





2015 NAU Landscape Master Plan Final Report: June 26, 2015

WLB Group, Inc Civitas, Inc

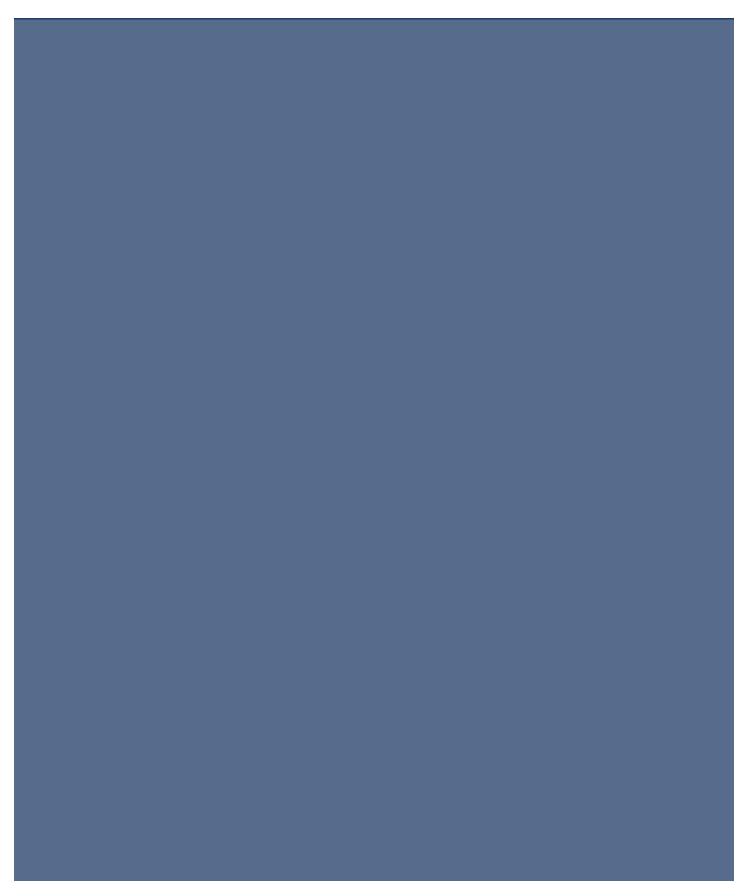


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INTRODUCTION



Study Group

EXECUTIVE SUMMARY

Northern Arizona University is experiencing substantial growth and expansion. Enrollment is anticipated to increase significantly with 25,000 students on the Flagstaff Campus by 2020. Growth, in addition to excellence in academics, provides the University an opportunity to compete with nationally ranked universities.

In 2010 a Campus Master Plan was completed with the intent of guiding the development of the Campus while balancing the needs of students, faculty, and visitors. The master plan was produced in collaboration between various Campus entities (student associations and University departments, among others), the community, and the City of Flagstaff. Emphasizing University values, sustainability and functionality were highlighted throughout. Several projects have been completed with the guidance of the 2010 Master Plan including the renovation of the Historic North Quad, construction of the San Francisco Parking Structure, development of the Transit Spine, and construction of the McConnell Bridge.

With the growth and development of the Campus, it has become apparent that the University would greatly benefit from a Landscape Master Plan. The 2010 Master Plan provided two sections to address landscapes on Campus: Landscape Recommendations and Landscape Design Principles. Both sections provided brief, general outlines for addressing the primary spatial typologies on Campus such as traditional quadrangles and woodland landscapes. Plant selection and landscape management were also touched upon. The 2015 Landscape Master Plan is the next step for the University to create a cohesive identity.

The goal of the 2015 Landscape Master Plan is to provide the University with a comprehensive document that will build on the existing landscapes, provide a cohesive palette of plants and materials to be used on future projects, and to celebrate the diversity of NAU Campus landscapes while creating a unified overall Campus that will attract and retain students.

PROJECT APPROACH

The 2015 Landscape Master Plan was created through an iterative process consisting of workshops, document and concept design drawing reviews, and collaborative meetings. The NAU Executive Steering Committee provided the foundation to understand the current identity of NAU and the core missions and values that the Campus landscaping should present. The information gathered during this portion of the process is presented in the 'Analysis and Assessment' portion of this document.

Building on this comprehensive understanding of Campus functionality and setting, in conjunction with the overall vision for the Campus, the WLB Group-Civitas Design Team consulted with the Executive Steering Committee to develop the 'Principles, Standards and Concept Designs'. This portion of the document is intended to be a cohesive and comprehensive guide for future Campus development by specifying the types of materials, furnishings, and plantings that can be utilized on Campus. It is intended for use by the NAU Staff internally as well as Design Professionals working on Campus (Planners, Architects, Civil Engineers, and Landscape Architects) to ensure the desired aesthetic and primary goal of the Landscape Master Plan is achieved: a unified Campus with regionally appropriate, distinct character zones. This document can also be used to inform the anticipated update to the 2010 Campus Master Plan.

GUIDING PRINCIPLES

The landscape is a critical defining element that contributes to the first impression of the NAU Campus for prospective students and visitors. The regional setting of the Campus within Northern Arizona and the largest Ponderosa Pine Forest in the world is unique and presents the opportunity for students and visitors to enjoy a Campus experience that is unlike any other. A unified and distinguished Campus landscape can offer an appeal that will attract students and visitors; however, the importance of landscape design extends beyond aesthetics. Effective, sound design creates a sense of place for students, faculty, visitors, and alumni. Students experience the gathering spaces and landscape through social engagement, Campus recreation activities, and educational opportunities. This facilitates a sense of belonging and pride in the University which supports student retention. In turn, memories of those experiences on Campus increases alumni involvement with the University. Below are key principles to guide future development of NAU's landscape.



Proud NAU Graduate

Landscape Architectural Design

- Incorporate the project site within the Campus context, connect to Campus circulation, and design social spaces to be integrated with academics and student life;
- Fully express the inherent beauty, diversity, and distinction of the regional landscape by using native and adapted species in appropriate densities;
- Naturalize planting beds with curvilinear plant masses and sweeping lines with year round interest and winter structure at the forefront;
- Grading and drainage solutions should be discreet;

Sustainability

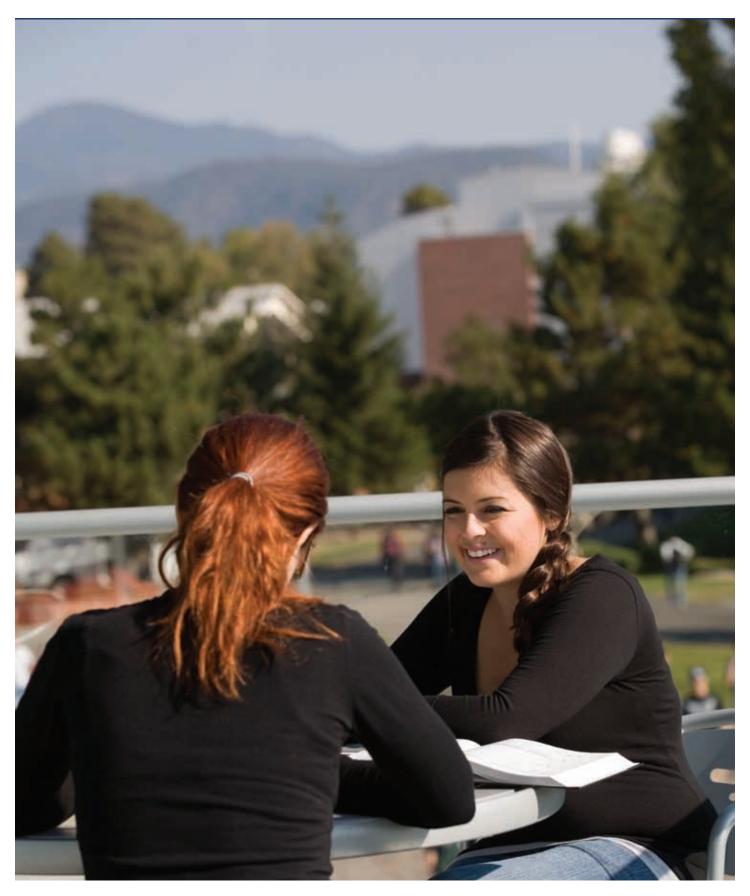
- Be conscious of water use by utilizing native and adapted plants, zoning low-water use species together in irrigation design
 to facilitate weaning off of irrigation, limiting the amount of stark gravel areas to decrease heat island effects, and limiting
 or decreasing the amount of manicured turf areas;
- Avoid the use of pesticides/herbicides;
- Materials selection includes considerations such as longevity of the material/product and local availability in order to minimize impacts associated with extraction, processing, transport, and maintenance;
- As discussed in the 'Northern Arizona University Design Guidelines', the University considers stormwater as a resource and encourages designs to collect and infiltrate stormwater;

Winter Considerations

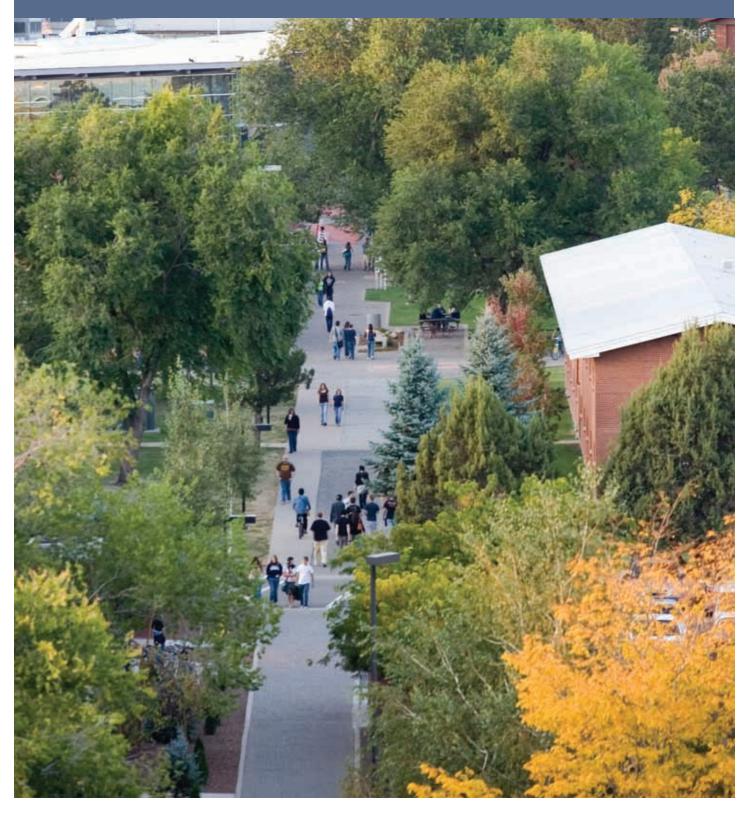
- Incorporate species selections in planting design that create contrast, distinction, and year-round interest, with particular attention to visual attractiveness during fall orientation and winter/spring graduations;
- Integrate evergreens and semi-evergreens in all designs for year-round structure, interest, and ground plane coverage;
- Incorporate visually discreet snow storage areas, preferably in stormwater basins or turf areas into landscape designs. Avoid snow storage in social gathering areas and planting beds;

Accessibility

- Conceptual plans have been designed with ADA requirements and maximum accessibility in mind;
- Refer to the 'Northern Arizona University Design Guidelines' for further requirements regarding Campus accessibility and design.



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OVERVIEW

The purpose of the Analysis and Assessment was to provide a foundation of thinking that would support principles on which the Landscape Master Plan would be prepared. Input and involvement from the NAU Executive Steering Committee was crucial to understanding the existing appearance and function of the Campus landscaping.

The Campus encompasses 740 acres and is comprised of approximately 38 major academic and administrative buildings, 40 support facilities, and 22 residential buildings with new construction adding to that number every year. The scale of the Campus and expedited rate of new construction have produced an eclectic and unclear landscape image. Numerous areas of Campus contain an assortment of landscape, hardscape, and element typologies.

The Executive Steering Committee and the WLB - CIVITAS design team collaborated during the Analysis and Assessment. Various locations throughout Campus were identified that would benefit from new or modified landscapes. Maintenance considerations were essential to understand what options for improvement would be most pragmatic, as was the University's commitment to sustainable design. Once these areas were identified, project opportunities became apparent throughout Campus and a vision for the Campus landscape began to take shape.



Pedway and the San Francisco Peaks

The University possesses a unique opportunity to create a distinct, beautiful and memorable Campus unlike any other institution of its kind. The scale of the Campus offers diversity and the ability to create landscapes that support and enhance this diversity. It will be essential that the landscapes created are easily maintainable without the use of hazardous chemicals, and are conscious of water use. Education of the landscape typologies utilizing signs, QR Codes, or other media will also be critical to create an understanding of the native vegetation and landscapes.

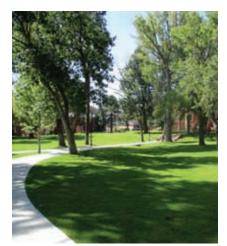
The 2010 Campus Master Plan highlighted various areas of Campus where future buildings would be constructed or demolished and green space could be introduced. The timing of future projects is uncertain due to budgetary and other considerations, including the update of the 2010 Campus Master Plan. For this reason, the Landscape Master Plan will focus on projects that are immediately attainable and will not be reliant on future construction. The Landscape Master Plan will also provide comprehensive guidelines and standards for future construction projects.

SUMMARY

The Analysis and Assessment revealed three existing distinct zones of the Campus: Historic North Campus, Central Innovation Campus, and Mountain South Campus. These zones are currently delineated based on the historical context of building construction, predominant landscapes, topography and vegetation.

Development of the Northern Arizona University Campus was generally completed in three phases which define the building architecture, orientation and density. The first phase began with the conception of the Arizona Normal School in 1899, during which the first structures were constructed on Historic North Campus along with traditional collegiate landscape. The second phase of construction took place during the 1950's, expanding what was then Arizona State College, into what is now Central Innovation Campus. The final significant phase of Campus development took place as the College became Northern Arizona University, encompassing much of the Mountain South Campus. Recent and current construction provides an infilling of the Campus with the addition of numerous buildings and parking structures as well as renovations to older structures.

The delineation of the three zones becomes more clear when the existing landscape, geology, topography and drainage is considered. Historic North Campus embodies the classic university aesthetic with large quadrangles and mature trees. The landscape of Central Innovation Campus is more eclectic, consisting of a wide variety of materials and vegetation. Runke Drive



Historic North Campus Character North Quad



Central Innovation Campus Character Student Union



Mountain South Campus Character South Recreational Fields

provides a stark division between Central Innovation Campus and Mountain South Campus. The Ponderosa Pine forest is immediately prevalent to the south and the topography becomes varied and dramatic with the inclusion of Sinclair Wash and grand views of the San Francisco Peaks.

Further defining the three existing zones are the primary uses of the structures on Campus. Historic North Campus and Mountain South Campus are dominated by structures utilized for academics. Central Innovation Campus is the social focus of Campus containing the majority of student services, housing, and dining.

UNIFYING ELEMENTS

Unique or potential unifying elements were also identified: the Transit Spine and Pedway, the east-west Pedway connectors, Historic North Campus interface with the City of Flagstaff, Sinclair Wash, Flagstaff Urban Trail System (FUTS), and Campus gateways. Located within all three zones are Campus gateways and the Pedway. The Campus gateways provide the first impression of the University for students or visitors driving onto Campus. Six entrances were identified with the most prominent located at the intersection of McConnell Drive and the Interstate 17 off-ramp. The Pedway currently connects North Campus to the South Quad within Mountain South Campus. At the South Quad, the Pedway dissolves without providing a connection to the South Recreation Fields or South Family Apartments.

The recently completed Transit Spine extends from University Drive to E. Franklin Avenue, connecting the Historic North Campus and Central Innovation Campus. This section of Beaver Street does not permit traffic other than the buses which allows for reduced travel time for students using the Campus bus system. This encourages students to utilize the existing Campus transit and reduces traffic and the need for parking within the Campus core.

Unique to the Historic North Campus is the interface between the University and the City of Flagstaff. In 2005, the City of Flagstaff completed the Southside Plan. This document outlines several options for enhancing and improving accessibility for pedestrians, bicycles, and vehicles between the city and Campus. Along Butler Avenue, the interface includes the Drury Hotel and High Country Conference Center. From Humphreys Street to the east, the contact between NAU and the city is within the residential Southside Neighborhood. The Southside plan discusses the opportunity for partnership between the two entities to develop parking, housing, and create an enhanced gateway for pedestrians and vehicles. Also located within the interface is the University's most visible Campus edge along Milton Road from Butler Avenue south to the grass lawn west of the Geology Building. Milton Road is a major city arterial roadway making this a significant and highly visible Campus edge.

Traversing South Campus from east to west are the FUTS and Sinclair Wash. The FUTS trail is a graded dirt pathway which parallels the north side of Sinclair Wash from McConnell Drive to San Francisco Street. Sinclair Wash is usually dry; however, the wash does run during summer monsoons and with snow melt in the spring.

OBSERVATIONS & OPPORTUNITIES

Diagrams and text of the items below are included on the following pages:

- City/Campus Interface
- Perceived Campus Character
- Geologic Features
- Topographic Character & Views
- Floodplain & Drainage
- Campus Character Zones
- Campus Seams & Transitions
- Campus Gateways & Entries
- Campus Circulation
- Campus Structure
- Social Spaces & Settings
- Campus Ground Plane
- Campus Tree Canopy
- Furnishings



Topographic Character & Views



Campus Structure - South Campus

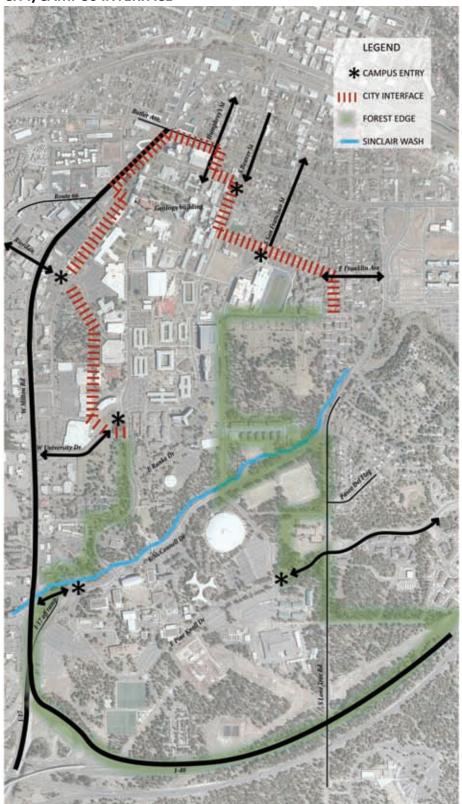


Northern Arizona Geologic Features



Campus Circulation - Transit Spine

CITY/CAMPUS INTERFACE



Observations

The University interface with the City of Flagstaff can be characterized as urban or forest. In general, the urban interface where the Campus interacts with the developed portions of the City either lacks definition or is hidden from view. Along North Campus, the Campus interface with the Southside Historic District, and the City beyond, is recognizable but not clearly defined. West of this location, the Campus edge is highly visible along Milton Road from Butler Avenue south to the grass lawn west of the Geology Building. Milton Road is a major arterial street utilized by a high volume of local traffic as well as traffic connecting Interstates 17 and 40 to the Grand Canyon. This Campus edge does not have appropriate landscape announcing the presence of the University. South of this location, the western edge of Campus is not easily recognizable as it is masked by various shopping centers or dissolves into various land-uses.

The southwest, south, and east Campus edges lack definition as the Ponderosa Pine Forest becomes dominant. Along the south, Interstate 40 passes through what is University owned land on both sides of the interstate. This swath of land is highly visible; however, Campus recognition is lacking.

Opportunities:

Urban Interface

In the north, the landscape of the University should be distinctive while also tying into Flagstaff's Historic Southside aesthetic. The pedestrian character between the Southside Neighborhood and the University along Beaver Street and San Francisco Street should be amplified to increase the connectivity. Connectivity from the Campus to the city can also be strengthened by creating pedestrian and bike links from Campus to retail developments along Milton Road including eateries, grocery stores, and other shops commonly frequented by students. Recognition of the University along the Campus edges can be created by making arrival onto Campus distinctive

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and memorable. At the highly visible edge along Milton Road, a strong Campus identity can be built utilizing amplified landscaping and stone or brick walls. Parking areas west of the historic Geology and Gammage Buildings should be buffered or eliminated. South of this location, a stronger and more consistent edge adjacent to western retail zones can be accomplished through signage, urban street tree and hedge plantings, stone walls, and paving materials that reflect the character of the Campus. At highly visible areas and Campus entries, the identity of the University should be strengthened. This will announce the presence of the University and differentiate the Campus from adjacent land uses.

Forest Interface

There are several locations along Interstate 40 that can be transformed to communicate the NAU experience: views into the Ponderosa Pine Forest, open vistas of the Campus with the San Francisco Peaks beyond, and areas with road cuts and sound walls. Views into the woodlands should be revered and celebrated with additional understory plantings, wildflowers and native grass species. In the locations where the views open up, the foreground should be carefully thought through to ensure the Campus and the NAU brand are associated with that view. The sound wall is an opportunity for redesign so that the wall features signage supporting the NAU message. It is also possible to capitalize on the character of the limestone road cuts along Lonetree Road and I-40 to create a recognition of NAU.



North Campus Edge



East Campus Edge



South Campus Edge



South Campus Edge



West Campus Edge



South Campus Edge

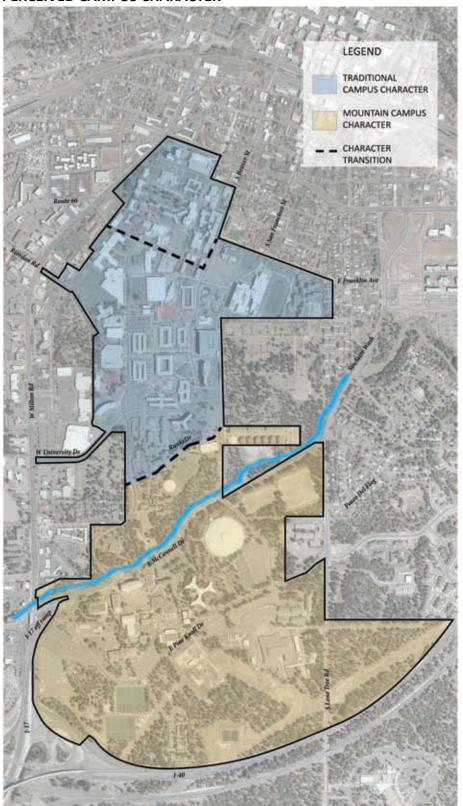


West Campus Edge



West Campus Edge

PERCEIVED CAMPUS CHARACTER



Observations

The landform of North and Central Campus exhibits gentle topography. The spatial character from Butler Avenue to the north character transition line is defined by tight building placement with a visual emphasis placed on the historic character of the architecture. Buildings are surrounded by expansive lawns and mature trees. From the north character transition to the south character transition, the building placement is farther apart and the architectural style more varied. The landscape character of this central region is eclectic and includes cultivated lawns as social spaces and the highly variable use of hardscape materials, lighting, and furnishings.

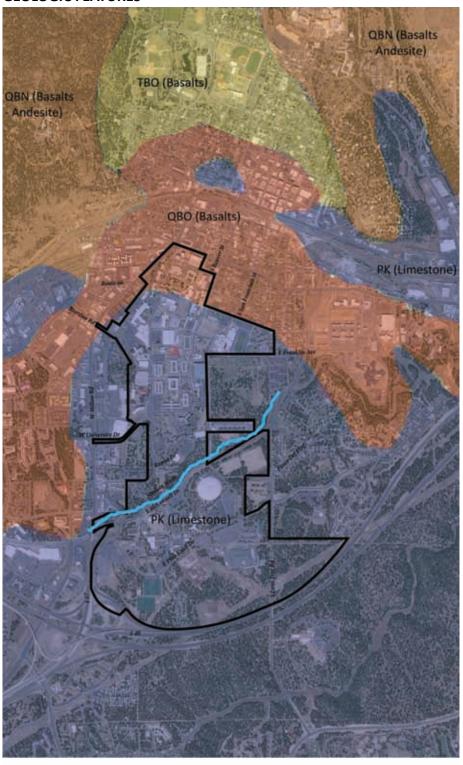
The south character transition along Runke Drive illustrates a shift from the traditional manicured Campus character, defined by turf grass and an informal canopy of trees, to a clear mountain character where the Ponderosa Pine Forest is dominant. The landform becomes varied and dramatic. Architecture and public spaces are spaced farther apart and carved out of the Ponderosa Pine forest.

Opportunities

The diversity offered on Campus should be simplified and celebrated. Two distinct character styles are immediately evident: traditional Campus character and mountain Campus character. Each should be unique and expressive while supporting a unified Campus that reflects the NAU culture and Northern Arizona lifestyle. Transitions between the character zones should be developed so that they stitch and unify the Campus.

The traditional Campus character is found within the northern half of Campus. The natural Ponderosa Pine forest is prevalent in the southern half of Campus and could be restored and elevated to become a student attraction and evoke a sense of adventure. The opportunity is to create unique character zones.

GEOLOGIC FEATURES



Observations

The University lies within the San Francisco Volcanic Field which covers 1,800 square miles of the southern portion of the Colorado Plateau. The geology of Campus directly impacts the topography, floodplains, and the type and density of vegetation. The San Francisco Peaks to the north produced numerous basalt flows. Competent basalt is mapped along north Campus and is also present under the Health and Learning Center. Underlying the basalt is the Kaibab Limestone which is typically decomposed in the upper several feet, becoming more competent with depth. Generally, the soils overlying the basalt and limestone of North and Central Campus consist of various types of fill from previous construction as well as expansive clay.

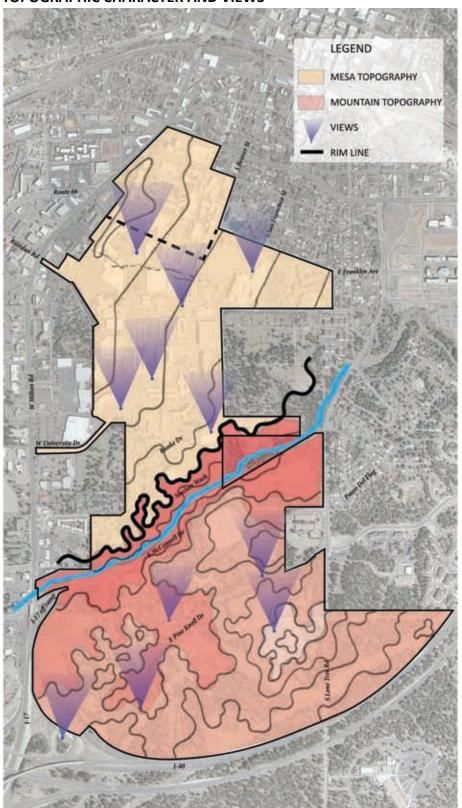
The transition to South Campus is subtle from University Drive, south to the northern edge of the Sinclair Wash Drainageway. The Kaibab Limestone is commonly shallow and begins to impact the topography with a rise in elevation. South of the northern edge of the Sinclair Wash Drainageway, the limestone dominates the landscape forming numerous hills and valleys. The rock is exposed in frequent outcrops and overlying soils are generally thin and consist primarily of silty sand, although fill and expansive clay are also present on South Campus.

Opportunities

The predominantly clayey soils of North and Central Campus present an opportunity to utilize plantings that adapt well to periods of moderate moisture and poor drainage.

The mountainous terrain and natural rock outcroppings of South Campus provide a framework for the type and density of vegetation in this area. The permeable soils lend themselves to a different vegetation type and the hills and valleys provide natural variability by controlling moisture and drainage.

TOPOGRAPHIC CHARACTER AND VIEWS



Observations

The Campus exhibits two very strong and recognizable topographic character zones with a subtle transition between. North of University Drive, the topography exhibits a generally flat visual quality that contributes to the formal organization of both the North and Central Campus zones. There is a slight rise in elevation along the western boundary of North and Central Campus. The topography exhibited in this area and the proximity to drainages and floodplains is consistent with the historical classification for this area as a meadow.

From University Drive to Runke Drive there is a gentle but significant rise in elevation. At Runke Drive the topography drops down to meet the northern rim of the Sinclair Wash Drainageway, a linear feature carved into the limestone. South Campus exhibits hillock type topography which contributes to the mountain characteristics of this zone. The topographic form and variability in elevation from north to south across the Campus offers exceptional views to the San Francisco Peaks.

Opportunities

There is tremendous opportunity to express and amplify these topographic characteristics as they relate to the character zones of the Campus.

North and Central Campus

Although the meadow that once enveloped North and Central Campus is no longer apparent, the landform should be maintained and respected. The rise in elevation observed both along western Campus and from University Drive to Runke Drive provides the opportunity take advantage of viewsheds and create spaces that are carved out of the landform.

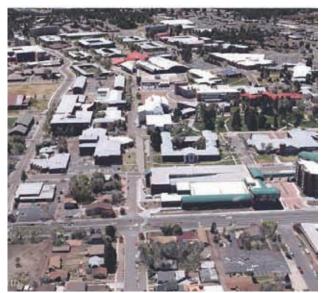
South Campus

The north rim of the Sinclair Wash Drainageway defines the transition between topographic character zones and can be enhanced and visually strengthened to create a dramatic threshold. Future

building development should respect the topographic characteristics of the Campus. This in combination with the preservation of mature Ponderosa Pine stands, including the native understory, is one of the most important steps to ensuring the Mountain South Campus retains its rustic character and experience.



NAU Campus 1950's Development



NAU Campus Recent Development



Flat North Campus Topography

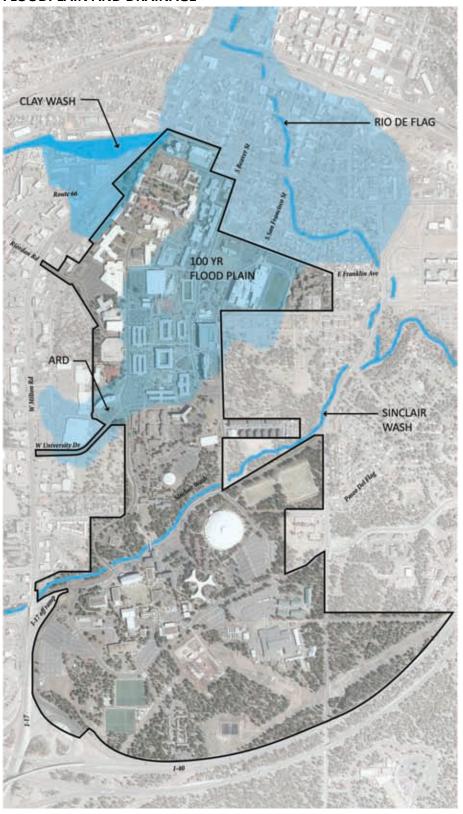


Linear Sinclair Wash Topography



Rolling South Campus Topography

FLOODPLAIN AND DRAINAGE



Observations

The existing Campus drainage conditions, as well as the current drainage solutions, are varied and often integrated with City of Flagstaff drainage solutions. The Rio de Flag flows from north to south northeast of the Campus. Although the drainageway does not enter Campus, the Rio de Flag's 100 year floodplain blankets much of North and Central Campus. The Rio de Flag continues to present a challenge throughout Flagstaff where it interfaces with urban conditions. Flooding is a common issue within the Southside Neighborhood during monsoon and some winter storm events. The Army Corps of Engineers is currently working on mitigation strategies with the City of Flagstaff for the Rio de Flag Drainageway. The presence of this floodplain on Campus has resulted in elevating new structures 3 to 4 feet above existing grade to ensure the building is above floodplain conditions.

Drainage in North and Central Campus is almost entirely subsurface; however, pipes daylight to different areas without a consistent approach. Multiple drainage solutions have led to nuisance flooding during monsoon season. Ponding can be observed adjacent to the Physical Sciences Building and poor drainage is evident in the majority of the turf areas which, in combination with the clayey soils, create saturated conditions and render the turf unusable.

Within Central Campus at the Applied Research and Development (ARD) Building, is a regional detention basin which captures off-Campus drainage from a 136 acre watershed. The watershed includes runoff from a large percentage of the commercial development along Milton Avenue from Route 66, south to Woodlands Village Boulevard. This includes the Target/Sprouts shopping centers, Sherwood Forest shopping plaza, and University Plaza. Development of the ARD site must maintain the existing stormwater detention volume. The ARD site also functions as a Campus entrance making it a critical and highly visible area.

The majority of runoff from North and Central Campus is directed to the ARD Basin and in turn discharges into Sinclair Wash. Sinclair Wash flows from west to east, draining into the Rio de Flag east of Campus. The varied topography and generally more permeable soils of South Campus allow for natural drainage with flooding conditions rarely occurring. The exception to this is Sinclair Wash which exhibits a shallow gradient allowing for flooding along the drainageway through Campus and onto McConnell Drive.

Opportunities

Elevation Changes

Grade changes between buildings and the landscape made necessary by the presence of the floodplain across the flat landscape, create opportunities for more interesting transitions. The changes in elevation can become terraced sitting edges and meeting places. These edges can be developed to become places themselves, to invite people into spaces, or be used as viewing areas both formally or informally as people watching places.

Drainage Patterns

The presence of different types of drainage patterns on Campus creates the opportunity for the landscape character of each zone to be expressed in unique and interesting ways. The landforms that have been created by water can be enhanced, turning them into memorable landscape features. For example, the South Campus vegetation is characterized by Dry Ponderosa Pine-Arizona Fescue Forest Habitat. However, where Sinclair Wash runs through Campus, carrying snowmelt and monsoonal moisture, a subtle distinction can be created using Streamside and Moist Canyon Habitat vegetation. The Sinclair Wash Drainageway, along with the Rio de Flag Drainageway, are naturally characterized by partially shaded, sloping, canyonlike and streamside areas. Trees such as Maple, Cottonwood, Birch and Willow can take the place of Ponderosa Pines. Although these drainages do not run with water year-round, by using subtle





North and South Campus Elevated Building Porch Conditions





Central Campus Existing Drainage & Detention Features





South Campus Existing Drainage Features



Proposed LID and Pedestrian Walkway



Proposed Sculpted LID



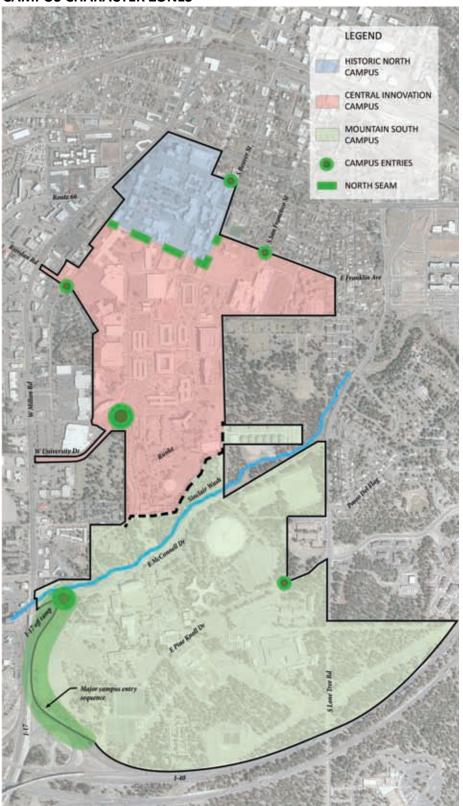
Existing Detention Basin - NAU ARD Building

vegetation cues, the sense of water can be evoked. *Drainage Opportunities*

To enhance the University's commitment to sustainability, the University has adopted the City of Flagstaff's Low Impact Development (LID) standards. The goal of this effort is to maintain the pre-development hydrology of a site by using Integrated Management Practices, or IMPs. This is achieved through the construction of small-scale controls. These small-scale controls are designed to capture, filter, and detain runoff to allow infiltration (where soils permit) close to the source. Vegetation buffers can be utilized to disconnect impervious areas within parking and pedestrian circulation areas. Sculpted water quality features would add a visual appeal while providing functionality.

In North and Central Campus, drainage solutions should have a more discreet quality, concealing their utilitarian nature so that social spaces and landscaping can take center stage. Where these features cannot be concealed, such as the detention basin at the ARD Building, this feature can be transformed into an educational, multi-purpose area for gatherings and events. Located at one of the Campus's entrances, this basin has been preliminarily designed as an opportunity to strengthen the University's image as a leader in sustainability while continuing to function as a regional stormwater detention basin. Local materials have been proposed for pathways, dry creek boulders, and ledge stones along with more robust plantings have been proposed to enhance the basin.

CAMPUS CHARACTER ZONES



Observations

There are a number of observations articulated within the previous sections of this document that support the concept that the Northern Arizona University Campus is composed of several distinct character zones. Physical conditions such as topographic relief, floodplain areas and drainage routes, and existing vegetation along with other characteristics including circulation, architectural style and density, and perceived Campus character define the character zones. The previous studies are site specific observations and recommendations that define the boundaries of the existing character zones with the intent of creating a cohesive Campus that simplifies, refines and enhances the variety of existing landscape experiences.

Opportunities

The impressive extent of the University Campus lends itself to a hierarchy of landscapes to be experienced and offers the possibility to create a University environment that enhances and weaves the traditional Campus character and mountain aesthetic in a way that is unique to NAU and distinct from similar institutions. This opportunity can be leveraged to attract and retain students and faculty, as well as garner and sustain the support of Alumni.

Historic North Campus

The classic and timeless qualities of the Historic North Campus produce a nostalgic feeling. This is often the portion of Campus where alumni, students, faculty and visitors all share a common sense of NAU tradition. The character is defined by densely spaced brick and sandstone buildings, traditional landscape spaces with expansive lawns, broad canopied deciduous trees, and full evergreen trees. These qualities should be amplified through simple and formal landscaping. The inclusion of hedge rows, dense plant beds and the expansion of the existing arboretum are all concepts to be amplified.

Central Innovation Campus

Central Innovation Campus garners two distinct functions: it is the hub of social activity on the Campus and it provides an important link between North and South Campus. This is the most eclectic and least defined character zone. It is also the character zone that has the potential to be the most expressive, artful and interesting as it pertains to developing a campus that fosters collegiality, creativity, innovation and leadership. The opportunity is to re-invent this portion of the Campus landscape as highly social environment that maximizes the space available to the greatest extent possible for a wide variety of social activities, recreation, and learning. The second opportunity for Central Campus is to weave the native landscape of the Ponderosa Pine forest, dominant on South Campus with the manicured landscapes within the Historic North Campus. For a successful transition to occur in this zone, the interplay of these landscape typologies will rely on simple material choices, well composed spaces that are shaped by or defined by this interplay, and the thoughtful inclusion of edges that separate the native plants from the cultivated (domesticated) plantings. In this landscape zone, the graphic or design quality should mirror the social objectives and carefully consider the articulation and

expression of the weave characteristics to become a place where the landscape is both memorable and unique to the Northern Arizona University.

Mountain South Campus

This is the boldest landscape zone on the Northern Arizona University Campus. It is also one of the main reasons students are attracted to the University as the place they receive their education. The rustic mountain character is appealing and evokes a sense of adventure. This quality should be amplified by 'keeping it simple'. In other words, the beauty of this landscape is that it is incredibly complex, has a grand scale but is also a simple read with evergreens, tall grass and big views. This is what people love about mountain environments and every effort must be taken to restore the native landscape where possible, intensify its understory with shrub lands, wildflower meadows and native grass stands. Education of the native palette and vegetation will add depth and understanding to this landscape. The spaces that are carved out of the mountain landscape are often domesticated places like the South Quad and are important in this zone as well and must be carefully integrated into this landscape so that the qualities of both are revealed and celebrated.



North Campus Landscape Character



Central Campus Landscape Character



Central Campus Landscape Character



South Campus Landscape Character



South Campus Landscape Character

HISTORIC NORTH CAMPUS CHARACTER OPPORTUNITIES:

Traditional Plantings, Simple Design Palette



NAU North Quad



Proposed Character Palette



Proposed Character Palette



NAU North Quad



Proposed Character Palette



NAU Old Main

CENTRAL INNOVATION CAMPUS CHARACTER OPPORTUNITIES

Expressive Designs, Highly Social, Woven Landscape Typologies



Proposed Character Palette



Proposed Character Palette



Proposed Character Palette



Proposed Character Palette



Proposed Character Palette



Proposed Character Palette

NORTHERN ARIZONA UNIVERSITY

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MOUNTAIN SOUTH CAMPUS CHARACTER OPPORTUNITIES

Simple, Natural Design, Mountain Aesthetic



Ponderosa Pine Forest



Ponderosa Pine Forest



Proposed Character Palette



NAU Skydome Tailgating

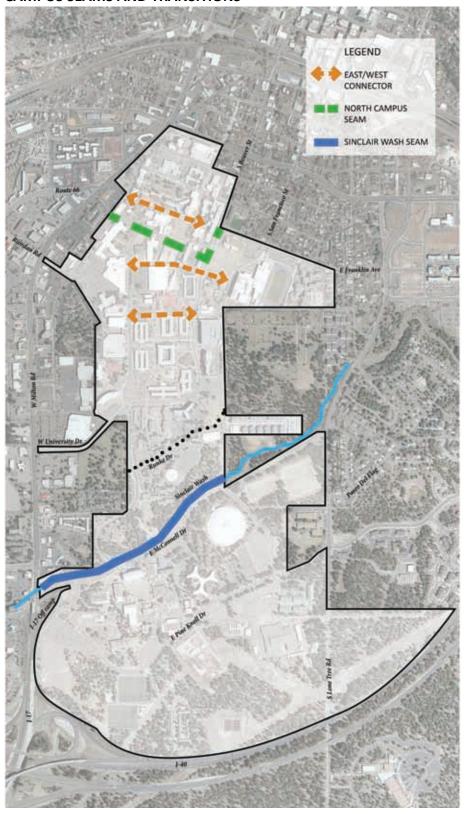


Proposed Character Palette



NAU The Suites

CAMPUS SEAMS AND TRANSITIONS



Observations

The three perceived character zones of the Campus are divided along two recognizable lines. In the north, the Historic North Campus exhibits a change in character along a visible Campus seam beginning at the southern edge of Rosebury Apartments east-southeast to the northern edge of the Academic Annex and Peterson Hall. This transition is fairly abrupt as the architectural character of the structures and the building density shift. In the south along Runke Drive, the character changes dramatically from the more traditional manicured turf to the Ponderosa Pine forest dominated mountain character. This transition between character zones occurs along a vehicular path is very divisive and prevents the Campus from feeling unified and cohesive.

Opportunities

Central Innovation Campus

The three distinct character zones of the Northern Arizona University Campus present the opportunity to cultivate a unifying transition from Historic North Campus to Mountain South Campus. This transition should dissolve the abrupt change in character that exists along Runke Drive into a broad zone that enhances the existing manicured landscape and Ponderosa Pine forest qualities of the Central Innovation Campus and weave the rustic character of Mountain South Campus with the traditional landscape of Historic North Campus. This shift should be a careful and artfully executed landscape transition that is highly expressive of the interplay of 'nature' and 'culture'. In places the weave of these two landscape typologies can be soft and relaxed and in places can be hard edged, bold and graphic. In this way, Central Innovation Campus becomes a character zone of which its importance cannot be over-stated as the expression of this distinct landscaped underpins what is so special about the NAU Campus, its traditions and its culture.

The northern boundary of this zone is defined along The North Seam. The south

edge of Central Innovation Campus is defined by the north rim of Sinclair Drainageway, as it is a strong visual link that follows the Sinclair Wash. Moving the boundary from a roadway which was previously contributing to the divisive nature that is perceived between the character zones will create a unified and cohesive Campus.

The North Seam

While the purpose of Central Innovation Campus is to weave together the landscape typologies of North and South Campus in a broad manner, a different strategy is required at 'The North Seam'. This is an opportunity to transition Historic North Campus to Central Innovation Campus along a 'seam', defined here as a linear feature that exhibits its own character. This approach requires that emphasis is placed on the landscape character within 'The North Seam' itself. The design should be bold, simple and recognizable and become a place unto itself. This new linear landscape feature will serve to stitch the Historic North Campus with the more eclectic Central Innovation Campus and result in a smooth transition that celebrates the qualities of each character zone.

The Sinclair Wash Seam

Sinclair Wash also exhibits characteristics of a 'seam' but is contained within Mountain South Campus. This important water course should be expresses with more riparian characteristics in order to enhance its presence in the Ponderosa Pine landscape and to amplify its role as a destination for people to experience.





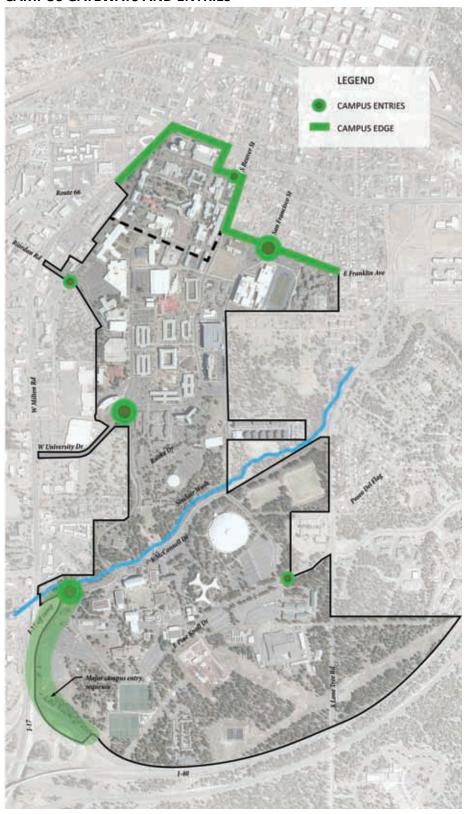


Proposed Seams for Pedestrian Movement



Proposed Seams as Usable Space

CAMPUS GATEWAYS AND ENTRIES



Observations

The manner in which the Campus meets the surrounding city creates a condition in which the University is only in possession of the land on one side of the roadway at many of the entrances, and consequently signage and landscaping announcing the University can only be placed on one side of the roadway. This detracts from a more profound effect that could be made if both sides of the roadway were available. Also contributing to the lack of recognition of the Campus entries, the existing signage present at each of the six entrances is generally understated. The scale of the signage and landscape does not clearly celebrate the arrival onto the University Campus. The one exception to this is the signage and wall located at the McConnell Drive Gateway. This entrance is grand and announces the Campus effectively; however, it is not integrated into a landscape character that is expressive of the Ponderosa Pine forest. This gateway and Campus entrance is also lacking adequate pedestrian connections and can be dangerous as people are forced to walk in the street during winter snowfall.

Opportunities

North Campus

The northern edge of the University is integrated into the City of Flagstaff street grid. This presents an opportunity to amplify the presence of this Campus edge and the entry points along Beaver St. and San Francisco St. by intensifying the plantings and pedestrian amenities. As a result, the northern street edges will serve as a clear and beautiful threshold to the Campus experience.

South Campus

Within South Campus, the Pine Knoll Campus entry presents an opportunity to announce the arrival to the Campus while enhancing the mountain aesthetic. This entry point could be defined by site stone walls, planting and lighting schemes that capture the rustic character of the Mountain South Campus while respecting the greater Ponderosa Pine landscape.

A secondary entry into the Walkup Sky Dome parking lot could celebrate the athletic tradition of Northern Arizona University and create a high quality and memorable experience for visitors, alumni, and the greater community.

The I-17 and I-40 interchange and associated offramp should announce the presence and arrival onto the University Campus. The McConnell Drive gateway and Campus entrance could be enhanced by a bold, grand scale landscape expression that integrates the existing sign wall with the mountain character. A clear vehicular and pedestrian sequence that is safe, beautiful and memorable should also be woven into the landscape. The landscape improvements should also extend south along the I-17 exit ramp to fully capture the highway interchange.



NAU Campus Gateway



NAU Campus Edge



NAU Campus Entry

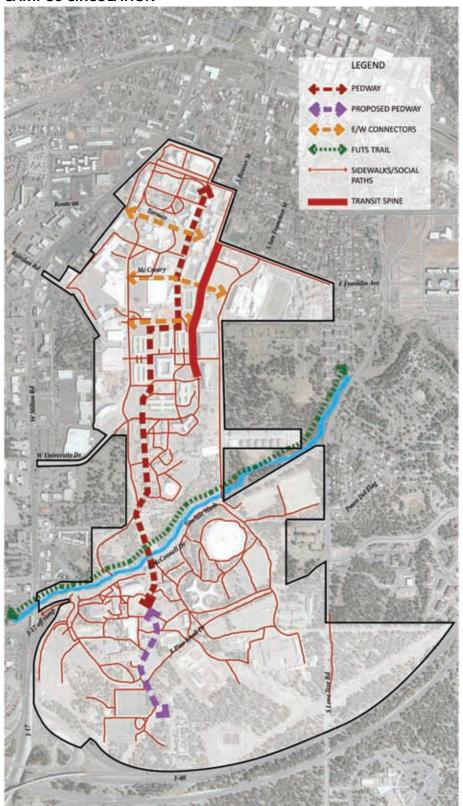


NAU Campus Entry



NAU Campus Edge

CAMPUS CIRCULATION



Observations

The Pedway traverses the core of Campus from north to south, beginning at Dupont Avenue and ending at the South Quad. It is utilized by a multitude of students; however, it is often difficult to recognize where a change of direction occurs or a road is encountered as there are numerous inconsistencies in the types materials used and an absence of signage. Current materials include concrete paving, asphalt paving, and precast concrete pavers of which many are failing. While the Pedway provides north-south circulation, there is currently a lack of clear connectivity to the Pedway for students traveling in the eastwest direction. Examples of this condition occur along Tormey Drive, McCreary Drive, and Blome Drive. East-west connectivity is also lacking in South Campus with no clear route from parking area P62 to the Skydome. The Flagstaff Urban Trail provides an existing east-west connection but contains steep grade changes.

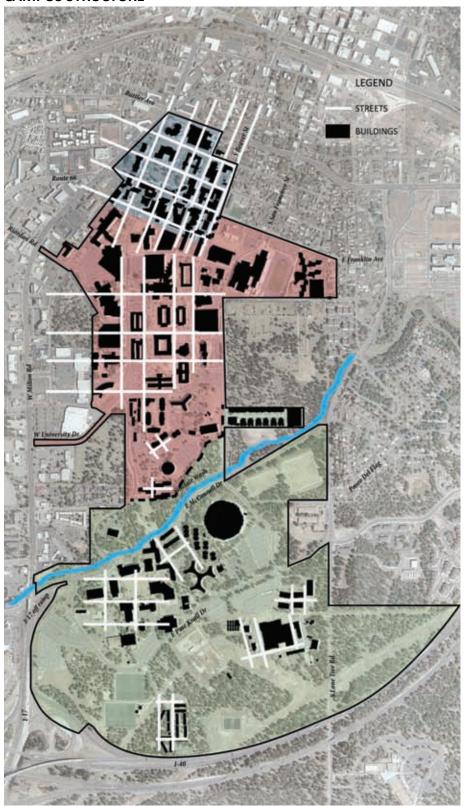
Many existing sidewalks throughout Campus are narrow and do not accommodate the high volume of pedestrian and bicycle traffic that exists on Campus. In other areas sidewalks are lacking altogether, creating a safety hazard for pedestrians and bicyclists.

Opportunities

The Pedway is a consistent transect through the three character zones and should be consistent with the elements of each zone. The east-west pedestrian connections could be enhanced by providing an inviting palette of materials, plantings and site furnishings. These improvements can also be used to create spaces that are unique unto themselves and function as informal social gathering areas for students.

The existing narrow sidewalks could be widened to accommodate foot traffic and well defined bike lanes could be incorporated into the existing roadways. New sidewalks should be wide and installed where sidewalks are lacking to improve pedestrian safety and circulation.

CAMPUS STRUCTURE



Observations

The character of Campus in large part is defined by the relationship of building mass and building separation to the amount of open space that surrounds it. This is a simple notion but it is very telling when it comes to how landscape contributes to the Campus experience and how open spaces are shaped. The architecture of Historic North Campus is visually dominant and carries with it a palette that is best when there is unity in how it is applied and how the building forms are massed. In the Central Innovation Campus, the building structure is formal and orthogonally organized similar to the north, but the building height and separation create a landscape character that is much more open. The building structure of Mountain South Campus is organized in village type clusters that are carved into the Ponderosa Pine forest. The formal grid is not present in the south and the clusters are separated by the forest.

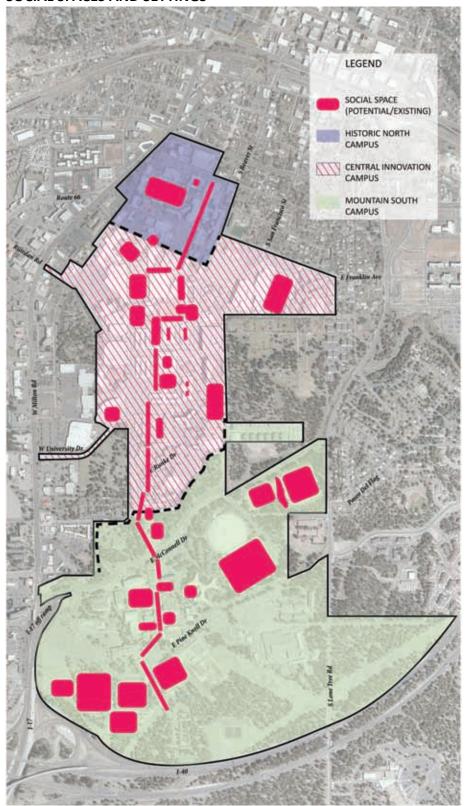
Opportunities

The Campus structure provides the framework for the development of each character zone. The traditional character and high building density of Historic North Campus could best be supported by a style of design that creates well defined landscape spaces with a strong sense of enclosure.

Although the structures of Central Innovation Campus are still aligned in a formal grid, increased space between structures allows for trees and landscape layering to play a stronger role in how outdoor space is shaped. The broader open spaces between the structures lends itself a more open environment.

The spacing of the village like clusters of Mountain South Campus are carved out of the natural Ponderosa Pine forest. This allows for a more rustic setting in which the natural forest envelopes the urban spaces and provides a different setting than that of North or Central Campus.

SOCIAL SPACES AND SETTINGS



Observations

Open space within each character zone functions as either a social space or a setting. Social spaces are defined as areas where students come together and interact with one another. They can be utilized for gathering or movement such as the Pedway, plazas, or recreational fields. In contrast, a setting is the visual character provided by the landscape.

The social spaces and settings of North Campus embrace the historic character of a classic university campus. The majority of student gathering on Campus takes place in the Central Innovation Campus with social spaces encompassing a wide variety of uses and spatial definitions.

The social spaces of South Campus are more dispersed than those observed in North and Central Campus. This is reinforced by the topography of South Campus and the pervasiveness of the Ponderosa Pine forest. The setting is much stronger than North and Central Campus; however, the inconsistent use of materials and lack of vegetation on the ground plane detract from the beautiful mountain campus setting.

Opportunities

Improvements to the settings and social spaces of North Campus are the most straight-forward and simple. The materials and plant palette should reinforce the classical and historic character that it currently has.

Central Innovation Campus has the opportunity to capitalize on the existing amenities which draw students, such as housing and dining. Additional uses that inspire innovation and the sharing of knowledge should be encouraged in social spaces.

The natural setting of South Campus should be enhanced to embrace the architecture and social spaces. Social spaces should be designed to capture the viewsheds and enhance the mountain setting characteristics.

NORTH CAMPUS SOCIAL SPACE AND SETTING OPPORTUNITIES

Expression of the NAU Heritage: Traditional Campus Community



NAU Old Main







Proposed Social Opportunities

CENTRAL SOCIAL SPACE AND SETTING OPPORTUNITIES

Expression of Innovation: Wide Variety of Social and Learning Opportunities



NAU Student Union





Proposed Social Opportunities













Proposed Social Opportunities

SOUTH CAMPUS SOCIAL SPACE AND SETTING OPPORTUNITIES

Expression of the Forest: Social Activity is Integrated into Nature













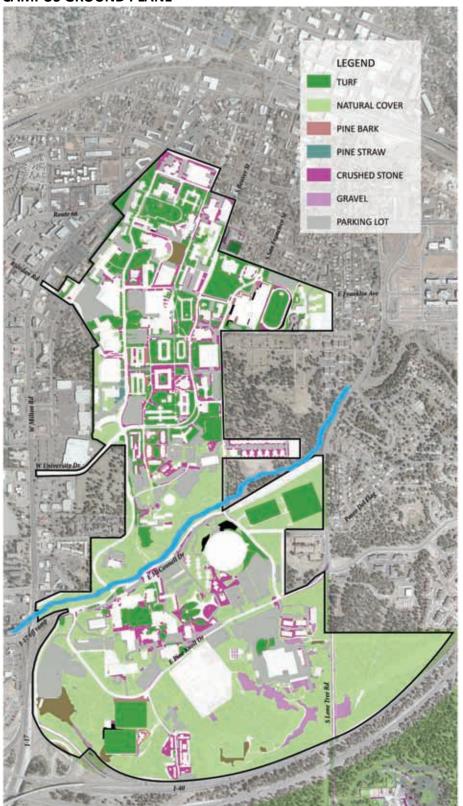






Proposed Social Opportunities

CAMPUS GROUND PLANE



Observations

Vegetative and mulch materials that compose the current Campus ground plane are not consistent and create a busy, jumbled appearance that is contradictory to a unified landscape. Gravel mulch, locally referred to as decomposed granite or "d.g.", dominates the landscape of many areas. When combined with low-density plantings, their appearance is stark. These areas are difficult to maintain despite the common use of weed barrier. Over time dust accumulates in the gravel mulch above the weed barrier and weedy plants take hold. Manual weed removal is not possible in the numerous d.g. areas, requiring the undesirable use of herbicides. These areas also contribute to urban heat island effect.

