



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

LANDSCAPE MASTER PLAN

Foreword

Every person passing through the University of Wisconsin–Madison has a unique experience focused by their own academic or research passion; but we all find common ground in the shared landscape of our physical campus. Most alumni and visitors consistently say our campus landscape is what they remember most fondly – the Memorial Union Terrace, the view from Observatory Hill over Lake Mendota, studying on Bascom Hill on a warm spring day, food carts and Library Mall.

All of these amazing landscapes create a sense of who we are and how our campus has shaped our own futures over time. Even as buildings are built and removed, the campus landscape is the thread that unites all students, families, visitors, faculty and staff through the generations. However, it is the ever-present campus landscape that also leads it to being taken for granted. Over the years, the university’s landscape has been slowly eroded, sometimes literally, by small interventions that diminish our unique sense of place along the southern shores of Lake Mendota.

This Landscape Master Plan sets out challenging goals for restoring and enhancing the great outdoor spaces of this university. It reflects the highest aspirations of aesthetics, ecology and landscape performance. Much like the 1908 Campus Master Plan by Laird & Cret, not every goal is meant to be achieved in the immediate or even distant future. A grand, sweeping vision is necessary in order to plan for the next generation. Just as the UW Board of Regents in 1894 recognized that knowledge never reaches its final goals and requires continual “sifting and winnowing”, it is the role of the project design team and the university to understand that the campus landscape will never reach a final state of completion. It is a living, literally breathing, organism that is in a constant state of change. For this reason the Landscape Master Plan is designed to be flexible, guiding our future progress while staying firmly grounded in the natural and cultural heritage all around us. The landscape of this university is truly unique and creates an unparalleled setting for this incredible, world-class institution. From the earliest conceptions of the university, the founders took care to place the campus in a prominent location – atop the hill facing our state Capitol, on the shores of Lake Mendota. Over the years the campus has grown and changed, building by building, but the campus landscape continues to be the significant unifying feature.

Landscapes like Bascom Hill and Observatory Hill are photo iconic, but a campus is more than picturesque places. It is the sum of all the in-between spaces; these are the settings and connections that unite the diverse sectors of our great institution. This is why this Landscape Master Plan focuses on preserving,

restoring and enhancing the various elements that create a cohesive sense of place for everyone to enjoy and remember fondly. Our university has a deep legacy of environmentalism, preservation, ecology, and landscape architecture. And much like the giants that preceded us – Muir, Leopold, Longenecker, Jensen and Nelson – we must continue to advance these ideals in the laboratory we call the campus landscape.

This Landscape Master Plan recognizes the evolution of the university and codifies the proposed major changes. It guides the overall organization of university design neighborhoods and landscape typologies. The plan also is an educational tool that reinforces the value of the campus landscape beyond aesthetics to a point of enhancing and supporting our mission of learning, teaching, research and outreach. Finally, it breaks down the individual elements that enrich our campus landscape – plants, paths, benches, trees, and signs – while making recommendations for areas prime for intervention and positive change.

As the world continues to speed up and over-value immediacy, it is the role of the university to provide a physical campus that facilitates the type of learning that cannot be achieved in isolation. The experience of “going off to college” is a rite of passage that forges young adults into well-rounded thinkers. As alternatives continue to multiply and recede, UW–Madison will provide consistency and an unmatched experiential component and the natural landscape provides a visual and physical refuge that reduces stress and helps them learn.

The UW–Madison is proud of our amazing campus landscape and we are grateful for all of the individuals and groups that have helped us create this guiding plan. This Landscape Master Plan celebrates that rich history, but challenges how we move forward to create a better campus that will be a model for all universities. Whether at a rally on Library Mall, sledding with friends on Observatory Hill, or dipping your feet into the waters of Lake Mendota, every person is part of the collective Badger experience that comprises UW–Madison.

Gary A. Brown, PLA, FASLA
Director, Campus Planning & Landscape Architecture
September 2016



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Abbreviations and Acronyms

ADA: Americans with Disabilities Act.

APPA: Formerly the Association of Physical Plant Administrators, today known as “APPA: Leadership in Educational Facilities.” The association supports the development and training of education facilities personnel and departments.

CPD: Capital Planning & Development

CPLA: Capital Planning & Landscape Architecture

CPTED: Crime Prevention Through Environmental Design, is defined as a multi-disciplinary approach to deterring criminal behavior through environmental design.

DFD: Division of Facilities Development.

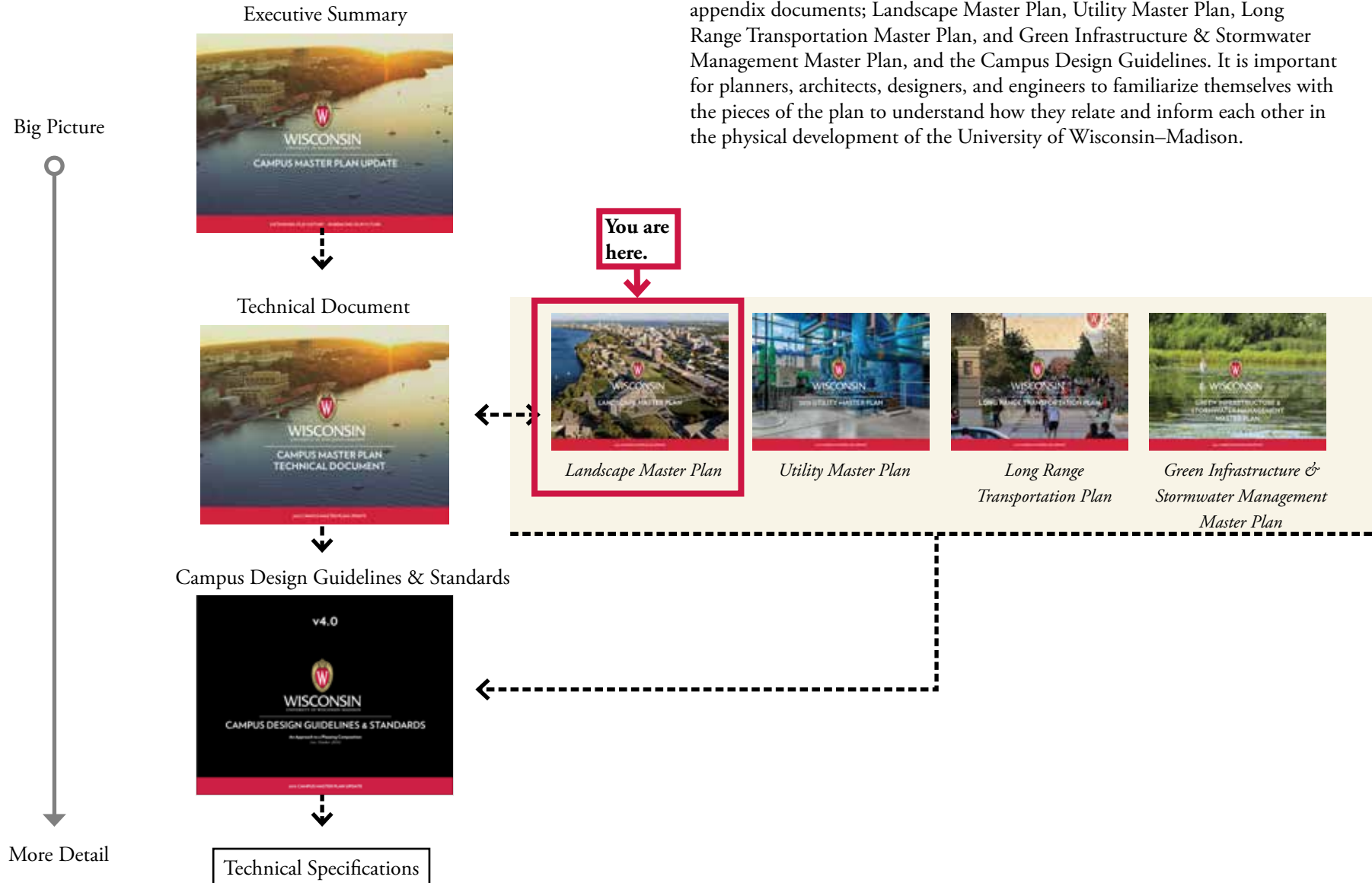
FP&M: Facilities Planning & Management at UW–Madison.

SF: Square feet.

CF: Cubic feet.

Document Composition

The “2015 Campus Master Plan Update” is comprised of the Executive Summary, the Technical Document, which includes the four (4) supporting appendix documents; Landscape Master Plan, Utility Master Plan, Long Range Transportation Master Plan, and Green Infrastructure & Stormwater Management Master Plan, and the Campus Design Guidelines. It is important for planners, architects, designers, and engineers to familiarize themselves with the pieces of the plan to understand how they relate and inform each other in the physical development of the University of Wisconsin–Madison.





2015 Campus Master Plan Executive Summary

A full color 24-page report that summarizes the major goals and guiding principles for the Master Plan. The document includes the Chancellor's vision and the major goals and initiatives for each of the identified focus topics (appendices to the Technical Document). Welcomes and sets the tone for users and viewers of the master plan document. It is both a marketing piece for future development and a summary of the planning process.



2015 Campus Master Plan Technical Document

The unabridged thought and support behind the goals and guiding principles for the Master Plan. This more than 250-page document presents a roadmap for campus development over the next 30-50 years by referencing what has come previously and embracing what the future holds. Together with the Campus Design Guidelines, the Technical Document strives to give physical form to the university's mission, vision, and programs through the effective use of human, environmental and fiscal resources.



UW–Madison Campus Design Guidelines

The site specific framework that has been established to create the ground rules for a fruitful dialogue between planners, architects, engineers, campus community, and city/state authorities. Divided into nine Campus Design Neighborhoods, the goal of the guidelines is to enhance the university's sense of place by creating well-defined, functional, sustainable, beautiful and coherent campus environments that promote intellectual and social exchange.

Appendices:

Landscape Master Plan

Establishes a 'sense of place' where phased growth and future development can occur while maintaining a cohesive environment.

Utility Master Plan:

Confirms status of the 2005 recommendations, acknowledges completed projects, and makes recommendations to meet the 2015 plan revisions.

Long Range Transportation

Plan: Updated from the previous LRTP, the plan is the university's transportation vision and describes baseline conditions, travel behaviors, and trends all modes.

Green Infrastructure & Stormwater Management

Master Plan: A campuswide plan that recommends solutions to meet stormwater management regulations as well as existing campus stormwater policy.

Introduction

The Landscape Master Plan establishes the vision for the campus landscape at the UW–Madison. As a major component of the 2015 update to the 2005 Campus Master Plan, this serves as the first landscape master plan for the university, marking a significant milestone in its history. Focused on fully utilizing the spaces between the buildings, the plan determines an overall vision for growth of the campus landscape (see Figure 1). Most importantly, this plan creates a framework of guiding principles for landscape architects and planners to ensure the cohesive integration of future expansion projects.

The following major landscape initiatives are proposed for campus:

- 1 A revitalized Willow Creek corridor.
- 2 A dedicated campus arrival for the School of Veterinary Medicine.
- 3 New Near West Commons open space, adaptively re-purposing the historic Horse Barn.
- 4 Expanded naturalized and working landscapes on Observatory Hill.
- 5 An iconic pedestrian bridge at the intersection of N. Charter Street and Linden Drive.
- 6 A boardwalk to safely traverse the steep slope behind Sewell Social Sciences Building.
- 7 The creation of new campus open spaces through the redevelopment of the Medical Sciences and Humanities.
- 8 Improved visitor gateway experience along University Avenue and W. Johnson Street
- 9 Green Street initiatives along N. Charter and W Dayton Streets.
- 10 A new South Campus quad at Educational Sciences.



Figure 1 Campus Landscape Master Plan



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

L A K E M E N D O T A

UNIVERSITY BAY



1

2

3

4

6

5

7

8

9

10

Walnut St.

Observatory Dr.

Linden Dr.

University Ave.

W. Johnson St.

N. Randall Ave.

N. Park St.

The Landscape Master Plan establishes landscape design guidelines organized by landscape typology. It focuses on the 636 acre main campus, while also incorporating the recommendations of the Lakeshore Nature Preserve Master Plan. The plan also investigates a number of focus areas as key catalytic projects and prototypical applications of the planning principles and design guidelines: Observatory Hill, N. Charter Street, University Avenue, Linden Drive & Willow Creek, and a new South Quad on South Campus. A brief summary of each focus area is presented below. A separate document, the UW–Madison Campus Design Guidelines, contains the architectural design guidelines by campus neighborhood and the application of the landscape typologies at the neighborhood level. These documents should be used in tandem when implementing the plan.

Landscape Typologies

A typology is a category of space that has a specific character, design features, and function. Eight landscape typologies are defined for the UW–Madison campus landscape (Figure 2 below), including: Campus Greens; Campus Malls; Courtyards, Plazas, Terraces & Gardens; Campus Supportive Landscapes; Naturalized Landscapes; Athletics & Recreation; Streetscapes; and Parking & Service. Each typology discusses a variety of design considerations and assigns a maintenance level to provide visual continuity across campus.

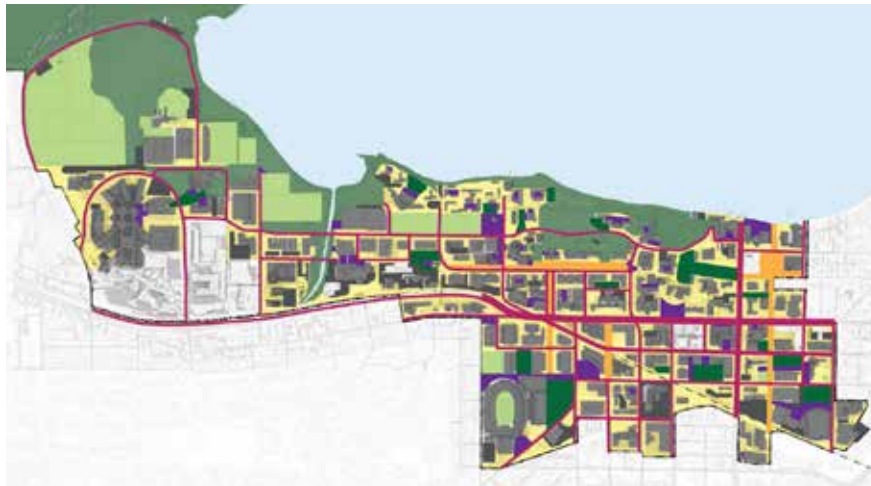


Figure 2: Landscape Typologies Plan

Observatory Hill Recommendations

Observatory Hill is a landscape steeped in history worthy of preservation. Despite its revered status, opportunities exist to revitalize this open space, strengthening its connection to Lake Mendota while providing both restorative and didactic environments for students, faculty, and staff. Major initiatives of the plan include:

- Relocate Lot 34 and on-street parking along Observatory Drive to improve the view to Lake Mendota (relocation site is a new consolidated under building parking structure at the intersection of N. Charter Street and Linden Drive). Provide temporary parking for visitors to access the lookout and Elizabeth Waters Residence Hall.
- In place of Lot 34, construct a naturalized wetland feature to manage stormwater from Observatory Hill, Tripp Hall, and adjacent sites. Incorporate boardwalks for strolling, teaching, research and accessing the water. Seating nooks for social gathering or quiet reflection will help students and visitors reengage with this landscape.
- Convert traditional lawn areas to a designed oak savanna ecosystem with large informal groupings of oak trees and short-grass prairie plants. This naturalistic landscape will require less frequent maintenance, provide wildlife habitat, and act as a teaching landscape. A properly sized lawn will be retained adjacent to Elizabeth Waters Residence Hall as passive recreation and open space.
- Reroute and improve the connections for ridgeline pathways near the effigy mounds and restore the mound landscape to short-grass prairie per the Indian Mound Management Policy (May 2011) in consultation with FP&M staff.

N. Charter-Linden Intersection Recommendations

People, mopeds, buses, bikes, and cars all converge at this intersection. Coupled with steep topography from Bascom and Observatory Hills, this intersection creates extremely challenging conditions. To address these challenges and improve the safety and function of the intersection, the plan proposes to:

- Build a pedestrian land bridge that establishes a new primary pedestrian level connecting from Van Vleck to Van Hise. To be successful, the bridge must feel like the natural choice for students. Using the unique topography, the bridge crossing will reduce the amount of climbing. Separating pedestrians from vehicular traffic will alleviate traffic congestion, mitigate multi-modal

conflicts, and improve pedestrian experience (see Figure 3).

- Build an iconic bridge. The bridge will be at the eastern terminus of the Linden “Greater Mall” and provides a tremendous opportunity to create an architectural icon. Unlike a particular building that only a small portion of the campus may use, this bridge will be used by a large campus cross section.
- Create a destination through the incorporation of planting and seating. The bridge creates a new opportunity that currently does not exist, to create space that accommodates the traffic flow while providing flex space for people to congregate. The bridge will conceptually extend the Linden Mall up toward Bascom Hill connecting two spaces that were previously divided. The bridge design should be flexible as not to hinder both anticipated and unanticipated programming.
- Provide an open and airy structure. The bridge should incorporate large openings to provide adequate daylight to travelers below. Lighting should be incorporated for safety and to highlight architectural features.



Figure 3 Proposed Charter-Linden Pedestrian Bridge

University Avenue Recommendations

University Avenue is one of the primary gateways to the UW–Madison campus and represents a tremendous opportunity to make visitors’ first impression of the campus inspiring; presenting a welcoming, positive image of a world-class university. The following improvements are proposed:

- Combine the existing bike lanes into a two-way cycle track on the south side. This will consolidate cyclists protecting them from vehicular traffic.

- Combining the bike lanes together on the south side creates efficiencies in the road cross section, allowing for the addition of a median planter between the cycle track and vehicular traffic. This planter will be up to 12 feet in width, but will vary in size depending upon the width of the right-of-way and will taper to accommodate left turn maneuvers at N. Lake Street, N. Park Street, N. Charter Street, and N. Randall Avenue. It should be raised 6-18 inches in height to provide visual buffering of cars while mitigating the accumulation of roadway salt in the planter.
- The addition of the planter will be transformative to University Avenue and provide numerous benefits. It protects cyclists and breaks up the roadway profile, thus slowing traffic and improving the aesthetic appearance of campus; it will form a barrier discouraging non-designated pedestrian crossing, negating the need for the “staple” guardrails; and the reduction of hardscape combined with the addition of shade trees will reduce the heat-island effect and mitigate stormwater while improving pedestrian comfort.
- Plant shade trees 30 feet on center to provide a contiguous urban tree canopy. This tree canopy will form the landscape structure unifying the University Avenue corridor while binding the central and south campuses.
- Plant large caliper shade trees that respond to the scale of University Avenue to provide immediate impact. Always strive for continuous soil volumes via soil trenches and combined street grates where space is not available for planters.
- Gateway understory planting should be simple yet robust massing of understory shrub and perennial plantings that will read well even at vehicular speeds.
- Provide a cohesive suite of campus standard site furnishings to unify the visual experience and enhance the walkability of the University Avenue corridor. Add campus banners along the corridor to announce the arrival to campus.

Linden Drive Recommendations

The agricultural campus started as a series of experimental farming plots and open spaces. As this district of campus continues to develop itself as a modern research campus, incredible opportunity exists to create a new campus vernacular of working landscapes, rooted in the agricultural and natural history of the area. Major plan initiatives include:

- Create working landscapes such as rain gardens throughout the agricultural campus to sustainably manage stormwater and develop the Near West

Campus as the “Green District”. Link the features hydrologically conveying rain water west toward Willow Creek.

- Create a dedicated School of Veterinary Medicine entry sequence along Linden Drive, converting Easterday Lane to green space.
- Create a Near West Commons at the Horse Barn, restoring the historic open space that was the western terminus of the Linden Greater Mall. Adaptively re-purpose the Horse Barn, providing programming to activate the anchor building of the new space. Provide a terrace west of the Horse Barn that reinterprets the footprint of the original paddock. Maintain the visual connection to the Dairy Barn.
- There is a significant amount of large equipment, maintenance vehicle traffic and pedestrian use through this area. Use design strategies such as different pavements, separation, etc. to reduce conflicts between the various users in this area.

Willow Creek Recommendations

The character of Willow Creek has changed substantially since the establishment of the agricultural campus. What once was a meandering creek, it is now channelized, receiving significant amounts of stormwater and sediment from upstream in the watershed. The plan proposes to re-vitalize the creek corridor converting a neglected resource into a campus amenity.

- Restore the riparian zone by providing an expanded vegetative buffer to manage non-point source pollution and stabilize the slopes. The removal of Easterday Lane will provide much needed green space for rain gardens to manage stormwater from major development to the east, cleansing and slowly releasing it to Willow Creek.
- Construct wetlands to manage to stormwater and provide habitat. Perched wetlands along the west side of the creek will intercept stormwater runoff from the Grounds service yard prior to it entering the creek. Provide boardwalks with interpretive signage to educate visitors.
- Provide a multi-use pathway connecting the Campus Drive Path to the Howard Temin Lakeshore Path.
- Activate Willow Creek with linear terraces stepping down to the water’s edge, allowing campus users to engage with and access the creek. Create outdoor plazas providing direct access from the Veterinary Medicine north building expansion and the new Natatorium. See Figure 4 top right.



Figure 4 Proposed Revitalized Willow Creek Corridor

South Quad Recommendations

South Campus will continue to urbanize and increase in density in the coming years. The creation of a new quad addresses the vital need for open space in the South Campus. The plan for the area proposes the following campus improvements:

- Create a ‘quad’ of civic scale and character. The simple design will withstand heavy pedestrian traffic. The layout makes programming the space flexible for large and small events. Large lawn panels lined with trees will be reminiscent of larger campus malls and provide a soft, collegiate feel for informal social gatherings. Diagonal paths cut through the space along desire lines between entries and exits. Trees wrap the space and define the rooms, providing a human scale to the surrounding architecture.
- Reinforce north-south pedestrian movement by creating a tree-lined pedestrian mall. The axis will create a pleasant corridor defining the rooms within the quad, while terminating the viewshed on the historic campus to the north.
- Introduce green infrastructure to manage stormwater on site. The site coincides with a low point in the terrain and intercepts the existing storm sewer line in the N. Brooks Street right-of-way, making it an ideal location for an urban stormwater feature to illustrate green infrastructure on campus. The rain garden ponds replace traditional fountains, providing the noise mitigation and calming effects while treating and managing the site’s stormwater.

- Redevelop W. Dayton Street as a “green street” pilot project (see Figure 5 below). As with N. Charter Street, implement the design guidelines outlined in the streetscape typologies to give W. Dayton Street a clear landscape identity linking Camp Randall Memorial Park, Union South, the South Quad and the Kohl Center along one unified “athletic” streetscape experience.



Figure 5 Proposed South Quad and Revitalized W. Dayton Street

Design & Maintenance Guidelines

Campus landscapes require regular maintenance to preserve the character and function for the many future classes, visitors and faculty that will use them. Maintenance is imperative to achieve the campus environment visions: “To use the campus as a living laboratory of stewardship in which we discover, teach, and apply knowledge that safeguards the environment, preserves quality of life, and maintains fiscal responsibility.”

Below are the goals for the design and maintenance of campus:

Goals:

1. Sustainable Planting
 - Goal: Design and Maintenance
 - Goal: Reduced Input Turf Management
 - Goal: Create Resilient Plant Communities
 - Goal: Utilize Plant Assessment Schedule

- Goal: Minimize and Focus Use of Exotic Plant Material
2. Reducing Synthetic Inputs
 - Goal: Compost and Use it
 - Goal: Improve Soils
 - Goal: Employ Integrated Pest Management
 - Goal: Use Targeted Pest Eradication
 - Goal: Move Toward Chemical free approach
 3. Better Water
 - Goal: Irrigation for Efficient Water Use
 - Goal: Provide Riparian and Aquatic Buffers
 - Goal: Increase Pervious Pavement Surfaces
 - Goal: Manage Rain Water Through Natural Systems
 - Goal: Manage Snow Removal and Chloride Use
 4. Native Planting
 - Goal: Preserve Natural Areas
 - Goal: Invasive Removal Strategy
 - Goal: Prioritize Native Plants

Landscape Development Standards

The various elements that populate the campus landscape and open spaces make sites functional, increase their use and contribute to the university’s strong sense of place. These pieces reinforce the campus character, but also affect the short and long-term maintenance.

Standards for campus paving, landscape materials, site amenities, and signage are established. The goal is to build a consistent palette of site elements without constraining designers on future projects. Examples have been given of where it is appropriate or beneficial to deviate from the campus standard. Areas primarily associated with a specific building may have a sub-set of elements unique to that site without affecting the overall legibility of the campus aesthetic.

The elements have been primarily selected to match the campus aesthetic character. Each element has also been evaluated for durability, maintenance, sustainability, and functionality. For more detailed information regarding their implementation and execution, see the UW–Madison FP&M Technical Guidelines.

* UW–Madison Sustainability Initiative Task Force Final Report, October 2010



Camp Randall Stadium

1. LANDSCAPE MASTER PLAN VISION, GOALS & PRINCIPLES

Vision & Goals

Landscape Master Plan Vision

The history of the University of Wisconsin–Madison landscape creates a unique sense of place that unites the campus over its vast expanses and throughout the generations of students and alumni. The vision for the UW–Madison Landscape Master Plan is to strengthen and steward this character and identity, preserving the historic and natural environment for decades to come.

The UW–Madison campus is a vast expanse, home to an amazing diverse group of people and places. It has been stitched together over a century and a half and will continue to evolve in the decades ahead. Although the “Wisconsin Idea” has expanded the boundaries of the university’s influence to the state’s borders and beyond, the campus must remain a coherent and unique locale. A cohesive landscape is paramount for retaining the function and feel of this place along with supporting our mission of teaching, research, and outreach.

A vision is a guiding statement that is imaginable, desirable, feasible, focused, flexible and easily communicated. This UW–Madison Landscape Master Plan Vision balances lofty ideals with forward-thinking guidance. This statement should inspire the stakeholders and recipients alike, without being overly prescriptive. It is the broadest road map to guide all future designs toward our shared goals. The following goals and principles articulate the plan for achieving this vision.

