommendation(s)

Create physical connections for pedestrian and cyclists that promote interaction between the campus and surrounding neighborhoods and parks.

Beautify the borders that identify the boundaries and edges of campus while being considerate of the adjacent properties.



# 4 Analysis of Existing Conditions

## Natural Systems

Montana’s southwestern mountains, rivers, creeks, forests, and abundant wildlife habitat are an irreplaceable asset that draw people to the area. Recruitment tools that emphasize the area’s natural systems have been proven to draw students from around the region, country and world. Smaller natural systems exist on MSU’s campus and connect the students, faculty, staff, and visitors to the physical attributes that set MSU apart from other campuses throughout the region.

### Creek and Water Features

The natural systems in the form of water features on campus are of a low-key and passive nature. Mandeville Creek, located west of South 11th Avenue, provides a sinuous linkage between the north and south ends of campus. Improvements in 2008 and 2010, to a small section of the creek adjacent to the Hedges Complex and also west of the Animal Bioscience Building, have proven to be

beneficial to both the aesthetics and the ecological viability of the creek. Future plans for realigning and rehabilitating other sections of the creek should involve removing culverts and in-stream structures, eliminating harmful run-off into the creek through pipes and other structures, and planting appropriate noninvasive plant materials that will enhance the creek habitat.

### Views and Vistas

A major tenet of improving the transportation and circulation component of the LRCDP was a strategy for enhancing visual corridors and vistas. The Gallatin Valley and the Bozeman area are known and revered for their outstanding views and vistas. However, on a human scale, ground level development often obscures views and vistas. In this case, care should be taken to create interesting and pleasing views for pedestrians while on the campus grounds.

MSU has been working toward protecting access to the viewshed and enhancing views by realigning sidewalks and visual connections, such as between Montana Hall and Johnstone Center. Created in 1994 by the removal of Garfield Street through campus, Malone Centennial Mall offers one of the most dramatic vistas looking to the west. Major views towards the Gallatin Mountain range to the south have been preserved also, by concentrating lower scale development on the southern edge of campus, including athletic fields.

Smaller scale improvements have taken the shape of screening of service drives and trash collection facilities. The complex layout and circulation patterns on campus often require service access and trash facilities to be adjacent to or contiguous with pedestrian corridors or gathering areas. MSU has been making an effort to screen these uses and has made a commitment to address conflict areas around campus both through shorter term design projects and the LRCDP.



# Designed Systems

## Campus Districts and Neighborhoods

The LRCDP promotes the continued organization of campus spaces into districts and neighborhoods. Development over the years concentrated certain uses close to each other for the convenience of shared resources or to facilitate thoughtful planning efforts. The Districts recognized in the LRCDP include academic, west core housing, support services, enterprise zones, agriculture, campus mixed use, and community venue areas. These districts will continue to be further defined by their similarities through the careful reorganization of facilities and infrastructure. Pedestrian and vehicular connections between districts and neighborhoods have been a recent focus in an effort to enhance the current physical relationships between districts.

Neighborhoods, such as arts and architecture, athletics, research, engineering and others already exist on campus. For instance, the Engineering Neighborhood, located on the east side of campus, provides a synergistic organization of academic and research facilities in three core buildings. Classes, research, lecture halls, offices, and indoor and

outdoor public spaces all contribute to the sense of place that defines the Engineering Neighborhood.

## MSU's Urban Forest

There are numerous definitions of “urban forest,” but in practicality they are individual and groups of trees and associated plantings that are planned and managed as a resource valued for quality of life contributions to human settlements. The MSU Bozeman urban forest offers the following benefits to the campus:

- Captures carbon
- Conserves water
- Reduces soil erosion
- Conserves energy
- Provides shelter and shade
- Reduces noise pollution
- Promotes wildlife and plant diversity
- Reduces stress, fatigue and aggression in humans
- Calms and slows traffic
- Increases property values
- Moderates local climate

The predominate benefit of the campus urban forest is that it significantly beautifies the landscape and formulates visceral reactions of the campus as a place to remember.

The campus environment was once a treeless hilltop with grass and sage brush. The environment changed with human intervention and the systematic planting of trees and treatment of the campus as a large park. As the campus developed, trees were planted en masse with species popular at the time. This included primarily ash, elm and spruce. Many of these trees still exist but are nearing the end of their life cycle, creating the need for campus arborists and planners to infuse the landscape with additional trees in order to sustain the acquired canopy.

In addition to time and aging issues, campus trees are affected by numerous environmental, disease and human stressors. These include heavy snow events, hail storms, drought, fungus, borers, construction, vandalism, slacklining, and other stressors that may be present all within the same growing season. The Bozeman area and campus in general is a challenging environment for trees. For example, in addition to an aging urban forest inventory, pine trees of many varieties have been subjected to intense recent infestations of the Mountain Pine Beetle, causing the destruction and removal of the majority of pine trees on campus.



Black ash have been systematically attacked by the Ash Phyllid in the last few years and Green ash are anticipated to take the impact of various pests and diseases in the future. A comprehensive plan for dealing with this onslaught of die off and disease is in the planning stages and will address replanting of trees that are being removed in addition to focusing on future tree loss contingencies.

Tree canopies are also on the decline because of long term soil compaction from pedestrians, equipment and vehicles. Tree loss often does not occur until well after this compaction damage occurs. Construction has also taken its toll on tree health in certain areas of campus.

A comprehensive tree inventory is underway, utilizing a GPS system, to ascertain which areas need different types of care, replanting or tree removal. Tree values have been assessed according to the *Council of Tree and Landscape Appraisers Guide for Plant Appraisal*. This process was implemented to ascertain the value of the urban forest assets and to enhance the management practices of the urban forest.

### Agricultural Lands

The university's heritage is rooted in its designation as the State's land grant institution. This distinction created a close relationship with the land, the history of the people, and with the processes by which land has been cultivated, cared for and stewarded since the establishment of the university in 1893.

The Agricultural District and agricultural lands basically comprise the spaces north of Kagy Boulevard, south of Garfield Street, east of Ferguson Road, and west of South 19th Avenue. These lands have been preserved for use in agricultural research and teaching programs. The College of Agriculture and the Montana Agricultural Experiment Station (MAES) utilize these areas for achieving their rich teaching and research missions and to steward a finite land resource, for future generations.

It is intended, with future development west of South 19th Avenue, to preserve working lands for teaching and research, while providing buffers for non-agricultural use. This has yet to take place, as major development or expansion of the campus core has not extended west of South 19th Avenue.

However, more public interaction has occurred at the Bozeman Agricultural Research and Teaching (BART) farm in recent years. As part of the Sustainable Foods and Bioenergy Systems major, the Towne's Harvest Garden was created as a real-life, hands-on experience in small-scale, sustainable food production and marketing to the public and MSU community. The Gallatin Valley Gardener's Club work at the Horticulture Farm, to interact with faculty and staff, toil in their gardens and support a scholarship program. An MSU Extension program, Master Gardener, also uses the Horticulture Farm for hands-on instruction. Youth equestrian camps and the Special Olympics have also utilized the Miller Pavilion for special events. These outreach efforts and interactions allow the community to see the value of agricultural land as open space for food production, education, outreach, and working areas.

### Campus Core

The Campus Core is philosophically defined by the density of development, the treatment of landscaped spaces and the concentration of developed amenities that signify a more populated and well traveled area on campus. The Campus Core is geographically defined by the north-south axis of Montana Hall to Romney Gym and east-west



by the Malone Centennial Mall between South 11th Avenue and South 6th Avenue. Buildings and spaces in this core area are easily recognized as having a sense of place on campus and also act as the main defining pedestrian corridors that link major academic and research buildings.

A strong central focal point of the core is the Montana Hall lawn and commemorative marker of the Malone Centennial Mall. This area also marks a resting and gathering spot as much as it marks a transition spot to and from core campus. Pedestrian paths lead from here to the residence halls and housing to the west and also to periphery research and academic buildings.

Heavy use of the Campus Core necessitates intense landscape and site maintenance procedures in order to keep it in good shape. Recent improvements to the Montana Hall green include new mulch, pruned shrubs and trees and additional recycling containers. Future improvements to the north side of Montana Hall and an evaluation of the pedestrian circulation patterns around the building will further enhance the space.

### Building Use Patterns

Throughout the years there have been both planned and unplanned building development and placement. The George Carsley/Cass Gilbert development plan of 1917 is still somewhat evident on campus. However, the vast majority of its principles were departed from in the 1940's and 1950's during rapid and reactionary expansion of the university after World War II. The Carsley/Gilbert plan called for the organized arrangement of buildings around a defined axis with symmetry and spatial enclosure being defined by the placement of buildings on either side. Montana Hall was a major central focus of the plan, including the arrival feature of a curved, horseshoe shaped entry drive. It was an elegant and expansive plan with greater separation of buildings in the campus core. Changing demands on the university facilities and a large influx of new students prompted the university into a building frenzy.

Current planning efforts have sought to integrate these remnants of the past into future plans. The LRCDP calls for the eventual removal of several buildings that would, in their absence, allow for a better connected layout for building placement and use. In addition, recent new additions to the campus have started to recreate that early emphasis

on axial relationships and spatial enclosure that was previously lost in decades of rapid development, including the Alumni Plaza.

### Edges, Boundaries, Gateways, and Portals

The LRCDP calls for the definition of the edges, boundaries, gateways, and portals of campus. Such clarifying elements assist with recognition of the university at both physical and emotional levels. The sense of place that is defined by edges and boundaries communicates that they are indeed at the threshold of a different land use. In addition, it also provides a proper buffer between university and community.

Campus edges are the interfaces at street level that less formally separate the private neighborhoods and commercial properties from the university functions. These edges are in some cases dramatically defined but in others it is a more ambiguous delineation between the surrounding community and university. The edges on the east side of campus are well defined due to stately tree plantings and entry features such as landscaping, gates and building differentiation from historic and traditional neighborhoods. The north edge is also well defined due to the transition between public commercial uses on the north side of College Street



and university residence halls on the south side. The west and south edges are not so well defined. They would benefit from edge treatment so that the transition between university and community is more obvious.

Boundaries are more formal demarcations of university land based on property lines and mapped extents of ownership. While ownership boundaries are formal they do not always present a visual definition. These formal boundaries extend out to the west of South 19th Avenue where it is less clear what is university, community or rural land ownership since uses are similar.