Shrub and ground cover plant densities on Campus reflect a sparse high-desert look. While some areas in the Northern Arizona region are high-desert landscapes, such as Winslow and Leupp, Flagstaff lies within the dry Ponderosa Pine-Arizona Fescue forest habitat. This habitat naturally presents a fuller landscape with a multitude of native grasses, forbs and perennial species. There is a broad range of understory plants that characterize the various microclimates of this forest habitat and are drought tolerant.

Also contributing to the cluttered Campus appearance are the plethora of wall and paving materials currently on Campus. Existing wall materials include sandstone, limestone, basalt, concrete, and manufactured concrete blocks of all sizes, shapes, and colors. Paving materials reflect the same type of broad materials selection as the wall materials.

Opportunities

Campus can become more vibrant by allowing plants take center stage rather than the d.g. beds. Increased plant densities and fuller shrub beds would create a more appealing appearance year-round. This approach would also reduce maintenance by eliminating unoccupied spaces where weedy plants grow. Organic mulches should

be considered over gravel mulch as a natural soil amendment and as a material that can take backstage to the plantings.

The strong mountain character of South Campus can be magnified by simplifying the ground plane so that it takes on a natural forest aesthetic. The ground plane can be transitioned to appear as the forest naturally exists in the Flagstaff region utilizing native grasses, shrubs and perennials that are part of the Ponderosa Pine-Arizona Fescue habitat. Where the developed social spaces exist in Mountain South Campus, other plantings should be explored to provide a transition and complement to the natural forest ground plane. The use of robust masses of ground covers and shrubs can complete the landscaping in areas adjacent to buildings and social spaces.

The ground plane could be greatly simplified by creating a simple palette of allowable materials used to compose the walls and paving. Selecting a few materials would create a cohesive campus and allowing those materials to be utilized in different ways within the character zones would strengthen the characteristics of each zone.



Decomposed Granite



Decomposed Granite



Low Plant Density



Low Plant Density



Pavement Materials



Grass Lawn



Wall Materials



Wall Materials



Wall Materials

CAMPUS TREE CANOPY



Observations

The Northern Arizona University Campus exists in the world's largest Ponderosa Pine-Arizona Fescue forests. Within this forest there are different plant communities that tell the story of the land, drainage patterns, soil types, areas of high wind and intense sun, and where grazing and logging have disturbed the land. In the Flagstaff region the land surface is characterized by distinct areas referred to locally as "parks" and "mesas". Examples include McMillan Mesa, Doney Park, and Kendrick Park. Parks refer to areas where the Ponderosa Pine forest gives way to open, flat grassland meadows hosting numerous species of native grasses and wildflowers. The Campus is composed of these two distinct plant communities.

The historic open grassland meadows of the northern and central portions of Campus have been replaced with buildings and hardscape as the Campus was built. Clues to the native grasslands no longer exist. Tree canopy is an eclectic mix of introduced species, ranging from newer cultivars of columnar pear trees to broad canopied elms that were planted as specimens of the Arboretum. While much change has taken place within North and Central Campus, South Campus continues to reflect the vegetation of a Ponderosa Pine forest.

Opportunities

In Historic North Campus, the tree canopy should be consistent with the traditional character of the North Quad. Large canopied, deciduous shade trees and coniferous evergreens with low branches will to add to the North zone's sense of place. As aging trees die out or require replacement, an understory planting program should be developed to support the north zone's character and Arboretum program.

The modified landscape of Central Innovation Campus presents the opportunity to utilize appropriate adapted species, both native and non-native, along with the reintroduction of areas containing open meadows with little to no tree canopy. The focus of the tree

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canopy in Central Campus should primarily be to create different types of social spaces. Placement and type of tree canopy becomes critical to create inviting urban spaces, interesting social edges, welcoming entrances, and delineation of circulation routes such as the Pedway and Transit Spine. Central Campus should also weave North and South Campus, utilizing a textured patchwork of plant communities can be created from the merging of Ponderosa Pine forest and the more cultivated landscape.

Within the North Seam, or 'The Seam', the tree canopy should provide a blend of dominant types rather than a hard, distinct line. The Seam transition is an opportunity to use pockets of Campus Arboretum tree species that meet a more diverse cultivated canopy type at key nodes or thresholds.

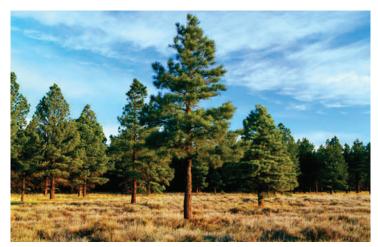
The strong presence of the Ponderosa Pine forest on South Campus provides the opportunity to follow nature's cues. By using these cues, the natural character can be simplified and enhanced, creating a stronger link to the sense of place. The native plant pattern in this area lends itself to a more simplified vegetative canopy with a naturalistic palette of understory trees introduced in order to add diversity and interest in the landscape.







Mixed Deciduous Canopy







Ponderosa Pine Canopy and Meadow

FURNISHINGS

Observations

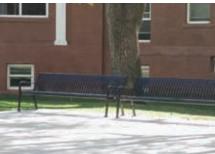
Northern Arizona University does not have defined furnishings standards which has resulted in a plethora of different site furnishings throughout the Campus. The number and diversity of the furnishings present on the Campus also contributes to the lack of Campus unity. Each new construction project undertaken on the Campus specifies site furnishings that the project team believes will complement the design of that specific site. While this would be an effective strategy for individual construction projects, it is not appropriate for a University and creates a situation where each project is isolated and the Campus as a whole is disjointed.

Opportunities

The development of furnishings standards for seating, bike racks, trash receptacles, and other items will establish what items can and cannot be used on Campus and over time, create a cohesive appearance. Allowing for slight deviations on the standards within each of the three character zones will provide the necessary selection to adequately express the distinct elements of each zone.









Existing Benches





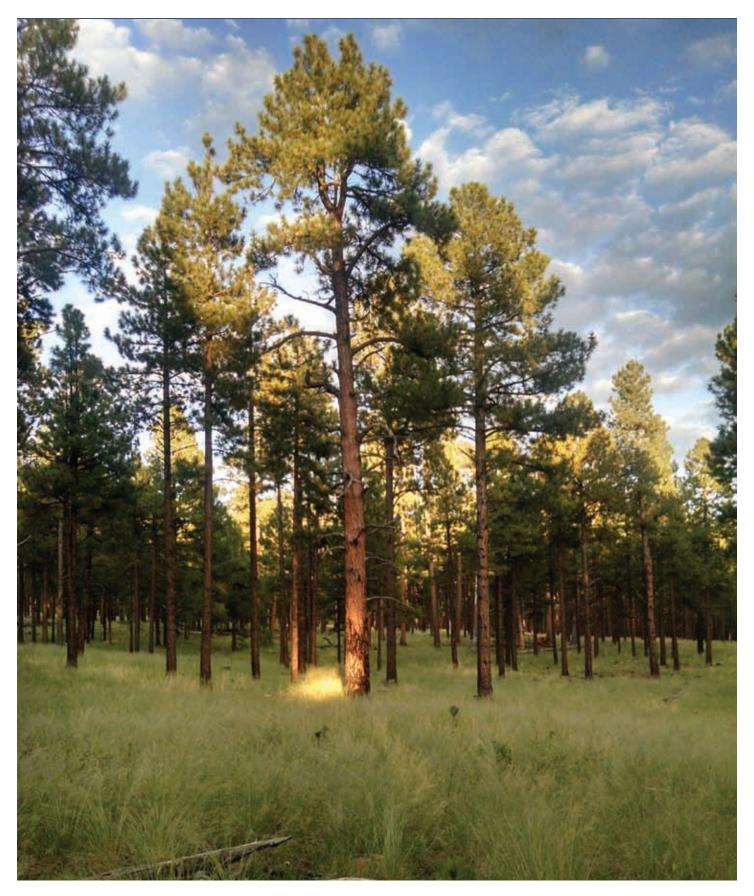
Existing Tables and Chairs





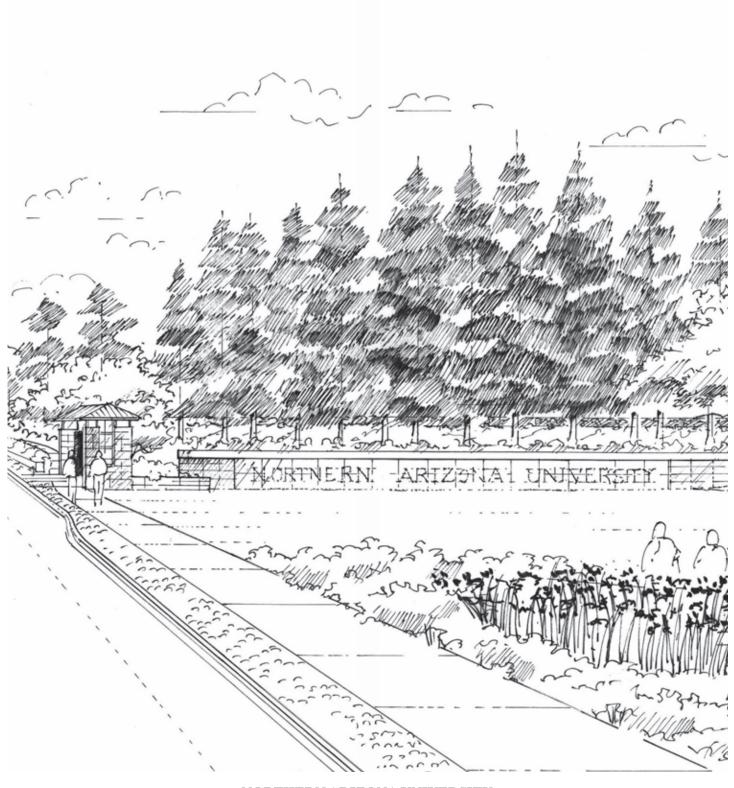


Existing Railing



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Circulation

Historic North Campus



Central Innovation Campus



Mountain South Campus

HOW TO USE THE PRINCIPLES, STANDARDS, AND CONCEPT DESIGNS

Organization and Intent

The Principles, Standards, and Concept Designs presented on the following pages are based on the previous Analysis and Assessment section. These two sections should be viewed as companions; Design Professionals working on Campus should be familiar with the content included in both sections. Familiarity with Analysis and Assessment is key to understanding the context from which the Principles, Standards, and Concept Designs were developed. Design considerations and requirements for projects on Campus, from planning vision to detailed project design are included. The Principles, Standards, and Concept Designs are meant to be complimentary and supplementary to the current NAU Campus Master Plan, NAU Design Guidelines, and NAU Technical Standards. Where discrepancies exist, the Principles, Standards, and Concept Designs are meant to take precedence.

The Principles, Standards, and Concept Designs consists of five sections:

- Campus Circulation
- Historic North Campus: Design Palette and Concept Designs
- Central Innovation Campus: Design Palette and Concept Designs
- Mountain South Campus: Design Palette and Concept Designs
- Detailed Principles and Design Standards

Campus Circulation provides an overview of the existing pedestrian circulation routes on Campus. A detailed study of Campus circulation is not part of the Landscape Master Plan; however, this section provides possible solutions to circulation challenges and guidance for the design of pedestrian circulation routes, most notably the primary north-south Pedway. Further study of Campus Circulation is recommended for inclusion in the anticipated update to the 2010 Campus Master Plan.

The three character zones (North, Central, and South Campus) contain an Overview, Guiding Principles, Design Palette, and Concept Designs. The Overview and Guiding Principles provide a descriptive summary of the intended character for each zone. The Design Palette section provides a quick look at the materials, furnishings, and plantings to be used within each character zone. This is intended to be an easy-to-use reference guide for each zone. More in-depth information is provided in the Principles and Design Standards section. The intent of the Principles and Design Standards is to specify the types and appropriate locations of materials, furnishings, and plantings to be used on Campus to achieve the intended design character for each zone. The intent of the Concept Designs is to illustrate the design intent for possible project areas. This section includes plans with keynotes for design elements. It is intended that the Concept Design drawings will evolve during the design development process to accommodate site specific conditions. Note that existing ground plane conditions shown in the drawings are based on NAU GIS data and will require designers to verify.

Review of Design Development and Construction Plans

As future projects are implemented on Campus, the plans will be reviewed to include site work, landscape architectural and architectural elements. The Site Development, Design Development, and Construction Document review will include:

- Character Zone
- Site Layout
- Circulation
- Campus Connectivity
- Grading and Drainage
- Social Spaces and Accent Areas
- Materials, Furnishings, and Plantings
- Variances as may be requested by the Design Professional

While the Standards were developed to create a unified Campus, it is understood that flexibility in design elements may be appropriate when the landscape design is to be reflective of the architecture design. Where the landscape plays a role in knitting buildings or character zones together, the Standards will take precedence over the building architecture style.

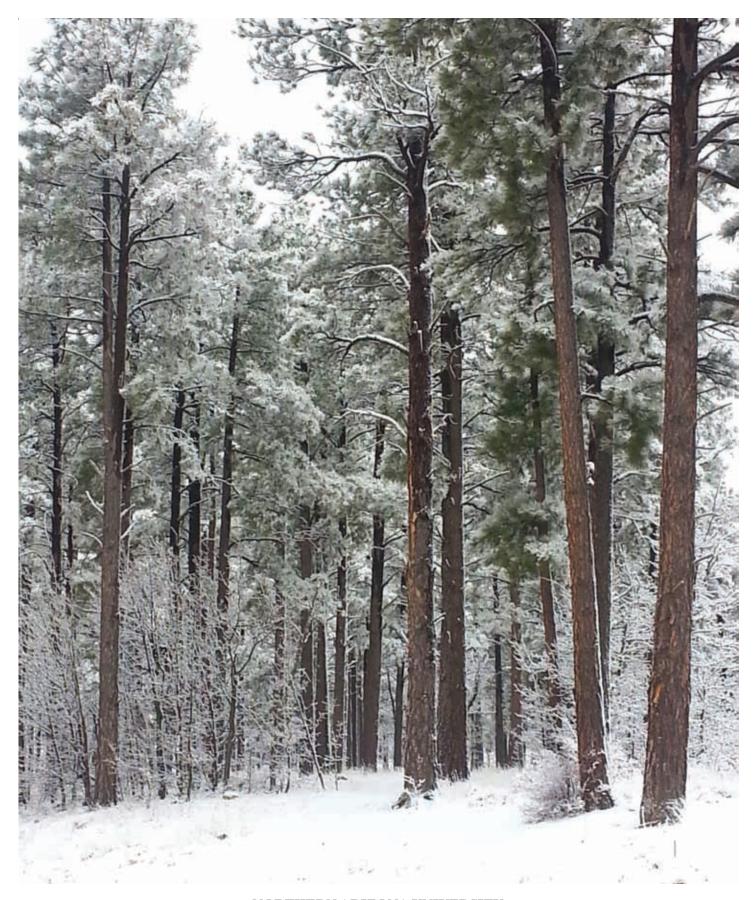
Plan reviews include the Director of Planning, Design and Construction, NAU Project Manager, Design Professionals, and the WLB-Civitas Design Team. Design Professionals are requested to communicate with their NAU Project Manager. The role of the WLB Group-Civitas Design Team is to provide recommendations to NAU based on conformance to the Landscape Master Plan.



Concept Design 'The Seam'



Concept Design 'The Game Room'



NORTHERN ARIZONA UNIVERSITY

LEGEND

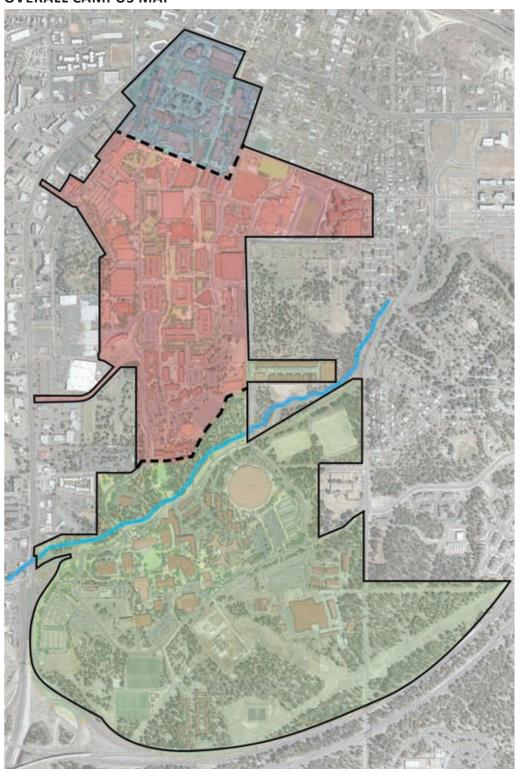
HISTORIC NORTH CAMPUS

MOUNTAIN SOUTH CAMPUS

CENTRAL INNOVATION

CAMPUS

OVERALL CAMPUS MAP



CONCEPT DESIGNS LIST

Priority projects are highlighted below

C16. KNOLES DRIVE PINE GROVE EXPANSIONC17. UNIVERSITY DRIVE MEDIAN PLANTING

P1A. PEDWAY

HISTORIC NORTH CAMPUS PROJECT LIST	MOUNTAIN SOUTH CAMPUS PROJECT LIST
N1. MILTON ROAD EDGE AND BLOME GARDENS	S1. GABALDON GREEN
N2. HUMPHREYS STREET ENTRY	S2. THE SUN DECK
N3. DUPONT AVENUE EDGE	S3. BABBITT CENTER AND KNOLES DRIVE
N4. BEAVER STREET AND DUPONT AVENUE ENTRY	S4. SINCLAIR WASH
N5. TORMEY AVENUE CONNECTOR	S5. W.A. FRANKE COLLEGE OF BUSINESS ADMINISTRATION
N6. SCIENCE PLAZA AND PEDWAY	S6. SKYDOME ENTRY PLAZA
N7. PEDWAY AND ARBORETUM	S7. SKYDOME PARKING
N8. SCIENCE AND HEALTH BUILDING AND PEDWAY	S8. SOUTH QUAD
	S9. DUBOIS CENTER AND HEALTH PROFESSIONS
	S10. PEDESTRIAN CONNECTIONS DUBOIS CENTER TO SKYDOME
CENTRAL INNOVATION CAMPUS PROJECT LIST	S11. PEDESTRIAN CONNECTIONS NEAR MCCONNELL ENTRY
C1. CENTRAL CAMPUS SPORTS DISTRICT	S12. CAMPUS ENTRY AT MCCONNELL DRIVE
C2. THE SEAM	S13. MCCONNELL ENTRY PARKING LOT
C3. AMENDMENT PLAZA AND QUADRANGLE	S14. SKYDOME VILLAGE
C4. NATIVE AMERICAN CENTER AND LANDSCAPE EXPANSION	S15. SOUTH CAMPUS PINE FOREST
C5. MCCREARY DRIVE CONNECTOR	P1B. PEDWAY
C6. FIELDHOUSE PARKING LOT	
C7. RIORDAN PARKING LOT IMPROVEMENTS	
C8. SEVEN COLLEGES QUAD	
C9. STUDENT UNION PLAZA AND RESIDENCE LAWN	
C10. STUDENT UNION CONNECTOR	
C11. COWDEN PARKING LOT	
C12. THE SOCIAL HALL AND GAME ROOM	
C13. RESIDENCE HALLS CONNECTOR	
C14. STUDENT SUCCESS PLAZA	
C15. CENTRAL QUAD	

PRINCIPLES AND DESIGN STANDARDS LIST

For more detail refer to the Principles and Design Standards

PAVEMENT

Campus Wide

Concrete Paving Broom Finish Concrete Paving Sand Finish

Concrete Edger

Scoring Patterns and Control Joints

Bike Access at Stairways

Pedway

Concrete - Pedway Design

PAVERS

Campus Wide

Open Pavers

Holland Pavers

Plankstone Pavers

Grass Pavers

Concrete Stepping Stones

GROUND PLANE

Campus Wide

Wood Mulch

Gravel Mulch - 1/2" Minus

Crusher Fines Paving

Decking

Central Campus

Beach Sand*

South Campus

Beach Sand*

Limestone Boulders

PATHWAYS

Campus Wide

Crusher Fines Forest/Lawn Paths

Central Campus

Solar Pathway

Manufactured Concrete Stairs

South Campus

Manufactured Concrete Stairs

WALLS

North Campus

Manufactured Concrete Wall

Classic Limestone Wall

North Campus Continued

Classic Sandstone Wall

Manufactured Concrete Cap

Natural Limestone Cap

Natural Stone Cap Detail

Central Campus

Sand Finish Concrete Wall

Modern Limestone Wall

Modern Sandstone Wall

Retaining Wall

Sand Finish Concrete Wall Cap

Sand Finish Concrete Cap Detail

Natural Stone Cap Detail

South Campus

Sand Finish Concrete Wall

Manufactured Concrete Wall

Dry Stack Limestone Wall

Retaining Wall

Sand Finish Concrete Wall Cap

Sand Finish Concrete Cap Detail

Manufactured Concrete Cap

Natural Limestone Cap

Natural Stone Cap Detail

RAILING

Campus Wide

Hand Rail

North Campus

North and Central Edge Rail

Fall Protection Rail

Central Campus

North and Central Edge Rail

Fall Protection Rail

South Campus

South Edge Rail

Weathering Steel Hand Rail

Weathering Steel Separation Rail

Weathering Steel Fall Protection Rail

South Guard Rail

Ironwood Guiderail

^{*} Only where specified in Design Plan Drawings

PRINCIPLES AND DESIGN STANDARDS LIST

For more detail refer to the Principles and Design Standards

FURNISHINGS

Campus Wide

Bamboo Bench without Arms

Metal Bench

Bamboo Table and Chairs

Attached Table and Chairs

Movable Table and Chairs

Metal Umbrella

Solar Charging station

Picnic Table

Bike Rack

Skateboard Rack

Big Belly Trash and Recycling Receptacles

Metal Trash and Recycling Receptacles

QR Code Informational Signage

Central Campus

Harvest Table

Bar Seating

Skateboard Bench

Concrete Skateboard Bench

'Flor' Bench*

Double Sided Wood Deck Lounge Chair*

Chaise Lounge

Adirondack Chair

Chammock*

South Campus

Harvest Table

Skateboard Bench

Concrete Skateboard Bench

Double Sided Wood Deck Lounge Chair*

Chaise Lounge

Adirondack Chair

Hammock*

LIGHTING

Campus Wide

Pedestrian Lighting

Parking Area Lighting

GRADING AND DRAINAGE

Stormwater Storage Techniques

Bio-Retention

Retention Basin

Detention Basin

Above Ground Stormwater Collection

Stormwater Conveyance and Erosion Control

Below Ground Stormwater Collection

Vegetated/Rock Swales

Liquid or Mulch Soil Stabilizer - Erosion

Protection

Erosion Control Blankets

Soil Rip-Rap

Rip-Rap

PLANTING

Design Principles

Campus Wide Principles

Special Areas

North Campus Principles

Central Campus Principles

South Campus Principles

Planting Selection Notes

Planting

Deciduous Trees

Evergreen Trees

Deciduous Shrubs

Evergreen Shrubs

Ornamental Grasses

Riparian Ornamental Specimens for

Linear or Meandering PLD's (Not

Basins)

Riparian Grass Blend for PLD Basin

Tall Meadow Grass Blend

Short Meadow Grass Blend

Bluegrass Turf Blend

Perennials

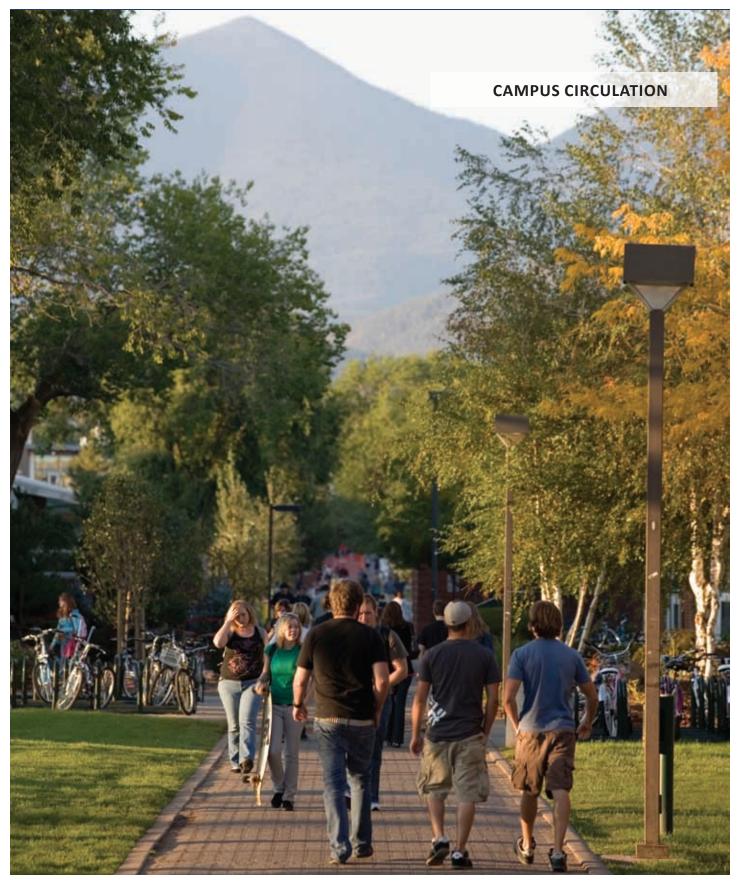
Evergreen Perennial Groundcovers

Vines

^{*} Only where specified in Design Plan Drawings

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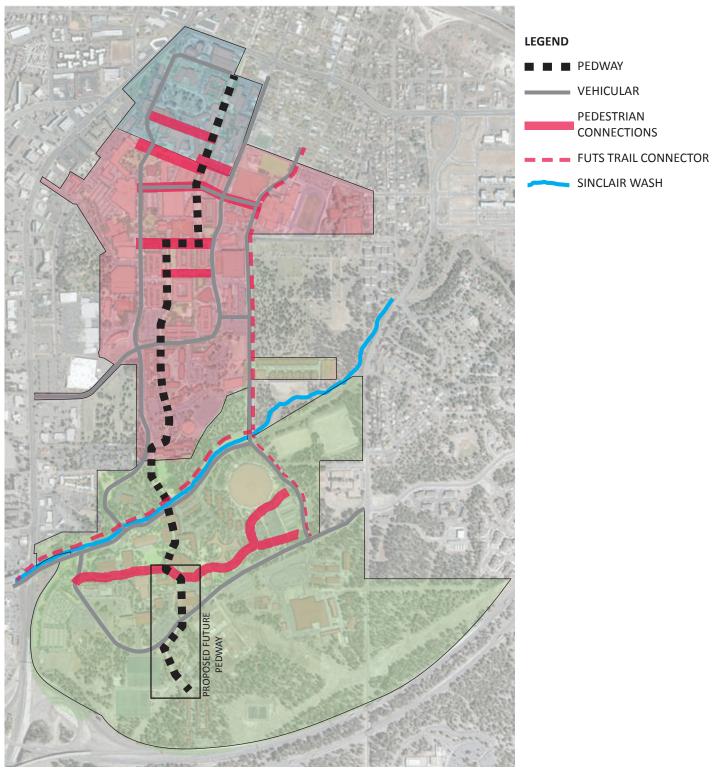
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CAMPUS CIRCULATION AND HIERARCHY MAP





Campus Sidewalk



Yellow Bikes



FUTS Trail

CIRCULATION OVERVIEW

Primary campus circulation is concentrated on the Pedway which traverses the campus from north to south, beginning at Dupont Avenue and ending at the South Quad. The sidewalk portion of the Pedway has been widened in select locations to accommodate a high volume of foot traffic. In many areas, the Pedway also includes a bike lane with striping to allow for bike traffic. Current circulation challenges are as follows:

- It is often difficult to recognize where the Pedway changes direction or encounters a road. This is a result of numerous inconsistencies in the types materials used and an absence of signage.
- Areas that have not been improved include pavers which are failing
 in some sections as a result of poor construction, subgrade failure, or
 driving heavy equipment over a surface that was not designed for that
 purpose.
- Many existing sidewalks throughout campus are narrow and do not accommodate the high volume of pedestrian and bicycle traffic that exists on campus. In other areas sidewalks are lacking altogether, creating a safety hazard for pedestrians and bicyclists.
- Mixing the high speed bike and skateboard traffic with the foot traffic throughout campus causes dangerous situations.
- East-west connectivity is lacking throughout campus. Improved eastwest connectivity would reduce bicycle and pedestrian circulation conflicts and improve safety.
- The Flagstaff Urban Trail provides an existing east-west connection but contains steep grade changes, lacks lighting, and is unpaved north of McConnell Drive.
- Student movement from Hilltop Phase I to South Campus along San Francisco Street allows foot traffic on the west side of the street and bike lanes on the east side of the street; however, foot traffic is common in the bike lanes.

PROPOSED DESIGN SOLUTIONS

Numerous options exist for design of the north-south and east-west pedestrian circulation routes traversing campus and by what method plazas and social spaces should be incorporated along those routes. One primary concern of the existing circulation routes is safety. Combining pedestrian foot traffic with fast moving bicycles and skateboards, especially where the Pedway enters social spaces and/or meets sharp corners with low visibility, creates a potentially hazardous situation. Solutions to slow traffic include: incorporating textured pavements, adding signage, or placing obstacles such as planters or tables and chairs. While some of these solutions would meet the goal of slowing the traffic, they created challenges of their own, such as keeping the fire access that the Pedway provides free of obstacles and students disregarding the signage.

Through the design work, it became apparent that providing access for fast moving traffic through the social spaces would be difficult to deter without creating subsequent challenges and ultimately, it diminishes the potential to create social gathering areas that are distinct. For these reasons, the Pedway has been designed as a pedestrian circulation route that will link the

plazas and social gathering areas and ultimately create a campus experience that is more enjoyable. The result of this design is that the Pedway will not be one continuous route through campus; however, this allows the opportunity to shift a portion of the high volume of traffic to secondary circulation routes that are already utilized. The existing narrow sidewalks could be improved by widening the sidewalks to the minimum campus standard of 8 feet to accommodate foot traffic. To relieve bike traffic on sidewalks without a designated bike lane and to relocate the fast moving bicycle traffic from the Pedway, well defined bike lanes could be incorporated into the existing roadways, similar to the markings on the transit spine and the green markings at intersections along Beaver Street, north of the University. This would relieve congestion, slow the bicycle and skateboard traffic on the Pedway, and improve safety by separating the high speed bike traffic from the foot traffic. New sidewalks should be installed with a minimum width of 8 feet in areas where sidewalks are currently lacking to improve pedestrian safety and circulation. An example of one area that would greatly benefit from new sidewalks is along Pine Knoll Drive from McConnell to the South Recreational Fields. The east-west pedestrian connections are enhanced within the design sheets for each character zone by providing an inviting palate of materials, plantings and site furnishings.

The Pedway design on the following page is intended to provide consistent and distinct paving materials in order to make this avenue of circulation stand out from secondary routes. The intent of the 'Graphite' integral colored concrete is to indicate the presence of a the bike lane and all standard light gray concrete indicates pedestrian travel. In areas where the bike lane meets plazas or other social spaces, it is recommended that rumble strips and/or a visual indicator are used to indicate that the rider should dismount the bicycle. The Pedway is unique in that it traverses all three character zones. Designs adjacent to the Pedway should reflect the consistent use of site furnishings, paving, lighting, and vegetation designated for that character zone.

The NAU Environmental Caucus/Transportation Action Committee has been analyzing campus circulation and could be a good reference for a more in-depth understanding of campus circulation routes and possible solutions to the current circulation challenges.

FUTURE CHALLENGES

These recommendations provide solutions to some of the circulation issues noted above. The remaining circulation issues will require a more detailed analysis of the foot, bike, and vehicular traffic and would be more appropriate for inclusion in the anticipated update to the 2010 Campus Master Plan.



Student Union Plaza

PEDWAY: DESIGN PRINCIPLES

- Paving elements are consistent with the Design Standards but are composed in a way that distinguishes the Pedway from secondary circulation routes
- Sand finish concrete will reduce the glare as compared to broom finish concrete
- Scoring patterns are intended to bring the wide expanse of concrete down to a pedestrian scale while maintaining the 26 foot width required for the fire lane
- The integral color of the bike lane will differentiate the bike lane from the designated area for foot traffic, improving safety
- Sealing the concrete is recommended to protect the surface from the salt ice melt utilized in the winter months and from staining

Pedway Design



Bike Lane: light broom finish perpendicular to bike traffic, integral color 'GRAPHITE' pigment concrete



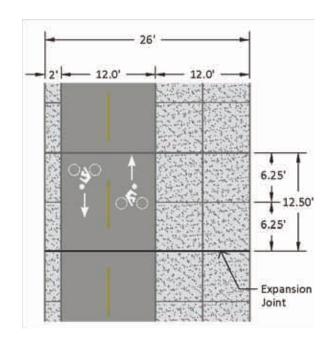
Pedestrian Lane: sand finish panels, standard gray concrete

Expansion joints spaced every 37.5'

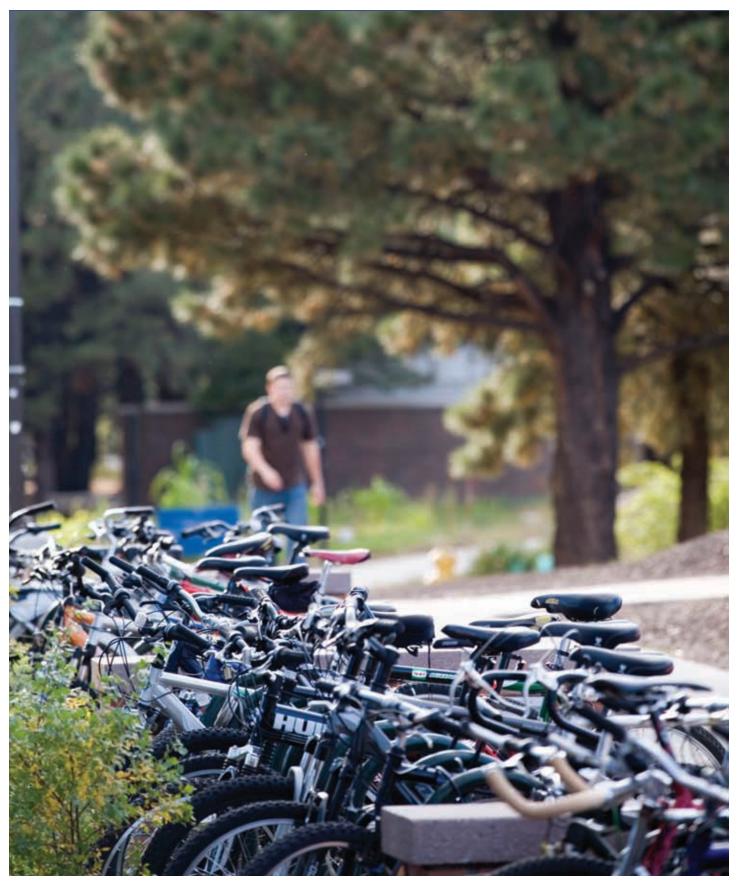
- Placement: Primary north-south Pedway only
- All concrete must be 6" thick, fibermesh reinforced overlying
 4" of compacted ABC per NAU Technical Standards
- Concrete mix design for Pedestrian lane must contain 60% fine aggregate and 40% large aggregate to achieve sand finish
- Weather Worker 40% J29 Sealer or NAU approved equal should be applied to concrete after the 28 day curing period unless otherwise directed by NAU
- Expansion joints must align with spacing of control joints as shown in plan diagram
- Tooled joints must extend to a depth of 1/4 slab thickness
- Use 2' long, 1/2" diameter rebar dowels at 2'-6" O.C. to tie pedestrian and bike concrete together
- On-site 8' by 8' mock-up of full cross-section of Pedway required to ensure desired look is achieved. Approval by Landscape Architect required

Surface Retarder for Sand Finish

- Product: 'TOP CAST' by Grace Construction Products or Landscape Architect approved equal
- Number Code: Grade 05
- Etch/Aggregate Size to Expose: Light Sandblast Finish
- Coverage: 250/350 Square Feet Per Gallon
- Retardant removal per manufacturer standards, typically within 6-24 hours after application. Timing of removal dependent upon temperature to create desired finish.

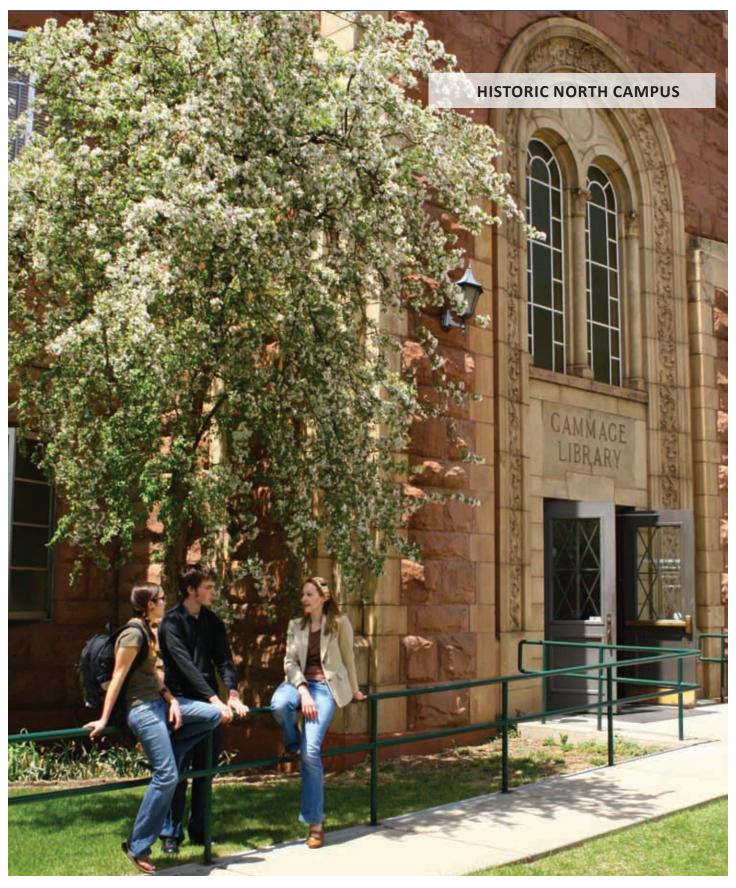






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HISTORIC NORTH CAMPUS

OVERVIEW

Northern Arizona University traces its origins to a single structure, Old Main. Located within the northern portion of campus, this structure was constructed from locally quarried Moenkopi sandstone. As enrollment grew, subsequent structures built around Old Main remained consistent in the use of sandstone as a primary material for construction. Campus beautification projects began in 1920 with native trees, non-native trees, and a number of historically significant trees. The result is the presence of thirty-six species of trees on north campus today. A recent project, "Louie's Legacy - The North Quad QR Code Project," provides QR Code labels for smartphones to identify significant trees, monuments, and structures within the North Quad. (Information obtained from NAU - Louie's Legacy webpage)

The primary function of North Campus is academic, but it also includes several administration buildings. Although North Campus is best represented by a historic atmosphere, new construction is also a part of landscape. The recently renovated North Quad best exemplifies the atmosphere of North Campus with a historic, classical quadrangle. The space is utilized for campus tours and orientation activities.

The classic and timeless qualities of the Historic North Campus produce a nostalgic feeling. This is often the portion of campus where alumni, students, faculty and visitors all share a common sense of NAU tradition. The character is defined by densely spaced brick and sandstone buildings, traditional landscape spaces with expansive lawns, broad canopied deciduous trees, and full evergreen trees. These qualities should be amplified through simple and formal landscaping. The inclusion of hedge rows, dense plant beds and the expansion of the existing arboretum are all concepts to be amplified.

GUIDING PRINCIPLES

- 1. Enhance the historic heritage of NAU and the classical landscape character by applying traditional and formal campus design principles.
- 2. Improve campus recognition along the campus edges.
- 3. Create a simple ground plane that compliments the traditional and historic character of the architecture.

DESIGN PALETTE INTENT

The Design Palette is intended as a quick reference for materials, furnishings, and plantings in each Campus Zone. Please refer to 'Principles and Design Standards' for more detailed information.

Plantings

All plant photographs are courtesy of Keith Williamson with Little Valley Wholesale Nursery in Brighton, CO.

Seasonal Interest Plant Legend:

SpringSummerFallWinter







Historic North Campus

HISTORIC NORTH CAMPUS: DESIGN PALETTE

Design Aesthetic

Classic, Formal Landscape Spaces







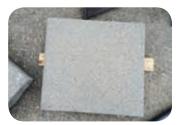




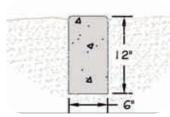
Pavement



Concrete Paving Broom Finish



Concrete Paving Sand Finish



Concrete Edger



Scoring Patterns and Control Joints

Pavers



Open Pavers



Holland Pavers (Concrete Subbase)



Plankstone Pavers (Concrete Subbase)



Grass Pavers



Concrete Stepping Stones

HISTORIC NORTH CAMPUS: DESIGN PALETTE

Ground Plane



Wood Mulch (with 80% Planting Density)



Gravel Mulch - 1/2" Minus (with 80% Planting Density)



Crusher Fines Paving



Decking

Pathways



Crusher Fines Forest/Lawn Paths

Walls



Manufactured Concrete Wall



Classic Limestone Wall



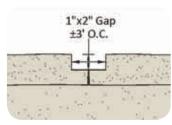
Classic Sandstone Wall



Manufactured Concrete Cap



Natural Limestone Cap



Natural Stone Cap Detail

Railing



North and Central Edge Rail



Hand Rail (Stainless Steel, Galvanized, or Brushed Aluminum)



Fall Protection Rail (Stainless Steel, Galvanized, or Brushed Aluminum)

HISTORIC NORTH CAMPUS: DESIGN PALETTE

Furnishings



Bamboo Bench without Arms



Metal Bench



Bamboo Table and Chairs



Attached Table and Chairs



Movable Table and Chairs



Metal Umbrella



Solar Charging Station with Table



Picnic Table



Bike Rack



Skateboard Rack



Big Belly Trash/Recycling Receptacles



Metal Trash/Recycling Receptacles



QR Code Informational Signage

Lighting



Pedestrian LED Lighting



Parking Area LED Lighting

Planting - Tree Canopy









DECIDUOUS TREES

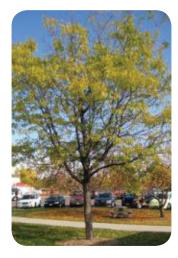
- • Autumn Blaze Maple, Acer freemanii 'Autumn Blaze'
- Sienna Glen Maple, Acer freemanii "Sienna Glen"
- Amur or Ginnala Maple, Acer ginnala 'Flame'
- Tatarian Maple, Acer tataricum
- Hot Wings Maple, Acer tataricum 'Hot Wings'
- Autumn Brilliant Serviceberry, Amelanchier x grandiflora 'Autumn Brilliance'
 - Western Hackberry, Celtis occidentalis
- Thornless Cockspur Hawthorn, Crataegus crus-galli 'Inermis'
- Crimson Cloud Hawthorn, Crataegus laevigata 'Crimson Cloud'
- Washington Hawthorn, Crataegus phaenophyrum
- Autumn Purple Ash, Fraxinus Americana 'Autumn Purple'
- Marshall Ash, Fraxinus pennsylvanica 'Marshall'
- Patmore Ash, Fraxinus pennsylvanica 'Patmore'
- Imperial Honeylocust, Gleditsia triancanthos 'Imperial'
- Shademaster Honeylocust, Gleditsia triancanthos 'Shademaster'
- Espresso Kentucky Coffee Tree, Gymnocladus dioicus 'Espresso-JFS'
- Quaking Aspen, Populus tremuloides
- Kwanzan Flowering Cherry, Prunus serrulata 'Kwanzan'
- • Amur Chokecherry, Prunus maackii
- Mayday Tree, Prunus padus
- Flowering Cherry, Prunus sargentii
 - Swamp White Oak, Quercus bicolor

DECIDUOUS TREES CONTINUED

- • Red Oak, Quercus borealis
- Northern Red Oak, Quercus rubra
- Shumard Oak, Quercus shumardii
- Black Locust, Robinia pseudoacacia
- European Mountain Ash, Sorbus acuparia
 - • Princeton Elm, Ulmus Americana 'Princeton'
- Triumph Elm, Ulmus 'Morton'
- • Accolade Elm, Ulmus japonica x wilsoniana 'Morton'

Planting - Tree Canopy Continued









EVERGREEN TREES

- White Fir, Abies concolor
- ● Engelmann Spruce, Picea engelmannii
- ● Colorado Blue Spruce, Picea pungens glauca
- Baby Blue Eyes Spruce, Picea pungens 'Baby Blue Eyes'
- Bakeri Spruce, Picea Pungens 'Bakeri'
- ● Fat Albert Spruce, Picea Pungens 'Fat Albert'
- ● Limber Pine, *Pinus flexilis*
- Vanderwolf's Pyramid Limber Pine, Pinus flexilis 'Vanderwolf's Pyramid'
- Ponderosa Pine, Pinus ponderosa
- Douglas Fir, Pseudotsuga menziesii
- Rocky Mountain Douglas Fir, Pseudotsuga menziesii var glauca
- ● Giant Sequoia, Sequoidendron giganteum

Planting - Shrubs



DECIDUOUS SHRUBS

- Saskatoon Serviceberry, Amelanchier alnifolia
- Shadblow Serviceberry, Amelanchier canadensis
- Utah Serviceberry, Amelanchier utahensis
- Dwarf Iroquois Beauty Chokeberry, Aronia melanocarpa 'Iroquois Beauty'
 - • Blue Mist Spirea, Caryopteris x clandonensis 'Blue Mist'
 - Dark Knight Blue Mist Spirea, Caryopteris clandonensis 'Dark Knight'
 - First Choice Blue Mist Spirea, Caryopteris clandonensis 'First Choice'
 - • Ivory Halo Dogwood, Cornus sericea 'Ivory Halo'
 - • Arctic Fire Dogwood, Cornus sericea 'Arctic Fire'
 - Isanti Dogwood, Cornus sericea 'Isanti'
 - Kelsey Dogwood, Cornus sericea 'Kelseyi'
 - Cranberry Cotoneaster, Cotoneaster apiculatus
 - Coral Beauty Cotoneaster, Cotoneaster damerii 'Coral Beauty'
 - • Rock Cotoneaster, Cotoneaster horizontalis
 - ● Lodense Privet, Ligustrum vulgare 'Lodense'
 - Twinberry Honeysuckle, Lonicera ivolucrata
- Arnold's Red Honeysuckle, Lonicera tatarica 'Arnold's Red'
 - Dwarf Snowflake Mockorange, Philadelphus x virginalis 'Dwarf Snowflake'
 - Shrubby Cinquefoil, *Potentilla fruticosa*
 - Dakota Sunspot Potentilla, Potentilla fruticosa 'Dakota Sunspot'
 - Jackman Potentilla, Potentilla fruticosa 'Jackmanii'

DECIDUOUS SHRUBS CONTINUED

- Western Sand Cherry, Prunus besseyi
- Creeping Sand Cherry, Prunus besseyi 'Pawnee Buttes'
- • Pink Flowering Almond, Prunus glandulosa 'Rosa Plena'
- Nanking Cherry, Prunus tomentosa
 - • Dwarf Fragrant Sumac, Rhus aromatica 'Gro-Low'
 - Autumn Amber Sumac, Rhus trilobata 'Autumn Amber'
- Alpine Currant, Ribes alpinum
- Golden Currant, Ribes aureum
- Champlain Rose, Rosa 'Champlain'
- Persian Yellow Rose, Rosa foetida 'Persiana'
- Anthony Waterer Spirea, Spiraea japonica 'Anthony Waterer'
- Little Princess Spirea, Spiraea japonica 'Little Princess'
- Magic Carpet Spirea, Spiraea japonica 'Magic Carpet'
- Shirobana Spirea, Spiraea japonica 'Shirobana'
 - • Red Coralberry, Symphoricarpos orbiculatus
 - Mountain Snowberry, Symphoricarpos oreophilus
 - Pink Snowberry, Symphoricarpos x doorenbosii 'Magic Berry'
- Miss Kim Dwarf Lilac, Syringa patula 'Miss Kim'
- Bloomerang Purple Lilac, Syringa x Bloomerang
- ● Burkwood Viburnum, *Viburnum x burkwoodii*
- Arrowwood Viburnum, Viburnum dentatum
- Compact European Cranberrybush, Viburnum opulus 'Compactum'
 - Dwarf European Cranberrybush, Viburnum opulus 'Nanum'
 - Snowball Viburnum, Viburnum opulus 'Roseum'

Planting - Shrubs Continued

DECIDUOUS SHRUBS CONTINUED

- • Koreanspice Viburnum, Viburnum x carlesii
- Compact American Cranberrybush, Viburnum trilobum 'Baily Compact'

EVERGREEN SHRUBS

- Common Juniper, Juniperus communis
- Alpine Carpet Juniper, Juniperus communis 'Alpine Carpet'
- Green Carpet Juniper, Juniperus communis 'Green Carpet'
- • Blue Chip Juniper, Juniperus horizontalis 'Icee Blue'
- ● Icee Blue Juniper, Juniperus horizontalis 'Wiltonii'
- Blue Rug Juniper, Juniperus horizontalis 'Wiltonii'
- • • Mini Arcadia Juniper, Juniperus sabina 'Mini Arcadia'
- ● Buffalo Juniper, Juniperus sabina 'Buffalo'
- Scandia Juniper, Juniperus sabina 'Scandia'
- ■ Tammy Juniper, Juniperus sabina 'Tamariscifolia'
- Blue Star Juniper, Juniperus squamata
- Oregon Grape Holly, Mahonia aquifolium
- Compact Oregon Grape Holly, Mahonia aquifolium 'Compacta'
- Mountain Lover, Pachystima myrsinites
- Spreading Norway Spruce, Picea abies 'Elegans'
- Bird's Nest Spruce, Picea abies 'Nidiformis'
- Mesa Verde Spruce, Picea pungens 'Mesa Verde'
- Miniature Mugo Pine, Pinus mugo 'Mops'
- ● Dwarf Mugo Pine, Pinus mugo pumillo
- • Slowmound Mugo Pine, Pinus mugo 'Slowmound'

Planting - Grasses

















ORNAMENTAL SINGLE SPECIMENS

- Big Bluestem, Andropogon gerardii
- Karl Foerster Feather Reed Grass, Calamagrostis acutiflora 'Karl Foerster'
- Variegated Feather Reed Grass, Calamagrostis acutiflora 'Overdam'
- • Korean Feather Reed Grass, Calamagrostis brachytricha
- Western Sedge, Carex occidentalis
- ● Blue Fescue, *Festuca glauca*
- • Boulder Blue Fescue, Festuca glauca 'Boulder Blue'
- • Elijah Blue Fescue, Festuca glauca 'Elijah Blue'
- ● Idaho Blue Fescue, Festuca idahoensis
- Siskiyou Blue Idaho Fescue, Festuca idahoensis 'Siskiyou Blue'
- ● Blue Sheep Fescue, Festuca ovina glauca
- Blue Avena Grass, Helictotrichon sempervirens
 - • Maiden Grass, Miscanthus sinensis 'Gracilimus'
 - • Flame Grass, Miscanthus sinensis 'Purpurascens'
 - Variegated Maiden Grass, Miscanthus sinensis 'Variegatus'
 - Heavy Metal Switch Grass, Panicum virgatum 'Heavy Metal'
 - • Red Switch Grass, Panicum virgatum 'Rotsrahlbush'
 - Shenandoah Switch Grass, Panicum virgatum 'Shenandoah'

RIPARIAN ORNAMENTAL SPECIMENS FOR LINEAR OR MEANDERING PLD'S (NOT BASINS)

Big Bluestem, Andropogon gerardii

RIPARIAN ORNAMENTAL SPECIMENS CONTINUED

- Karl Foerster Feather Reed Grass, Calamagrostis acutiflora 'Karl Foerster'
- Variegated Feather Reed Grass, Calamagrostis acutiflora 'Overdam'
- Western Sedge, Carex occidentalis
 - Maiden Grass, Miscanthus sinensis 'Gracilimus'
- Variegated Maiden Grass, Miscanthus sinensis 'Variegatus'
- Switchgrass, Panicum virgatum
- Heavy Metal Switch Grass, Panicum virgatum 'Heavy Metal'
- Red Switch Grass, Panicum virgatum 'Rotsrahlbush'
- Shenandoah Switch Grass, Panicum virgatum 'Shenandoah'

RIPARIAN GRASS BLEND FOR PLD BASINS

RIPARIAN GRASSES - SEASONAL MOISTURE

- Blue Grama, Bouteloua gracillas
- Arizona Fescue, Festuca arizonica
- Deergrass, Muhlenbergia rigens
- Spiked Muhly, Muhlenbergia wrightii

RIPARIAN GRASSES - YEAR ROUND MOISTURE (TO BE ADDED TO GRASSES LISTED ABOVE)

- Water Sedge, Carex aquatillis
- Smallwinged Sedge, Carex microptera

RIPARIAN PERENNIALS

- Western Blue Flag, Iris missouriensis
- • Alkali Checkerbloom, Sidalcea neomexicana

Planting - Grasses Continued

TALL MEADOW MIX

GRASSES

- Blue Grama, Bouteloua gracillas
- Pine Dropseed, Blepharoneuron trichloepis
- Side Oats Grama, Bouteloua curtipendula
- Arizona Fescue, Festuca arizonica
- Prairie Junegrass, Koeleria macrantha
- Deer Grass, Muhlenbergia rigens
- Switchgrass, Panicum virgatum

PERENNIALS

- Double Bubblemint Hyssop, Agastache cana 'Double Bubble Mint'
- Purple Coneflower, Echinacea purpurea
- Rocky Mountain Pensemon, Penstemon strictus

SHORT MEADOW MIX

GRASSES

- Blue Grama, Bouteloua gracillas
- Idaho Blue Fescue, Festuca idahoensis
- Sheep's Fescue, Festuca ovina
- Mountain Muhly, Muhlenbergia montana
- Muttongrass, Poa fendleriana
- Sand Dropseed, Sporobolus crytandrus
- Buffalo Grass, Bouteloua dactyloides (Add if high traffic area)

PERENNIALS

Rocky Mountain Pensemon, Penstemon strictus

BLUEGRASS BLEND

- Langara
- America
- Granite
- Blue Velvet

Planting - Perennials, Groundcovers, and Vines













PERENNIALS

- Greek Yarrow, Achillea ageratifolia
- Coronado Hyssop, Agastache aurantiaca
- Double Bubblemint Hyssop, Agastache cana 'Double Bubble Mint'
- Sonoran Sunset Hyssop, Agastache cana 'Sinning'
- Sunset Hyssop, Agastache rupestris
- Rocky Mountain Columbine, Aquilegia caerulea
- Golden Columbine, Aquilegia chrysantha
- Red Columbine, Aquilegia desertorum
 - Dwarf Blue Fall Aster, Aster novi-belgii 'Professor Kippenburg'
 - Winecups, Callirhoe involucrata
 - Sundrops, Calylophus hartwegii
- Bluebells, Campanula rotundifolia
- Red Valerian, Centranthus rubber
- Snow in Summer, Cerastium tomentosum
- Plumbago, Ceratostigma plumbaginoides
- Western Virgin's Bower, Clematis liquisticifolia
- Lanceleaf Coreopsis, Coreopsis lanceolata
- Summer Nights Dwarf Delphinium, Delphinium grandiflorum 'SummerNights'
- Purple Coneflower, Echinacea purpurea
- White Swan Coneflower, Echinacea purpurea 'White Swan'
- PowWow Wild Berry Coneflower, Echinacea purpurea 'PowWow Wild Berry'
- PowWow White Coneflower, Echinacea purpurea 'PowWow White'

PERENNIALS CONTINUED

- Aspen Fleabane, Erigeron sp.
- Dwarf Blanket Flower, Gaillardia grandiflora 'Arizona Sun'
- Burgundy Blanket Flower, Gaillardia grandiflora 'Burgundy'
- Dwarf Blanket Flower, Gaillardia grandiflora 'Goblin'
- Sweet Woodruff, Galium odoratum
- Cambridge Geranium, Geranium x cantabrigiense
- Johnson's Blue Geranium, Geranium 'Johnson's Blue'
- • Purple Cransebill, Geranium caespitosum
- Baja Daylily, Hemerocallis 'Baja'
- Frans Hals Daylily, Hemerocallis 'Frans Hals'
- Stella d'Oro Daylilly, Hemerocallis Stella d'Oro
- • Red Coral Bells, Heuchera sanguineum 'Splendens'
- Bearded Iris, Iris x germanica cultivars
- Deep Blue Lavender, Lavandula angustofolia 'Hidcote'
- English Lavender, Lavandula angustifolia 'Munstead'
- Fat Spike Lavender, Lavandula x intermedia 'Grosso'
- Provence Lavender, Lavandula x intermedia 'Provence'
 - Compact Shasta Daisy, Leucanthemum superbum 'Alaska'
- Mixed Lupine, Lupinus 'Russell Hybrids'
 - Red Bee-Balm, Monarda cambridge 'Scarlet'
 - Petite Wonder Dwarf Beebalm, Monarda didyma 'Petite Wonder'
 - Kit Kat Catmint, Nepeta faassenii 'Kit Cat'
 - Select Blue Catmint, Nepeta hybrid 'Select Blue'
 - Walkers Low Catmint, Nepeta x faassenii 'Walker's Low'