Landscape Master Plan Goals

Working with university stakeholders, the following goals have been established for the Landscape Master Plan. These goals will be the metric by which we measure success:

1. Protect and enhance open spaces and create new gathering spaces.
2. Maintain lands in the Lakeshore Nature Preserve as undeveloped natural areas that support our mission of teaching, research and outreach.
3. Protect and enhance known historical cultural landscapes, quadrangles, and courtyards.
4. Establish open space design principles to guide growth and sustainable development on campus.
5. Provide a campus environment that supports physical, emotional, and psychological well being.
6. Enhance the campus as a living laboratory for teaching, learning and research.
7. Strengthen the campus connection to Lake Mendota.

Landscape Master Plan Principles

In response to the Landscape Master Plan goals established by the university, a series of guiding principles was developed to help us reach our goals for the Landscape Master Plan (see Figure 5 right). These broad principles, rooted in sustainability and campus stewardship, guided and informed the planning work, forming the basis for the Landscape Master Plan:

1. A Welcoming Environment
2. Re-Engage the Lakefront
3. Working Landscapes
4. Rooted in History
5. Foster Naturalized Landscapes
6. Walkable Streetscapes
7. Promote Wellness & Quality of Life



Figure 5 Landscape Master Plan Principles



University of Chicago

A Welcoming Environment

Home. The word itself stirs a sense of sweet nostalgia.

Home is an open door and a table set. Home is invited guests becoming part of the family. Home is shoes kicked off and hair let down. Home is the place we learn to be ourselves. Home is laughter exchanged and lessons learned. Home is the harmony of structure and spontaneity.

For the thousands of new students that arrive at UW–Madison each fall, the campus is their home away from home. As such, the campus needs to be an inviting environment where guests are welcomed into the Badger family. The spaces need to create not only a great first impression, but a lasting impression; an environment where memories are made.

Our campus landscape, our home away from home, must speak to our values as a university. It must be a place where both learning and laughter are fostered; an environment that allows students, faculty, and staff to be their best possible selves. It must be a home that is beautiful, accessible, inclusive, and maintainable. A place so welcoming that guests can't wait to arrive and family never wants to leave.



Re-engage the Lakefront

Lake Mendota is at the very heart of UW–Madison. From the first buildings erected atop Bascom Hill to capture the isthmus' breathtaking views, to the students of today longing for a more intimate interface with the shoreline, its impact goes beyond mere branding. The lake is our life source and identity; the very blood coursing through our campus' veins.

Over time, however, building development has obstructed views to the lake while parking lots have occupied valuable waterfront land. In order to celebrate and capitalize on this incredible natural resource these trends must be reversed. A re-establishment of the visual and physical connections to the lake through the revitalization of adjacent open spaces and waterfront access points will create a stronger sense of place on campus.

Strategic efforts to improve lakefront connections will help rebuild the campus identity, improve student quality of life, uncover the unseen potential of an amazing natural resource, and create a visual connection that cannot be shaken from our visitors' memories.



Des Moines Botanical Garden, Des Moines, Iowa



Working Landscapes

It is time we start demanding that our campus environment is as high performance, progressive, and ground-breaking as our campus teaching and research. Developing a green infrastructure network will transform an outdated stormwater management system into a living entity that celebrates our campus hydrology and ecology.

This new green infrastructure of rain-gardens, constructed wetlands, and bioswales will not only satisfy the state’s stricter stormwater requirements, but provide a variety of ecosystem service benefits such as wildlife habitat and local climate control. However, working landscapes are not merely tools to improve ecological functionality, but a means to provide settings for human enjoyment, engagement, research, and education.

An old paradigm made new again, these systems are designed to mimic the natural hydrology of the site without heavy investments in underground infrastructure. Embracing working landscapes will not only provide the university with didactic and sustainable landscapes for the future, but will ensure we are on the cutting edge of green, sustainable design in the present.

Rooted in History

UW–Madison has a fascinating landscape history just waiting to be more fully celebrated and embraced. Molded by glaciers during the last ice age, the dramatic drumlin topography and glacial soils define the campus along inland Lake Mendota.

From the Native American influence that impacted the land centuries before the university was established, to the landmarks of post-European settlement still visible today, these vestiges have left an indelible mark on the land. Strategic preservation of key landscapes allow these stories to become the stitches that weave their way into the present; the colorful tapestry that gives all future development credibility.

Our campus landscape seeks to embrace our history to create a rich, layered narrative of origin and evolution. It is peeling back the layers of our past to reveal our history and help guide future decision making.



Prairie Crossing, Illinois

Foster Naturalized Landscapes

As Aldo Leopold once said “there are two things that interest me; the relation of people to each other and the relation of people to the land.” It is these very sentiments we seek to echo in our campus landscape. That, amidst an urban environment teeming with people, nature is the ultimate common ground. With the pressure of academics and the chaos of life outside the walls of the classroom, there is a visceral desire in the heart of every human being to escape into the beauty of nature.

UW–Madison’s tradition of pioneering environmentalism is reflected in its campus landscape. A rich canvas painted by the brushes of renowned figures like Jens Jensen, John Muir, and Aldo Leopold, wonderful naturalized environments exist today in Muir Woods, the lake shore, and the Lakeshore Nature Preserve. The qualities of these naturalized environments should be expanded to create a sense of cohesiveness and identity to the West Campus. Expanded naturalized landscapes will support the university’s mission of teaching, research, and outreach providing a living laboratory for faculty, staff, and students.



Walkable Streetscapes

Streets are the skeleton that give UW–Madison its structure and the arteries that provide the campus its life. As the majority of the campus is experienced via streets, creating walkable streetscapes is paramount, particularly in the South Campus.

Walkable streetscapes are not about merely making infrastructure interesting. They represent a paradigm shift that sees streets and sidewalks not only as linkages to destinations, but as vital centers of pedestrian life. They are places to people watch, study, eat, laugh, live – they are both hallway and hearth.

Streetscapes must be designed comprehensively: to create safe, beautiful, and engaging spaces for human enjoyment and not simply catering to the convenience of the car. Providing scale, refuge, seasonal interest and amenities for social interaction all make streets more walkable and enjoyable.



University of Chicago

Promote Wellness and Quality of Life

“Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to both body and soul alike” – John Muir

The campus landscape is not simply an aesthetic dressing to be experienced with the eyes, but a tangible setting to be engaged by the body. Whether as simple as a flash of light dancing through the foliage of a tree canopy billowing beyond a classroom window or as extensive as lakefront access renovations, physical, emotional, and psychological well-being on campus can be improved through restorative environments for reflection and recreation.

The task of the campus landscape should not only seek to improve the landscape’s health and aesthetics, but make the lives of people who study and work here more stress free and livable.



2. DISCOVERY & ANALYSIS

Toboggan Run, Observatory Hill

2. DISCOVERY & ANALYSIS

The 936 acres of the state of Wisconsin's flagship university have been forged by natural and man-made forces. The campus has always been associated with the city of Madison. Since its selection as the capitol in 1836, a university was in the works. But, long before the first building opened in 1851, geologic and glacial forces created the varied landscape that defines the university's setting. Native people inhabited these lands for tens of thousands of years, making it their home and habitation site well before the Europeans started settling here in the early 1800's.

Since its founding in 1848, the campus has spread out and in-filled across this land to accommodate the ever-expanding needs of the students and faculty. The expansion has, at times, taken the campus in new directions and redefined the vernacular.

This chapter explores the evolution of the campus landscape and characteristics that will shape its future development. Additional details of early campus plans and development of the campus can be found in the 2015 Campus Master Plan Technical Report document.

Geology and Topography

The campus and greater Madison region are defined by the prominent glacial landforms that surround and punctuate the landscape. Over 15,000 years ago glaciers reshaped the region, taking the bluffs and buttes and creating smooth valleys and lakes. Until 7,000 years ago Madison was a string of small islands in a wide spreading lake known as Glacial Lake Yahara. The lake encompassed everything from Lake Mendota to Lake Kegonsa.

The most prominent natural features on campus are the glacial drumlins, depositional hills left over from the mountains of ice that scraped the rest of the landscape clean. Bascom Hill is the largest drumlin and provided a perfect location for the university to grow from. Adjacent Observatory Hill, a separate drumlin feature to the west, creates a natural saddle landform between the two (see Figure 6 Campus Topography and Watersheds). While the dramatic landform of this topography beautifully shapes the character of the central campus, it creates a number of accessibility challenges for pedestrians.

Watersheds

Lowered lake levels have created distinct watersheds that divide campus. The gentle ridges can be felt as people traverse the land, creating distinctive physical districts. The majority of rainfall drains to Lake Mendota, including the entire 2,016 acre Willow Creek subwatershed. Rainfall south of the Observatory Hill ridgeline, including all of south campus, drains to Lake Monona (see Figure 6).

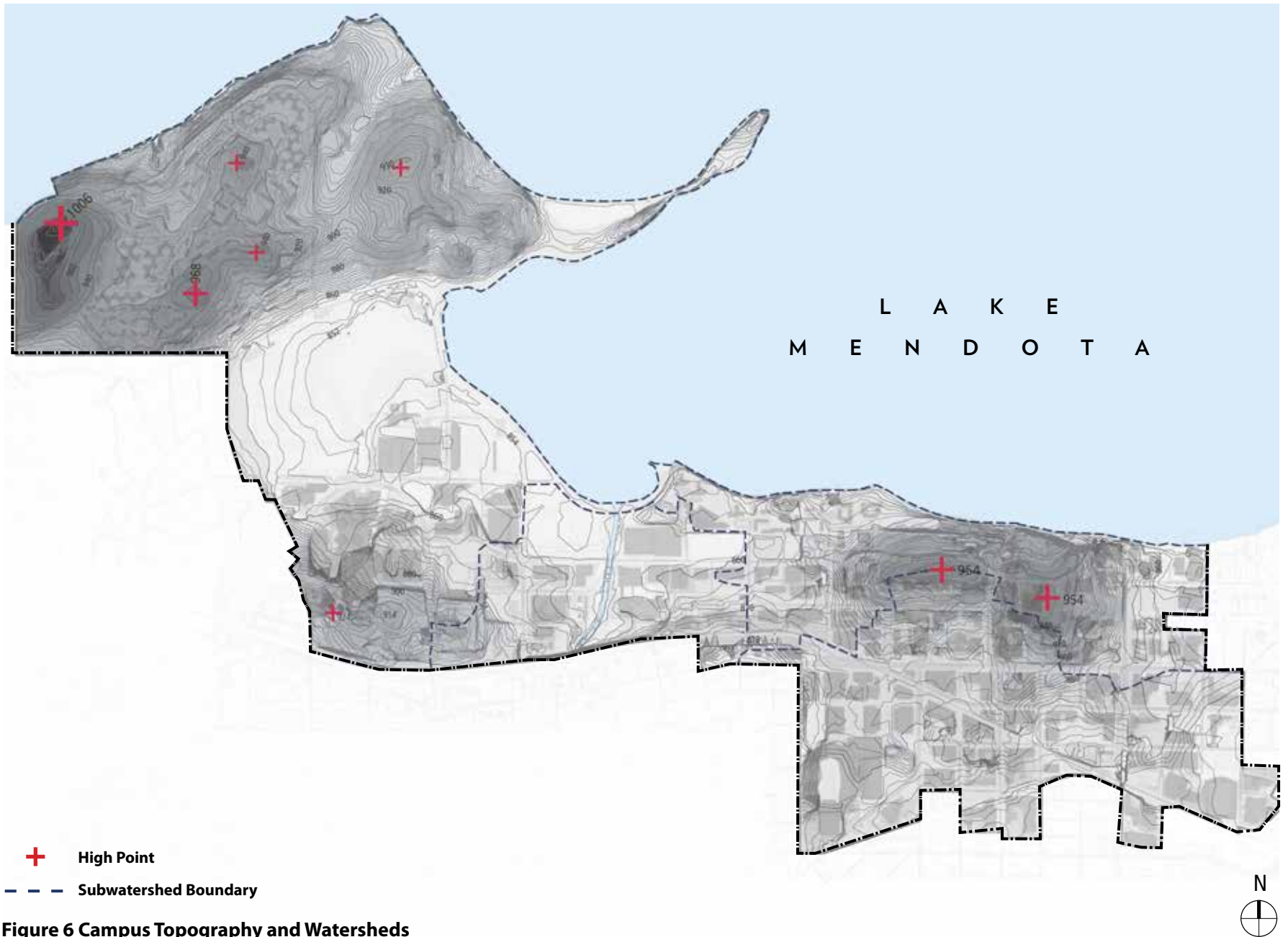
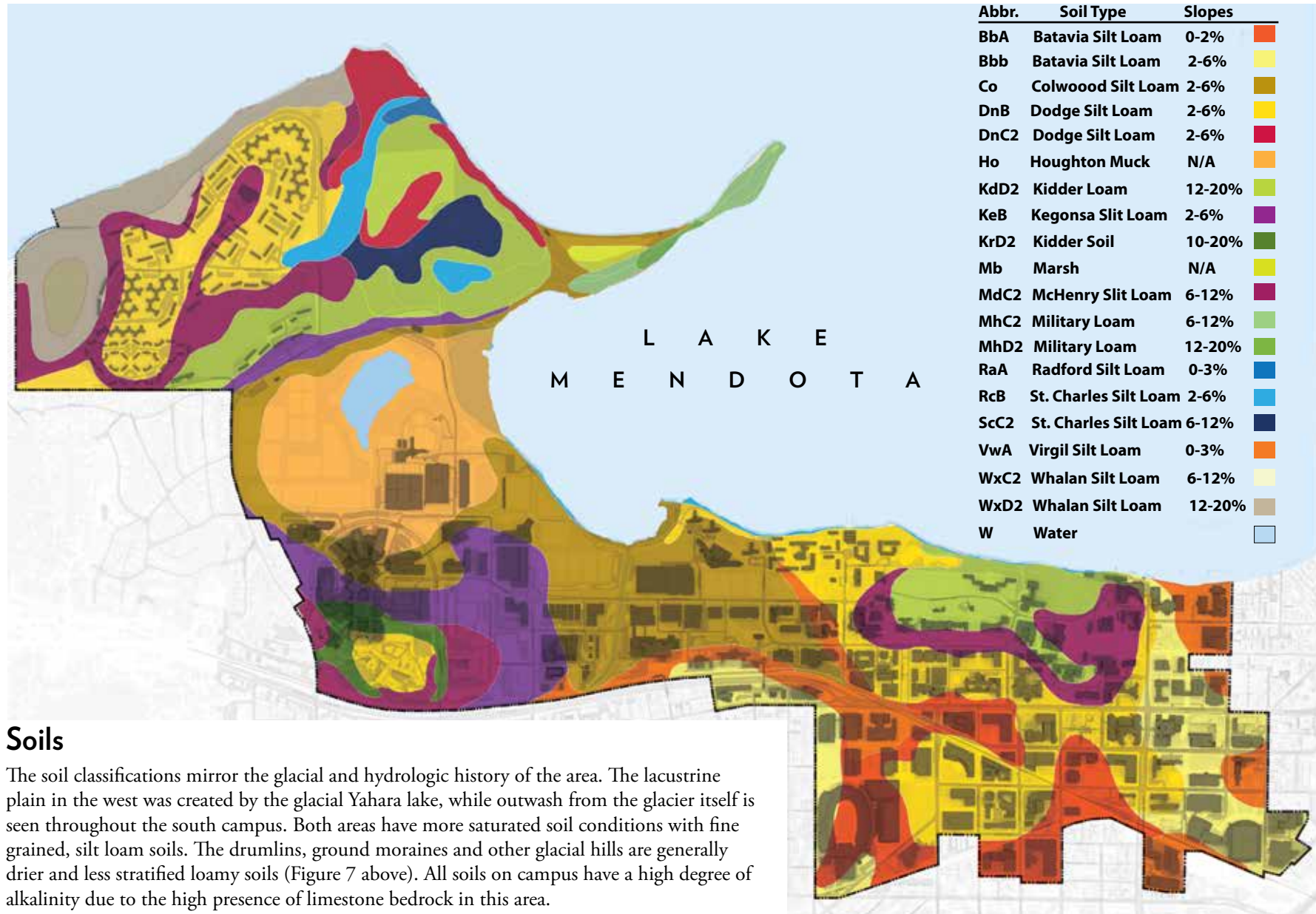


Figure 6 Campus Topography and Watersheds



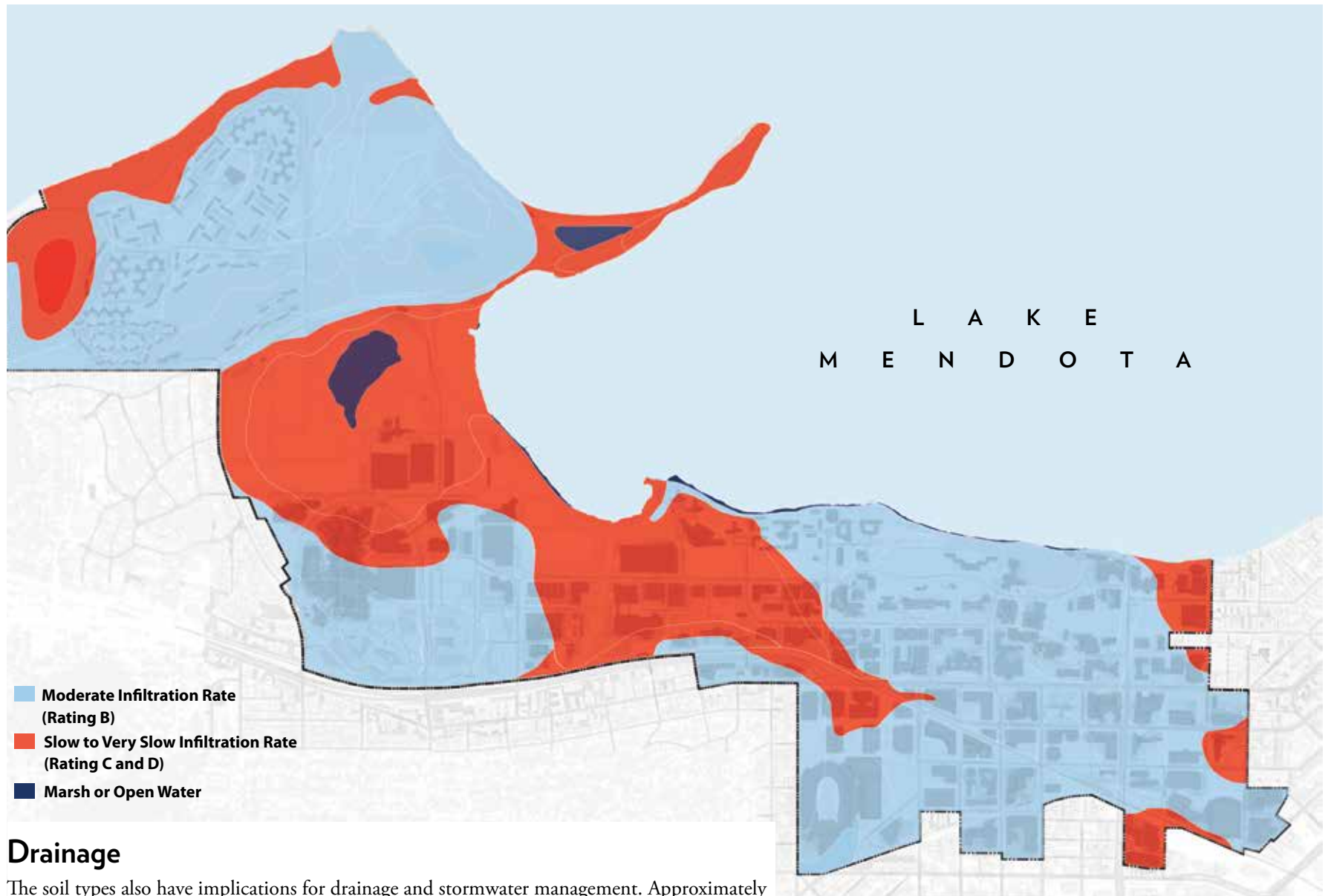
Soils

The soil classifications mirror the glacial and hydrologic history of the area. The lacustrine plain in the west was created by the glacial Yahara lake, while outwash from the glacier itself is seen throughout the south campus. Both areas have more saturated soil conditions with fine grained, silt loam soils. The drumlins, ground moraines and other glacial hills are generally drier and less stratified loamy soils (Figure 7 above). All soils on campus have a high degree of alkalinity due to the high presence of limestone bedrock in this area.

The upper soil profiles on campus may be characterized as anthrosols, having been highly disturbed through farming and building expansion overtime. Native soils have been truncated, but have not completely disappeared.

Figure 7 Campus Soils Plan





Drainage

The soil types also have implications for drainage and stormwater management. Approximately 40% of soils on campus have slow to very slow infiltration rates. These are concentrated in the near west campus, Willow Creek, Class of 1918 Marsh, University Bay and Picnic Point as illustrated in Figure 8 above.

Figure 8 Drainage Based on Soil Type



Pre-European Settlement

For more than 12,000 years, native peoples inhabited the region, leaving many indelible marks. As a result, Madison has the largest concentration of Native American effigy mounds in the world, and examples still exist on campus today. These cultural landscapes are a significant part of the history at UW–Madison, and merit respect and preservation.

There are four burial mound groups on campus; Observatory Hill, Willow Drive, Eagle Heights and Picnic Point are illustrated in Figure 9 Campus Pre-Settlement Landscape. Two of these mound groups (Observatory Hill and Willow Drive) contain effigy forms. These mounds relate visually to one another and are part of a broader network of mounds extending beyond campus and across Lake Mendota. These visual connections have largely been diminished due to building development over time. Neglected for decades, these mounds now have a protected legal status and significant archeological research has been conducted to document their history.

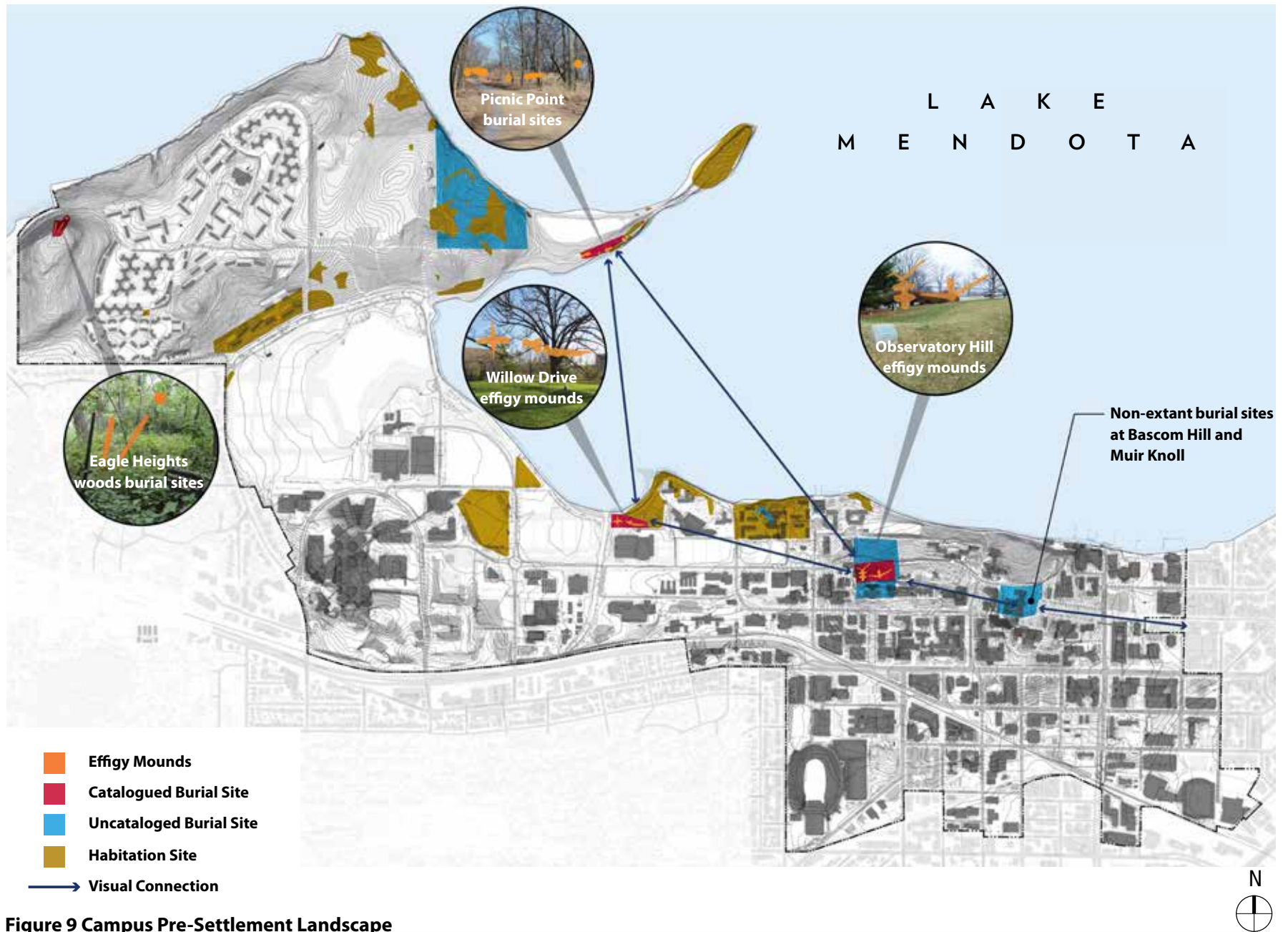


Figure 9 Campus Pre-Settlement Landscape

Campus Landmarks

The UW–Madison campus has developed over a century and half and numerous generations of students. The result is a rich campus comprised of historic and cultural landscapes that provide a vital link to our past. Despite constant development pressures, these landscapes must be preserved and renewed; they are sacred and powerful landscapes to be enjoyed by all.

The 2005 Cultural Landscape Resource Project (CLRP) comprehensively surveyed, analyzed and documented the historic and cultural resources of the university. This document also provides guidelines and treatment recommendations. The fifteen most prominent sites (Figure 10 Campus Cultural Landscapes), include:

- Agricultural Campus
- Bascom Mall
- Camp Randall Memorial Park
- Class of 1918 Marsh
- Eagle Heights Community Gardens
- Henry Mall Historic District
- Howard Temin Lakeshore Path
- John Muir Park
- Keystone House
- Lakeshore Residence Halls
- Library Mall
- Memorial Union Terrace
- Observatory Hill
- Picnic Point
- University Houses

Further, more detailed information on the university's National Landmarks, National Register of Historic Places listed buildings and districts, along with other information on historic preservation initiatives can be found in the 2015 Campus Master Plan Technical Report document.