Sense of entry or transition into the university area is defined by gateways and portals. Gateways serve as major transition areas with more elaborate sign features. Portals are less formal entries that occur at transitions between the surrounding neighborhoods and the university. Several attractive and functional gateways and portals exist on campus, including South 8th Avenue and Cleveland Street. In addition, there are several signed entries on the edges of campus that currently function as some of the limited wayfinding sign pieces on campus. The campus fabric would benefit from expanded and

unified wayfinding devices as well as enhanced gateways and portals.

## Transportation and Circulation

### *Pedestrian*

Pedestrian circulation is now mixed with bicycle circulation, creating design and planning issues for the campus core in particular. Major crosswalk redesign and installation has been taking place to improve both the character of pedestrian crosswalks on campus and to provide safe, visible routes of travel across campus streets. In addition to issues with bikes and vehicles, the university has been trying to address the formation of “cow paths.” These informal pathways are created by cut-throughs or shortcuts across lawns or landscaped areas. Several mitigation techniques have been used, including installing pavement, laying down organic and inorganic mulch or using recycled concrete pieces for stepping stones. There has been mixed success with all of these applications.

### *Bicycle*

Additional bike parking facilities have been installed annually for the past two years, providing more bike parking in heavy use areas. A multi-year,

comprehensive bike parking survey was also done, in order to ascertain where the heaviest use areas are and what the use patterns are for different types of bike parking surfaces and rack types. Future placement of bike racks and bike pads will endeavor to draw on this plan and provide racks where they are most needed.

### *Vehicular*

Vehicular traffic on campus is always a consideration in long term planning. The LRCDP took into careful consideration the future growth of the core of campus and the need to provide safe and efficient access to university facilities while keeping the campus relatively car free in the interior. Vehicles have been mostly relegated to the outskirts of campus and onto the major vehicle routes.

### *Parking*

Expansion of campus and growth of the student body will invariably lead to the need for increased parking capacity. The LRCDP calls for the expansion of this service. The existing surface parking lots are currently adequate for the number of users needing accommodation. Expansion should feature moving to a vertical structure to accommodate more vehicles in a smaller footprint. Likewise, large surface lots, which may actually be better utilized as





building sites, would become a feature of the past. Screening has become a priority, through strategic planting of vegetation to distract from monotonous expanses of asphalt surface lots. Parking is routinely maintained with seal coating, crack sealing and striping. In addition, the university has been researching future requirements for the increased need for more handicap accessible spaces.

### **Public Transit**

The University is partnered with Streamline, the local transit system, and student groups, to provide pickup and transfer stations on campus in order to provide alternate transportation for students, faculty and staff from throughout the greater community. Non-campus users often use these services and enjoy the seating area in front of the Student Union Building, where transfers to all bus routes are available. This is seen as a vital town and gown relationship with both the transit service and the community benefiting.

### **Utilities and Services**

Utilities are a web-like network of both active and abandoned above and underground utilities on campus. This is most apparent during construction projects and scheduled maintenance procedures. For instance, it is not uncommon to encounter

both live and abandoned utility lines in the same trench or perpendicular to a trench in an excavation project. Utility locates are critical on campus and are a key component in identifying utilities and coordinating construction activities.

Utility maps are available for all campus lands and are updated routinely to reflect changes or new construction. These maps are also coordinated with a larger system of drawings so that layers of utilities can either be viewed separately or with other site features.

The planning and maintenance of major utility corridors started with the completion of the Malone Centennial Mall tunnel project in 1997. This provided a dry, safe vault and organized route for major utility lines traversing the campus core. However, there are areas without linkages to this underground tunnel system that need to be incorporated as those utilities age and need replacement. New building construction features tunnel extensions or connections where feasible so that they feature efficient linkage to the Heating Plant and other vital utilities.

To further protect utilities and plan tree plantings more appropriately, a “Tree Free Zone” has been established along College Street east of South

19th Avenue to coordinate utility installation and maintenance with tree removal and planting. MSU has agreed with the utility provider, Northwest Energy, to remove trees that are in the zone and to refrain from planting new trees in this area.

As MSU explores the possibilities for geothermal technology as an option for heat and hot water, the tunnel system may remain a campus core feature.

The LRCDP called for providing improved and well planned service access, of adequate size to buildings on campus, so that everything from daily service calls to construction projects could be accommodated. To protect the value of views and viewsheds, MSU is focused on reducing the physical and visual impacts of these areas, as they are often in locations central to campus or near pedestrian corridors or gathering spaces.

There have been recent accomplishments in planning and design projects that assist with the screening issue and reduce the visual impacts of service areas on campus.



## Security

Providing a secure and safe experience on campus is critical to recruiting and retention efforts, but especially vital for public health and safety. Significant efforts have been undertaken to prune overgrown shrubs and trees and remove awkward screens or hiding places. MSU has established a lighting standard, based on scientific data, throughout campus and installed bright, energy efficient LED street and landscape lighting. In addition, emergency call stations have been installed throughout campus in an effort to provide quick and easy access to emergency services.

The Bozeman setting inherently helps to provide a sense of security that a more urban or populated campus would not enjoy. However, with the growth of Bozeman and surrounding area, it is prudent to meet industry standard, when it comes to lighting, planting layout, pruning of hedges and shrubs, and providing walkable and navigable spaces.

## Open Space

### *Formal Open Spaces*

Formal open spaces are provided via a system of well designed lawns and parks. Wally Byam Park, Duck Pond, Romney Oval, and Malone Centennial

Mall are all examples of formal spaces. These spaces are well used in the spring in celebration of the end of winter and during the fall months to welcome the changing colors and cool breezes of October. Wally Byam Park is used for university events such as luncheons, concerts and public gatherings. The Duck Pond is heavily visited by the community, in part because of its recent rehabilitation, but also because of its rich history and accessible location.

### *Informal Open Spaces*

Green corridors, such as Hannon Green, athletic and recreation space, and agricultural lands make up informal open spaces. These are spaces that have either sporadic or informal use that is unscheduled and spontaneous. These spaces are also valued as great expanses of undeveloped land, such as the cultivated agricultural lands. These are larger spaces with less spatial definition than the formal open spaces. An example of an informal recreational open space is the intramural fields located southwest of Roskie Hall. Impromptu and organized recreation occurs in these open spaces throughout the year and especially during warmer months. The agricultural lands are used for very specific research and teaching uses by the College of Agriculture and Montana Agricultural Experiment Stations.

## Housing

Campus housing takes two forms: residence halls and family and graduate housing. The demographic between the two is different in that the residence halls tend to house younger students and the family and graduate housing offers alternative living arrangements for older students, couples and families with children. The residence halls are more typically located within the campus core, whereas the family and graduate housing is located between South 11th and South 19th Avenues. Both housing types offer informal and formal recreation opportunities, including sand volleyball courts, playgrounds and adjacent open space. However, most of these spaces are not “park like” in atmosphere and would benefit from more planned design and development. In addition, most areas are not well shaded. Additional tree plantings would enhance these areas by providing shade, high level screening, filtered light, and visual interest.



## Mixed Use, Enterprise Zones and Community Venue

Future growth of the university, a changing student demographic and an increasing demand for student access to off-campus style amenities has been addressed in the LRCDP from a master plan perspective as a Mixed Use District. These new demands are proposed to be addressed with new and improved residence hall options and by providing either the opportunity for collaboration with public sector entities or providing access to local businesses and services.

Future collaboration with outside entities, either to further research or academic pursuits in some fashion, would be pursued as part of the two Enterprise Districts identified in the LRCDP.

The Community Venue District is comprised mostly of the athletic department facilities and programs; but could evolve to include performing arts venues. The current large audience sport facilities lack interconnectiveness to the campus core due to disjointed pedestrian circulation and amenities.

Recent improvements at the Bobcat Stadium included new tailgate areas and the Bobcat Plaza, which provides fans with areas for game day enjoyment as well as for special booster events. The stadium was significantly expanded in 2011 with the addition of approximately 5200 new seats at the south end of the field. Future improvements should focus on connecting the Community Venue Districts with the rest of campus through a well planned walkway and plaza system, which may include a bonfire pit, as is called for in the LRCDP.



# 5 Planning and Design Guidelines

## Variable Complexity

### Special Places

Historically and culturally significant spaces on campus should be preserved and enhanced. MSU has several key spaces that represent special meaning. Romney Oval and the Duck Pond are two such spaces identified in the LRCDP to be preserved for future generations. There should be a progressive maintenance plan for rejuvenating these site features and plantings. In addition, close attention should be paid to current and potential future use patterns, changing demographics, space usage, and long-term maintenance of aging facilities, trees and plantings.

### Spatially Appropriate Landscapes

The location of landscaping can either positively or negatively impact a building or space. The MSU campus has many open

views that would benefit from providing human scale plantings and site amenities. In other cases, foundation plantings might be appropriate around one building perimeter but not another. All situations should be dealt with on a case by case basis.

Older buildings with overgrown foundation plantings may need to be redesigned to produce a more aesthetic situation that compliments the building. In contrast, a more modern or recently constructed building might be better accented with bold, mass plantings established apart from the building. In no case is it acceptable to plant large, broadly spreading plants directly adjacent to the building. These areas should be reserved for lower scale, more open formed plantings to promote easier maintenance, building health and public safety.

### Interpretive and Educational

The use of plant materials and landscapes as interpretive or educational features is a relatively

new practice at MSU. The agricultural landscapes west of South 19th Avenue have historically been heavily used for educational and research purposes. However, the landscapes more central to campus have been used for more utilitarian or aesthetic purposes. Recent landscape projects have allowed the university to use more areas for interpretation and education. For instance, at the Animal Bioscience Building there was a concerted effort to use all native plant materials in the landscape not only for sustainability purposes but also as an educational device for learning and care of indigenous species.

With the possible future expansion of campus, it is imminent that new opportunities will present themselves for use of landscapes as an educational or research tool. A future goal of the university is to create a campus arboretum that can be used by faculty and students.



In addition to collaboration opportunities at the project design and construction level, there is also the opportunity to reach out to the faculty to garner their knowledge in design, horticulture, disease and pest control, best management practices, and other applicable areas of expertise.