Planting - Perennials, Groundcovers, and Vines Continued

PERENNIALS CONTINUED

- New Mexico Primrose, *Oenothera berlandieri*
- Tufted Evening Primrose, Oenothera caespitosa
- Shimmer Evening Primrose, Oenothera fremontii 'Shimmer'
 - Missouri Evening Primrose, Oenothera 'Missouriensis'
- Orange Oriental Poppy, Papaver orientale 'Brilliant'
 - Virginia Creeper, Parthenocissus Quinquefolia
- Pike's Peak Beardtongue, Penstemon mexicali 'Pike's Peak'
- Red Rocks Beardtongue, Penstemon mexicali 'Red Rocks'
 - Rocky Mountain Penstemon, Penstemon strictus
- Blue Creeping Phlox, Phlox sublata 'Blue'
- Red Creeping Phlox, Phlox sublata 'Red'
- Creeping Cinquefoil, Potentilla neumannia
 - Scarlet Cinquefoil, Potentilla thurberi
 - • Red Prairie Coneflower, Ratibida columnifera 'Red'
 - Yellow Prairie Coneflower, Ratibida columnifera 'Yellow'
 - Black-Eyed Susan, Rudbeckia fulgida 'Goldsturm'
- May Night Salvia, Salvia nemorosa
- Rock Soapwort, Saponaria ocymoides 'Splendens'
- Flowerless Lamb's Ears, Stachys byzantine 'Silver Carpet'
- Partrige Feather, Tanacetum denastum
- Mountain Meadow Rue, Thalictrum fendleri
- Red Creeping Thyme, Thymus praecox 'Coccineus'
- Pink Chintz Creeping Thyme, Thymus praecox 'Pink Chintz'
- Turkish Speedwell, Veronica liwanensis
 - Blue Spike Speedwell, Veronica spicata 'Tall Blue'
 - Sunny Border Blue Speedwell, Veronica 'Sunny Border Blue'
- Canyon Grape, Vitis arizonica
 - Orange Carpet Hummingbird Flower, Zaushneria garrettii 'Orange Carpet'

EVERGREEN PERENNIAL GROUNDCOVERS

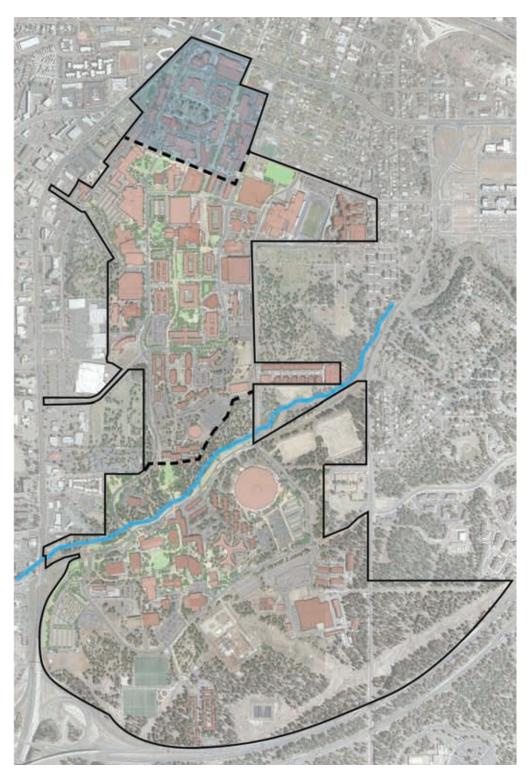
- Kinnikinnick, Arctostaphylos uva ursi
- English Ivy, Hedera helix
- • Prairie Smoke, Geum triflorum
- • Red Coral Bells, Heuchera sanguineum 'Splendens'
- Evergreen Candy Tuft, Iberis sempervirens
- • Hall's Honeysuckle, Lonicera japonica 'Halliana'
- Creeping Mahonia, Mahonia repens
- Mountain Lover, Paxistima myrsinites
- ● Mat Penstemon, Penstemon linaroides
- • Pineleaf Penstemon, Penstemon pinifolius
- Yellow Pineleaf Penstemon, Penstemon pinifolius 'Mersea Yellow'
- ● Wall Germander, Teucreum chamaedrys
- Woolly Thyme, Thymus lanuginous
- • Allioni Speedwell, Veronica allionii
- • Crystal River Speedwell, Veronica Crystal River
- Woolly Creeping Speedwell, Veronica pectinata
- Bowles Periwinkle, Vinca minor 'Bowles'

VINES

- • Fiveleaf Akebia, Akebia quinata
- White-Flowered Chocolate Vine, Akebia quinata 'Shirobana'
- Western Virgin's Bower, Clematis ligusticifolia
- • English Ivy, Hedera helix
- Arizona Honeysuckle, Lonicera arizonica
- • Hall's Honeysuckle, Lonicera japonica 'Halliana'
- Virginia Creeper, Parthenocissus Quinquefolia
- Canyon Grape, Vitis arizonica

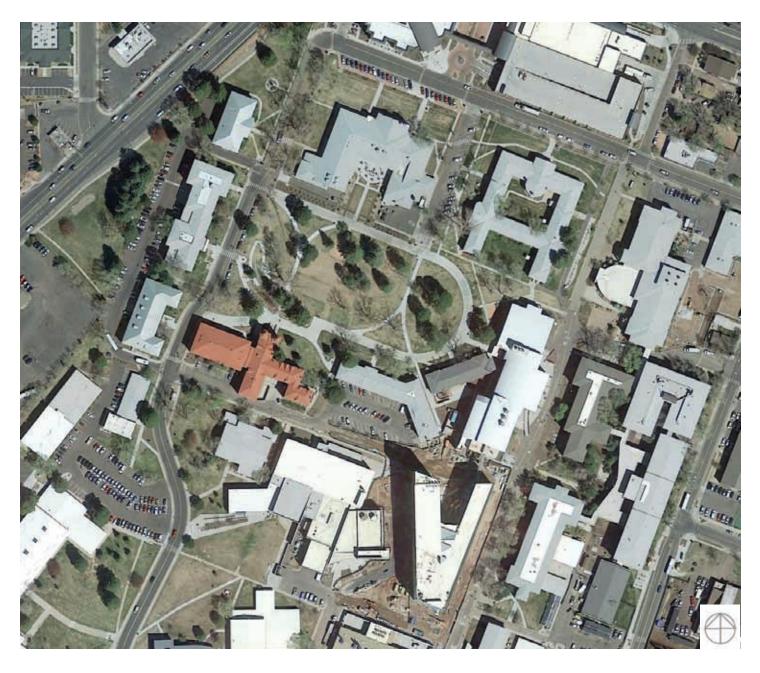
HISTORIC NORTH CAMPUS

Concept Designs



NORTHERN ARIZONA UNIVERSITY

EXISTING CONDITIONS OVERVIEW

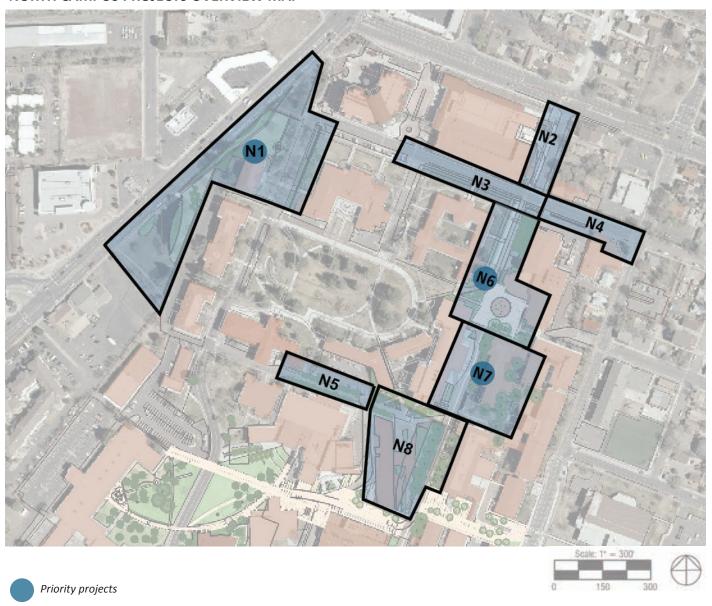


NORTHERN ARIZONA UNIVERSITY

PROPOSED IMPROVEMENTS OVERVIEW



NORTH CAMPUS PROJECTS OVERVIEW MAP



NORTH CAMPUS OBJECTIVE

Enhance the historic heritage of NAU and the classical character by applying traditional and formal campus design principles for quadrangles, gardens, pedway, and other exterior spaces.

NORTH CAMPUS GUIDING PRINCIPLES

- 1. A campus quadrangle that is spatially defined by classical architecture provides a strong historic campus identity.
- 2. Mature signature trees enhance the historic campus environment and provide a Campus legacy.
- 3. A simple ground plane consisting of turf and formal hedges compliments the traditional and historic character of the architecture.

PROJECT LIST

- N1. MILTON ROAD EDGE AND BLOME GARDENS
- N2. HUMPHREYS STREET ENTRY
- N3. DUPONT AVENUE EDGE
- N4. BEAVER STREET AND DUPONT AVENUE ENTRY
- N5. TORMEY AVENUE CONNECTOR
- N6. SCIENCE PLAZA AND PEDWAY
- N7. PEDWAY AND ARBORETUM
- N8. SCIENCE AND HEALTH BUILDING / PEDWAY

N1: MILTON ROAD EDGE AND BLOME GARDENS



N1: MILTON ROAD EDGE AND BLOME GARDENS

Design Concept:

The Milton Road Edge and Blome Gardens are designed to embrace the traditional and formal aesthetics of Northern Arizona University through the use of high quality and well-crafted materials.

Project Objectives:

- Enhance the visual experience of the campus edge when viewed from vehicular traffic on Milton Road.
- Improve campus identity by providing NAU monument identity signage.
- Provide more functional and attractive gardens that celebrate the historic character of North Campus.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- Α. 3' high classic sandstone retaining wall with natural limestone cap*
- В. 2' high freestanding classic limestone wall *
- C. Campus monument identity signage, 4' tall classic sandstone wall with natural limestone cap*
- D Existing sculpture to remain
- Ε. PLD (Porous Landscape Detention) with riparian grasses and accent perennials*
- F. Reconditioned bluegrass turf blend lawn*
- G. Concrete paving natural gray with light broom finish*
- Concrete steps with light broom finish* Η.
- Ornamental flowering tree grove* Ι.
- J. 3' high shrub hedge row screen*
- Short grass meadow mix* Κ.
- Tall grass meadow mix* L.
- M. Existing deciduous tree(s) to remain
- N. Existing evergreen tree(s) to remain
- Ο. Add 3' wide landscape shoulder at existing sidewalk and remove handrail
- P. Low privet hedge*
- Q. Perennial garden*
- Ornamental grass border* R.
- Relocate bus stop and integrate with site walls, new paving S.
- T. Infill shrub/ perennial beds with higher plant density*
- U. Compacted crusher fines path with stabilizer
- Salt tolerant perennials adjacent to curb* V.

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.



Кеу Мар

N1: MILTON ROAD EDGE AND BLOME GARDENS



Existing view of Milton Road Edge

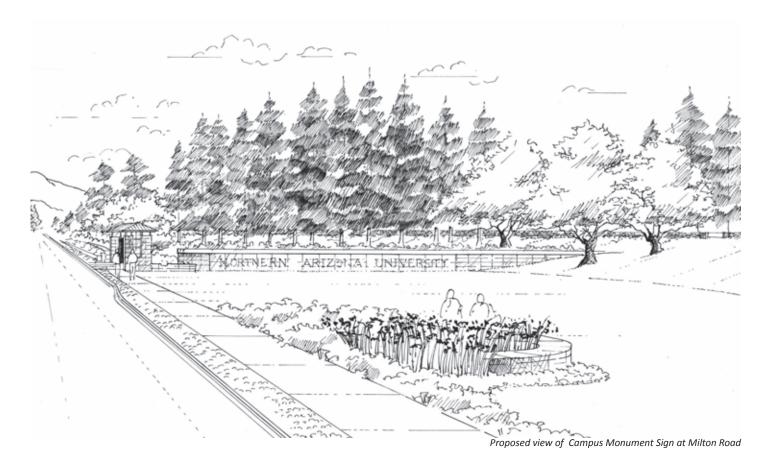


Proposed view of Milton Road Edge

N1: MILTON ROAD EDGE AND BLOME GARDENS



Existing view on Milton Road



NORTHERN ARIZONA UNIVERSITY

N2: HUMPHREYS STREET ENTRY



Design Concept:

The Humphreys Street entrance is one of the most significant pedestrian routes to Campus from downtown Flagstaff. The design for this important gateway creates a recognizable arrival to Historic North Campus.

Project Objectives:

- 1. Improve visual characteristics of the campus edge.
- Create a distinct sense of arrival to the Historic North Campus.
- 3. Improve pedestrian safety and clarify vehicular and bicycle modes of transportation.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions

*(Refer to Principles and Design Standards)

- A. 2' high site wall with campus sign
- B. Re-align sidewalk
- C. New curb and gutter
- D. Maintain service access
- E. Perennial/ shrub bed
- F. Bluegrass turf w/ shade trees
- G. Concrete paving, sand finish or unit paving*
- H. Concrete paving natural gray*
- I. NAU logo sandblasted in paving w/ color stain

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.



Кеу Мар

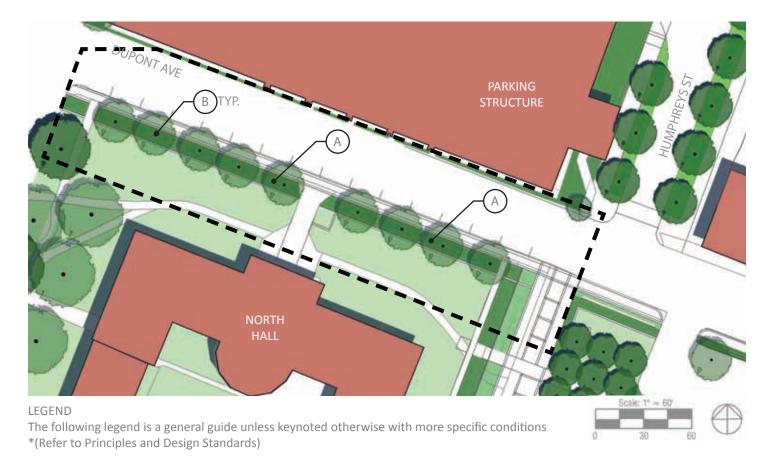
N3: DUPONT AVENUE EDGE

Design Concept:

The design of DuPont Avenue creates a distinct and formally planted edge to 'Historic North Campus'. The hedge/tree row establishes a distinct threshold that instills a sense of ceremony to entering the campus from Downtown.

Project Objectives:

- Enhance the formal landscape characteristics of the Historic North Campus.
- Create a threshold into the Historic North Campus.
- Intensify the cultivated beds of the Historic North Campus.



Add shrubs, plant as monoculture and provide drip irrigation Α.







Кеу Мар

N4: BEAVER STREET AND DUPONT AVENUE ENTRANCE

Design Concept:

The design for this important entry emphasizes the consistency and quality of the NAU experience. The scale and placement of materials emphasize and enhance the stature of the NAU brand.

Project Objectives:

- 1. Enhance the formal landscape characteristics of the Historic North Campus.
- 2. Enhance the stature of the NAU brand along its edges.
- 3. Improve the pedestrian experience and arrival sequence.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Move campus sign wall back from curb and add low shrub planting
- B. Add crusher fines path w/ stabilizer between walls

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.



Кеу Мар

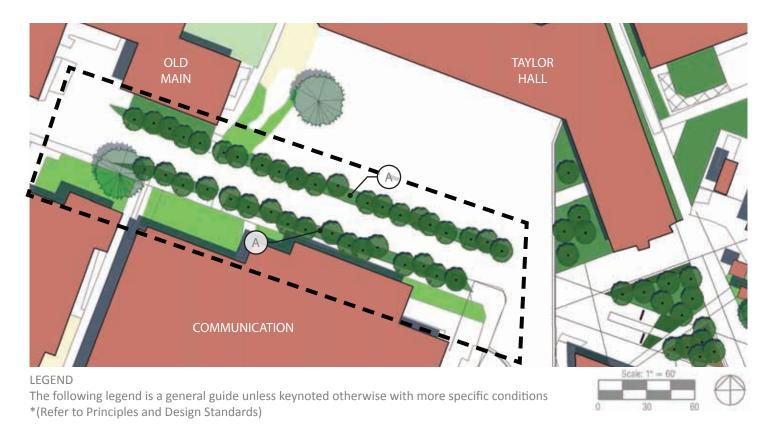
N5: TORMEY AVENUE CONNECTOR

Design Concept:

The design for Tormey Avenue amplifies the existing character of the vehicular and pedestrian route. The design envisions it as a Complete Street replete with pedestrian walks and amenities. These are defined by informal rows of aspen trees and a low shrub understory.

Project Objectives:

- Enhance the established aspen canopy that defines the north edge of the street.
- Improve the pedestrian character and walk-ability.



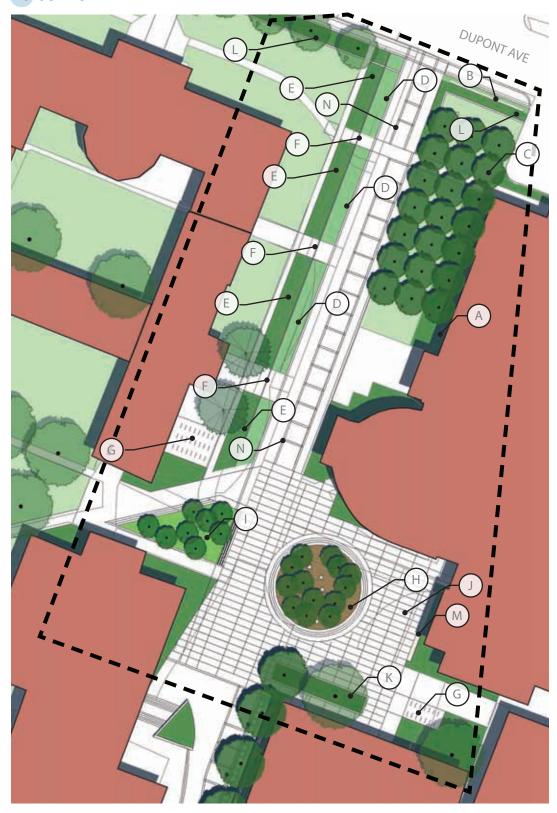
Under-plant new Aspen trees with low shrubs Α.

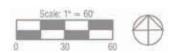
Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





N6: SCIENCE PLAZA AND PEDWAY





NORTHERN ARIZONA UNIVERSITY

N6: SCIENCE PLAZA AND PEDWAY

Design Concept:

The Science Plaza and Pedway serves many important roles for the NAU Campus. It creates a recognizable pedestrian threshold to Historic North Campus and establishes a pedestrian scale and structure in the landscape. This creates a strong sense of place and defines pedestrian and bicyclist movements throughout campus. From the north, the Science Plaza is the first pedestrian plaza/gathering destination along the Pedway that embodies the pioneering and innovative spirit of the NAU Campus.

Project Objectives:

- 1. Enhance the arrival sequence to Historic North Campus.
- 2. Create a grand sense of scale and clarity to the Historic North Campus edge.
- 3. Create a distinct, dynamic and comfortable place for students to gather, socialize, and study.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

PROJECT-SPECIFIC MATERIALS LEGEND

- A. Remove gravel mulch and add low shrubs*
- B. 2' high freestanding wall, classic sandstone with manufactured concrete or natural limestone cap*
- C. Bosque of single species shade trees*
- D. Remove lawn and add switchgrass in swale, plant full width*
- E. Add linear band of groundcover planting with concrete edger and drip irrigation*
- F. Replace existing asphalt paths with new concrete paving, maintain existing bridges
- G. Bike parking*
- H. Raised deck with concrete steps, Aspen grove, and movable tables and chairs*
- I. Raised Blue Grama planter with concrete steps and aspen grove
- J. Concrete paving with sand finish*
- K. Maintain existing trees, add low shrub planting and seat wall*
- L. Low shrub hedgerow*
- M. 18" high concrete seat wall, sand finish
- N. Existing Pedway to remain

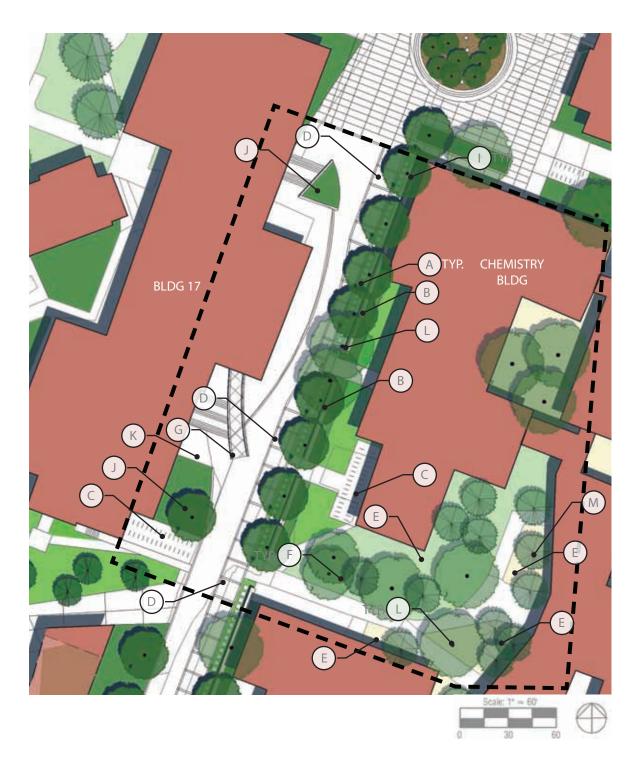
Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





Кеу Мар

N7: PEDWAY AND ARBORETUM



N7: PEDWAY AND ARBORETUM

Design Concept:

The design of the Pedway within Historic North Campus includes a distinct Elm tree-lined walk defined by linear seat walls, gardens and lawn areas. This linear corridor encourages people to sit, people-watch, walk, and bike all within a safe and clear environment. The Arboretum is a significant pedestrian destination that will be enhanced to feature the plant species native to this region. Pedestrian movements and amenities will be improved to encourage the use of this unique space.

Project Objectives:

- 1. Enhance Pedway experience by providing additional shade and seating along Pedway.
- 2. Increase visibility where bikes and pedestrians cross paths to reduce the risk of accidents.
- 3. Preserve and enhance the existing Arboretum.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. 3'x3' concrete stepping stones in turf*
- B. 18" high freestanding seat wall*
- C. Bike rack*
- D. Pedway*
- E. New native grass and shrub garden with mountain arboretum theme
- F. QR codes identifying tree species
- G. Existing ADA ramp, walls, steps to remain. Cut ramp wall near Pedway to increase visibility.
- H. Not used
- I. Elm trees*
- J. Perennial / Shrub bed*
- K. Concrete paving natural gray*
- L. Existing deciduous tree(s) to remain
- M. Existing evergreen tree to remain

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





Кеу Мар

N7: PEDWAY AND ARBORETUM



Existing view of Pedway



Proposed view of Pedway

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N8: SCIENCE AND HEALTH BUILDING AND PEDWAY



N8: SCIENCE AND HEALTH BUILDING AND PEDWAY

Design Concept:

The design marks an arrival to a place on campus where the new and modern meets the traditional and historic. This portion of the Pedway serves as a consistent and recognizable elm-lined edge to the Science and Health Building landscape. On the south side of the Sciences and Health Building is an important project called 'The Seam,' which functions as a major east-west connector through campus.

Project Objectives

- 1. Enhance Pedway experience and integrate with new Science and Health Building and The Seam.
- 2. Improve pedestrian connections to North Quad and along Tormey Ave.
- 3. Improve pedestrian places by utilizing existing shade trees at Liberal Arts Building.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Raised deck with steps, movable tables/ chairs, and Aspen trees
- B. Planting bed with woodland low height native shrub and perennial massing*
- C. Legacy tree glade
- D. Bluegrass blend lawn*
- E. 3'x3' CIP concrete stepping stones in bluegrass lawn
- F. 3' wide pre-cast concrete seatwall with sand finish set on CIP sonotube footings
- G. Maintain existing Elm trees
- H. Concrete Pedway design*
- Bike parking clusters*
- J. New concrete, natural gray with light broom finish paving*
- K. Aspen grove
- L. Evergreen trees*
- M. Electrical transformers/ above ground utility
- N. Not used
- O. 8' wide concrete paving w/ 2'x4' scoring pattern
- P. 4' tall hedge w/ ornamental grasses*
- Q. ADA compliant parking
- R. 18" wide manufactured concrete seatwall

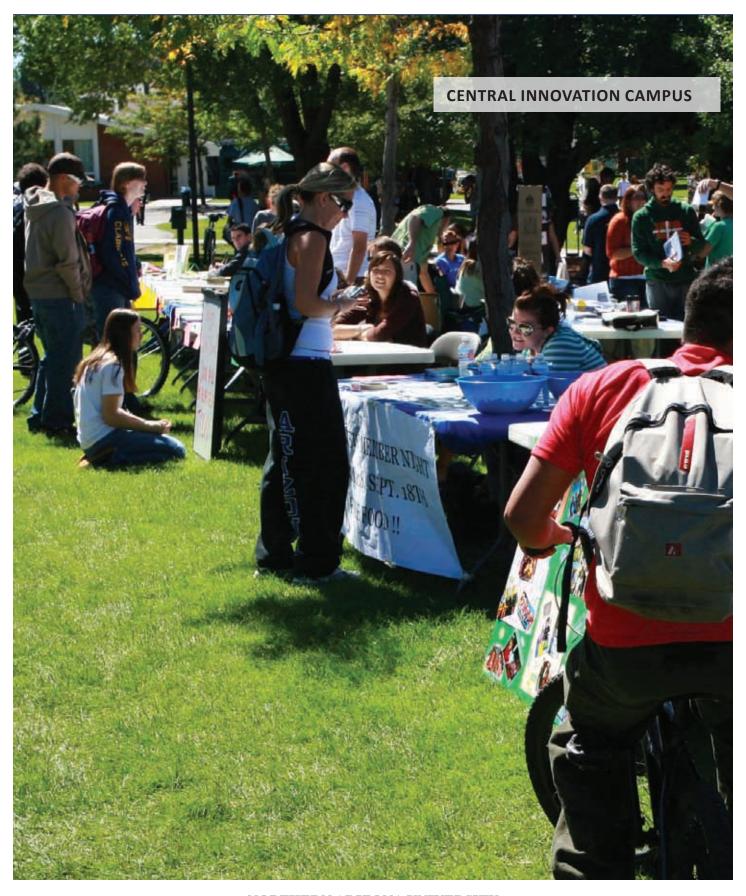
Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





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NORTHERN ARIZONA UNIVERSITY

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CENTRAL INNOVATION CAMPUS











Central Campus

OVERVIEW

Generally, campus development occurred from north to south. The majority of the structures within Central Campus were constructed in the 1950's and 1960's during the second major phase of campus development. The residential structures and landscape encompass a wide variety of styles and materials. As with the Historic North Campus, recent construction has also been woven into landscape.

Central Innovation Campus garners two distinct functions: it is the hub of social activity on the campus and it provides an important link between North and South Campuses. The timing and style of construction in Central Campus have created an eclectic character zone that has the potential to be the most expressive, artful and interesting as it pertains to developing a campus that fosters collegiality, creativity, innovation and leadership. The opportunity is to re-invent this portion of the campus landscape as highly social environment that maximizes the space available to the greatest extent possible for a wide variety of social activities, recreation, and learning. The second opportunity for Central Campus is to weave the native landscape of the Ponderosa Pine forest, dominant on South Campus with the manicured landscapes of Historic North Campus. For a successful transition to occur in this zone, the interplay of these landscape typologies will rely on simple material choices, well composed spaces that are shaped by or defined by this interplay, and the thoughtful inclusion of edges that separate the native plants from the cultivated (domesticated) plantings. In this landscape zone, the graphic or design quality should mirror the social objectives and carefully consider the articulation and expression of the weave characteristics to become a place where the landscape is both memorable and unique to the Northern Arizona University.

GUIDING PRINCIPLES

- 1. A creative environment promotes innovation, collegiality, and social interaction.
- 2. Design elements that are expressive, unique, and artful that will make the Central Campus a memorable experience.
- 3. Landscape character transition zones should incorporate a successful combination of native and domesticated landscape characteristics.

DESIGN PALETTE INTENT

The Design Palette is intended as a quick reference for materials, furnishings, and plantings in each Campus Zone. Please refer to 'Principles and Design Standards' for more detailed information..

Plantings

All plant photographs are courtesy of Keith Williamson with Little Valley Wholesale Nursery in Brighton, CO.

Seasonal Interest Plant Legend:

SpringSummerFallWinter

CENTRAL INNOVATION CAMPUS: DESIGN PALETTE

Design Aesthetic

Expressive, Innovative, Social











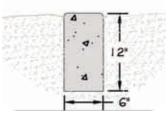
Hardscape







Concrete Paving Sand Finish



Concrete Edger



Scoring Patterns and Control Joints

Pavers



Open Pavers



Holland Pavers (Concrete Subbase)



Plankstone Pavers (Concrete Subbase)



Grass Pavers



Concrete Stepping Stones

CENTRAL INNOVATION CAMPUS: DESIGN PALETTE

Ground Plane



Wood Mulch (with 80% Planting Density)



Gravel Mulch - 1/2" Minus (with 80% Planting Density)



Crusher Fines Paving



Beach Sand (Special Areas)



Decking

Pathways



Solar Pathway



Crusher Fines Forest/Lawn Paths



Manufactured Concrete Stairs

Walls



Sand Finish Concrete Wall



Modern Limestone Wall



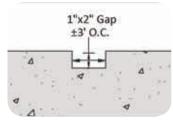
Modern Sandstone Wall



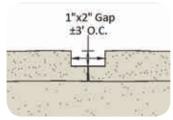
Mega-Tandem Retaining Wall



Sand Finish Concrete Cap



Sand Finish Concrete Cap Detail



Natural Stone Cap Detail

CENTRAL INNOVATION CAMPUS: DESIGN PALETTE

Railing



North and Central Edge Rail



Hand Rail (Stainless Steel, Galvanized, or Brushed Aluminum)



Fall Protection Rail (Stainless Steel, Galvanized, or Brushed Aluminum)

Furnishings



Bamboo Bench without Arms



Metal Bench



Bamboo Table and Chairs



Attached Table and Chairs



Movable Table and Chairs



Metal Umbrella



Solar Charging Station with Table



Picnic/Harvest Table



Bar Seating



Skateboard Bench



Concrete Skateboard Bench



Landscape Forms 'FLOR' Bench



Wood Deck Lounge Chair



Chaise Lounge



Adirondack Chair



Chammock











Metal Trash/Recycling Receptacles



QR Code Informational Signage

Lighting







Parking Area LED Lighting

Planting - Tree Canopy









DECIDUOUS TREES

- • Autumn Blaze Maple, Acer freemanii 'Autumn Blaze'
- Sienna Glen Maple, Acer freemanii "Sienna Glen"
- Amur or Ginnala Maple, Acer ginnala 'Flame'
- Tatarian Maple, Acer tataricum
- Hot Wings Maple, Acer tataricum 'Hot Wings'
- Autumn Brilliant Serviceberry, Amelanchier x grandiflora 'Autumn Brilliance'
 - Western Hackberry, Celtis occidentalis
- Thornless Cockspur Hawthorn, Crataegus crus-galli 'Inermis'
- Crimson Cloud Hawthorn, Crataegus laevigata 'Crimson Cloud'
- Washington Hawthorn, Crataegus phaenophyrum
- Autumn Purple Ash, Fraxinus Americana 'Autumn Purple'
- Marshall Ash, Fraxinus pennsylvanica 'Marshall'
- Patmore Ash, Fraxinus pennsylvanica 'Patmore'
- Imperial Honeylocust, Gleditsia triancanthos 'Imperial'
- Shademaster Honeylocust, Gleditsia triancanthos 'Shademaster'
- Espresso Kentucky Coffee Tree, Gymnocladus dioicus 'Espresso-JFS'
- Lanceleaf Cottonwood, Populus x acuminate
- Quaking Aspen, Populus tremuloides
- • Kwanzan Flowering Cherry, Prunus serrulata 'Kwanzan'
- Amur Chokecherry, Prunus maackii
- Mayday Tree, Prunus padus
- Flowering Cherry, Prunus sargentii

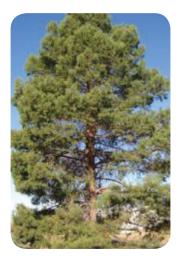
DECIDUOUS TREES CONTINUED

- Swamp White Oak, Quercus bicolor
- • Red Oak, Quercus borealis
- • Fastigate English Oak, Quercus robur 'Fastigiata'
- Northern Red Oak, Quercus rubra
- Shumard Oak, Quercus shumardii
- Purple Robe Locust, Robinia ambigua 'Purple Robe'
- Black Locust, Robinia pseudoacacia
- European Mountain Ash, Sorbus acuparia
 - • Princeton Elm, Ulmus Americana 'Princeton'
- Triumph Elm, Ulmus 'Morton'
- Accolade Elm, Ulmus japonica x wilsoniana 'Morton'

Planting - Tree Canopy Continued









EVERGREEN TREES

- White Fir, Abies concolor
- Engelmann Spruce, Picea engelmannii
- Colorado Blue Spruce, Picea pungens glauca
- Baby Blue Eyes Spruce, Picea pungens 'Baby Blue Eyes'
- ● Bakeri Spruce, Picea Pungens 'Bakeri'
- ● Fat Albert Spruce, Picea Pungens 'Fat Albert'
- ● Limber Pine, Pinus flexilis
- Vanderwolf's Pyramid Limber Pine, Pinus flexilis 'Vanderwolf's Pyramid'
- Ponderosa Pine, Pinus ponderosa
- Scotch Pine, Pinus sylvestris
- Douglas Fir, Pseudotsuga menziesii
- Rocky Mountain Douglas Fir, Pseudotsuga menziesii var glauca
- • Giant Sequoia, Sequoidendron giganteum

Planting - Shrubs













DECIDUOUS SHRUBS

- Saskatoon Serviceberry, Amelanchier alnifolia
- Shadblow Serviceberry, Amelanchier canadensis
- Utah Serviceberry, Amelanchier utahensis
 - Leadplant, Amorpha canescens
 - False Indigo, Amorpha fruticosa
- Dwarf Iroquois Beauty Chokeberry, Aronia melanocarpa 'Iroquois Beauty'
 - • Blue Mist Spirea, Caryopteris x clandonensis 'Blue Mist'
 - Dark Knight Blue Mist Spirea, Caryopteris clandonensis 'Dark Knight'
- First Choice Blue Mist Spirea, Caryopteris clandonensis 'First Choice'
- • Ivory Halo Dogwood, Cornus sericea 'Ivory Halo'
- Arctic Fire Dogwood, Cornus sericea 'Arctic Fire'
- Isanti Dogwood, Cornus sericea 'Isanti'
- Kelsey Dogwood, Cornus sericea 'Kelseyi'
- Cranberry Cotoneaster, Cotoneaster apiculatus
- Coral Beauty Cotoneaster, Cotoneaster damerii 'Coral Beauty'
- • Rock Cotoneaster, Cotoneaster horizontalis
- Mountain Spray, Holodiscus dumosus
- • Lodense Privet, Ligustrum vulgare 'Lodense'
- Twinberry Honeysuckle, Lonicera ivolucrata
- Arnold's Red Honeysuckle, Lonicera tatarica 'Arnold's Red'
 - Dwarf Snowflake Mockorange, Philadelphus x virginalis 'Dwarf Snowflake'
 - Shrubby Cinquefoil, Potentilla fruticosa

DECIDUOUS SHRUBS CONTINUED

- Dakota Sunspot Potentilla, Potentilla fruticosa 'Dakota Sunspot'
- Jackman Potentilla, Potentilla fruticosa 'Jackmanii'
- Western Sand Cherry, Prunus besseyi
- Creeping Sand Cherry, Prunus besseyi 'Pawnee Buttes'
- • Pink Flowering Almond, Prunus glandulosa 'Rosa Plena'
- Nanking Cherry, Prunus tomentosa
 - Dwarf Fragrant Sumac, Rhus aromatica 'Gro-Low'
 - • Rocky Mountain Sumac, Rhus glabra cismontana'
 - Three-leaf Sumac, Rhus trilobata
 - Autumn Amber Sumac, Rhus trilobata 'Autumn Amber'
 - Alpine Currant, Ribes alpinum
- Golden Currant, Ribes aureum
- Champlain Rose, Rosa 'Champlain'
- • Persian Yellow Rose, Rosa foetida 'Persiana'
 - Rugosa Rose, Rosa rugosa
 - Woods Rose, Rosa woodsii
 - Anthony Waterer Spirea, Spiraea japonica 'Anthony Waterer'
 - Little Princess Spirea, Spiraea japonica 'Little Princess'
- Magic Carpet Spirea, Spiraea japonica 'Magic Carpet'
- • Shirobana Spirea, Spiraea japonica 'Shirobana'
 - Red Coralberry, Symphoricarpos orbiculatus
 - Mountain Snowberry, Symphoricarpos oreophilus
 - Pink Snowberry, Symphoricarpos x doorenbosii 'Magic Berry'
- Miss Kim Dwarf Lilac, Syringa patula 'Miss Kim'
- Bloomerang Purple Lilac, Syringa x Bloomerang

Planting - Shrubs Continued

DECIDUOUS SHRUBS CONTINUED

- Burkwood Viburnum, Viburnum x burkwoodii
- Arrowwood Viburnum, Viburnum dentatum
- Compact European Cranberrybush, Viburnum opulus 'Compactum'
 - Dwarf European Cranberrybush, Viburnum opulus 'Nanum'
 - • Snowball Viburnum, Viburnum opulus 'Roseum'
- Koreanspice Viburnum, Viburnum x carlesii
- Compact American Cranberrybush, Viburnum trilobum 'Baily Compact'

EVERGREEN SHRUBS

- • Fernbush, Chamaebatiaria millefolium
- Common Juniper, Juniperus communis
- Alpine Carpet Juniper, Juniperus communis 'Alpine Carpet'
- Green Carpet Juniper, Juniperus communis 'Green Carpet'
- Blue Chip Juniper, Juniperus horizontalis 'Icee Blue'
- • Icee Blue Juniper, Juniperus horizontalis 'Wiltonii'
- • Blue Rug Juniper, Juniperus horizontalis 'Wiltonii'
- • Mini Arcadia Juniper, Juniperus sabina 'Mini Arcadia'
- ● Buffalo Juniper, Juniperus sabina 'Buffalo'
- • Scandia Juniper, Juniperus sabina 'Scandia'
- • Tammy Juniper, Juniperus sabina 'Tamariscifolia'
- Blue Star Juniper, Juniperus squamata
- Oregon Grape Holly, Mahonia aquifolium
- Compact Oregon Grape Holly, Mahonia aquifolium 'Compacta'
- Mountain Lover, Pachystima myrsinites
- Spreading Norway Spruce, Picea abies 'Elegans'
- Bird's Nest Spruce, Picea abies 'Nidiformis'
- Mesa Verde Spruce, Picea pungens 'Mesa Verde'
- Miniature Mugo Pine, Pinus mugo 'Mops'
- ■ Dwarf Mugo Pine, Pinus mugo pumillo
- Slowmound Mugo Pine, Pinus mugo 'Slowmound'

Planting - Grasses



















ORNAMENTAL SINGLE SPECIMENS

- Big Bluestem, Andropogon gerardii
- Blonde Ambition Blue Grama Grass, Bouteloua 'Blonde Ambition'
- • Karl Foerster Feather Reed Grass, Calamagrostis acutiflora 'Karl Foerster'
- Variegated Feather Reed Grass, Calamagrostis acutiflora 'Overdam'
- • Korean Feather Reed Grass, Calamagrostis brachytricha
- Western Sedge, Carex occidentalis
- Blue Fescue, Festuca glauca
- Boulder Blue Fescue, Festuca glauca 'Boulder Blue'
- • • Elijah Blue Fescue, Festuca glauca 'Elijah Blue'
- • Idaho Blue Fescue, Festuca idahoensis
- • Siskiyou Blue Idaho Fescue, Festuca idahoensis 'Siskiyou Blue'
- Sheep Fescue, Festuca ovina
- Blue Sheep Fescue, Festuca ovina glauca
- Blue Avena Grass, Helictotrichon sempervirens
 - Maiden Grass, Miscanthus sinensis 'Gracilimus'
 - Flame Grass, Miscanthus sinensis 'Purpurascens'
 - Variegated Maiden Grass, Miscanthus sinensis 'Variegatus'
 - Yaku Jima Dwarf Maiden Grass, Miscanthus sinensis 'Yaku Jima'
 - Deer Grass, Muhlenbergia rigens
 - Heavy Metal Switch Grass, Panicum virgatum 'Heavy Metal'
 - • Red Switch Grass, Panicum virgatum 'Rotsrahlbush'

ORNAMENTAL SINGLE SPECIMENS CONTINUED

- Shenandoah Switch Grass, Panicum virgatum 'Shenandoah'
- Muttongrass, Poa fendleriana
- Little Bluestem, Schizachyrum scoparium
- Blaze Little Bluestem, Schizachyrum scoparium 'Blaze'
- • The Blues Bluestem, Schizachyrum scoparium 'The Blues'
- • Indian Grass, Sorghastrum nutans
- Alkali Sacaton, Sporobolus airoides

RIPARIAN ORNAMENTAL SPECIMENS FOR LINEAR OR MEANDERING PLD'S (NOT BASINS)

- Big Bluestem, Andropogon gerardii
- Karl Foerster Feather Reed Grass, Calamagrostis acutiflora 'Karl Foerster'
- Variegated Feather Reed Grass, Calamagrostis acutiflora 'Overdam'
- Western Sedge, Carex occidentalis
- Maiden Grass, Miscanthus sinensis 'Gracilimus'
- Variegated Maiden Grass, Miscanthus sinensis 'Variegatus'
- Switchgrass, Panicum virgatum
- Heavy Metal Switch Grass, Panicum virgatum 'Heavy Metal'
- • Red Switch Grass, Panicum virgatum 'Rotsrahlbush'
- Shenandoah Switch Grass, Panicum virgatum 'Shenandoah'

Planting - Grasses Continued

TALL MFADOW MIX

GRASSES

- Blue Grama, Bouteloua gracillas
- Pine Dropseed, Blepharoneuron trichloepis
- Side Oats Grama, Bouteloua curtipendula
- Arizona Fescue, Festuca arizonica
- Prairie Junegrass, Koeleria macrantha
- Deer Grass, Muhlenbergia rigens
- Switchgrass, Panicum virgatum

PERENNIALS

- Western Yarrow, Achillea millefolium 'Lanulosa'
- Double Bubblemint Hyssop, Agastache cana 'Double Bubble Mint'
- Purple Coneflower, Echinacea purpurea
- Native Blanket Flower, Gaillardia aristata
- Scarlet Gilia, Ipomopsis aggregata
- Blue Flax, Linum perenne
 - Silvery Lupine, Lupinus argenteus
 - Purple Aster, Machaeranthera canescens
 - Native Lavender Bee-Balm, Monarda fistulosa menthaefolia
 - Scarlet Bugler, Penstemon barbatus
 - Rocky Mountain Pensemon, Penstemon strictus

RIPARIAN GRASS BLEND FOR PLD BASINS

RIPARIAN GRASSES - SEASONAL MOISTURE

- Blue Grama, Bouteloua gracillas
- Arizona Fescue, Festuca arizonica
- Deergrass, Muhlenbergia rigens
- Spiked Muhly, Muhlenbergia wrightii

RIPARIAN GRASSES - YEAR ROUND MOISTURE

(TO BE ADDED TO GRASSES LISTED ABOVE)

- Water Sedge, Carex aquatillis
- Smallwinged Sedge, Carex microptera

RIPARIAN PERENNIALS

- Western Blue Flag, Iris missouriensis
- Native Lavender Bee-Balm, Monarda fistulosa menthaefolia
- Cutleaf Coneflower, Rudbeckia laciniata
- Alkali Checkerbloom, Sidalcea neomexicana

SHORT MEADOW MIX

GRASSES

- Blue Grama, Bouteloua gracillas
- Idaho Blue Fescue, Festuca idahoensis
- Sheep's Fescue, Festuca ovina
- Mountain Muhly, Muhlenbergia montana
- Muttongrass, Poa fendleriana
- Sand Dropseed, Sporobolus crytandrus
- Buffalo Grass, Bouteloua dactyloides (Add if high traffic area)

PERENNIALS

- Western Yarrow, Achillea millefolium 'Lanulosa'
- Wheeler's Wallflower. Ervsimum wheeleri
- Native Blanket Flower, Gaillardia aristata
- Gayfeather, Liatris punctata
- Kobold Gayfeather, Liatris spicata 'Kobold'
- Pretty Stoneseed, Lithospermum multiflorum
- Blue Flax, Linum perenne
 - Silvery Lupine, Lupinus argenteus
 - Purple Aster, Machaeranthera canescens
 - Coyote Mint, Monardella odoratissima
 - Scarlet Bugler, Penstemon barbatus
 - Rocky Mountain Penstemon, Penstemon strictus
 - Mexican Hat Coneflower, Ratibida columnifera

BLUEGRASS BLEND

- Langara
- America
- Granite
- Blue Velvet

Planting - Perennials, Groundcovers, and Vines



PERENNIALS

- Greek Yarrow, Achillea ageratifolia
- Western Yarrow, Achillea millefolium 'Lanulosa'
- Paprika Yarrow, Achillea millefolium 'Paprika'
- Sangria Yarrow, Achillea millefolium 'Sangria'
- Moonshine Yarrow, Achillea 'Moonshine'
- Coronado Hyssop, Agastache aurantiaca
- Double Bubblemint Hyssop, Agastache cana 'Double Bubble Mint'
- Sonoran Sunset Hyssop, Agastache cana 'Sinning'
- Sunset Hyssop, Agastache rupestris
- Rocky Mountain Columbine, Aquilegia caerulea
- Golden Columbine, Aquilegia chrysantha
- Red Columbine, Aquilegia desertorum
- Butterfly Weed, Asclepias tuberose
 - Dwarf Blue Fall Aster, Aster novi-belgii 'Professor Kippenburg'
- Basket of Golf Allysum, Aurinia saxatilis
 - Winecups, Callirhoe involucrata
- Sundrops, Calylophus hartwegii
- Bluebells, Campanula rotundifolia
- Red Valerian, Centranthus rubber
- Snow in Summer, Cerastium tomentosum
- • Plumbago, Ceratostigma plumbaginoides
- Western Virgin's Bower, Clematis ligusticifolia
- Lanceleaf Coreopsis, Coreopsis lanceolata
- Plains Coreopsis, Coreopsis tinctoria
 - Route 66 Coreopsis, Coreopsis verticillata 'Route 66'

PERENNIALS CONTINUED

- Summer Nights Dwarf Delphinium, Delphinium grandiflorum 'SummerNights'
- Tomato Soup Coneflower, Echinacea 'Tomato Soup'
- Purple Coneflower, Echinacea purpurea
- White Swan Coneflower, Echinacea purpurea 'White Swan'
- PowWow Wild Berry Coneflower, Echinacea purpurea 'PowWow Wild Berry'
- PowWow White Coneflower, Echinacea purpurea 'PowWow White'
- Aspen Fleabane, Erigeron sp.
- Western Wallflower, Erysimum capitatum
 - Wheeler's Wallflower, Erysimum wheeleri
- Wild Strawberry, Fragaria ovalis
 - Native Blanket Flower, Gaillardia aristata
 - Dwarf Blanket Flower, Gaillardia grandiflora 'Arizona Sun'
 - Burgundy Blanket Flower, Gaillardia grandiflora 'Burgundy'
 - Dwarf Blanket Flower, Gaillardia grandiflora 'Goblin'
- Cambridge Geranium, Geranium x cantabrigiense
 - White Whirling Butterflies, Gaura lindheimeri
 - Pink Whirling Butterflies, Gaura lindheimeri 'Pink Cloud'
 - Johnson's Blue Geranium, Geranium 'Johnson's Blue'
 - Purple Cransebill, Geranium caespitosum
 - • White Cranesbill, Geranium richardsonii
 - Baja Daylily, Hemerocallis 'Baja'
 - Frans Hals Daylily, Hemerocallis 'Frans Hals'

Planting - Perennials, Groundcovers, and Vines Continued

PERENNIALS CONTINUED

- Stella d'Oro Daylilly, Hemerocallis Stella d'Oro
- • Red Coral Bells, Heuchera sanguineum 'Splendens'
 - Scarlet Gilia, Ipomopsis aggregata
- Bearded Iris, Iris x germanica cultivars
- Deep Blue Lavender, Lavandula angustofolia 'Hidcote'
- English Lavender, Lavandula angustifolia 'Munstead'
- Fat Spike Lavender, Lavandula x intermedia 'Grosso'
- Provence Lavender, Lavandula x intermedia 'Provence'
- Compact Shasta Daisy, Leucanthemum superbum 'Alaska'
- Gayfeather, Liatris punctata
- Kobold Gayfeather, Liatris spicata 'Kobold'
- Blue Flax, Linum perenne
 - Pretty Stoneseed, Lithospermum multiflorum
 - Silvery Lupine, Lupinus argenteus
- Mixed Lupine, Lupinus 'Russell Hybrids'
 - Purple Aster, Machaeranthera canescens
 - Red Bee-Balm, Monarda cambridge 'Scarlet'
 - Petite Wonder Dwarf Beebalm, Monarda didyma 'Petite Wonder'
 - Native Lavender Bee-Balm, Monarda fistulosa menthaefolia
 - Coyote Mint, Monardella odoratissima
 - Kit Kat Catmint, Nepeta faassenii 'Kit Cat'
 - Select Blue Catmint, Nepeta hybrid 'Select Blue'
 - Walkers Low Catmint, Nepeta x faassenii 'Walker's Low'
 - New Mexico Primrose, Oenothera berlandieri
 - Tufted Evening Primrose, Oenothera caespitosa
- Shimmer Evening Primrose, Oenothera fremontii 'Shimmer'
 - Missouri Evening Primrose, Oenothera 'Missouriensis'
 - Pale Evening Primrose, Oenothera pallida
 - Purple Oregano, Origanum laevigatum 'Herrenhausen'
 - Wonderland Poppy, Papaver nudicaule 'Wonderland'
- Orange Oriental Poppy, Papaver orientale 'Brilliant'
 - Virginia Creeper, Parthenocissus Quinquefolia
 - Scarlet Bugler, Penstemon barbatus
 - Sunset Crater Penstemon, Penstemon clutei
 - Large Flower Penstemon, Penstemon grandiflourus
- Pike's Peak Beardtongue, Penstemon mexicali 'Pike's Peak'

PERENNIALS CONTINUED

- Red Rocks Beardtongue, Penstemon mexicali 'Red Rocks'
 - Bridge's Penstemon, Penstemon rostriflorus
 - Rocky Mountain Penstemon, Penstemon strictus
- Blue Creeping Phlox, Phlox sublata 'Blue'
- Red Creeping Phlox, Phlox sublata 'Red'
- Creeping Cinquefoil, Potentilla neumannia
 - Scarlet Cinquefoil, Potentilla thurberi
 - Mexican Hat, Ratibida columnifera
 - Red Prairie Coneflower, Ratibida columnifera 'Red'
 - Yellow Prairie Coneflower, Ratibida columnifera 'Yellow'
 - Black-Eyed Susan, Rudbeckia fulgida 'Goldsturm'
 - May Night Salvia, Salvia nemorosa
 - Lavender Cotton, Santolina chamaecyparissus
 - Green Lavender Cotton, Santolina rosmarinifolia
 - Rock Soapwort, Saponaria ocymoides 'Splendens'
- Blue Pincushion Flower, Scabiosa caucasica
- • Flowerless Lamb's Ears, Stachys byzantine 'Silver Carpet'
- Partrige Feather, Tanacetum denastum
- Mountain Meadow Rue, Thalictrum fendleri
- Golden Banner, Thermopsis pinetorum
- Red Creeping Thyme, Thymus praecox 'Coccineus'
- Pink Chintz Creeping Thyme, Thymus praecox 'Pink Chintz'
- Turkish Speedwell, Veronica liwanensis
 - Blue Spike Speedwell, Veronica spicata 'Tall Blue'
 - Sunny Border Blue Speedwell, Veronica 'Sunny Border Blue'
- Canyon Grape, Vitis arizonica
 - Orange Carpet Hummingbird Flower, Zaushneria garrettii 'Orange Carpet'

Planting - Perennials, Groundcovers, and Vines Continued

EVERGREEN PERENNIAL GROUNDCOVERS

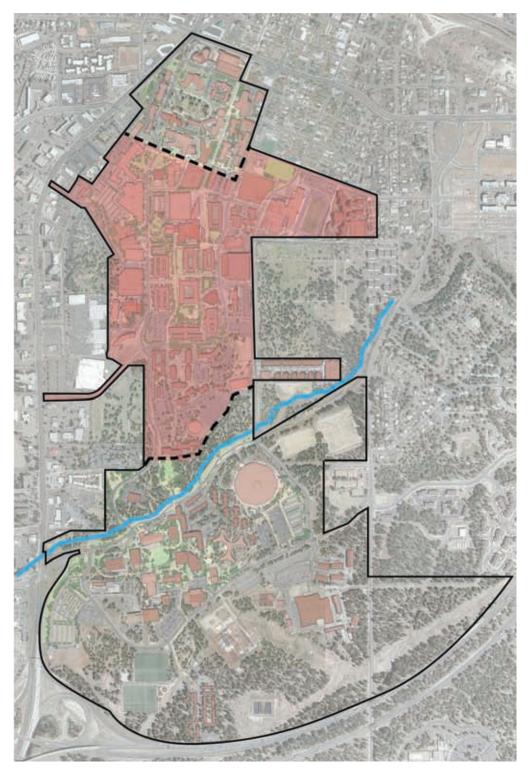
- • Littleleaf Pussytoes, Antennaria parvifolia
- Rosy Pussytoes, Antennaria rosea
- Kaibab Pussytoes, Antennaria rosulata
- ● Kinnikinnick, Arctostaphylos uva ursi
- • Prairie Smoke, Geum triflorum
- • Red Coral Bells, Heuchera sanguineum 'Splendens'
- • Evergreen Candy Tuft, *Iberis sempervirens*
- • Hall's Honeysuckle, Lonicera japonica 'Halliana'
- Creeping Mahonia, Mahonia repens
- Mountain Lover, Paxistima myrsinites
- Mat Penstemon, Penstemon linaroides
- • Pineleaf Penstemon, Penstemon pinifolius
- Yellow Pineleaf Penstemon, Penstemon pinifolius 'Mersea Yellow'
- Silver Lace Vine, Polygonum aubertii
- Wall Germander, Teucreum chamaedrys
- Woolly Thyme, Thymus lanuginous
- Allioni Speedwell, Veronica allionii
- ● Crystal River Speedwell, Veronica Crystal River
- Woolly Creeping Speedwell, Veronica pectinata
- Bowles Periwinkle, Vinca minor 'Bowles'

VINES

- • Fiveleaf Akebia, Akebia quinata
- White-Flowered Chocolate Vine, Akebia quinata 'Shirobana'
- Western Virgin's Bower, Clematis ligusticifolia
- English Ivy, Hedera helix
- • Arizona Honeysuckle, Lonicera arizonica
- ■ Hall's Honeysuckle, Lonicera japonica 'Halliana'
- Virginia Creeper, Parthenocissus Quinquefolia
- Silver Lace Vine, Polygonum aubertii
- Canyon Grape, Vitis arizonica

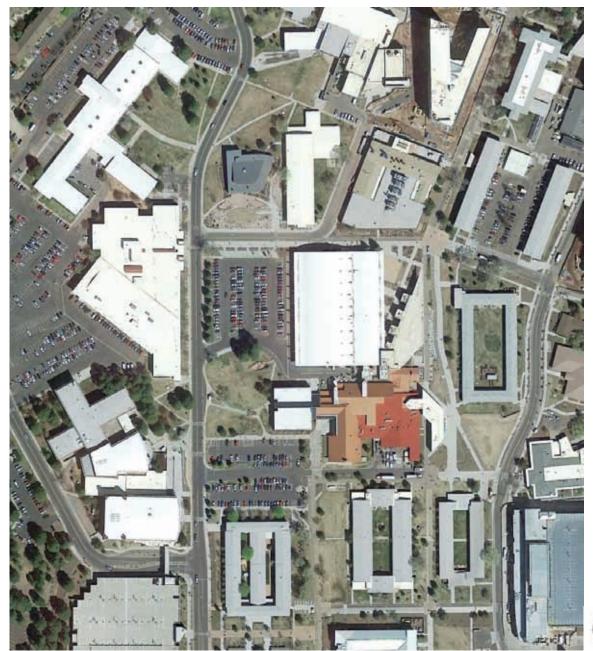
CENTRAL INNOVATION CAMPUS

Concept Designs



NORTHERN ARIZONA UNIVERSITY

EXISTING CONDITIONS OVERVIEW

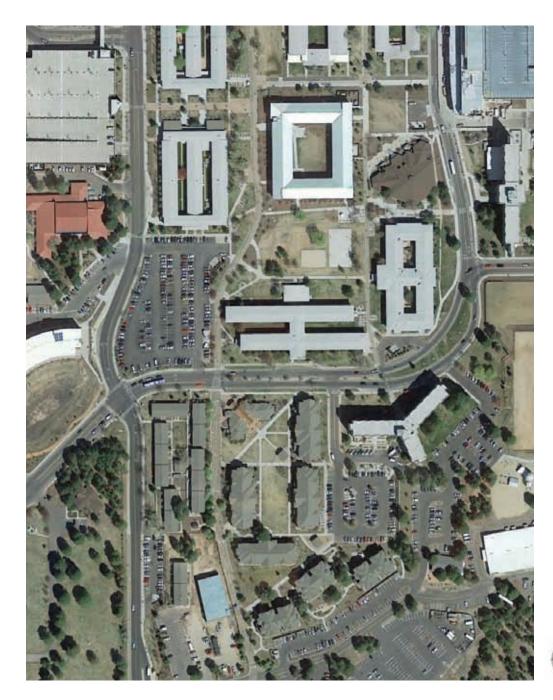




PROPOSED IMPROVEMENTS OVERVIEW



EXISTING CONDITIONS OVERVIEW



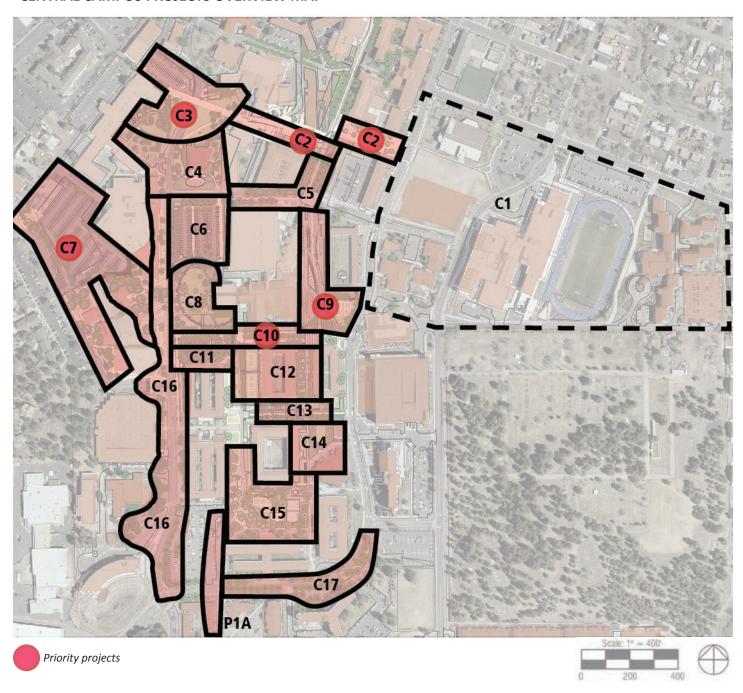


PROPOSED IMPROVEMENTS OVERVIEW





CENTRAL CAMPUS PROJECTS OVERVIEW MAP



CENTRAL CAMPUS OBJECTIVE

Provide a collection of expressive spaces that satisfy a wide variety of student needs: gather, socialize, study, collaborate, play, reflect, relax.