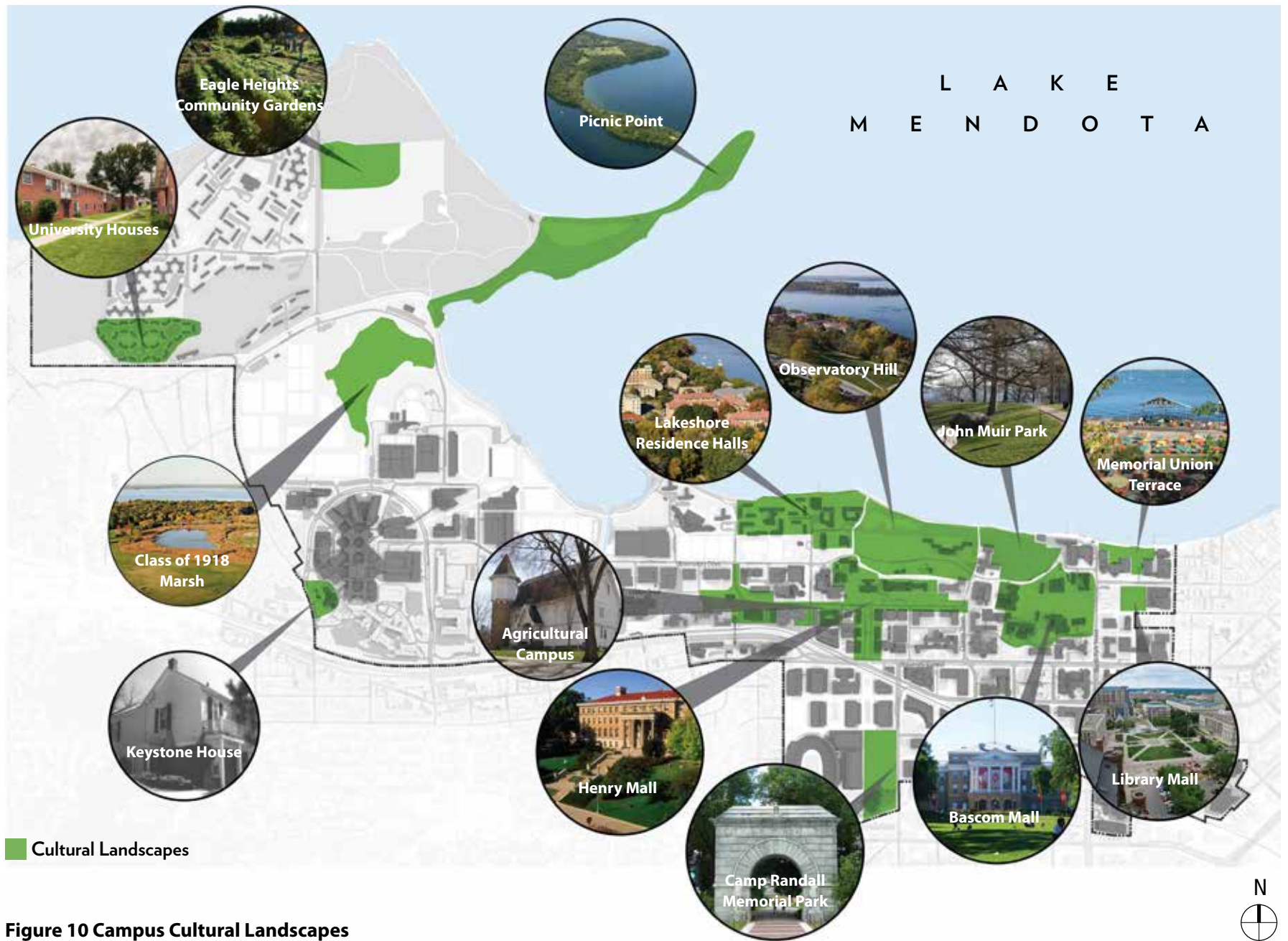


Figure 10 Campus Cultural Landscapes

Campus Viewsheds

Campus landmarks are important within the specific districts and regions of campus, but the connection to the lake is paramount. Preserving and enhancing views to Lake Mendota is essential. This visual connection reinforces the campus' unique natural setting and strengthens the sense of place. A summary of the campus viewsheds is presented in Figure 13 Campus Viewsheds.

Protected Views

Two viewsheds are protected on campus, these include views to the natural areas and the lake from both the WARF (Figure 11) and east hospital wing. Proposed building development within these viewsheds are subject to review. The intent is to preserve the uncluttered view of the lake and Lakeshore Nature Preserve.

Campus Views

Primary campus views include those visual connections to the lake and of significant campus landmarks and open spaces. These views are organizing features in the landscape, such as the view to the State Capitol from Bascom Hall (Figure 12) and the view down Henry Mall to Engineering from Agricultural Hall.

Elevated Views

A collection of viewsheds have been created through the development of open spaces atop roof deck structures. These occur at the UW Hospital, Nancy Nicholas Hall and Education Sciences. These new open spaces have created new ways to connect with the lake.

Lake Mendota Views

Campus is also experienced from Lake Mendota and across University Bay at Picnic Point. The naturalized lakeshore edge unifies and blends campus and the lake together. Opportunities exist to improve the view through the removal and relocation of parking areas and structures adjacent the lake.

For an in depth review of the campus viewsheds, refer to Appendix A – Campus Viewsheds.



Figure 11 View from the WARF Building to Lake Mendota



Figure 12 View from Bascom Hall toward the State Capitol

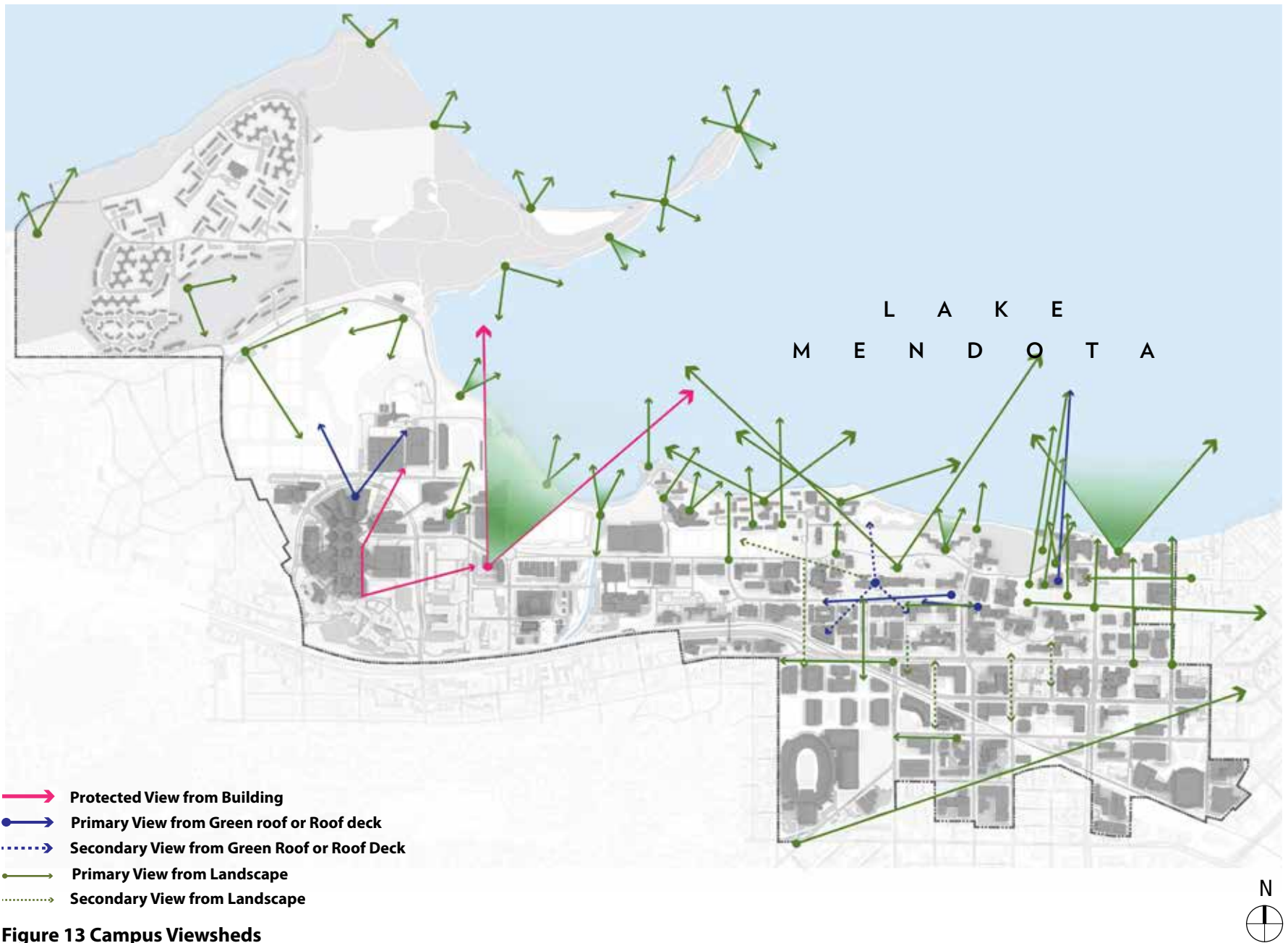


Figure 13 Campus Viewsheds

Tree Canopy

The tree canopy contributes directly to the landscape structure of a campus. At UW–Madison, the tree canopy density varies greatly throughout, resulting in a disconnection between campus landscape areas. Central campus is endowed with beautiful mature trees, many of them landmarks such as the Euthenics Oak at the School of Human Ecology. The Memorial Union Terrace is also graced with mature white oaks shading the outdoor terrace. Yet on west campus, the historic expansion of the agricultural campus and its modern redevelopment, have given this area a distinctly different landscape character. The re-establishment of a consistent tree canopy along with protection of the existing canopy would strengthen the unification of the lakeshore and central campus (see Figure 14 right).

Street Trees

Similarly, the lack of street trees distinctly separates between the “campus” spaces and the roads intertwined throughout. This is particularly apparent on south campus, where streetscapes and the city grid dominate the campus experience. Here, the addition of street trees would help provide landscape structure and provide shade, habitat, manage stormwater and buffer pedestrians from traffic.

Diversity

With 74 documented tree species in the campus tree inventory, the campus has significant species diversity. The canopy is dominated by maple (13%), honey locust (9%), ash (8%), pine (7%), oak (7%) and elm (5%). The Grounds department is currently managing the ash tree canopy and their percentages continue to decline due to the Emerald Ash Borer. However, only 15% of trees on campus are evergreens. Given the northerly climate, evergreens should be used increasingly on campus where appropriate to provide seasonal interest throughout the winter months when students are on campus, ensuring safety considerations are taken into account with proposed locations..

Future Tree Canopy

Much focus is given to the cherished landmark trees on campus, yet of increasing importance is the need to preserve large and middle-aged trees. These are the future landmark trees and their preservation from development pressures are essential to ensuring a healthy and robust campus tree canopy in the future.



Figure 14 Existing Campus Tree Canopy

L A K E M E N D O T A



Open Space Ratios

When considering future growth and expansion, it is important to ask: how much open space is needed on campus? To answer this question, each campus area was analyzed to determine a percentage of open space as a ratio of landscape (both soft and hardscapes) minus buildings, roads, and parking. The results found that the quantity of open space on campus today ranges from 90% in the far west campus containing the Lakeshore Nature Preserve, to 49% in the urban south campus. The other campus areas were around 50-60% open space to building, roads and parking.

This was compared to the projected build out capacity in the 2005 Campus Master Plan. The results indicate that all areas of campus will lose open space due to densification, with the exception of central campus (see Figure 15 Existing and Proposed Open Space Ratios based upon the 2005 Campus Master Plan). Central campus is projected to gain open space due to the conversion of parking lots to structured parking, freeing up open space. South campus will continue to densify, going from 49% to 42% of open space suggesting the need for new open space and placing greater emphasis on the quality of open spaces created.

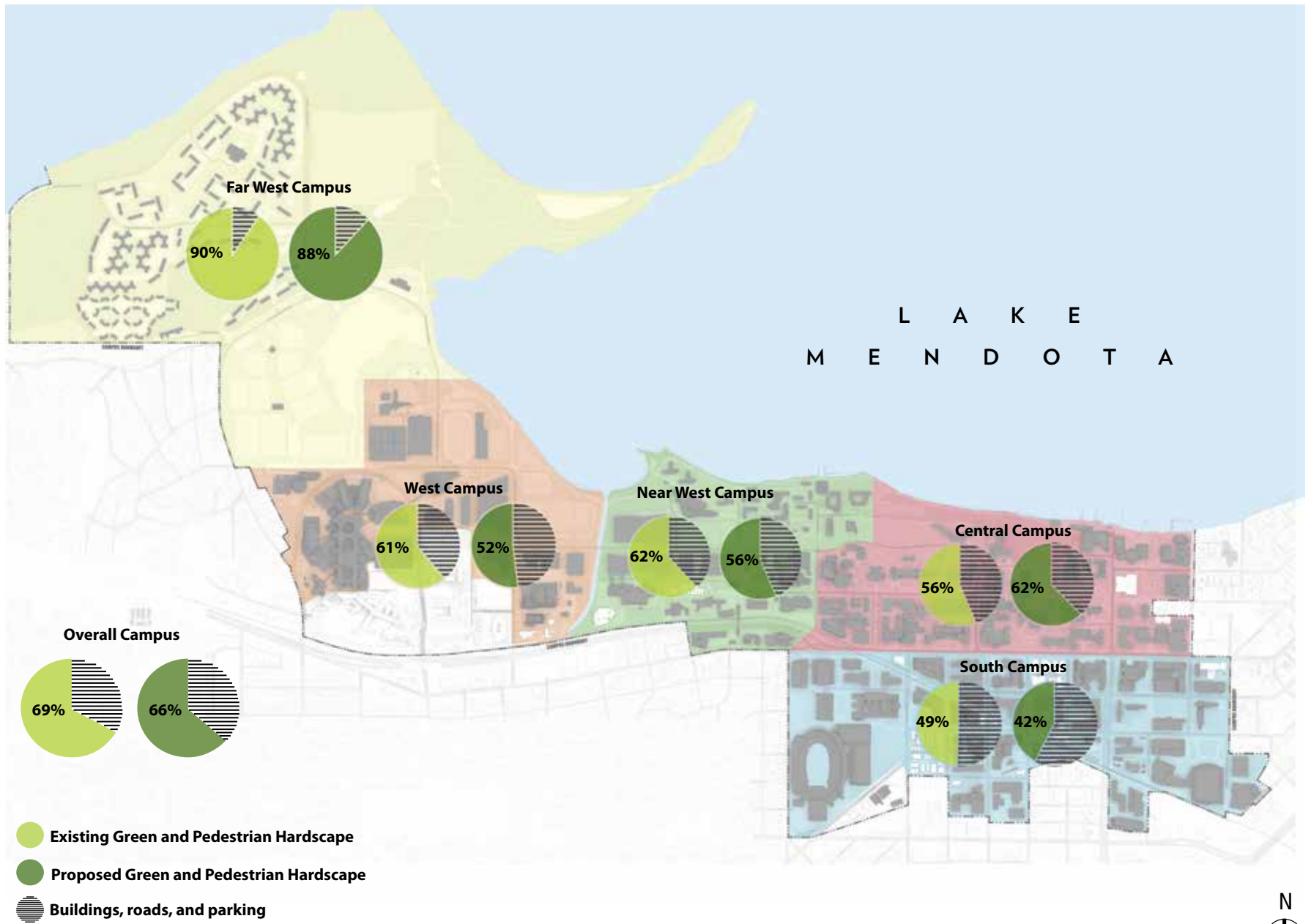


Figure 15 Existing and Proposed Open Space Ratios based upon the 2005 Campus Master Plan



Open Space Character

The development of campus over time has resulted in a diversity of landscape spaces on campus, each reflective of the values of the students and administration that oversaw their development. The campus landscape may be viewed as a diverse composition of landscape types, each defined by their landscape character, scale and use.

Eight broad typologies were identified, including naturalized, recreational, suburban, campus mall, traditional lawn, urban streetscape, courtyard and terraces, and parks and gardens. These landscape types form the open space character found on campus today. A brief definition is provided below.

- **Naturalized:** Landscapes characterized by woodland, marsh, wetland or other natural ecosystems.
- **Recreational:** Athletic, recreational fields, and open activity areas.
- **Suburban Landscape:** Low density development; typically characterized by turf grass and irregular placement of large shade trees.
- **Campus Mall:** Architecturally defined, typically formal linear space intended for the movement of pedestrians on campus. Landscape may be hard or soft in character.
- **Traditional Campus:** Comprised of traditional lawn, large shade trees, and building foundation planting. Human-scaled spaces that receive heavy pedestrian use.
- **Urban Streetscape:** Pedestrian landscape treatment adjacent the urban roadway network.
- **Courtyard & Terrace:** Intimate spaces that relate to the immediate building architecture and programming.
- **Parks & Gardens:** Historic park space and botanical gardens on campus.

Central Campus

Central campus is an organic composition of collegiate quads, malls and courtyards first established in the early 1900's. Here, classical architecture defines spaces characterized by traditional greens, building foundation plantings and mature stands of trees.

West Campus

Although the lakeshore has retained much of its natural character, the majority of the near west and west campuses are characterized by auto-oriented development, with larger building footprints and large parking lots. Rather than buildings defining open space, buildings are placed within open landscapes, resulting in a landscape of a completely different character. This area of campus contrasts sharply with the other areas of campus, with large undefined open spaces and traditional lawns. These open spaces are out of scale with pedestrians and contribute to the disconnect between west and central campus.

South Campus

The urban south campus is organized by the city's grid. Streetscapes, plazas and pedestrian malls define a harder, more urban landscape character than the area north of University Avenue. The area is a mix of university and private development with a variety of building scales and elevations, resulting in an incoherent landscape experience.

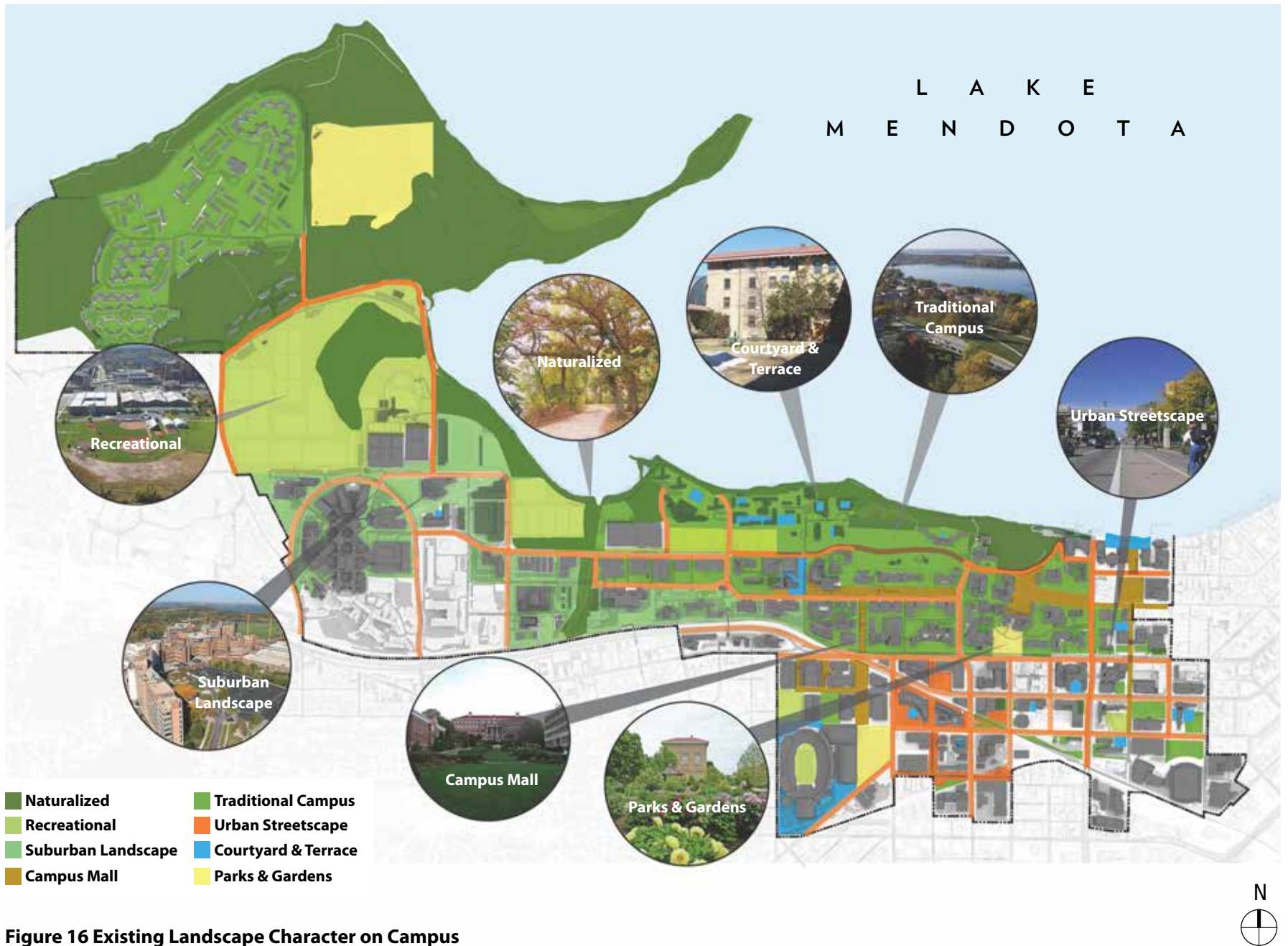


Figure 16 Existing Landscape Character on Campus

Campus Connectivity

The main campus is generally organized into three main districts: central, west and south campuses. Each district has its own unique character shaped by the physical and cultural conditions of the site. Yet these three districts remain disconnected due to the lack of a cohesive landscape experience that unifies and connects disparate areas of campus (Figure 17 Campus District Connectivity).

East-West Connectivity

The West Campus is perceived as a distant and remote area from Bascom Hill. The scale and pattern of building development, the lack of tree canopy, and the flat topography in near west campus exacerbates this perception. Re-establishing the tree canopy to buffer buildings and provide pedestrian scale while developing a cohesive landscape character would visually connect the west campus to central campus and give this area of campus a much needed identity.

North-South Connectivity

Similarly, central and south campus remain divided. University Avenue acts as both a physical and psychological barrier, bifurcating the two campus districts. Strengthening the landscape identity along this corridor while improving north-south pedestrian movement on campus would reinforce the connectivity between central and south campus.

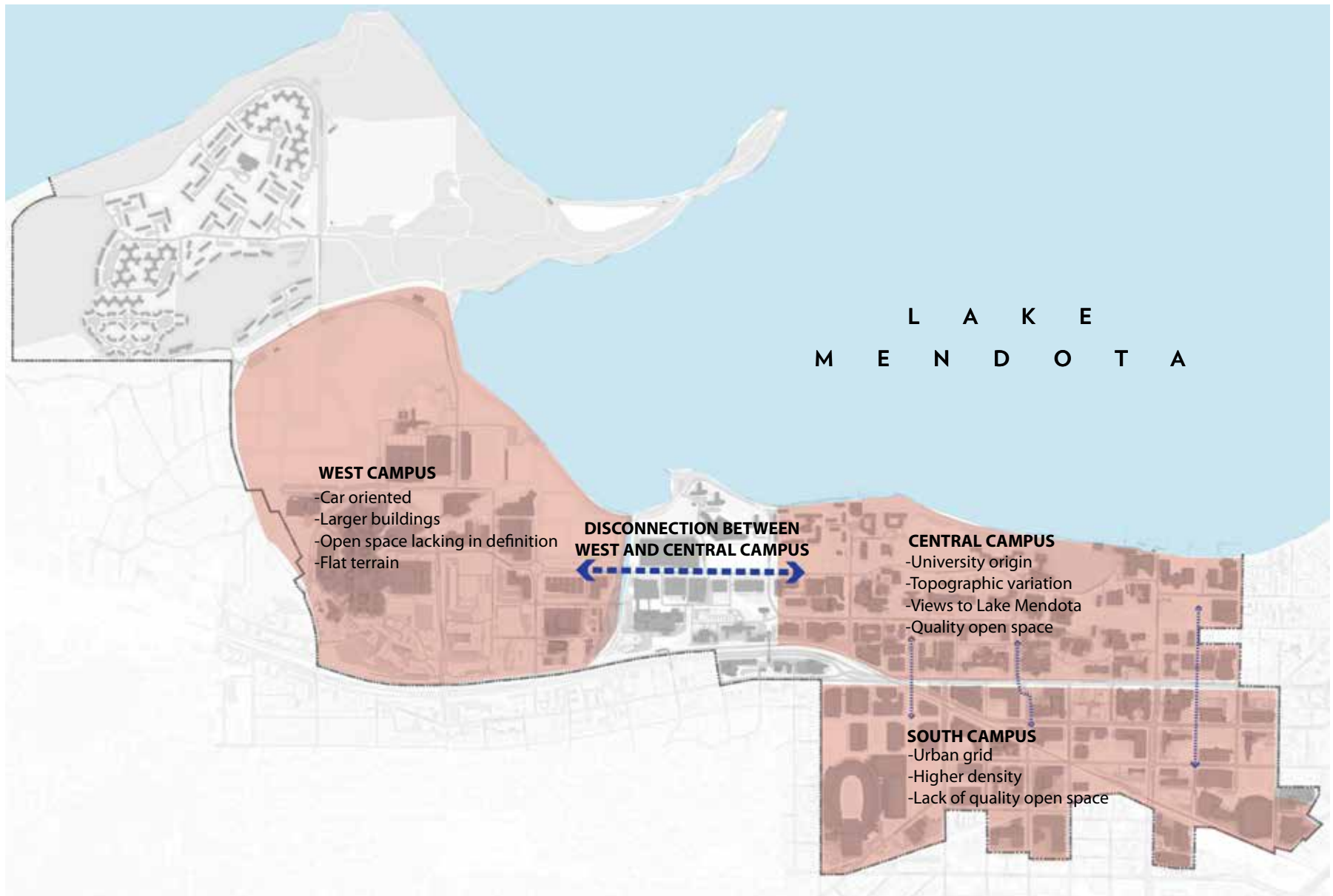


Figure 17 Campus District Connectivity

Opportunities & Constraints Plan

The analysis of the physical, cultural and visual characteristics of campus resulted in the compilation of an Opportunities and Constraints Plan. The plan indicates areas to preserve and areas of potential change on campus (Figure 18 right).