## Sense of Place

### Campus Districts and Neighborhoods

The LRCDP established the idea of organizing campus areas into districts and neighborhoods that had similar functions as well as similar support needs. The LRCDP established the following districts: Academic, Community Venue, Campus Mixed-Use, Campus Core Housing, Campus West Housing, Agriculture, Support Services, and Enterprise Zones. These areas cluster related functions. The Neighborhoods more carefully define specialized areas within districts, such as Arts and Architecture, Engineering, Athletics, and so forth. The LRCDP framework plan and organization of districts is meant to help promote district specific diversity and encourage the refinement or development of landscape, architecture and infrastructure elements that create a sense of place that fits the neighborhood.

An example of how landscaping and site improvements can help reinforce neighborhoods would be to create an outdoor performance space in the heart of the Arts and Architecture Neighborhood, where classes, performances and other events could take place at the epicenter of arts. Another example would be to provide pedestrian and vehicular connections from main campus to the athletics venues in order to provide a direct relationship visually and physically between two currently separated entities. These physical connections could include architectural or landscape elements that identify the area and reinforce being on the correct path.

In many cases, with future landscape, architecture and site planning efforts, it will be important to provide more appropriate and functional outdoor spaces and interconnections on campus to enhance the idea of neighborhoods.

### Edges, Boundaries, Gateways, and Portals

A major piece of the LRCDP was the identification of the primary and secondary gateways and portals. Further refinement of these areas should involve improved signage, lighting, enhanced streetscape and pedestrian experience, and improved

informational opportunities in the form of kiosks and visitor centers.

Edges and boundaries are the limits of campus that are defined by both the built and perceived environment. MSU's edges are sometimes ambiguous. They should be reinforced and enhanced by providing informal treatments and signage at key areas by using architectural elements, signage and landscaping. The less formal and definitive limits of campus should be well landscaped. They should also provide buffers for undesirable views into campus service drives or utilitarian areas and should create a concrete sense of transition from community to campus.

Since boundaries are the physical limits of campus and often stretch beyond the developed areas of facilities and built structures, they are more receptive to being locations for more formal signage so as to classify the area as university land.

Where edges and boundaries adjoin residential areas, an effort should be made to compliment that environment by mimicking it on the campus side. Many adjoining residential areas feature street tree plantings, pedestrian friendly sidewalks and amenities and smaller scale construction.



The campus can compliment this by making an effort to plant more street trees, provide sidewalks, benches and pedestrian amenities, and screening undesirable views with opaque fencing or appropriate landscaping. By defining campus edges, the existence of the university is cemented in the community. It also assists in establishing a sense of place for the campus in the mix of extensive new residential and commercial development that has blurred the edges of campus during the past 20 or more years.

The university is currently working on a Wayfinding Plan that will provide entry signage at the campus edges and boundaries that engage the community with the campus by providing inviting gateways and portals that draw people into campus. The edges can be defined with smaller scale wayfinding amenities whereas the boundaries might feature more elaborate or formal gateway structures or installations. A good wayfinding plan starts with well planned and designed gateway and portal signage. A hierarchal system of edges and boundaries should be established to assist in wayfinding. Primary entries, or gateways, are the most significant and should serve both pedestrian and vehicular uses.

Portals have a lesser visual presence but serve to demarcate campus grounds and aid in wayfinding. They can also act as informational areas for on-campus events and services. Portals might be less defined but still provide smaller scale signage and less intense site and landscape features. Secondary gateway and points would be smaller in scale and detail than the primary entries however they should still represent the same design style as the primary entries so as to connect them with the campus and continue to create that sense of place.

## Historic Preservation and Adaptive Reuse

The LRCDP recognizes that the historically significant buildings and outdoor spaces throughout campus are an invaluable asset to the university in both a physical and psychological context. Historic buildings and landscapes often require a significant investment of capital for adaptive use. The MSU campus has several unique and important outdoor spaces that are historically significant, including Hamilton Hall entry, Wally Byam Park, the Iris Garden, the Duck Pond, and Romney Oval. These outdoor spaces all contain as

many memories for students and graduates as they do for the community.

For instance, the Duck Pond is often more heavily visited and used by local residents and school children than it is by university students. This space is well liked by the community despite the lack of proximate visitor parking. Wally Byam has historically been used for regular events at the university (such as the annual back to school luncheon) as well as by the famous Airstream rally. These spaces should have routine maintenance plus regular renovations to ensure that the integrity of the historical space is maintained while making it usable in a modern and current context.

The Duck Pond and the Iris Garden have been recently revitalized. Both of these spaces benefited from a renewed interest in improving existing historic resources and a commitment to preserving outdoor spaces for social and aesthetic reasons.



# Connectivity

## Transportation and Circulation

The LRCDP stresses that a successful transportation network “is multi-modal, convenient, easily understood and interpreted, interconnected and accessible.” MSU has been working diligently to improve its transportation network in recent years. The major improvements that have enhanced circulation included working with the city to provide upgraded paving and utility connections on the northeast end of campus and creating a Main Street to campus connection from the west. In addition, the pending wayfinding and signage plans will further delineate campus from the rest of the community and will add positively to the interpretation of the vehicular routes through campus.

Transportation and circulation on campus needs to be improved to provide efficient and safe vehicular and pedestrian routes that interconnect the districts and neighborhoods while providing access for all users. It must also be easy to locate and navigate to, especially for users with accessibility concerns.

A significant improvement in the circulation patterns to and from campus were addressed with the completion of a round-a-bout at the intersection of College Street and South 11th Avenue.

### *Pedestrian Crossings*

Pedestrian crossings on campus have been designed for superior visibility so that they have continuity as designated awareness zones for drivers. The crosswalks experiencing upgrades are initially those major intersections or pedestrian crossings at frequently visited buildings or facilities. Other, less trafficked areas will receive upgrades over time. This process will continue so that all pedestrian crossings are upgraded to the campus standard.

In addition, there are crossings that connect MSU entities and campus facilities that span over non-MSU roads and drives. The crossings over South 11th and South 19th Avenues are a good example. Awkward crossing points in these types of areas should be aggressively improved in cooperation with the Montana Department of Transportation and the city of Bozeman, to improve safety and interconnections. The university should work with jurisdictional agencies to plan street crossings, including pedestrian bridges, for safe access to

campus. This will become increasingly important as the university develops more facilities west of South 19th Avenue.

### *Bicycles*

Several years ago the ban of bikes on Malone Centennial Mall was lifted. Allowing biking at the core of campus has encouraged users to bike directly to building entrances. Bikers are encouraged to park at designated racks rather than lock bikes to signs, poles and walkway railings.

Future improvements should include using the recently completed Bike Parking Master Plan and periodic surveys of use patterns to install bike racks and parking facilities where needed and where funds allow. Bike lanes should be installed with street renovations where applicable and where room permits.

The university should investigate creating a bike program on campus that emphasizes the advantages of owning and riding a bike, bicycle maintenance and riding safety. From a sustainability perspective it makes sense to encourage students to bike more as a way to reduce emissions and the expense of parking and driving a car.



The university should work closely with the city of Bozeman and other jurisdictional agencies to ensure that future street improvements or widening coordinate efficient and safe bicycle use to and from campus.

### **Public Transit**

Public transit in Bozeman consists of Streamline and Skyline fare-free bus service. Streamline uses the Student Union Building as one of their major transfer stations. A rider can access all of the routes offered by this transit system from the MSU campus. The future of this transit system is always in flux due to funding availability. It is in the university's best interest to support this system and continue to accommodate it by offering this transfer station as well as shelter for riders. In addition, with future campus expansion or development on the edges and boundaries, it would also be advantageous to provide additional stops or shelters for riders and pedestrian connections into campus via a sidewalk or trail.

### **Vehicular**

The university is still oriented to the vehicular user but increasingly more at the fringes, rather than at the campus core. The LRCDP outlines plans to

reorganize vehicular circulation in certain areas of campus in order to create a more functional and safe pedestrian environment. As these changes take place, vehicles will access the key areas of campus differently.

A key to creating efficient and safe vehicular circulation is to provide the linkages between major campus hubs or districts and reinforce it with a solid wayfinding plan and parking where it will best service the campus. A complete transportation study should be done to determine if linkages are in place and if vehicular signage is required either by code or by choice to further determine if the high amount of signage clutter is detracting from the vehicular experience.

### **Parking**

The parking situation on campus is perceived differently than the statistics might actually suggest. There appears to be no parking when it is needed or where it is needed. However, the statistics indicate that there is currently sufficient parking for the number of faculty, staff, students, and visitors on campus.

MSU needs to accommodate a variety of parking issues:

1. Long term parking for student residents
2. Sports and performing arts events
3. Commuter students, faculty and staff
4. Bookstore and other SUB merchants
5. Conference Services and other SUB events
6. Visitors
7. Handicap accessible spaces

The LRCDP advocates for some future surface parking to be provided in vertical structures, so as to open up land on campus for building and site construction. These structures will provide parking for an expanding campus at those areas where it makes most sense. In the interim, it is important to provide safe and proximate parking to campus that contain the appropriate wayfinding elements, safe crosswalks onto campus and visitor opportunities in more locations throughout campus.

Large parking areas are generally discouraged without some type of visual and physical separation to eliminate large expanses of pavement. Parking areas should be subdivided into sub-areas of 50 spaces or less. The use of bio-swales, large planting islands and safe pedestrian routes should be





implemented in future parking lot renovations or in new lots. In addition, MSU should consider using multiple lots as visitor lots and make these easily usable by providing self-pay parking facilities like other universities.

### **Americans with Disabilities Act Compliance**

The university created an ADA Transition Plan for how accessibility will be improved and met within the coming years. Access to university facilities and programs is on the forefront of planning issues and building design and will continue to become more important. Changing regulations and initiatives to ensure the campus is accessible to all people require diligence. It is important that anyone involved in the planning, design, construction, or administration of university spaces become familiar with the current requirements that apply to their field and work progressively to meet the intent of the regulations.

Snow removal, wheelchair access, building access, program access, signage, wayfinding, construction signage, rerouting, and facility compliance are all areas that MSU needs to be progressive in finding solutions, as it pertains to accessibility issues on campus. In addition to web site notifications and route maps, the UFPB established the ADA Advisory

Committee in 2008. This committee has taken on the effort of determining what types of information are pertinent to the university. They also help disseminate information to their constituents and determine the best course of action in creating and implementing a transition plan.