CENTRAL CAMPUS GUIDING PRINCIPLES

- 1. A creative environment that promotes innovation, collegiality, and social interaction.
- 2. Design elements that are expressive, unique, and artful that will make the Central Campus a memorable place.
- 3. Landscape character that incorporates a successful combination of native and domesticated landscape characteristics.

PROJECT LIST

- C1. CENTRAL CAMPUS SPORTS DISTRICT (detailed information not included as part of the Landscape Master Plan)
- C2. THE SEAM
- C3. AMENDMENT PLAZA AND QUADRANGLE
- C4. NATIVE AMERICAN CENTER AND LANDSCAPE EXPANSION
- C5. MCCREARY DRIVE CONNECTOR
- C6. FIELDHOUSE PARKING LOT
- C7. RIORDAN PARKING LOT IMPROVEMENTS
- C8. SEVEN COLLEGES QUAD
- C9. STUDENT UNION PLAZA AND RESIDENCE LAWN
- C10. STUDENT UNION CONNECTOR
- C11. COWDEN PARKING LOT
- C12. THE SOCIAL HALL AND GAME ROOM
- C13. RESIDENCE HALLS CONNECTOR
- C14. STUDENT SUCCESS PLAZA
- C15. CENTRAL QUAD
- C16. KNOLES DRIVE PINE GROVE "WEAVE" EXPANSION
- C17. UNIVERSITY DRIVE MEDIAN PLANTING
- P1A. PEDWAY (No design plan, refer to Circulation section)

C1. CENTRAL CAMPUS SPORTS DISTRICT

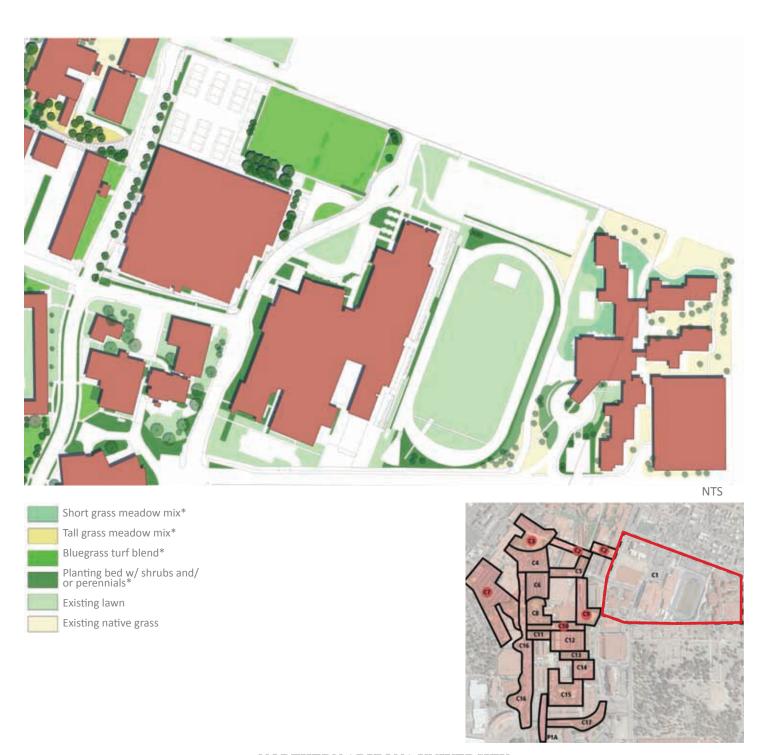
Existing Condition



NTS

C1. CENTRAL CAMPUS SPORTS DISTRICT

Though not fully detailed in the Landscape Master Plan, several areas of the Central Campus Sports District are currently under design. The plan diagram below represents the campus-wide approach of increasing plant densities in planting beds along with maximizing stands of native grass to replace rock mulch beds that currently have few or no plants.



NORTHERN ARIZONA UNIVERSITY

C2. THE SEAM





C2. THE SEAM

Design Concept:

The design for the east-west 'Seam' is a graphic interplay between the traditional, formalistic landscape typology of Historic North Campus and the more innovative, edgy and eclectic landscape character of Central Campus. The design intent of 'The Seam' is to be a recognizable, continuous and bold gesture, juxtaposing the two design styles into a memorable place on campus.

Project Objectives:

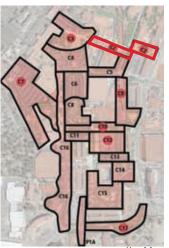
- 1. Create a unique pedestrian experience along the highly used east-west campus connector.
- 2. Express and juxtapose the materials that are common to both Historic North Campus and Central Innovation Campus to highlight the distinctions and magnify the transitions.
- 3. Make this a pedestrian scale environment with the ability to accommodate service and emergency vehicle movements where needed.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

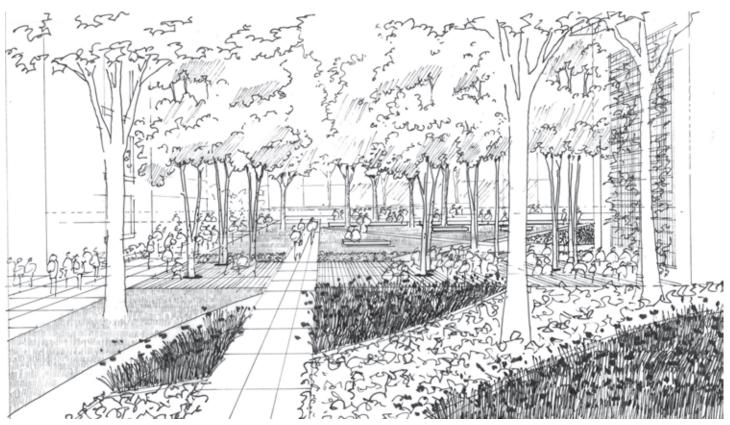
- A. Concrete paving light broom finish* (Coordinate design with Amendment Plaza Quadrangle)
- B. 18" wide CIP sand finish concrete seat/accent wall*
- C. Maintain existing service access
- D. Planting bed with woodland low height native shrub and perennial massing*
- E. Bluegrass turf*
- F. Ornamental tall grass planted at high density to create full multi-row beds
- G. Not used
- H. Deciduous shade tree grove*
- I. Grass pavers to maintain fire truck access*
- J. Maintain existing trees
- K. Pedway*
- L. Electrical transformer/ above ground utility
- M. Compacted crusher fines path with stabilizer*
- N. Service parking stalls
- O. Bicycle racks*





Кеу Мар

C2. THE SEAM



Proposed view of The Seam

C2. THE SEAM









Examples of planting patterns

C3. AMENDMENT PLAZA AND QUADRANGLE



C3. AMENDMENT PLAZA AND QUADRANGLE

Design Concept:

The design of the Amendment Plaza and Quadrangle is a unification of several disparate green spaces along the 'The Seam' into one bold and recognizable Campus quadrangle. The grand, arching promenade serves to unify the spaces and creates a hierarchy of pedestrian movements that emphasize and improve the view corridors to the San Francisco Peaks to the north. A variety of pedestrian-scaled plazas and gardens (including 'the Seam') create a diverse array of Campus experiences that promote collegiality and social overlap. The Quad is sized to host a wide variety of campus events ranging from outdoor learning to festivals and more contemplative activities. This plan also includes restriping the parking lot facilities and realigning the vehicular entry sequence to create more landscaping along the Knolls Drive edge.

Project Objectives

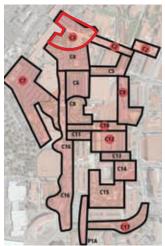
- 1. Create a grand scale Campus destination that celebrates and capitalizes on the view to the San Francisco peaks.
- 2. Unify disparate Campus green spaces into one quadrangle.
- 3. Improve the pedestrian experience on campus.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Concrete seat/edge wall, 2' wide, with sand finish*
- B. Maintain existing site walls
- Concrete paving natural gray light broom finish (optional sand finish accent bands)*
 (Coordinate design with The Seam project)
- D. Grass pavers to maintain fire access
- E. Reconditioned bluegrass blend lawn*
- F. Concrete paving natural gray, light broom finish*
- G. Concrete paved plaza, sand finish, with attached tables and chairs*
- H. Remove existing walls and replace with new deck and harvest table
- I. Maintain existing trees
- J. 30" high deciduous hedge single species*
- K. Tall grass meadow mix*
- L. New compacted crusher fines with stabilizer walk, remove existing concrete
- M. Deciduous shade tree*
- N. Ponderosa Pine tree*
- O. Future building expansion
- P. Re-stripe parking, demo unnecessary paving, add new curbs and bluegrass planting
- Q. Picnic table on concrete pad*
- R. Double row of deciduous columnar trees*
- S. Planting bed featuring low height shrubs and perennials*
- T. Concrete seat wall w/ sand finish
- U. Ornamental flowering tree

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.



Кеу Мар

C4. NATIVE AMERICAN CENTER AND LANDSCAPE EXPANSION

Design Concept:

The design principle that is expressed throughout the Innovative Central Campus is the careful weaving of the native Ponderosa Pine and tall grass landscape with the more domesticated campus landscape of a traditional turf grass and trees. This concept is referred to throughout this document as 'The Weave'. The landscape expansion for the Native American Center focuses on the establishment of tall grass meadows, short grass meadows and ornamental grass gardens to create high contrast and interest with the manicured character of the Amendment Plaza and Quadrangle.

Project Objectives

- 1. Enhance the native/domestic landscape contrast within the Innovative Central Campus.
- 2. Intensify the plantings to enhance the mission of the Native American Center.
- 3. Improve amenities for the oval dance lawn. Including seat walls, ornamental plantings and lighting.

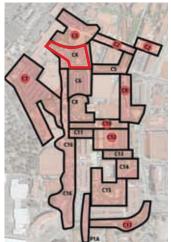


LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Ornamental grass planting bed spaced 2' o.c. max*
- B. Short grass seed mix*
- C. Tall grass seed mix*
- D. Ponderosa Pines
- E. 2' wide concrete seat wall, sand finish*
- F. Maintain existing trees
- G. New concrete path, natural gray, light broom finish*

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.



Кеу Мар

C5. MCCREARY DRIVE CONNECTOR

Design Concept:

The McCreary Drive Corridor is an important east-west pedestrian and vehicular link that connects west edge of the campus to the Student Union. Improvements to the corridor focus on plant density and amplifying the landscape character that has already been established.

Project Objectives

- 1. Enhance plantings to celebrate the arrival to the Student Union Plaza.
- 2. Improve the level of pedestrian amenities such as furnishings and sit able environments.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Planting bed with combination of native low shrubs, groundcover, and native/ non-native accent planting*
- B. Deciduous shade trees, single species clusters, max. 3 species total
- C. Deciduous shade tree row, single species
- D. Maintain existing trees



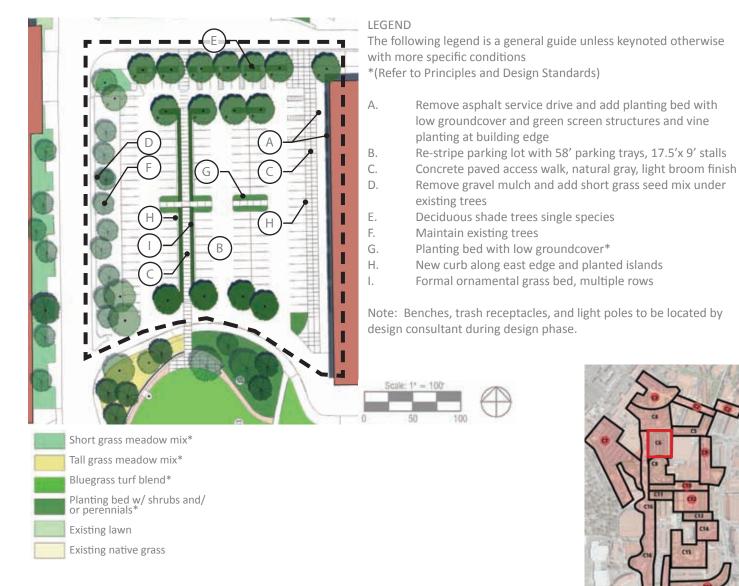
C6. FIELDHOUSE PARKING LOT

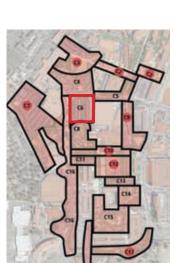
Design Concept:

The design of this central parking amenity is centered on the idea of parking in a garden. The strategy employs restriping and more efficient parking tray layout to capture much-needed landscape area to be used for screening, pedestrian circulation, tree plantings and the development of north-south pedestrian walks that link the 'Seven Colleges Quad' to the McCreary Drive East/West Corridor

Project Objectives

- Maximize efficiency in parking lot layout to maintain or increase parking count.
- 2. Improve the pedestrian experience and walkability around and through the parking facility.
- Enhance the landscape character and improve screening of parking from important exterior views.





Kev Map

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C7. RIORDAN PARKING LOT IMPROVEMENTS



C7. RIORDAN PARKING LOT IMPROVEMENTS

Design Concept:

The Riordan Road Parking strategy maximizes efficiency through lot restriping in order to maintain or increase parking count, along with increasing the available landscape area along Riordan Road. Reorganizing the existing parking lot will aid in ease of use, orientation, functionality, and screening of the parking lot while improving the Campus edge character. This project also includes the establishment of native grass and additional Ponderosa Pine plantings along the west face of the Performing Arts complex to enhance the integration of Campus with the native Ponderosa Pine landscape.

Project Objectives

- Establish a landscaped Campus edge along Riordan Road and buffer the view of the parking lot.
- Improve efficiency and functionality of the parking lot.
- Create a clear Campus entry plaza at the eastern edge of the parking lot and adjacent to the Library and Performing Arts buildings.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- Α. Re-stripe parking lot with 58' parking trays (8.5' x 18' stalls)
- В. Short grass meadow mix*
- C. Tall grass meadow mix*
- D. Ponderosa Pines*
- Maintain existing trees Ε.
- Existing campus signage wall F.
- Short grass meadow mix with concrete edger* G.
- Concrete paved plaza with passenger drop-off, connect to existing walks Н
- Maintain existing walk Ι.
- Not used J.
- Κ. Future building approximate footprint
- New curb and gutter at islands and along street edge L.
- New 3' high hedgerow* M.
- Low native shrub border* N.







NORTHERN ARIZONA UNIVERSITY

C8. SEVEN COLLEGES QUAD



C8. SEVEN COLLEGES QUAD

Design Concept:

The design for the Seven Colleges Quad centers on creating an adaptable campus space that is comfortable for studying as well as engaging in public events. As this space is central to the heart of the Campus and adjacent to convenient parking, it serves as an ambassador for NAU. The space is internally-focused and expresses the characteristic of the Weave principle. A central lawn environment is circumscribed by tall grass meadows and Ponderosa pine trees. The design features nine vertical interactive sculpture elements that reflect events happening in the Seven Colleges, the Administration and the Athletics department.

Project Objectives

- 1. Create a unified Quadrangle space that celebrates the NAU mission.
- 2. Add to the experience of being a student, Alumni, or staff member of the NAU institution.
- 3. Create a distinct space that embodies the 'Weave' principle.

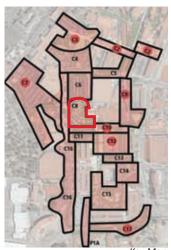
LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Relocate existing electric car charging station to Cowden parking lot
- B. Seven colleges columns
- C. Picnic table on concrete pad*
- D. PLD (Porous Landscape Detention) planted with riparian shrubs and perennials
- E. Maintain existing trees
- F. Deciduous tree row to match existing
- G. Concrete seat wall*
- H. Crusher fines path*
- I. Reconditioned lawn*
- J. New lawn*
- K. Tall grass seed mix*
- L. Existing shuttle stop
- M. Ponderosa pines*
- N. Maintain existing walk
- O. New concrete walk, natural gray light broom finish*

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





Кеу Мар

C9. STUDENT UNION PLAZA AND RESIDENCE LAWN



C9. STUDENT UNION PLAZA AND RESIDENCE LAWN

Design Concept:

The Student Union is the social heart of the NAU Campus. The design of this environment embodies the innovative spirit and sense of adventure that students are seeking when they come to NAU. This is an important concept that underpins the design philosophy behind the Student Union Plaza. A highly urbanized environment with an energetic overlap of pedestrian, bicycle, and skateboard movements, this space is the place to be and be seen. The plaza is defined by multiple micro-environments that compose the Student Union Plaza including: the Student Union Beach, furnished with movable Adirondack chairs; the Elm Grove Deck, which features movable tables and chairs; a lunch counter for watching activity in the plaza; and a bouldering wall designed to place health and adventure at the center of the NAU experience. Other common activities that are accommodated on the plaza include: expanded café zones for outdoor dining, lawn sports, open recreation, and efficient bicycle parking facilities.

Project Objectives:

- 1. Re-establish the Elm grove that existed prior to construction of the second addition to the Student Union.
- 2. Integrate a deck over the existing drainage detention area that will also function as a place for students to relax or socialize.
- 3. Provide flexible lawn space that students can use for a variety of social activities.
- 4. Incorporate creative elements such as a bouldering wall and "beach" area that contribute to the eclectic vibe of the Student Union.
- 5. Provide clear routes of circulation with traffic calming devices to slow down bicycle and skateboarding traffic.
- 6. Integrate a terraced patio for students to socialize near the residence hall.

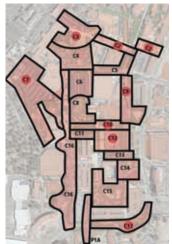
LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions

*(Refer to Principles and Design Standards)

- A. 3' wide CIP concrete seatwall, sand finish*
- B. Pedway*
- C. Cafe zone with movable tables and chairs*
- D. Deck with movable tables and chairs* maintain existing stormwater detention basin under deck, provide access panel at inlet structures
- E. Lunch counter, bar-height with swivel seating*
- F. Student Union sand beach with colorful Adirondack chairs and umbrellas w/ hinged caps (see note on following page)*
- G. Custom double-sided wood deck lounge chair*
- H. Bouldering wall with safety fall surface at base
- I. Bike parking plaza*
- J. 6" CIP concrete risers
- K. Farmers market plaza with tables and chairs*
- L. Reconditioned bluegrass turf residence lawn*
- M. Residence terrace with crusher fines paving and movable tables and chairs*
- N. Existing concrete walk
- O. Not used
- P. Planting bed with bold accent shrubs and perennials*
- Q. Elm grove
- R. Bicycle dismount zone
- S. 3' high hedgerow planting*
- T. Crusher fines paving with stabilizer and concrete edger*
- U. Plaza paving improvement options see next page





Кеу Мар

C9. STUDENT UNION PLAZA AND RESIDENCE LAWN

U

PLAZA PAVING STRATEGIES

Option 1: Saw-cut joint pattern in existing concrete. Integrate new joint patterns with existing scoring to create unique mosaic patterns.

Option2: Remove existing paving and replace with new concrete paving, sand finish with plaza scoring pattern.

Option 3: Replace existing paving with linear modular pre-cast Plankstone pavers with concrete subbase.



G Custom double-sided wood deck lounge chair*



D Decking
Photo Credit: Image 42



H) Bouldering wall with safety fall surface at base Photo Credit: Image 43



F) Umbrellas engineered for Flagstaff wind loads



Lunch Counter, bar-height with swivel seating
Photo Credit: Image 41

(C) Movable tables and chairs*

C9. STUDENT UNION PLAZA AND RESIDENCE LAWN



Elm grove and crusher fines paving

Photo Credit: Image 45

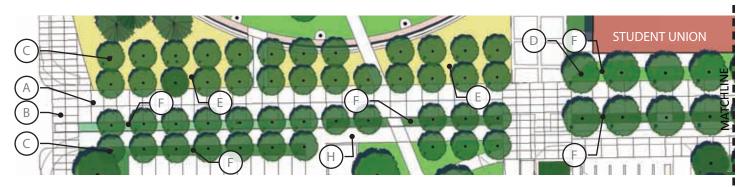
C10. STUDENT UNION CONNECTOR

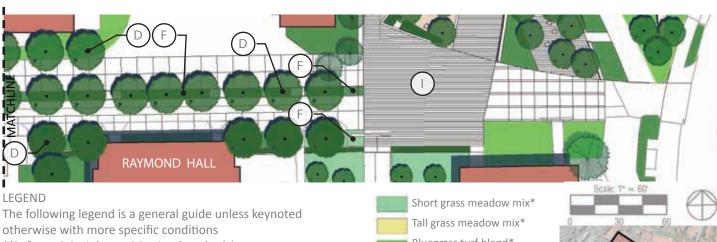
Design Concept:

The Student Union Connector is the most formal of the East/West Campus connectors. This linear space is lined with a formal bosque of Amur Chokecherry trees and understory plantings. The design of this linear space allows for multiple modes of transportation including pedestrian traffic, bicycles, and service vehicles while maintaining the character of a pedestrian mall.

Project Objectives:

- 1. Transform existing service street into a pedestrian mall that accommodates service and emergency vehicles.
- Create a distinct and formal pedestrian zone in Central Innovation Campus.





- *(Refer to Principles and Design Standards)
- Α. Remove asphalt and replace with concrete paving*
- В. Concrete paving sand finish*
- Amur chokecherry bosque C.
- Deciduous tree row, single species D.
- Ε. Tall grass Meadow Mix*
- F. Planting bed with accent shrubs and perennials*
- Not used G.
- Н. Pedway
- Plaza paving improvement options, see Project C9 ١. Student Union





Кеу Мар

C11. COWDEN PARKING LOT

Design Concept:

The relocation of the Cowden parking lot south of the Blome Drive Pedway is critical to the design of the Seven Colleges Quadrangle. The relocated parking allows for the completion of the Quad while creating a direct connection to the Blome Drive Pedway. The design of the lot allows for convenient parking to serve the Central Campus and the various events in the Seven Colleges Quadrangle.

Project Objectives

- Move the parking to south of the Blome Drive Pedway to unify the Seven Colleges Quadrangle.
- Relocate the vehicle battery charging station.

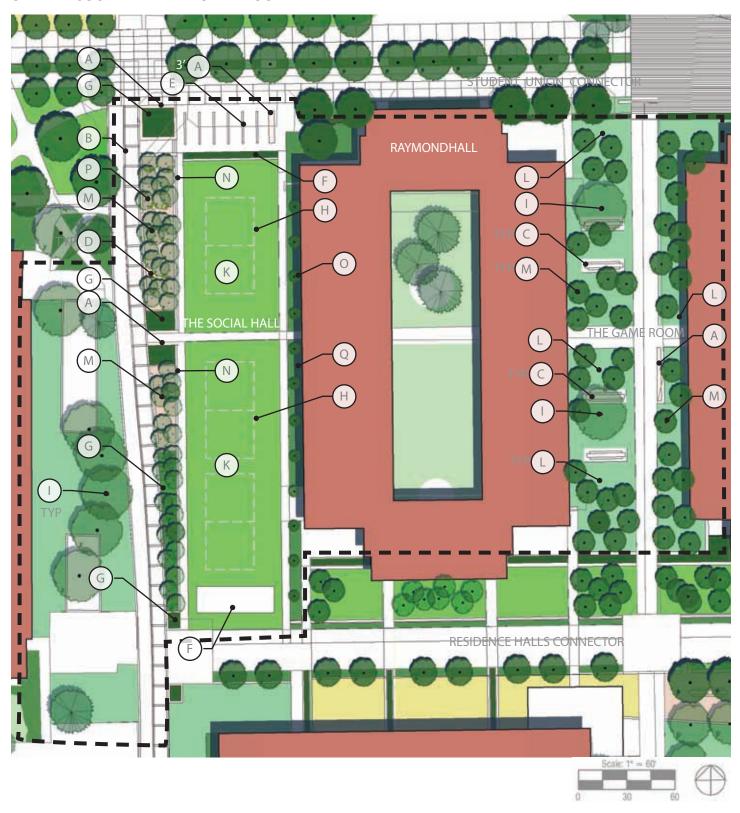


- D. New concrete bike lane per Pedway standards*
- Lawn with deciduous shade trees* Ε.
- Planting bed with native shrubs and perennials* F.
- G. Maintain existing trees
- Ponderosa Pine tree Η.
- Maintain existing concrete walk ١.
- Resurface and re-stripe parking lot w/ new curb and J. gutter



Кеу Мар

C12. THE SOCIAL HALL AND GAME ROOM



C12. THE SOCIAL HALL AND GAME ROOM

Design Concept:

The Social Hall: This important north-south passage through central campus in general and two student housing in particular is an opportunity to transform left over space into a distinct place that is defined by a dense glade of aspen trees, short grass meadows and long harvest tables that encourage studying, social engagement and chance meetings.

The Game Room: There are several green places on campus that have great potential for becoming bold, distinct and memorable. Spatial definition, grading and edge refinements will transform the ordinary panel of lawn of the Game Room into a popular destination for students seeking a great place to sit or engage in outdoor recreation.

Project Objectives

- 1. Provide flexible lawn space that students can use for a variety of social activities.
- 2. Create a terrace with well-defined edges that allows students to watch activities on the lawn as well as the Pedway.
- 3. Provide unique seating environments such as hanging chairs and harvest tables that contribute to the innovative setting of the Central Campus.
- 4. Integrate stormwater management techniques such as Porous Landscape Detention (PLD) that also features riparian plants.
- 5. Provide additional bicycle parking.

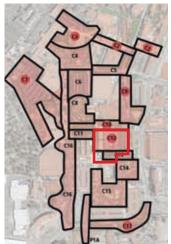
LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. 2' or 3' wide concrete seat wall w/ sand finish*
- B. Pedway*
- C. Harvest Table*
- D. Hanging hammock chairs (chammock)*
- E. Bike rack multi-gang collection*
- F. PLD (Porous Landscape Detention) with native riparian grasses*
- G. Planting bed with bold accent planting*
- H. Lawn space large enough for volleyball
- I. Maintain existing tree
- J. Remove existing Junipers
- K. Reconditioned lawn*
- L. Short grass seed mix*
- M. Aspen grove*
- N. Continuous concrete seat/ steps
- O. Columnar tree row, single species*
- P. Crusher fines paving below Aspen grove
- Q. Foundation planting bed with low shrubs*

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





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C12. THE SOCIAL HALL AND GAME ROOM



Existing view of The Game Room



Proposed view of The Game Room

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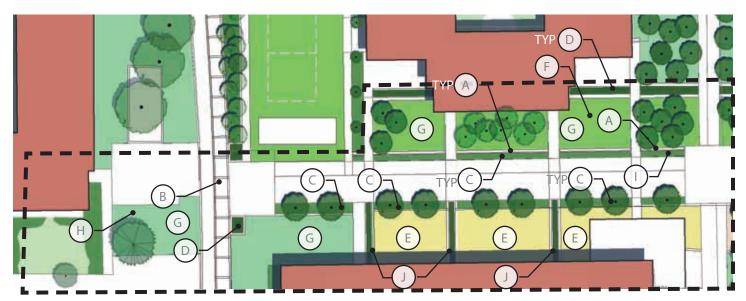
C13. RESIDENCE HALLS CONNECTOR

Design Concept:

The Residence Halls Connector is defined by formally edged garden rooms that are sequentially organized to form a unified place ideal for sculptures and more contemplative or quiet social activities. The linear corridor features an informal tree canopy in contrast with the formally edged garden rooms to create an interesting and memorable visual character.

Project Objectives

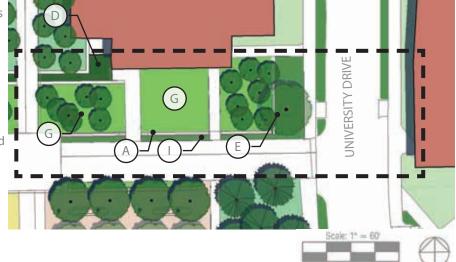
- 1. Transform this existing service street into a linear sequence of inter-connected garden rooms.
- 2. Amplify the 'green' or garden quality on campus.
- 3. Create more contemplative and relaxing space on campus.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. 2' wide, 18" high brick retaining seat wall with pre-cast cap*
- B. Pedway*
- C. PLD (Porous Landscape Detention) planted with 'heavy metal' switchgrass
- D. Planting bed with bold accent shrubs and perennials*
- E. Tall grass seed mix*
- F. Remove existing Junipers
- G. Lawn*
- H. Short grass seed mix*
- I. 12" high shrub hedge row*
- J. Concrete planter w/ ornamental grasses



C13. RESIDENCE HALLS CONNECTOR





Existing view of the Residence Halls Connector



Proposed view of the Residence Halls Connector

C14. STUDENT SUCCESS PLAZA

Design Concept:

The Student Success Plaza is a green room on campus that requires a few simple adjustments to the edge conditions, new plantings and furnishings to allow this space to be fully utilized for light recreation and small scale events.

Project Objectives

- 1. Transform the visual quality of the space by improving the edges, adding trees/plantings and furnishing to the space to promote studying, socialization and small group gathering.
- 2. Replace gravel mulch beds with usable crusher fines paving
- 3. Improve the space to promote more recreation and healthy activities such as volleyball, yoga or lawn games.

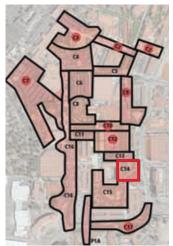




LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Maintain existing trees
- B. Reconditioned lawn*
- C. Planting bed with shrubs and perennials*
- D. Maintain existing concrete walks
- E. Harvest table*
- F. Deciduous trees to match existing tree species*
- G. Crusher fines paving w/ stabilizer



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C15. CENTRAL QUADRANGLE



C15. CENTRAL QUADRANGLE

Design Concept:

The design concept for the Central Quadrangle is centered on creating a visually interesting and sculptural landscape environment that supports a wide array of social, athletic and fun activities that attract students from all sectors of the campus. The Central Quad is aptly named as it is conveniently located and supported by the Pedway and other important pedestrian movement corridors. The space features basketball, sand and grass volleyball, outdoor ping pong, a fire pit and sculpted landforms below a glade of trees that create places for students to study or engage socially in the shade.

Project Objectives

- Transform the visually cluttered Quadrangle into a distinct and graphically unique place on campus.
- 2. Create a great place for students to come together outside to play, relax, and enjoy social activities.
- 3. Reflect the design principles of the Innovative Central Campus.

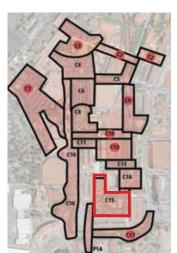
LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Maintain existing trees
- B. Maintain existing courts
- C. Fire pit, 2' wide concrete seat walls, no cap
- D. PLD (Porous Landscape Detention) with 'heavy metal' switchgrass at existing drainage area
- E. Pre-cast concrete foot bridge
- F. Crusher fines paving w/ stabilizer
- G. Crabapple trees planted on lawn domes
- H. Tables and chairs*
- I. 2' wide concrete seat walls, no cap*
- J. Precast concrete table tennis
- K. Deciduous shade trees*
- L. Reconditioned lawn*
- M. Short grass seed mix*
- N. Planting bed with groundcover single species*
- O. Tall grass seed mix mounds*
- P. Bike rack gang clusters*
- Q. Maintain existing concrete paving
- R. Pedway*

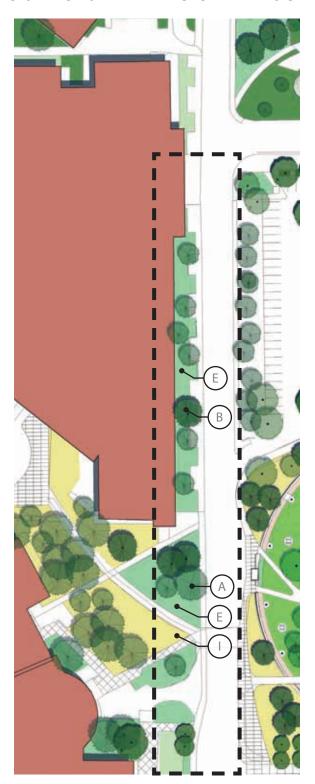
Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.





Кеу Мар

C16. KNOLES DRIVE PINE GROVE EXPANSION

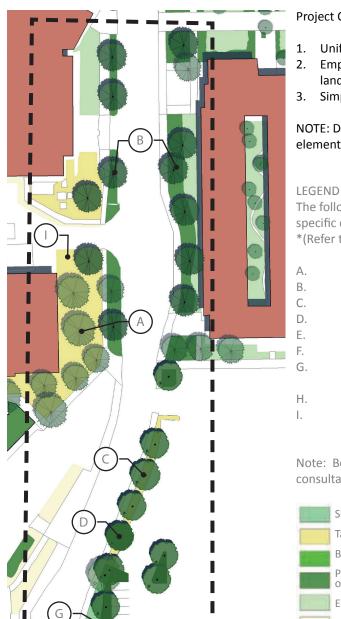


Design Concept:

The distant views to the San Francisco Peaks afforded by the North/South alignment of Knoles Drive is a significant visual experience that is unique to NAU. The design of the Knoles corridor is simple and bold as it builds on the existing large evergreen trees that line the road and frame this world-class view. New plantings of evergreen trees and the introduction of native stands of tall and short grass will enhance the idea that NAU is a unique mountain-oriented Campus. The large parking lot at the intersection of Knoles Drive and University is an important threshold on Campus and a tremendous opportunity to improve the visual and experiential quality of the western edge of the Campus. By correcting inefficiencies in the parking lot layout, the Knoles Drive and University edges can incorporate new plantings and sidewalks while buffering the visual impact of cars along the corridor.



C16. KNOLES DRIVE PINE GROVE EXPANSION



Project Objectives

- Unify the Corridor and frame the mountain views with large evergreen trees.
- Employ the 'Weave' principles to transition from native to domesticated landscape zones.
- Simplify and strengthen the visual experience of Knoles Drive.

NOTE: During the DD Phase, it is recommended to incorporate additional weave elements in the ground plane for a stronger graphic quality.

The following legend is a general guide unless keynoted otherwise with more specific conditions

*(Refer to Principles and Design Standards)

- Maintain existing pine trees
- New Ponderosa pine trees*
- Maintain existing deciduous trees
- New deciduous trees*
- Short grass meadow mix*
- Shrub bed screen planting*
- Re-stripe parking to gain landscape area w/ new curb and gutter, demo unnecessary paving
- Maintain existing campus sign wall
- Tall grass meadow mix*

Note: Benches, trash receptacles, and light poles to be located by design consultant during design phase.

Short grass meadow mix* Tall grass meadow mix*

Bluegrass turf blend*

Planting bed w/ shrubs and/ or perennials*

Existing lawn

Existing native grass



C17. UNIVERSITY DRIVE MEDIAN PLANTING

Design Concept:

University drive is an important artery through Campus and its impact on how the campus is perceived is significant. The design concept for the roadway is to create an experience of passing through the Innovative Central Campus landscape rather than defining the edge between Central and South Campus. The design strategy allows the Central Campus tree canopy and the ground plane materials to flow across the divided boulevard.

Project Objectives

- 1. Create an experience of passing through the Innovative Central Campus not the edge of it.
- 2. Scale the street to have more comfortable proportions by planting trees.
- 3. Create safe pedestrian crossing, way-finding and improve campus orientation.

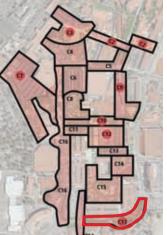


LEGEND

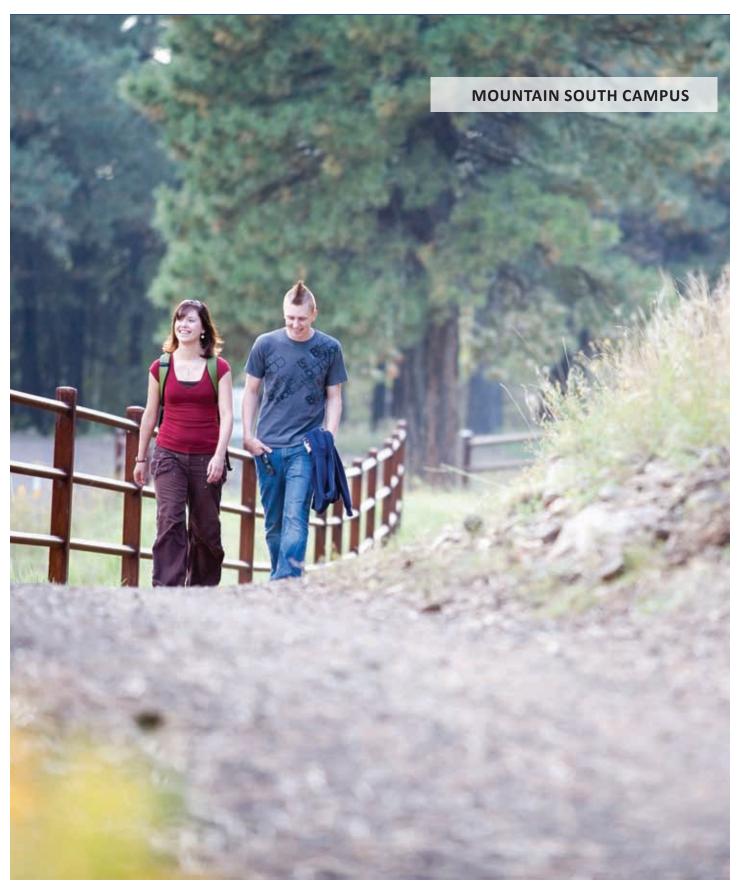
The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Remove existing Plum trees in median
- B. Bury existing overhead power line
- C. New deciduous shade trees, (4) species max. *
- D. Lawn*





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NORTHERN ARIZONA UNIVERSITY

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MOUNTAIN SOUTH CAMPUS

OVERVIEW

South campus embodies the mountain experience of living in Flagstaff where Ponderosa Pine forest and tall grasses are the prevailing landscape. Natural features such as the topographic high ridge of Runke Drive, Sinclair Wash, and exceptional views of the San Francisco Peaks add to the natural aesthetic and appeal of the landscape within this zone. Academics are predominant in Natural South Campus, including Forestry, Business, Engineering, and Social and Behavioral Sciences; however, also included are residential housing, the Walkup Skydome, and Facilities Services. The Walkup Skydome dominates the horizon and provides a strong link to the Flagstaff community with activities such as NAU football games and graduations, high school football games and graduations, and community events like the annual Home & Garden Show.

This is the boldest landscape zone on the Northern Arizona University Campus. It is also one of the main reasons students are attracted to the University as the place they receive their education. The rustic mountain character is appealing and evokes a sense of adventure. This quality should be amplified by 'keeping it simple'. In other words, the beauty of this landscape is that it is incredibly complex, has a grand scale but is also a simple read with evergreens, tall grass and big views. This is what people love about mountain environments and every effort must be taken to restore the native landscape where possible, intensify its understory with shrub lands, wildflower meadows and native grass stands. Education of the native palette and vegetation will add depth and understanding to this landscape. The spaces that are carved out of the mountain landscape are often domesticated places like the South Quad and are important in this zone as well and must be carefully integrated into this landscape so that the qualities of both are revealed and celebrated.



- A mountain setting that evokes a sense of adventure is a key ingredient for attracting students to NAU and should be preserved and enhanced on campus.
- 2. The Ponderosa Pine Arizona Fescue habitat provides a strong regional sense of place which is a unique and desirable contrast to a more traditional campus setting.

DESIGN PALETTE INTENT

The Design Palette is intended as a quick reference for materials, furnishings, and plantings in each Campus Zone. Please refer to 'Principles and Design Standards' for more detailed information..

Plantings

All plant photographs are courtesy of Keith Williamson with Little Valley Wholesale Nursery in Brighton, CO.

Seasonal Interest Plant Legend:

SpringSummerFallWinter









South Campus

Design Aesthetic

Rustic Mountain Campus, Sense of Adventure







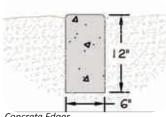
Hardscape







Concrete Paving Sand Finish



Concrete Edger



Scoring Patterns and Control Joints

Pavers



Open Pavers



Holland Pavers (Concrete Subbase)



Plankstone Pavers (Concrete Subbase)



Grass Pavers



Concrete Stepping Stones

Ground Plane



Wood Mulch (with 80% Planting Density)



Gravel Mulch - 1/2" Minus (with 80% Planting Density)



Crusher Fines Paving



Beach Sand (Special Areas)



Limestone Boulders



Decking

Pathways



Crusher Fines Forest/Lawn Paths



Manufactured Concrete Stairs

Walls



Sand Finish Concrete Wall



Manufactured Concrete Wall



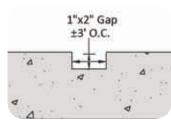
Drystack Limestone Wall



Mega-Tandem Retaining Wall



Sand Finish Concrete Cap



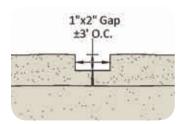
Sand Finish Concrete Cap Detail



Manufactured Concrete Cap



Natural Limestone Cap



Natural Stone Cap Detail

Railing



South Edge Rail



Hand Rail (Stainless Steel, Galvanized, or Brushed Aluminum)



Weathering Steel Hand Rail



Weathering Steel Separation Rail



Weathering Steel Fall Protection Rail



South Guard Rail



Ironwood Guard Rail

Furnishings



Bamboo Bench without Arms



Metal Bench



Bamboo Table and Chairs



Attached Table and Chairs



Movable Table and Chairs



Metal Umbrella



Solar Charging Station with Table



Picnic/Harvest Table



Skateboard Bench



Concrete Skateboard Bench



Wood Deck Lounge Chair



Chaise Lounge



Adirondack Chair



Hammock



Bike Rack



Skateboard Rack



Big Belly Trash/Recycling Receptacles



Metal Trash/Recycling Receptacles



QR Code Informational Signage

Lighting



Pedestrian LED Lighting



Parking Area LED Lighting

Planting - Tree Canopy









DECIDUOUS TREES

- Autumn Blaze Maple, Acer freemanii 'Autumn Blaze'
- • Sienna Glen Maple, Acer freemanii "Sienna Glen"
- Amur or Ginnala Maple, Acer ginnala 'Flame'
- Bigtooth Maple, Acer granidentatum
- Tatarian Maple, Acer tataricum
- Hot Wings Maple, Acer tataricum 'Hot Wings'
- Autumn Brilliant Serviceberry, Amelanchier x grandiflora 'Autumn Brilliance'
 - Western Hackberry, Celtis occidentalis
- Thornless Cockspur Hawthorn, Crataegus crus-galli 'Inermis'
- Crimson Cloud Hawthorn, Crataegus laevigata 'Crimson Cloud'
- ● Washington Hawthorn, Crataegus phaenophyrum
 - Autumn Purple Ash, Fraxinus Americana 'Autumn Purple'
 - Marshall Ash, Fraxinus pennsylvanica 'Marshall'
 - • Patmore Ash, Fraxinus pennsylvanica 'Patmore'
 - Imperial Honeylocust, Gleditsia triancanthos 'Imperial'
 - Shademaster Honeylocust, Gleditsia triancanthos 'Shademaster'
 - Quaking Aspen, Populus tremuloides
 - Red Oak, Quercus borealis
 - ● Gambel Oak, Quercus gambelii
 - Northern Red Oak, Quercus rubra
 - Shumard Oak, Quercus shumardii
- Purple Robe Locust, Robinia ambigua 'Purple Robe'
- Black Locust, Robinia pseudoacacia

Planting - Tree Canopy Continued









EVERGREEN TREES

- White Fir, Abies concolor
- Alligator Juniper, Juniperus deppeana
- Rocky Mountain Juniper, Juniperus scopularum
- ● Engelmann Spruce, Picea engelmannii
- Colorado Blue Spruce, Picea pungens glauca
- ● Baby Blue Eyes Spruce, *Picea pungens 'Baby Blue Eyes'*
- Bakeri Spruce, Picea Pungens 'Bakeri'
- Fat Albert Spruce, Picea Pungens 'Fat Albert'
- • Pinyon Pine, *Pinus edulis*
- • Limber Pine, Pinus flexilis
- Vanderwolf's Pyramid Limber Pine, Pinus flexilis 'Vanderwolf's Pyramid'
- Ponderosa Pine, Pinus ponderosa
- Douglas Fir, Pseudotsuga menziesii
- Rocky Mountain Douglas Fir, Pseudotsuga menziesii var glauca

Planting - Shrubs



DECIDUOUS SHRUBS

- Saskatoon Serviceberry, Amelanchier alnifolia
- Shadblow Serviceberry, Amelanchier canadensis
- Utah Serviceberry, Amelanchier utahensis
 - Leadplant, Amorpha canescens
 - False Indigo, Amorpha fruticosa
- Black Chokeberry, Aronia melanocarpa
- Dwarf Iroquois Beauty Chokeberry, Aronia melanocarpa 'Iroquois Beauty'
 - Blue Mist Spirea, Caryopteris x clandonensis 'Blue Mist'
 - Dark Knight Blue Mist Spirea, Caryopteris clandonensis 'Dark Knight'
 - First Choice Blue Mist Spirea, Caryopteris clandonensis 'First Choice'
 - • Ivory Halo Dogwood, Cornus sericea 'Ivory Halo'
 - Arctic Fire Dogwood, Cornus sericea 'Arctic Fire'
 - Isanti Dogwood, Cornus sericea 'Isanti'
 - Mountain Spray, Holodiscus dumosus
 - Twinberry Honeysuckle, Lonicera ivolucrata
- Arnold's Red Honeysuckle, Lonicera tatarica 'Arnold's Red'
 - Littleleaf Mockorange, Philadelphus microphyllus
- Dwarf Snowflake Mockorange, Philadelphus x virginalis 'Dwarf Snowflake'
- Shrubby Cinquefoil, Potentilla fruticosa
- Dakota Sunspot Potentilla, Potentilla fruticosa 'Dakota Sunspot'
- Jackman Potentilla, Potentilla fruticosa 'Jackmanii'
- Western Sand Cherry, Prunus besseyi

DECIDUOUS SHRUBS CONTINUED

- Creeping Sand Cherry, Prunus besseyi 'Pawnee Buttes'
 - Dwarf Fragrant Sumac, Rhus aromatica 'Gro-Low'
 - • Rocky Mountain Sumac, Rhus glabra cismontana'
 - Three-leaf Sumac, Rhus trilobata
 - Autumn Amber Sumac, Rhus trilobata 'Autumn Amber'
 - Alpine Currant, Ribes alpinum
- Golden Currant, Ribes aureum
 - Wax Currant, Ribes cereum
- • Persian Yellow Rose, Rosa foetida 'Persiana'
 - Rugosa Rose, Rosa rugosa
 - Woods Rose, Rosa woodsii
 - White Snowberry, Symphoricarpos albus
 - Red Coralberry, Symphoricarpos orbiculatus
 - Mountain Snowberry, Symphoricarpos oreophilus
 - Pink Snowberry, Symphoricarpos x doorenbosii 'Magic Berry'
- Bloomerang Purple Lilac, Syringa x Bloomerang
- Arrowwood Viburnum, Viburnum dentatum
- Compact European Cranberrybush, Viburnum opulus 'Compactum'

Planting - Shrubs Continued

EVERGREEN SHRUBS

- • Fernbush, Chamaebatiaria millefolium
- Common Juniper, Juniperus communis
- Alpine Carpet Juniper, Juniperus communis 'Alpine Carpet'
- Green Carpet Juniper, Juniperus communis 'Green Carpet'
- • Blue Chip Juniper, Juniperus horizontalis 'Icee Blue'
- ● Buffalo Juniper, Juniperus sabina 'Buffalo'
- ● Blue Star Juniper, Juniperus squamata
- Oregon Grape Holly, Mahonia aquifolium
- Compact Oregon Grape Holly, Mahonia aquifolium 'Compacta'
- Mountain Lover, Pachystima myrsinites
- Miniature Mugo Pine, Pinus mugo 'Mops'
- ● Dwarf Mugo Pine, Pinus mugo pumillo
- • Slowmound Mugo Pine, Pinus mugo 'Slowmound'

Planting - Grasses

















ORNAMENTAL SINGLE SPECIMENS

- Big Bluestem, Andropogon gerardii
- Pine Dropseed, Blepharoneuron trichloepis
- Blonde Ambition Blue Grama Grass, Bouteloua 'Blonde Ambition'
- Western Sedge, Carex occidentalis
- Idaho Blue Fescue, Festuca idahoensis
- Siskiyou Blue Idaho Fescue, Festuca idahoensis 'Siskiyou Blue'
- Sheep Fescue, Festuca ovina
- Blue Avena Grass, Helictotrichon sempervirens
 - Deer Grass, Muhlenbergia rigens
 - Heavy Metal Switch Grass, Panicum virgatum 'Heavy Metal'
 - • Red Switch Grass, Panicum virgatum 'Rotsrahlbush'
 - Shenandoah Switch Grass, Panicum virgatum 'Shenandoah'
- Muttongrass, Poa fendleriana
 - Little Bluestem, Schizachyrum scoparium
 - Blaze Little Bluestem, Schizachyrum scoparium 'Blaze'
 - The Blues Bluestem, Schizachyrum scoparium 'The Blues'
 - Indian Grass, Sorghastrum nutans
 - Alkali Sacaton, Sporobolus airoides

RIPARIAN ORNAMENTAL SPECIMENS FOR LINEAR OR MEANDERING PLD'S (NOT BASINS)

- Big Bluestem, Andropogon gerardii
- Western Sedge, Carex occidentalis
 - Switchgrass, Panicum virgatum

RIPARIAN ORNAMENTAL SPECIMENS CONTINUED

- Heavy Metal Switch Grass, Panicum virgatum 'Heavy Metal'
- • Red Switch Grass, Panicum virgatum 'Rotsrahlbush'
- Shenandoah Switch Grass, Panicum virgatum 'Shenandoah'

RIPARIAN GRASS BLEND FOR PLD BASINS

RIPARIAN GRASSES - SEASONAL MOISTURE

- Blue Grama, Bouteloua gracillas
- Arizona Fescue, Festuca arizonica
- Deergrass, Muhlenbergia rigens
- Spiked Muhly, Muhlenbergia wrightii

RIPARIAN GRASSES - YEAR ROUND MOISTURE (TO BE ADDED TO GRASSES LISTED ABOVE)

- Water Sedge, Carex aquatillis
- Smallwinged Sedge, Carex microptera

RIPARIAN PERENNIALS

- Western Blue Flag, Iris missouriensis
- Native Lavender Bee-Balm, Monarda fistulosa menthaefolia
- Cutleaf Coneflower, Rudbeckia laciniata
- Alkali Checkerbloom, Sidalcea neomexicana
- Canada Goldenrod, Solidago canadensis

BLUEGRASS BLEND

- Langara
- America
- Granite
- Blue Velvet

Planting - Grasses Continued

TALL MEADOW MIX

GRASSES

- Blue Grama, Bouteloua gracillas
- Pine Dropseed, Blepharoneuron trichloepis
- Side Oats Grama, Bouteloua curtipendula
- Arizona Fescue, Festuca arizonica
- Prairie Junegrass, Koeleria macrantha
- Deer Grass, Muhlenbergia rigens
- Switchgrass, Panicum virgatum

PERENNIALS

- Western Yarrow, Achillea millefolium 'Lanulosa'
- Double Bubblemint Hyssop, Agastache cana 'Double Bubble Mint'
- Native Blanket Flower, Gaillardia aristata
- Scarlet Gilia, Ipomopsis aggregata
- Blue Flax, Linum perenne
 - Silvery Lupine, Lupinus argenteus
 - Purple Aster, Machaeranthera canescens
 - Native Lavender Bee-Balm, Monarda fistulosa menthaefolia
 - Scarlet Bugler, Penstemon barbatus
 - Firecracker Penstemon, Penstemon eatonii
 - Rocky Mountain Pensemon, Penstemon strictus
 - Wand Penstemon, Penstemon virgatus
 - • Few-Flowered Goldenrod, Solidago sparsiflora

SHORT MEADOW MIX

GRASSES

- Blue Grama, Bouteloua gracillas
- Idaho Blue Fescue, Festuca idahoensis
- Sheep's Fescue, Festuca ovina
- Mountain Muhly, Muhlenbergia montana
- Muttongrass, Poa fendleriana
- Sand Dropseed, Sporobolus crytandrus
- Buffalo Grass, Bouteloua dactyloides (Add if high traffic area)

PERENNIALS

- • Western Yarrow, Achillea millefolium 'Lanulosa'
- Paintbrush, Castilleja integra
 - Wheeler's Wallflower, Erysimum wheeleri
 - Native Blanket Flower, Gaillardia aristata
 - Gayfeather, Liatris punctata
 - Pretty Stoneseed, Lithospermum multiflorum
- Blue Flax, Linum perenne
 - Silvery Lupine, Lupinus argenteus
 - • Purple Aster, *Machaeranthera canescens*
 - Coyote Mint, Monardella odoratissima
 - Lambert's Locoweed, Oxytropis lambertii
 - Scarlet Bugler, Penstemon barbatus
 - Firecracker Penstemon, Penstemon eatonii
 - Rocky Mountain Penstemon, Penstemon strictus
- Wand Penstemon, Penstemon virgatus
- Mountain Parsley, Pseudocymopterus montanus
 - Mexican Hat Coneflower, Ratibida columnifera
- Few-Flowered Goldenrod, Solidago sparsiflora
- Prairie Zinnia, Zinnia grandifloria

Planting - Perennials, Groundcovers, and Vines

















PERENNIALS

- Greek Yarrow, Achillea ageratifolia
- Western Yarrow, Achillea millefolium 'Lanulosa'
- Moonshine Yarrow, Achillea 'Moonshine'
- Coronado Hyssop, Agastache aurantiaca
- Double Bubblemint Hyssop, Agastache cana 'Double Bubble Mint'
- Sonoran Sunset Hyssop, Agastache cana 'Sinning'
- Silver Blue Mexican Hyssop, Agastache 'Kudos Silver Blue' PPAF
- Sunset Hyssop, Agastache rupestris
- Rocky Mountain Columbine, Aquilegia caerulea
- Golden Columbine, Aquilegia chrysantha
- • Red Columbine, Aquilegia desertorum
- Butterfly Weed, Asclepias tuberose
 - White Aster, Aster falcatum v.commutatus
 - Dwarf Blue Fall Aster, Aster novi-belgii 'Professor Kippenburg'
 - Winecups, Callirhoe involucrata
 - Sundrops, Calylophus hartwegii
- ● Bluebells, Campanula rotundifolia
- Paintbrush, Castilleja integra
- Snow in Summer, Cerastium tomentosum
- Western Virgin's Bower, Clematis ligusticifolia
- Lanceleaf Coreopsis, Coreopsis lanceolata
- Plains Coreopsis, Coreopsis tinctoria
 - Route 66 Coreopsis, Coreopsis verticillata 'Route 66'
- Whiplash Daisy, Erigeron flagellaris
 - Aspen Fleabane, Erigeron sp.