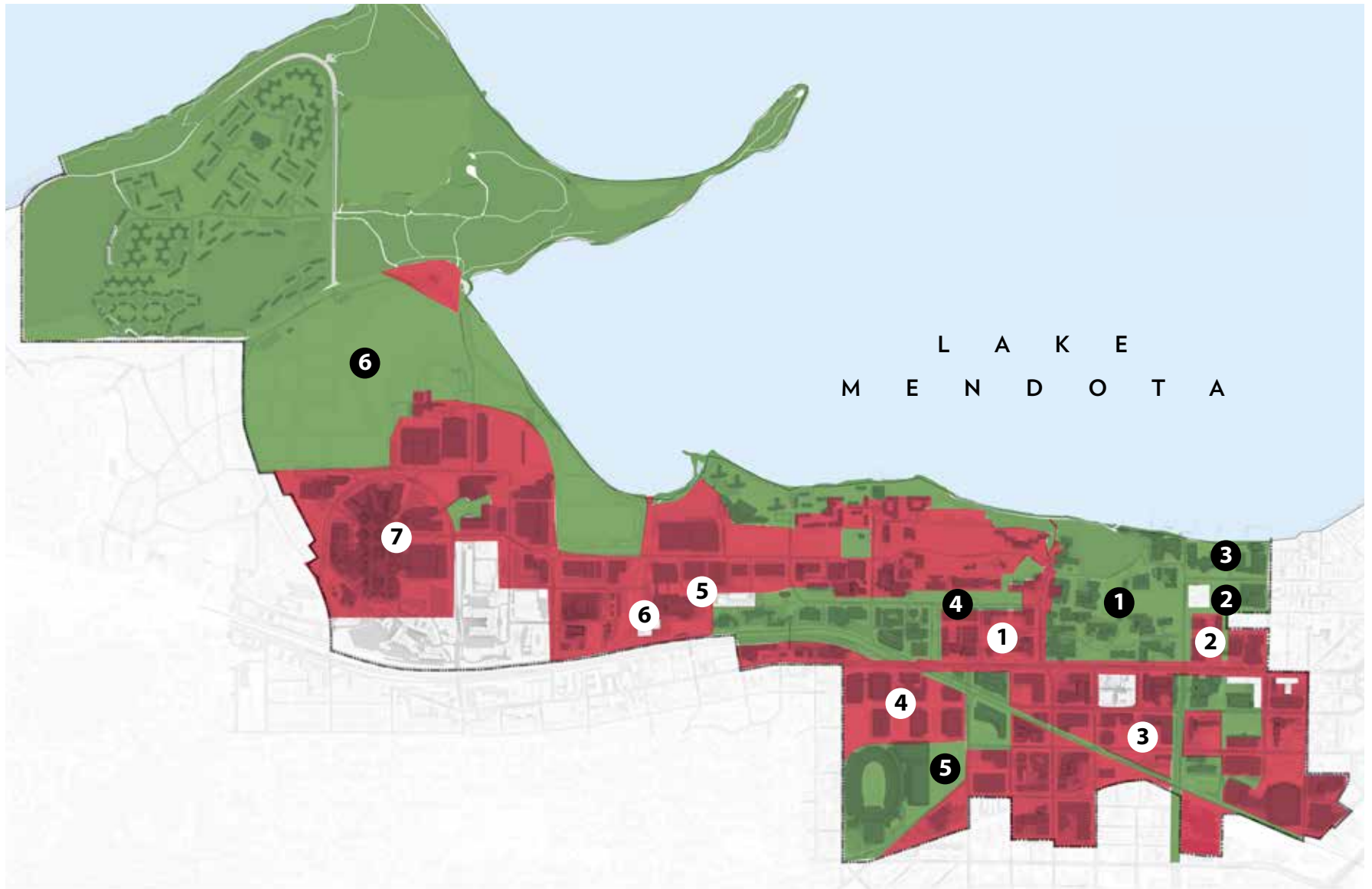
This does not preclude any interventions in the areas of preservation; in fact, these areas may require significant renewal. However, it indicates that significant changes are not projected for the area.

Areas to Preserve and Maintain

- ① Bascom Hill
- ② Library Mall
- ③ Memorial Union Terrace
- ④ Linden Mall
- ⑤ Camp Randall Memorial Park
- ⑥ Class of 1918 Marsh & University Bay Fields

Areas of Potential Change

- ① Medical Sciences block
- ② Humanities block
- ③ Significant areas of South Campus
- ④ Engineering Campus
- ⑤ Linden Drive West of Elm Drive
- ⑥ Willow Creek
- ⑦ UW-Hospital



- Areas to Preserve
- Potential Changes

Figure 18 Areas of Preservation and Potential Change on Campus



Landscape Framework Plan

The summation of the discovery and analysis phase was the creation of an inter-disciplinary landscape framework plan to guide future plan proposals. The plan integrates the inventory and analysis materials from the Landscape, Transportation and Green Infrastructure working groups. The result is a framework plan (Figure 19 right) for re-vitalizing the campus landscape through improved open space connectivity, campus gateways and green infrastructure.

Open Space Connectivity

The need to move easily and safely about campus is paramount. In addition to the Howard Temin Lakeshore Path, the plan highlights Observatory Drive and Linden Drive as key corridors to improve connectivity between central and west campus. In the south campus, W. Dayton Street is identified as a key link between Camp Randall Memorial Park and the Kohl Center to the east. University Avenue and W. Johnson Street also work in tandem as primary green thoroughfares through the campus.

Due to the geology and drumlin topography of campus, few roads run the entire length of campus from Regent Street to Lake Mendota. For this reason, N. Charter Street and N. Park Street take on special prominence in enhancement north-south pedestrian movements on campus. N. Orchard Street, N. Mills Street and N. Brooks Street are identified as “managed streets”; opportunities to close or create a shared-use street, improving pedestrian connectivity in the south campus.

On the west campus, the Willow Creek corridor has the potential to act as a seam rather than a barrier, binding the west and near west campuses together. It also provides an important north-south connection between Campus Drive and the Howard Temin Lakeshore Path.

Campus Gateways

The plan identifies major campus gateway opportunities located at Highland Avenue, Walnut Street, along University Avenue, W. Dayton Street and Regent Street. Future plan proposals should address gateway design at these key arrival points to campus.

Green Infrastructure

A paradigm shift has occurred in managing stormwater on campus. In contrast to traditional stormwater management methods of channelizing stormwater via underground pipe, green infrastructure aims to mimic the natural hydrologic processes in place prior to development. Green infrastructure stores, detains and infiltrates stormwater on site before it enters an underground conveyance system. The framework plan identifies key opportunities for large-scale, green infrastructure interventions that will contribute to meeting campus stormwater management requirements.

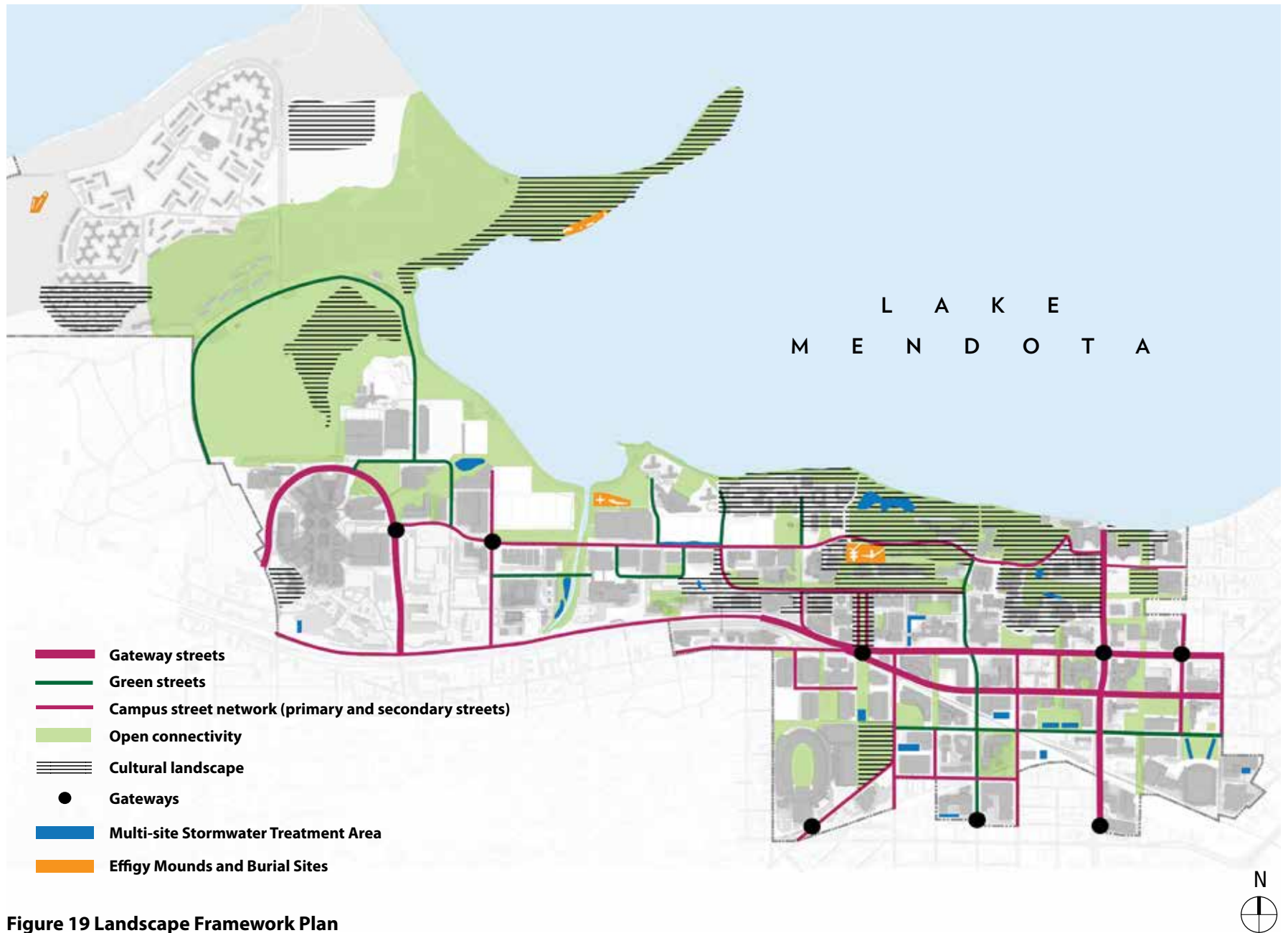


Figure 19 Landscape Framework Plan



3. CAMPUS LANDSCAPE MASTER PLAN

Landscape Concept

Broad Strokes

Three big design moves define how the campus landscape will both preserve and enhance the quality of the open space across campus:

- Celebrate the historic central core
- Strengthen cross campus connections
- Establish a Near West Campus Green District

These concepts further develop the character of the campus districts while improving connections. As part of each of these interventions, both visual and physical linkages back to Lake Mendota is a goal within each district and across the campus. The campus' connection to the lake was defined since its inception and remains one of the strongest design criteria for the campus landscape.

Celebrate the Historic Central Core

Central Campus has a wonderful sense of scale and order that reflects the classical roots of past Campus Master Plans. Large mature trees grace the Bascom Hill quad, and walkways weave through intimate courtyard spaces. This district still functions as the heart of campus and its iconic green spaces and trees require preservation and restoration to enhance them for the future.

The natural lake edge is a tremendous amenity for the university, synonymous with the UW–Madison brand. It should likewise be preserved and revitalized through careful intervention, which is supported by many, if not all our stakeholders.

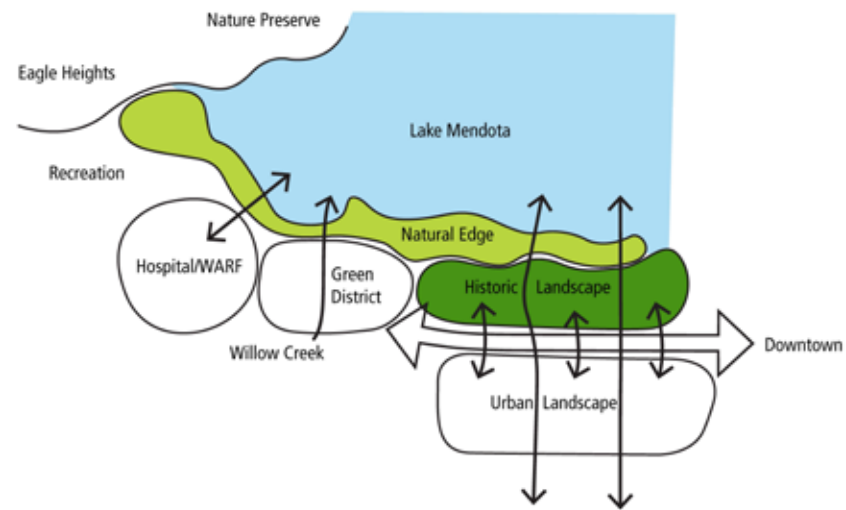


Figure 20 Preserving the Natural Lake Edge and Historic Core

Strengthen Cross Campus Connections

South Campus remains divided physically from the rest of campus. Crossing University Avenue, the landscape character quickly changes from a traditional collegiate campus to a mixed urban environment. The area is devoid of green open spaces associated with a major campus and the streetscapes lack a definitive character.

Reinvigorating the streetscapes with a defined urban tree canopy and clear design vocabulary will strengthen the urban corridors, providing a sense of human scale and rhythm. Redeveloping latent open space will provide gathering spaces that are currently non-existent. Together, these moves will create a new urban character for the South Campus; different from the Historic Campus yet expressive of the renewed urban South Campus.

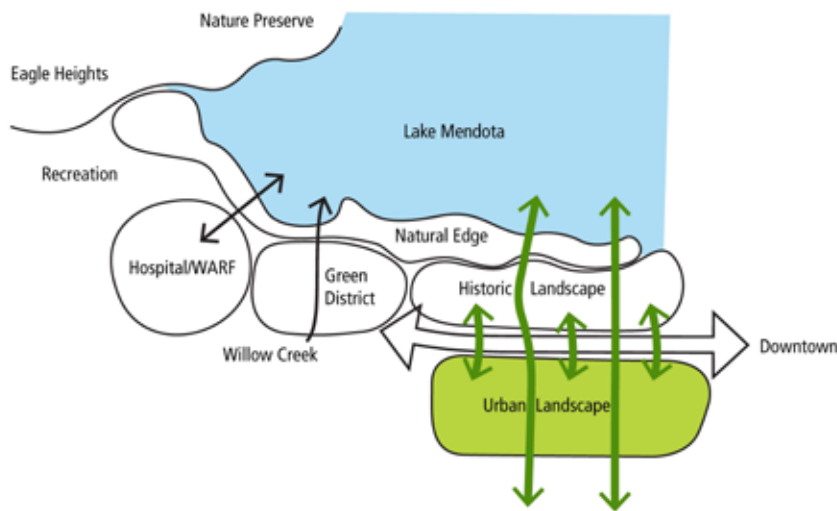


Figure 21 Strengthening Campus Connectivity

Develop Near West Campus “Green District”

The Near West Campus landscape character is a product of unconstrained development. The sprawling district is scaled to the primary form of transportation: the automobile. Surface lots and traditional lawn are surrounded by nondescript research labs which dominate the area.

Yet it is poised for substantial redevelopment that will redefine this district as a model for a sustainable green campus. Historically, the Near West Campus has been an agricultural research hub for the institution. With this shift, it can be a living laboratory again, characterized by working landscapes and a revitalized Willow Creek. Working landscapes that illustrate UW–Madison as a leader in sustainability and care for the environment.

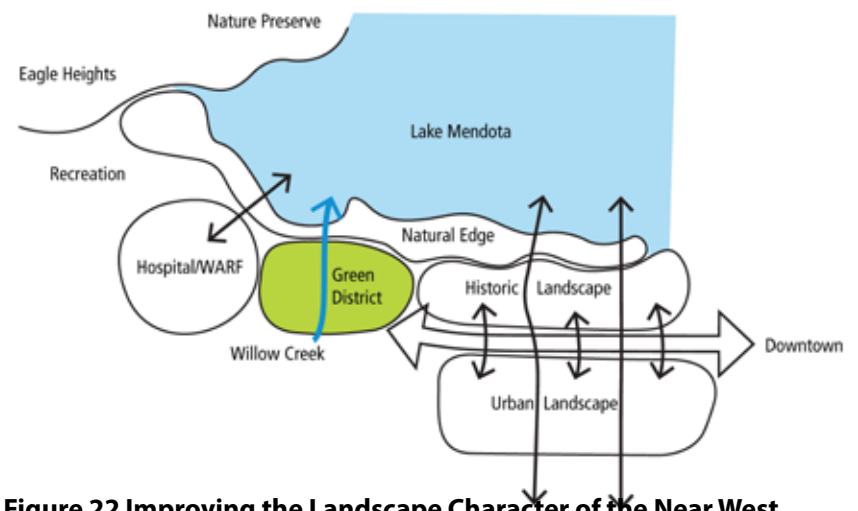


Figure 22 Improving the Landscape Character of the Near West Campus

Campus Landscape Master Plan

The overall campus Landscape Master Plan is a summation of the planning and design by an inter-disciplinary team, in collaboration with the UW–Madison Facilities Planning & Management and university stakeholders.

The plan is conceptual, illustrating campuswide improvements based upon the principles established and the landscape concepts presented above. The plan is not a final destination, but a guiding illustration that envisions what the campus could look like as resources are made available for implementation.

Focus areas are discussed in the next chapter, that explore more detailed study of the areas of greatest potential.

Recommendations:

- 1 A revitalized Willow Creek corridor.
- 2 A dedicated campus arrival for the School of Veterinary Medicine. New
- 3 Near West Commons open space, adaptively re-purposing the historic Horse Barn and the area around it.
- 4 Expanded naturalized and working landscapes on Observatory Hill.
- 5 An iconic pedestrian bridge at the intersection of N. Charter Street and Linden Drive.
- 6 A boardwalk and stairs to safely traverse the steep slope behind Sewell Social Sciences Building.
- 7 The creation of new campus open spaces through the redevelopment of the Humanities site.
- 8 Improved visitor gateway experience along University Avenue at Campus Drive and on N. Park Street.
- 9 Green Street initiatives along N. Charter and W. Dayton Streets.
- 10 A new South Campus quad at Educational Sciences.
- 11 Improved Lakeshore Nature Preserve entry.



Figure 23 Campus Landscape Master Plan



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

L A K E M E N D O T A

UNIVERSITY BAY



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4. LANDSCAPE DESIGN GUIDELINES

Landscape Typologies

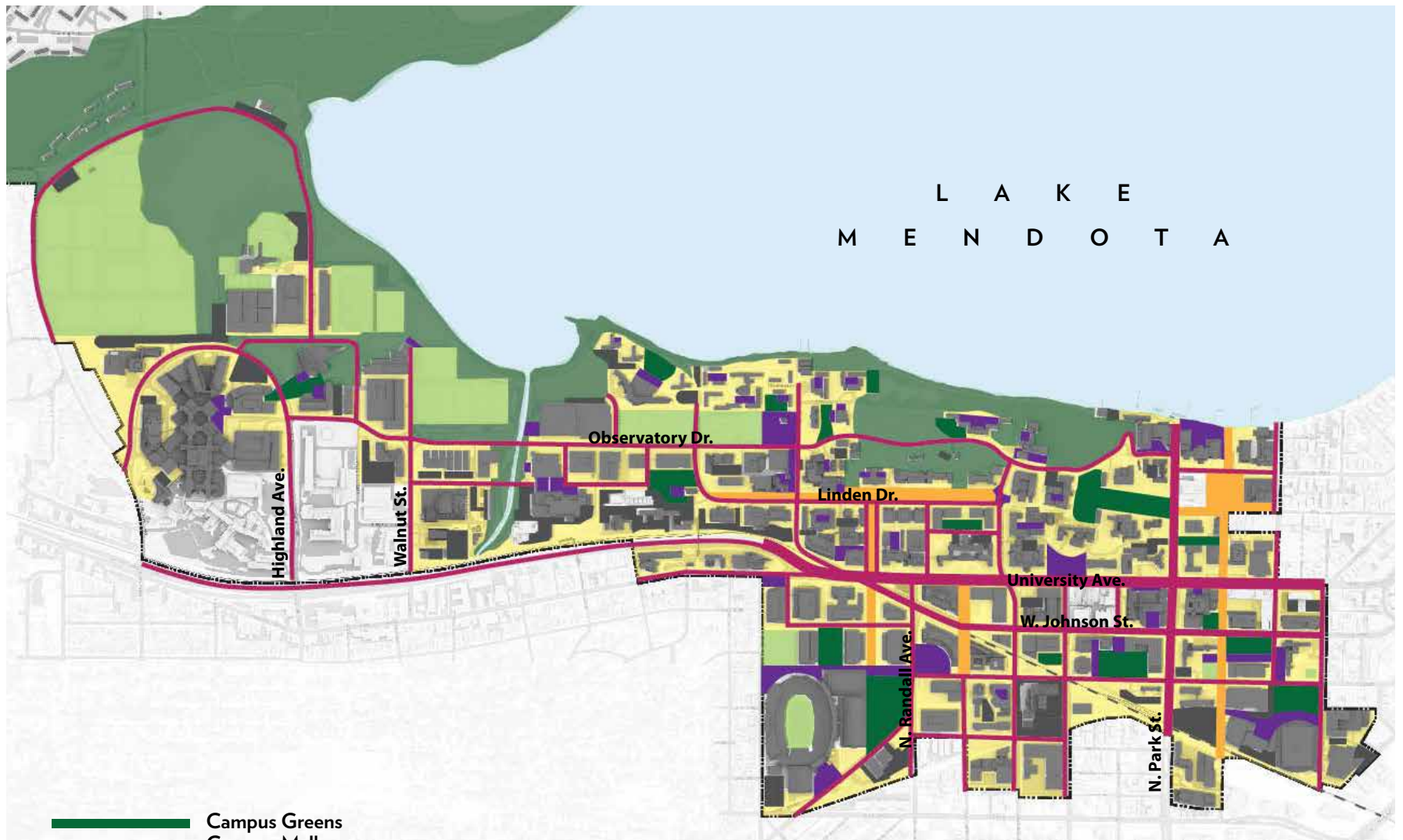
The UW–Madison campus landscape is viewed as a diverse composition of outdoor spaces developed over time. These spaces can be broken out into typologies that define and provide structure to the campus landscape and buildings. These typologies should not be viewed in isolation; rather, they knit together a comprehensive and cohesive landscape fabric, unifying diverse architectural styles and periods of development.

A typology is a category of space that has a specific character, design features, and function. Although typologies have a level of specificity, they do not limit the eventual design of the space, but instead determine how it fits in the larger context of its surroundings. The following section outlines the most prominent typologies present at UW–Madison (see Figure 24). Each typology discusses a variety of design aspects including: scale, level of function, definition, views, circulation, lighting, planting and maintenance.

The intent of defining and developing landscape typologies is to establish a campus-wide landscape framework to structure design guidelines and maintenance standards. These guidelines are a tool to steer landscape architects and planners, ensuring the quality of the landscape is appropriate. The goal of these guidelines is to provide visual continuity across campus and its diverse collection of design neighborhoods without creating uniformity. Each typology is flexible enough to respond to the design neighborhood context while relating to the campus as a whole.

LANDSCAPE TYPOLOGIES:

1. **Campus Greens**
2. **Campus Malls**
3. **Courtyards, Plazas, Terraces & Gardens**
4. **Campus Supportive Landscapes**
5. **Naturalized Landscapes**
6. **Athletics & Recreation**
7. **Streetscapes**
8. **Parking & Service**



- Campus Greens
- Campus Malls
- Courtyards, Plazas, Terraces & Gardens
- Campus Supportive Landscapes
- Naturalized Landscapes
- Athletics & Recreation
- Streetscapes
- Parking & Service

Figure 24 Campus Landscape Typology Plan



Campus Greens

Campus Greens are among the most iconic and cherished landscapes of institutions of higher education. Even the term “campus” originally referred to these greens. They are collective spaces where students interact, congregate, study and relax. In contrast to the private schools of the U.S. east coast which emulated the cloistered quadrangles of England, UW–Madison was a land grant university whose formation in the late 19th century was influenced by the City Beautiful movement and the Beaux-Arts study of architecture. Consequently, its campus greens are larger and civic in nature.

Campus Greens embody the quintessential collegiate landscape aesthetic and are characterized by traditional lawns (see Figure 25 right) surrounded and framed by large trees. Situated throughout the campus, their expression reflects the period of their development and their neighborhood context, yet all share commonalities of scale, function and definition. As UW–Madison continues to evolve, new approaches must be sought to integrate sustainable design practices into these historic landscape spaces.

The iconic Campus Greens at UW–Madison are prominent landscapes experienced by students and visitors alike on a daily basis (see Figure 26). Nostalgia for these spaces is ingrained in the psyche of every American who has attended a university. They are typically the most highly photographed spaces and contribute significantly to the image of the university. For this reason, Campus Greens must be well maintained, projecting a positive appearance throughout the year.



Figure 25 Bascom Hill is an Iconic Campus Green



Campus Greens



Figure 26 Campus Greens Typology Plan

General Design Considerations

Function and Character

Campus Greens are the quintessential American collegiate landscape aesthetic. They are large, civic lawn spaces intended for collective use. While typically level and architecturally defined, at UW–Madison this typology has been adapted to the glaciated landforms, open and sloping such as at Bascom Hill. Their design should be simple, avoiding overly fussy design or ornamentation and employ classical design principles such as symmetry and balance. These landscapes are open in character with clear sight lines through the space typically with a major focal point on one or both ends.