### **Pedestrian Plazas**

Pedestrian plazas complete a hub by reducing the chaos at transition spaces. Plazas should be designed for circulation and connection of linear pedestrian walks. Careful placement of pedestrian plazas offer passive opportunities for meeting and gathering and can include either formal or informal site amenities.

The placement of benches and site furnishings offer more formal site amenities. The use of rock walls, boulders and landscape elements offer less formal site amenity opportunities. The less formal elements can be considered “landscape affordances.” These are further described as natural landscape features that add to the aesthetic while affording the opportunity to be used as something else.

Plazas should be provided at building entrances to encourage easy transition from a pedestrian walk to the building and as an area for gathering.

Pedestrian plazas should also be placed in areas of transition or intersection where major node relationships exist along pedestrian circulation routes, such as at the intersection of two major walkways. An example of this was accomplished at the Herrick Hall and Linfield Hall intersection with the Montana Hall and Johnstone Center axis, with the Alumni Plaza project.

### **Pedestrian Connections and Walkways**

The campus has paved pedestrian connections and routes based on either building alignments or circulation patterns. However, in some cases pedestrians create and use the route that dictates the shortest distance between two points. These paths are often referred to as “cow paths.” They can be counteracted by creating circulation alignments that address dominant use patterns as well as aesthetic concerns.

Pedestrian connections should therefore be placed to facilitate efficient circulation and also accommodate bike use and service or emergency vehicles when appropriate. Areas for pedestrian gathering or stopping should be provided on lengthy linear paths in order to offer the opportunity for sitting, talking or enjoying the space.



## Interstitial Spaces

The small, underutilized spaces between buildings can be described as interstitial spaces. On campus every inch of real estate should be considered valuable. The under utilization of interstitial spaces with so much potential is an opportunity lost. Recently, interstitial landscape space on campus has been rehabilitated, such as the small pedestrian seating area on the southeast corner of Cheever Hall. These types of spaces can be easily provided in between buildings and in places that might otherwise be considered dead zones. The space between Howard Hall and the pedestrian walkway was recently enhanced with a sculpture and planting bed.

Interstitial spaces should be developed as gathering or seating areas or places for public art, wayfinding signage or beautification. The use of more detailed landscape plantings, human scale signage and architectural elements (such as small kiosks and sculpture) and site furnishings creates a sense of place.

## Streets

Streets provide a solid framework for university development. They are critical to spatial connections and are a dynamic and interactive

public space. The careful layout of internal and external circulation routes should be implemented with future development to honor the intent of the LRCDP. Campus streets should be maintained in good working order and should have improvements installed in the form of crosswalks and pedestrian amenities or safety devices, such as bump outs, signage and snow storage and storm water runoff.

With the closing of Garfield Street to create Malone Centennial Mall, through traffic from the east side of the campus to the west side was diverted. The only remaining through-street affecting the campus core is Grant Street. This poses some issues with vehicular circulation and access. Future street construction should follow the basic principles of the LRCDP and/or the future transportation plan.

Using visual cues and a solid wayfinding system will help in providing a cohesive street and circulation plan for vehicles. Main vehicular entries to campus should be accentuated through clear signage and should also be coordinated with parking facilities. Cyclists should have safe and convenient bike lanes and transitions so that navigating through traffic is not dangerous.

Additional street edge landscaping on campus is supported. The edges of campus contain street tree plantings, which continue the boulevard aesthetic appeal dominant in adjacent residential neighborhoods. Edge trees endure a difficult growing environment but offer shade, urban cooling and visual appeal. Street tree plantings should be carefully planned with consideration for existing and future underground utilities, species growth habits and requirements on watering and drainage.

Streets are also important transporters of storm water and run off. In most cases it is acceptable to direct storm water into the gutters of the streets or use streets to move water to a storm water receiving area. In some cases it makes more sense to retain water on site. Directing water into a storm water receiving device in the street should be planned so that pedestrian and vehicular safety is considered to prevent ice build up and damming in the colder months.

## Wayfinding

Wayfinding is a comprehensive collection of signage that helps diverse groups (both pedestrians and vehicles) move about the campus safely and



efficiently. An inclusive wayfinding signage system is a contributing element to the university's identity and architectural character. The lack of wayfinding signage is a significant barrier to campus accessibility by visitors, students, and those with disabilities – all relying on signage for guidance and direction.

A comprehensive wayfinding system and design provides cohesiveness to the campus. Distinct wayfinding signage articulates where information is available. Similar signage is immediately recognized because of design and placement as a map from campus entry to building doorway.

MSU is developing a Wayfinding and Signage Plan. This plan will provide consistent, coherent and comprehensive guidelines for all types of signage which will be used to guide persons from the freeway into campus, between locations on campus, and through buildings. The MSU Wayfinding Signage Guidelines address the types of signage appropriate at typical locations and provide graphic standards. The guidelines address signage that is outside buildings, either on the building or in the landscape; building informational signage; interior building signage; evacuation and refuge area signage; and directional signage.

## Campus Trees

### Inventory

As an urban forest, MSU's trees connect the campus to the greater community. Trees are an important asset to the campus in terms of social, aesthetic and resource based benefits. MSU is currently undertaking a comprehensive inventory of trees on campus. This inventory is being conducted by the University Arborist and involves the use of a Global Positioning System (GPS) to locate trees in the landscape and track their health in a comprehensive data base. Back in the office these trees are assigned monetary values and other pertinent information for managing their health and maintenance. This inventory should be supported into the future and should be expanded so that it includes information relevant to planning and maintenance functions with its future link to a Geographic Information System (GIS) and other databases.

### Care of Trees and Diversity of Species

Due to plant life span and weather conditions, intense planting efforts have occurred every few decades. This trend has created tree stands with similar characteristics, one of those being size

and health. In addition, the abundance of certain species seems to be related to the era in which they were planted and to species hardiness. To combat the shortfalls of the past, it is important that MSU adopt a tree planting and care policy that addresses issues like species diversity, successional planting strategy, pest and disease management, tree removal, tree values, tree replacement, and construction protection.

The Tree Protection Specification is being used to ensure that a perimeter of protection be established prior to construction work. This new specification is being enforced to protect trees with significant cultural or monetary value.

Trees are an important and invaluable asset to the campus. From a planning, public image and practical perspective, creating a campus where trees are a priority is the best course of action. As such, a policy or plan should be adopted that supports this and provides for their enhancement, protection and replacement when applicable.



## Tree Campus USA

The university may consider pursuing and obtaining Tree Campus USA status. Tree Campus USA is an Arbor Day Foundation sponsored program that recognizes college and university campuses that effectively manage their trees; develop connectivity with the community to foster healthy, urban forests; and strives to engage students into using service learning opportunities centered on campus, community and forestry efforts.

## Character and Image

### Turf Areas

Turf areas are very important for several reasons. They act as a “carpet” on which the day to day traffic can traverse without having overly detrimental impacts. They also provide a cooling effect to campus users and surrounding buildings. Turf areas offer an area for informal and formal recreation. However, turf areas need to be well drained, groomed and irrigated properly to be viable and usable. Common complaints on the MSU campus include soggy grass areas that are unusable due to poor drainage and over watering. While the campus’ centrally controlled irrigation system will be

addressed later in this plan, it is clear that there is always room for improvement in providing the most usable and maintainable turf areas on campus.

### Planting Beds

Planting beds offer a wonderful alternative to large expanses of turf grass on campus. However they require a higher standard of care than large turf areas. For instance, they need to be hand sprayed for weeds or hand weeded. They also need to have mulch repaired or replaced on an intermittent basis. They also tend to show wear and tear more than turf areas. However, they offer a good visual diversion and should be used in specific areas where deemed appropriate. Using planting beds in special circumstances makes them more meaningful. It also allows them to be more easily maintained. Planting beds should be used predominantly at the entrances of buildings, at pedestrian plazas, gathering areas, and at campus entries.

### Perennials

Perennial beds offer a unique way of providing a human scale element to a landscape. Perennial beds have been used in isolated cases in more recent landscape installations to showcase ornamental grasses and native perennial species adjacent to

pedestrian walkways, gathering areas and building entrances. They should continue to be used in these types of areas, where applicable. Careful planning will ensure that the plant species used are maintainable and viable given the cold, harsh weather of the area. It is also desirable to pick different plant species to encompass three seasons of flower blooming. The use of native plant species, coupled with periodic fertilizing, proper drainage, mulching, and watering, will help ensure a viable stand of plants that will look beautiful spring, summer and fall.

### Natives

The use of native plants is very appropriate on the MSU campus given the harsh conditions during the growing season and dormant season. Natives are better at fighting off disease and damage. They usually require less water to survive. There has been a recent trend in using native perennials and shrubs for accent planting in order to reduce water use and test the viability of certain species on campus, where the normal environmental conditions can be exaggerated. Natives have the tendency to look a bit wild. Careful pruning and planting technique, along with good design and massing, can prevent them from looking unkempt.



## Materials and Furnishings

In order to create a sense of place and a lasting character or image for the campus, MSU will use the LMP (a more detailed document of design guidelines) that suggests the landscape materials and site furnishings appropriate for an institutional environment. For instance, the use of stone and pavers over asphalt or concrete, for outdoor spaces, creates an interesting texture, is often more appealing to the eye and complements the brick elements of campus buildings.

Constructing plazas out of concrete pavers is preferred over paved materials, when applicable. Pavers create a more detailed treatment on the horizontal surface. They are also a sustainable product that can be reused and they also reduce runoff. These types of materials exist readily in the region and often are competitively priced.

Site furnishings should be chosen for their durability, quality and attractiveness. MSU has chosen several campus standards for bike racks, benches, trash receptacles, and light fixtures. They are produced by vendors that have proven to be reliable for warranty and service. They have also been used as reoccurring elements that have established a character for the campus. The wear

and tear caused by frequent use on campus and the potential for vandalism should also be considered when purchasing new site furnishings. New site furnishings should be determined to be safe to the public and should be chosen to complement the other objects on the campus either in their style or color. Within the same general design character there should be diversity for sense of place in different neighborhoods.