PERENNIALS CONTINUED

- Red-Root Buckwheat, Eriogonum racemosum
- Sulfur Flower, Erigonum umbellatum
- Western Wallflower, Erysimum capitatum
- Wheeler's Wallflower, Erysimum wheeleri
- Wild Strawberry, Fragaria ovalis
 - Native Blanket Flower, Gaillardia aristata
 - Dwarf Blanket Flower, Gaillardia grandiflora 'Arizona Sun'
 - Burgundy Blanket Flower, Gaillardia grandiflora 'Burgundy'
- Dwarf Blanket Flower, Gaillardia grandiflora 'Goblin'
- Adobe Blanketflower, Gaillardia pinnatifida
- Cambridge Geranium, Geranium x cantabrigiense
 - White Whirling Butterflies, Gaura lindheimeri
 - Pink Whirling Butterflies, Gaura lindheimeri 'Pink Cloud'
 - Purple Cransebill, Geranium caespitosum
 - White Cranesbill, Geranium richardsonii
 - Maximilian's Sunflower, Helianthus maximilianii
- • Red Coral Bells, Heuchera sanguineum 'Splendens'
 - Scarlet Gilia, Ipomopsis aggregata
 - Gayfeather, Liatris punctata
 - Mountain Phlox, Linanthastrum nuttallii
- Blue Flax, Linum perenne
 - Pretty Stoneseed, Lithospermum multiflorum
 - Silvery Lupine, Lupinus argenteus
 - Purple Aster, Machaeranthera canescens
 - Red Bee-Balm, Monarda cambridge 'Scarlet'

Planting - Perennials, Groundcovers, and Vines Continued

PERENNIALS CONTINUED

- Petite Wonder Dwarf Beebalm, Monarda didyma 'Petite Wonder'
- Native Lavender Bee-Balm, Monarda fistulosa menthaefolia
- Coyote Mint, Monardella odoratissima
- Kit Kat Catmint, Nepeta faassenii 'Kit Cat'
- Select Blue Catmint, Nepeta hybrid 'Select Blue'
- Walkers Low Catmint, Nepeta x faassenii 'Walker's Low'
- New Mexico Primrose, Oenothera berlandieri
- Tufted Evening Primrose, Oenothera caespitosa
- Shimmer Evening Primrose, Oenothera fremontii 'Shimmer'
 - Hooker Evening Primrose, Oenothera hookeri
 - Missouri Evening Primrose, Oenothera 'Missouriensis'
 - Pale Evening Primrose, Oenothera pallida
 - Lambert's Locoweed, Oxytropis lambertii
 - Virginia Creeper, Parthenocissus Quinquefolia
 - Scarlet Bugler, Penstemon barbatus
 - Sunset Crater Penstemon, Penstemon clutei
 - Firecracker Penstemon, Penstemon eatonii
 - Large Flower Penstemon, Penstemon grandiflourus
- Pike's Peak Beardtongue, Penstemon mexicali 'Pike's Peak'
- Red Rocks Beardtongue, Penstemon mexicali 'Red Rocks'
 - Bridge's Penstemon, Penstemon rostriflorus
 - Rocky Mountain Penstemon, Penstemon strictus
 - Wand Penstemon, Penstemon virgatus
- Mountain Phlox, Phlox austromontana
 - Silvery Cinquefoil, Potentilla hippiana
- Scarlet Cinquefoil, Potentilla thurberi
- Mountain Parsley, Pseudocymopterus montanus
 - Mexican Hat, Ratibida columnifera
 - • Red Prairie Coneflower, Ratibida columnifera 'Red'
 - Yellow Prairie Coneflower, Ratibida columnifera 'Yellow'
 - Rock Soapwort, Saponaria ocymoides 'Splendens'
 - Many Headed Groundsel, Senecio multilobatus
 - Golden Baby Goldenrod, Solidago 'Golden Baby'
 - • Few-Flowered Goldenrod, Solidago sparsiflora
- Partrige Feather, Tanacetum denastum
- Mountain Meadow Rue, Thalictrum fendleri
- Golden Banner, Thermopsis pinetorum

PERENNIALS CONTINUED

- Sunny Border Blue Speedwell, Veronica 'Sunny Border Blue'
- Canada Violet, Viola canadensis
- Canyon Grape, Vitis arizonica
 - Orange Carpet Hummingbird Flower, Zaushneria garrettii 'Orange Carpet'
 - Paper Flower, Prairie Zinnia

EVERGREEN PERENNIAL GROUNDCOVERS

- • Littleleaf Pussytoes, Antennaria parvifolia
- Rosy Pussytoes, Antennaria rosea
- Kaibab Pussytoes, Antennaria rosulata
- Kinnikinnick, Arctostaphylos uva ursi
- Prairie Smoke, Geum triflorum
- • Red Coral Bells, Heuchera sanguineum 'Splendens'
- Evergreen Candy Tuft, Iberis sempervirens
- • Creeping Mahonia, Mahonia repens
- Mountain Lover, Paxistima myrsinites
- Mat Penstemon, Penstemon linaroides
- • Pineleaf Penstemon, Penstemon pinifolius
- • Silver Lace Vine, Polygonum aubertii
- Allioni Speedwell, Veronica allionii
- • Crystal River Speedwell, Veronica Crystal River
- Woolly Creeping Speedwell, Veronica pectinata

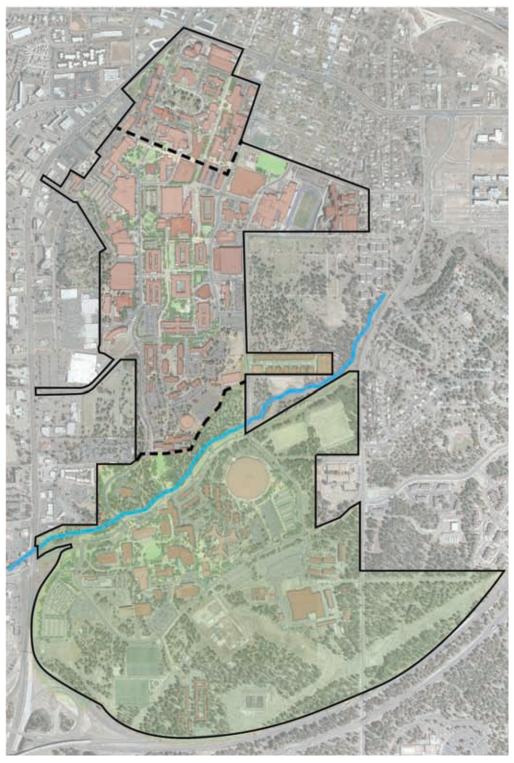
VINES

- Western Virgin's Bower, Clematis liquiticifolia
- • Arizona Honeysuckle, Lonicera arizonica
- Virginia Creeper, Parthenocissus Quinquefolia
- ● Silver Lace Vine, Polygonum aubertii
- Canyon Grape, Vitis arizonica

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MOUNTAIN SOUTH CAMPUS

Concept Designs



NORTHERN ARIZONA UNIVERSITY

MOUNTAIN SOUTH CAMPUS: CONCEPT DESIGNS

EXISTING CONDITIONS OVERVIEW

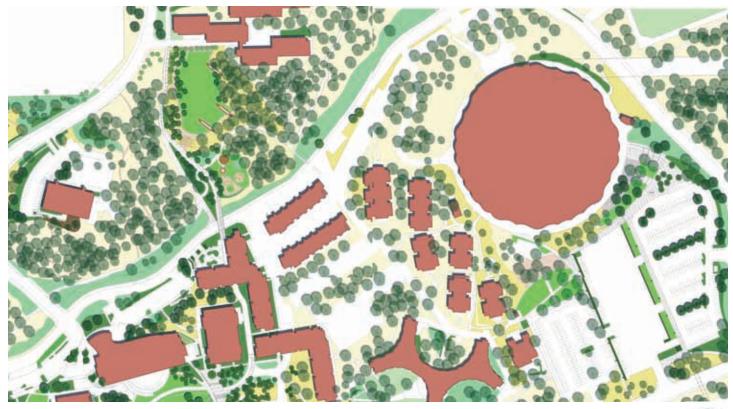




MOUNTAIN SOUTH CAMPUS: CONCEPT DESIGNS

PROPOSED IMPROVEMENTS OVERVIEW







MOUNTAIN SOUTH CAMPUS: CONCEPT DESIGNS

EXISTING CONDITIONS OVERVIEW

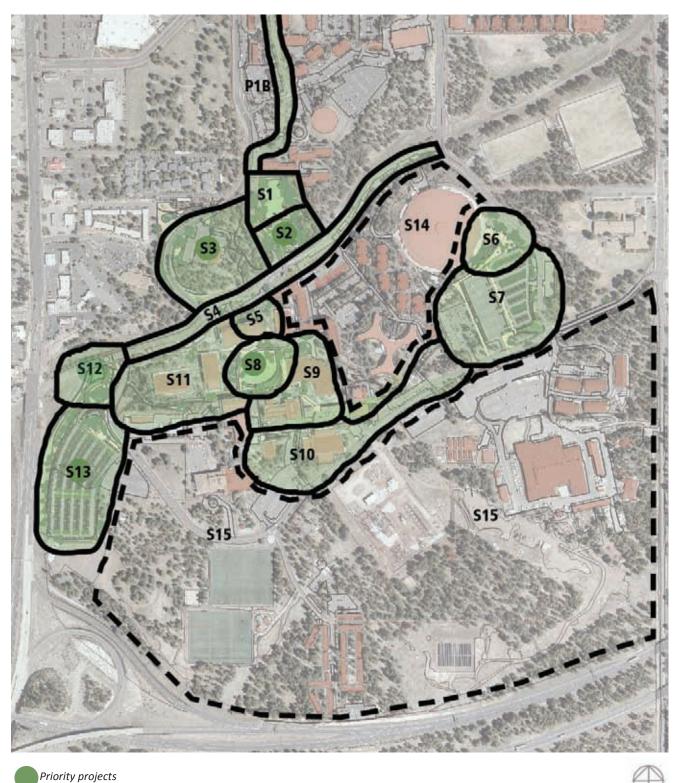




PROPOSED IMPROVEMENTS OVERVIEW



SOUTH CAMPUS PROJECTS OVERVIEW MAP



SOUTH CAMPUS OBJECTIVE

Utilize and enhance the natural beauty of the existing Ponderosa Pine forest to enrich students' experience of a mountain campus setting.

SOUTH CAMPUS GUIDING PRINCIPLES

- 1. A mountain setting that evokes a sense of adventure is a key ingredient for attracting students to NAU and should be preserved and enhanced on campus.
- 2. The Ponderosa Pine-Arizona Fescue habitat provides a strong regional sense of place.

PROJECT LIST

- S1. GABALDON GREEN
- S2. THE SUN DECK
- S3. BABBITT CENTER AND KNOLES DRIVE
- S4. SINCLAIR WASH
- S5. W.A. FRANKE COLLEGE OF BUSINESS ADMINISTRATION
- S6. SKYDOME ENTRY PLAZA
- S7. SKYDOME PARKING
- S8. SOUTH QUAD
- S9. DUBOIS CENTER AND HEALTH PROFESSIONS
- S10. PEDESTRIAN CONNECTIONS DUBOIS CENTER TO SKYDOME
- S11. PEDESTRIAN CONNECTIONS NEAR MCCONNELL ENTRY
- S12. CAMPUS ENTRY AT MCCONNELL DRIVE
- S13. MCCONNELL ENTRY PARKING LOT
- S14. SKYDOME VILLAGE (detailed information not included as part of the Landscape Master Plan)
- S15. SOUTH CAMPUS PINE FOREST (detailed information not included as part of the Landscape Master Plan)
- P1B. PEDWAY (No design plan, refer to Circulation section)

S1. GABALDON GREEN



S1. GABALDON GREEN

Design Concept:

The redesigned Gabaldon Green will accommodate a wide variety of campus activities ranging from quiet study to open play. Welldefined edges are critical to the visual and experiential quality of this space. Nestled between mature stands of Ponderosa Pine, the Green sits above the Sinclair Wash and the Sun Deck. New crusher fines walks around the perimeter feature stone seat walls and linear decks with long harvest tables that offer dramatic views over the Sinclair Wash and the heart of South Campus.

Project Objectives

- Create a distinctive active space adjacent to the Pedway that amplifies the pine forest.
- Improve the spatial quality by refining the edge conditions.
- Furnish the pace to accommodate small and large group gatherings.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- Harvest table on deck w/ flush concrete edger* Α.
- Concrete Pedway* B.
- C. Crusher fines paving with stabilizer and concrete edger*
- D. 18"x18" free standing manufactured concrete wall(mimics limestone)*
- Aspen grove, expand on existing grove as shown F
- Reconditioned bluegrass lawn
- Cool season tall grass meadow mix* G.
- Soil rip-rap drainage swale with tall grass meadow mix* Η.
- Ι. Pre-cast concrete bridge
- Planting bed with native low shrubs and ornamental grasses* J.
- Reconfigure existing boulders at slope edge, re-seed with tall grass meadow mix Κ.
- Over-seed warm season tall grass seed mix L.



Кеу Мар

S2. THE SUN DECK



S2. THE SUN DECK

Design Concept:

Adjacent to McConnell Bridge, and the Gabaldon Green is the south-facing 'Sun Deck'. The Sun Deck is a new and engaging student environment that emphasizes passive recreation and social engagement. The environment is tailored to the NAU culture and mountain experience. The design features multiple areas where students can lounge in colorful Adirondack chairs, push their feet into the sand, gather around a fire pit or relax in a hammock below the canopy of the Ponderosa Pines.

Project Objectives:

- 1. Create a functional series of spaces in a highly visible yet underutilized area adjacent to the Pedway.
- 2. Provide a unique and memorable experience for students to gather and relax in a mountain setting.
- 3. Utilize solar orientation to create a warm, comfortable environment for students to use.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions

*(Refer to Principles and Design Standards)

- A. 18" high x 18" wide manufactured concrete wall*
- B. Pedway*
- C. The Sun Deck: decking with Adirondack chairs*
- D. Short grass meadow mix*
- E. Sand beach with Adirondack* chairs (sub-surface drainage)
- F. Open fire pit with deck
- G. Hammocks tied to existing pines (8 total), with carabiner hooks and trunk protection*
- H. 2' high drystack limestone wall*
- I. Bluegrass turf mound with 12" wide concrete edger*
- J. Existing McConnell Bridge, paint guardrail rustic brown*
- K. 12" wide concrete edger*
- L. Concrete steps*
- M. Aspen grove
- N. New low height shrub bed with drip irrigation*
- O. Bluegrass blend turf or high traffic short grass meadow mix*
- P. Tall grass meadow mix with wildflowers*
- Q. Maintain existing Pine trees
- R. Maintain existing walk
- S. Provide protection from high velocity stormwater runoff at edge of planter
- T. Compacted crusher fines path with stabilizer
- U. 6" CIP concrete steps, radial to seatwall
- V. New 10' wide concrete FUTS trail





Кеу Мар

S2. THE SUN DECK



Existing view

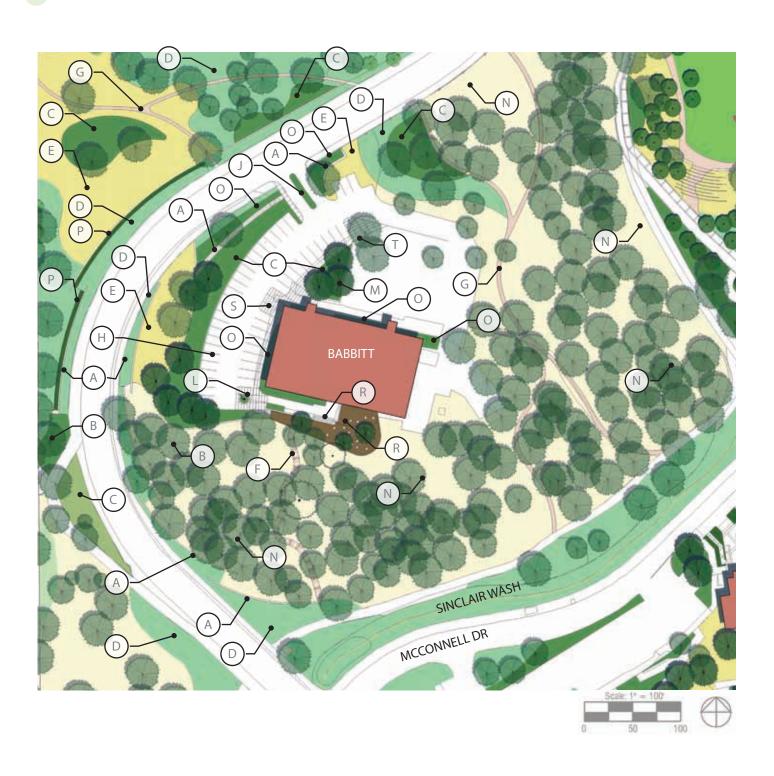
- 1. Thin riprap to allow for shrub planting. Add protection along north and west side of planting bed.
- 2. Remove riprap to allow for new native grass stands. Add protection along north and west side of planting bed.



Proposed view

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S3. BABBITT CENTER AND KNOLES DRIVE



S3. BABBITT CENTER AND KNOLES DRIVE

Design Concept:

Babbitt Center is positioned to look into Sinclair Wash and Mountain South Campus. Viewed from the bottom of the slope and Knoles Drive, the design features new landscape improvements such as curvilinear stone walls, planted understory, wildflower meadows and forest floor restoration. These features create a natural and beautiful arrival sequence to a building that respects the native landscape.

Project Objectives

- 1. Celebrate the natural beauty of the native Ponderosa Pine forest.
- 2. Restore and amplify the natural beauty and character of the building context.
- 3. Create a recognizable and memorable sense of arrival to the Babbitt Center.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions

*(Refer to Principles and Design Standards)

- A. 30" high manufactured concrete or drystack limestone wall*
- B. Maintain existing Pines
- C. Planting bed with native shrubs*
- D. Short grass meadow mix*
- E. Tall grass meadow mix with wildflowers*
- F. 6" concrete risers at existing grade, provide level crusher fines landings between risers, connect to existing trail
- G. Crusher fines trail w/ stabilizer, no concrete edger
- Reconfigured parking to maximize efficiency and simplicity, maintain parking count
- I. Not used
- J. Median added with low ground cover planting*
- K. Not used
- L. Entry plaza with flag pole, manufactured concrete seatwall, concrete paving sand finish, and planting bed w/ ornamental grasses and perennials
- M. New pine trees
- Remove dense needles and over-seed with native tall grass mix and wild flowers
- O. Ornamental grass and flower bed
- P. Native shrub hedgerow
- Q. Not used
- R. New deck with stainless steel cable and railing, and movable furniture*
- S. Concrete plaza, sand finish
- T. Sawcut existing wall, add new wall segment to existing wall to accommodate new parking lot alignment



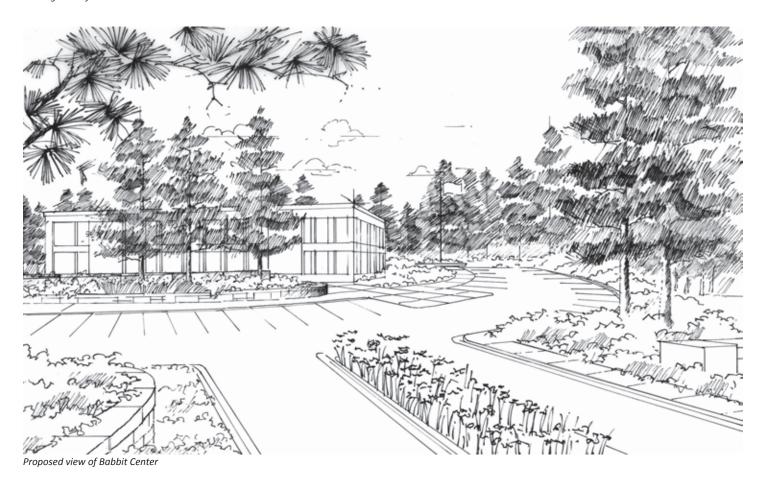


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S3. BABBITT CENTER AND KNOLES DRIVE



Existing view of Babbit Center



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S4. SINCLAIR WASH

Design Concept:

The Sinclair Wash is an extremely important feature of the NAU campus. As a regionally significant storm water conveyance, a threshold, and linear space, it merits careful restorative attention. The design concept focuses on establishing native grasses, wetland plants, and the control of weed species to create a beautiful and recognizable natural habitat that amplifies the mountain characteristics of the Mountain South Campus.

Project Objectives

- 1. Maintain and improve the urban drainage through campus.
- 2. Clean up, restore and amplify the natural beauty and character of the Sinclair Wash.
- 3. Establish new habitat for small mammals and birds.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Supplemental short grass and climate-adapted cottonwood seed mix with hydromulch tackifier on channel banks
- B. Switchgrass seed mix with hydromulch tackifier at channel bottom

NOTE: During the Design Development Phase, there is potential for collaboration on restoration with riparian species in low flow areas and strengthen the red oaks along McConnell Drive for streetscaping.

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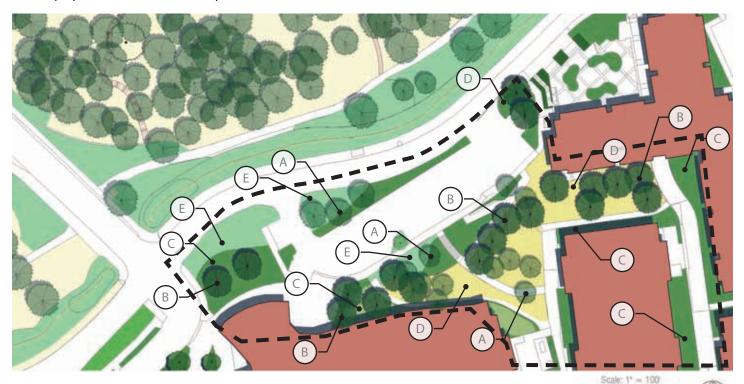
S5. W.A. FRANKE COLLEGE OF BUSINESS ADMINISTRATION

Design Concept:

The design for this area of the Mountain South Campus focuses on ground-level improvements including: the re-establishment of short and tall grass meadows in place of gravel mulch; new shrub, ground cover and perennial plantings to screen parking areas; and new sidewalk improvements.

Project Objectives

- 1. Improve the visual characteristics of the landscape, parking lot and pedestrian walks
- 2. Restore native landscape zones around and in between buildings
- 3. Amplify the Mountain South campus character



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Protect existing trees
- B. New Ponderosa pines*
- C. Planting bed with native shrubs*
- D. Tall grass seed mix*
- E. Short grass seed mix*





Кеу Мар

S6. SKYDOME PLAZA



NORTHERN ARIZONA UNIVERSITY

S6. SKYDOME PLAZA

Design Concept:

The Sky Dome is a landmark for the University, and the redesign of this venue seeks to create a unique game-day experience. Addressing space limitations of an existing detention pond, the design features a generously sized deck that accommodates increased attendance and greater flexibility. A new arrival plaza welcomes students, alumni and faculty to game day celebrations with new trees, banner elements, seating, improved circulation and a more prominent location for Louie the Lumberjack.

Project Objectives

- 1. Create a grand and mountain-oriented plaza/deck environment to enhance the game day experience.
- 2. Celebrate and amplify the NAU sports tradition.
- 3. Increase the pre-game and post-game capacity for tailgating and celebrating.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Relocated Louie sculpture on stepped concrete base, sand finish
- B. Concrete paved plaza, sand finish*
- C. Concrete stairs, sand finish*
- D. Deck over drainage swale
- E. Lawn terraces w/ 1' wide concrete seat walls, footers to frost depth
- F. Planting bed with native shrubs and perennials*
- G. Resurface and re-stripe parking lot, add curb and gutter islands w/ native shrubs and Ponderosa pines
- H. Passenger drop-off, new curb and gutter
- I. 18" high x 2' wide limestone veneer seat walls w/ pre-cast cap*
- J. Deciduous trees in circular seatwall planters
- K. Short grass seed mix w/ wildflowers*
- L. Limestone masonry retaining wall, 1'-2' high w/ pre-cast cap
- M. Concrete paving, natural gray, light broom finish
- N. Limestone and steel banner monument
- O. ADA ramp



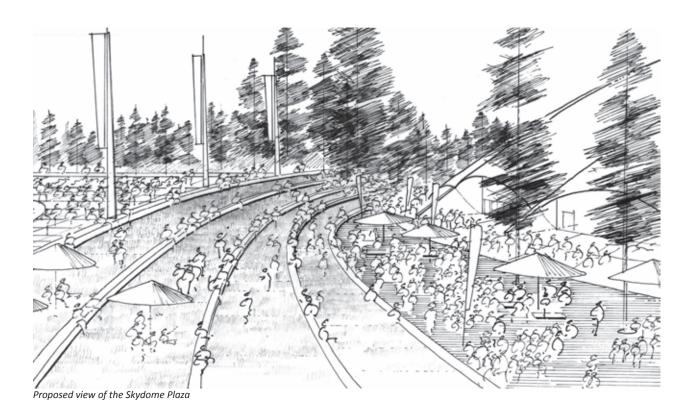


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S6. SKYDOME PLAZA

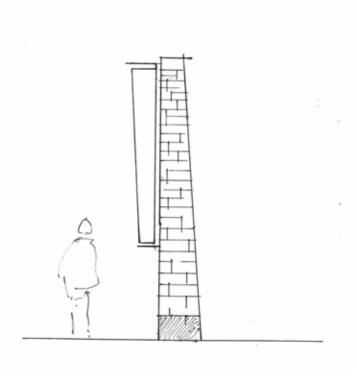


Existing view of the Skydome



NORTHERN ARIZONA UNIVERSITY

S6. SKYDOME PLAZA



Proposed Skydome Banner Monument

S7. SKYDOME PARKING



S7. SKYDOME PARKING

Design Concept:

The parking lots at Skydome have been realigned to maximize efficiency, add screening and enhance the arrival sequence. Banner monuments will be added to celebrate the NAU sporting tradition, improve pedestrian walks and tailgating environments and create an atmosphere that is unique to the NAU experience.

Project Objectives

- 1. Improve the visual characteristics of the landscape, parking lot and pedestrian walks.
- 2. Celebrate and amplify the NAU Sports tradition.
- 3. Increase the pre-game and post-game capacity for tailgating and celebrating.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Resurface/ re-stripe parking, new curb and gutter and islands w/ native shrubs and deciduous shade trees
- B. Relocated shuttle stop
- C. Banner poles with limestone base
- D. Planting bed native shrubs and accent perennials*
- E. New events lawn
- F. Concrete retaining wall, 1' to 30" high, no cap
- G. Ponderosa pines*
- H. Concrete paving, natural gray*
- I. Concrete paving, sand finish*
- J. Not used
- K. Limestone veneer masonry freestanding wall w/ pre-cast cap*
- L. New curb and gutter, remove unnecessary paying to allow for new plantings
- M. Crusher fines paving*
- N. Parking lot striping alignment to remain
- O. Limestone veneer masonry retaining wall, 3' hight max
- P. Tall grass seed mix*
- Q. Short grass seed mix*
- R. 3' high hedgerow w/ striking fall color*





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S8. SOUTH QUAD



S8. SOUTH QUAD

Design Concept:

The South Quad is one of NAU's most important and dramatic open spaces. The design for this quadrangle is centered on a few key concepts that give it form, visual quality and adaptability. The south and east edges of the space offer a vista to the San Francisco Peaks. These edges are composed to capitalize on the views and create an environment that supports events, social gatherings, or just simply sitting and enjoying the view. The second concept is the quad's capacity to host a wide array of events, concerts, and game day activities. Design features include terraced lawn steps for passive recreation and amphitheater-style seating, a spruce garden that builds on the existing stand of mature trees, and improved service and emergency vehicle access. Also included is a linear seat wall that harnesses the heat from underground hot water lines.

Project Objectives:

- 1. Improve pedestrian, service and emergency circulation.
- 2. Create a venue for large community events, concerts, and festivals.
- 3. Capitalize on the incredible mountain views with new seating areas, overlooks and amenities.
- 4. Improve on the aesthetics and design of the space.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

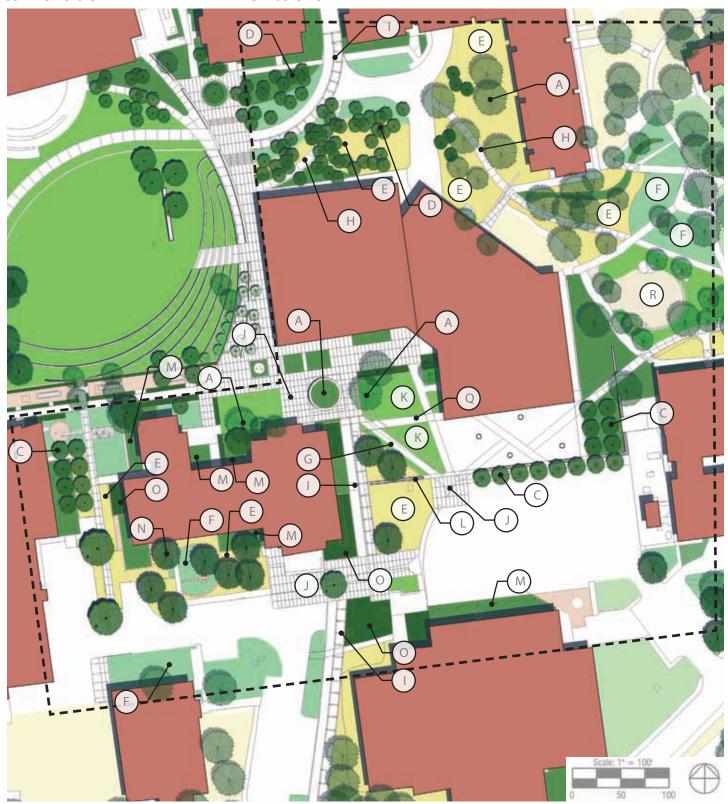
- A. 12" CIP concrete risers, footings to frost depth
- B. Concrete steps
- C. 5' wide concrete seat wall aligned with underground hot water tunnel
- D. Concrete paving for fire truck access
- E. Grass pavers for fire truck access*
- F. 12" CIP concrete edger*
- G. Harvest table*
- H. Compacted crusher fines paving with stabilizer and concrete edger*
- I. Concrete paving sand finish with movable tables and chairs*
- J. Existing sculpture
- K. Planting bed with low shrub hedgerow*
- L. Short grass seed mix*
- M. Tall grass seed mix*
- N. Bluegrass turf blend lawn*
- O. Maintain existing trees
- P. Deciduous shade tree*
- Q. Tree grove
- R. Ponderosa pine*
- S. Picnic table on concrete pad
- T. 18" high manufactured concrete seatwall with manufactured concrete cap
- U. Native shrub bed*
- V. Fire lane
- W. ADA ramp





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S9. DUBOIS CENTER AND HEALTH PROFESSIONS



S9. DUBOIS CENTER AND HEALTH PROFESSIONS

Design Concept:

The Dubois Center and Health Professions area of the Mountain South Campus offers a tremendous opportunity to re-imagine how architecture and the associated landscape can extend into the adjacent mountain terrain. The existing architecture and adjacent grounds are flat and the extent of gravel mulch renders the campus hot, uncomfortable and detached from the mountain setting. By planting stands of ornamental grass, native grass meadows, shrub beds and new trees, the design seeks to nestle the buildings into the mountain context. Using geometric lines and edges to separate species and vertical planes of planting, the composition of plant textures will form a palette that can be repeated throughout the Mountain South Campus.

Project Objectives

- 1. Create planting palettes, landscape principles and strategies for how buildings are landscaped in the Mountain South Campus.
- 2. Improve the pedestrian and visual characteristics.
- 3. Improve the capacity for events and gatherings.
- 4. Build an example of how water conserving landscapes can be beautiful, maintainable and durable.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Maintain existing trees
- B. Deciduous shade tree*
- C. Deciduous tree row, single species*
- D. Aspen tree grove, 3 species max*
- E. Tall grass meadow mix*
- F. Short grass meadow mix*
- G. Maintain existing concrete path
- H. New concrete accessible path*
- Pedway*
- J. Concrete plaza, sand finish*
- K. Lawn*
- L. 2' wide concrete seat wall, pre-cast cap*
- M. Planting bed with native shrubs and accent perennials*
- N. Ponderosa Pines*
- O. Planting bed w/ low evergreens*
- P. Existing paving to remain
- Q. New concrete paving, natural gray, light broom finish
- R. New sand volleyball pit w/ large limestone boulders and concrete seat steps
- S. 3' high hedgerow





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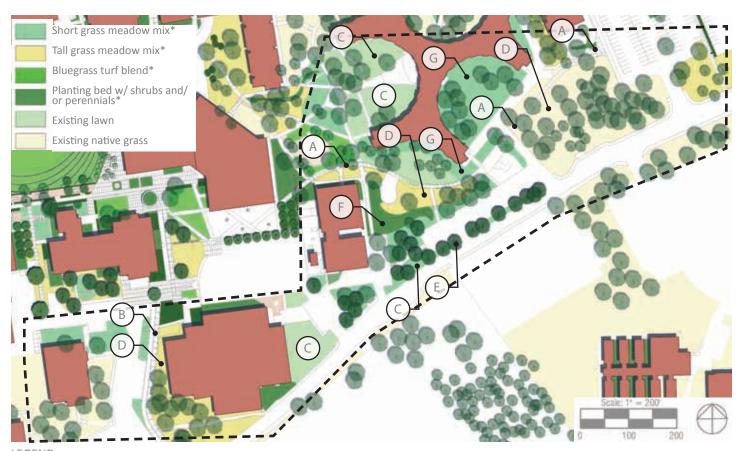
S10. PEDESTRIAN CONNECTIONS DUBOIS CENTER TO SKYDOME

Design Concept:

The east/west connections through the Mountain South Campus are critical to both functionality and the pedestrian experience. The design for these important movements create a hierarchy of walks and landscaped paths that delineate clear and intuitive routes to the various destinations.

Project Objectives

- Improve east west movements through the Mountain South Campus.
- Restore and visually improve the native and domesticated landscapes that these walks move through 2.
- Amplify the mountain experience.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- Α. New concrete path*
- В. New Pedway connection*
- Short grass seed mix* C.
- D. Tall grass seed mix*
- Ε. Ponderosa pines*
- Plant bed w/ native riparian shrubs* F.
- Plant bed w/ native dry land shrubs* G.



Кеу Мар

S11. PEDESTRIAN CONNECTIONS NEAR MCCONNELL ENTRY

Design Concept:

Critical to both functionality and the pedestrian experience, the east/west connections through the Mountain South Campus will be designed to create a hierarchy of walks and landscaped paths that delineate clear and intuitive routes to the various destinations.

Project Objectives

- 1. Improve east west movements through the Mountain South Campus.
- 2. Restore and visually improve the native and domesticated landscapes that these walks move through.
- 3. Amplify the mountain experience.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. New concrete path*
- B. Crusher fines path*
- C. New concrete fire lane
- D. Tall grass seed mix*
- E. Deciduous tree row, single species*
- F. Lawn*
- G. Relocate existing SLUG garden, coordinate new location w/ NAU planning and design staff
- H. Planting bed w/ native shrubs and perennials



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\$12. CAMPUS ENTRY AT MCCONNELL DRIVE



S12. CAMPUS ENTRY AT MCCONNELL DRIVE

Design Concept:

The experience of being in the native Ponderosa Pine forest is what makes Flagstaff unique. The entry statement will become more deliberate with a strong landscape design that clearly marks the threshold to the Campus. This important landscape sets the tone for the quality of Campus and highlights the mountain character that attracts people to it. This is a stylized mountain design that features sweeping meadows, stands of native shrubs, wildflowers and wet meadows that treat stormwater runoff. This will remain one of the signature places for graduates to take pictures as well as one of the first memories a student might experience when visiting Campus.

Project Objectives:

- Create a lasting impression of NAU by capitalizing on the visibility from the Interstate 17 and the off-ramp.
- 2. Stylize the native landscape to be inspiring, beautiful and welcoming.
- 3. Celebrate the heritage of NAU and arrival to campus.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

- A. Campus monument identity signage, cut wall 10' from curb to improve circulation, restore masonry, reinstall stone end piece
- B. 18" high concrete weir
- C. PLD (Porous Landscape Detention) with native riparian shrubs and accent perennials*
- D. Digital information signage
- E. 1' high concrete retaining wall
- F. Compacted crusher fines paving with stabilizer and concrete edger*
- G. 3' wide soil rip-rap drainage swale planted with Switchgrass*
- H. Planting bed with native shrubs and accent perennials*
- Short grass seed mix*
- J. Tall grass seed mix*
- K. Reconditioned bluegrass turf blend lawn*
- L. Concrete walk light broom finish*
- M. Maintain existing trees
- N. Remove existing Spruce trees behind wall and add Ponderosa pines
- O. Remove curb and gutter, add turn lane, reinstall curb and gutter, and install sidewalk
- P. Decorative concrete entry drive w/ rumble surface
- Q. New guard rail*
- R. Low concrete bridge
- S. Stormwater outfall w/ riprap
- T. Drain inlet

NOTE: ADOT is planning to construct a sidewalk on the south side of McConnell Drive from the I-17 off-ramp to Beulah Boulevard. It is recommended to coordinate Design Development with ADOT.





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S13. MCCONNELL ENTRY PARKING LOT



S13. MCCONNELL ENTRY PARKING LOT

Design Concept:

The Parking facilities at the McConnell Entry are a tremendous resource for not only student and faculty parking but also for game days, summertime events in the South Quadrangle and other programmable spaces on campus. Like the entry experience, the parking lots and arrival sequence is critical to the pedestrian experience of the campus. Redesigning the McConnell lot affords more stalls, improve snow removal and storage and increases the landscape area through islands and perimeter treatment. The northeast end of the parking lot features a new plaza, gardens and campus orientation facilities that welcome visitors and creates a comfortable place to sit while waiting for a ride or a game day shuttle. This plaza also marks the entry to the main east/ west pedestrian sidewalk connection to the main destinations in the Mountain South Campus.

Project Objectives

- 1. Improve the visual characteristics of the landscape, include landscaped parking lot islands and clarify pedestrian movement.
- 2. Develop a strong and intuitive sense of campus orientation.
- 3. Maintain snow storage capabilities of the facility.
- 4. Improve the performance of the storm water and water quality facilities, while enhancing the landscape design characteristics.

LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)

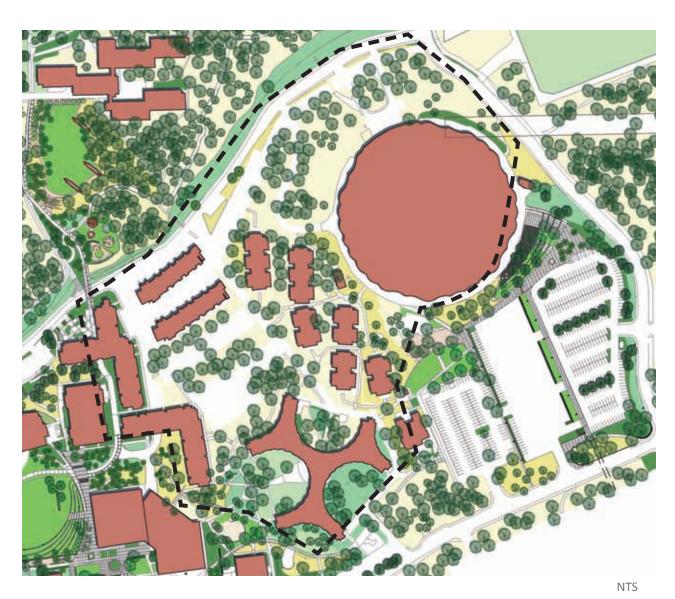
- A. Plaza, concrete paving, sand finish, NAU logo sandblasted w/ color stain
- B. 18" high concrete retaining wall, sand finish w/ pre-cast cap*
- C. PLD (Porous Landscape Detention) with native riparian shrubs and accent perennials
- D. Passenger drop off
- E. Parking lot reconfigured and re-striped to gain landscape islands, maintain existing space count
- F. 3' wide soil rip-rap drainage swale planted with Switchgrass
- G. Planting bed with native shrubs and perennials*
- H. Short grass meadow mix*
- I. Tall grass meadow mix*
- J. Lawn*
- K. Concrete walk light broom finish*
- L. Maintain existing trees
- M. Ponderosa Pines*
- N. Deciduous shade trees*
- O. New curb and gutter islands
- P. Existing parking lot to remain
- Q. Maintain tractor trailer turning radius needed for emergency parking during I-40 snow closures





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S14. SKYDOME VILLAGE



LEGEND

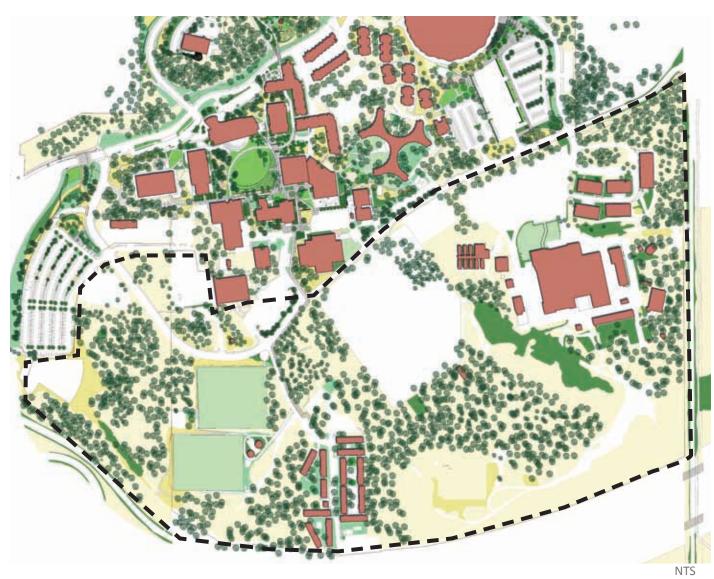
The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)





S15. SOUTH CAMPUS PINE FOREST

The plan diagram below generally represents the campus-wide approach of increasing plant densities in planting beds along with maximizing stands of native grass to replace rock mulch beds with little or no plants.



LEGEND

The following legend is a general guide unless keynoted otherwise with more specific conditions *(Refer to Principles and Design Standards)





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NORTHERN ARIZONA UNIVERSITY

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PAVEMENT: DESIGN PRINCIPLES

- ▶ The hardscape should create a calming, supportive background and may not be colored or stamped
- Pavements should be a simple, unifying element that creates a pedestrian scale, and provide ease of maintenance and repair
- ▶ Use special paving methods as an accent in special areas or significant places (i.e. the student union plaza)
- Pedestrian pavement should be seen as separate and distinct from vehicle pavement
- ▶ Pavements should be designed to meet ADA standards

Concrete Paving Broom Finish

Zone: Campus Wide

Placement: Sidewalks and pedestrian areas except special gathering areas where payers are used

- Concrete to meet NAU Technical Standards
- Broom finish
- Standard gray concrete (no color or pigment)
- Sidewalks to be a minimum of 8' wide



Concrete Paving Sand Finish

Zone: Campus Wide

Placement: Accent material used for the Pedway and special gathering areas such as plazas, courtyards, and building entries

- Concrete to meet NAU Technical Standards
- Sand finish standards
- · Standard gray concrete (no color or pigment)

Sand Finish Standards: Surface Retarder

- Product: 'TOP CAST' by Grace Construction Products or Landscape Architect approved equal
- Number Code: Grade 05
- Etch/Aggregate Size to Expose: Light Sandblast Finish
- Coverage: 250/350 Square Feet Per Gallon
- Retardant removal per manufacturer standards, typically within 6-24 hours after application. Timing of removal dependent upon temperature to create desired finish.
- Refer to Pedway Design Standards (Page 219) for additional details

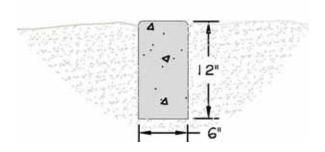


Concrete Edger

Zone: Campus Wide

Placement: Crusher fines lawn paths, 1/4" crusher fines paving in bike parking areas, planting beds, and grass paver fire lanes.

- Concrete to meet NAU Technical Standards
- MAG Type 'B' Curb (Detail 222 6.0" wide, 12" depth) modified to be flush with finished grade
- · Standard gray concrete (no color or pigment)



PAVEMENT CONTINUED

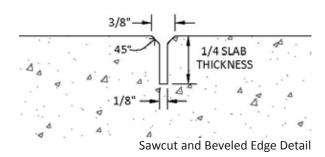
Concrete Scoring Patterns & Control Joints

Zone: Campus Wide

Placement: All locations where concrete is utilized.

- Saw cut and beveled at special gathering areas
- Tooled for sidewalks and pedestrian areas with broom finish
- Scoring and joints must have beveled edge
- Joints must extend to a depth of 1/4 of slab thickness
- Rectangular or square patterns
- Patterns must be 3'x3' min and 12'x12' max





Bike Access at Stairways

Zone: Campus Wide Placement: At stairways.

- Concrete to meet NAU Technical Standards
- Standard gray concrete (no color or pigment)
- The U-shaped channel should be:
 - Placed 1.5 to 2" from stairs
 - A minimum of 8" from a stairway wall
 - 4" wide minimum and 8" wide maximum
 - 1.5 to 2" deep
- The slope of the channel should match the slope of the stairs
- Location of railing should not obstruct bike access and be compatible with ADA requirements



PAVEMENT CONTINUED: PEDWAY DESIGN PRINCIPLES

▶ Refer to the Circulation Principles and Design Standards for additional information regarding Pedway Design.

Concrete - Pedway Design

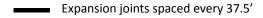
Placement: Primary north-south Pedway only.



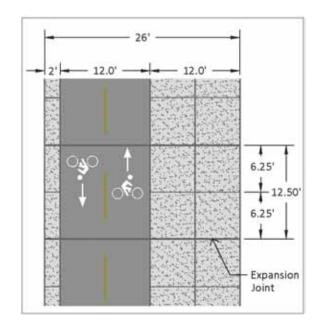
Bike Lane: light broom finish perpendicular to bike traffic, integral color 'GRAPHITE' pigment concrete



Pedestrian Lane: sand finish panels, standard gray concrete



- All concrete must be 6" thick, fibermesh reinforced overlying
 4" of compacted ABC per NAU Technical Standards
- Concrete mix design for Pedestrian lane must contain 60% fine aggregate and 40% large aggregate to achieve sand finish
- Weather Worker 40% J29 Sealer or NAU approved equal should be applied to concrete after the 28 day curing period unless otherwise directed by NAU
- Expansion joints must align with spacing of control joints as shown in plan diagram
- Tooled joints must extend to a depth of 1/4 slab thickness
- Use 2' long, 1/2" diameter rebar dowels at 2'-6" O.C. to tie pedestrian and bike concrete together
- On-site 8' by 8' mock-up of full cross-section of Pedway required to ensure desired look is achieved. Approval by Landscape Architect required.



PAVERS: DESIGN PRINCIPLES

- ▶ Pavers should be a simple, unifying element that creates a pedestrian scale and provides ease of maintenance and repair
- ▶ Used as accent material in outdoor gathering spaces that will slow runoff and does not contribute to impermeable area
- ► Designed to meet ADA standards

Open Pavers

Zone: Campus Wide

Placement: Bike parking areas or pedestrian gathering areas with no vehicular traffic.

- Standard gray concrete (no color or pigment)
- Planted with bluegrass turf blend or utilized with pea gravel
- Curvilinear, soft edge (no concrete border)
- Installation per manufacturer specifications



Holland Pavers

Zone: Campus Wide

Placement: Pedestrian gathering areas with no vehicular traffic.

- Concrete subbase required
- 4"x8" Holland Stone Color Belgard 'Fuego Blend' or Landscape Architect approved equivalent
- Installation per manufacturer specifications



Plankstone Pavers

Zone: Campus Wide

Placement: Pedestrian gathering areas with no vehicular traffic.

- Concrete subbase required
- 4"x18" Plankstone Color Gray
- Installation per manufacturer specifications



Grass Pavers

Zone: Campus Wide

Placement: Where contiguous lawn areas are desired.

- Grasspave or Landscape Architect approved equal
- Must be designed to support fire truck traffic
- Concrete Border to delineate edge of pavers required
- Installation per manufacturer specifications



PAVERS CONTINUED

Concrete Stepping Stones

Zone: Campus Wide

Placement: Limited use along seat walls as a skateboard deterrent. This design requires higher maintenance and should be limited to special design areas.

- Preferred size: 2'x2'
- Standard gray concrete (no color or pigment)
- Must be surrounded by bluegrass turf blend or low ground cover
- Prefer in placement in shaded area to minimize watering



GROUND PLANE: DESIGN PRINCIPLES

The Northern Arizona University Campus is located in the Ponderosa Pine - Arizona Fescue forest (Refer to Planting Design Principles on pages 224-228). This is important because, although a more diverse plant selection is offered in this document, it implies a general aesthetic that should be applied to the ground plane throughout Campus. Plant density of the ground plane should reflect this habitat with no more than 20% of the mulch visible after 3 years of growth. The 80% coverage refers to plants on the ground plane and should be accomplished utilizing low height shrubs, grasses, perennials, and/or groundcover plantings (trees and medium height shrubs do not contribute to 80% plant coverage on the ground plane). Large expanses of mulch, gravel, or rip-rap should be avoided. Although plant density is more critical than the mulch material utilized, material selection contributes to the overall aesthetic of the landscape. Materials should be selected based on the following factors: 1) plant health, 2) aesthetics, 3) public safety, 4) appropriate solution per the Grading and Drainage Section (refer to page 221), and 5) maintenance.

Wood mulch contributes to plant health, provides the preferred aesthetic, provides cooling of soils, and does not contribute to urban heat island effect. It also lends itself to fuller planting beds resulting from the ability of plants to spread, and easier maintenance by deterring weeds by filling in the space between plantings, and allows weeds to be pulled by hand, negating the need for chemicals.

Gravel and rip-rap should be avoided in planting beds due to the inability to plant effectively and difficulty weeding. Rip-Rap has a utilitarian aesthetic, is not appropriate for planting beds, and should only be used where appropriate for drainage solutions (refer to page 223 for placement). Planting beds should emphasize the plants themselves with the mulch as a supporting background material. The Grading and Drainage Section of the Principles and Design Standards outlines appropriate solutions for slopes and drainageways. If a project site has existing 1/2" to 2" Rock Springs Chocolate or Table Mesa Brown, it may remain if the plant density is increased to 80% coverage of the planting bed after the 3 year establishment period.

Mulch should be placed 4" thick without weed fabric. Weed fabric prevents the material from binding with the soil and encourages movement or dispersion of the mulch by wind. Plastic also prevents the material from binding with the soil, does not allow water or nutrient penetration, and should not be used.

Wood Mulch

Zone: Campus Wide

Placement: High density planting beds where flammability is not an issue. Not used in retention or detention basins, areas with high velocity stormwater runoff, or slopes greater than 3:1.

- Utilize in planted beds rather than gravel
- Western Red Cedar Mulch (preferred) or Gorilla Hair Mulch
- To be placed 4" thick to deter weed growth (no weed fabric or plastic)
- No more than 20% of planting bed mulch visible after 3 yrs



Gravel - 1/2" or 1" Screened

Zone: Campus Wide

Placement: High density planting beds where flammability is an issue (i.e. known smoking areas) or select NAU approved locations (unplanted beds). Not used in retention or detention basins or areas with high velocity runoff or on slopes areater than 3:1.

- 1/2" or 1" screened Rock Springs Chocolate or Table Mesa Brown Crushed Rock
- To be placed 4" thick to deter weed growth (no weed fabric)
- No more than 20% of planting bed gravel visible after 3 yrs



GROUND PLANE CONTINUED

Crusher Fines Paving

Zone: Campus Wide

Placement: Seating areas, bike rack areas, and crusher fines forest/lawn paths. Not to be placed close to building entries, areas with high velocity stormwater runoff, or areas that require snow plowing.

- 1/4" minus Madison Gold Decomposed Granite with fines and optional tackifier
- To be placed 4" thick to deter weed growth (no weed fabric)
- Proper subgrade preparation, an underdrain system, or a minimum slope should be utilized to assist drainage.
- CU-Structural Soil or approved equal recommended where trees are planted in crusher fines (planting pit should be 10' in diameter)



Beach Sand

Zone: Central and South Campus Placement: Only where specified in Design Plan Drawings.

- Mortar sand (finest sand utilized by masons)
- · Clean, washed, locally sourced sand
- · Cinders are not allowed



Limestone Boulders

Zone: South Campus

Placement: Only in select locations to compliment architecture of new construction. Must have approval of Master Plan Landscape Architect.

- Boulders are approximately 3 feet in diameter
- Rock color should match existing limestone on campus
- 1/3 of boulder should be buried for natural effect
- Boulders must be placed in naturalistic groupings (groups of 1, 3, or 5 preferred)



Decking

Zone: Campus Wide

Placement: Only where decking is specified in Design Plan Drawings.

- Three Options for Materials:
 - 1. TruGrain with Resysta 'Platinum' Decking Untreated
 - 2. Kebony Wood
 - 3. Black Locust Wood
- Structural support per manufacturer specifications



PATHWAYS: DESIGN PRINCIPLES

- ▶ Informal pathways used for pedestrian connectivity through lawns and forested areas
- ▶ Materials utilized for informal pathways will slow runoff and reduce impermeable area
- ► Solar pathways are innovative and support sustainable design

Solar Pathway

Zone: Central Campus

Placement: Pedestrian or bike pathways. Not to be used for Pedway.

- SolaRoad Solar Bike Path or approved equal
- Must be designed with no-slip surface and ability to accommodate snow removal equipment



Crusher Fines Forest/Lawn Paths

Zone: Campus Wide

Placement: Secondary paths in low traffic areas that do not require snow plowing. Not to be placed close to building entries or intended as primary circulation routes.

- Material is 1/4" minus with fines
- To be placed 4" thick to deter weed growth (no weed fabric)
- Lawn Paths: CIP concrete border (concrete border not needed next to planting beds)
- Forest Paths: soft edge (no concrete)



Manufactured Concrete Stairs

Zone: Central and South Campus

Placement: Crusher fines forest paths in low traffic areas that do not require snow plowing. Not to be placed close to building entries.