Scale

Campus Greens are civic in scale, large enough to host large groups of people on campus. They project prominence of the university as a world-class research institution. Lawn panels should be cohesive, avoiding fragmentation.

Circulation

It is important to accommodate pedestrian traffic through the space. Students will always take the shortest path from Point A to Point B. Rather than obstructing student desire lines with ad hoc fencing, these “cow-paths” should be codified and paved for durability and ease of maintenance yet still maintain the classical symmetry and balance of the space.

Views

Campus Greens often front on a prominent building or landmark. Avoid infringement of the viewshed and remove visual clutter such as lighting, benches, signage, trash receptacles, etc. from the primary view corridor. The beauty of these spaces lie in their simplicity; removing site elements has a more positive impact.

Materials

Paving

Permanent paving should be cast-in-place concrete paving.

Lighting

Lighting must be provided in accordance with Crime Prevention Through Environmental Design (CPTED) guidelines. Lighting should be located adjacent to circulation pathways running parallel to the space and not within the primary viewshed. Sharp cut-off downlighting should always be used to prevent light pollution. See campus lighting standards for more information.

Planting

These spaces are characterized by large overstory trees in single/double rows or in informal massings providing the enclosure that defines the space. The ground plane is clean, typically dominated by lawn. The transition from low lawn to high canopy is sharp and dramatic. In the historic areas of campus, maintaining the health of middle-aged and mature trees is paramount. Utility upgrades must be planned around existing critical root zones to preserve the existing tree canopy. Plans should be established for proper succession of large caliper trees to avoid holes or discontinuity between old and new trees.

Consider the incorporation of low-mow lawn on the periphery of this typology between the building and walks to increase the environmental benefits and maintain the functionality of Campus Greens. Compared to traditional lawn, low-mow lawns are more drought tolerant once established, require less fertilizer, and require less mowing (see Figure 27).

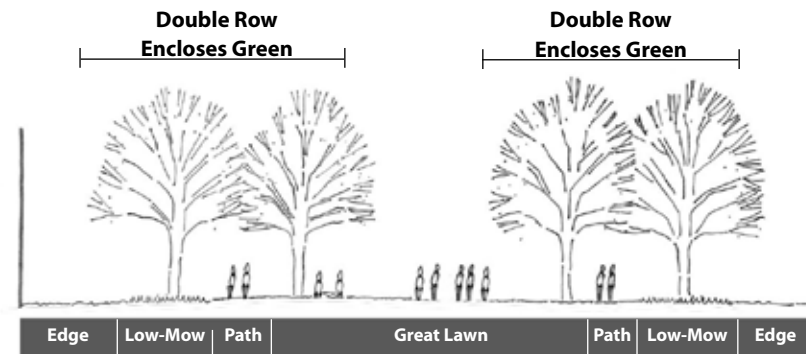


Figure 27 Campus Greens Planting Concept Vignette

Furniture

Site furniture should be minimal within the space to avoid obscuring views. Trash receptacles should be placed at key corners. Fixed seating should be incorporated along the perimeter of key views. Bike racks should be conveniently located to destinations along the edges. Memorial benches are appropriate based on an approved plan for the area.

Maintenance Level

APPA Grounds Standard Level 2 for high-level maintenance. (See APPA guidelines)

Key Guidelines for Campus Greens

- Maintain classical collegiate landscape Beaux-Arts quadrangle character.
- Civic design scale and simple, low-maintenance landscapes.
- Preserve views and de-clutter the landscape.
- Meet circulation desire lines when and where necessary.
- Plant palette consists of large canopy trees and traditional lawn.
- Look for new opportunities to improve or create framed viewsheds.
- Plant palettes should reflect simple, elegant schedules with layouts that favor drifts and massings of plant species.



Campus Malls

Campus Malls are primary pedestrian corridors where large groups of students move, congregate, and socialize. Beyond their functional use, they are also powerful spatial organizing features that structure the campus landscape and determine the placement of buildings, rather than the other way around. They also define and visually link different campus neighborhoods together.

The Campus Malls typology plan is presented in Figure 29 Campus Malls Typology Plan. The major malls of campus include: East Campus Mall (Figure 28 right), Library Mall, Henry Mall, and the Linden “Greater Mall”.



Figure 28 East Campus Mall



— Campus Malls



Figure 29 Campus Malls Typology Plan

General Design Considerations

Function and Character

Similar to Campus Greens, Campus Malls are large pedestrian spaces intended for both congregation and pedestrian movement. Unlike Campus Greens, Malls encouraging more active. The landscape plays a vital role in visually unifying disparate architecture fronting the space, creating a cohesive campus. This typology is typically a very public space, opportunities should be created to encourage small, intimate group gatherings along the edges.

Scale and Form

Campus Malls are linear in nature and civic in scale. Their proportions relate to the anticipated pedestrian volume, the heights of the surrounding buildings and the scale of the space between buildings.

Context

The design of new Campus Malls must respond to their neighborhood context. The historic Linden Mall (Greater Mall) and Henry Mall (Lesser Mall) on Central Campus are soft in nature, predominantly lawn, reflecting the period of their development. More recently, the East Campus Mall transects urban areas of campus with high pedestrian volumes and is composed primarily of hardscape materials. Both expressions are valid responses to the site context which is the paramount design consideration.

Circulation

Campus Malls are primarily corridors for pedestrian and bicycle movement with opportunities for small social gathering and rest. They also, in some cases, provide access for emergency vehicles.

Views

The linear form of Campus Malls encourage focused attention on key buildings or landmarks. Vegetation and architectural elements should be used to frame these views. Similar to Campus Greens, encroachment on the viewshed is prohibited and visual clutter unwanted.

Materials

Paving

Pavement should employ the highest quality materials, reflecting the longevity and excellence of UW–Madison. Materials should be appropriate for cold weather climates and salt application environments due to high levels of pedestrian traffic. Patterns should also reflect the direction of travel. Hardscape design may incorporate upgraded paving materials to place special emphasis on campus nodes. See campus paving standards for more information.

Lighting

Malls should be well-lit on both walking surfaces and at key monuments or features and should be lit from the perimeter to avoid blocking views along its central axis. As a primary pedestrian route, all Campus Malls should be lit in accordance with Crime Prevention Through Environmental Design (CPTED) safety guidelines.

Planting

These spaces are characterized by medium to large overstory canopy trees. Low understory planting are encouraged to define walkways edges, seating areas, main building entrances and nodes, maintaining clear sight lines for safety. Understory plantings should be designed for seasonal interest weighted toward the academic calendar year of fall, winter and spring. (See Figure 30)

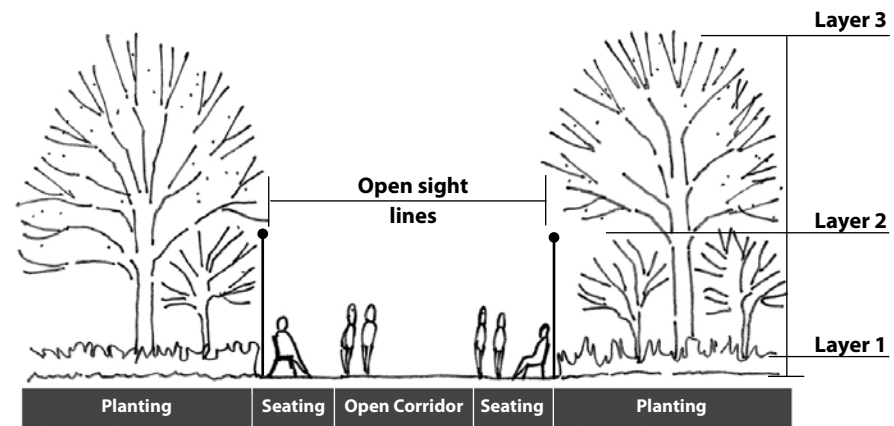


Figure 30 Campus Malls Planting Concept Vignette

Furniture

Opportunities for seating and social interaction should be incorporated in Campus Malls. Fixed benches should be positioned parallel to the primary direction of travel to avoid blocking traffic flow and used in small nodes adjacent to the main corridor. Furnishings should be sited so as not to inhibit snow removal and should provide ample temporary storage areas.

Maintenance Level

APPA Grounds Standard Level 2 for high-level maintenance.

Key Guidelines for Campus Malls

- Civic design scale and simple, low-maintenance landscapes.
- Provide opportunities for seating and social interaction adjacent to the main corridor of the Mall.
- Preserve and enhance terminating views.
- Layer planting through use of understory, medium and large canopy trees.
- Use understory planting to define edges and enhance seasonal interest in a style and execution appropriate to a campus institutional setting.



Courtyards, Plazas, Terraces & Gardens

Courtyards, Plazas, Terraces and Gardens are architecturally defined spaces intended for social gathering. They may be completely enclosed, such as the courtyard at Tripp Residence Hall or more open in character, such as the terrace at Signe Skott Cooper Hall (Figure 31 right). In this way, they are unique spaces that relate more to the immediate architecture and program of a building, than the greater campus landscape. The size and program of these spaces vary dramatically based on the context and intended function. For example, the Botany Garden includes a series of small spaces along a winding path. It accommodates small groups of visitors at one time, while the Union South plaza hosts large crowds before each home football game. Figure 32 Courtyards, Plazas, Terraces & Gardens Typology Plan presents the Courtyards, Plazas, Terraces & Gardens plan for campus.



Figure 31 Campus Courtyard are Intimate Spaces for a Multitude of Functions



— Courtyards, Plazas, Terraces & Gardens



Figure 32 Courtyards, Plazas, Terraces & Gardens Typology Plan

General Design Considerations

Function and Character

Courtyards, Terraces, Plazas and Gardens are architecturally defined social gathering spaces. They provide a setting for a range of social interactions from individual contemplation and intimate conversations to outdoor teaching and large, school spirit events. Depending on the desired character of the space, they may utilize hard or soft surfaces and minimal or intensive plantings.

Scale and Context

Courtyards and Terraces are intimate campus spaces. Their finer scale provide opportunities for detailed hard and softscape design. Planting and site elements support individual or small group scale gatherings.

Conversely, Plazas are large scale spaces that allow for large group gatherings. They are more open in nature, relating directly to the scale and architecture of the building(s) around the space.

Gardens are unique landscape typologies; they are introspective and thematic landscapes that may or may not relate to their surroundings. They may be treated as an escape from the landscape at large.

Materials

Site Amenities

Amenities such as water features and public artwork are recommended to enhance the aesthetics and programming of the enclosed courtyards or terraces. Water features provide white noise and ameliorate microclimate temperatures. Central features help organize the space, provide reference points, and opportunities for donors.

Due to long-term maintenance and operation aspects, water features and artworks shall be reviewed by FP&M staff and approved individually on a case by case basis.

Furniture

As primary outdoor spaces for social interaction, seating should be provided to facilitate and encourage dialogue and conversation for a variety of group sizes. Integrated seating such as seatwalls or linear benches should be sized proportionately with the space. These are ideal because they second as an organizing feature. Bike racks should be conveniently located to destinations

along the edges. Fixed benches and tables should be arranged in clusters while movable tables and chairs allowing students to modify the space are the preferred seating type. Enough space should be provided for organized gatherings or outdoor classrooms. See the campus standards for a selection of seating options. Site furniture may be unique to the site, but selected in consultation with FP&M landscape architecture staff.

Paving

Hardscape design should relate to the building architecture and neighborhood aesthetic and to lesser degree the overall campus. Unit paving should be considered to add scale and design emphasis to the space.

Lighting

Site lighting should be coordinated with building lighting to provide adequate coverage of walking surfaces. Avoid sharp contrasts of light that create glare and unsafe conditions. Accent lighting may be incorporated into planting and site features in consultation with FP&M staff.

Planting

The planting design should support the program of the space. Plaza plantings should define a large, open space and withstand large and periodically raucous crowds. Diverse, layered vegetation with seasonal interest that supports a pedestrian scale should be used in courtyards and terraces. The planting design in these spaces should support intimate interactions. The scale of the space shall be considered when proposing a monoculture planting, understanding that monocultures may be appropriate to smaller scale spaces. Gardens should support a high level of plant diversity for interactive learning experiences.

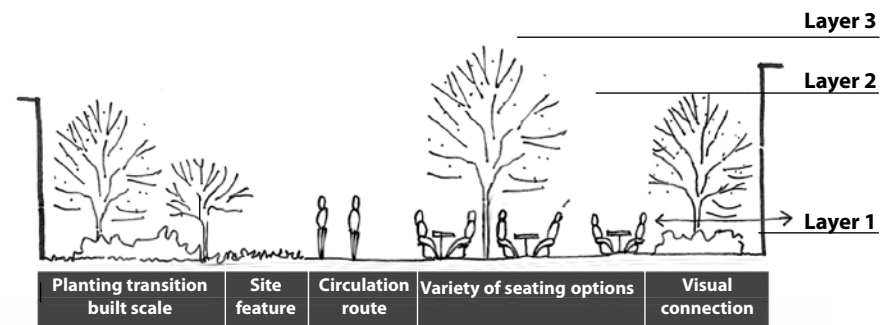


Figure 33 Courtyard Planting Concept Vignette

Plantings for all these spaces should respond to the microclimate of the site. Because of the proximity to buildings, a visual connection between building interior and exterior is preferable (see Figure 33).

Maintenance Level

APPA Grounds Standard Level 2 for high-level maintenance.

Key Guidelines for Courtyards, Plazas, Terraces & Gardens

- Create open spaces that uniquely identify with the building.
- Provide opportunities for seating and social interaction.
- Carefully consider microclimates.
- Provide water features and artwork for reference points in the space.
- Planting design should directly relate to the program of the space.



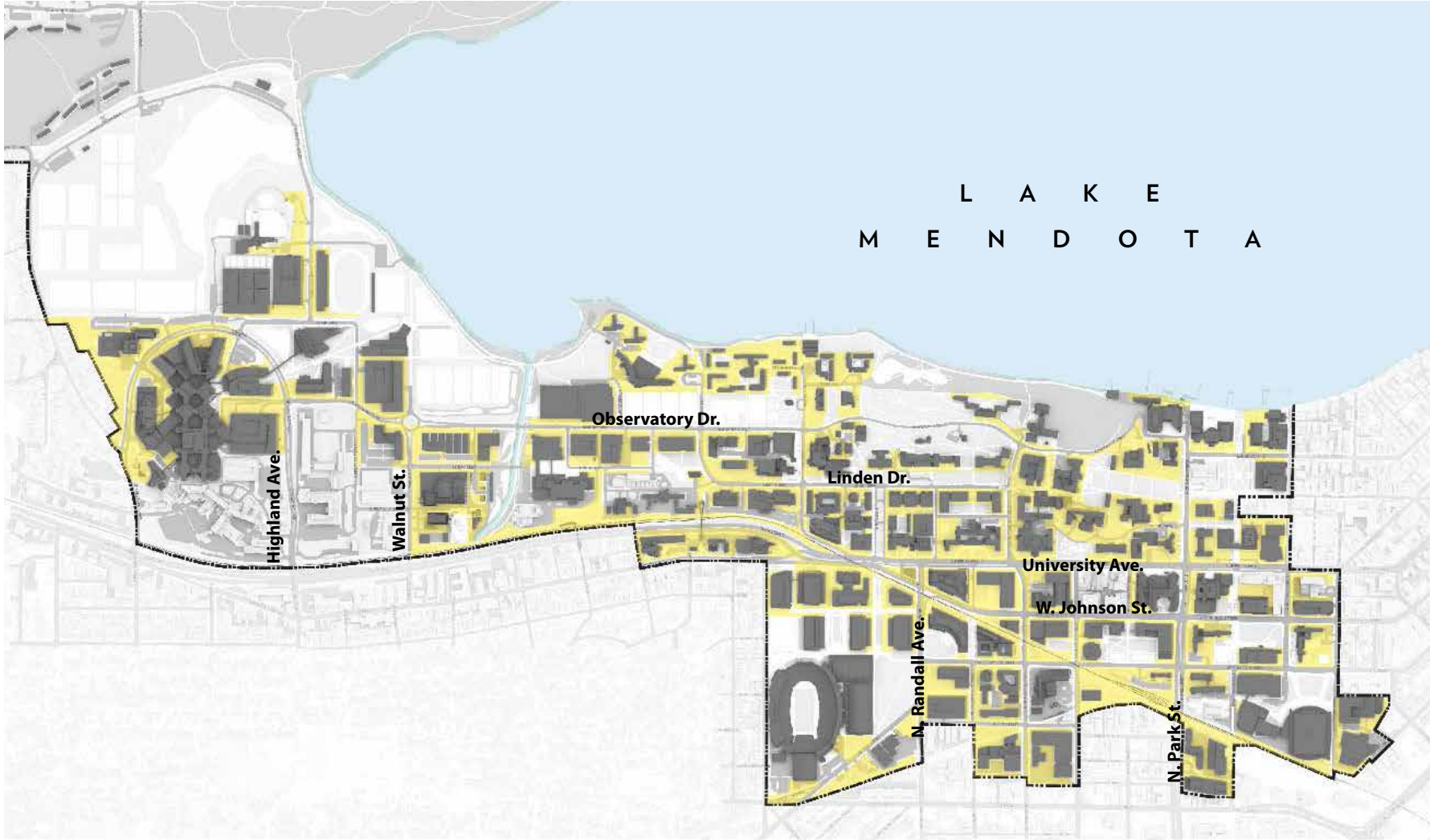
Campus Supportive Landscapes

Campus supportive landscapes are the most ubiquitous features that students encounter as they move about the university. It is composed of a variety of spaces from thresholds and landscape verges to lawns and foundation plantings (Figure 35 Campus Supportive Landscapes Typology Plan). These spaces are usually passed through, but students are rarely compelled to engage or linger (see Figure 34). As interstitial landscape spaces, campus supportive landscapes connect primary open spaces and buildings.

These landscapes are passive, connective open space vital to providing visual continuity on campus. The additive effect of these spaces define the character of the campus and have a greater effect than any individual space. It is paramount that the treatment of these spaces be carefully considered within the context of the immediate architecture and neighborhood, as well as the overall campus.



Figure 34 Campus Supportive Landscapes are Composed of the Connective and Interstitial Spaces between Buildings



— Campus Supportive Landscapes



Figure 35 Campus Supportive Landscapes Typology Plan

General Design Considerations

Function and Character

Campus supportive landscapes are diverse and directly reflect the surrounding context. These spaces are multifunctional, generally grounding buildings in the larger landscape as well as shaping and enclosing the minor secondary pathways and building entries. But, despite reflecting the character of the adjacent structures, all landscape fabric should fit into the larger neighborhood and campus context.

The majority of campus supportive landscapes are used as pass through spaces. Although, the intimate scale also provides opportunities for small scale gatherings spaces.

Scale and Context

These spaces are usually experienced at a close proximity and intimate scale. Exceptions occur where campus supportive landscapes function as a transition for the scale of larger campus buildings.

Although these spaces are not usually given extensive design consideration, they are ubiquitous across the campus. For this reason designs should focus on creating comfortable spaces that reduce maintenance, avoid safety issues, are easily accessible and amplify the campus aesthetic.

Materials

Paving

Finish is dependent on the context, but plain concrete sidewalks are most appropriate. More decorative finishes adjacent to other projects should be evaluated individually.

Lighting

Site lighting should be coordinated with building lighting to provide adequate coverage of walking surfaces. Avoid sharp contrasts of light that create glare and unsafe conditions. Use campus standard fixtures with full cut off luminaires.

Furniture

Trash/ recycling receptacles should be placed at key locations near confluence points. Benches and tables should be used at key locations for respite along longer paths or to focus key views. Bike parking is usually located within this typology and should be sited to correspond with specific building entrances and screened with landscape plantings to better integrate them into the campus landscape.

Planting

The planting within campus supportive landscapes should consist of a variety of evergreen and deciduous shrubs mixed with both lawn and groundcovers. Priority should be given to native species. Overhead canopy is important to provide scale and enclosure. Planting should be used to mitigate microclimate, creating shade and blocking winter winds. Where appropriate habitat and stormwater mitigation and infiltration should be incorporated.

Consider the incorporation of low-mow lawn on the periphery of this typology between the building and walks to increase the environmental benefits and maintain functionality. Compared to traditional lawn, low-mow lawns are more drought tolerant once established, require less fertilizer, and require less mowing.

In key areas and as scale dictates, perennials and occasional annual beds should be employed to draw attention to key features.

Maintenance Level

APPA Grounds Standard Level 3 for moderate-level maintenance.

Key Guidelines for Campus Supportive Landscapes

- Visual continuity.
- A cohesive suite of campus standard site furniture that relates to the overall campus landscape.
- Simplified material palette.
- Functional planting: creating habitat, wind breaks, shade, and stormwater storage.
- Lighting for safety and clear wayfinding.
- Integrate plant materials and landscape into bike parking areas to break up scale of space and better enhance visual experience.



Naturalized Landscapes

The UW–Madison campus is defined by its natural beauty. The Lakeshore Nature Preserve and nearly four miles of lakefront provide a wonderful natural setting for academic studies and research pursuits. Preserving and enhancing this natural landscape character is imperative to maintaining the essence of the UW–Madison campus.

The pre-settlement oak savanna landscape has long since been lost; however, fostering a naturalized aesthetic strengthens the connection to Lake Mendota and provides a natural visual transition from the formal open spaces of the historic campus to the forested Lakeshore Nature Preserve.

Naturalized landscapes are naturalistic in appearance, yet are designed and managed for human use (see Figures 36 & 37). They distinguish themselves from true natural or restored landscapes in that they are designed landscapes intended for human enjoyment. Despite their natural or unintentional look, they require significant management during establishment and periods of high use.

Naturalized landscapes are also working landscapes that provide a myriad of ecosystem services to the campus including stormwater management, wildlife habitat and carbon sequestration. They are didactic, providing a living laboratory for teaching and learning. Yet they are also human spaces, designed for recreation and enjoyment. Numerous studies have shown the restorative value of natural environments to humans.

The Naturalized Landscapes typology plan (Figure 38 Naturalized Landscapes Typology Plan) proposes expanding naturalized landscapes on the West Campus, Willow Creek corridor, and Observatory Hill.



Figure 36 Pedestrian Path through Short-Grass Meadow



Figure 37 UW–Madison Biocore Team Performing a Prescribed Burn



— Naturalized Landscapes



Figure 38 Naturalized Landscapes Typology Plan

General Design Considerations

Maintenance/Management

Naturalized landscapes are susceptible to failure due to the perception that they do not require maintenance. These landscapes require trained maintenance staff to identify which plants to keep and which to discard particularly during the first few years of establishment. Therefore, it is imperative that these naturalized landscapes be designed with simplified plant palettes and legible plant massings for easy identification.

This landscape typology is rated APPA Grounds Standard Level 4 for moderately low-level maintenance; however, those naturalized landscapes within the Lakeshore Nature Preserve also require systematic long-term management. Refer to the Lakeshore Nature Preserve Master Plan for more information and management recommendations.

Oak Savanna

- Oak savannas are magnificent natural environments. Large oak trees create an enormous sense of scale and space. Therefore, provide large and cohesive areas when restoring these landscapes and avoid fragmentation.
- Group oak trees in irregular and asymmetrical stands of trees. Their placement should be naturalistic, not formal or linear (see Figure 39). Provide a predominance of grasses with accent perennials for seasonal interest. Be mindful of microclimates created by the overstory canopy, planting shade tolerant grasses and sedges where appropriate.
- Always provide clear sight lines for safety. Tall grass prairie plants should be avoided or located away from paths of travel.
- Provide educational interpretive signage minimally to convey an important message yet not overwhelm the naturalized landscape character.
- Space and locate trees to create areas for use by classes and informal group discussion.
- Characteristic of the Midwest Landscape, Oak Savanna plantings shall strengthen the overall sense of place and re-engage the lake.

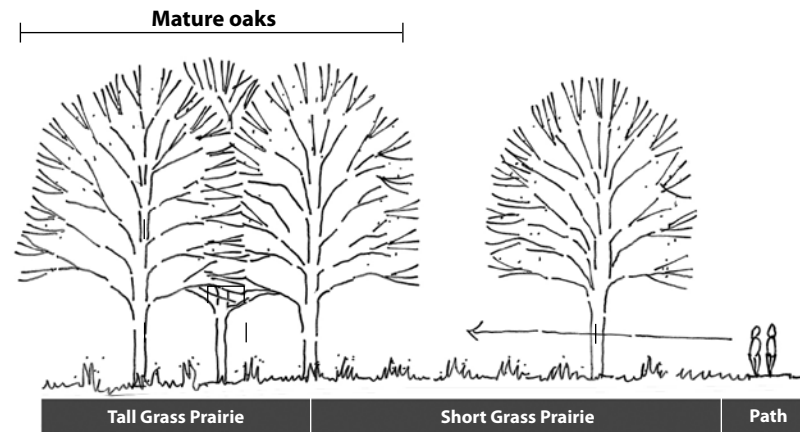


Figure 39 Oak Savanna Planting Concept Vignette

Short-Grass Prairie/Meadow

Large open expanses of traditional lawn on campus are ideal for conversion to short-grass prairies or meadows. These landscapes provide biodiversity, wildlife habitat, stormwater management, reduce mowing and water usage and are visually appealing when well executed.

- Provide a predominance of perennials and grasses with low shrub massings at the edges for landscape structure (Figure 40). Plant bloom times should be weighted less importantly in favor of year round interest with a focus on wildlife habitat and pollinator species (ecosystem services).
- Always provide clear sight lines for safety. Tall grass prairie plants should be avoided or located away from paths of travel.
- Provide educational interpretive signage where appropriate.
- Provide areas for classes or individuals to meet and/or gather.



Figure 40 Short-Grass Meadow Planting Concept Vignette

Constructed Wetlands

Construct wetland features in lowland areas to manage stormwater, provide wildlife habitat and ecosystem services, all while providing a naturalized landscape for student teaching and enjoyment. See Figure 41.

- Provide legible plant masses for simplified maintenance.
- Provide a defined edge as a indication to visitors that the naturalistic design is intentional.
- Incorporate wetland boardwalks to provide accessibility, enabling students of all abilities to engage the water's edge.
- Provide educational interpretive signage where appropriate and in consultation with FP&M staff.
- Provide areas for classes or individuals to meet and/or gather.