## Security

Security is an important issue on campus. Life on campus at MSU is relatively safe in comparison to other more urban or suburban campuses throughout the country. MSU takes pride in having their own police force to aid campus in everyday activities and emergencies. Providing security within the outdoor spaces on campus is as much the responsibility of the planners and designers of those spaces as it is for the emergency responders.

Creating safe spaces on the campus should entail planning for appropriate and well placed lighting, access to emergency call boxes and trimming and pruning of vegetation. In addition, it is imperative that safety is not compromised by dense plantings that obscure sight lines and/or clear routes. In general, it is advised that all planting beds adjacent

to plazas or walkways not contain plants that grow over three feet in height. Outdoor spaces and parking lots should be well lit and signed so as to indicate both visually and in text where exits, safe zones or emergency call boxes are located.

All new landscape and site development projects should be reviewed with the MSU Police Department early in the planning and design process to obtain input about safety and security issues.

## Sustainability and Stewardship

It is MSU's moral imperative to be a steward of the natural environment of campus. It is the obligation of the university to set an example as a steward in the fostering and support of sustainable practices as it relates to landscape design, construction and maintenance.

The university has taken the recent efforts of constructing new building facilities according to U.S. Green Building Council's Leadership in Energy and Environmental Design (USGBC LEED) standards. In addition, some of the landscapes associated with these buildings have followed in the footsteps of the architectural achievements by following the spirit of LEED certification



in the landscape. Future sustainability efforts should include reuse of gray water and runoff for landscaping, LED lighting and use of low or no irrigation plantings.

In addition, through promotion, protection and education MSU can contribute to the awareness and understanding of sustainable outdoor spaces and conservation of resources. This can be done first by creating landscapes that conserve water, use native plantings, use sustainable hardscape materials, and employ the use of less impactive, non-chemical horticultural practices.

### Landscape and Ecology

Because the campus is set in such an extraordinary geographical location, it is often easy to forget that within the campus there is a micro-ecology that contains both natural and man-made ecosystems that are valuable in the big picture. MSU should strive to protect and enhance these places and promote their attributes.

Future outdoor spaces that have their own unique ecology should be pursued with future building projects and campus expansion. Agricultural areas of campus should be valued and preserved because of their unique use and heritage.

Watercourses, such as Mandeville Creek, should continue to be improved and protected due to their potential for special urban and suburban habitat and water quality. Places like this offer not only aesthetic alternatives to the paved places of campus but they also provide spaces for habitat diversity and academic investigation.

This plan will provide guidance in best practices, material selection, installation technique, and maintenance which support protection of MSU's ecological resources.

### Culture and Public Art

Recently, additional public art has been installed in outdoor public spaces on campus. The Public Art Committee (PAC), an UFPB advisory committee, was formed to evaluate public art opportunities and proposals for their appropriateness and contributions to campus. This group developed the criteria by which the university determines if a piece of art is appropriate in scale, location, impact to campus, and contribution to the mission of the university.

However, even in light of the PAC being formed, progress needs to be made in obtaining a diversified and fundable public art base. It is important that

an aggressive effort be undertaken to obtain a funding mechanism for commissioning diverse public art for the campus. In addition, the campus should work diligently to place art in locations in the landscape that complement both the artistic piece as well as the landscape setting. Where appropriate, landscape should complement the art through plantings, seating areas, pavement treatments, and similar improvements.

The university should also promote organized and impromptu cultural expressions through theatre and performing art by developing areas throughout campus that support these activities. These could be spaces with outdoor seating for small to large groups of people and may have performance areas visible from the majority of the seating, such as in a naturally formed amphitheater. These spaces would also serve as informal outdoor classrooms. They should be accessible.

### Landscape Character

Landscape character is created through design and the use of more human scaled elements such as paving, site furnishings, public art, and signage. Through the careful placement of these elements, outdoor spaces evolve as places with a life of their



own that have comforting qualities compared to more open and single element spaces.

Character is also built out of the type and arrangement of plantings and plant types used in the landscape. MSU should define its landscape character through the use of regionally appropriate landscape designs, treatments and plantings. In larger, open areas, such as Romney Oval, MSU could further enhance the formality by reinforcing oval shapes and concentrating on larger, stately tree plantings and pedestrian comforts.

A congested area that would become more efficient, aesthetically pleasing and safer for pedestrians is the western side of the Student Union Building and the service drive. Efforts should be made to make vehicular circulation subordinate to the more dominant need for safe and enjoyable pedestrian use of the space. Creating a more pedestrian oriented environment can be achieved by removing vehicular use altogether, limiting vehicle access time, moving it underground or providing site amenities that enhance the space.

## Open Space

### Formal and Informal

Open space is essential in creating a university campus that provides a relief from density and close personal space. It is an institution of higher education that is also the home and backyard to students and families. It provides outdoor areas for circulation, recreation, campus, and family activities. There are two types of open space on campus: formal and informal. Formal open space takes the form of more planned and conceived landscapes or spaces, such as Malone Centennial Mall. Informal open space is often unprogrammed but programmable, as in recreational fields or natural areas.

Formal open space activities can be more planned and should be accommodated for with landscape features and perimeter site amenities such as signage, kiosks, lighting, informal shelter, or site furnishings. Formal open space areas should be linked to the campus circulation network via pathways and should incorporate a plaza within it for seating or gathering. Pathways should be sparingly placed within the space so as to not transect or divide large green areas, thus allowing

more useful open space at the center. These central expanses of green open space will then allow for more enjoyable use of the space. In addition, perimeter plantings, such as trees, should be stately and well organized to further accentuate the formal nature of the space. An example of this type of space is the Dobbie Lambert Intramural Fields southwest of Roskie Hall.

Informal open space is meant for more passive activities or more impromptu gatherings or recreation. An example is Hannon Green, which is used for frisbee, sunbathing and the increasingly popular “slacklining.” It is a popular space for large group interaction or individual activities. Smaller, human scaled informal landscapes should be created close to academic buildings throughout campus for recreation between classes.

With the expansion to the west in the future it will be important to follow the lead of the updated LRCDP so that formal and informal spaces are strategically within quick walking or biking distance.

### Campus Gardens

Several gardens exist on campus. Maintaining these spaces is difficult and requires increased labor over other less formal areas. As such, formal



gardens should be limited and should be well planned so that they are easily accessible and can be enjoyed by the greatest number of people. Regular maintenance for these should be a priority to address their detailed design and increased planting, pruning and weeding requirements. Areas such as Wally Byam Park, Iris Garden and annual beds throughout campus should be preserved due to their aesthetic qualities and the cheeriness they bring to campus.

If gardens are sponsored by student or volunteer groups there should be an agreed upon understanding for who takes care of these spaces and the source of the funding. These agreements should be long term and include a collaborative maintenance process so that the viability of these spaces can be monitored over time.

### Greenways

Greenways are a linear form of informal open space. They exist between buildings and between directional nodes on campus. Many new greenways are loosely planned within the LRCDP. These spaces should be created to accentuate major axes between campus facilities and define separation of land uses. They should contain low to intermediate pedestrian amenities, enhanced landscape features, clear

signage, and adequate lighting. Retention ponds and stormwater treatment facilities may be integrated into greenway designs where practical, to enhance the ecological function of the greenway. Greenways can also serve as snow storage areas in the winter.

### Recreation

With the LRCDP, large recreational green spaces, such as Dobbie Lambert Intramural Fields, are preserved into the future for events, games and organized sports. These areas are often adjacent to residential areas on campus and provide a much needed release from high density living and the stresses of academic pursuits. These fields are used by community organizations, further fostering the good neighbor connection of MSU. Future planning and design of these types of spaces should include flexibility for multi-sport and multi-season use by the campus. They should also offer proximate user facilities such as rest rooms, overhead shelters and handicap accessible parking.

## Utilitarian

### Future Buildings & Projects

In recent years, MSU has successfully incorporated landscape and site improvements with new construction and larger projects, however still has room to improve.

All construction on campus should be planned with the knowledge that there is the potential for either disturbance to the site and landscape or there is the need for improved landscape features. Almost all utility, building, renovation, and site work disturb some area of the landscape, whether it is a few irrigation spray heads, areas of lawn, building perimeter landscaping, or planting beds.

A utilitarian approach for major building or site construction projects would be to establish a setback from the building perimeter for required landscape and site improvements equal to the area that is disturbed during excavation of the building site, construction of the building or site staging. For smaller construction and maintenance projects, the area for remediation should extend at least to the extents of the disturbance plus repairs of adjacent critical irrigation lines or landscape features.





If disturbance is anticipated, a budget for landscape restoration or enhancement should be incorporated into the project budget from the time of programming. With all new construction, the building plans should be accompanied by a complimentary site, landscape and irrigation plan. Comprehensive specifications have been developed by MSU staff that address lawns and grasses, irrigation, tree protection, and general landscape issues. These should be provided to consultants and contractors where appropriate, whether during programming or during bidding, to ensure that the requirements are understood and followed.

### Irrigation

The university has taken great efforts to create an efficient, automatically controlled irrigation utility. The automated irrigation system is controlled by a Rain Bird Maxi-Com Central Control System. This Central Control is used to ensure maximum efficiency in MSU's use of water using high-tech software coupled with an elaborate layout of sensors and hardware.

The irrigated areas of campus are divided into approximately 80 regions. Each region contains a satellite controller that controls irrigation for that

area's micro-climate. Each controller operates six to 40 zones and each zone is watered by 10 to 55 sprinkler heads, depending on the size and configuration of the area.

Each day the system automatically adjusts and assigns each zone a run time based on the previous days measured water loss or gain. The Central Control Computer receives the previous day's evapotranspiration (ET0) loss via phone modem from a central weather station on campus. The Central Controller then computes each zone's irrigation runtimes based on the individual zone precipitation rate in order to replenish the previous day's lost water. This information is then sent via radio to each satellite controller in each region.

When outdoor events are planned, the central computer can also schedule irrigation turn-offs in that area. Following the event the system computes the missed watering day and readjusts to make up for losses. When it rains, system sensors automatically turn off all irrigation once the pre-programmed precipitation amounts are met. This allows MSU to save water and ensure the proper amount and duration of irrigation is used, resulting in less runoff or soggy areas. MSU plans to continue the use of this system to use water as efficiently as possible.