- Rosetta 'Irregular Steps' manufactured concrete product
- Color 'Fond Du Lac'
- Natural edge or boulder setting edge (no linear rock borders or concrete edge)
- Installation per manufacturer specifications



WALLS: DESIGN PRINCIPLES

- ► Clean lines and modern detailing to create a unifying background
- ▶ Sandstone and Limestone in natural form should have tight coursing with long rectangular blocks and a smooth face
- ► Not to be used: stucco or pre-cast block

Sand Finish Concrete Walls

Zone: North Campus along Pedway only, Central, and South Campus Placement: Seat wall or edge wall

Wall Cap: Central - no cap; South - Manufactured Concrete Cap or Sand Finish Concrete Cap

- Concrete to meet NAU Technical Standards
- Sand finish concrete standards
- Standard gray concrete (no color or pigment)
- Beveled edge (preferred) or straight edge



Manufactured Concrete Wall

Zone: North and South Campus Placement: Seat wall or edge wall Wall Cap: Manufactured Concrete Cap

- Belgard 'Tandem Wall'
- Single/Solid Textured Units (Ashlar pattern not allowed)
- Color Landscape Architect approved custom color blend to match natural limestone on campus
- Installation per manufacturer specifications
- Intent is to match the classic look of natural stone



Classic Limestone Wall

Zone: North Campus

Placement: High visibility accent areas and seat wall or edge wall Wall Cap: Natural Limestone Cap

- Rectangular blocks 6-12" high and 12-18" long with pitched, chiseled face
- Rock color should match existing limestone on campus
- Classic mortar to match color of limestone
- Rock must resist freeze/thaw conditions (ASTM D5312, C568) and be sourced within 500 miles of project location



WALLS CONTINUED

Modern Limestone Wall

Zone: Central Campus

Placement: High visibility accent areas and seat walls or edge wall Wall Cap: None

- Drystack large blocks, 2'-3' in length and 12-18" in height
- Rock color should match existing limestone on campus
- Rock must resist freeze/thaw conditions (ASTM D5312, C568) and be sourced within 500 miles of project location



Drystack Limestone Wall

Zone: South Campus

Placement: Seat wall, edge wall, and retaining wall under 3 feet in height Wall Cap: None

- Drystack large blocks, 2'-3' in length and 12-18" in height
- Rock color should match existing limestone on campus
- Preferred source is from local Flagstaff construction sites
- If source is not local, rock must resist freeze/thaw conditions (ASTM D5312, C568) and be sourced within 500 miles of project location



Classic Sandstone Wall

Zone: North Campus

Placement: High visibility accent areas and seat wall or edge wall Wall Cap: Natural Limestone or Manufactured Concrete Cap

- CMU with sandstone veneer
- Rock color should match existing sandstone on campus
- Rectangular blocks 6-12" high and 12-18" long with pitched, chiseled face
- Raked mortar joints with color pigment to match natural stone
- Rock must resist freeze/thaw conditions (ASTM D5312, C616) and be sourced within 500 miles of project location
- Ash Fork Sandstone discouraged due to inability to withstand freeze/thaw cycles
- Recommended that veneer is a minimum of 4" thick with rock bedding planes parallel to ground plane to discourage spalling



WALLS CONTINUED

Modern Sandstone Wall

Zone: Central Campus

Placement: High visibility accent areas and seat wall or edge wall Wall Cap: No cap or Sand Finish Concrete Cap

- CMU with sandstone veneer in ashlar pattern
- Rock color should match existing sandstone on campus
- Raked mortar joints with color pigment to match natural stone
- Rock must resist freeze/thaw conditions (ASTM D5312, C616) and be sourced within 500 miles of project location
- Ash Fork Sandstone discouraged used due to inability to withstand freeze/thaw cycles
- Recommended that veneer is a minimum of 4" thick with rock bedding planes parallel to ground plane to discourage spalling



Retaining Wall

Zone: Central and South Campus Placement: Areas requiring a retaining wall Wall Cap: 'Mega-Tandem Wall Cap'

- Belgard 'Mega-Tandem' Retaining Wall
- Color Landscape Architect approved custom color blend to match natural limestone on campus
- Terracing of walls is preferred with plantings to soften the visual impact of the wall if allowable per the wall design. If terracing is not possible due to site constraints, retaining walls should be screened with plantings.
- Installation per manufacturer specifications



Sand Finish Concrete Cap

Zone: Central and South Campus

Placement: Classic or Modern Sandstone Walls

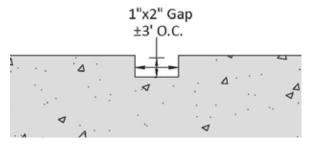
- Concrete to meet NAU Technical Standards
- Sand finish concrete standards
- Standard gray concrete (no color or pigment)
- Designed per Sand Finish Concrete Wall Cap Detail to deter skateboarding
- Skate stops not allowed



Sand Finish Concrete Cap Detail

Zone: All zones utilizing concrete as a cap or as the wall material Placement: Sand Finish Concrete Walls, Sand Finish Concrete Wall Caps, and Manufactured Concrete Wall Caps

- Place a 1" deep by 2" wide sawcut in the concrete to deter skateboarding
- Distance between sawcuts must not exceed 3'
- Skate stops not allowed



WALLS CONTINUED

Manufactured Concrete Cap

Zone: North and South Campus

Placement: Wall cap for Manufactured Concrete Walls and Classic Sandstone Walls

- Belgard 'Tandem Wall' Cap
- Color Landscape Architect approved custom color blend to match natural limestone on campus
- Skate stops not allowed
- Installation per manufacturer specifications
- Intent is to match the classic look of natural stone



Natural Limestone Cap

Zone: North and South Campus

Placement: Wall cap for Classic Sandstone Walls and Classic Limestone Walls

- Rock color should match existing limestone on campus
- Rock must resist freeze/thaw conditions (ASTM D5312, C568) and be sourced within 500 miles of project location
- Designed per Natural Stone Wall Cap Detail to deter skateboarding
- Skate stops not allowed

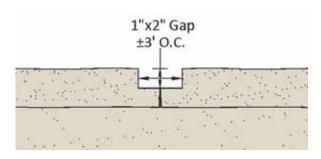


Natural Stone Cap Detail

Zone: All zones where natural stone walls are utilized

Placement: Walls utilizing natural stone as a cap or at the top of the wall (Modern Sandstone and Modern Limestone walls, Natural Limestone Cap)

- Place a 1" deep by 2" wide sawcut at the intersection of natural stone blocks to deter skateboarding
- Distance between sawcuts must not exceed 3'
- Skate stops not allowed



RAILING: DESIGN PRINCIPLES

- ► Unifying element with different styles allowed
- ▶ Railings for should not be painted (decreased maintenance because skateboarders utilize the railings)

North and Central Edge Rail

Zone: North and Central Campus

Placement: Campus edge between North Campus and the City of Flagstaff

- Railing per NAU Technical Standards
- Classic Red Brick Pillars
- Decorative Wrought Iron Fence
- Wrought iron with or without ornamentation



South Edge Rail

Zone: South Campus

Placement: Campus edge between South Campus and the City of Flagstaff

- Rough hewn timbers with weathering steel supports
- Optional limestone or sandstone pillars (refer to Wall Design Principles Section)
- 12' spacing of supports with natural stone pillars every 3rd support (or every 36')



Hand Rail

Zone: Campus Wide

Placement: Stairs or ramps where hand rails are required

- Stainless steel or galvanized steel
- Rounded top rail
- Round or square vertical supports welded to top rail



RAILING CONTINUED

Weathering Steel Hand Rail

Zone: South Campus

Placement: Stairs or ramps where hand rails are required.

- Corten steel or weathering steel treated with muriatic acid and peroxide to induce rusting aesthetic and then sealed to prevent staining of concrete
- Rounded top rail
- Round or square vertical supports welded to top rail
- Existing railing in good condition may be painted to match weathering steel



Weathering Steel Separation Rail

Zone: South Campus

Placement: Areas where a separation rail is desired

- Match FUTS railing
- Railing must be offset from concrete or treated with muriatic acid and peroxide to induce rusting aesthetic and then sealed to prevent staining of the concrete



Fall Protection Railing

Zone: North and Central Campus

Placement: Areas requiring fall protection railing

- Stainless steel or galvanized steel
- Rail must have 4" vertical or horizontal spacing for fall protection



Weathering Steel Fall Protection Rail

Zone: South Campus

Placement: Areas requiring fall protection railing

- Match FUTS railing
- Rail must have 4" vertical or horizontal spacing for fall protection
- Railing must be offset from concrete or treated with muriatic acid and peroxide to induce rusting aesthetic and then sealed to prevent staining of the concrete



RAILING CONTINUED

South Guard Rail

Zone: South Campus

Placement: Areas where a separation rail is desired

- Corten steel or weathering steel railing treated with muriatic acid and peroxide to induce rusting aesthetic and then sealed to prevent staining of concrete
- Concrete cap and rock base must be sealed to prevent staining
- Base must be sandstone or limestone



Zone: South Campus

Placement: Areas where a guard rail is required

- West-East Partners Ironwood Guiderail
- Must meet ADOT standards
- Installation per manufacturer specifications





FURNISHINGS: DESIGN PRINCIPLES

- Furnishings should be durable, either placed or designed to deter skateboarding, and composed of sustainable materials
- ► Some existing benches could be replaced with tables and chairs to deter skateboarding and increase social activity at building entries and east-west circulation routes
- ▶ Benches should be placed where there are nice views and/or in more intimate/quiet spaces
- ► Expressive in specific design areas of Central Campus

Bamboo Bench without Arms

Zone: Campus Wide

Placement: Grass areas, memorial areas, and intimate seating. Strategic placement required to deter skateboarding.

- Anova 'Allure' Bamboo 6' Contour Bench
- Bamboo Slat Color 'Fawn'
- Fusion Advantage Finish Color 'Pewter'



Metal Bench

Zone: Campus Wide

Placement: Special gathering areas with crusher fines or concrete pad (not in grass).

- Landscape Forms 'Parc Vue' Bench
- Powdercoated Metal- Color 'Titanium'
- Backed bench with arms and custom skateboard deterrent



Bamboo Table and Chairs

Zone: Campus Wide

Placement: Pedestrian gathering areas with crusher fines or concrete pad (not in grass).

- Anova 'Beacon Hill' Bamboo Table and Chairs (3 or 4 flat or contour seats, with or without ADA access)
- Bamboo Slat Color 'Fawn'
- Fusion Advantage Finish Color 'Pewter'



Attached Table and Chairs

Zone: Campus Wide

Placement: Pedestrian gathering areas with crusher fines or concrete pad (not in grass).

- Landscape Forms 'Carousel' Table and Chairs
- Powdercoated Metal- Color 'Titanium'
- Chairs with or without backs



FURNISHINGS CONTINUED

Movable Table and Chairs

Zone: Campus Wide

Placement: Limited use, only for special pedestrian gathering areas with crusher fines or concrete pad (not in grass).

- Landscape Forms 'Katina' Table, 'Parc Vue' Single Bench Seat
- Powdercoated metal Color 'Titanium'
- Furnishings are heavy and cannot be lifted



Metal Umbrella

Zone: Campus Wide

Placement: With tables and chairs (attached and movable).

- Landscape Forms 'SOLSTICE CYGNUS'
- Powder coated Metal Custom Colors 'NAU Blue, NAU Sage Green, or Gold'
- Canvas umbrellas not allowed
- Custom solar option possible with Landscape Forms



Solar Charging Station

Zone: Campus Wide

Placement: Pedestrian gathering areas with crusher fines or concrete pad (not in arass).

- · Custom furnishing design
- Green Barrel Energy and Landscape Forms produced solar charging station shown in photo
- Larger top & NAU Colors



Picnic Table

Zone: Campus Wide

Placement: Pedestrian gathering areas with crusher fines or concrete pad (not in grass). Strategic placement required to deter skateboarding.

- Custom furnishing design
- Length: 6' or 12'
- Supports: smooth standard gray concrete, weathering steel, or Corten steel
- Weathering steel treated with muriatic acid and peroxide to induce rusting aesthetic and then sealed to prevent staining of concrete
- Seat and Table Top: TruGrain with Resysta with walnut stain, Black Locust Wood with stain similar to walnut



FURNISHINGS CONTINUED

Harvest Table

Zone: Central and South Campus

Placement: Pedestrian gathering areas with crusher fines or concrete pad (not in grass). Strategic placement required to deter skateboarding.

- Custom furnishing design
- Length: 24'
- Supports: smooth standard gray concrete, weathering steel, or Corten steel
- Weathering steel should be treated with muriatic acid and peroxide to induce rusting aesthetic and then sealed
- Seat and Table Top: TruGrain with Resysta Stain 'Walnut' or Black Locust Wood with stain similar to walnut



Bar Seating

Zone: Central Campus

Placement: Only where specified in Design Plan Drawings. Strategic placement required to deter skateboarding.

- Custom furnishing design
- Swivel seating



Skateboard Bench

Zone: Central and South Campus

Placement: Areas where skateboarding can be encouraged. Place adjacent to skateable surface. Not to be used in high traffic areas.

- Custom furnishing design
- Material: Black Locust Wood, Kebony, or Trugrain with Resysta
- Stainless steel edge must be square or rectangular to accommodate curved shape



Concrete Skateboard Bench

Zone: Central and South Campus

Placement: Areas where skateboarding can be encouraged. Place adjacent to skateable surface. Not to be used in high traffic areas.

- Custom furnishing design
- Standard gray concrete with or without sand finish (no color or pigment)
- Stainless steel edge must be square or rectangular to accommodate curved shape



FURNISHINGS CONTINUED

'Flor' Bench

Zone: Central Campus

Placement: Only where specified in Design Plan Drawings. Strategic placement required to deter skateboarding.

- Landscape Forms 'FLOR'
- Cast Stone Color 'Beige'
- 'Acid Etched' Finish



Double Sided Wood Deck Lounge Chair

Zone: Central and South Campus

Placement: Only where specified in Design Plan Drawings. Strategic placement required to deter skateboarding

- Custom Furnishing Design
- Black Locust Wood or Kebony



Chaise Lounge

Zone: Central and South Campus

Placement: Pedestrian gathering areas with pavers, sand, crusher fines, or concrete pad (not in grass). Strategic placement required to deter skateboarding

- Maglin MCL720 Series-M
- Powdercoated Steel
- South Campus Colors 'Bronze 14' or 'Silver 14'
- North and Central Campus Colors 'Graphite', 'Silver 14', or custom green and blue color tones



Adirondack Chair

Zone: Central and South Campus

Placement: Pedestrian gathering areas with pavers, sand, crusher fines, or concrete pad (not in grass).

- Loll Designs Adirondack Collection 4 Slat
- Model Numbers: AD-4SFS-CG (Charcoal), AD-4SFS-CG (Evergreen), and AD-4SFS-LG (Leaf)
- Can also use custom green and blue color tones



FURNISHINGS CONTINUED

Chammock

Zone: Central Campus

Placement: Only where specified in Design Plan Drawings.

- Custom Furnishing Design
- All weather fabric that is water, mildew resistant
- Colors navy, green, gold
- Stainless steel or galvanized steel supports



Hammock

Zone: South Campus

Placement: Only where specified in Design Plan Drawings.

- All weather fabric that is water, mildew resistant
- Colors navy, green, gold
- Provide hammock hooks and tree protection



Bike Rack/Bike Storage

Zone: Campus Wide

Placement: Near building entrances on a separate concrete pad from the sidewalk (for ease of snow removal).

- Madrix Bike Rack 'UT160'
- Hot-dipped galvanized (no powder coating)
- One to five loops available
- Installation per manufacturer specifications
- Bike Sheds should be coordinated with Residence Life and the Environmental Caucus/Transportation Action Committee



Skateboard Rack

Zone: Campus Wide

Placement: Near building entrances on a separate concrete pad from the sidewalk (for ease of snow removal).

- Board Loch Brand Products 'Genesis 7', Spartan 7', or 'Spartan 14'
- Zinc Plated Finish
- Installation per manufacturer specifications



FURNISHINGS CONTINUED

Big Belly Trash and Recycling Receptacles

Zone: Campus Wide

Placement: Areas requiring receptacles. Big Belly is the primary campus Trash/Recycling Receptacle.

- Big Belly Solar Trash Compactor and Recycling Receptacle
- Model per NAU standards



Metal Trash and Recycling Receptacles

Zone: Campus Wide

Placement: Areas requiring receptacles and Big Belly is not appropriate.

- Landscape Forms 'POE'
- Powder coated metal Color 'Titanium'
- Side opening without lock (snow must be cleared to allow opening; locks freeze in the winter)
- Litter and Recycling Receptacles



QR Code Informational Signage

Zone: Campus Wide

Placement: Areas where information regarding landscape elements, plantings, or typologies is needed.

Engraved metal sign



LIGHTING: DESIGN PRINCIPLES

- ▶ Light fixtures should create a calming, supportive background for the expressive landscape character
- ▶ Lighting should be LED meeting Flagstaff's Dark Skies Standards
- ▶ Refer to NAU Technical Standards and Design Guidelines for additional information, Campus Lighting Plan, and LED Testing

Pedestrian Area Lighting

Zone: Campus Wide

Placement: Pedestrian areas requiring lighting.

- Kim Lighting 'WARP 9' or NAU approved equal
- Color 'RAL 7010'
- Narrow Spectrum Amber LED
- Lighting must meet COF Dark Skies Standards
- Banner arms required for Pedway



Zone: Campus Wide

Placement: Parking areas requiring lighting.

- Kim Lighting 'WARP 9' or NAU approved equal
- Color 'RAL 7010'
- Narrow Spectrum Amber LED
- Lighting must meet COF Dark Skies Standards
- Custom Option speaker addition for sporting events





GRADING AND DRAINAGE: DESIGN PRINCIPLES

- ▶ NAU adopted stormwater management practices per the City of Flagstaff's 'Low Impact Development Guidance Manual for Site Design and Implementation'. The term PLD (used in the Design Projects for each character zone and the Planting Design Principles) refers to Porous Landscape Detention, a type of Low Impact Development (LID). LID is a broad term that identifies a range of Integrated Management Practices including porous paving, rain gardens, cisterns, and bio-swales among others. PLD refers to a type of LID consisting of a low-lying vegetated area underlain by a permeable media with or without an underdrain. This can be a rain garden, retention basin, etc. Irrigation is required for the establishment of vegetation in PLD areas.
- ▶ Refer to NAU Technical Standards and Design Guidelines for additional information.
- ► This section contains some options available for stormwater management, stormwater conveyance, and erosion control; however, many additional options are available.

► Landscape Design

- The landscape design should be the primary focus with supportive drainage solutions
- Grading should be taut and intentional as an integral part of the site design, not reactive to the site layout
- Blend drainage solutions with the landscape design to create a more discrete appearance
- Integrate vegetation into drainage solutions for a softer aesthetic
- Avoid large areas of rip-rap
- Drainage solutions should begin with the most simple and aesthetic solutions; use the most obtrusive solutions only when required by stormwater velocity or steep slopes
- Screen erosion control measures, such as the use of rip-rap under building overhangs, with vegetation
- ► Incorporate snow storage areas in stormwater basins
- ▶ It is recommended to grade away from buildings at a minimum slope of 5% in the first 10 feet
- ► Slow stormwater runoff rather than concentrating runoff
- ▶ Soils conditions should be a key component in deciding which best management practice is most appropriate for site development
- ▶ Minimize and disconnect impervious surfaces using Bio-Retention techniques
- ▶ Direct runoff to landscaped areas with well draining soils conducive to infiltration

Stormwater Storage Techniques

Bio-Retention

Planting: Refer to Riparian Grasses and Blends in Planting Principles and Design Standards

Placement: Parking lots or areas with little open area available for stormwater detention

- Depressed area with porous backfill under a vegetated surface
- An underdrain may be needed in clayey soils to encourage filtration and infiltration

Retention Basin

Planting: Refer to Riparian Grasses and Blends in Planting Principles and Design Standards

Placement: Areas requiring slowing stormwater velocity and/or maintaining predevelopment site hydrology.

- Basins have a riser with an orifice at a higher point so that it infiltrates slowly.
- The drainage system should be designed so that water does not stand for more than 36 hours.
- This basin is utilized to retain the increased volume of stormwater runoff resulting from site development.



GRADING AND DRAINAGE CONTINUED

Detention Basin

Planting: Refer to Riparian Grasses and Blends in Planting Principles and Design Standards

Placement: Areas requiring slowing stormwater velocity and/or maintaining predevelopment site hydrology.

- Basin has an orifice level with the bottom of the basin so that all of the water eventually drains out and it remains dry between storms
- This basin is utilized to mitigate increases in peak discharge due to site development and increased impervious area



Above Ground Stormwater Collection

Placement: Student/Faculty garden areas

- Rain barrel or another type of water storage container placed next to a building and connected to the roof downspouts to harvest rainwater for reuse
- Screen to obstruct view of water storage container with vines on a trellis, trees/shrubs with sufficient height to screen 100% of the container at maturity, or a wall designed per the Principles and Standards



Below Ground Stormwater Collection

Planting: Groundcovers, shrubs, or grasses. Depth of growing medium precludes the use of trees.

Placement: Areas where nuisance flooding is an issue or available open space is not large enough to accommodate retention basins

- There are various types of underground storage that can provide retention and/or detention
- Promotes infiltration through rock bedding



Stormwater Conveyance and Erosion Control Techniques

Vegetated/Rock Swales

Planting: Refer to Riparian Grasses and Blends in Planting Principles and Design Standards

Placement: Areas requiring stormwater conveyance and/or slowing stormwater velocity

- Channel with low-pitched side slopes and a shallow longitudinal slope that forces the flow to be slow and shallow
- Suitability depends on soil type, slope, and dimension and slope
- Slopes no greater than 5 percent
- Where vegetated, stormwater velocity should be low enough not to cause erosion
- Refer to Rip-Rap for rock specifications



GRADING AND DRAINAGE CONTINUED

Erosion Protection - Spray-on Product

Planting: Refer to Native Grass Blends (Short and Tall Meadows)
Placement: Site specific for any slope. Not for use in areas of stormwater
conveyance (channels).

- Bonded Fiber Matrix or High Performance Flexible Growing Medium
- Preferred as a less visually obtrusive solution
- Install per manufacturer's recommendations
- Use with grass blends to allow for multiple seeding applications to establish full grass stands



Erosion Control Blankets

Planting: Refer to Native Grass Blends (Short and Tall Meadows) Placement: Site Specific

- Erosion Control Options:
 - 1. Short Term/Temporary Stabilization
 - 2. Long Term/Temporary Stabilization
 - 3. Permanent Turf Reinforcement
- Install per manufacturer's Recommendations



Soil Rip-Rap

Planting: Refer to Native Grass Blends (Short and Tall Meadows) Placement: Drainage swales and steep slopes

- 3" to 6" diameter Rock Springs Chocolate or Table Mesa Brown Crushed Rock mixed with topsoil installed 12" thick
- 65% Rip-rap and 35% Topsoil by volume
- Use soil rip-rap as a uniform mixture without voids



Rip-Rap

Placement: High velocity drainage swales and building overhangs

- 6" diameter Rock Springs Chocolate or Table Mesa Brown Crushed Rock installed 12" thick
- Screen rip-Rap areas with high-density plantings (refer to planting section of Principles and Design Standards)
- Limited use to areas where erosion will occur if rock is not used and stormwater cannot be slowed using other methods



PLANTING: DESIGN PRINCIPLES

The NAU Campus is located in the world's largest Ponderosa Pine - Arizona Fescue forest. Within this forest there are different plant communities that tell the story of the land, drainage patterns, soil types, areas of high wind and intense sun. When healthy, the Ponderosa Pine forest is characterized by a mix of old-growth and younger tree stands with ample space, meadow grasses and understory shrubs to create an open aesthetic with a layered and varied vegetative mosaic. While rock outcroppings may be part of the forest floor, the tree canopy and meadow ground plane are visually dominant.

Campus Wide Principles:

- ► Fully express the inherent beauty, diversity and distinction of the regional landscape. Native species are encouraged and preferred, in both informal naturalized plantings and formal beds, for ecological soundness and creation of an appropriate regional aesthetic.
- ► In addition to native species, rely on appropriate adapted species with a proven track record on campus or in Flagstaff, and include opportunities to test tree species not yet tried in Flagstaff in limited areas to increase plant diversity.
- Preserve existing Ponderosa Pine trees whenever possible and improve forest health.
- Use planting design to increase the distinctions between spaces.
- ▶ Incorporate species selections in planting design that create contrast, distinction, and year-round interest in their natural form (unpruned), with particular attention to visual attractiveness during winter and spring graduations, and fall orientations. Integrate evergreens or semi-evergreens (including perennials, shrubs and/or trees) in all designs for year-round structure. Evergreens, semi-evergreens, and winter interest plants should comprise 30-50% of a project's plant palette.
- ► Create simple ground planes of turf in areas of active social use using a specialized blend of drought and shade tolerant species. Avoid planting Ponderosa Pine in turf areas. NAU irrigates with reclaimed water which is high in salts; the Ponderosa Pines are unable to tolerate the high salt levels.



Adapted Species



Ponderosa Pine Forest



Winter Interest



Integration of Native Species

PLANTING CONTINUED

- ► Represent tree canopies on planting plans at 75% maturity, with no more than 30% overlap between canopies to allow sufficient space for growth and uptake of water and nutrients.
- ► Represent shrub, perennial, and ornamental grass plantings at 90% maturity (within approximately three years of planting) on planting plans.
- ► Compose plant massings to provide 80% planting bed coverage on the ground plane within approximately three years of planting. Careful species selection is critical to ensure appropriate ground plane coverage. Visibility of mulch is not desired and should be minimized.
- ► Planting design should be staggered or use triangular plant spacing (avoid linear patterns).
- ► The minimum preferred initial size for deciduous trees is 2" caliper and the minimum preferred size for evergreen trees is 6' height.
- ► Limit shrub height to 12 to 36 inches in areas where visibility is desired for safety concerns.
- ➤ Zone low-water use species together in irrigation design to allow them to be weaned off supplemental watering after approximately three years. Maintain irrigation capabilities for low-water plants after three year period to permit watering during dry periods as needed. (Refer to NAU Technical Standards for additional irrigation requirements)
- ► There are numerous memorial gardens and trees located throughout Campus, including Arboretum trees. Design Professionals should consult the NAU Grounds Crew and/or the NAU Greenhouse Manager during preliminary site design prior to tree removal.
- Concrete edger should be used for planting bed borders where they abut turf or native grass meadow areas (steel or plastic edger is not allowed).
- ▶ Indicate areas where snow will be plowed and stored on project sites. Turf and detention/retention basins may be most appropriate in order to avoid piling snow on pedestrian hardscape areas. Planting beds are not appropriate for snow storage due to NAU's use of salts on campus to assist with snow melt.
- ► Construction/installation plans are preferred that do not use or minimize the use of pesticides/herbicides.



Plant Density



Plant Density



Color, Texture, and Year Round Interest

PLANTING CONTINUED

Special Areas:

Accent Areas and Campus Signage Locations:

 Use plants with 3-4 seasons of interest and long-bloom periods (six weeks or more, or repeat bloomers). Combine masses of perennials with low ornamental shrub backdrop plantings for year-round interest and evergreens to provide structure.

Riparian Areas, including Sinclair Wash:

 Use high-interest ornamental grasses to create distinction from other plantings. In linear PLD areas, including straight and meandering configurations, use monoculture masses for strong visual effect.

Parking Screening:

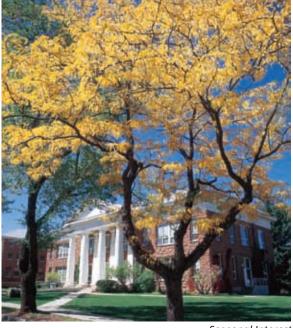
 Screen with low to medium height single species hedgerows in North and Central Zones to create 100% coverage at maturity.
 Use informal plant masses (1-3 species) in South Mountain Zone for screening.

Main North-South Pedway:

 In North Zone and Central Zone (to south end of Union), create mixed tree glade using 3-5 species of large canopy deciduous trees to continue existing Elm character and create a softer canopy lined experience at a pedestrian scale. South of the Union, Pedway passes through various landscapes and character zones without specific plant palette.



Color and Texture



Seasonal Interest



Riparian Monoculture



Ornamental Riparian Grasses

PLANTING CONTINUED

North Campus Principles:

- ► Simple ground planes with accent color in special areas
- ► Formal lawns to create expansive, reflective areas
- ► Low groundcover shrubs and perennials in single-species masses to act as supportive visual elements for large stone building foundations
- Hedgerows to create borders and screening (unpruned)
- Formal mixed perennial beds in special accent areas

► North Quad:

- Emphasize and continue Campus Arboretum concept and historical character with diverse collection of classic large canopy trees to provide legacy plantings
- Transplant immature trees to other areas of campus that do not complement the mixed glade character of the Quad, including species more appropriate to South campus (i.e. Gamble Oak) and homogeneous single-species compositions of shade trees
- Integrate understory ornamental trees to amplify fall season interest, along with ornamental flowering trees in special locations
- Limit evergreen trees to select peripheral areas to emphasize open character of the Quad



Parking Screening



Winter Interest



Hedgerow



Formal Mixed Perennial Beds



Integrate Understory



Arboretum Concept

PLANTING CONTINUED

Central Campus Principles:

- Robust single species shrub, perennial and grass masses in planting beds that create a strong graphic distinction and year-round visual interest and contrast
- ► Bold-themed planting design to contrast with the formal North Historic Zone and the South Mountain Zone
- Expressive approach that weaves domesticated-style beds and manicured lawn areas with native grass stands to capture regional sense of place, amplify design expression, integrate nature into campus, and be more responsible with water and maintenance resources
- Careful attention to edges of native grass meadows to create contrast with domesticated planting beds and turf areas (i.e. concrete curbing)

Integration of Grass Meadows:

- Use monocultures to create strong contrasts in texture, height and color, along with mixed species stands for more resilient climatic diversity and robustness throughout the seasons
- Integrate perennials where increased interest, variability and habitat diversity (attracting birds and insects) are desired
- Use shortgrass meadows in areas with native tree glades and to support occasional events and more passive recreational activities
- Integrate tall grass meadows for more expressive design in areas with limited recreational use
- Incorporate educational QR code signage where meadow edges meet social spaces to increase understanding of this habitat's ecological systems and benefits
- Maintain attractiveness by leaving at mature height without mowing
- Establishment can be slow and weed management complex. A
 healthy dominant stand can take 3 to 5 years to establish and in
 some cases will require pre-germination of weeds and applications
 of broadleaf herbicides to manage weeds while grasses are establishing



Shortgrass



Native Grass Meadow with Perennials



Robust Single Species Masses



Expressive Approach



Weave Edge



Tall Grass Monocultures Contrast



Tallgrass

PLANTING CONTINUED

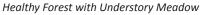
South Campus Principles:

- ▶ Naturalistically composed masses that mimic the natural character of the dry Ponderosa Pine-Arizona Fescue habitat
- ▶ Species composition and selection that responds to the more varied topography and drainage conditions
- Primarily native species in both planting beds and the forest understory to maintain the character of the Ponderosa Pine forest and the mountain aesthetic
- ► Introduced species (in small relative proportion) to contrast with natives in special locations, to visually amplify the mountain character

► Ponderosa Pine Forest Areas:

- Thin Ponderosa Pines where they are overgrown to be consistent with best forestry practices and increase forest health. Remove thick needle accumulations where in excess of 2" to increase water and air uptake
- In highly visible or special areas, enhance seasonal qualities and habitat biodiversity with the addition of native understory mixed species grass stands, perennials and informal masses of trees and shrubs. Use 5-7 mixed grass species and 3-5 mixed shrub species
- Incorporate educational QR code signage along forest pathways to increase understanding of the forest's ecological systems and benefits







Grass Meadow with Perennial Color

Plant Selection Notes:

- Tree and shrub selections were reviewed by NAU Greenhouse Manager, Phil Patterson, and Horticulturist, Kirsten Aamodt, for performance on campus. The plants were also compared with regional commercial grower lists, including a local grower in the Verde Valley. Also considered were Flagstaff Arboretum, City of Flagstaff, and previous NAU Plant Lists. The resulting plant lists in the Landscape Master Plan are a synthesis of this information, combined with the WLB-Civitas Design Team's intimate knowledge of and experience with appropriate Flagstaff plants.
- Dan Devere, Morning Dew Landscaping Natural Resource Specialist, was consulted regarding grass species selections.
- 'Trial' plants don't have a proven track record in the Flagstaff area; however, it is believed that they will do well based on available data and are encouraged to be utilized in limited quantities on campus to determine viability.

DECIDUOUS TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	нt(ft) X W(ft)	Sun	н20	Native	Locally Grown	Attributes
Botanicai Name	Common Name	2	S	1	I	ν	I	2	7	Gorgeous red in fall, nice shade or
										street tree, seems to do well in
Acer freemanii 'Autumn Blaze'	Autumn Blaze Maple	All	S, F		40x30	S	М		✓	Flagstaff
Acer freemanii 'Sienna Glen'	Sienna Glen Maple	All	S, F		40x30	S	М			Hardiness of Silver Maple and color of Red Maple, similar to Autumn Blaze Maple with pyramidal oval form, orange to burgundy in fall, adaptable to most soils
Acer ginnala 'Flame'	Amur or Ginnala Maple	All	S, F		15x12	S, FS	L-M		√	Large shrub or small ornamental tree with nice trunk structure and single or multiple stems, fiery red in fall, does best in part shade, drought tolerant
Acer granidentatum	Bigtooth Maple	S	S, F		20x20	S, PS	L-M	√		Large shrub or small native tree, needs wind protection, yellow-orange-red in fall, drought tolerant
Acer tataricum	Tatarian Maple	All	SP, S, F	√	20x15	А	L			Small tree or large shrub with single or multiple stems and irregular crown, yellow in fall, striking red seeds early summer, greenish white flower in spring, drought and soil tolerant
Acer tataricum 'Hot Wings'	Hot Wings Maple	All	SP, S, F, W	√	15x15	А	L			Small tree with rounded crown, red twigs, striking red samaras in late spring persist into winter, red-orange in fall, greenish white flower in spring, drought tolerant
Amelanchier x grandiflora 'Autumr Brilliance'	Autumn Brilliant Serviceberry	All	SP, S, F		20x15	S	L			Vase shaped large shrub or small tree with single or multiple stems, white flowers early spring, coppery red leaves unfold to rich green, fall color is yellow-orange-red, produces purpleblackish fruit, drought and salt tolerant

LEGEND:

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DECIDUOUS TREES										
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Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Celtis occidentalis	Western Hackberry	All	S, F		50x40	S	L		√	High canopy with rounded habit, yellow in fall, orange-red fruit in fall, tolerant of salts and drought, good legacy tree, consider for N-S Pedway
Crataegus crus-galli 'Inermis'	Thornless Cockspur Hawthorn	All	SP, S, F		15x15	S	L			Small tree or large shrub with single or multiple stems, white flowers in spring, dark red fruit in summer persists into fall, orange fall foliage, drought tolerant
Crataegus laevigata 'Crimson Cloud'	Crimson Cloud Hawthorn	All	SP, S, F		20x15	S	L			Small tough colorful tree for streets or as specimen, thornless, low branched rounded tree with red blossoms in spring followed by red glossy fruits, yellow fall color, somewhat drought tolerant
Crataegus phaenopyrum	Washington Hawthorn	All	SP, S, F, W		20x15	S, FS	L		✓	Small tree or large shrub, white flowers late spring produce persistent red berries, orange/red fall color
Fraxinus americana 'Autumn Purple'	Autumn Purple Ash	All	S, F		50x40	S	M		✓	Good shade and street tree with striking reddish-purple fall foliage, prefers moist soil with some drainage, tolerates some flooding, protect from wind, good legacy tree to consider for N-S Pedway tree glade, salt tolerant
Fraxinus pennsylvanica 'Marshall'	Marshall Ash	All	S, F		50x40	S	М			Symmetrical rounded tree, golden yellow in fall, sensitive to air pollutants, not for windy locations
Fraxinus pennsylvanica 'Patmore'	Patmore Ash	All	S, F		40x30	S	M			Resistant to wind damage, prefers moist soil with good drainage, good shade tree, sensitive to air pollutants, yellow in fall

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DECIDUOUS TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Gleditsia triancanthos 'Imperial'	Imperial Honeylocust	All	S, F		30x30	S	L		✓	Graceful tree with nice shade, thornless, soft yellow in autumn, tolerates wind, salt and drought, good for parking areas
Gleditsia triancanthos 'Shademaster'	Shademaster Honeylocust	All	S, F		40x30	S	L		√	Delicate foliage casts light shade, leafs out late, one of the earliest trees for fall color (yellow), tolerates wet and compacted soils, thornless, consider for N-S Pedway, tolerates wind, drought and salts, good for parking areas
Gymnocladus dioicus 'Espresso-JFS'	Espresso Kentucky Coffee Tree	N,C	S, F	√	50x40	S	L			Vase shaped, seedless, golden in fall, drought and salt tolerant, looks gangly when young but good tree to test on campus
Populus x acuminate	Lanceleaf Cottonwood	С	S, F		50x30	S	М		√	Upright-rounded fast growing tree with dense branching, wind tolerant, bright yellow in fall, not for turf areas due to shallow rooting
Populus tremuloides	Quaking Aspen	All	S, F, W		50x15	S, FS	М-Н	√	✓	Beautiful native with white bark and fluttering leaves, fast growth, roots are invasive and sucker (not for turf or use near streets or water lines), yellow in fall, does not tolerate flooding or compaction, needs well drained soils, space 3'-5' minimum when in clump form, sensitive to air pollutants
Prunus serrulata 'Kwanzan'	Kwanzan Flowering Cherry	N, C	SP, S, F		25x15	S, PS	М		✓	Nice small tree, vase-shaped, reddish bark, very showy pink flower masses early spring, reddish early foliage turns orange-yellow in fall, not good for parking lots, windy areas or areas with standing water

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DECIDUOUS TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Prunus maackii	Amur Chokecherry	N, C	SP, S, F, W	✓	20x20	S, FS	М			Cinnamon bark is peeling and shaggy for unique winter interest, broad conical crown, yellow in fall, showy white flower clusters produce black fruit in summer, great tree to test on campus
Prunus padus	Mayday Tree	N,C	SP, S, F		20x20	A	M			Good overall flowering tree for accent or turf areas, blooms reliably and leafs out early, yellow-orange in fall, fragrant white flowers, glossy fruits, tolerates moist soils if well-drained
Prunus sargentii	Flowering Cherry	N, C	SP, S, F, W		20x20	S, PS	М			Showy pink flowers in spring followed by fruits, red-orange in fall, upright rounded form, polished chestnut bark, graceful ornamental for lawns or streets, good in groups or specimen
Quercus bicolor	Swamp White Oak	N,C	S, F, W	✓	50x50	S, FS	L		√	Reddish-brownish bark sheds in papery flakes when young, low branched with rounded crown, golden w/ red & orange in fall turns to brown and may persist in winter, drought tolerant, nice stately tree
Quercus borealis	Red Oak	All	S, F, W		60x50	S	M			Stately tree with rounded crown, good red fall foliage turns to brown and may persist in winter, does surprisingly well on campus, good shade or street tree, tolerates many soils, grows relatively fast

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DECIDUOUS TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Quercus gambelii	Gambel Oak	S	S, F , W		25x15	S, FS	L	√	✓	Great native for forest understory but grows very slowly, thicket forming, large plants do not transplant well, yellow fall foliage turns to brown and may persist in winter, needs room for root growth, drought tolerant and very low water
Quercus robur 'Fastigiata'	Fastigate English Oak	С	S, F, W	✓	40x15	S	М			Strong upright form with low branches creates dense columnar tree, yellow fall foliage turns brown in fall often persisting through winter
Quercus rubra	Northern Red Oak	All	S, F, W		60x40	S	М		√	Stately tree, bronze to wine red fall foliage turns brown in fall and may persist in winter, requires well-drained soil, deep-rooting allows turf or street plantings, salt tolerant but not for dry, windy sites, does surprisingly well on campus, good legacy tree to consider for N-S Pedway
Quercus shumardii	Shumard Oak	All	S, F	√	35x30	S	М			Upright spreading tree, red fall color, thrives in moist soils where drainage is a problem for other trees
Robinia ambigua 'Purple Robe'	Purple Robe Locust	C,S	SP, S, F		35x25	S	L		✓	Rounded tree with purplish tinged new foliage, dark purple fragrant flowers in 6" racemes June, drought and wind tolerant, pale yellow in fall

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DECIDUOUS TREES										
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Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Robinia pseudoacacia	Black Locust	All	S, F		60x40	S	L			Nice large shade tree, wind and drought tolerant once established, avoid near water/sewer lines due to shallow aggressive roots, tolerates poor soils and salts but needs good drainage and does not tolerate flooding or compaction, yellow fall foliage sheds early
Sorbus acuparia	European Mountain Ash	N,C	SP, S, F, W		35x15	S, FS	М			Small-medium tree provides delicate shade and fruit for wildlife, not for turf areas as berry clusters can get messy (poisonous if consumed raw), red/orange/yellow in fall
Ulmus americana 'Princeton'	Princeton Elm	N, C	S, F		50x30	S	М			Symmetrical upright vase shape with broad crown, adapts to wet and dry sites and urban/street conditions, Dutch Elm Disease resistant, good lawn or shade tree, wind tolerant, yellow in fall, consider for N-S Pedway as legacy tree, needs room to grow as roots can lift pavement (space 5-10' away min.)
Ulmus x Triumph	Triumph Elm	N,C	S, F	✓	50x40	S	М			Hybrid Elm with Dutch Elm Disease resistance, quickly forms upright tree with arching habit
Ulmus japonica x wilsoniana 'Morton'	Accolade Elm	N,C	S, F	✓	70x60	S	М			Mature form like American Elm, Dutch Elm Disease resistant, yellow fall color

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EVERGREEN TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Tria!	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Abies concolor	White Fir	All	E		60x25	S, PS	М	√	√	Large elegant tree with soft blue- green needles and branches to the ground, shallow lateral rooting - recommended for large areas, requires moist cool well-drained soil, does not tolerate compaction, salts or windy sites
Juniperus deppeana	Alligator Juniper	S	E		25x20	S	L	✓	✓	Large character/specimen tree suited for hot dry sites, striking checked pattern on bark resembling alligator hide, salt and drought tolerant
Juniperus scopularum	Rocky Mountain Juniper	S	E		30x25	S	L	✓	✓	Pyramidal upright form with shredding reddish-brown bark, suited to hot dry sites, wind and salt tolerant
Picea engelmannii	Engelmann Spruce	All	E		100x40	S, PS	М	✓		Large pyramidal tree branched to the ground, blueish-green, shallow lateral roots need large area, prefers moist soils with good drainage, not for dry windy sites
Picea pungens glauca	Colorado Blue Spruce	All	E		60x25	S, FS	M	✓	√	Large dense, broad accent tree ranging in color from blue to green, shallow roots - best in large areas, prefers moist fertile soil and good drainage, sensitive to compaction, somewhat drought tolerant after established, not for dry windy sites, salt tolerant
Picea pungens 'Baby Blue Eyes'	Baby Blue Eyes Spruce	All	E		20x10	S	М			Compact pyramidal spruce with beautiful silver-blue foliage, 1/3 size of standard spruce
Picea pungens 'Bakeri'	Bakeri Spruce	All	E		35x15	S, FS	М			Dwarf spruce variety, fast growing, symmetrical form with silvery-blue needles
Picea pungens 'Fat Albert'	Fat Albert Spruce	All	Е		30x20	S, FS	М			Dwarf spruce with blue color and reliable pyramidal form

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EVERGREEN TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Pinus edulis	Pinyon Pine	S	E		25x15	S, FS	L	√	✓	Round to oval crown, bushy and symmetrical when young, shallow extensive roots, prefers well-drained soils, suited to hot dry sites but susceptible to bark beetles when stressed, drought tolerant, high resin - do not plant near walks or gathering spaces
Pinus flexilis	Limber Pine	All	E		40x25	S, FS	L	√	✓	Medium-sized pyramidal tree with dense foliage and flexible stems with good wind and snow tolerance, best in large areas, tolerates most soils but prefers good drainage, drought tolerant, becomes straggly in shade, does not tolerate flooding, compaction or dry windy sites
Pinus flexilis'Vanderwolf's Pyramid' Pinus ponderosa	Vanderwolf's Pyramid Limber Pine Ponderosa Pine	All	E		40x20 80x30	S, FS	L	✓	✓	Beautiful blue-green form of Limber Pine Stately tree with large pyramidal crown, mature trees on campus should be preserved, allow 30' diameter clearance, sensitive to air pollutants, prefers well-drained soils, does not tolerate flooding or compaction, tolerates drought but grows faster and resists bark beetles if watered some after establishment
Pinus sylvestris	Scotch Pine	С	E		40x25	S, FS	L			Conical to rounded evergreen with interesting form, wind resistant

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EVERGREEN TREES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Tria!	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Pseudotsuga menziesii	Douglas Fir	All	E		80x20	S, FS	M	√	✓	Beautiful specimen large tree with pyramidal crown, best in large areas, prefers well-drained soils, does not tolerate flooding or salts, wind tolerant, specify Rocky Mtn seed source (other seed sources do not do well in Flagstaff)
Pseudotsuga menziesii var glauca	Rocky Mountain Douglas Fir	All	E			S	М			Short blueish green needles
										Tolerates some light shade, grows
										best in cool climates with high
Sequoidendron giganteum	Giant Sequoia	N,C	E		60x25	S	М			moisture, needled conifer

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DECIDUOUS SHRUBS									
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Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Amelanchier alnifolia	Saskatoon Serviceberry	All	SP,S	10x8	S, PS	L			Small fragrant white flower clusters, purple/black berries attract birds mid- summer, excellent yellow, orange to soft rec in fall, drought and salt tolerant
Amelanchier canadensis	Shadblow Serviceberry	All	SP,S	20x15	S	L		✓	Large shrub or small tree, white fragrant flowers, purple/black berries mid-summer, yellow-orange-red in fall, drought and salt tolerant
Amelanchier utahensis	Utah Serviceberry	All	SP,S ,F	10x10	S,FS	L	√	✓	Fragrant white flowers with woolly gray- green leaves, yellow in fall, blueberry-like fruit mid-summer, drought tolerant
Amorpha canescens	Leadplant	C,S	S,F	3x3	S	L			Arching stems and spreading habit, gray- green leafelets, long spike-like clusters of blue to purple flowers mid-late summer, yellow fall color, drought tolerant Large shrub with fine-textured foliage,
Amorpha fruticosa	False Indigo	C,S	S,F	10x10	S	L	✓		spikes of blue/purple flowers with bright orange anthers, yellow in fall, drought tolerant
Aronia melanocarpa elata	Black Chokeberry	S	SP,S	6x5	A	L		✓	Suckering shrub forming dense colonies for natural areas, white flowers late spring, black/purple fruit late summer, wine red in fall, drought tolerant
Aronia melanocarpa 'Iroquois Beauty'	Dwarf Iroquois Beauty Chokeberry	All	SP,S ,F	4x3	А	L		✓	Dwarf form of Black Chokeberry, white flower clusters late spring, glossy black/purple fruit late summer, wine red in fall, drought tolerant
Caryopteris x clandonensis 'Blue Mist' Caryopteris clandonensis 'Dark	Blue Mist Spirea	All	S, F	3x2	S	L		√	Blue flowers, tightly rounded shrub with gray-green foliage that may freeze back in winter, can be cut back to crown before spring growth emerges, drought tolerant Variety of Blue Mist Spirea with dark blue
Knight' Caryopteris x clandonensis 'First Choice'	Dark Knight Blue Mist Spirea First Choice Blue Mist Spirea	All	S,F S,F	3x2 2x1.5	S	L		✓	flowers More compact variety that flowers ahead of other Blue Mist varieties

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DECIDUOUS SHRUBS									
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(ft) X W(ft)	Sun	H20	Native	Locally Grown	Attributes
Cornus alba Ivory Halo	lvory Halo Dogwood	All	S,F,	5x5	S,FS	М		√	Compact rounded shrub with finer texture and denser appearance than standard Variegated Dogwood, beautiful variegated foliage and bright red winter twigs
Cornus sericea 'Arctic Fire'	Arctic Fire Dogwood	All	S,F, W	3x3	А	М		√	Compact variety of native Red Twig Dogwood, dense bright red stems for for vivid winter color, dark green leaves with clusters of tiny white flowers and blueish- white berries late summer, red fall color
Cornus sericea 'Isanti'	Isanti Dogwood	All	S,F, W	4x5	А	М		✓	Bright red stems great in winter, lush green foliage, striking red in fall, tiny white flowers followed by white fruit late summer
Cornus sericea 'Kelseyi'	Kelsey Dogwood	N,C	S,F	2.5x2.5	FS,S H	М		√	Rich green foliage on reddish-brown stems create compact rounded somewhat formal shrub, tiny white flower clusters late spring followed by white berry-like fruit
Cotoneaster apiculatus	Cranberry Cotoneaster	N,C	S,F, W	1.5x4	S,FS	L		✓	Useful slope cover, border or groundcover plant, stiff arching branches with dark green leaves, white/pink blooms late spring followed by reddish-orange ornamental berries may persist in winter, maroon fall color
Cotoneaster damerii 'Coral Beauty'	Coral Beauty Cotoneaster	N,C	S, F,W	2x4	S,FS	М		√	Great groundcover with prostrate habit and dark glossy green foliage, white/pink blooms develop into showy red-orange fruit that may persist, bronze/red fall color, semi-evergreen
Cotoneaster horizontalis	Rock Cotoneaster	N,C	S,F, W	2x4	S,FS	М		√	Horizontal semi-evergreen sprays with dark green leaves good as groundcover or for covering banks, pink flowers late spring, red fruit in fall, reddish-yellow fall color

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Holodiscus dumosus	Rock/Mountain Spray	C,S	S,F	6x6	S,FS	L	✓	✓	Graceful shrub with showy creamy-pink white flowers early-late summer into early fall, grows in volcanic soils, drought tolerant
Ligustrum vulgare 'Lodense'	Lodense Privet	N,C	S,F, W	3x3	S,FS	L		√	Easy small shrub, perfect for hedges, dense twiggy habit with dark green foliage turns pale yellow in fall, white flowers early symmer produce shiny black fruit persisting into winter, drought tolerant
Lonicera ivolucrata	Twinberry Honeysuckle	All	S,F	4x5	FS,S H	М	✓	√	Upright oval habit, bright green leaves, creamy yellow tubular flowers late springearly summer produce black berries attractive to birds, yellow in fall, soil, wind and salt tolerant
Lonicera tatarica 'Arnold's Red'	Arnold's Red Honeysuckle	All	SP,S	6x5	S,FS	L-M		√	Broad rounded shrub with fragrant profuse reddish-pink tubular flowers late spring and glossy red berries mid-late summer, drought and salt tolerant
Philadelphus microphyllus	Littleleaf Mockorange	S	S,F	4x4	S,PS	L	✓	✓	Erect arching branches, sweet orange-like fragrant white flowers in summer, soft yellow fall color, peeling bark
Philadelphus x virginalis 'Dwarf Snowflake'	Dwarf Snowflake Mockorange	All	S	3x3	S	M			Dwarf vase-shaped habit with citrus fragrance and showy white blooms early summer, makes a nice small background plant or hedge/border, salt tolerant
Potentilla fruticosa	Shrubby Cinquefoil	All	S	3x3	S	L	✓	✓	Open round shrub with single yellow flowers early to late summer, salt and drought tolerant
Potentilla fruticosa 'Dakota Sunspot'	Dakota Sunspot Potentilla	All	S	3x3	S	L		✓	Gray-green foliage and reddish twigs when young, yellow flowers throughout summer, salt and drought tolerant
Potentilla fruticosa 'Jackmanii'	Jackman Potentilla	All	S	3x4	S	L		✓	Gray-green leaves, abundance of single yellow flowers early-late summer

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Prunus besseyi	Western Sand Cherry	All	SP,S ,F	4x5	S	L		✓	Grayish-green foliage turns red in fall, prefers sandy soil, profuse white single flowers late spring, purple-black fruit in summer, drought tolerant
Prunus besseyi 'Pawnee Buttes'	Creeping Sand Cherry	All	SP,S ,F	2x4	S	L		✓	Graceful groundcover form, leaves turn bright red-purple in fall, fragrant white flowers in spring produce fruit that attracts wildlife
Prunus glandulosa 'Rosa Plena'	Pink Flowering Almond	N,C	SP,S	5x5	S	M		√	Very showy double soft pink flowers early spring, upright rounded habit, best in mixed shrub beds, no fall color or fruits Tough shrub, peeling bark when young creates winter interest, edible fruit attractive to birds, pink buds open to fragrant white flowers early-mid spring, good hedge/border plant, wind and drought
Prunus tomentosa	Nanking Cherry	N,C	,W	8x10	S	L			tolerant Broad spreading shrub with sprawling
Rhus aromatica 'Gro-Low' Rhus glabra cismontana	Dwarf Fragrant Sumac Rocky Mountain Sumac	C,S	S, F S,F	2x6 5x5	S S,FS	L		✓ ✓	branches, yellow-red in fall, drought tolerant Rounded shrubs suckers in to colonies, yellow-crimson red fall color, drought tolerant
Rhus trilobata	Three-leaf Sumac	C,S	S,F	5x5	S,PS	L	✓	·	Glossy green foliage turns fiery red in fall, dense rounded shrub, nice in masses and as forest understory
Rhus trilobata 'Autumn Amber'	Autumn Amber Sumac	All	S,F	1x4	S	L		✓	Prostrate branches hug ground to form very low shrub with brilliant red fall color Standby shrub for its rich green foliage and
Ribes alpinum	Alpine Currant	All	S,F	4x4	S,PS	L			globular form, good hedge or border, tolerates wind, drought and urban conditions, attracts birds, yellow-red fall color
Ribes aureum	Golden Currant	All	SP,S	5x5	S,FS	L	✓		Broad rounded shrub with small clove- scented bright yellow flowers, blackish fruit mid-late summer, red in fall, drought tolerant

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Ribes cereum	Wax Currant	S	S,F	3x3	S,PS	L	✓		Compact shrub good in forest in masses, gray-green waxy foliage, abundant red berries produced late summer loved by wildlife, red fall color, drought tolerant
Rosa 'Champlain'	Champlain Rose	N,C	SP, S, W	3x2	S	М			Lightly fragrant, semi-double cherry red flowers, occasional repeat blooms later in season, orange hips on prickly branches in winter
Rosa foetida 'Persiana'	Persian Yellow Rose	All	SP,S	4x4	S	L			Yellow flowers late spring, prickly branches, upright rounded shrub rose Hardy tough shrub rose, useful as hedge and
Rosa rugosa Rosa woodsii	Rugosa Rose Woods Rose	C, S	S	4x4 4x4	S, PS		✓	✓ ✓	erosion prevention Shrub rose, pink flowers early summer, careful placement required due to prickles and loose bramble habit, spreads, drought tolerant
Spiraea japonica 'Anthony Waterer'	Anthony Waterer Spirea	N,C	S	2x3	S,FS	М		√	Leaves unfold purple-red and become dark green, dense rounded shrub, small rose red flowers early summer
Spiraea japonica 'Little Princess'	Little Princess Spirea	N,C	S, F	1x2	S,FS	М		√	Clusters of lilac-pink flowers early summer, light green foliage turns rosy red in autumn
Spiraea japonica 'Magic Carpet'	Magic Carpet Spirea	N,C	SP,S	1x1.5	S	М		✓	Very compact, lime green foliage emerges bronze-red, bright pink flowers mid-spring
Spiraea japonica 'Shirobana'	Shirobana Spirea	N,C	SP,S	2x2	S	М		✓	Deep green leaves, pink, white and rose blooms on same plant recur throughout summer
Symphoricarpos albus	White Snowberry	S	S,W	4x4	A	L		√	Thicket forming native to Rocky Mountains, good for wildlife in masses or naturalizing, tiny bell-shaped white-pink flowers produce berries that persist into winter, drought tolerant, no appreciable fall color, drought and salt tolerant

LEGEND:

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DECIDUOUS SHRUBS									
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Symphoricarpos orbiculatus	Red Coralberry	All	S,F,	4x4	S,FS	L			Dark green leaves turn red in fall, round open habit, small white-pink flowers produce purplish red berries that persist into winter, drought and salt tolerant
Symphoricarpos oreophilus Symphoricarpos x doorenbosii 'Magic Berry'	Mountain Snowberry Pink Snowberry	All	S,W S,F, W	3x3 3x3	S,FS	L	√	✓	Pale pink flowers early summer, brown peeling bark on pendulous branches, white berries ripen late summer, nice forest understory or planting bed in dry shade, does not spread like White Snowberry, drought and salt tolerant Broad upright shrub, bell-shaped whitishpink flowers bloom late spring to fall, purplish-red persistent berries, drought and salt tolerant
Syringa patula 'Miss Kim'	Miss Kim Dwarf Lilac	N,C	SP,S	4x4	S	L		✓	Small clusters of fragrant pale lavender flowers late spring, one of reliable lilacs to flower in Flagstaff, dense medium green foliage, drought and salt tolerant
Syringa x bloomerang	Bloomerang Purple Lilac	All	SP, S	4x4	S	L		✓	Reblooming spring through summer, purple pink fragrant flowers in dense clusters, compact mound, drought & salt tolerant
Viburnum x burkwoodii	Burkwood Viburnum	N,C	SP,S ,F,W	8x5	FS,S H	М		✓	Upright rounded habit with lustrous dark green leaves turning bronze/purple in fall, semi-evergreen, clusters of fragrant white flowers spring/early summer, good hedge or screen
Viburnum dentatum	Arrowwood Viburnum	All	SP,S ,F,W	8x8	А	М			Dark green leaves turn rich red in fall, clusters of white flowers late spring produce showy berries late summer, great specimen or backdrop plant, semi-evergreen
Viburnum opulus 'Compactum'	Compact European Cranberrybush	All	SP,S ,F	4x5	S	М		✓	Compact habit, clusters of single white flowers in spring produce persistent ornamental berries

LEGEND:

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DECIDUOUS SHRUBS										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes	
Viburnum opulus 'Nanum'	Dwarf European Cranberrybush	N,C	S,F	1.5x1.5	А	М		✓	Tight globe with lustrous green foliage turning outstanding wine-red in autumn, non-fruiting, sporadic summer flowers	
Viburnum opulus	Snowball Viburnum	N,C	S,F	8x8	A	M		 	Broad rounded shrub, showy large snowball- like clusters of white flowers late spring, purplish-red fall color	
Viburnum x carlesii	Koreanspice Viburnum	N,C	SP, S, F	4x5	А	М			Compact globular shrub with pinkishwhite flowers that have strong spicy scent midspring, red-burgundy in fall, red berries turn to black in fall	
Viburnum trilobum 'Bailey Compact'	Compact American Craphers thus h	N,C	SP,S	4x4	A	М			Compact rounded habit, dark green leaves turn vibrant red in fall, white flower clusters late spring produce bright red berries, salt tolerant, nice hedge or backdrop	

LEGEND:

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EVERGREEN SHRUBS									
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(ft) X W(ft)	Sun	Н20	Native	Locally Grown	Attributes
Chamaebatiaria millefolium	Fernbush	C, S	E	4x5	S	L	√	√	Fern-like grey-green leaves, clusters of small aromatic white flowers, drought tolerant, nearly evergreen
Juniperus communis	Common Juniper	All	E	3x5	S,FS	L	✓		Bright green needle-like foliage, bluish-black waxy fruits, drought tolerant
Juniperus communis 'Alpine Carpet'	Alpine Carpet Juniper	All	E	1.5x5	S	L		✓	Deep blue-green needle like foliage, low dense habit, drought tolerant
Juniperus communis 'Green Carpet' Juniperus horizontalis 'Blue Chip'	Green Carpet Juniper Blue Chip Juniper	All	E	.75x5	S	L			Low spreading, medium green foliage turns dark green in winter, drought tolerant Low spreading foliage stays tight to ground, slate blue foliage turns plum in winter, drouight tolerant
Juniperus horizontalis Icee Blue	Icee Blue Juniper	N,C	E	.3x6	S	L		√	Compact groundcover with silvery-blue foliage and purplish tips, drought tolerant
Juniperus horizontalis 'Wiltonii'	Blue Rug Juniper	N,C	E	.5x6	S	L		✓	Low mat forming, silvery-blue foliage becomes purple in winter, drought tolerant
Juniperus sabina 'Mini Arcadia'	Mini Arcadia Juniper	N,C	E	1x6	S,FS	L		✓	Bright green foliage form a compact mounding juniper, drought tolerant
Juniperus sabina 'Buffalo'	Buffalo Juniper	All	E	.75x6	S,FS	L		✓	Bright olive green foliage, low mat forming, drought tolerant
Juniperus sabina 'Scandia'	Scandia Juniper	N,C	E	1.5x5	S,FS	L			Dense rounded to flat top, light olive green foliage, drought tolerant Dense dark green foliage, thick mounding,
Juniperus sabina 'Tamariscifolia' Juniperus squamata	Tammy Juniper Blue Star Juniper	N,C All	E E	4x6 1.5x3	S,FS S,FS	L			drought tolerant Bluish-white dwarf variety with spreading branches, drought tolerant
Mahonia aquifolium	Oregon Grape Holly	All	E	5x5	SH	L		√	Broad leaf holly-like evergreen, dark blue- green foliage turns reddish bronze in winter, clusters of yellow flower, blue-black fruits,winc & drought tolerant
Mahonia aquifolium 'Compacta'	Compact Oregon Grape Holly	All	E	2.5x2.5	SH	L		✓	Compact variety of Oregon Grape Holly
Pachystima myrsinites Picea abies 'Elegans'	Mountain Lover Spreading Norway Spruce	All N,C	E	2x2 3x5	A	L	√		Small broadleaf evergreen with dark green glossy foliage, tiny maroon flowers in summer Low rounded dome, bright green

LEGEND:

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EVERGREEN SHRUBS											
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(ft) X W(ft)	Sun	H20	Native	Locally Grown	Attributes		
Picea abies 'Nidiformis'	Bird's Nest Spruce	N,C	Е	3x5	S,FS	М			Bright green foliage, spreading and flat topped		
Picea pungens 'Mesa Verde'	Mesa Verde Spruce	N,C	E	2x4	S, FS	M			Compact spreading form with bright green foliage, great low-growing evergreen		
Pinus mugo 'Mops'	Miniature Mugo Pine	All	E	3x3	S,FS	L			Naturally compact form of the species, does not require pruning, drought tolerant		
Pinus mugo pumillo	Dwarf Mugo Pine	All	E	3x7	S,FS	L		✓	Irregular with wide spreading habit, stays more compact than the species without pruning, drought tolerant		
Pinus mugo 'Slowmound'	Slowmound Mugo Pine	All	E	3x5	S,FS	L			Low mounding habit and dark green foliage, requires no pruning, drought tolerant		

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ORNAMENTAL GRASSES											
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht (ft) x Width (ft)	Sun	Н20	Native	Locally Grown	Attributes/Placement		
Andropogon gerardii	Big Bluestem	All	S,F	5x2.5	S	L	✓	√	Large clump, interesting color late summer-fall, dense roots good for erosion control in stream beds, good background plant, central streambed plant, or to keep students from walking where not desired, can take a lot of abuse, drought tolerant		
Blepharoneuron trichloepis	Pine Dropseed	S	S,F	2.5x2.5	S,PS	L-M	√		Beautiful open panicled accent or filler grass with delicate appearance, blends well in any ornamental or meadow planting adding airiness and attractiveness		
Bouteloua 'Blonde Ambition'	Blonde Ambition Blue Grama Grass	C,S	S,F	2.5x1.5	S	L			Ornamental form of native, clump forming, unique curled seed heads are chartreuse changing to blonde, beautiful in masses, very low water and drought tolerant		
Calamagrostis acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	N,C	S,F,	4x2	S, FS	L		✓	Upright clump with rich green blades, reddish bronze plumes early summer fade to buff and persist in winter, drought tolerant, good for borders and screens but overplanted; consider alternatives		
Calamagrostis acutiflora 'Overdam'	Variegated Feather Reed Grass	N,C	S,F,	2x2	S, FS	L		✓	Form with white and medium green variegated leaves, great for specimen and formal plantings		
Calamagrostis brachytricha	Korean Feather Reed Grass	N,C	S,F, W	3x2	S, FS	L		√	Clump forming with stiff upright foliage and pink-tinged plumes to 4' tall late summer		
Carex occidentalis	Western Sedge	All	SP,S ,F	1x2	S, FS	L-M	✓		Bright green arching blades, tufted, short seed spikes, pretty filler		

LEGEND:

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ORNAMENTAL GRASSES											
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht (ft) x Width (ft)	Sun	н20	Native	Locally Grown	Attributes/Placement		
									Bluish-green foliage, finely textured clump, tan seed heads mid-summer, great contrast or small border plant,		
Festuca glauca	Blue Fescue	N,C	E	1x1	S	L		✓	drought tolerant		
Festuca glauca 'Boulder Blue'	Boulder Blue Fescue	N,C	E	1x1	S	L			Intense blue form		
Festuca glauca 'Elijah Blue' Festuca idahoensis	Elijah Blue Fescue Idaho Fescue	N,C All	E E	.5x.5	S	L M	✓		Rich powdery blue form Densely tufted, bluish-green wiry blades with straw seed heads mid-late summer		
Festuca idahoensis 'Siskiyou Blue'	Siskiyou Blue Idaho Fescue	All	E	1.5x1	S	М	√		Densely tufted, slender blue-green blades, spikes of straw colored seed heads,		
Festuca ovina	Sheep Fescue	C,S	Е	1x1	S,PS	L	√		Finely textured compact bluish- greenish clump, straw seed heads mid- late summer, good contrast or border plant, drought tolerant, can be used as lawn, takes some foot traffic		
Festuca ovina glauca	Blue Sheep Fescue	N,C	E	1x1	S,PS	L			Blue variety of Sheep Fescue		
Helictotrichon sempervirens	Blue Avena Grass	All	E	2x1.5	S	L		✓	Slender, blue-grey blades with arching sprays of buff colored seed spikes, good in groups or as specimen, drought tolerant		
Miscanthus sinensis 'Gracilimus'	Maiden Grass	N,C	S, F	4x4	S	М		✓	Mass or accent, creamy white feathery seed plumes, rich green blades with white ribs		
Miscanthus sinensis 'Purpurascens'	Flame Grass	N,C	S,F	3x2	S	М			Columnar clump with bright green leaves becomes reddish-purple late summer, bronze seed plumes become silvery-white		
Miscanthus sinensis 'Variegatus'	Variegated Maiden Grass	N,C	S,F	4x2	А	М			Bright green blades with cream-yellow stripes, upright clump with stout stalks, silver seed plumes		
Miscanthus sinensis 'Yaku Jima'	Yaku Jima Dwarf Maiden Grass	С	S,F	4x4	S	М			Compact clump more rounded than Gracillimus, rich green blade-like leaves, stiff stalks, creamy white plumes		

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ORNAMENTAL GRASSES									
OKNAIVIENTAL GKASSE)								
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht (ft) × Width (ft)	Sun	Н20	Native	Locally Grown	Attributes/Placement
Muhlenbergia rigens	Deer Grass	C,S	S,F, W	3x3	S,FS	L-M	√	√	Upright dramatic arching clump grass tolerates variety of conditions including riparian, straw florets late summer, spikes up to 5' can remain until heavy snowfall, good substitute for pampas grass
Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	All	S,F,	3x1.5	S	L			Upright clump with stiff metallic blue leaves, yellow in fall, airy pink panicles in fall, drought tolerant
Panicum virgatum 'Rotsrahlbush'	Red Switch Grass	All	S,F,	3.5x1.5	S	L			Upright clump to 5' with seed heads, forms large clump, stiff leaves tinged with red all season, rich red in fall, burgundy flowers/seed panicles late summer with structural interest in winter, drought tolerant
Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	All	S,F, W	3.5x1.5	S	L			Beautiful clumps, tones of dark red in summer and wine-red in fall, airy seed heads late summer-early fall, larger in wetter conditions, drought tolerant
Poa fendleriana	Muttongrass	C,S	E	1.5x1	А	L-M	✓	V	Upright bunchgrass, bright green early turning to blue-gray with heat and drought, adds simple elegant beauty and softens tough areas such as curbsides or parking lot planter strips, prevents early season weed invasions

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ORNAMENTAL GRASSES												
ORIVAIVIEN I AL GRASSE	ONIVAIVILIA I AL GIVAGGES											
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht (ft) x Width (ft)	Sun	Н20	Native	Locally Grown	Attributes/Placement			
Schizachyrum scoparium	Little Bluestem	S	S,F, W	3x2.5	S, FS	L	✓	√	Native clump grass that can take a beating, will wilt/splay if overwatered, goes through series of attractive color changes turning to orange, red and violet in fall that can remain through winter for nice snow contrast, tolerant of wind, rocky soils and drought but does best with occasional deep watering			
Schizachyrium scoparium 'Blaze'	Blaze Little Bluestem	c,s	S,F,	3x2	S	L			Blue-gray variety of species turning copper red in fall and rich golden orange in winter, beautiful in large drifts			
Schizachyrium scoparium 'The Blues'	The Blues Bluestem	C,S	S,F,	3x1.5	S	L			Blue-gray variety of species, foliage turns dark purple in late fall, persisting in winter, silvery seed heads last into winter			
Sorghastrum nutans	Indian Grass	C,S	S,F, W	4x3	S	L	✓	✓	Tall bluish-green clumps up to 2-3' wide after several years, yellow to tan flowers above foliage, purple in fall, good winter interest, good border or screen, drought tolerant			
Sporobolus airoides	Alkali Sacaton	C,S	S,F	3x2	S	L	✓	✓	Clump forming bluish foliage with showy pinkish airy panicle flower plumes 3-5' tall, drought tolerant and low maintenance, good in masses, specimen or erosion control			

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ORNAMENTAL GRASSES										
RIPARIAN ORNAMENTAL SPI	ECIMENS FOR LINEAR OR ME	ANDE	ERIN	G PLD'S (I	NOT E	BASII	NS)			
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht (ft) × W (ft)	Sun	Н20	Native	Locally Grown	Attributes/Placement	
			-,		-,					
Andropogon gerardii	Big Bluestem	All	S,F	5x2.5	S	L	✓	✓	Large clump, interesting color late summer-fall, dense roots good for erosion control in stream beds, good background plant, central streambed plant, or to keep students from walking where not desired, can take a lot of abuse, drought tolerant	
Calamagrostis acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	N,C	S,F, W	4x2	S, FS	L		V	Upright clump with rich green blades, reddish bronze plumes early summer fade to buff and persist in winter, drought tolerant, good for borders and screens but overplanted; consider alternatives	
Calamagrostis acutiflora 'Overdam'	Variegated Feather Reed Grass	N,C	S,F,	2x2	S, FS	L		√	Form with white and medium green variegated leaves, great for specimen and formal plantings	
Carex occidentalis	Western Sedge	All	E	1x2	S, FS	L-M	√		Bright green arching blades, tufted, short seed spikes, pretty filler	
Miscanthus sinensis 'Gracilimus'	Maiden Grass	N,C	S, F	4x4	S	М		✓	Mass or accent, creamy white feathery seed plumes, rich green blades with white ribs	
Miscanthus sinensis 'Variegatus'	Variegated Maiden Grass	N,C	S,F	4x2	A	M			Bright green blades with cream-yellow stripes, upright clump with stout stalks, silver seed plumes	
Panicum virgatum	Switchgrass	All	S,F,	2x2	S	L-M	✓	√	Tall rhizomatous bunchgrass with blades to 5 feet, bright green turning russet or red-orange in fall, fine-textured panicles last into winter, responds to moisture and gets larger in wetter conditions, good for accent, massing, erosion control, drought tolerant	

LEGEND:

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ORNAMENTAL GRASSE	ORNAMENTAL GRASSES										
RIPARIAN ORNAMENTAL SPECIMENS FOR LINEAR OR MEANDERING PLD'S (NOT BASINS)											
Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	All	S,F,	3x1.5	S	L		Upright clump with stiff metallic blue leaves, yellow in fall, airy pink panicles in fall, drought tolerant			
Panicum virgatum 'Rotsrahlbush'	Red Switch Grass	All	S,F,	3.5x1.5	S	L		Upright clump to 5' with seed heads, forms large clump, stiff leaves tinged with red all season, rich red in fall, burgundy flowers/seed panicles late summer with structural interest in winter, drought tolerant			
Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	All	S,F,	3.5x1.5	S	L		Beautiful clumps, tones of dark red in summer and wine-red in fall, airy seed heads late summer-early fall, larger in wetter conditions, drought tolerant			

LEGEND:

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RIPARIAN GRASS BLEN	D FOR PLD BASINS							
RIPARIAN GRASSES - SEASO	NAL MOISTURE							
Botanical Name	Common Name	NAU Zone	% of Blend	Ht(in)	Shade Tolerant	Drought Tolerant	Warm/Cool Season (W/C)	Attribute/Placement
Bouteloua gracillas	Blue Grama	All	40	12-16		✓	w	Native to AZ, one of the most adapted grasses in Flagstaff area. Grows in almost any condition from drought to riparian, forest to meadow. Distinctive seed heads turn violet in fall. Tolerates some foot traffic.
Festuca arizonica	Arizona Fescue	All	20	30-50	✓		С	Native AZ species that thrives in most conditions but also works in riparian environment. Can perform as well in Pine forest as an open meadow. A clumpy grass that grows well in a rocky situation. Attractive red florets and foliage in the fall.
Muhlenbergia rigens	Deergrass	All	20	12-24	✓		w	Clumpy grass tolerates variety of conditions including riparian. Florets appear late summer, spikes can remain until snowfall.
Muhlenbergia wrightii	Spiked Muhly	All	20	24	✓		W	AZ native, unusual seed head that begins to show mid-summer.
RIPARIAN GRASSES - YEAR	ROUND MOISTURE* (ADD TO	ABO	/E WHE	RE MOI	STUI	RE IS	PRESEN'	TYEAR ROUND)
Carex aquatillis	Water Sedge	All	10	12-24	√		N/A	Grows best in west environments and can tolerant sun and shade, tolerates some foot traffic, strictly riparian plant.
Carex microptera	Smallwinged Sedge	All	10	12-24			N/A	Technically not a grass, best in areas that stay wet for long periods. Grows even when occassionally or partially submerged.
*For Year-round Moisture reduce	Blue Grama to 30% with even proporti	ons of	fremainin	g species				

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RIPARIAN GRASS BI	RIPARIAN GRASS BLEND FOR PLD BASINS										
RIPARIAN PERENNIALS											
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes/Placement		
Iris missouriensis	Western Blue Flag	All	SP,S	30x18		М-Н			Large blooms are pale lilac-blue, bright green leaves, moisture loving Tubular lavender-pink flowers, fragrant foliage, long blooms,		
Monarda fistulosa menthaefolia Rudbeckia laciniata	Native Lavender Bee-Balm Cutleaf Coneflower	C,S C,S	S S,F	24x24 60x36	S S/PS	L-M	✓ ✓		Daisy like yellow flowers on tall stalks, long blooms, butterflies, impressive focal plant in riparian habitat		
Sidalcea neomexicana	Alkali Checkerbloom	All	S,F	24x24	S,PS	М-Н	√		Deep pink cup shaped flowers (like hollyhock blossoms), butterflies, hummingbirds, repeat blooms		
Solidago canadensis	Canada Goldenrod	S	S,F	48x36	A	L-M	✓		Tall leafy plant with full yellow spikes, tall border, butterflies		

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				TALL MEADOW GRASS BLEND										
TALL MEADOW GRASSES*														
Common Name	NAU Zone	% of Blend	Ht (in)	Shade Tolerant	Drought Tolerant	Warm/Cool Season (W/C)	Attributes/Use							
Blue Grama	All	40	12-16		√	W	Native to AZ, one of the most adapted grasses in Flagstaff area. Grows in almost any condition from drought to riparian, forest to meadow. Distinctive seed heads turn violet in fall. Tolerates some foot traffic.							
Pine Dropseed	All	10	36	✓		w	Beautiful open panicled grass, very delicate appearance. Blends well in any ornamental or meadow planting adding airiness and attractiveness.							
Side Oats Grama	All	15	16-40	√	√	W	Good forest understory, one of most drought tolerant grasses that grows in shade.							
Arizona Fescue	All	10	30-50	✓		С	Native AZ species that thrives in most conditions but also works in riparian environment. Can perform as well in Pine forest as an open meadow. A clumpy grass that grows well in a rocky situation. Attractive red florets and foliage in the fall.							
Prairie Junegrass	All	10	8-28		✓	С	Produces earlier florets than many other meadow grasses, becoming showy in spring.							
Deergrass	All	10	12-24	✓		w	Clumpy grass tolerates variety of conditions including riparian. Florets appear late summer, spikes can remain until snowfall.							
Switchgrass	All	5	24-60	✓	✓	W	Tall bunch grass offering interesting colors in fall depending on variety. Works well as understory in forest, responds to moisture and gets larger in wetter conditions.							
	Blue Grama Pine Dropseed Side Oats Grama Arizona Fescue Prairie Junegrass Deergrass	Blue Grama All Pine Dropseed All Side Oats Grama All Arizona Fescue All Prairie Junegrass All Deergrass All	Blue Grama AII 40 Pine Dropseed AII 10 Side Oats Grama AII 15 Arizona Fescue AII 10 Prairie Junegrass AII 10 Deergrass AII 10	Blue Grama	Blue Grama	Blue Grama All 40 12-16 ✓	Blue Grama All 40 12-16 ✓ W							

LEGEND:

SEASONAL INTEREST: SEASONAL INTEREST: SUN: NAU ZONE: SUN: WATER: TRIAL: S = Summer W = Winter S = Full Sun SP = Spring E = Evergreen FS = Filtered ShadeN = North SH = Shade L = LowUse in limited C = Central quantities M = Medium A = Adaptive SE = Semi-Evergreen PS = Partial Shade F = Fall S = South H = High

TALL MEADOW GRASS BLEND										
TALL MEADOW PERENNIAL	S*									
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(in) X W(in)	Sun	Native	Н20	Attributes/Placement		
Achillea millefolium 'Lanulosa'	Western Yarrow	C,S	S,F	12x24	S,FS	✓	L-M	Fern-like foliage, clusters of small white flowers, long blooming, spreading clump, can be mown as groundcover, takes moderate foot traffic		
Agastache cana 'Double Bubble Mint'	Double Bubblemint Hyssop	All	S,F	24x18	S		L	Tall bushy blue green foliage, striking fragrant flowers, long blooming, thrives on sun & reflected heat, attracts hummingbirds & butterflies Broad clump, large daisy like purple flowers, long blooming, drought		
Echinacea purpurea	Purple Coneflower	N,C	S,F	24x18	S, FS		L-M	tolerant		
Gaillardia aristata	Native Blanket Flower	C,S	S, F	18x18	S	√	L	Daisy-like yellow flowers with red- brown centers, attracts butterflies, nice with native grasses, long blooms, drought tolerant		
Ipomopsis aggregata	Scarlet Gilia	C,S	S,F	36x12	S,FS	✓	L	Bright green leaves, loose spikes of scarlet trumpet flowers, hummingbird plant		
Linum perenne	Blue Flax	C,S	SP,S	24x24	S	√	L-M	Saucer-like blue flowers, airy clump, dark bluish-green foliage, can repeat bloom, butterfly plant, good with native grasses		
Lupinus argenteus	Silvery Lupine	C, S	S	24x24	S,FS	√	L	Erect spikes blue-purple flowers, loose clump, very drought tolerant, good with native grasses		
Machaeranthera canescens	Purple Aster	C, S	S,F	24x24	S, FS	√	L	Airy spread, purple ray flowers with yellow centers, butterfly plant, drought-tolerant, heavy bloomer		
Monarda fistulosa menthaefolia	Native Lavender Bee-Balm	C,S	S	24x24	S	√	L-M	Tubular lavender-pink flowers, fragrant foliage, long blooms, butterfly plant		

LEGEND:

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TALL MEADOW GRASS BLEND											
TALL MEADOW PERENI	TALL MEADOW PERENNIALS*										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(in) X W(in)	Sun	Native	Н20	Attributes/Placement			
Penstemon barbatus	Scarlet Bugler	C,S	S,F	24x18	S,FS	√	L	Striking spires of scarlet tubular flowers on tall stalks, purple leaves in fall, repeat bloom if cut, butterflies, hummingbirds			
Penstemon eatonii	Firecracker Penstemon	S	S	24x12	S,FS	✓	L	Dramatic tubular red flowers bloom above dark green clumps, hummingbird & butterfly plant, likes reflected heat			
Penstemon strictus	Rocky Mountain Penstemon	All	S	24x24	S,FS	√	L	Blue flowers on tall spikes, long blooms, butterfly & hummingbird plan			
Penstemon virgatus	Wand Penstemon	S	S	18x12	S,FS	✓	L	Light purple tubular flowers through summer, forest understory, hummingbird & butterfly plant			
								Arched spikes have many yellow flowers followed by fluffy seeds, butterfly plant, good under Ponderosa			
Solidago sparsiflora	Few-Flowered Goldenrod	S	S,F	24x24	Α	\checkmark	L	Pines			

*When incorporating perennials with Tall Meadow Mix equal proportions of desired species are recommended. A second seeding application may be necessary to ensure adequate control of weedy species between seeding applications.

LEGEND:

SEASONAL INTEREST: SEASONAL INTEREST: SUN: NAU ZONE: SEASONAL INTEREST: SUN:

S = Summer W = Winter S = Full Sun

SP = Spring E = Evergreen FS = Filtered Shade

F = Fall SE = Semi-Evergreen PS = Partial Shada SUN: WATER: TRIAL: N = North SH = Shade L = LowUse in limited C = Central M = Medium A = Adaptive quantities S = South H = High

SHORT MEADOW GRASS BLEND								
SHORT MEADOW GRASSE	:S*							
Botanical Name	Common Name	NAU Zone	% of Blend	Ht (in)	Shade Tolerant	Drought Tolerant	Warm/Cool Season (W/C)	Attributes/Use
Bouteloua gracillas	Blue Grama	All	50	12-16		√	w	Native to AZ, one of the most adapted grasses in Flagstaff area. Grows in almost any condition from drought to riparian, forest to meadow. Distinctive seed heads turn violet in fall. Tolerates some foot traffic.
Festuca idahoensis	ldaho Blue Fescue	All	10	10-14	✓	√	С	Commonly grown as ornamental, handles traffic better than other ornamental fescue. Blends well with Blue Grama and Buffalograss, adds color an interesting seed heads.
Festuca ovina glauca	Sheep's Fescue	All	10	6-10	✓		С	Commonly used ornamental grass native to Northern AZ. Looks great when combined with Pine Dropseed and Little Bluestem. Takes some traffic when established.
Muhlenbergia montana	Mountain Muhly	All	10	12-18		√	W	Similar habit to Blue Grama, usually recovers from traffic well but won't survive traffic on its own.
Poa fenderianna	Muttongrass	All	10	18-24	√	√	С	One of earliest grasses to germinate in spring, one of few shade tolerant grasses that is also drought tolerant. Good low maintenance prairie grass,
Sporobolus crytandrus	Sand Dropseed	All	10	12-24		✓	W	best in full sun, may take a few years to establish.

LEGEND:

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SHORT MEADOW GRASS BLEND									
SHORT MEADOW GRASSE	S*								
Botanical Name	Common Name	NAU Zone	% of Blend	Ht (in)	Shade Tolerant	Drought Tolerant	Warm/Cool Season (W/C)	Attributes/Use	
FOR HIGH TRAFFIC AREAS	ADD:**								
Buchloe dactyloides	Buffalograss	All		6		✓	w	Used as erosion control and low- maintenance lawn. Handles traffic better than most native grasses. Bes with Blue Grama. Will brown out early in fall.	
* Seed mix at 8-10 lbs/acre; obta		based on	% of mix I	isted. Wh	nen ad	ding E	Buffalog	rass to the mix, use 30% Buffalograss,	
	ubute remaining varieties in the mix								
**For high traffic mix use 30% Bu	ffalo grass at 6 lbs/acre, 30% Blue 0	Grama and	equal pro	oportions	rema	ining	varietie	S.	
SHORT MEADOW PERENN	IALS*								
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(in) X W(in)	Sun	н20	Native	Attributes/Placement	
Achillea millefolium 'Lanulosa'	Western Yarrow	C,S	S,F	12x24		L-M	✓	Fern-like foliage, clusters of small white flowers, long blooming, spreading clump, can be mown as groundcover, takes moderate foot traffic	
Castilleja integra	Paintbrush	S	SP,S,F	12x12	S,FS	L-M	✓	Showy crimson floral spikes, attracts hummingbirds & butterflies, nice plant with Blue Grama Burnt-orange flowers, long blooms,	
Erysimum wheeleri	Wheeler's Wallflower	c,s	S	24x12	S,FS	М	✓	butterfly plant	
Gaillardia aristata	Native Blanket Flower	C,S	S, F	18x18	S	L	√	Daisy-like yellow flowers with red- brown centers, attracts butterflies, nice with native grasses, long bloom drought tolerant	
Liatris punctata	Gayfeather	C,S	S	12x6	S	L		Stiff upright stems with narrow linea leaves, lavender flower spikes Lavender wands, narrow blade-like	

LEGEND:

Liatris spicata 'Kobold'

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С

Kobold Gayfeather

18x12 S

foliage

SHORT MEADOW GRASS BLEND									
SHORT MEADOW PERENN	IIALS*								
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(in) X W(in)	Sun	Н20	Native	Attributes/Placement	
Linum perenne	Blue Flax	C,S	SP,S	24x24	S	√	L-M	Saucer-like blue flowers, airy clump, dark bluish-green foliage, can repeat bloom, butterfly plant, good with native grasses	
Lithospermum multiflorum	Pretty Stoneseed	C, S	S	12x24	А	L-M	√	Bright yellow tubular flowers, plant underneath Ponderosas to revegetate understory, butterfly plant, reliable tidy bloomer	
Linum perenne	Blue Flax	C,S	SP,S	24x24	S	L-M	√	Saucer-like blue flowers, airy clump, dark bluish-green foliage, can repeat bloom, butterfly plant, good with native grasses	
Lupinus argenteus	Silvery Lupine	C, S	S	24x24	S,FS	L	✓	Erect spikes blue-purple flowers, loose clump, very drought tolerant, good with native grasses	
Machaeranthera canescens	Purple Aster	C, S	S,F	24x24	S, FS	L	√	Airy spread, purple ray flowers with yellow centers, butterfly plant, drought-tolerant, heavy bloomer	
Monardella odoratissima	Coyote Mint	C,S	S,F	12x12	S,FS	L	✓	Tubular lavender flowers, neat mound of minty foliage, tolerant of hot dry conditions, good understory	
Oxytropis lambertii	Lambert's Locoweed	S	S,F	8x8	S,FS	L	√	Spreading clump of silver-green foliage, reddish-purple flowers, long bloomer, butterfly & hummingbird plant, good forest understory	
Penstemon barbatus	Scarlet Bugler	C,S	S,F	24x18	S,FS	L	√	Striking spires of scarlet tubular flowers on tall stalks, purple leaves in fall, repeat bloom if cut, butterflies, hummingbirds	

LEGEND:

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SHORT MEADOW GRASS BLEND								
SHORT MEADOW PERENN	IIALS*							
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Ht(in) X W(in)	Sun	Н20	Native	Attributes/Placement
Penstemon eatonii	Firecracker Penstemon	S	S	24x12	S,FS	✓	L	Dramatic tubular red flowers bloom above dark green clumps, hummingbird & butterfly plant, likes reflected heat
Penstemon strictus	Rocky Mountain Penstemon	All	S	24x24	S,FS	√	L	Blue flowers on tall spikes, long blooms, butterfly & hummingbird plant
Penstemon virgatus	Wand Penstemon	S	S	18x12	S,FS	✓	L	Light purple tubular flowers through summer, forest understory, hummingbird & butterfly plant
Pseudocymopterus montanus	Mountain Parsley	S	SP,S,F	24x24	S,FS	L-M	√	Yellow to red flowers, long blooms, butterfly plant, Ponderosa Pine forest
Ratibida columnifera	Mexican Hat Coneflower	C,S	S, F	24x24	S	L	✓	2 color forms (yellow & red) of same species, airy clump with sombrero like flowers, prolific long blooms, butterfly plant
Solidago sparsiflora	Few-Flowered Goldenrod	S	S,F	24x24	A	✓	L	Arched spikes have many yellow flowers followed by fluffy seeds, butterfly plant, good under Ponderosa Pines
Zinnia grandiflora	Paper Flower, Prairie Zinnia	S	S, F	12x12	S		√	Yellow-orange flowers, fine-textured mound, good in windswept locations, butterfly & hummingbird plant, needs warm location and drainage, drought tolerant

^{*}When incorporating perennials with Short Meadow Mix equal proportions of desired species are recommended. A second seeding application may be necessary to ensure adequate control of weedy species between seeding applications.

LEGEND:

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BLUEGRASS 1	ΓURF BLEND*					
Pickseed Variety	Drought Tolerance	Shade Tolerance	Wear Tolerance	Disease Resistance	Sod Strengrh	Density
Langara		Good	Good	Good-Excellent	Good	Excellent
America	Good	Excellent	Excellent	Very Good		Very Good
Granite	Excellent		Good	Very Good		Very Good
Blue Velvet	Excellent			Excellent	Good	Excellent

^{*}Custom Bluegrass blend using Pickseed varieties. Seed varieties can be purchased from a vendor such as Granite Seed, Lehi, UT (www.graniteseed.com). It is recommended to custom grow the blend using a local sod farm such as Cedar Ridge Sod, Snowflake, AZ. Note that at least 15 months notice is generally required for a custom sod grow and 10 acres can be grown at a time.

LEGEND:

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PERENNIALS										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes/Placement
Achillea ageratifolia	Greek Yarrow	All	S		6x18	S	L			Wide-spreading spreading clump with white flower clusters and gray foliage, drought tolerant
Achillea millefolium 'Lanulosa'	Western Yarrow	C,S	S,F		12x24	S,FS	L-M	√	✓	Fern-like foliage, clusters of small white flowers, long blooming, spreading clump, can be mown as groundcover, takes moderate foot traffic
Achillea millefolium 'Paprika'	Paprika Yarrow	С	S		18x18	S	L		✓	Finely textured fern-like grey-green foliage, clusters of small red flowers Bright green fern-like foliage, red-wine
Achillea millefolium 'Sangria'	Sangria Yarrow	С	S		18x18	S	L		✓	colored flowers that bloom throughout summer Sulfur yellow flowers over grey-green
Achillea millefolium 'Moonshine' Agastache aurantiaca 'Coronado'	Moonshine Yarrow Coronado Hyssop	C,S	S S,F		24x18 15x12	S S,FS	L	✓	✓	foliage Silvery green fragrant foliage, pale orange flowers
Agastache cana 'Double Bubble Mint'	Double Bubblemint Hyssop	All	S,F		24x18	S	L		✓	Tall bushy blue green foliage, striking fragrant flowers, long blooming, thrives on sun & reflected heat, attracts hummingbirds & butterflies
Agastache cana 'Sinning'	Sonoran Sunset Hyssop	All	S,F		12x12	S	L		✓	Large rose colored tubular flowers, green bushy foliage, long blooming, compact
Agastache 'Kudos Silver Blue'	Silver Blue Mexian Hyssop	S	S,F	✓	12x24	S	L			Tight low foliage mounds, light blue blooms staked on spikes, butterflies and hummingbirds
Agastache rupestris	Sunset Hyssop	All	S,F		24x24	S,PS	L	✓	✓	Bold spikes of orange flowers with root beer-like fragrance
Aquilegia coerulea	Rocky Mountain Columbine	All	SP,S		18x12	FS,SH	M	✓		Large rich blue flowers with white centers, bluish-green foliage, Colorado state flower, early & repeat blooms Abundant pale yellow flowers, repeat
Aquilegia chrysantha	Golden Columbine	All	SP,S		24x18	S, PS	L-M	√	✓	bloomer, tough & drought tolerant in shade
Aquilegia desertorum	Red Columbine	All	SP,S ,F		18x15	SH,PS	M	✓	✓	Small bright orange-yellow flowers, prefers protected location, hummingbird plant, long blooms, fern- like foliage

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PERENNIALS										
	Garage Marie	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	
Botanical Name	Common Name	2	Š	1	I	52	I	2	77	Attributes/Placement
Asclepias tuberosa	Butterfly Weed	C,S	SP,S		12x15	S	L	√	√	Showy yellow-orange flowers, attracts butterflies, neat foliage, long blooming, prefers protected location
Aster falcatum v.commutatus	White Aster	S	F		24x24	S/FS	L	√		Linear stalkless leaves, multiple white radial petals with yellow centers
Aster novi-belgii 'Professor Kippenburg'	Dwarf Blue Fall Aster	N,C	S,F		12x12	S	М			Thick rounded clump, dark green narrow leaves, daisy like lavender-blue flowers, plant in mass or as a border
Aurinia saxatilis	Basket of Gold Allysum	С	SP		8x12	S	L			One of earliest blooming perennials, bright yellow flowers with grey-green foliage on compact mound, drought tolerant
Callirhoe involucrata	Winecups	All	S, F		4x36	S	L	√	√	Sprawling, rich green leaves, reddish purple flowers all summer into fall, likes reflected heat, butterfly plant, good filler, cascades over walls, drought tolerant
Calylophus hartwegii	Sundrops	All	S,F		12x24	S	L	✓	√	Semi-shrubby, showy bright yellow blooms
Campanula rotundifolia	Bluebells	All	SP,S ,F		18x12	А	L-M	√		Bountiful blue blooms in sun & shade, ground-hugging mat of bright green
Castilleja integra	Paintbrush	S	SP,S ,F		12x12	S,FS	L-M	✓	√	Showy crimson floral spikes, attracts hummingbirds & butterflies, nice plant with Blue Gramma Bushy clump of blue-green leaves, fragrant pink trumpet flowers, butterfly
Centranthus ruber	Red Valerian	N,C	S		24x18	S	L		√	plant
Cerastium tomentosum	Snow in Summer	All	SP, S		6x12	S	L		✓	Soft silvery gray foliage forms a spreading mound, smothered by snowy white flowers, drought tolerant
Ceratostigma plumbaginoides	Plumbago	N, C	S, F	✓	6x12	А	L		√	Spreading mound with striking blue flowers, foliage turns red in fall, good plant to try on campus, drought tolerant

LEGEND:

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PERENNIALS										
			+							
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes/Placement
Clematis ligusticifolia	Western Virgin's Bower	All	S, F		spread- ing	S, PS	М	√	√	Clambering fast-growing, bright green foliage, fragrant white flowers summer, showy seedheads into fall, good for slope stabilization
Coreopsis lanceolata	Lanceleaf Coreopsis	All	S		18x18	S	L			Broad clump of shiny green leaves, daisy like yellow flowers, creates nice mass
Coreopsis tinctoria	Plains Coreopsis	C, S	SP,S		12x12	S, PS	L			Yellow daisy-like flowers with maroon centers, long stalks from multi branching stems
Coreopsis verticillata 'Route 66'	Route 66 Coreopsis	C, S	S		20x20	S	L			Threadleaf foliage, yellow flowers with red centers
Delphinum grandiflorum 'SummerNights'	Summer Nights Dwarf Delphinium	N, C	S		10x12	S	М		√	Bright green palmate foliage forms rounded clump with spikes of midnight blue flowers, repeat blooms through summer if spent blooms are cut
Echinacea 'Tomato Soup'	Tomato Soup Coneflower	С	S		24x24	S,PS	L			Large red flowers, long blooming
Echinacea purpurea Echinacea purpurea 'White Swan'	Purple Coneflower White Swan Coneflower	N,C	S,F		24x18 24x18	S, FS	L-M L		✓	Broad clump, large daisy like purple flowers, long blooming, drought tolerant Large deep green leaves, large daisy-like white flowers
Echinacea purpurea 'PowWow Wild Berry' Echinacea purpurea 'PowWow	PowWow Wild Berry Coneflower	N,C	S		18x22	S	L			Compact variety, blooms continually, deep rose-purple flowers Pure white petals with a golden cone,
White'	PowWow White Coneflower	N,C	S		18x22	S	L-M			sturdy, compact
Erigeron flagellaris	Whiplash Daisy	S	SP, S, F		spread- ing	А	L-M	√		Versatile, fast grower with supplemental water, tolerates light foot traffic, white flowers late spring through fall, gray foliage,butterfly plant
Erigeron sp.	Aspen Fleabane	All	S		12x24	А	L-M	✓		Spreading, daisy-type flowers, butterfly plant, good filler or free-flowing understory below Aspens
Eriogonum racemosum	Red-Root Buckwheat	S	S,F		18x12	S/PS	L-M	√		Pale pink blooms turn to russet in fall, silver foliage, butterfly plant, small area ground cover and natural areas, drought tolerant

LEGEND:

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PERENNIALS										
Botanical Name	Common Nama	NAU Zone	Seasonal Interest	Tria!	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes (Discourage)
	Common Name			7						Attributes/Placement Woody sub-shrub, dark green foliage, thin stalks form clusters of sulfur yellow flowers, butterfly plant, small ground cover areas & natural areas, drought
Erigonum umbellatum Erysimum capitatum	Sulfur Flower Western Wallflower	S C,S	S,F SP,S		9x18 24x24	S,FS S,FS	L M	✓ ✓	✓ 	Yellow flowers, long-blooms, butterfly plant, good to combine with other wildflowers
Erysimum wheeleri	Wheeler's Wallflower	C,S	S		24x12	S,FS	М	✓		Burnt-orange flowers, long blooms, butterfly plant
Fragaria ovalis	Wild Strawberry	C, S	SP, S, F		spread- ing	А	М	√		Quick-spreading, tolerates light foot traffic, attractive foliage turns red in fall, many white flowers in spring produce edible red berries that attract birds, woodland garden
Gaillardia aristata	Native Blanket Flower	C,S	S, F		18x18	S	L	✓	✓	Daisy-like yellow flowers with red-brown centers, attracts butterflies, nice with native grasses, long blooms, drought tolerant
Gaillardia grandiflora 'Arizona Sun'	Dwarf Blanket Flower	All	S		8x8	S	L			Compact clump, large burgundy daisies with red centers and yellow tips Large entirely wine-red flowers above a thick clump of grey-green foliage,
Gaillardia grandiflora 'Burgundy'	Burgundy Blanket Flower	All	S		18x18	S	L			butterfly plant Leathery grey-green foliage, compact clump, large red daisy-like flowers with
Gaillardia grandiflora 'Goblin'	Dwarf Blanket Flower	All	S		12x12	S	L			yellow tips Yellow flower with bright red center, butterfly plant, native grass companion,
Gaillardia pinnatifida Galium odoratum	Adobe Blanket Flower Sweet Woodruff	S N	S SP		18x24 6x8	S	M	✓ 	✓	long bloomer Fragrant, showers of white star-like flowers, bright green foliage
Geranium x cantabrigiense	Cambridge Geranium	All	SP,S , F		6x12	А	М		✓	Wave of bright pink flowers, compact spreading clump, wine red fall foliage Clump of rich green willow like leaves,
Guara lindheimeri	White Whirling Butterflies	C,S	S,F		24x24	S	L		✓	wiry stems, loose spikes of white four petaled flowers

LEGEND:

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PERENNIALS										
		NAU Zone	Seasonal Interest	Tria!	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	
Botanical Name	Common Name	Ž	Se	7	Ĩ	Sr	Ĭ	ž	27	Attributes/Placement White/pink flowers, green vase-like
Guara lindheimeri 'Pink Cloud'	Pink Whirling Butterflies	C,S	S,F		24x24	S/FS	L			clump, long blooms
Geranium 'Johnson's Blue'	Johnson's Blue Geranium	N,C	S		18x24	A	М			Broad clump of grey-green leaves, violet blue wide faced flowers, woodland garden
Geranium caespitosum	Purple Cransebill	All	S,F		18x24	А	L-M	√		Rich magenta flowers, purple-red foliage in fall, butterfly plant, woodland garden
Geranium richardsonii	White Cranesbill	C,S	S,F		24x24	А	М	✓		White flowers , good filler, softens walls, burgundy fall foliage, butterfly plant
Helianthus maximilianii	Maximilian's Sunflower	S	F		72x24	S	М			Multiple smaller yellow sunflower blooms late summer-fall, blue-green foliage with woody crown
Hemerocallis 'Baja'	Baja Daylily	N, C	S,F		20x18	S,PS	L			Red with yellow centered flowers
Hemerocallis 'Frans Hals'	Frans Hals Daylily	N, C	S		20x24	S,PS	L			Free blooming on grassy green mounds, bi-colored yellow and orange flowers
Hemerocallis Stella d'Oro	Stella d'Oro Daylilly	N, C	S, F		12x12	S	L		√	Low clump of green blade-like leaves, stalks of fragrant bell-shaped golden flowers all summer into fall, drought tolerant
Heuchera sanguineum 'Splendens'	Red Coral Bells	All	All		12x12	А	М	√	√	Year-round thick clump of round rich green leaves, loose spikes of scarlet red flowers
Ipomopsis aggregata	Scarlet Gilia	C,S	S,F		36x12	S,FS	L	√		Bright green leaves, loose spikes of scarlet trumpet flowers, hummingbird plant
Iris x germanica cultivars	Bearded Iris	N,C	SP		24x12	S,FS	L		✓	Bluish-green sword like leaves create solid clump , bearded ruffled flowers, colors vary
Lavandula angustofolia 'Hidcote'	Deep Blue Lavender	N,C	SP,S		12x12	S	L		√	Scented, lavender-blue flowers on tight spikes, compact evergreen aromatic clumps, good in borders
Lavandula angustofolia 'Munstead'	English Lavender	N,C	SP		12x12	S	L		✓	Grey-green foliage, aromatic, long spikes of tiny lavender flowers

LEGEND:

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PERENNIALS										
		NAU Zone	Seasonal Interest	le.	Ht(in) X W(in)		0	Native	Locally Grown	
Botanical Name	Common Name	NA	Sea	Trial	Ht(i	Sun	H20	Nat	700	Attributes/Placement
Lavandula x intermedia 'Grosso'	Fat Spike Lavender	N,C	SP		24x24	S	L		✓	Highly aromatic grey foliage, very fragrant lavender flowers in full spikes
Lavandula x intermedia 'Provence'	Provence Lavender	N,C	SP		24x24	S	L		√	Aromatic silver leaves, woody stems, mounded clumping, fragrant spikes of lavender flowers
Leucanthemum superbum 'Alaska'	Compact Shasta Daisy	N, C	S		24x18	S	М			Dense clump, large single white daisies, repeat blooms if cut after 1st flush
Liatris punctata	Gayfeather	C,S	S		12x6	S	L			Stiff upright stems with narrow linear leaves, lavender flower spikes
Liatris spicata 'Kobold'	Kobold Gayfeather	С	S		18x12	S	L		✓	Lavender wands, narrow blade-like foliage
Linanthastrum nuttallii Linum perenne	Mountain Phlox Blue Flax	S C,S	S,F		6x12	S,PS	L-M	✓ ✓	✓	Covered with small white flowers, long blooms, neat appearance, trails over walls and walks, butterfly plant Saucer-like blue flowers, airy clump, dark bluish-green foliage, can repeat bloom, butterfly plant, good with native grasses
Lithospermum multiflorum	Pretty Stoneseed	C, S	S		12x24	А	L-M	✓		Bright yellow tubular flowers, plant underneath Ponderosas to revegetate understory, butterfly plant, reliable tidy bloomer
Lupinus argenteus	Silvery Lupine	C, S	S		24x24	S,FS	L	✓	√	Erect spikes blue-purple flowers, loose clump, very drought tolerant, good with native grasses
Lupinus 'Russell Hybrids'	Mixed Lupine	N, C	SP, S		24x18	S	М			Dense clump of dark green, spikes of pea like flowers with varied colors
Machaeranthera canescens Monarda cambridge 'Scarlet'	Purple Aster Red Bee-Balm	C, S	S,F S		24x24 24x12	S, FS	L	✓		Airy spread, purple ray flowers with yellow centers, butterfly plant, drought-tolerant, heavy bloomer Red flowers, mint scented foliage

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PERENNIALS										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes/Placement
Monarda didyma 'Petite Wonder'	Petite Wonder Dwarf Beebalm	All	S, F		12x12	S, PS	L-M		✓	Fragrant gray-green foliage, showy pink flowers through late summer, can be used as a border or edge plant, hummingbird & butterfly plant
Monarda fistulosa menthaefolia	Native Lavender Bee-Balm	C,S	S		24x24	S	L-M	✓		Tubular lavender-pink flowers, fragrant foliage, long blooms, butterfly plant
Monardella odoratissima	Coyote Mint	C,S	S,F		12x12	S,FS	L	√	√	Tubular lavender flowers, neat mound of minty foliage, tolerant of hot dry conditions, good understory
Nepeta faassenii 'Kit Cat'	Kit Kat Catmint	All	S		15x15	S,PS	L		✓	Grey-green leaves, aromatic when touched or crushed, profuse lavender blooms above small leaves
Nepeta hybrid 'Select Blue'	Select Blue Catmint	All	S,F		12x12	S,PS	L			Forms a spreading clump, grey-green leaves, aromatic lavender-blue flowers Aromatic grey-green leaves, forms
Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	All	S		18x24	S	L		✓	groundcovers, clusters of lavender blossoms
Oenothera berlandieri	New Mexico Primrose	All	S		6x12	S	L			Spreading mass covered by large cup- shaped flowers, drought tolerant
Oenothera caespitosa	Tufted Evening Primrose	All	S		12x12	S	L	√	✓	Large fragrant white flowers open in afternoon, plant in evening use area, drought tolerant
Oenothera fremontii 'Shimmer'	Shimmer Evening Primrose	All	SP, S, F		8x12	S	L			Large yellow flowers with attractive gray green foliage, drought tolerant Summer-long yellow flowers, succeeds
Oenothera hookeri	Hooker Evening Primrose	S	S,F		36x24	S,FS	L-M	✓		in tough dry places Sprawling clump topped by large lemon
Oenothera 'Missouriensis'	Missouri Evening Primrose	All	S		12x15	S	L		✓	yellow flowers opening early evening, plant in evening use areas, drought tolerant
Oenothera pallida	Pale Evening Primrose	C, S	S		18x24	S	L-M	✓		Large white flowers in evening, fragrant moonlight plant
Origanum laevigatum 'Herrenhausen'	Purple Oregano	С	S,F		18x18	S	L			Woody sub-shrub, small fragrant leaves, produces abundant lavender flowers

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PERENNIALS	PERENNIALS									
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	H20	Native	Locally Grown	Attributes/Placement
Oxytropis lambertii	Lambert's Locoweed	S	S,F		8x8	S,FS	L	✓	√	Spreading clump of silver-green foliage, reddish-purple flowers, long bloomer, butterfly & hummingbird plant, good forest understory
Papaver nudicaule 'Wonderland'	Wonderland Poppy	С	S,F		18X12	S	М		✓	Mounding tuft of blue-green leaves, topped by large saucer-like flowers in many colors Broad clump with large crepe-like
Papaver orientale 'Brilliant'	Orange Oriental Poppy	N,C	SP,S		24x18	S	L		✓	orange flowers
Parthenocissus quinquefolia	Virginia Creeper	All	S, F		spread- ing	S, FS	L-M	√	√	Very tough, great red color in fall, produces blue-black fruits, attracts birds, soil, wind and drought tolerant
Penstemon barbatus	Scarlet Bugler	C,S	S,F		24x18	S,FS	L	✓	√	Striking spires of scarlet tubular flowers on tall stalks, purple leaves in fall, repeat bloom if cut, butterflies, hummingbirds Spikes of pink flowers, long-blooming,
Penstemon clutei Penstemon eatonii	Sunset Crater Penstemon Firecracker Penstemon	C,S S	S		24x24 24x12	S S,FS	L	✓ ✓	✓	Dramatic tubular red flowers bloom above dark green clumps, hummingbird & butterfly plant, likes reflected heat
Penstemon grandiflorus	Large Flower Penstemon	C,S	S		15X12	S	L		✓	Large pink blooms cover tall stems
Penstemon mexicali 'Pike's Peak'	Pike's Peak Beardtongue	All	SP, S		12x12	S	L			Attractive dark green mound with violet flowers, soil & drought tolerant
Penstemon mexicali 'Red Rocks'	Red Rocks Beardtongue	All	SP, S		12x12	S	L			Narrow dark green leaves form attractive mound, bright rose colored flowers all summer, soil & drought tolerant
Penstemon rostriflorus	Bridge's Penstemon	C,S	S		12x8	S,PS, FS	L	√		Tubular scarlet flowers, woodland gardens, hummingbird & butterfly plant
Penstemon strictus	Rocky Mountain Penstemon	All	S		24x24	S,FS	L		✓	Blue flowers on tall spikes, long blooms, butterfly & hummingbird plant

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PERENNIALS										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes/Placement
Penstemon virgatus	Wand Penstemon	S	S		18x12	S,FS	L			Light purple tubular flowers through summer, forest understory, hummingbird & butterfly plant
Phlox austromontana	Mountain Phlox	S	SP,S		4x12	S,FS	L			Loose forming dense mats, solitary pale pink flowers
Phlox sublata 'Blue' Phlox sublata 'Red'	Blue Creeping Phlox Red Creeping Phlox	N, C			4x18 1x18	S, FS	L		✓	Early spring blue flowers on spreading mound of bright green leaves, will cascade or mass nicely, drought tolerant Dense clump of narrow dark green leaves with reddish cast, clumps of bright red disk-like flowers early spring, cut back after flowering, drought tolerant
Potentilla hippiana	Silvery Cinquefoil	S	S,F		6x24	S,FS	L	✓	✓	Bright yellow flowers rise on above a rounded clump of silver-green leaves, rust-purple fall foliage, small area ground cover, butterfly plant
Potentilla neumannia Potentilla thurberi	Creeping Cinquefoil Scarlet Cinquefoil	N,C	SP, S S,F		4x12 18x18	S	L L-M	✓		Thick bright foliage rapidly spreads, hugs tight to ground, canary yellow flowers Deep red flower clusters, clump forming sprawling foliage, butterfly plant, long blooms
Pseudocymopterus montanus Ratibida columnifera	Mountain Parsley Mexican Hat Coneflower	S C,S	SP,S ,F		24x24 24x24	S,FS S	L-M	✓	✓	Yellow to red flowers, long blooms, butterfly plant, Ponderosa Pine forest 2 color forms (yellow & red) of same species, airy clump with sombrero like flowers, prolific long blooms, butterfly plant
Ratibida columnifera 'Red'	Red Prairie Coneflower	All			24x24	S	L			Lacy textured mass of bright green with dark red flowers around a cone shaped center, drought tolerant, long blooms
Ratibida columnifera 'Yellow'	Yellow Prairie Coneflower	All	S		18x15	S	L			Linear bright green leaves make up an airy clump with multiple stalks capped with yellow sombrero-like flowers

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PERENNIALS										
		NAU Zone	Seasonal Interest	al	Ht(in) X W(in)	,	0	Native	Locally Grown	
Botanical Name	Common Name	₹	Sec	Trial	Ht(Sun	H20	Na	707	Attributes/Placement
Rudbeckia fulgida 'Goldsturm'	Black-Eyed Susan	N, C	S		18x18	S	L			Golden yellow flowers with brown centers, drought tolerant
Salvia nemorosa 'May Night'	May Night Salvia	N.C.	S, F		18x12	S			 	Dense clump, crowded spikes of violet flowers early-late summer, drought tolerant
Santolina chamaecyparissus	Lavender Cotton	C	S		12x12	S	L			Fragrant silver foliage with bright yellow button flowers
Suntonna Chamaecypunssus	Lavenuer Cotton				12X12		_			Same as Lavender Cotton except foliage is bright green, forms thick mounds,
Santolina rosmarinifolia	Green Lavender Cotton	С	S		12x12	S	L			good for borders
Saponaria ocymoides 'Splendens'	Rock Soapwort	All	S		6x24	S	L		✓	Dense trailing mounds blanketed by bright pink flowers late spring-early summer, cascading, drought tolerant
Scabiosa caucasica	Blue Pincushion Flower	С	S		18x12	S	М		✓	Long stalks topped with lavender florets with gray pincushion-like center
Senecio multilobatus	Many Headed Groundsel	S	S		24x12	S,FS	L			Multiple bright yellow daisy flowers on soft green foliage, Ponderosa Pine forest openings, butterfly plant
Solidago 'Golden Baby'	Golden Baby Goldenrod	S	S		12x18	S,FS	L			Compact clumps of upright stems, dark green lance-shaped leaves, panicle of golden flowers
Solidago sparsiflora	Few-Flowered Goldenrod	S	S,F		24x24	А	L			Arched spikes have many yellow flowers followed by fluffy seeds, butterfly plant, good under Ponderosa Pines
Stachys byzantine 'Silver Carpet'	Flowerless Lamb's Ears	N, C	SP, S, F		8x12	S	L		√	Velvety silver foliage, excellent for contrast foliage and massing, mostly non-flowering, drought tolerant
Tanacetum denastum	Partrige Feather	All	SP, S, F		6x8	S	L		✓	Grown for its silvery foliage resembling a tuft of feathers, button-like yellow flowers early summer
Thalictrum fendleri	Mountain Meadow Rue	All	SP,S		24x18	A	L-M	√	✓	Delicately scalloped leaves resemble Columbine and Maidenhair Ferns, good in dry shady gardens as filler

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PERENNIALS										
		NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	
Botanical Name	Common Name	≥	\sqrt{s}	1	I	S	I	>	07	Attributes/Placement Lupine-like plant, many yellow pea like
Thermopsis pinetorum	Golden Banner	C, S	SP		24x24	А	L-M	√		flower, butterfly plant, prolific early bloomer
Thymus praecox 'Coccineus'	Red Creeping Thyme	N, C	SP		2x12	S	L			Trailing stems create green carpet covered with profusion of carmine-red flowers in spring, drought tolerant
Thymus praecox 'Pink Chintz'	Pink Chintz Creeping Thyme	N, C	SP		2x12	S	L			Trailing stems create green carpet covered with profusion of pink flowers in spring, drought tolerant
Veronica liwanensis	Turkish Speedwell	N, C	SP, S		.5x12	S	L			Small glossy green leaves form low dense mat blanketed with intense blue flowers, drought tolerant
Veronica spicata 'Tall Blue'	Blue Spike Speedwell	N, C	S		1x1	S	L-M			Upright clump of bright green leaves with spikes of deep blue flowers
Veronica 'Sunny Border Blue'	Sunny Border Blue Speedwell	All	S		24x12	S	L			Dense upright spikes of dark violet-blue flowers, long blooming
Viola canadensis	Canada Violet	S	S		6x12	A	M-H	✓	✓	Clumping bright green foliage, small white flowers, shade-loving, butterfly plant, repeat blooms
Vitis arizonica	Canyon Grape	All	SP, S, F		8	S, PS	L-M	✓	√	Dark green leaves, fragrant greenish- white flowers May-June, edible purple grapes late summer-fall, prefers well- drained soils, good for controlling erosion as rambling groundcover, yellow fall color
Zaushneria garrettii 'Orange Carpet'	Orange Carpet Hummingbird Flower	All	S, F		6x15	S	L	√		Compact cascading plant, orange trumpet-shaped flowers late in season, hummingbird plant
Zinnia grandiflora	Paper Flower, Prairie Zinnia	S	S, F		12x12	S	L	✓	~	Yellow-orange flowers, fine-textured mound, good in windswept locations, butterfly & hummingbird plant, needs warm location and drainage, drought tolerant

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EVERGREEN PERENNIAL GROUNDCOVERS										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes
Antennaria parvifolia	Littleleaf Pussytoes	C, S	E		3x12	PS, SH	L-M	✓	✓	Small area groundcover, can take light foot traffic or be planted between stepping stones, butterfly plant, silver grey leaves year-round
Antennaria rosea	Rosy Pussytoes	C, S	Е		4x12	S, PS	L	✓		Evergreen silver foliage, clusters of pink flowers
Antennaria rosulata	Kaibab Pussytoes	C, S	Е		1x12	S	L-M	✓		Mat forming, tolerates light foot traffic, gray-green foliage, forms small clusters of white flowers
Arctostaphylos uva-ursi	Kinnikinnick	All	E		6x36	FS, SH	L	√	✓	Dark leaves turn purple with cold, neat appearance, urn shaped pink tinged flowers form bright red fruits, birds, hummingbird plant, drought tolerant
Hedera helix	English Ivy	N	E		spread-	SH	M		✓	Dense mass of dark green evergreen leaves, best in protected location, needs some maintenance to control, classic look
Geum triflorum	Prairie Smoke	All	E		4x12	S, PS	L-M	✓		Fern-like bright green foliage, white flowers in spring create feathery pink seed plumes, takes light traffic, good filler, drought tolerant
Heuchera sanguineum 'Splendens'	Red Coral Bells	All	SE		12x12	А	М	√	✓	Rich green leaves form thick mounds, small area groundcover, woodland garden, long-blooming small scarlet flowers, hummingbird plant
lberis sempervirens	Evergreen Candytuft	All	E		12x18	S	L		✓	Spreading mound, green leaves blanketedd by pure white flowers late spring to early summer, drought tolerant

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EVERGREEN PERENNIA	AL GROUNDCOVERS									
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	H20	Native	Locally Grown	Attributes
Lonicera japonica 'Halliana'	Hall's Honeysuckle	N, C	SE		spread- ing	S	L			Bright green leaves turn purple in fall and persist in winter, woody stems, fragrant creamy white-yellow trumpet flowers in summer
Mahonia repens	Creeping Mahonia	All	E		12x12	A	L-M	√	√	Holly-like blue green leaves turn red in fall, small yellow flowers produce blue berries, good for erosion control, forms dense groundcover in sunny locations, attracts birds, drought tolerant
Paxistima myrsinites	Mountain Lover	All	E		24x24	А	L-M	√		Dark green foliage, can be used as informal low border or foundation planting, tiny flowers in spring
Penstemon linaroides	Mat Penstemon	All	SE		12x36	S, FS	L	✓		Blue-violet flowers spring-summer, fine textured green foliage, butterflies, mat forming, can tolerate light foot traffic, drought tolerant
Penstemon pinifolius	Pineleaf Penstemon	All	SE		24x24	S, FS	L	√	√	Dark green needle like foliage, tubular scarlet non-stop during summer into fall, good for difficult areas, hummingbirds, drought tolerant
Penstemon pinifolius 'Mersea Yellow'	Yellow Pineleaf Penstemon	N, C	SE		6x12	S	L		√	Shrubby, short needle like leaves, bright tubular yellow flowers early- mid summer, drought tolerant Vigorous, fast-growing, fragrant
Polygonum aubertii	Silver Lace Vine	C, S	SE		spread- ing	S, PS	L-M		✓	white flowers summer-fall, can be used to cover slopes Compact mound with dark green
Teucreum chamaedrys	Wall Germander	N, C	SE		8x8	S	L		✓	leaves, produces spiraling spikes of pink flowers mid-summer, drought tolerant

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EVERGREEN PERENNIAL GROUNDCOVERS										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Ht(in) X W(in)	Sun	Н20	Native	Locally Grown	Attributes
Thymus Ianuginous	Woolly Thyme	N, C	E		.5x12	S	L			Woolly gray foliage hugs ground, purple hue in winter, red flowers in spring, good around stepping stones, drought tolerant Gray-green foliage with spikes of vibrant purple flowers in summer,
Veronica allionii	Allioni Speedwell	All	SE		4x12	S	L			drought tolerant
Veronica Crystal River	Crystal River Speedwell	All	Е		2x20	S, FS	L			Tiny bright blue flowers in spring almost completely cover plant and later recur sprinkled through summer, drought tolerant
Veronica pectinata	Woolly Creeping Speedwell	All	SE		12x12	S	L			Fuzzy gray-green leaves form thick carpet with woolly appearance, may remain evergrenn, blue flowers early summer, drought tolerant
Vinca minor 'Bowles'	Bowles Periwinkle	N, C	E		4x12	A	L		✓	Deep blue flowers cover spreading mass of dark green leaves through summer, drought tolerant

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VINES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Length (ft)	Sun	Н20	Native	Locally Grown	Attributes
Akebia quinata	Fiveleaf Akebia	N,C	SE		20	А	M			Attractive foliage, deep purple fragrant flower in spring, vigorous grower, best in protected location
Akebia quinata 'Shirobana'	White-Flowered Chocolate Vine	N, C	SE		15	А	M			Attractive bright green foliage, best in protected location, vigorous grower with fragrant creamy white flowers in spring
Clematis ligusticifolia Hedera helix	Western Virgin's Bower English Ivy	AII N, C	S, F E		20	S, PS	M	√	√	Clambering vine needs support, can also be fast-growing groundcover, bright green foliage, fragrant white flowers in summer, showy seedheads into fall, good for slope stabilization Dense mass of dark green leaves, do not plant near buildings or will climb with masonry damaging tendrils
Lonicera arizonica	Arizona Honeysuckle	All	S		18	PS, SH	М	✓		Trumpet shaped red-orange flowers, clusters of red berries, hummingbird plant, fast-growing
Lonicera japonica 'Halliana' Parthenocissus Quinquefolia	Hall's Honeysuckle Virginia Creeper	N, C	SE S, F		20	S	L L-M	✓	✓	Bright green leaves turn purple in fall and persist in winter, fragrant creamy white-yellow trumpet flowers, needs support to climb or can be used as groundcover Very tough, great red color in fall, produces blue-black fruits, attracts birds, soil, wind and drought tolerant, groundcover or vine
Polygonum aubertii	Silver Lace Vine	C, S	SE		30+	S, PS	L-M		✓	Vigorous, fast-growing, fragrant white flowers summer-fall, can be used to cover slopes

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SEASONAL INTEREST: SEASONAL INTEREST: SUN: NAU ZONE: SUN: WATER: TRIAL: S = Summer W = Winter S = Full Sun SP = Spring E = Evergreen FS = Filtered ShadeN = North SH = Shade L = LowUse in limited C = Central quantities M = Medium A = Adaptive SE = Semi-Evergreen PS = Partial Shade F = Fall S = South H = High

VINES										
Botanical Name	Common Name	NAU Zone	Seasonal Interest	Trial	Length (ft)	Sun	Н20	Native	Locally Grown	Attributes
										Dark green leaves, fragrant greenish-white flowers May-June, edible purple grapes late summerfall, prefers well-drained soils, good for controlling erosion as rambling groundcover, yellow fall
Vitis arizonica	Canyon Grape	All	SP, S, F		8	S, PS	L-M	✓	✓	color

LEGEND:

SEASONAL INTEREST: SEASONAL INTEREST: SUN: NAU ZONE: SUN: WATER: TRIAL: S = Summer W = Winter S = Full Sun N = North SH = Shade L = Low Use in limited C = Central SP = Spring E = Evergreen FS = Filtered Shade M = Medium quantities A = Adaptive F = Fall S = South SE = Semi-Evergreen PS = Partial Shade H = High

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NAU EXECUTIVE STEERING COMMITTEE MEMBERS

John P. Morris
Associate Vice President, Facility Services

Agnes Drogi
Director, Facility Services, Project Design & Construction

Scott Perelstein
Director, Facility Services, Operations and Maintenance

Dennis McCarthy
Director, Facility Services, Engineering and Inspection

Andrew lacona
Project Manager II, Facilities Services, Project Design & Construction

Jane Kuhn
Vice President, Enrollment Management & Student Affairs

Thomas 'TC' Eberly
Director, Campus Services & Activities Administration

Rich Payne
Executive Director, Housing & Residence Life

Chris Thrash
Associate Director, Housing and Residence Life

Tom Yazzie

Grounds Crew Chief, Housing & Residence Life

Paul Gazda Sustainable Landscapes Faculty

Ralph Padilla Manager, Facilities Services, Landscaping

Susan Dietrich

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Mayleen Farrington
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DESIGN AND PLANNING TEAM MEMBERS

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Janel Wilcox, RLA and Planner

Alexis Griffiths, RG, LEED Green Assoc

Dan Burke, PE, Director of Operations

Joe Loverich, PE

Chris Flory, Project Designer

Mike Bechtel, Civil Designer

CIVITAS, INC.