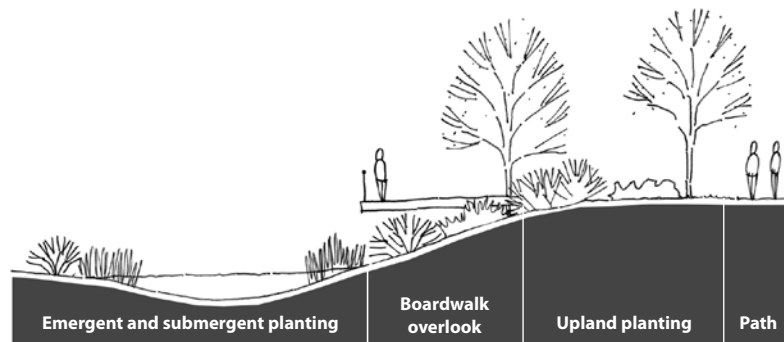


Figure 41 Constructed Wetland Planting Concept Vignette

Rain Gardens & Bioswales

Rain gardens and bioswales are dry detention basins and swales that detain and infiltrate stormwater. They are designed to withstand frequent inundation and drought. See Figure 42.

- Provide a simplified plant palette and legible plant masses for simplified maintenance.
- Provide a defined edge as a indication to visitors that the naturalistic design is intentional.
- The landscape form should respond to the campus landscape context.
- Provide educational interpretive signage where appropriate.
- Ensure area is designed to accommodate sediment removal and ease of access.

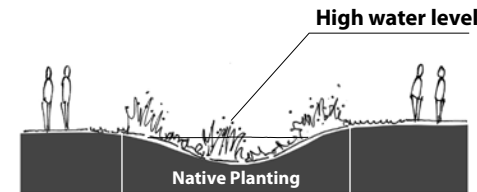


Figure 42 Rain Garden Planting Concept Vignette

Key Guidelines for Naturalized Landscapes

- Begin plant community building process with invasive removals and a simplified beginning plant palette and work in diversity over time.
- Apply “Cues to Care” principles to assist in adapting cultural expectations to recognize new landscape forms that include greater biodiversity and enhanced ecosystem services.
- Plant in irregular and asymmetrical plant massings; avoid symmetry, linear, or formal designs.
- Maintain large, contiguous landscapes; avoid fragmentation.
- Always provide clear sight lines for safety.
- Provide educational interpretive signage where appropriate and in consultation with FP&M staff.
- Along campus walks maintain a minimum 24 inch maintained edge condition along naturalized landscapes.
- Provide opportunities to engage and learn in these environments through the placement of site furnishings.

* Nassauer, Joan. Messy Ecosystems, Orderly Frames. Landscape Journal, Fall 1995.

Athletics & Recreation

Athletics and recreation are an important component of the collegiate environment. Universities are known for their recreation programs and their availability is directly linked to the students' success in academics.

UW–Madison is fortunate to have a diversity of these facilities, although the majority are located toward the West Campus due to available space (see Figure 44). This landscape typology plays a vital role in promoting physical and emotional well being for our campus community by providing the prerequisite open space needed for students, faculty, and staff to exercise and participate in team sports. These open spaces are reservable and intended primarily for active recreation (Figure 43).

Although the typology is a specialized landscape, the types of athletic fields and facilities vary greatly based on their intended level of uses.



Figure 43 Recreational Playing Fields



Figure 44 Athletics & Recreation Typology Plan



General Design Considerations

Campus athletics and recreation facilities fall into three categories: competition, dedicated, and recreational. Competition facilities include spaces like practice and competition fields for a particular NCAA sport. These are not typically used by the general student body or the public. Dedicated facilities are designed for specific sports, but do not limit use by other parties (like a baseball diamond or a sand volleyball court). Recreational fields are designed to handle a wide variety of sports and events. They are usually oversized to handle a wide range of sports at the same time.

Function

Some facilities have a singular purpose or sport, but the majority of fields and courts accommodate multiple activities. Fields should be designed to accommodate a variety of programs throughout the year. Artificial turf fields may afford year round use, while natural turf fields may allow for snow condition activities. Furthermore, basic site amenities such as benches, drinking fountains and bike parking shall be provided.

In addition fields can be used for larger events. Irrigation and utilities should be located to avoid temporary structures for these larger events.

Circulation

Sports fields and facilities are usually very large in scale and difficult to negotiate. Perimeter circulation is important to avoid disrupting activities. Intermediate paths between fields should be added to help direct users and spectators without impacting field uses and layout.

Materials

Furniture

Fixed furniture along the periphery of these spaces creates important gathering areas and places for storage. Trash and recycling receptacles should be placed at regular intervals and drinking fountains prominently located.

Lighting

Athletic and recreation spaces are often used long into the evening and require adequate lighting. Overhead lighting should be provided and stadium lighting accessible for appropriate fields. All lighting should strive to minimize spilling and adhere to Dark Sky Initiatives.

Planting

High quality, wear resistant turf should be used on all fields. Sod should be replaced as needed to avoid erosion and rutting. Soils and drainage should be amended to allow for proper drainage, as wet fields increase damage to turf and can cause injuries. Trees should be used to provide shade for spectators along the periphery.

Artificial or reinforced turfs can be used in specialized cases where excessive wear is expected. Irrigation, drainage, and stormwater management should still be provided.

Plantings should be focused at the entrances and special nodes along with functional uses such as screening and/or shading.

Maintenance Level

Despite the extremely limited plant palette, sports fields require a very high level of maintenance. Fields should be mowed weekly, aerated regularly and resodded or seeded when bare areas become evident.

APPA Grounds Standard Level 2 or 3 depending upon the frequency of use and level of play.

Key Guidelines for Athletics & Recreation

- Design for programming flexibility.
- Lighting is required for extended hours.
- Maintain large, contiguous landscapes; focus planting and site amenities at nodes, entrances, and gathering areas.
- Provide adequate drainage to minimize ponding and extra wear.



Streetscapes

A significant portion of the UW–Madison campus is experienced by walking or traveling along campus and city streets. This is particularly true on the South Campus where the urban grid dominates and organizes the landscape experience of campus. A primary guiding principle of the Landscape Master Plan is to create walkable streetscapes that are enjoyable for pedestrians and encourage walking (Figure 45). This means designing complete streets that in addition to safely facilitating vehicular movement through campus, also designs for walking and other non-motorized means as equivalent forms of transportation.

The streetscape typology plan (Figure 46 Streetscapes Typology Plan) illustrates the streetscape network on campus. Its hierarchy and design are further explored in the following pages.



Figure 45 University Avenue Streetscape, Wisconsin Institute for Discovery



Streetscapes



Figure 46 Streetscapes Typology Plan

Streetscape Hierarchy

As with the campus open spaces, some streets play a more significant role in introducing visitors to campus and facilitating movement. This is due to geography and the regional roadway network. It is important that the design of the streetscapes respond to these patterns of movement. A primary goal is to increase the urban tree canopy on campus. By establishing a hierarchy of streetscapes the university can strategically plan for and maintain the university streetscapes throughout campus (see Figure 47). Four streetscape typologies are proposed:

Streetscape Typologies:

1. Gateway Streets
2. Primary Streets
3. Secondary Streets
4. Green Streets

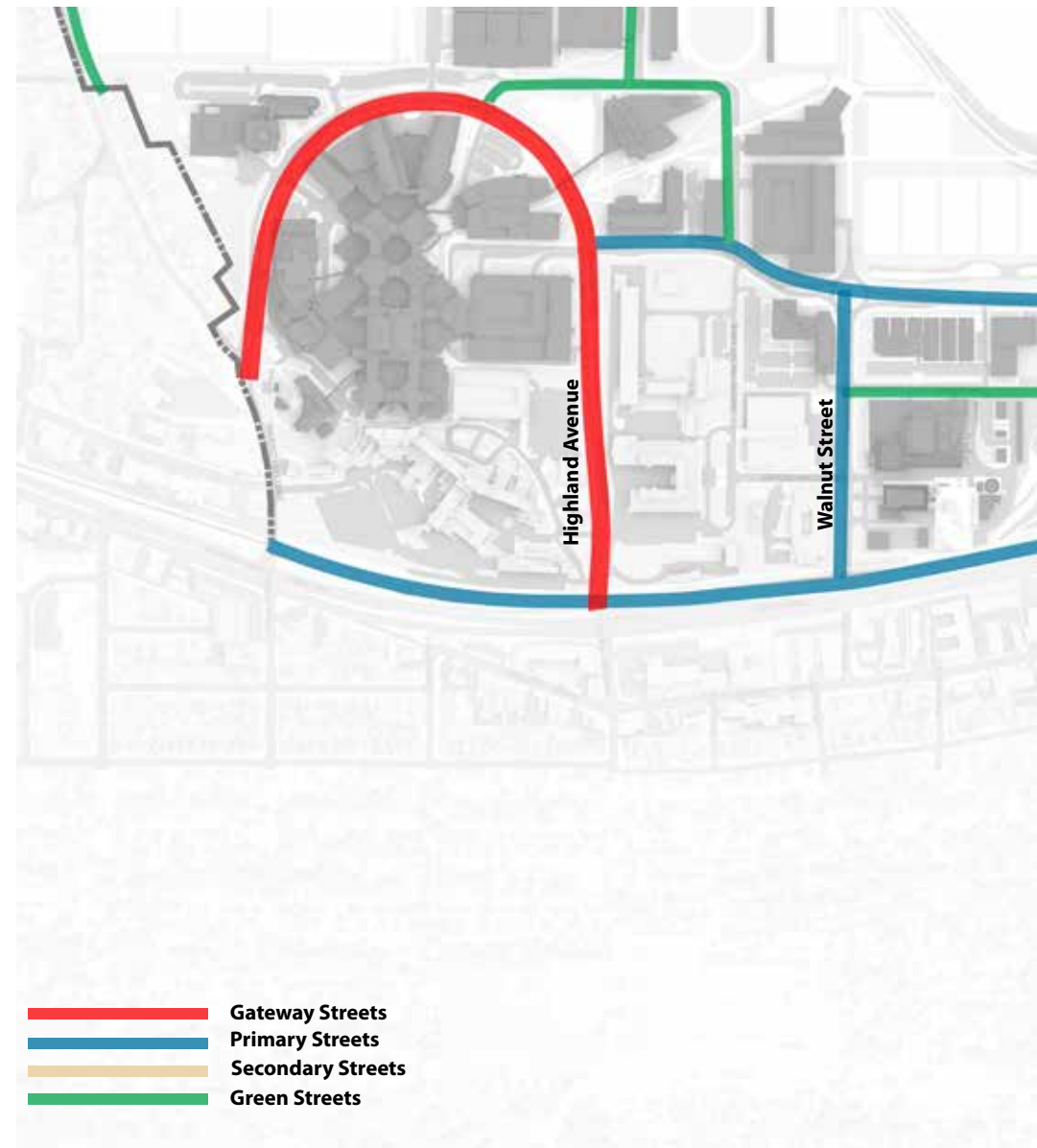
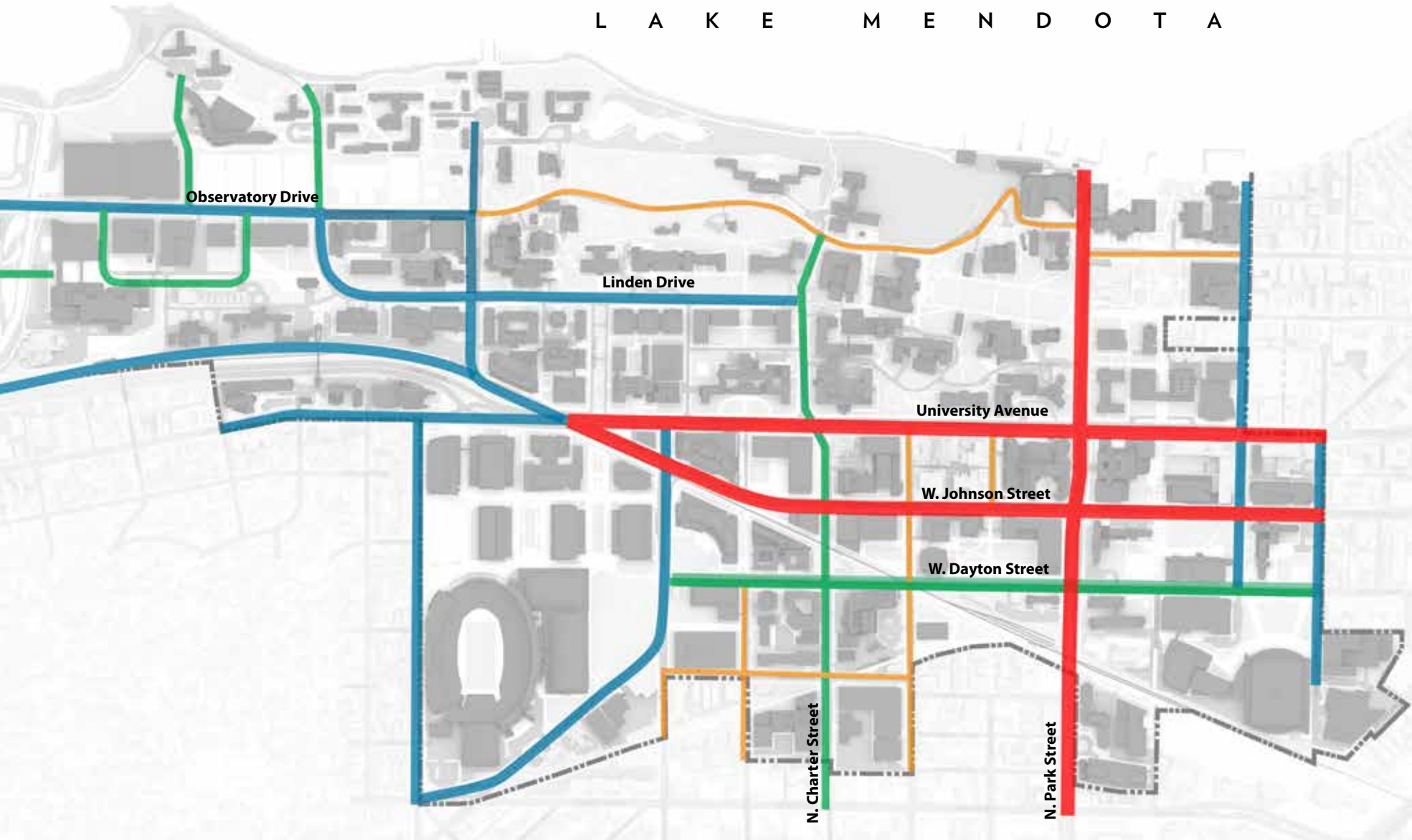


Figure 47 Streetscape Hierarchy Plan

L A K E M E N D O T A



Gateway Streets

Gateway streets represent the front door to the university. Examples include University Avenue and N. Park Street. These streets are regional traffic routes with significant daily traffic and are key opportunities to make a great first impression on campus. These streets should receive the most intensive planting and be well-maintained year-round. Figure 48 illustrates a typical Gateway Street profile.

Recommendations

- Sidewalks should be a minimum of 10 feet in width to accommodate high levels of pedestrian traffic.
- Provide street trees along blocks that average a spacing of 30 feet on-center. A minimum of 3 shade tree species per block are to be provided.
- The street terrace shall have a 6” high raised curb planter minimum 8 feet in width. Where this dimension cannot be accommodated, trees in grates shall be provided.

- Provide a robust understory of 5-7 groupings of plantings. Maintain sight lines for safety.
- Provide a continuous tree-pit soil volume with a minimum of 1,200 cubic feet per tree.
- Plantings need to be able to handle snow removal, stormwater inundation, and deicing agents.



Figure 48 Typical Gateway Street Section

Primary Streets

Primary streets are key transportation corridors through campus. Examples include Observatory Drive, Linden Drive, and Monroe Street. These streets are highly used by students, faculty and staff on a daily basis to navigate campus. Figure 49 illustrates a typical Primary Street profile.

Recommendations

- Sidewalks to be a minimum of 8 feet in width to accommodate high pedestrian traffic.
 - Provide street trees at an average spacing of 30 feet on-center. A minimum of 3 shade tree species per block are to be provided.
 - The street terrace shall have a raised planter minimum 8 feet in width. Where this dimension cannot be accommodated, trees in grates shall be provided.
 - Provide simple masses of understory plantings or turf with accent plants.
- Provide a continuous tree-pit soil volume with a minimum of 1,200 cubic feet per tree.
 - Plantings need to be able to handle snow removal, stormwater inundation, and deicing agents.

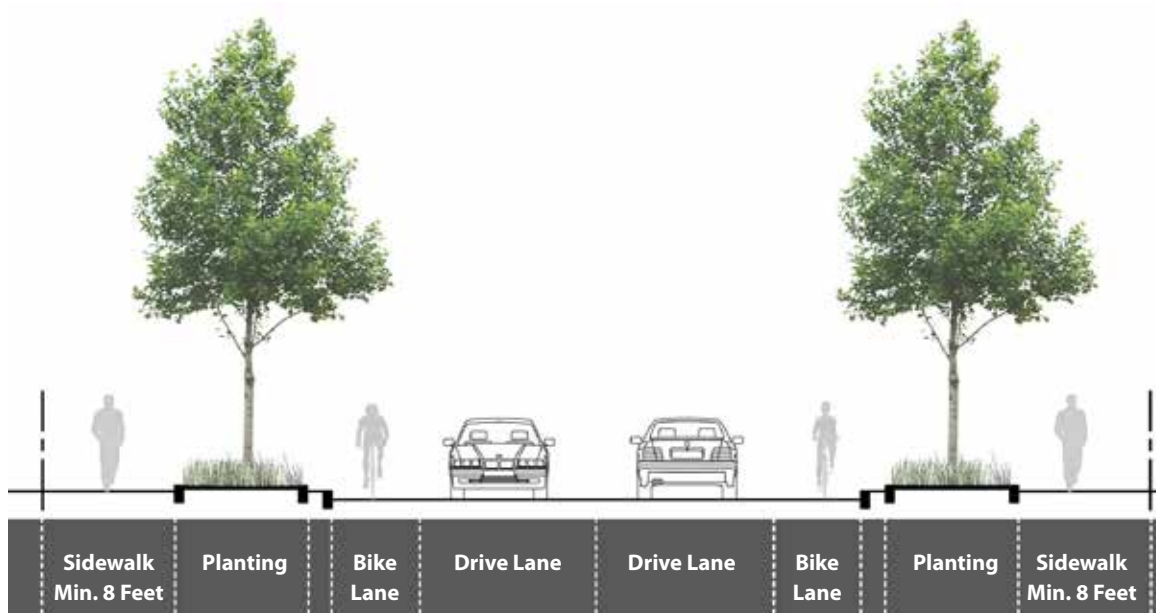


Figure 49 Typical Primary Street Section

Secondary Streets

Secondary streets are local neighborhood streets. Examples include N. Mills Street and Spring Street. These streets are characterized by slower traffic speeds and narrower right-of-ways. Figure 50 (below) illustrates a typical Secondary Street profile.

Recommendations

- Sidewalks to be a minimum of 8 feet in width.
- Provide street trees along blocks that average a spacing of 30 feet on-center. A minimum of 3 shade tree species per block are to be provided.
- The street terrace will vary by campus context. In the urban south campus, provide street trees in tree grates or tree pavers. On the west campus, lawn, low-mow fescue, or other durable groundcovers shall be used. Refer to the Landscape Master Plan for more information.
- Provide a continuous tree-pit soil volume with a minimum of 1,200 cubic feet per tree.
- No bike racks or moped stalls in terrace areas.

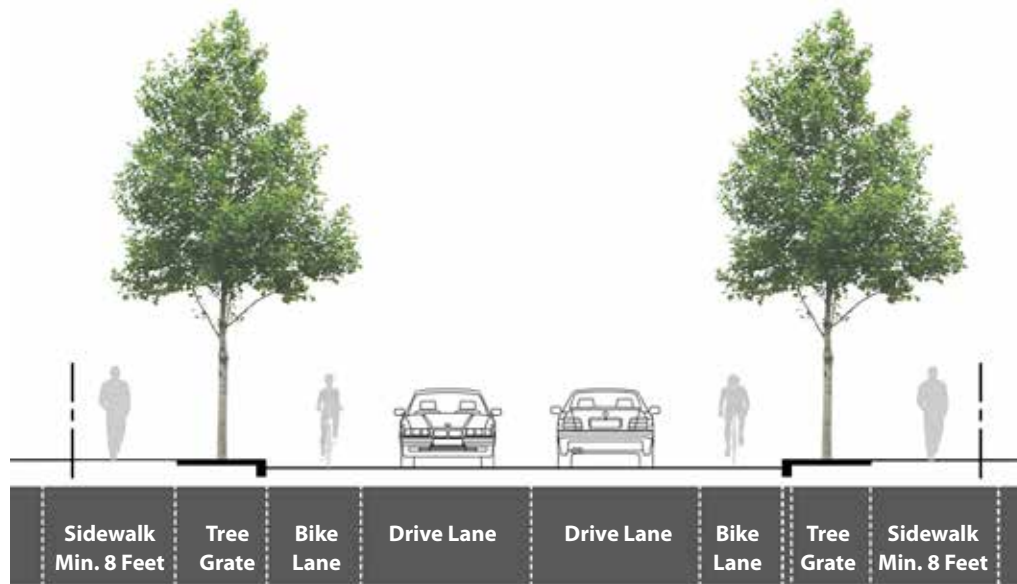


Figure 50 Typical Secondary Street Section

Green Streets

Green Streets represent an alternative approach to managing stormwater through the integration of green infrastructure Best Management Practices. N. Charter Street and W. Dayton Street are proposed as pilot projects on campus in cooperation with the City of Madison. By integrating infiltration planters, permeable paving, and drought tolerate planting, Green Streets infiltrate stormwater into the ground, recharging groundwater and reducing the peak discharge rate into the storm sewer. Figure 51 (below) illustrates a typical Green Street profile.

Recommendations

- Sidewalks to be a minimum of 6 feet with a recommended 8 feet in width to accommodate high pedestrian traffic.
- Provide street trees along blocks that average a spacing of 30 feet on-center. A minimum of 3 shade tree species per block are to be provided.
- The street terrace shall have infiltration planters a minimum 8 feet in width.

Raised curbs shall define the planter edge while curb inlets shall be provided to channel stormwater into the planter.

- Consider permeable paving in low traffic pedestrian areas.
- Provide simple masses of understory plantings with accent plants in infiltration planters.
- Provide a continuous tree-pit soil volume with a minimum of 1,200 cubic feet per tree.
- Plantings need to be able to handle snow removal, stormwater inundation, and deicing agents.
- The design and implementation of green infrastructure is rapidly changing, industry standards that support innovative engineering/landscape architecture practices shall be favored.

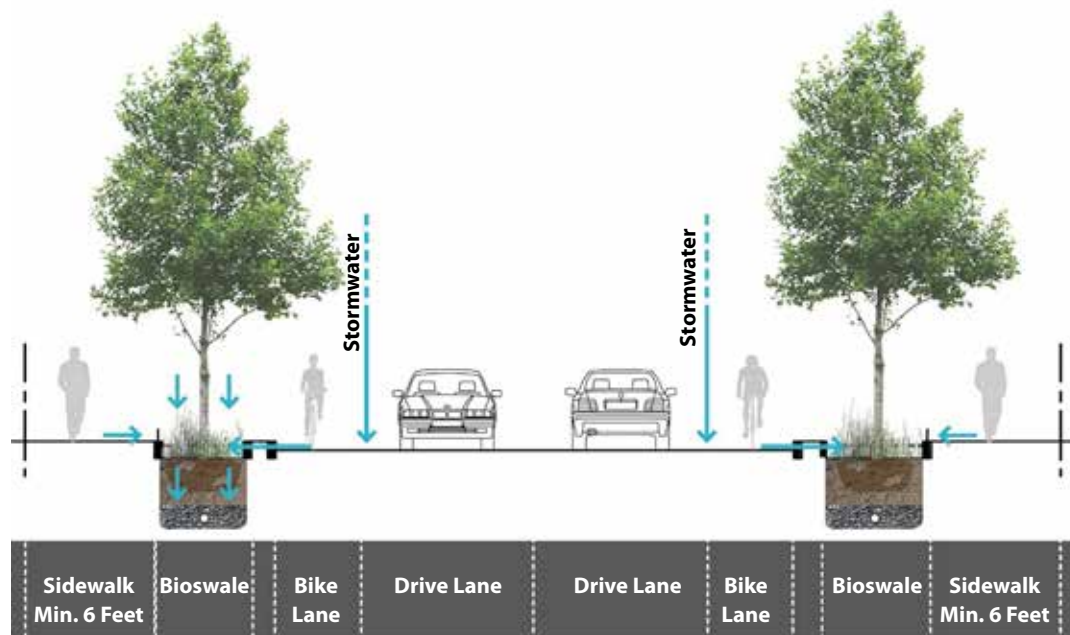


Figure 51 Typical Green Street Section

Gateways

Campus Gateways signify the entry to campus. Significant gateway opportunities are proposed at critical nodes along gateway streets or at key viewsheds on campus (Figure 54). These gateway elements create a lasting first impression and act as primary wayfinding elements on campus.

Recommendations

- Provide seasonal annual and bulb displays to accentuate key entry points. Spring, fall and winter displays corresponding with the academic calendar should be prioritized (Figures 52 & 53 right).
- Make a distinguished statement. Simple mass plantings composed of regionally appropriate species to reinforce our sense of place should be used in creating identifiable and appropriate displays. See campus precedent image at right.
- Use annual planters displays in areas where space is restricted, such as University Avenue and other south campus streetscapes.

Campus Gateways

- 1 University Avenue / N. Lake Street
- 2 University Avenue / N. Park Street
- 3 W. Johnson Street at Henry Mall
- 4 Monroe Street at Camp Randall
- 5 N. Charter Street / Regent Street
- 6 N. Park Street / Regent Street
- 7 Walnut Street / Observatory Drive
- 8 Highland Avenue at UW Hospital



Figure 52 UW–Madison Gateway Precedent



Figure 53 Streetscape Gateway Annual Planting



Figure 54 Campus Gateways Plan



Parking & Service

Parking and service areas are vital to the accessibility and function of a campus. Service areas include loading docks and other access zones required for deliveries and operations of the building. Traditionally not considered an important typology, these spaces occupy a significant footprint on campus and should be designed with care to avoid conflicts and take advantage of potential opportunities.