### Maintenance and Service

It is understood that with more intensely detailed landscape installations comes more intense landscape maintenance. If the university values well designed and constructed landscapes and outdoor spaces it is important to match the intent with the funding to maintain them properly. If this does not occur, intensely planted or constructed landscapes cannot exist. Large open spaces consisting of homogenous plantings of Kentucky blue grass do not involve the intense labor of weeding, pruning and trimming that smaller shrub and perennial plantings require.

Providing increased funding for more detailed landscapes should be a priority of the university, in keeping with the belief that these spaces positively affect recruiting efforts, retention of faculty and students and create a pleasing atmosphere for the campus users while increasing educational and outreach opportunities.



## Service Drives

The closing of Garfield Street and the installation of Malone Centennial Mall established a wonderful pedestrian focused campus “main street” but also created several problems for accessing buildings for service. This unintentional service drive access pattern exists throughout campus. The LRCDP addresses service drive size and location and the LMP suggests screening them from the campus experience and to buffer their uses from adjacent public areas.

Service drives often serve several buildings. Service drives should be screened without being unsafe. They should be well lighted and have limited pedestrian access, when feasible. If pedestrians

do need to walk through steps should be taken to provide perimeter access routes out of the way of traffic. Service areas can be screened from the road and adjacent public open spaces by way of vertical, architectural screens that are opaque.

Landscape materials may be used as secondary screens for service drives if the plant species will reach a mature height of at least six feet within five years of planting. These plant species should be densely planted but should not negatively affect safety and security in the service drive or in adjacent public spaces. Mechanical units and other sensitive areas may be secured with attractive fencing or screening that is durable and tall enough to obstruct views of the unit or other devices.





*The Alumni Plaza project was completed in 2010. It created a dynamic pedestrian plaza and transition area at a key area on campus.*

# 6 Design Concepts

This chapter presents some basic conceptual solutions for areas on campus that would benefit from landscape revitalization, redevelopment or enhancement. One location might embody one or all of the guideline suggestions from Chapter 5.

Plans and sketches strive to express the possibilities that six selected areas of campus possess in regards to redevelopment, enhancement and preservation of landscape resources.

The conceptual solutions focus on a variety of smaller planning areas identified as:

- The north entry of Montana Hall is a prime example of a historic building with a less than inspiring entry at the pedestrian level. Its orientation has evolved so there is not a clear front door off of Malone Centennial Mall. The building is stately and picturesque, the university's icon; however, the entry of the

building is not complimented by natural or landscaped features.

- The Hamilton Hall lawn, located on the south side of the building, is a blank slate. This area could be enhanced with the infusion of significant pedestrian seating, a green area for impromptu gatherings and complimentary plantings.
- The oval lawn central to Hedges Suites and Hedges North would benefit from a redesign and revitalization that addresses circulation, soil quality, semi-private study or seating areas, and adequate lighting for night time use.
- The concept for the northwest entry to the Bobcat Stadium attempts to address the lack of pedestrian amenities at critical areas of a complex community venue facility.

- The Alumni Plaza to Johnstone Center Corridor takes a close look at how the green space between buildings is defined by both architectural enclosure and landscape treatment.
- Wally Byam Park is a wonderful gathering space. It is underutilized during the warmer months and would benefit from additional visitor amenities and programming for events and year-round use.

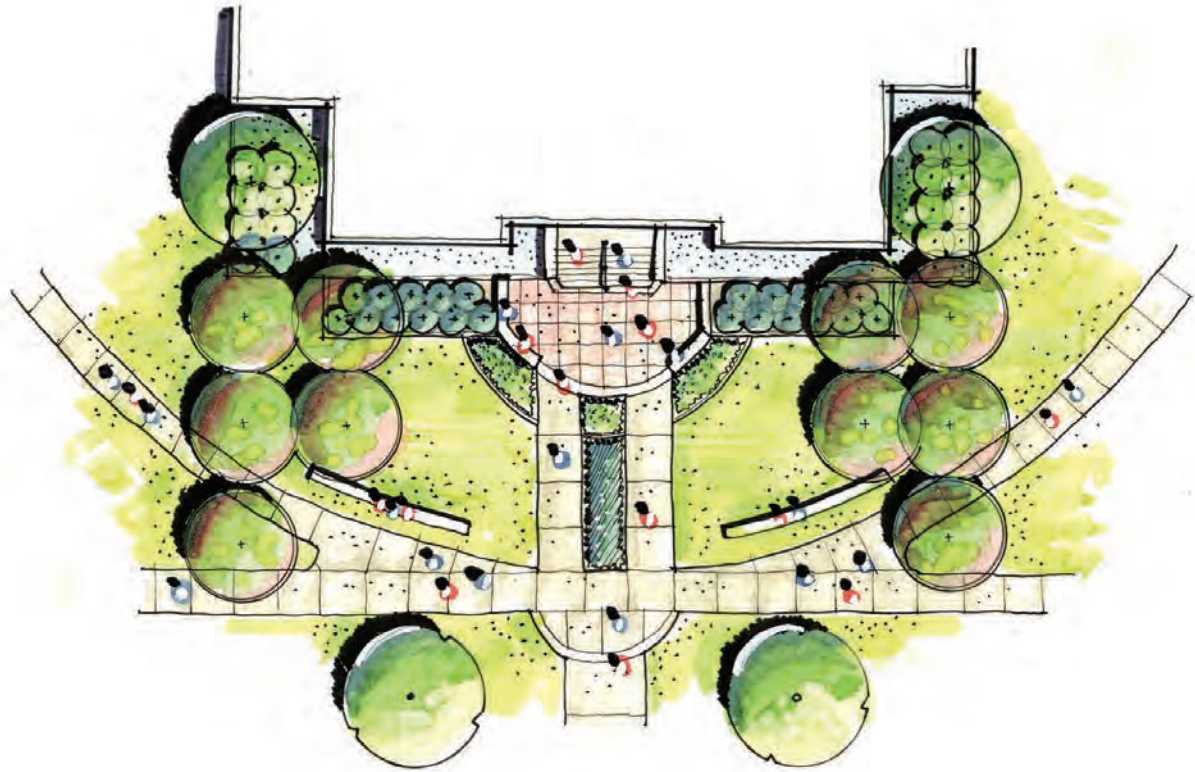


## Montana Hall North Entry

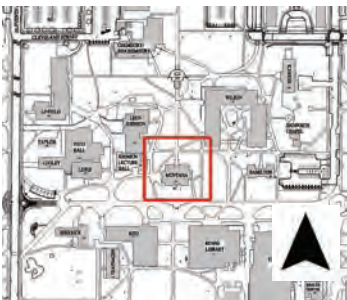


### Existing Conditions:

- Underaccented and underused space
- Landscape not complimentary to building
- Terminus of major campus axis should be enhanced
- Traffic flow around east side of building disjointed



Note: Image is not oriented to north.



### Guideline Suggestions:

- Improved character and image of Montana Hall
- Enhanced connectivity to Malone Centennial Mall
- Creating pedestrian spaces at entry for gathering
- Use of plantings to accent architecture
- Opportunities for detailed plantings and site furnishings
- Create a successful pedestrian oriented landscape by paying attention to detail in design and maintenance

# Montana Hall North Entry

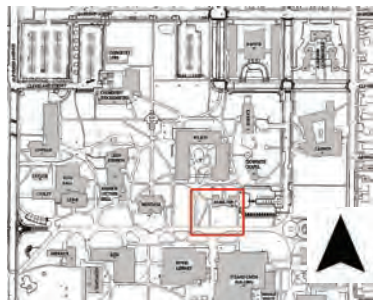
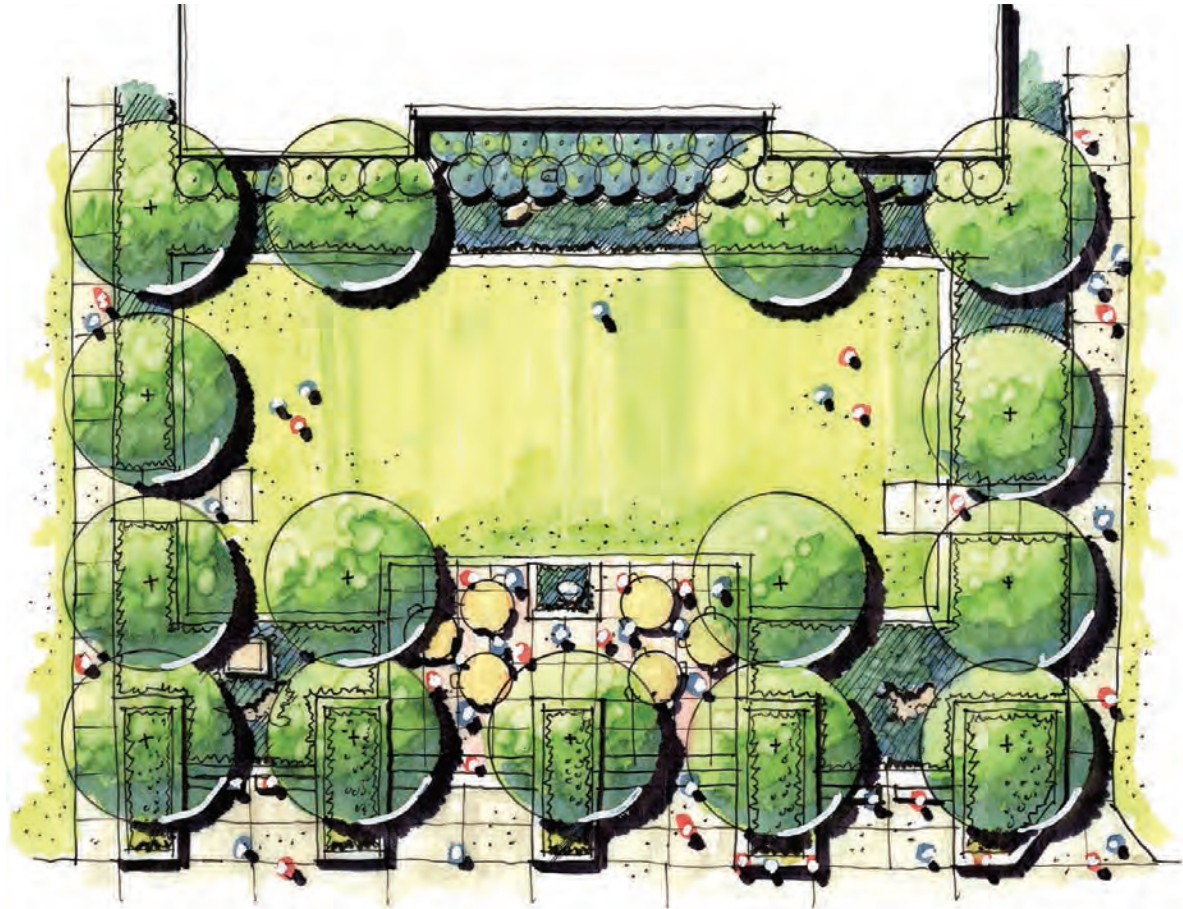