Craig Vickers, RLA, Principal

Heath Mizer, RLA, Urban Designer

Shihomi Kuriyagawa, Landscape Designer

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APPENDIX

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	NAU La	ndscape Master Plan Photo Credits
Image	Image Number	Source
	1	http://asg-architects.com/portfolio/nau-northquad
	2	https://plus.google.com/113820569975491031050/posts
	3	http://www.emory.edu/home/about/visiting/campus_tours.html
	4	http://asg-architects.com/portfolio/nau-northquad
	5	https://plus.google.com/113820569975491031050/posts
	6	http://johndurant.photoshelter.com/image/I0000xmFdZxilhfs
Standard Control	7	http://www.stoss.net/projects/16/the-plaza-at-harvard/
	8	http://www.archdaily.com/110834/eleanor-roosevelt-college-safdie-rabines-architects/

	9	https://pearlsofprofundity.wordpress com/2012/02/15/number-367/
	10	http://en.wikipedia.org/wiki/Englischer_Garten#/media/File:English_gar den_amphitheatre.jpg
	11	http://www.nbbj.com/work/columbus-state-community-college-master-plan/
	12	http://asg-architects.com/portfolio/south-columbia-st-streetscape/
	13	http://land8.com/profiles/blogs/viashenyang-architectural
	14	http://www.theepochtimes.com/n2/united-states/baruch-students-ecstatic-about-new-pedestrian-plaza-in-nyc-350836.html)
TO AN	15	https://www.pinterest.com/pin/36943659413728544/
	16	http://www.s-aronson.co.il/project/campuses-museums-and-public-buildings-project1/

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1		ratho.html
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	29	http://www.trustedcompass.net/2011/07/first-tent-camping-in-rockies-part-2.html#comment-form
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	31	http://www.artifexed.com/Initiatives/NCMAPondProject/tabid/223/Default.aspx
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	33	http://aspent.com/slopes/

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	34	http://www.esohio.com/Services/Erosion_control_blanket
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	39	http://weburbanist.com/2012/03/12/city-seats-14-examples-of-unconventional-urban-furniture/
-	40	(image credit: http://www.stoss.net)
	41	http://www.landscapeforms.com/en-us/site-furniture/pages/Gus.aspx
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and the lates	45	http://www.landezine.com/index.php/2011/01/ulap-square-by-rehwaldt-landscape-architects/

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NAU Campus Landscape Assessment – Workshop I Minutes 08.14.14

Attendance: John P Morris NAU Facility Services

Scott Perelstein NAU Facility Services

Paul Gazda Sustainable Landscapes Faculty

Agnes Drogi NAU Facility Services

Jane Kuhn Campus Services Enrollment Management & Student Affairs TC Eberly Campus Services Enrollment Management & Student Affairs

Ralph Padilla Grounds Susan Dietrich Grounds Dan Burke **WLB Group** Joe Loverich WLB Group Janel Wilcox **WLB Group** Alexis Griffiths **WLB Group** Civitas Craig Vickers Heath Mizer Civitas

Project Phases & Workshop Schedule

- Three Phases are anticipated to reach completion of this project, are described below, and are outlined in the proposed schedule.
 - o Phase I: Information Gathering, Analysis and Assessment
 - o Phase II: Vision and Principles
 - o Phase III: Implementation Intents, Guidelines, Standards and Costs
- Workshop Schedule:
 - o Workshop 2: Design Principles & Concept Plan
 - September 18th 8am to 12pm
 - September 19th 1pm to 5pm
 - o Workshop 3: Prepare Landscape Master Plan Draft
 - October 10th 1pm to 5pm
 - Workshop 4: Identification of Landscape Capital Projects
 - October 30th 10am to 2pm

Critical Areas Identified for Improvement

(Also Refer to Attachment 1: Campus Landscape Needs prepared by John Morris)

- McConnell Drive Campus Gateway: McConnell Drive at the I-17 off-ramp was identified as a
 major campus entry point. Suggestions for improvements included installing a curb to define the
 edges of the off-ramp, installing sidewalks, better defined pedestrian crossing areas for the offramp and Pine Knoll, and constructing an electronic marquee to replace the numerous sandwich
 boards that are erected for various events on campus. High use occurs from May to July
 (introduction to campus for visitors and for graduation) and December and January (graduation).
- North Campus Edge along Milton Road: The most notable campus edge is along north campus and Milton Drive. Current landscaping was provided by ADOT. Suggestions for improvement included constructing terraces and placing a NAU sign to identify this area as part of the campus. Everyone from NAU in attendance was in agreement that this area is a priority.
- <u>Sidewalks</u>: Campus sidewalks should be widened to a minimum of 8 feet throughout campus. It was suggested that sidewalk intersections should be curved to avoid cow paths between the sidewalks.

New sidewalk is needed to accommodate students entering campus from McConnell along the major campus gateway from the Woodlands Village area. The existing sidewalks end at the overpass prior to reaching the I-17 off-ramp. New sidewalk would need to extend from the overpass, possibly on both sides of McConnell, and continue to the McConnell Bridge. Two possibilities were discussed for pedestrian access along the north side of McConnell Drive. The first was paving the FUTS Trail, which currently is present along the north side of McConnell Drive as a dirt pathway to provide a main connector to the McConnell Bridge. The second possibility was flattening the grade along the north shoulder from the overpass, relocating the guardrail, and installing a sidewalk to the McConnell Bridge. This option may encounter difficulties with storm drains and utilities. From the intersection of McConnell and Pine Knoll, new sidewalk is needed on both sides of Pine Knoll, extending east to the South Recreation Fields and Huffer Lane.

- Skydome Parking Lot and Landscaping: The Skydome is an iconic Flagstaff experience. Graduation for NAU and the local high schools is held within the Skydome. Tailgating takes place in the parking lot prior to football games. What image does NAU want to present to visitors at this location as this is sometimes the only campus experience visitors have? "Louie" is currently partially hidden by trees and may need to be moved. There is a grass hill extending from the parking lot to the Skydome that could be utilized by constructing terraces and a deck for barbeques. The parking lot does not contain any landscaping, has several curb areas that make snow removal difficult, and contains overhead power lines. It would be desirable to put the power lines underground. NAU representatives are receptive to including trees in the landscape plan for the parking lot. It was suggested to create a space that would invite families and the community prior to events such as football games. This suggestion included spaces to barbeque and for children to play. Grass areas for picnic blankets and trees for shade would improve the stark parking area. The area needs to have a "Lumberjack" theme.
- <u>Babbitt Administrator Parking Lot Entry</u>: The current landscaping needs to be improved to project a welcome image indicating this is where the office of the president of the University is located.

Additional Areas Identified for Improvement

- <u>Minor Campus Gateways</u>: Minor gateways at University Drive, Pine Knoll Drive and San Francisco Street, Franklin Avenue and San Francisco Street, and Dupont Avenue and Beaver Street were identified as lacking definition but not discussed at length.
- McConnell Bridge Landscaping: The area was not landscaped following the completion of the McConnell Bridge. Grounds has constructed a limestone wall and placed a picnic bench in this area. This area with a key element or interest point could be a gathering place for students as it is south facing, receives a lot of sun, and is next to Sinclair Wash.
- <u>South Quad</u>: The South Quad contains a buried steam line that is shallow and subsequently burns the grass leaving a visible mark. Would be beneficial to take advantage of the view of the peaks and define the edges of the quad with possible terracing.
- Runke Drive: Appears to divide the green, manicured areas of campus from the more natural landscape of southern campus. This area, including the observatory, was identified in the 2010 Master Plan for a landscape project as a greenway.
- <u>Pedway</u>: The attendees discussed how the pedway becomes lost on south campus once past
 The Suites. There are numerous cow paths connecting the South Quad to the Forestry Building
 and South Recreation Fields.

- <u>Area between The Suites and McConnell</u>: Each side of the sidewalk has a different appearance.
 Possible area for native groundcover treatment.
- <u>Streetscapes and Medians</u>: The median on Riordan Road west of Knoles Drive and the median near Reilly were specifically mentioned as needing landscaping.
- Entrance to P62: The area would benefit from more inviting landscaping since this is a highly used parking area.
- Existing Landscape around Business Building: The existing landscape does not provide an attractive transition from P42 to the Business Building. The existing retaining walls do not match the newer structure.

Maintenance Considerations

- <u>Snow Removal</u>: Grounds discussed the need for areas to place snow. They identified the north side of the intersection of McConnell and Pine Knoll as an area frequently used to mound snow.
- Pesticide Use: Landscape should be designed to minimize the need for use of pesticides.
- <u>Specified Gravel/Cobble Size</u>: Decomposed granite gravel at a size of 1 inch as well as river rock cobble are too large and make maintenance of weeds difficult.
- Turf: Edges are difficult to maintain due to transition of turf into the river rock cobbles.
- <u>Consistency</u>: Create consistency between Facilities Services and Housing by outlining maintenance plans and requirements for each landscape and zone of campus. Provide guidance for pruning to enable consistency across campus.
- Incomplete Landscape Construction Projects: In multiple areas on campus, it was unclear what has taken place with the landscape once construction of a new building is complete. This has led to new sod not receiving water and dying or landscaping not completed in certain construction areas. It would be desirable to put together a plan to assist the transition for care of the landscape from the landscape contractor to Facilities Services.

Landscaping and Materials

- <u>Landscape Overview</u>: The existing landscaping varies considerably throughout campus. The
 question of how to create a native/regional palette versus a palette that could be taken from
 anywhere was raised. Appropriate densities for plant massings was also discussed (sparse
 desert landscape versus robust plant massings, large areas of decomposed granite, and
 groundcovers such as native grass, perennials, and wood mulch).
- Three zones were identified within the campus:
 - Zone 1: Historic North Campus. North campus is characterized by classic quadrangle spaces, large trees, and the first sandstone structures constructed for the college. This area of campus ties into the city with an urban feel.
 - Zone 2: Central Campus. The central area of campus is more eclectic and may be more expressive and fun in design. A majority of campus housing is located within this zone.
 - O Zone 3: Natural South Campus. South campus is distinguished by areas of natural Ponderosa Pine forest. This zone could capture the mountain experience using a simplified palette that captures the views and adventure of a mountain campus.
- <u>Landscape Concerns:</u> The transition between traditional turf and natural forest was discussed. NAU would like options other than just concrete separating the two areas. The overall picture of

how to tie the historic northern portion of campus to the natural landscape of south campus was also discussed. It was implied that the central area of campus would tie these two areas together.

• Landscape Suggestions:

- NAU expressed that they would like to include winter interest into the landscaping such as grasses and evergreens.
- Incorporate educational signage to describe the landscapes, especially the natural areas.
 Information on the signs could include the intention of the landscape, the advantages of that specific type of landscape and QR codes that would allow students or visitors to receive specific information regarding the types of trees and plants within the landscape.
- Provide guidance for the restoration of natural areas.
- o Provide guidance for soils preparation for turf/grass.
- Mixed use areas are also desirable as most of the existing fields are designated for specific use.

Furnishing and Materials

- <u>Furnishings</u>: Campus is currently composed of an eclectic mix of furnishings. Suggestions included selecting several styles of furnishings that are complementary to one another. The use of each style of furnishing would be directed to one of the three zones that were previously identified. Furnishing need to be durable. Bike racks were described as missing in key locations such as the Starbucks courtyard at The Suites. The issue of placing ash trays at building entrances versus declaring a smoke free campus was also discussed. Solar panels could be used for the dual purpose of generating power and providing shade structures in sitting areas.
- <u>Materials</u>: There are a wide variety of materials currently used (greater than 10) for retaining walls, as is especially evident along Knoles Drive south of University Drive. Consistency in material types for retaining walls, hardscapes, and landscape rock would improve the visual appeal.

2010 Master Plan

 <u>University Green and the Mixing Bowl</u>: Attendees discussed the likelihood of the demolition of Raymond and Gillenwater Halls to provide open space. It was general agreement that these dorms will remain in place for some time as they are paid for and waiting lists exist for each due to their central campus location. The basalt façade of Gillenwater is used by students for bouldering.

The NAU representatives came to the conclusion that since a new master plan is in the works and a new University president will be taking the helm, that it would be best if the landscape master plan addressed the existing critical areas and did not speculate on potential future green space landscaping.

Presentation and Notes by Craig Vickers

- Utilize the simple beauty of the regional landscape for inspiration and clues
- Simplify the overall palette of materials in use
- Amplify the three distinct character zones on Campus to express their best individual qualities while still adding up to a complete and unified whole

Memorable and Functional Campus Spaces

- Create spaces that will serve multiple functions student use and public events
- Small special spaces are also important
- Celebrate the mountain experience by creating areas that capitalize on the view of the Peaks

- o Photos posted by students on Google Earth and Instagram focus on the peaks and snow
- Decks with Adirondack chairs (it was noted that students really enjoy and use the chairs at the Union)
- Include large harvest tables in the design for the South Bowl for a Mountain Campus feel
- Expressive and Fun Design:
 - Water jets at pipe area at South Bowl (similar to downtown Fort Collins)
 - Outdoor exercise/equipment course as design elements 2 mile loop (the course could include the new pool, observatory field, cardinals field, disc golf course, south recreation fields, Sinclair wash & FUTS trail)
 - Outdoor ice rink for skating and hockey
 - o Create spaces for slacklines, hammocks, and swings
 - Install infrastructure to support food trucks and outdoor dining
 - o Place a large screen in the upper parking lot of the Skydome where tailgating takes place

Vision Statements

- Maintainable without hazardous chemicals
- · Conscious of water use
- Create transitions
- Use different types of landscapes and appreciation of them
- Decide what the right amount of open space is for student activities (25,000 students)
- What is the right type of open spaces type, size, and location
- Celebrated unique mountain campus
- Destination campus
- Be the example of how to build a campus landscape in the west
- Outdoor reflection of mission/education
- Education about the why/what the landscape is showing

Action Items

• Generate existing conditions and analysis maps





NAU Campus Landscape Assessment – Workshop 2 Minutes 09.24.14

Attendance: John P Morris NAU Facility Services

Scott Perelstein NAU Facility Services

Paul Gazda Sustainable Landscapes Faculty

Agnes Drogi NAU Facility Services

Jane Kuhn Campus Services Enrollment Management & Student Affairs TC Eberly Campus Services Enrollment Management & Student Affairs

Ralph Padilla Grounds Susan Dietrich Grounds Mayleen Farrington Grounds Dan Burke **WLB Group** Joe Loverich **WLB Group** Janel Wilcox **WLB Group** Alexis Griffiths **WLB Group** Craig Vickers Civitas Civitas Heath Mizer Shihomi Kuriyagawa Civitas

September 18th, 2014: Presentation and Discussion

- 1. Presentation:
 - Phase I: Information Gathering, Analysis and Assessment Review
 - Review the three project phases anticipated to reach completion of this project:
 - Phase I: Information Gathering, Analysis and Assessment
 - Phase II: Vision and Principles
 - Phase III: Implementation Intents, Guidelines, Standards and Costs
 - Review and Discuss findings from Phase I
 - o Handouts: Agenda, Phase I Summary / Phase II Kick-off
 - Kick-off Phase II: Vision
 - Vision statements for campus and three character zones

2. Presentation and Discussion Notes:

- There was a general agreement that there are two landscapes present on campus: the traditional campus character of north and central campus and the mountain campus character of the south.
 - A transition zone is needed to tie the two landscapes together to create a unified campus instead of two separate campuses.
 - The location of where the transition should begin was suggested as either Runke Drive or Sinclair Wash.
 - The character of the transition could include a strong edge between native and turf. The group discussed the maintenance of the edge and it was generally agreed that a strong edge would make maintenance easier and although establishment of the native landscape would take time, signage and QR Codes could educate observers during this time. The turf would not need to be sprayed to discourage seeds from the native landscape if it is healthy. The selection of native grasses would be dependent upon the grading.
 - The Landscape Master Plan must relate to and inform future development in the weave.
- The landscape of North Campus must respect traditions and get them right. Within North Campus, the traditional campus landscape should be consistent throughout, especially to the east of the Pedway.

- Central Campus contains the majority of social spaces and could be innovative. Adding social spaces into South Campus could integrate freshman into South Campus.
- The campus contains a significant amount of decomposed granite. This is often seen as a simple solution to landscape maintenance but actually requires more work as weeds come through and requires spraying to control weeds. In these areas plants are widely spaced which would be appropriate for a desert; however, Flagstaff is in the Ponderosa Pine forest and plant density should be increased. Seasonal interest should be considered in plant selection and scarification of soils should be considered in areas of previous construction to avoid highly compacted soils.
 - Native and adaptive species should be utilized.
 - o Consideration should be given to native landscapes as water collection basins.
 - Use of more native plantings in the understory of pine forest and of overall plantings of campus would help to stay true to Flagstaff landscape character and help with maintenance.
 - New or enhanced native plantings can include educational signage.
- Overall, the materials on the ground plane, hardscape, and furnishings of campus need to be simplified. The Pedway hardscapes need to be simplified and asphalt needs to be replaced.
- The Adirondack chairs outside of Starbucks are a success and similar installations of brightly colored furnishings are welcome.
- Design should begin with five projects with a budget of \$50,000 per project that can be completed immediately in the highest impact areas. There is a concern that if a larger project is chosen, it will need to be completed in phases. This could mean less of an impact or that the project will not reach completion.
 - Suggested Project Areas:
 - The Pedway from University Dr. to McConnell
 - Existing landscape near Wettaw
 - Native American Building landscaping
 - Pedestrian walkway on east side of conference center parking garage
 - Milton/Route 66 edge
 - Babbitt entrance
 - Paths from auxiliary Skydome Parking to the Skydome Parking Lot
 - Section of Pedway south of University Dr. (currently old roadway)
 - Babbitt Building entrance and cow paths from the parking lot to Pedway
 - McConnell and I-17 Campus Entrance
 - Increase student usage of the South Quad and design for major events
 - Increase visibility and student usage of Gabaldon Field
 - Fix drainage problems and landscape Physical science building
- Research Emory University as it has similar topography and proximity to forest.

September 19th, 2014: Design Charette and Next Steps

- 3. Design Charette North Campus Focus Area
 - Pedway:
 - o The Pedway begins at Dupont Avenue and this entrance should have signage.
 - The Pedway needs to be 26 feet for fire lane requirements from Dupont Avenue to the north end of Wettaw.
 - Current pedway requirements throughout campus:
 - Bike lane to be asphalt and pedestrian section to be concrete
 - 26 feet wide at all locations for fire lane
 - Bike lane and pedestrian walkway must not be separated by plantings
 - Pedway must be clear of furnishings and planters at all times
 - There is a general consensus that there is an abundance of asphalt on or along the Pedway making it feel more like a road. The asphalt could be replaced with colored concrete.

- The concrete for the pedestrian walkway portion of the Pedway is very bright.
 Varying concrete colors, finishes and bands would improve the Pedway.
- More information needed to determine if different stamped or textured concrete finishes are appropriate for ADA requirements and durable enough for snow removal.
- Pavers are not an acceptable material due to movement. Movement is a result of freeze/thaw and heavy equipment driving over the pavers for construction access and snow removal (plowing utilizes a dump truck).
- The Pedway from Dupont Ave. to McCreary Dr. can be scaled down by adding to the tree line most of the way down. The Liberal Arts building has a great Pedway scale with a line of mature elms against the walkway.
- Access to the North Quad from the existing Pedway south of the new Science and Health Building will be oriented diagonal under the new building and continue past a dumpster area then squeeze between Bury and Taylor Halls. This access needs to be improved with screening of the dumpsters.
- Access to the North Quad from the north side of Science and Lab Building is currently a mix of asphalt, concrete, and decomposed granite. The sidewalk in this area is not oriented correctly and the walkway is not inviting.
- Pedestrians exiting the Science Lab Building currently have to cross the Pedway bike lane to reach the pedestrian walkway portion of the Pedway. This has caused safety issues that need to be resolved.
- Removing, relocating, or dispersing large bike parking areas from the center of plazas, in pedestrian circulation areas, and directly in front of building entries would remove clutter and confusion in these spaces.

Landscape, Materials and Furnishings:

- o Inviting seating area along the pedway would create social spaces.
- o If a bistro setting is utilized, the furnishings need to be durable, removable for winter, and be able to endure high winds.
- o Could there be depressions in concrete benches instead of metal skate stops?
- o It would be desirable to place benches on both sides of trees to allow for seating that is shaded throughout the day.
- Current bike storage outside of the buildings is not meeting demand. The amount of bike storage needs to be increased so that bike storage is available outside of every building.
- The hidden Gardens/Arboretums in between Physical Science and Liberal arts and near greenhouse need to have better access from the Pedway and signage to inform students of their location.
- All areas in the north near the North Quad could be cleaned up by simplifying the ground plane.
 - Removing the understory plantings next to the buildings would allow turf areas to extend to the base of the structures.
 - The areas of decomposed granite could be replaced with formal plantings and a sidewalk could be added on the west side of Knoles Dr. along the North Quad.

General:

- Snow removal currently places snow in sunny spots along pedway to allow the snow to melt quickly. Maintenance needs areas to place snow when clearing the pedway and sidewalks.
- The west side of Physical Science Building floods and is often shaded

- Once the new Science and Health Building is completed, the northern portion of the pedway is going to feel like a canyon between buildings. This will create an area that is colder, darker, and be more difficult for snow and ice to melt.
- Construction ruined the grass near the Science Lab Building. The grass was never replaced and without a budget, maintenance placed decomposed granite in this area.
- The Science Lab Building does not provide a positive entry/plaza experience. The handicap ramps could be shifted against the building and a wraparound staircase could be constructed for the main entry.
- McCreary St. from Beaver St. to San Francisco St. is currently closed due to construction. NAU is planning on reopening this area at the end of construction as a road but would like options for changing the road to an East-West Pedway connector.
- Located next to the Hotel and Restaurant Management Building, parking area P-19
 has limited capacity. Should this parking be kept or is this an opportunity for green
 space?
- The area between Campbell Hall and the Physical Science Building can be a plaza.
- The storm basin located near the Student Union could be filled with quality plantings and seating elements or paved to create a large plaza space.
- A climbing wall could be added along the west side of Gillenwater Hall adjacent to the existing bouldering wall.
- The bike racks outside of the Student Union could be removed or dispersed to create a seat wall in this space.
- Amendment Plaza could be enhanced with better edges for seating utilizing the existing grade and by enhancing the existing tree plantings to create a room.
- Area between Raymond and McDonald Halls called "the Study Hall" could be a series of garden rooms for a quieter experience for study.
- The existing lawn west of Raymond Hall could be elevated slightly off of the Pedway for a recreational area called "the game room" which would include volleyball, bocce ball, and a small recreational field. This elevated plane would also provide an opportunity for seating and people watching spaces.
- Drainage needs to be addressed in the Central Quad north of Wilson Hall where flooding occurs in the grassy areas.
- The location for the "Seam" between North and Central campus should be located south of the new Science and Health Building.

4. Design Charette – South Campus Focus Area

• Pedway:

- The Pedway from University Dr. south to the McConnell Bridge has several different areas that present opportunities for improvement:
 - From University Dr. to Runke Dr. the Pedway follows an old road. The asphalt could be replaced in this section.
 - From Runke Dr. to the McConnell Bridge the Pedway needs to meet fire lane requirements for width.
 - The intersection with the sidewalk along Knoles is difficult and dangerous as pedestrians cross the bike lane. Bikers and skateboarders travel at high speeds through this section.
- The Pedway west of Bilby Research Center is a nice area but appears neglected. This area has a large bike rack but could be improved with seating.
- Pedway hardscape materials need to be consistent throughout campus.

Landscape, Materials and Furnishings:

- The spaces in South Campus should be carved out of the pines.
- The same visual cues should be used throughout campus.

- Selective forest thinning for better forest health, more diverse and visually appealing ground plane, and more inviting.
- Year round interest achieved through the ground plane with increased plant densities using native and adapted species.
- With new construction, the Ponderosas are disappearing on campus. If it is necessary to cut some, could they be replaced elsewhere?
- Deciduous trees could be used for summer shade but would not block the sun on warm spring days.
- o The predominant wall material is stacked limestone boulders.
- o Trails need a specific treatment to read as a system of circulation.
- Decomposed granite should be replaced with native plantings to reduce maintenance.
- Edges where native areas meet the Pedway could be enhanced to direct runoff and keep soils from washing onto the Pedway.

General:

- The University is at the threshold for its allotted reclaimed water use. This affects any new plantings that would require irrigation for establishment periods or permanent irrigation.
 - Can the campus reduce water usage in other areas of campus?
 - Can rainwater harvesting be implemented and used for irrigation?
- Administrators, students, and faculty should be educated regarding informed management practices used to preserve the natural forest.
- o Informal paths should be created from the Babbitt Building parking lot to the Pedway.
- Informal paths from off campus housing across Knoles Dr. to the Pedway should also be created.
- Summer use from the end of May to the end of June needs to be considered in the landscape. Students and parents often visit and the University hosts numerous sports.
- Formalize the FUTS trail with concrete and lighting.
- o Seating areas along Sinclair Wash and in the Ponderosas are desirable.
- Gabaldon field, referred to as "the meadow", could be enhanced with perimeter tree glade to create a room like feeling called "the glade".
 - Grading at the south end of the meadow could be enhanced by carving edge elements out of the landforms that extend into the pines. Opportunities on top of these landforms can provide seating and overlook experiences that provide The Weave transition language.
- South of Gabaldon field is an opportunity for overlook and lounge area referred to as "the sun deck".
 - Space should feel urban, will have a native grass that can be mowed or a type of pavement, and lounge furniture.
 - This area could utilize a passive solar wall and solar charging stations.
 - Area to the east can be filled with hammocks and provide a more reflective space.
- The South Quad edges need to be enhanced by seating to activate this space.
 - The southern end of the quad called "the porch" could provide a great mountain deck feel with lounge chairs, fire pits, and bistro tables.
 - Service access for events could be accommodated at the northeast end.
 - The portion of the grass that has been burned by the hot water line can become a place, "the hallway", with seating and pathway that carves out a new room in the South Quad.

- This space is surrounded by academic buildings and has enough student traffic at all hours of the day to warrant more seating, lounging, and meeting areas.
- Remove the existing planters at the northeast end and connect the Pedway to the south end of Dubois. This area can be part of the terrace.
- 5. Workshop Schedule:
 - o Workshop 3: Prepare Landscape Master Plan Draft
 - October 10th 11:30am to 3:30pm
 - o Workshop 4: Identification of Landscape Capital Projects
 - October 30th 10:00am to 2:00pm



NAU Campus Landscape Assessment – 10.30.14 Workshop 3 Minutes

Attendance: John P Morris NAU Facility Services

Scott Perelstein NAU Facility Services

Paul Gazda Sustainable Landscapes Faculty

Agnes Drogi NAU Facility Services

TC Eberly Campus Services Enrollment Management & Student Affairs

Chris Thrash Housing Ralph Padilla Grounds Grounds Susan Dietrich Mayleen Farrington Grounds Dan Burke WLB Group Joe Loverich WLB Group Janel Wilcox **WLB Group** Alexis Griffiths **WLB Group** Russ MacDonald WLB Group Craig Vickers Civitas Heath Mizer Civitas

1. Campus Designs Presentation Areas:

- Overview of Focus Design Areas
- South Mountain Campus
- The Weave
- Central Innovation Campus
- North Historic Campus

2. Design Discussion Comments:

- South Mountain Campus:
 - Parking area P-62 is utilized as emergency parking during I-17 and I-40 road closures.
 Parking area should accommodate semi-truck access and parking.
 - The design of landscape islands within parking areas should also accommodate snow removal. Long landscape islands between rows of parking stalls allows for easy snow removal. Curb could be sloped or not installed to facilitate snow placement within the landscape islands and to avoid curb damage during snow removal. Landscape areas at the ends of parking rows may present a challenge during snow removal.
 - The South Quad design meets event program needs and fire lane access. Lawn terraces should be 8' wide minimum to allow for ease of maintenance.
 - Parking configuration at the Skydome should accommodate tailgating. The first row of parking is used as ADA during large events. The Athletics Master Plan, draft dated December, 2013, shows the Skydome being expanded where the proposed plaza is shown.
 - A bike plaza is needed in the vicinity of the Sun Deck. Moveable chairs are okay as long as they are durable and heavy to prevent students moving them out of the Sun Deck area.
 - O Plans are in discussion for the campus entry on Pine Knoll Drive. The city is planning to install a sidewalk on the north side of the roadway and the University is planning a sidewalk along the south side of the roadway. Plans also include moving the University signage from the current location at the northwest corner of Pine Knoll Drive and San Francisco Street to the south side of Pine Knoll Drive between Lone Tree Road and San Francisco Street. The design of this signage should capitalize on its location in the forest setting.

• The Weave:

Plans are currently being drafted for Hilltop Phase II residential development along Runke Drive. Discussion with project planners should include preserving existing Ponderosa Pine trees and landscape design that will be consistent with the Landscape Master Plan.

- The west side of Knoles Drive should have landscape plans to improve the driver experience along the roadway, complement the landscape design for the Babbitt Building entrance and edge landscape design, and provide cleaner pedestrian connections off-campus. A visual barrier between the University and off-campus adjacent uses (apartments) to the west, forest health and aesthetic treatment, and natural boulder settings and/or low stone walls would improve this area.
- The existing pathway from the Babbitt Building to Sinclair wash needs to be depicted.

Central Campus:

- Vehicular drive access to the existing basketball court within the Central Quad is desired. Currently plywood is placed in order to drive vehicles over the grass to set up barbeques and events on the basketball courts. Drainage improvements are also needed. Central Quad improvements should also include a fire lane.
- The Game Room should accommodate ADA access and ease of snow removal at select paths/routes.
- The bike and skate traffic on the walkway through the Study Hall (between Raymond and McDonald Halls) is too fast and needs to be slowed down. This area has a hallway feel to it as students pass from the Union to South Campus. The Committee was agreeable to tables within this area and indicated that they would be well used. This area contains numerous above and below ground utilities. Fire lane access may be needed in this area.
- Bike and skate traffic at the intersection of pedestrian walkways at the southwest corner of Gillenwater Hall travels at high speeds and is dangerous due to congestion in this area. The congestion results from pedestrians traveling from the bus stop and student union.
- The proposed terraces within the lawn south of Gillenwater Hall should be accessible by mowing equipment.
- The Committee was in agreement that a seat wall around the oval south of the Native American Cultural Center would improve the space.
- Future development within Amendment Plaza includes the construction of a lecture hall along the west and north sides of the Communications Building. The existing Math Building will be demolished and replaced with a 4 story, L-shaped structure. The view of the mountain peaks from the Native American Cultural Center will be preserved.

North Campus:

- The east side of Humphreys Street, as well as the street itself, do not belong to the University. Emphasizing the start of the pedway in this area will either have to be limited to the west side of Humphreys or will need to involve the City of Flagstaff.
- Pedestrian connections between north and central campus should be emphasized at Amendment Plaza and the Seam.
- The context of the proposed signage along Milton should be considered. Discussion included the visual noise along the Milton commercial corridor, the orientation of the proposed signage and its relationship to the existing sign at Butler and Milton, the existing sidewalk's impact on the design, and the effect of ADOT snow plowing and road salts for proposed plantings along Milton.

• General:

Guidelines for forest health are desired (selective thinning, needle removal where accumulations are excessive, and understory native shrubs and grass plantings where appropriate). Involvement with the NAU Forestry program is desired.

3. Design Refinement and Hardscape Materials & Furnishings

Below are materials and furnishings that the Steering Committee discussed as desired elements for Campus.

Hardscape:

- Sand finished concrete
- Colored concrete accent bands
- Black or grey concrete for bike lane. Could high fly ash concrete be used to achieve this effect?

- Wood stamped concrete looks inviting and is a durable alternative to wood
- Concrete in square scoring pattern creates an inviting pedestrian scale. Could be a good approach for patio at Dubois.
- Square cut concrete that fades into turf areas
- Scored/stamped concrete in McKay Village

Walls:

- Dry-stack limestone blocks at the South Recreational Fields
- Sandstone cut block wall for stairs at Old Main
- Sandstone veneer along Observatory Fields & San Francisco Street
- Materials should be limestone and sandstone
- Block, CMU, stucco, and exposed aggregate walls should be removed and these materials should not be used for future construction

Furnishings:

- Lights under bench seating
- Materials and designs should be carefully considered in regard to comfort for benches, particularly in winter
- o Durable umbrellas that offer dappled sunlight
- o Banners between posts provide good mix of sun, shade, and whimsy
- Seat or edge walls with openings for pedestrian traffic
- o Incorporate brightly colored furnishings and color at the end of seat walls
- o Hammocks could be nice but concerns over maintenance
- Harvest tables
- o Bar height seating with seat wall in front
- o Committee was mixed regarding the use of concrete for benches. Concerns centered around comfort and cold, stark look. Concrete can be okay if design is tied to building architecture.
- o Different playful shapes and designs for seating "classy" yet fun

Rails:

- The existing railing along the Butler median was well liked. Materials for the posts should be sandstone or limestone instead of basalt. Basalt has Flagstaff aesthetic but is not the character of the NAU Campus.
- o Rust colored railing should be utilized (as on FUTS railing)
- Iron and brick fence (as on Franklin) should be used on North Campus

Other:

- NAU may have limestone and sandstone materials on campus that can be utilized for projects
- Are there sustainable wood sources (IPE) or appropriate wood substitutes such as recycled plastic? Committee members liked the look and feel of wood but were not in favor of its use on Campus due to maintenance and durability issues.
- QR Codes incorporated into signage for various elements on Campus
- Crusher fines (1/4" d.g. with fines) can be good alternative for seating areas and paths in wooded areas that are not major circulation routes. Weed control was a concern for this application.
- One consistent LED light fixture is desired throughout campus. Pedway may be one appropriate exception
- No pavers anywhere due to durability issues and style changes over time
- Avoid seat walls that need skate stops if possible look of skate stops is not desired
- o Large sandstone slabs (as used on way finding signs) may not be durable



NAU Campus Landscape Assessment – 1.8.15 Focus Group Minutes

Attendance: John P Morris NAU Facility Services

Agnes Drogi NAU Facility Services
Dennis McCarthy NAU Facility Services
Scott Perelstein NAU Facility Services

Ralph Padilla Grounds
Susan Dietrich Grounds
Dan Burke WLB Group
Janel Wilcox WLB Group
Alexis Griffiths WLB Group

1. Comments:

- General:
 - Specify that exceptions to the standards must be WLB approved
 - Review process will be incorporated into the front of the Landscape Assessment document (see attached for additional information)
 - Pricing will be scaled to reflect the size of the project
- Hardscape and Ground Plane:
 - o All new sidewalks must be 8' wide
 - Access (groove in concrete) for walking bicycles up/down stairs is good
 - o Determine if salt will affect sand finish concrete
 - Provide a details for scoring patterns and control joints
 - Clarify where scoring patterns should occur
 - Scoring patterns
 - Plan view showing continuous scoring pattern
 - Section drawing of saw cut with beveled edge
 - Show Pedway in plan view to illustrate design principals
 - Dark concrete for bike lane
 - Good color demarcation for bike versus pedestrian
 - Want to keep it simple
 - Clarify that wood mulch should not be placed in areas of high wind such as building corners
 - Gravel at the observatory is the color palomino gold. This is the only exception on campus to the Rock Springs Chocolate.
 - Crusher fines should not be placed in areas with high runoff. An underdrain, proper subgrade preparation, and grading will allow the material to drain faster.
 - Crusher fines should not be placed near building entrances due to concerns of mud tracked into buildings.
 - Flagstone was suggested as an alternative in informal areas
 - Locally sourced flagstone is not durable enough for the freeze thaw cycles
 - Open pavers are preferred over crusher fines in bike areas
 - Specify the grit and grade of sand to be used
 - Open pavers with small squares are difficult to maintain. Change the paver pattern to a paver with grass inside of larger pavers.
 - Holland pavers and plankstone pavers need more specific placement descriptions and address ADA issues. Specify no vehicular traffic on pavers.
 - No red brick pavers
 - o Limestone rock border on paths helps define the path
 - Manufactured concrete stairways for informal forest paths would be good
 - Concrete stepping stones
 - Should be surrounded by turf or low ground cover
 - Use should be limited to seat walls
 - Skate stops should not be allowed

- Walls cap should be staggered in height or jagged
- Walls should be placed in a way that skateboarding is not possible
- Benches could have design with metal that wraps around wood slats to deter skateboarding
- Poles for railing would be better if they could be separated from the concrete ramps/stairs for snow removal purposes. Need to check this with ADA Standards

• Furnishings:

- Tropical hardwood should not be used on campus
- Four wood and wood alternatives were discussed
- Furnishings utilizing wood should only be placed in select, special areas
- Yearly maintenance is a concern for furnishings
- Benches that can be used for skateboarding should be encouraged and incorporated into designs; however, they should not be placed in high traffic pedestrian/bike areas or next to building entrances
- Furnishings should be placed on a crusher fines or concrete pad and not in grass due to issues with mud and mowing
- Picnic tables are good near the FUTS Trail
 - Need an inventory to keep track of them
 - Should have ADA access
- Harvest tables are fun but type of wood is a concern
- Tables with fixed seating are preferred over table and chairs for campus wide application
- o Tables and chairs (not fixed seating) should be very heavy and only placed in select areas
- Umbrellas should be able to withstand the high winds and be maintenance free (no setup or take-down)
- Solar charging stations would be fun
- Solar bike path would be fun but possibly cost prohibitive
- Bike racks:
- Campus standard is fine
- May need to study how many racks are needed and where
- Just stay with one bike rack style
- Bike racks should not be painted for durability purposes
- Space is needed between bike racks to maneuver snow removal equipment
- Concerns with single bike racks included bike parking density and the number of bolts used to fasten the rack to the slab
- Solar cover over bike racks could be used to power nearby charging stations

Trash receptacles:

- Big Belly is the campus standard
- Additional style could be placed in locations where the Big Belly does not make sense
- Existing aggregate trash receptacles are not desirable
- Prefer a side opening to prevent shoulder injuries when emptying the trash
- Prefer a top over the opening to deter birds and keep out rain and snow

o Railing:

- Brick with wrought iron could be campus edge standard
- Union railing with stars could be nice in urban areas
- Specialized rail on McConnell Bridge should be limited use
- FUTS railing is nice in more rural areas
- Black railing in North Quad railing is boring
- Not sure about dry stack limestone at South Rec Fields
- Most common 3 rail campus handrail is not desirable
- Posts with cables along San Francisco is dangerous
- Proposed rounded or flat top railings give a nice, clean look but encourages skateboarders
- Rustic finish is nice
- Timber railing and posts with antique finish steel are nice

o Central:

- Furnishings choices should be simplified
- No LF 'LUNGO MARE' due to snow/ice/leaf/etc. collection
- LF 'FLOR' would be good but not in white
- Will there be too much variety on Central Campus
- Chammocks present durability concerns with snow/wind
- Adirondacks are very popular
- Bar seating should be near dining areas
- Hammocks:
 - Need to have an inventory to keep track of them
 - Concerns with durability

• Lighting:

- NAU wants a pedestrian scale light in a style where the pole does not interfere with the light (pole to the side of fixture and not directly underneath)
- Lighting must be LED and compatible with Dark Skies Standards
- o Is it possible to have banners on the light poles for the Pedway
- o Dark poles with streamlined LED fixture are desirable

• Vegetation:

Large expanses of tall grasses and shrubs pose a safety hazard and will collect litter.
 Designs must consider CPED requirements.





NAU Campus Landscape Assessment – 1.30.15 Workshop 4 Minutes

Attendance: John P Morris NAU Facility Services

Agnes Drogi NAU Facility Services Scott Perelstein NAU Facility Services

Paul Gazda Sustainable Landscapes Faculty

Andrew Iacona NAU Facility Services

TC Eberly Campus Services Enrollment Management & Student Affairs

Chris Thrash Housing and Residence Life Rich Payne Housing and Residence Life

Susan Dietrich Grounds
Dan Burke WLB Group
Janel Wilcox WLB Group
Alexis Griffiths WLB Group
Craig Vickers Civitas

1. Project Update and Overview

The WLB-Civitas Design Team has continued its work on project Phases 2 & 3 (Principles, Design Standards, Design Projects and Implementation) since the last Steering Committee (STC) workshop. Work has focused on the conceptual designs and Materials and Furnishings Standards. A focus group consisting of several STC members has provided input to guide the Standards work. Input from the STC's last workshop and ongoing input from John and Agnes has guided the design work.

A draft of Phases 1-3 was provided for STC perusal. Handouts were provided including:

- Table of Contents for all project phases
- Updated Overall Campus Zone Map
- Campus Structure & Hierarchy Diagram
- Design Projects List, Map, Principles, Plans, and Images
- Design Palettes for Hardscape, Ground Plane, Pavers, Walls, Wall Caps, Railing, Planting, Furnishings, and Lighting
- Pedway Design

Comments that follow include feedback from STC members during the workshop as well as written notes recorded on the handouts.

Overall Campus Map

An updated Overall Campus Map was provided reflecting the current campus zones: Historic North, Central Innovation, and Mountain South. Design work since the last workshop has led to the "Weave" transition zone being merged with the Central zone. Many designs in the Central zone incorporate "weave" design concepts, combining native and domesticated landscaping.

Campus Structure and Hierarchy Map

It was suggested that a different graphic for the pedway route on the Structure and Hierarchy diagram be considered. Pedestrian connections should also include/address:

- FUTS Trail (would need grading, paving, and light improvements)
- Runke Drive
- Pedestrian and bike routes from Hilltop Phase I to South Campus along San Francisco Street need improvement
- Possible bike underpass at San Francisco Street
- Guard rail along San Francisco prevents bikes from crossing at the intersection with McConnell and accessing the paved bike lane along San Francisco

Additional comments included:

- Continuity of pedway from north to south keeps unique zones neatly pulled together and 'feels' right.
- North-south pedestrian route should be added to the map from the Student Union, south to University Drive.
- A pedestrian route should be added from Hilltop Phase I, south along San Francisco Street to McConnell Drive and then west along McConnell Drive to the intersection with the official pedway.
- Campus circulation, pedway location, and pedestrian improvements need to be addressed in the next Campus Master Plan.
- Map should be labeled "Pedestrian Connections" not "Seams."
- Map should clarify what the different colors mean (coordination with the zones).
- Priority projects should be graphically consistent throughout the document (all lists, all plans).

2. Priority Implementation Projects

While approximately 40 design areas will be included in the final document, 14 areas were determined as priorities for implementation. These were selected based on ongoing feedback from John and Agnes and prior STC workshop feedback. Other considerations included:

- Projects that amplify the visitor experience (primarily driving experience around the edges and through the main parts of campus)
- Projects that enhance the daily life experiences for students and faculty
- Different cost categories, including phasing options
- Big impact "wow" projects as well as those that exemplify the new standards for each zone and have elements that can be replicated

Following are STC comments related to the 14 priority areas, including group discussion items as well as written notes recorded on the collected handouts.

North Campus

Milton Road Edge and Blome Gardens

Discussion comments:

The City of Flagstaff uses the iron fence near the Drury Inn to hang banners. Consider whether this fencing style is consistent with the north zone or if it should be removed to eliminate items being displayed on it.

Written comments:

- The north end of Knoles currently has a bike lane on the east side of the road
- Potential safety issues around spruce trees, new wall, and shrubs increased density gives hiding areas and transient camps
- Planting density should be increased or a hedge added at the south boundary of the project area to obscure parking for the Pawn Shop

Science Plaza and Pedway

Written comments:

 Native tallgrasses in the swale could look untidy (versus a more formal lawn) and will obscure the interior sidewalk

Pedway and Arboretum

Discussion comments:

 The ramp at the Science Lab building may be better where it currently exists, and/or widened (or expanded into an apron where it meets the Pedway), with the wall lowered (as previously shown) to improve visibility.

Written comments:

The bikelane may be too tight where it is adjacent to the existing wall, causing conflicts with the seat wall area and pedestrians.

North Campus General Comments

- Humphreys Street needs to maintain FUTS Standards.
- The north campus zone should have more formal beds.

Central Campus

The Seam

Discussion comments:

- Current SHB plans need to be carefully compared to conceptual designs for SHB and the Seam for implementation.
- Weeds can be a problem in concrete expansion joints. Consider sealing joints and curb interfaces to prevent weed germination.

Amendment Plaza and Quadrangle

Discussion comments:

- Consider adapting the building footprint shape for the future Mathematics Building to coincide with the conceptual landscape design (i.e. can the northern building edge arch to compliment the plaza arch?)
- Design should be adjusted to accommodate the large amount of pedestrian student traffic from behind the library (north through P15A) to the Eastburn Education Building.

Written comments:

- Consider shortgrass meadow in lieu of turf.
- A memorial keystone bed exists at the southwest corner of the quadrangle (next to Eastburn) that should be incorporated into the design.
- Flagstone or something hard may be preferred for informal walkways as crusher fines can become muddy and track into buildings.

Riordan Parking Lot Improvements

Discussion comments:

- The net gain/loss of parking for the new designs of P13 and P16A should be considered, especially when factoring in snow storage areas within the parking lot.
- Tree species in parking areas should be able to withstand tough conditions but not be messy or problematic (i.e. avoid sap, heavy leaf drop, roots that heave). Honeylocust may be good option.
- Islands in the parking areas may not be conducive for snow removal and storage. Adjacent landscape areas may be better for snow storage.

Student Union Plaza and Residence Lawn

Discussion comments:

- Consider addressing areas where Pedway pavement has recently been replaced as remaining for the interim.
- Seat walls need to be separated from concrete to deter skateboarding and aid in ease of snow removal.
- Climbing wall should be called a bouldering wall and specify that it will not be tall enough to require ropes. Consider moving the wall south of Gillenwater Hall to take advantage of solar orientation and to avoid blocking windows from the residence hall. Liability needs to be considered.
- Label pictures to correspond to design key notes.

South Student Union Connector

Written comments:

Consider distinguishing versus unifying this connector with the Pedway.

The Social Hall and Game Room

Discussion comments:

- Two Pedway challenges were discussed: 1) distinguishing the Pedway as the main circulation route, and 2) designing the Pedway as a high-speed travel route versus a circulation route that connects important social spaces and is conducive to foot traffic. Ideas included:
 - Plazas could indicate a change in Pedway direction
 - Signage at the plazas could indicate the direction of the Pedway
 - Pedway should have a unique color/texture to cue people on which way to follow for commuting
 - Which north-south pedestrian route is dominant east or west of Raymond Hall?
 - Should Pedway curve for ease of travel or maintain the right angle turns that will slow pedestrian and bike traffic?
 - Should the north-south route east of Raymond Hall be a no bike zone?
 - Could a triangular planter at the north end of the north-south pedestrian route on the east side of Raymond Hall help slow traffic?
 - Design could indicate concrete like the Pedway but without a bike lane
 - Balance the need for smooth circulation flows with speed and safety issues

Written comments:

This area is already manicured, should it be a priority project.

Central Campus General Comments

- East-west connector from HLC to the library should be designed for ease of travel.
- SAS Building will have an auditorium which will have an exit at the southwest corner of the building. The seating area designed at the north of Building 43 should be designed as a destination for this traffic.
- Consider pedestrian circulation along San Francisco from HLC south to Pine Knoll.

South Campus

Babbitt Center and Knoles Drive

Discussion comments:

- Consider moving the parking lot entrance north to allow for a more prominent entry and better visibility pulling out of the parking lot.
- Entry could be more formal and special to reflect the importance of the place. Consider referencing historic campus materials and design, or signage similar to Milton or McConnell entries.

Written comments:

- The existing entry contains a memorial Maple tree that was dedicated to the former President's secretary.
- The west side of Knoles should include shrubs to screen the off-campus parking.

Sun Deck

Written comments:

"Fantastic!"

South Quad

Discussion comments:

- Stairway at the northeastern corner of the design area needs to be opened up and include a ramp for ADA access.
- The plaza area west of du Bois could be utilized as a concession area.

Written comments:

- The fire lane entry into the southwest corner of the South Quad should be designed with a better turn radius.
- Crusher fines are muddy when wet.
- "Fantastic!"

Fire lane could be 26 feet wide to accommodate farmers market or student club activities.

Campus Entry at McConnell Drive Written comments:

A walkway is needed from off campus, along McConnell to the bus stops.

South Zone General Comments

- A University group may working on a restoration collaborative for Sinclair Wash to restore it to native vegetation.
- Consider including a sidewalk from P62 to the South Rec Fields.
- P62 could be analyzed using a turn radius program to make sure semi-trucks are able to turn around in the parking lot.
- Consider circulation at the intersection of McConnell and San Francisco.
- Note possible expansion of Dubois dining to the south.

Campus Wide General Comments

- Year round plant interest should be specified in the design standards.
- Signage and education can be incorporated at native grass areas to address the misconception that people may have that these areas are weeds rather than native grasses that do not require mowing. Other strategies include:
 - Including architectural elements such as flush concrete edges and low edge/seat walls
 - Mowing strips adjacent to sidewalks
- Parking areas proposed to be restriped need to show up better graphically.
- Consider grasspave adjacent to athletic fields as well.

3. Priority Project Costs and Discussion

Based on the project presentations, the following projects were noted as top implementation priorities:

North Campus:

Milton Edge and Blome Gardens Science Plaza and Pedway Pedway and Arboretum

Central Campus:

Riordan Parking Lot Improvements Student Union Plaza and Residence Lawn Student Union Connector

South Campus:

The Sun Deck
Babbit Center and Knoles Drive
Campus Entry at McConnell Drive

Considerations for prioritizing implementation projects included:

- Ranking the current condition of the project area (i.e. A to F) to determine which areas are in the worst condition and implementing those project areas first
- Selecting projects in high traffic areas
- Selecting projects that would reduce maintenance requirements
- Thinking about importance based on different user experiences, including students, visitor/alumni, and community residents
- Looking at impact and ease of implementing "systems" (i.e. planting beds, turf and native grass areas) versus project areas