Although this typology is generally considered utilitarian, there is an opportunity to create attractive welcome sequences for visitors and campus users alike (see Figure 55). Most of these facilities have little area available for planting and are predominantly designed for vehicular circulation.

Parking is necessary for faculty and staff, but these large paved areas interrupt pedestrian oriented campus, contribute to stormwater runoff, and require additional staffing and maintenance. Through careful design these spaces can blend into the surrounding areas and provide valuable service to the university. Figure 56 Parking & Service Typology Plan presents the Parking & Service typology plan for campus.



Figure 55 Vertical Screening and a Low-Maintenance Plant Palette



Figure 56 Parking & Service Typology Plan



General Design Considerations

Placement

Proposed projects should always consider parking ramps or underground parking first as the preferred method of supplying parking on campus, preserving vital open space for pedestrian use. Where budgets do not allow for this, new parking lots should be located away from the lake and outside of primary campus viewsheds indicated in the Landscape Master Plan.

Proposed projects must also plan early during the design phase for service and access to the building. Consider dedicated service drives that avoid pedestrian zones when possible. Service areas should avoid major pedestrian paths and have a grade differential to ease with screening. Where conflicts occur between different modes of travel paving cues should be employed to remind vehicles.

It is important to plan for adequate snow storage early in the design of both parking lots and service areas.

Screening

When new parking lots are constructed on campus, provide significant landscape islands for planting to visually screen and buffer cars. A 20-foot minimum island width is recommended to provide adequate soil volume for healthy trees. Mound the landscape and plant trees with understory shrubs for verticality. Shade trees will also ameliorate the micro-climate and reduce the heat island effect.

Loading areas should be architecturally and/ or vegetatively screened. Use a mix of evergreen and deciduous material to screen during all seasons.

Green Infrastructure

Parking lots are a non-point source of heavy metals, petroleum runoff, and salt that mixes with stormwater during rain events. Integrating green infrastructure strategies will help treat the stormwater at its source and avoid more intensive treatment down stream. Depressed planting areas that absorb stormwater like bioswales and rain gardens can effectively treat a number of stormwater contaminants while reducing the peak flows.

Design and retrofit of parking lots should consider both the “Screening” and “Green Infrastructure” design recommendations. While they appear counter to the goals of each, a hybrid solution may allow for both to occur within the same facility.

Materials

Paving

Generally concrete or asphalt. Textured paving or pavers should be used where service and parking areas correspond with pedestrian pathways to announce the shared space and slow traffic. Consider areas to implement pervious pavement to manage stormwater.

Lighting

Lighting should follow campus standards for parking lots and Crime Prevention Through Environmental Design (CPTED) recommendations. Parking lot lighting should be emphasized on pedestrian circulation routes for safety, while avoid glare for drivers.

Planting

Use resilient plants with salt and moisture tolerance. Perimeter plants should provide mid-level screening, blocking headlights and visually breaking up parking bays. Taller shrubs should not be used to avoid creating hiding places or crime opportunities. Consider snow loads during the winter months due to plowing and do not obstruct areas intended for snow storage.

Strong regular overhead canopy will provides much needed shade. Canopy cools parked cars, reduces heat island effects, blocks views from surrounding buildings and reduces stormwater.

The scale of the space shall be considered when proposing a monoculture planting, understanding that monocultures may be appropriate to smaller scale spaces.

Maintenance Level

APPA Grounds Standard Level 3 for moderate-level maintenance.

Key Guidelines for Parking & Service

- Provide verticality through vegetation and berming to visually screen cars. A landscape island width of 20-feet is recommended.
- Provide shade trees to moderate micro-climate and reduce the heat-island effect.
- Plant low maintenance, drought, and salt tolerant plant materials.
- Maintain sight triangles for safety.
- Integrate green infrastructure where appropriate to manage stormwater close to its source.
- Provide for adequate snow storage early in the design.



UW–Madison Campus Planting

Design Intent

- On a mature campus, the spaces between buildings become even more important to the campus aesthetic than the buildings themselves. Thus, the attitude toward landscape design at UW–Madison must be one which fosters a high degree of visual excellence.
- Plantings should strive to enhance the experience of and expand the use of outdoor spaces by students, faculty, staff and visitors.
- Promote plant diversity for teaching purposes and sustainability.
- Enhance landscape biodiversity and ecological connectivity throughout the building site, campus, neighborhood, and community. Increase areas of multi-tiered vegetation and ecological value.
- The landscape should be viewed as fabric that knits together campus to form a cohesive yet diverse experience. It unites disparate architectural, programmatic, and infrastructure elements together.
- Plants should be selected and chosen to enhance the aesthetics, educational goals, ecosystem services, and sustainability goals of the campus landscape master plan.
- Landscape designs shall address and enhance natural systems, human needs, campus ideals, educational opportunities and human behavior.
- Plantings have multifunctional roles including: stormwater reduction, improving air quality, wildlife habitat, educational tools, psychological benefits, carbon sequestration, erosion control, slope stabilization, and urban heat island effects reduction.
- Recommendations strive to increase the quantity, density, diversity, and distribution of tree canopy, understory, shrub, groundcover, and herbaceous layers throughout campus.
- Embrace a Midwestern landscape aesthetic that fosters a greater sense of

place and connection to the land.

- Consideration of succession planting amongst our historic and older landscapes to reduce stark visual voids when these trees no longer exist.
- Planting beds should be designed to create plant massings instead of individual plants that are not allowed to touch. It is desirable to have fuller, smaller planting beds rather than larger, sparsely planted areas.
- Plantings have a natural growth character and form that should be encouraged and allowed. Plantings should be allowed to mass together, rather than be highly maintained to appear as individual plantings.

Plant Material Standards

Plant material shall meet current green industry standards including the American National Standards Institute (ANSI) Z60.1 American Standard for Nursery Stock. ANSI Z60.1 establishes standards for measuring plants, specifying and stating the size of plants, proper plant proportions and root ball sizes. The following sections shall be adhered to:

- Section 1: General Standards
- Section 2: Shade and Flowering Trees
- Section 3: Deciduous Shrubs
- Section 4: Coniferous Evergreens
- Section 5: Broadleaf Evergreens
- Section 6: Roses
- Section 7: Young Plants
- Section 8: Fruit Trees
- Section 9: Small Fruits
- Section 10: Understock
- Section 11: Seedling Trees and Shrubs
- Section 12: Bulbs, Corms, and Tubers
- Section 13: Herbaceous Perennials, Ornamental Grasses, Groundcovers, and Vines.

Prohibited Plants

The UW–Madison “Do Not Plant” list (Figure 58 following page) is supplied with the most current information at the time of this printing, but not inclusive as natural ecosystems are living organisms that change through time. Rather, the list is derived from the Wisconsin Department of Natural Resources invasive species inventory, the Invasive Plants Association of Wisconsin (IPAW), and the UW–Madison Department of Landscape Architecture, Campus Planning and Landscape Architecture and UW–Madison Grounds Department. The ‘Do Not Plant’ list identifies terrestrial, aquatic, and wetland species both ‘regulated’ and ‘non-regulated’ that shall not be specified or installed on campus as well as currently over planted species on campus. Upon special circumstances (historic significance, research request, educational merit, etc.), deviation from the lists may occur with consultation and coordination with UW–Madison landscape architecture staff, Grounds department, and/or ecological restoration professionals.

References:

- Wisconsin Department of Natural Resources invasive species list: www.dnr.wi.gov/topic/invasives/ (last update May 1, 2015)
- Invasive Plants Association of Wisconsin: www.ipaw.org

Street Trees

- Refer to the UW–Madison Preferred Street Tree List for tree selection (Figure 57 right).
- Street tree pits should be designed to optimize the future health of the tree, allowing it to reach its full potential. A minimum of 1,200 CF of soil shall be provided to each street tree.
- Utility lines should be located appropriately to avoid existing or future conflict with trees. The landscape plan and utilities plan shall be coordinated at the pre-design phase of the project, to minimize locating new trees within 10 feet of utility main lines.
- Streetscape trees shall contain a diversity of no more than two of the same species planted within succession. Street trees shall have consistent form per corridor and a variety of corridor species across campus.
- Street tree selections should be based on the following list of preferred street trees. As natural ecosystems are living organisms that change through time, this list may need to be reevaluated and updated to respond to current horticultural recommendations.

Figure 57 UW–Madison Preferred Street Tree List

Botanical Name	Common Name	Wisconsin Natives
<i>Acer miyabei</i> 'Morton'	State Street Maple	No
<i>Acer rubrum</i> 'Franksred' Red Sunset	Red Maple	Yes
<i>Acer x freemanii</i> 'Jeffersred'	Autumn Blaze Maple	Yes
<i>Catalpa speciosa</i>	Northern Catalpa	Yes
<i>Celtis occidentalis</i> 'Chicagoland'	Hackberry	Yes
<i>Ginkgo biloba</i> 'Autumn Gold'	Ginkgo	No
<i>Gleditsia triacanthos</i> var. inermis	Thornless Honeylocust	Yes
<i>Gymnocladus dioicus</i> 'Espresso'	Kentucky Coffeetree	Yes
<i>Nyssa sylvatica</i>	Black Gum	Yes
<i>Platanus x acerifolia</i> 'Morton Circle'	Exclamation London Planetree	No
<i>Tilia americana</i> 'Redmond'	Redmond Linden	No
<i>Phellodendron</i> 'Longenecker'	Cork Tree	No
<i>Quercus bicolor</i>	Swamp White Oak	Yes
<i>Quercus ellipsoidalis</i>	Northern Pin Oak	Yes
<i>Quercus shumardii</i>	Shumard's Oak	No
<i>Quercus macrocarpa</i>	Bur oak	Yes
<i>Quercus rubra</i>	Northern Red Oak	Yes
<i>Robinia pseudoacacia</i> 'Chicago Blues'	Chicago Blues Black Locust	Yes
<i>Ulmus</i> 'Morton'	Accolade Elm	No
<i>Ulmus</i> 'Morton Glossy'	Triumph Elm	No
<i>Ulmus americana</i> 'Jefferson'	Jefferson Elm	No
<i>Ulmus americana</i> 'Princeton'	American Elm	No

City of Madison preferred street trees are also acceptable. Refer to the current City of Madison preferred street tree list.

Figure 58 UW–Madison ‘Do Not Plant’ List

Latin Name	Common Name
<i>Acer campestre</i>	Hedge Maple
<i>Acer ginnala</i>	Amur Maple*
<i>Acer glutinosa</i>	European Black Alder
<i>Acer negunda</i>	Boxelder
<i>Acer platanoides</i>	Norway Maple*
<i>Acer saccharinum</i>	Silver Maple
<i>Akebia quinata</i>	Five-leaf Akebia
<i>Alianthus altissima</i>	Tree-of-Heaven
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Ampelopsis brevipedunculata</i>	Porcelain Berry
<i>Arctium minus</i>	Common Burdock
<i>Berberis thunbergii</i>	Japanese Barberry*
<i>Bromus inermis</i>	Smooth Brome
<i>Campanula rapunculoides</i>	Creeping Bellflower
<i>Chasmanthium latifolium</i>	Northern Sea Oats
<i>Cirsium arvense</i>	Canada Thistle
<i>Clelastrus orbiculata</i>	Oriental Bittersweet*
<i>Convallaria majalis</i>	Lily of the Valley
<i>Convolvulus arvensis</i>	Field Bindweed
<i>Coronilla varia</i>	Crown-vetch
<i>Crepis tectorum</i>	Hawksbeard
<i>Daucus carota</i>	Queen Annes Lace
<i>Dipsacus laciniatus</i>	Cut-Leaved Teasel
<i>Dipsacus sylvestris</i>	Common Teasel
<i>Eleagnus angustifolia</i>	Russian Olive
<i>Eleagnus pungens</i>	Thorny Olive
<i>Eleagnus umbellata</i>	Autumn Olive*
<i>Elytrigia repens</i>	Quackgrass
<i>Epipactis helleborine</i>	Helleborine Orchid
<i>Euonymus alata</i>	Winged Burning Bush
<i>Euonymus fortunei</i>	Wintercreeper
<i>Euphorbia cyparissias</i>	Cypress Spurge
<i>Euphorbia esula</i>	Leafy Spurge
<i>Festuca elatior</i>	Tall Fescue
<i>Filipendula ulmaria</i>	Queen of the Meadow
<i>Frangula alnus</i>	Glossy Buckthorn

Latin Name	Common Name
<i>Fraxinus</i>	All Ash species (including blue)
<i>Glechoma hederacea</i>	Creeping Charlie
<i>Hedera helix</i>	English Ivy
<i>Hemerocallis fulva</i>	Orange Daylily
<i>Hesperis matronalis</i>	Dame's Rocket
<i>Hypericum perforatum</i>	St. John's Wort
<i>Juniperus scopulorum</i>	Rocky Mountain Juniper
<i>Iris pseudacorus</i>	Yellow Iris
<i>Ligustrum obtusifolium</i>	Blunt-leaved privet
<i>Ligustrum sinense</i>	Chinese Privet
<i>Lonicera bella</i>	Showy Bush Honeysuckle*
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>Lonicera maackii</i>	Amur Honeysuckle
<i>Lonicera morrowii</i>	Morrow's Honeysuckle*
<i>Lonicera standishii</i>	Standish's Honeysuckle
<i>Lonicera tatarica</i>	Tartarian Honeysuckle*
<i>Lotus corniculatus</i>	Bird's-foot Trefoil
<i>Lysimachia nummularia</i>	Moneywort
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Melia azedarach</i>	China Berry
<i>Melilotus officinalis</i>	Yellow Sweet Clover
<i>Mililotus alba</i>	White Sweet Clover
<i>Miscanthus sinensis</i>	Silver Grass
<i>Morus alba</i>	White Mulberry
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil
<i>Pastinaca sativa</i>	Wild Parsnip
<i>Paulownia tomentosa</i>	Princess Tree
<i>Phalaris arundinacea</i>	Reed Canary Grass
<i>Phellodendron amurense</i>	Amur cork tree (female only invasive)
<i>Phragmites australis</i>	Common Reed Grass
<i>Pinus nigra</i>	Austrian Pine
<i>Pinus sylvestris</i>	Scotch Pine*
<i>Poa compressa</i>	Canada Bluegrass
<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Populus alba</i>	White Poplar*
<i>Ranunculus ficaria</i>	Lesser Celandine*

Latin Name	Common Name
<i>Rhamnus cathartica</i>	Common Buckthorn*
<i>Robinia pseudoacacia</i>	Black Locust
<i>Rosa multiflora</i>	Multiflora Rose*
<i>Rumex acetosella</i>	Sheep Sorrel
<i>Saponaria officinalis</i>	Soapwort
<i>Solanum dulcamara</i>	Climbing nightshade
<i>Sorbus aucuparia</i>	European Mountainash
<i>Sorghum halepense</i>	Johnsongrass
<i>Tanacetum vulgare</i>	Tansy
<i>Tilia cordata</i>	Littleleaf Linden (especially Greenspire)
<i>Trifolium pratense</i>	Red Clover
<i>Typha angustifolia</i>	Narrow-leaved Cattail
<i>Typha x glauca</i>	Hybrid Cattail
<i>Ulmus pumila</i>	Siberian Elm*
<i>Viburnum lantana</i>	Wayfaringtree Viburnum
<i>Viburnum opulus</i>	European Cranberrybush Viburnum
<i>Vinca minor</i>	Common Periwinkle*
<i>Vincetoxicum nigrum</i>	Black Swallow-wort*
<i>Wisteria sinensis</i>	Chinese Wisteria

* Derived from UW–Madison 2005 Do Not Plant List.
 This list is based on regulated and non-regulated plants as identified by the WDNR and IPAW, and UW–Madison FP&M overplanting, maintenance, and experience with plant success.

Figure 59 UW–Madison Preferred Green Street Planting List

Plant Type	Botanical Name	Common Name	Wisconsin Natives
Tree	<i>Acer rubrum</i> 'Franksred' Red Sunset	Red Maple	Yes
Tree	<i>Celtis occidentalis</i>	Hackberry	Yes
Tree	<i>Nyssa sylvatica</i>	Black Gum	Yes
Tree	<i>Quercus bicolor</i>	Swamp White Oak	Yes
Tree	<i>Platanus x acerifolia</i> 'Morton Circle'	Exclamation London Planetree	No
Grass/Sedge	<i>Carex vulpinodea</i>	Fox Sedge	Yes
Grass/Sedge	<i>Panicum virgatum</i> 'Shenandoah'	Switch Grass	Yes
Grass/Sedge	<i>Schizachyrium scoparium</i>	Little Bluestem	Yes
Grass/Sedge	<i>Sporobolus heterolepis</i> 'Tara'	Prairie Dropseed	Yes
Perennial	<i>Iris</i> 'Caesar's Brother'	Siberian Iris	No
Perennial	<i>Penstemon digitalis</i> 'Husker Red'	Beardtongue	Yes

Green Streets

Green Streets are corridors that provide multiple benefits including improved water quality, reduced runoff, and absorb carbon from the environment. These improvements are achieved by integrating treatment of stormwater through natural processes.

- Reduce the width of pavement to increase the opportunities for infiltration and planting. The use of bumpouts and enlarged corners increases the areas for interventions and improves the pedestrian experience while calming traffic.
- A variety of swales, detention, and retention plantings filter fine particles, pollutants, and infiltrate stormwater reducing the quantity of runoff while improving water quality.
- Tree canopy reduces runoff, improves air quality, and cools pavements, in addition to providing valuable urban wildlife habitat.
- Refer to Figure 59 for preferred Green Street plants.

Definitions

Local-genotype: A population within a species that has a specific genetic makeup naturally adapted to a specific region. This means the genotype is indigenous to the area and is acclimated to Wisconsin's rainfall, temperature ranges, altitude, diseases, pests, and predation.

Native: Any plant that occurs or grows naturally within a specific region prior to European settlement.

Cultivar: A plant seed strain or clone selected and grown for certain desirable characteristics. These characteristics often do not support genetic diversity and are not representative of our wild-plant populations. Many cultivars lack ample nectar or pollen for reproduction and feeding.

Native: A cultivar and/or hybrid of a native species. The beneficial qualities of such plants may or may not be supportive of the campus planting practices.

Forb: Any herbaceous plant that is not a graminoid, usually with obvious flowers.

Graminoid: A family of species containing subgroups such as: sedges, rushes, and grasses.

Neonicotinoid: A class of systemic insecticides that are especially lethal to invertebrates, like insects (bees in particular).

Invasive: A species that is non-native to an ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Hybrid: A plant that has been cross bred with another plant to create advantageous traits or reduce less advantageous traits. Naturally occurring hybrids (i.e. *Amelanchier x grandiflora*) are acceptable as planting introductions. Human made hybrids (i.e. *Coreopsis x 'Moonbeam'*) are less desirable due to the unknown origin of the parent genotype and overall tendency to reduce genetic diversity in the environment, but may be useful in difficult environments like along street terraces.

Design & Maintenance Guidelines

Design and maintenance are not mutually exclusive and need to be viewed in the context of each other when planning and implementing landscapes on campus. All campus landscapes require design that is appropriate to the anticipated level of maintenance. Design is necessary to ensure the landscape goals are being met and that a visually cohesive and environmentally diverse campus setting is achieved. A critical aspect to design of the campus landscape relates to the understanding of the physical and fiscal realities necessary to ensure a 'successful' end product that meets the needs of our faculty, staff and students.

Campus landscapes require regular maintenance to preserve the character and function for the many future classes, visitors and faculty that will use them. Maintenance is imperative to achieve the campus environment visions: "To use the campus as a living laboratory of stewardship in which we discover, teach, and apply knowledge that safeguards the environment, preserves quality of life, and maintains fiscal responsibility." Maintenance procedures and intervals will vary greatly based on the character of the space, the planting regime and materials.

Below are a series of goals and guidelines for design and maintenance of the UW–Madison Landscape. Also included is the APPA guide for maintenance prioritization based on level of importance. Refer to the landscape typologies for the appropriate maintenance level.

Goals:

1. Sustainable Planting
 - Goal: Design and Maintenance
 - Goal: Reduced Input Turf Management
 - Goal: Create Resilient Plant Communities
 - Goal: Utilize Plant Assessment Schedule
 - Goal: Minimize and Focus Use of Exotic Plant Material
2. Reducing Synthetic Inputs
 - Goal: Compost and Use it
 - Goal: Improve Soils
 - Goal: Employ Integrated Pest Management
 - Goal: Use Targeted Pest Eradication
 - Goal: Move Toward Chemical free approach
3. Better Water
 - Goal: Irrigation for Efficient Water Use
 - Goal: Provide Riparian and Aquatic Buffers
 - Goal: Increase Pervious Pavement Surfaces
 - Goal: Manage Rain Water Through Natural Systems
 - Goal: Manage Snow Removal and Chloride Use
4. Native Planting
 - Goal: Preserve Natural Areas
 - Goal: Invasive Removal Strategy
 - Goal: Prioritize Native Plants

* UW–Madison Sustainability Initiative Task Force Final Report, October 2010

Goal: Design & Maintenance

Sustainable Planting

All plantings should be designed with aesthetics in mind, but still need to function sustainably. All planting designs should be reviewed by UW–Madison FP&M and Grounds staff for water usage, fertilization and pest requirements, as well as eventual size and habit.

Considerations:

- Refer to APPA guide for maintenance frequency based on associated landscape typology.
- Provide aesthetic and structural considerations from conceptual designs to determine suitable plant materials.
- Review plans for alternative species that provide equivalent attributes, but have lower maintenance requirements.
- Require maintenance specifications be reviewed prior to bidding projects to determine level of maintenance to achieve.

Goal: Reduced Input Turf Management

Sustainable Planting

Turf grass is an important planting regime that is used throughout campus. It serves as a space for gathering and for recreation. Unfortunately, to maintain turf at a high level requires significant inputs.

By using the following recommendations, maintenance of turf areas can be more targeted, reducing the chemical used and the time invested.

Considerations:

- Refer to APPA guide for maintenance frequency based on associated landscape typology.
- Mow lawns at increased height to promote deeper root systems for drought tolerance.
- Aerate soil with hollow tine aerator on a regular schedule to reduce soil compaction and increase infiltration.
- Use mulching mowers to return clippings to turf for added nutrients.
- Use compost as a soil amendment to increase beneficial fungi and bacteria within the profile.
- Use low-mow turf and other lawn alternatives where appropriate to reduce inputs.



Prairie Crossing, Illinois

Goal: Create Resilient Plant Communities

Sustainable Planting

Using plants in the right combinations increases the aesthetics and reduces maintenance. Beneficial plant communities create areas with year round interest. These groupings reduce disease, increase drought tolerance, and attract beneficial insects. Finally, resilient communities of plants reduce weeds by filling voids that monocultures often create.

Considerations:

- Consider plant groupings with distinct levels: low, mid and high.
- Avoid monocultures in general, planting in groups mimics nature and allows plants to thrive at different times of year and microclimates.
- Plant variety reduces over all reliance on a single plant species to achieve success and reduces maintenance necessary by allowing plants to grow more naturally.



Goal: Utilize Plant Assessment Schedules

Sustainable Planting

Creating schedules for assessing specific species, plant types, and areas on campus documents problems and patterns. Recognizing these issues and documenting it creates an opportunity to minimize the use of unsuitable plants and reduce overall maintenance by creating a preventative care program.

Considerations:

- Create a database for plant and bed evaluations at different times of the year on the FP&M network.
- Record treatments and interventions in a database that is accessible to all maintenance and planning.
- Regular assessment / standardized assessment alerts staff to problems before they become serious and / or costly.



Goal: Minimize and Focus Use of Exotic Plant Material

Sustainable Planting

Not all plants create the same effect or are suited for all applications. Although native plants should be considered, some applications require plants that fill a very specific niche. Exotic, non-invasive plants could be used in areas where other plants are not suitable. There are a number of planting situations where the characteristics of our native species do not excel. This is also true of historical use of planting material on campus that is not native, that should not be discouraged from use. These non-native species assist in filling a niche or a cultural reference that would otherwise be a void.

Considerations:

- Define the aesthetic characteristic or effect desired.
- Create a plant list and review for aggressive spreading, excessive seeding, or noxious plants.
- Review locations for sensitive areas that are in close proximity.
- Regularly assess and replace if plants become a nuisance.



Goal: Compost and Use It

Reducing Synthetic Inputs

The university currently employs a composting program at the West Madison Agricultural Research Station. Consider expanding this program to the main campus.

Considerations:

- Divert all landscape waste for composting on campus. Include other waste streams where possible.
- Use compost as a soil amendment to increase beneficial fungi and bacteria within the profile.
- Avoid placing organic compost/mulch in areas that contribute to stormwater runoff thereby reducing phosphorus loading potential.
- Consider the practice of mulching perennial and grass plant debris in situ as an alternative to shredded hardwood bark mulch.



Goal: Improve Soils

Reducing Synthetic Inputs

Improving soils is one of the most efficient methods for reducing plant maintenance and ensuring overall landscape health. Additionally, well structured soils drain better and support a local wildlife.

Considerations:

- Test soil on a regular schedule for nutrients, organic matter, pH, CEC, physical composition, biotics and structure.
- Compare results to create a realistic treatment program.
- Replace soil surrounding building projects with uncompacted local topsoil mix and require compaction testing after completion. Refer to the UW Technical Guidelines for soil depth requirements and placement standards.
- Incorporate organic fertilizers and amendments.



Goal: Employ Integrated Pest Management

Reducing Synthetic Inputs

Pests from insects to bacteria to rodents can destroy a landscape. Even the most resilient plant communities are susceptible to stress and may become vulnerable to pest infestations.

Using an Integrated Pest Management (IPM) plan can reduce the pest damage without the using methods that are harmful to people and the environment. This strategy reduces the economic, health, and environmental risks associated with pest management.

Considerations:

- Use a combined approach that includes biological, cultural, physical and chemical tools to minimize pest related issues.
- Continue campus program of documenting and reporting chemical applications.
- Use assessment schedules to recognize problems before they become serious.
- Promote healthy growth through fertilization and cultural practices, such as proper plant spacing and density, that naturally reduce stress and the susceptibility of planting by minimizing the conditions in which pests need to live.
- Use chemical applications as last resort and minimize spray areas.