## Hamilton Hall Lawn



### Existing Conditions:

- Underused prime space on Malone Centennial Mall
- No access into Hamilton Hall from Malone Centennial Mall
- Large lawn space does not compliment adjacent structure



### Guideline Suggestions:

- Enhance unused open space
- Feature plantings that have a significant visual impact
- Sanctuaries from the hustle and bustle of campus
- Intimate open lawn for informal use
- Feature annual and perennial plantings
- Site furnishings and pedestrian amenities
- Utilize sustainable landscaping and maintenance practices

# Hamilton Hall Lawn



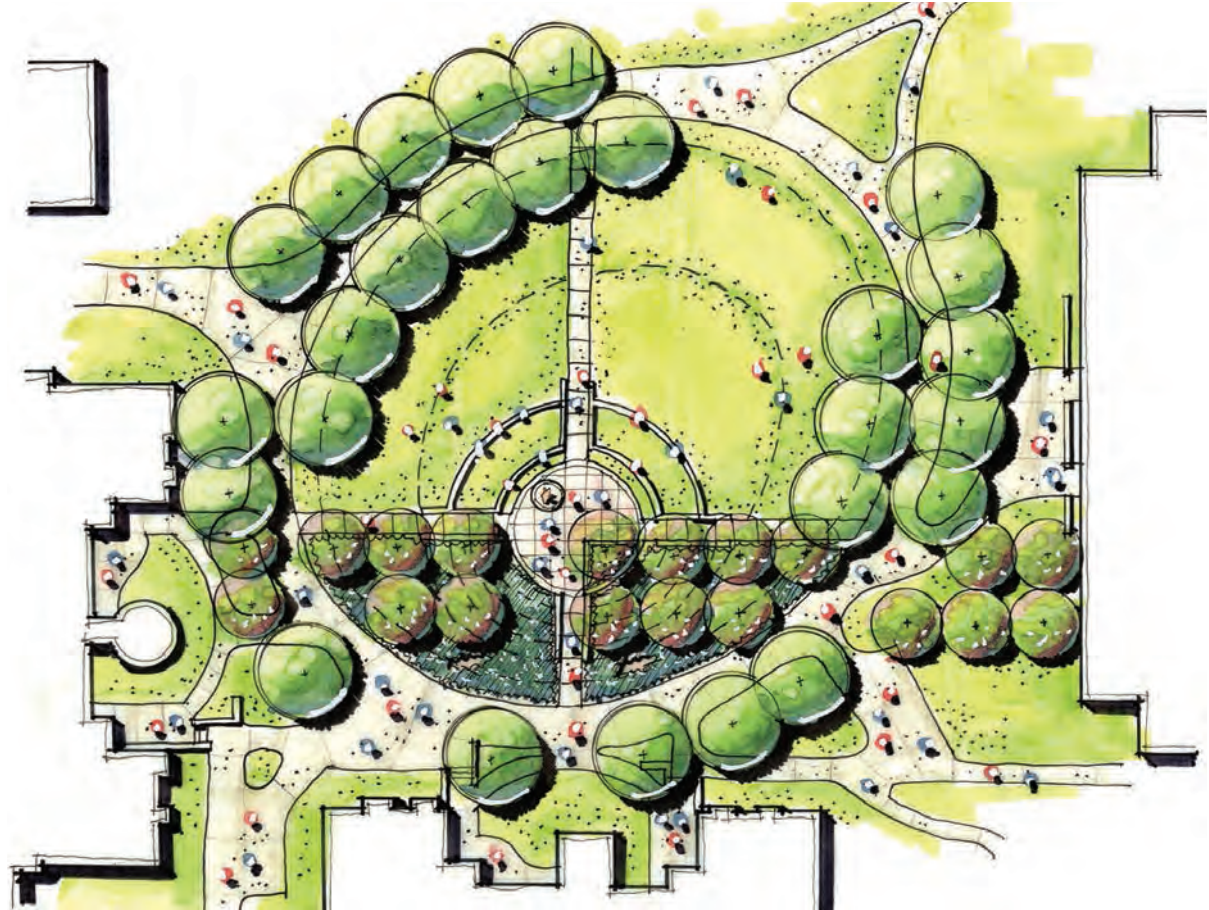


## Hedges Oval



### Existing Conditions:

- Underused central green
- Harsh growing conditions and sparse landscaping
- Lack of connective walkways or pedestrian spaces
- No definition of space



### Guideline Suggestions:

- Define space with earthwork and large trees
- Improve pedestrian connections
- Provide outdoor open space for multiple uses
- Increase safety with lighting and clear site lines
- Utilize native plantings in combination with grass lawns for flexible and complimentary outdoor uses of the space
- Feature outdoor sculpture and art

## Hedges Oval

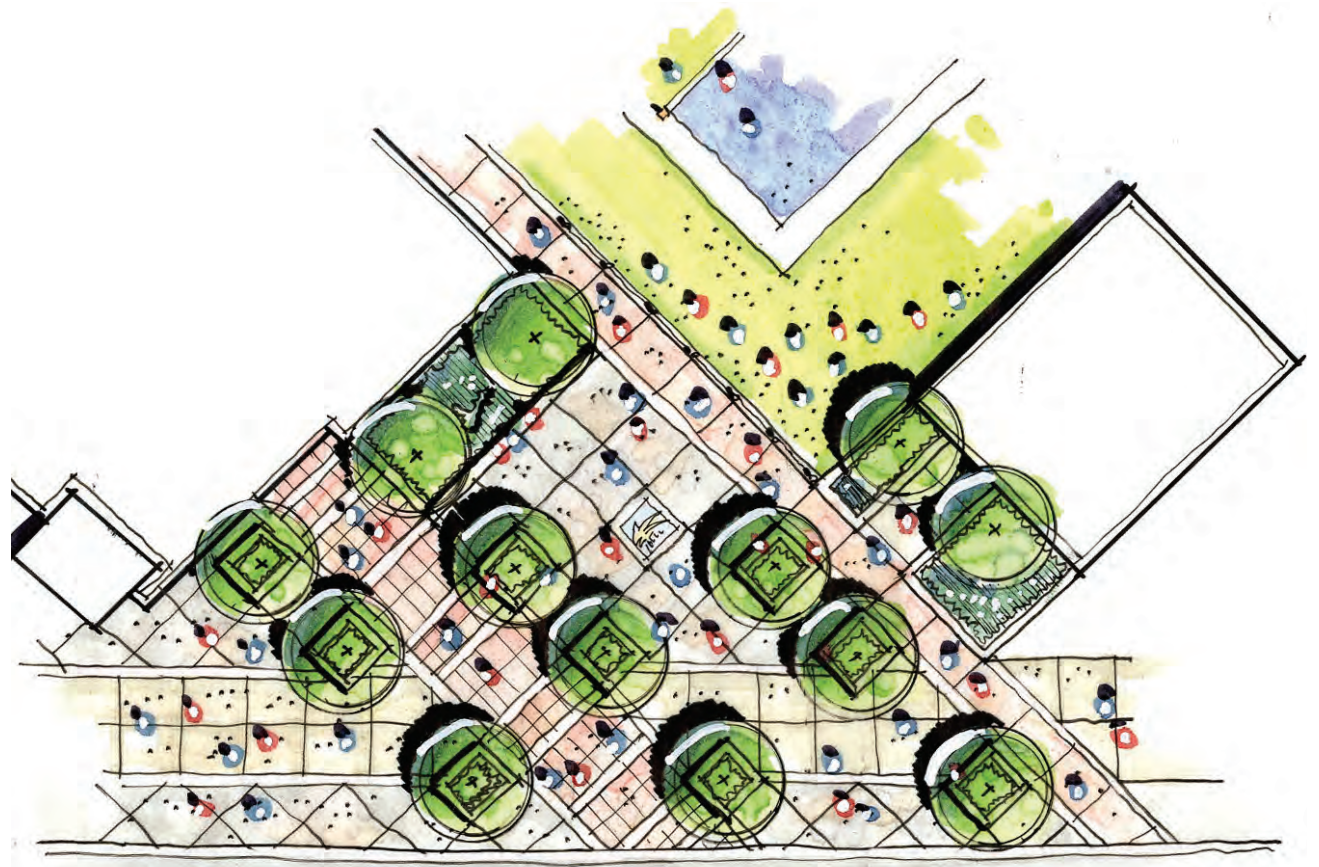


## Bobcat Stadium Northwest Entry



### Existing Conditions:

- Recent expansion of east end of stadium further defines space of entire complex
- This space is uninteresting and uninviting
- Potential for pedestrian gathering and outdoor activities pre- and post-game



Note: Image is not oriented to north.



### Guideline Suggestions:

- Improve character of space with pedestrian friendly design
- Utilize softer materials such as concrete pavers, raised planters, and trees; accent with pedestrian amenities
- Create space for gathering
- Further define the Athletics neighborhood with connections to other facilities and neighborhoods on campus
- Provide service access within design of space

## Bobcat Stadium Northwest Entry

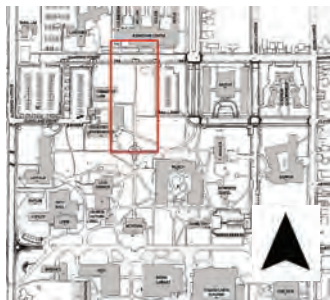
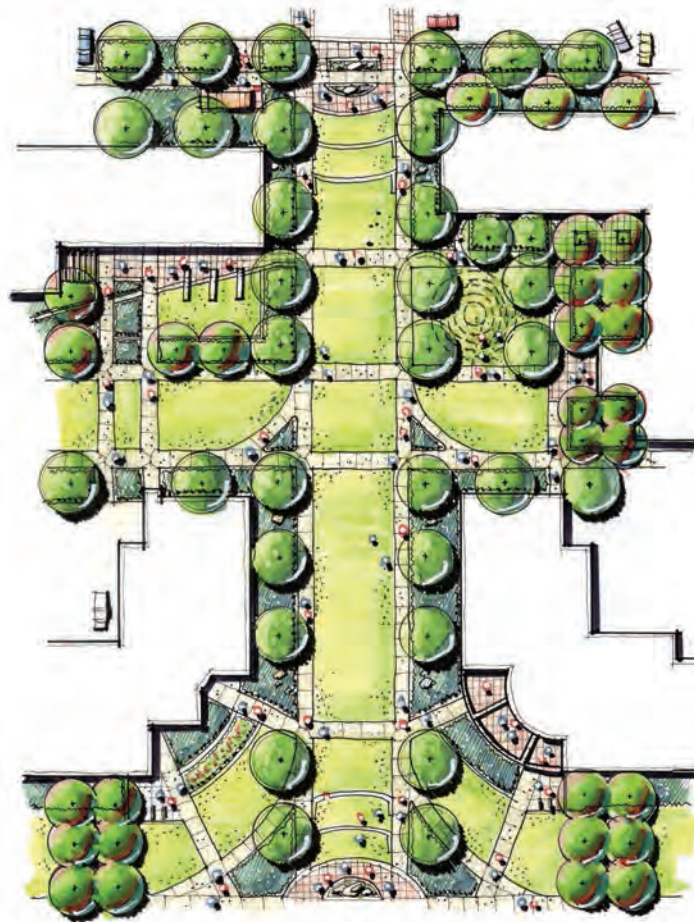


## Alumni Plaza to Johnstone Center Corridor



### Existing Conditions:

- Recent improvements at Alumni Plaza promote further enhancements to the north
- Aesthetic lacking in open space treatments
- Definition of space is weak



### Guideline Suggestions:

- Utilize LRCDP as guiding factor in placement of buildings
- Enhance axial relationships with pedestrian connections
- Reinforce site lines and sense of enclosure with tree plantings
- Create pockets of usable space between buildings in interstitial spaces
- Promote entry to buildings with welcoming landscaping

## Alumni Plaza to Johnstone Center Corridor

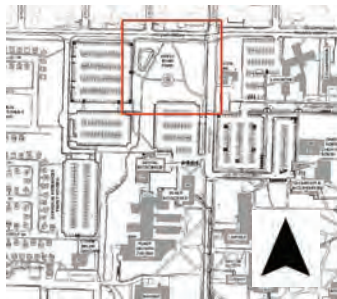
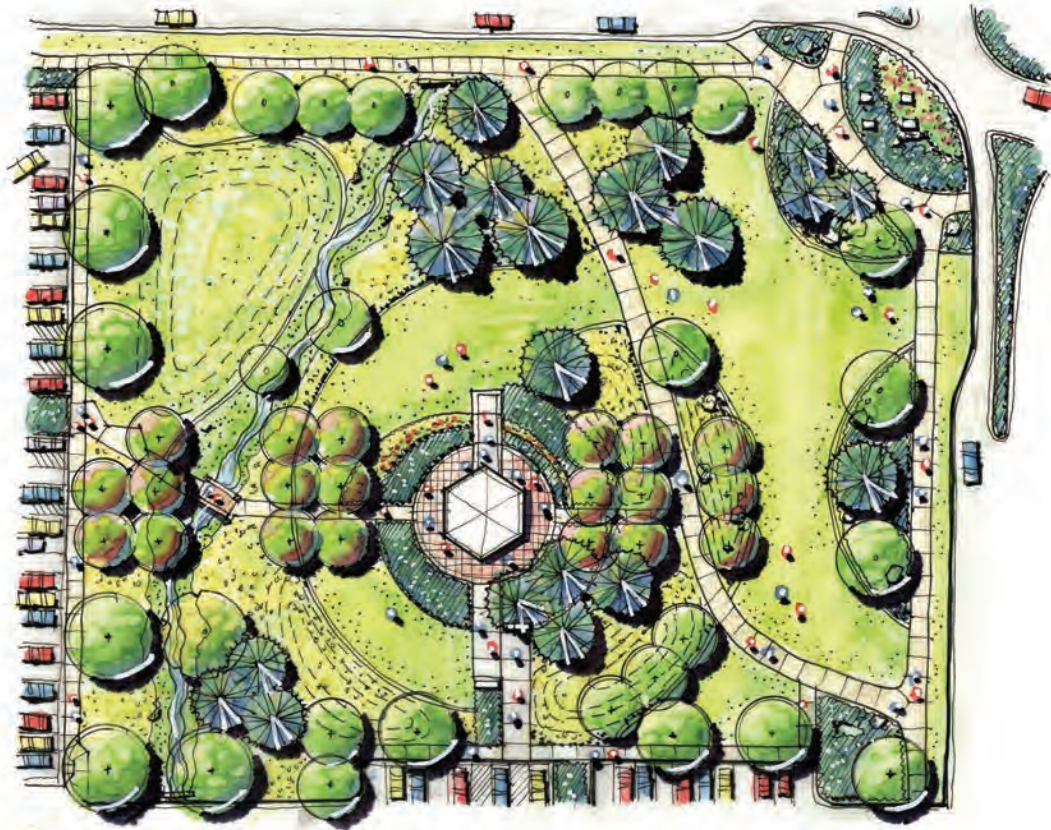


## Wally Byam Park



### Existing Conditions:

- Hidden gem with flower and shrub beds
- Located adjacent to Mandeville Creek
- Excellent location for larger scale informal gatherings
- Lacks visual connection to many parts of campus



### Guideline Suggestions:

- Redesign pavilion as visitor center
- Place seating to the periphery for outward viewing
- Enlarge plaza area to include more seating and gathering space
- Manage trees to create a sense of enclosure
- Utilize space for informal gatherings and planned events
- Showcase native, perennial and annual plantings

# Wally Byam Park





*The contrast of the vertical, built environment and the welcome flowers of spring. The campus is a dynamic relationship of brick, mortar, steel, concrete, soil, grass, and plants. They work together to create Montana State University's beautiful environment.*



# 7 Acknowledgements

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**MSU Creative Services**

Photographs included in this document include images of the MSU campus as well as other campuses and communities, taken by the Planning Team.

# 8 Glossary

## **ADA**

The abbreviation for the Americans with Disabilities Act.

## **ASMSU**

The abbreviation for the Associated Students of Montana State University, which is the student government association serving as the elected voice of the students of Montana State University, Bozeman campus. This association is charged with the mission of enhancing the overall educational experience of students by providing leadership and employment opportunities for students and by cost-effectively providing diverse student-oriented, non-academic programs and services through responsible fiscal management of student activity fees.

## **Campus Core**

This term refers to the same general area of campus over the last 100 years; however, the size and configuration has differed slightly over the decades. The campus core is generally the area of campus bounded on the north by College Street, west by South 11th Avenue, south by Grant Street, and east by South 6th Avenue.

## **District**

A district is an area of concentrated similar use. The LRCDP framework plan recognizes Academics, Community Venue, Campus Mixed-Use, Campus Core Housing, Campus West Housing, Agriculture, Support Services, and Enterprise Zones as districts. Districts emerge from the clustering of related but distinct uses referred to as neighborhoods.

## **FPDC**

The acronym for the Facilities Planning, Design & Construction department within University Services.

## **Geographic Information System (GIS)**

A software application utilized to store, analyze and manage types of geographically referenced data. Examples of data include but are not limited to plant species coverage, infrastructure and utility location, floodplain data, and building locations.

## **Global Positioning System (GPS)**

A space-based global navigation satellite system that provides information on location for places on earth. Typically three or more satellites are optimally needed for mapping purposes. Data can be collected using the GPS surveying equipment. Users can also find their way to a known location using a GPS as a navigation tool rather than a mapping tool.

## **Historic Campus**

The historic area of campus is described as the area occupied by some of the original campus buildings, dating back to the 1890's, including Montana Hall, Taylor Hall, Hamilton Hall, Lewis Hall, Traphagen Hall, Herrick Hall, Linfield Hall, the Heating Plant, Roberts Hall, the S.O.B. Barn, Romney Gym, and the original portion of the Student Union Building.

## **Land Grant Institution**

MSU, as the first state-supported institution of higher learning in Montana, was created as a result of the Morrill Land Grant Act, which granted millions of acres of federal lands to endow and support at least one college in each state, where the leading objective would be “to teach agriculture, military tactics, the mechanic arts and home economics, not to the exclusion of other scientific or classical studies,” so that members of the working classes might obtain a practical college education. MSU is Montana’s land grant institution.

**LRCDP**

The acronym for the MSU Long Range Campus Development Plan, published in December 2009.

**MSU**

The abbreviation for Montana State University. Bozeman is one of four MSU campuses. The other campuses are in Billings, Havre and Great Falls.

**Neighborhood**

A neighborhood refers to the smaller, tight-knit areas of similar land uses, functions and resource needs. They are geographically connected in most cases, concentrate use in one area of campus and are distinctive sub-groups of a larger district.

**Slacklining**

A practice in balance using nylon webbing and rigging equipment to create a dynamic length of webbing that is walked on. The fixed ends of the system are typically anchored to trees, rocks or other permanent objects.

Slackline advocates suggest using tree protection when trees are either susceptible to damage because of the nature of their bark or because they are used repeatedly as anchor points. Tree protection would include eliminating abrasion by securing anchors and redistributing the load over a wider area of the tree trunk.

**Tree Campus USA**

An Arbor Day Foundation sponsored program that recognizes college and university campuses that effectively manage their trees; develop connectivity with the community to foster healthy urban forests; and strives to engage students into using service learning opportunities centered on campus, community and forestry efforts.

**UFPB**

The abbreviation for the University Facilities Planning Board. The board consists of representatives of campus constituencies who are charged with reviewing development issues and recommending choices and use of public spaces to the university president for approval.

**USGBC**

The abbreviation for the U.S. Green Building Council. This is a 501(c)(3) non-profit organization that developed the LEED green building certification system and are advocates for sustainable development and building construction.

**University**

Used in this document as another term for Montana State University.

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