Goal: Targeted Pest Eradication

Reducing Synthetic Inputs

Pests like weeds and insects are inevitable and methods should be in place to monitor and treat. Using APPA or similar guidelines, acceptable levels of pests can be determined for each area.

A targeted approach avoids overuse of any method which can lead to resistance, health effects or unwanted damage.

Considerations:

- Identify the problem species and determine when/ or at what level to begin treating.
- Refer to the IPM for treatment strategies.
- Test small areas and use focused tools. Avoid broad spectrum tools that cause unwanted effects.
- Avoid chemicals like Neonicotinoids and other chemicals that can harm beneficial insects, plants, or animals.



Goal: Move Toward a Chemical Free Approach

Reducing Synthetic Inputs

Chemicals can be very effective for a wide variety of landscape applications, but often have collateral effects that outweigh the benefits. These effects often are cumulative and not well understood.

Moving campus toward a chemical free approach forces a culture of innovative approaches, while decreasing harmful impacts on natural areas, waterways, the soil biota, and the people in the area.

Considerations:

- Start reductions by eliminating chemicals from application in areas with the most potential for harmful impacts: within 50 feet of waterways and sensitive environments.
- Test multiple cultural and physical methods separately and together before using chemical fertilizers, herbicides or pesticides.
- Use University research capabilities to study and test new methods.



University of Chicago

Goal: Irrigation For Efficient Water Use

Better Water

Plantings should be designed for low water requirements and drought resilience, but some plantings or areas may require regular irrigation. Using a programmed system allows for better control and allows staff to correlate results.

Irrigation controllers can integrate weather information with soil moisture and pre-programmed schedules adjusting watering based on staff recommendations. Irrigation systems are also more consistent than the best hand watering applications, reducing over-watering.

Considerations:

- Specify controllers that can be integrated with rain, wind, weather, and soil sensors. Request Wi-Fi accessible units that can be tested regularly from the field with minimal staff.
- Audit systems seasonally to look for reductions in watering.



Goal: Provide Riparian and Aquatic Buffers

Better Water

Water is a valuable resource and, with the campus situated on the shores of Lake Mendota, methods should be employed to reduce detrimental runoff from campus. Planted buffers along waterways intercept nutrients, sediments, pesticides and other runoff contaminants that would otherwise end up in our lakes and streams. Buffers also create valuable habitat for a variety of species.

Considerations:

- Buffers should be 35 to 100 feet wide dependent upon the size of the water body, slope, soil types, and location (WI DNR).
- Riprap should be used in conjunction with herbaceous plantings to maintain steep slopes.
- Buffer should contain a variety of herbaceous and woody material to prevent erosion and increase plant diversity.
- Development and construction activities should prioritize best management practices to reduce erosion and sediment deposition.



Prairie Crossing, Illinois

Goal: Increase Pervious Pavement Surfaces

Better Water

Hardscape areas, especially vehicular, tend to accumulate toxins from spilled fuels, heavy metals and other sources. Using pervious pavements allows runoff containing these contaminants to percolate into the ground allowing soil chemistry and biology to 'treat' the polluted water naturally. Thus, stormwater retention areas may be reduced or eliminated. Furthermore, by collecting rainfall and allowing infiltration, the groundwater aquifer may be recharged, peak water flow may be reduced, and flooding may be mitigated.

Considerations:

- Replace pavement in low traffic (trails and sidewalks) and edge conditions with pervious pavement materials (see development standards).
- Include areas of rough pavement texture to filter out large sediment that can clog pavements.
- Create a maintenance plan for reduced salt use, vacuuming and life cycle replacement.
- Prioritize pervious pavements in areas with suitable soil conditions or in locations where proper base conditions can be implemented.
- Consider campus locations within well-head protection zones prior to specifying/implementing pervious pavements.

Goal: Manage Rain Water with Natural Systems

Better Water

Using natural systems like bioswales, rain gardens and detention/ retention areas has numerous benefits. Natural stormwater systems infiltrate stormwater filtering out excess nutrients and pollutants. They moderate the temperature of the stormwater and reduce peak flow volume that normally flood streets or less resilient landscapes down stream.

Considerations:

- Prioritize detention and retention systems in areas receiving roadway and building runoff before it enters traditional storm sewers.
- Soils should be checked annually to maintain proper infiltration rates.
- Create overland flow routes and storm sewer intakes to collect water once these systems reach full capacity.



Garfield Park, Illinois

- Prioritize biofiltration systems in upland situations to address stormwater quantity issues.
- Consider sediment removal and system maintenance within the design of these facilities.

Goal: Manage Snow Removal and Chloride Use Better Water

Snow makes campus a magical place in the winter and also provide benefits to plants and animals. But, removing it from pedestrian walkways and vehicular areas requires significant resources and time. It has be recognized since 1978 that salt for deicing causes significant environmental hazard to soils, groundwater, and surface water like lakes and rivers.

Considerations:

- Encourage and continue the use of mechanical methods for removing snow and ice. Be proactive during snow events to avoid accumulation that is more difficult to remove.
- Use edging and planting beds that are designed to minimize salt contamination.
- Reduce use of salt on paved surfaces to only areas that require it or that have significant ice accumulation issues.
- Avoid using salts with Arsenic anti-clumping agents.
- Avoid using salt in areas that outfall into Willow Creek or within Riparian Management Zones.



Goal: Preserve Natural Areas

Native planting

Natural areas around campus are one of the biggest assets. Maintenance systems should be designed and employed to preserve these areas. Refer to the Lakeshore Nature Preserve Master Plan for further management and maintenance recommendations.

Considerations:

- Maintenance in these sensitive areas should avoid heavy equipment and chemical treatments when possible.
- Programs should be systematic and gradual to avoid major disruption to plant and animal communities.



Goal: Invasive Removal Strategy

Native Planting

Invasive plants cause damage to landscapes, reduce plant diversity and out-compete native plants. Overall, invasives reduce ecological value of areas and harm/diminish plant and animal habitat.

Considerations:

- Maintain a list of potential and confirmed invasive species. Create identification keys and removal recommendations for staff.
- Create multi-year plans to reduce and eliminate invasive plants.
- Use a combination of physical and chemical methods to eliminate invasive plants from campus landscapes and natural areas.
- Engage academic programs and community groups to help remove invasive species seasonally, before plants flower or go to seed.
- Determine best methods for disposal.



Goal: Prioritize Native Plants

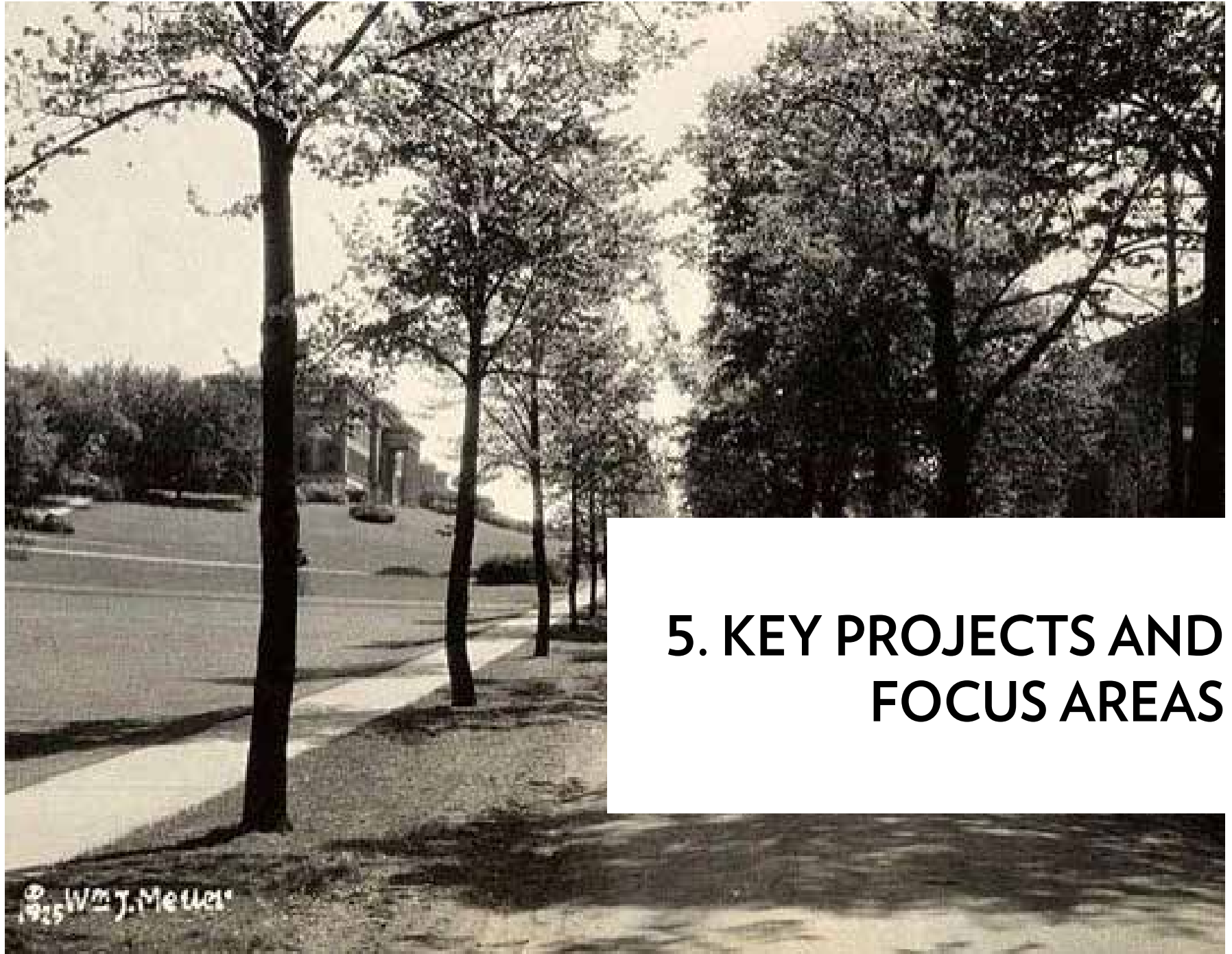
Native Planting

Native plants maintain a Midwestern campus aesthetic that reinforces the university's sense of place. Using native species on campus has many benefits beyond their aesthetic qualities and inherent adaptation characteristics. They also contribute to the enhancement of our ecosystem services and have evolved to succeed in this environment, ultimately helping reduce maintenance inputs and reinforcing our sense of place here on campus.

Considerations:

- Use native plants in buffers strips, natural systems, and working landscapes.
- Plant only native species in natural areas and areas immediately adjacent to natural areas.
- Review plant lists for native alternatives to exotic plant material.
- As a general rule, a higher percentage of native species should be used as one gets closer to the lakeshore (Lakeshore Nature Preserve).





5. KEY PROJECTS AND FOCUS AREAS

1925 Wm J. Mella

Linden Drive, 1925

Focus Areas

Five key areas were selected for in depth study and design. All five project areas represent catalytic projects on campus with the potential to significantly improve campus beyond their immediate locale. They also represent prototypical applications of the landscape design guidelines at a site design scale. Though the solutions are not prescriptive, they provide guidance to future design teams by illustrating the application of the guiding principles while visualizing the design of campus at a site specific scale. The following areas were selected (see Figure 60 Campus Focus Areas Plan):

1 Observatory Hill

The historic landscape area from Washburn Observatory down to the Howard Temin Lakeshore Path, and west from Tripp Residence Hall and King Hall to Elizabeth Waters Residence Hall to the east.

2 N. Charter Street

One of the few north-south streets that transect the university, the study area included the entire street corridor from Regency Street north to Observatory Drive and the pathway behind Sewell Social Sciences down to Lake Mendota.

3 University Avenue

One of the primary gateways to campus, the study area included the length of University Avenue from N. Frances Street to N. Breese Terrace.

4 South Quad

The city block defined by W. Johnson Street to the north, W. Dayton Street to the south, N. Mills Street to the west and N. Park Street to the east.

5 Willow Creek & Linden Drive

The area of Near West Campus defined by the Willow Creek corridor to the west and Linden Drive extending east to the Horse Barn and Elm Drive, north to Observatory Drive, and south to Campus Drive.

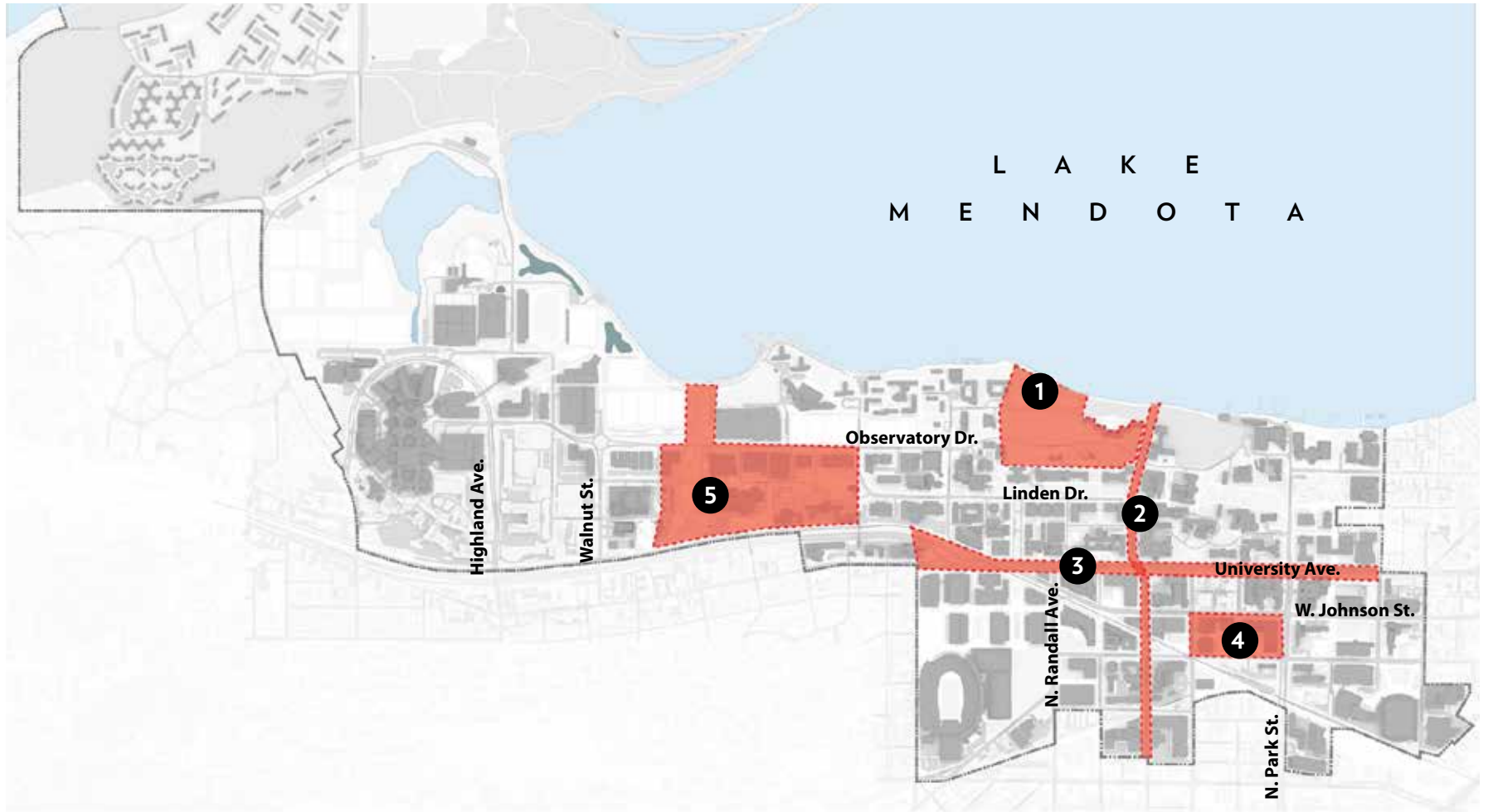


Figure 60 Campus Focus Areas Plan



Figure 61 Looking Northwest toward Picnic Point from Observatory Hill

Observatory Hill

Observatory Hill is a sacred, historic landscape. It is one of the few remaining large open spaces in central campus and its view of Lake Mendota and Picnic Point is treasured by all (see Figure 61 Looking Northwest toward Picnic Point from Observatory Hill).

Even before the campus located Washburn Observatory on the apex of the drumlin, this landscape was utilized for thousands of years. Native Americans built effigy mounds atop the hill which visually connected to mound groups at Willow Drive, Picnic Point and across Lake Mendota. Centuries later, the university terraced the hill and built an orchard; the remnants of which are still visible today. Unfortunately, the landscape has become a pass-through space that has lost much of its prominence. Beyond winter sledding, the hillside gets little activity and dedicated use.

Observatory Hill is a landscape steeped in history worthy of preservation. Despite its revered status, opportunities exist to revitalize this open space, strengthening its connection to the lake while providing both restorative and didactic environments for students and staff.

Landscape Assessment

- The view from the lookout on Observatory Drive and the ridgeline path afford incredible views to Lake Mendota. This view is negatively impacted by the siting of Lot 34 at the toe of the hill and on-street parking (Lot 26). Additionally, unmanaged trees screening the lot now blocks views to the lake.
- Existing vegetation is in decline. Ash trees dominate the western half of the site and will require removal. Lawn covers the hillside, requiring significant resources to maintain and contributes little to stormwater management and biodiversity.
- The existing ridgeline campus walks atop the hill are in conflict with the effigy mound group (Figure 62). The path does not have a clear termination and links poorly with other campus paths. Snow removal vehicles cut into the grade, degrading the mounds and their archaeological record. These pathways should be re-routed around the mounds to better deal with the steep grades on the western slope.
- The existing hillside is viewed in section in Figure 63 Observatory Hill Existing Conditions Section. A summation of the site analysis is presented in Figure 64 Observatory Hill Site Analysis.



Figure 62 Existing Sidewalk is in Conflict with the Observatory Hill Effigy Mounds

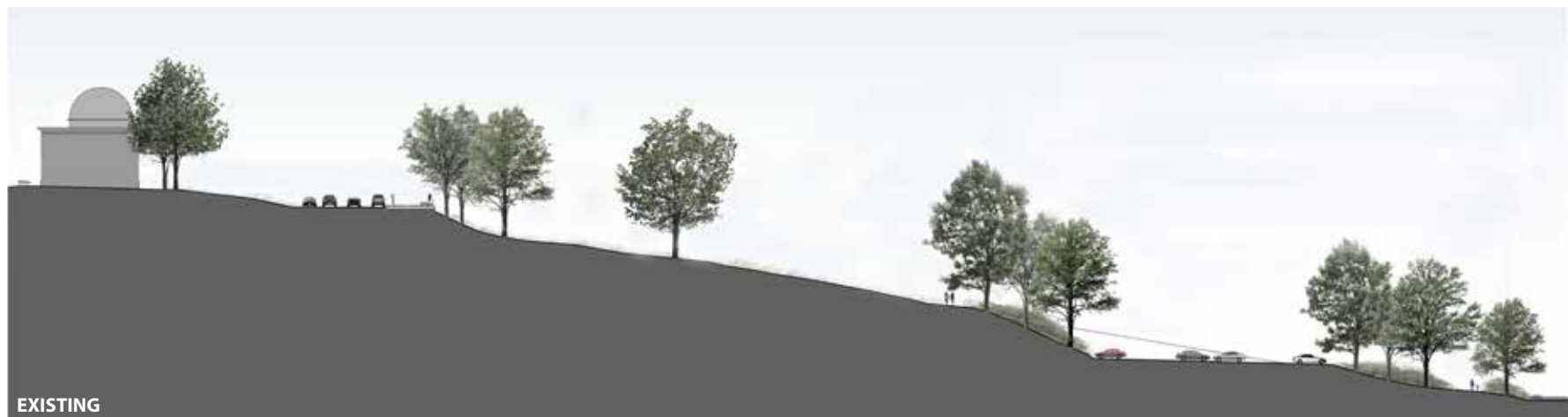


Figure 63 Observatory Hill Existing Conditions Section

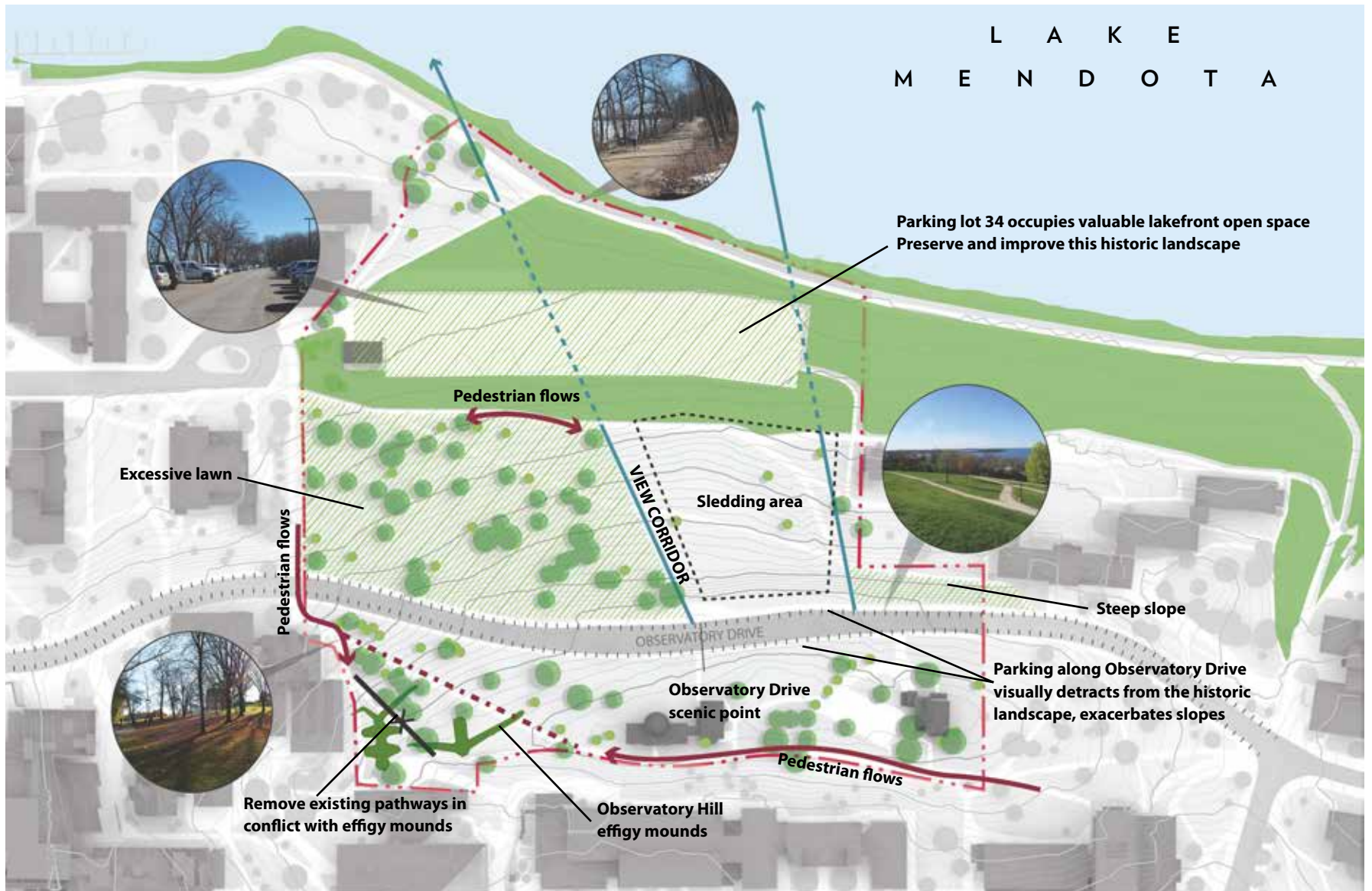


Figure 64 Observatory Hill Site Analysis



Recommendations

The plan for Observatory Hill (Figure 67) proposes a number of improvements to strengthen the landscape character and connection to Lake Mendota:

- Relocate Lot 34 and on-street parking along Observatory Drive to improve the view to Lake Mendota (Figure 66). The relocation site is a new consolidated under building parking structure at the intersection of N. Charter Street and Linden Drive. Provide temporary parking for visitors to access the lookout and Elizabeth Waters Residence Hall.
- In place of Lot 34, construct a naturalized wetland feature to manage stormwater from Observatory Hill, Tripp Hall, and adjacent sites. Incorporate boardwalks for strolling, teaching, research and accessing the water. Seating nooks for social gathering or quiet reflection will help students and visitors reengage with this landscape (Figure 65).
- Convert traditional lawn areas to a designed oak savanna ecosystem with large informal groupings of oak trees and short-grass prairie plants. This naturalistic landscape will require less frequent maintenance, provide wildlife habitat, and act as a teaching landscape. A more appropriately sized lawn will be retained adjacent to Elizabeth Waters Residence Hall as passive recreation and open space.
- Reroute and improve the connections for ridgeline pathways near the effigy mounds and restore the mound landscape to short-grass prairie per the Indian Mound Management Policy (May 2011) in consultation with FP&M



Figure 65 Constructed Wetland and Viewing Platform, Des Moines Botanical Garden

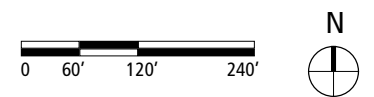
staff.



Figure 66 Observatory Hill Proposed Section



Figure 67 Observatory Hill Proposed Plan



5. KEY PROJECTS AND FOCUS AREAS



Figure 68 Class Change at the Intersection of Linden Drive and N. Charter Street

N. Charter Street

N. Charter Street serves as one of the major north south connections across campus, and is the border between the historic central core and the beginnings of the Near West Campus. Today the intersections along N. Charter Street are the most traveled confluence points on campus (Figure 68 Class Change at the Intersection of Linden Drive and N. Charter Street), bringing together multiple colleges and departments. More students pass through the Charter Street intersections at Linden Drive and University Avenue than most other places on campus.

However, the streetscape lacks a unique character that reinforces its importance in campus geography. The pedestrian sidewalks are poorly separated from vehicular traffic and do not accommodate a significant volume of pedestrian traffic patterns. The intersections are over capacity and cause significant conflict during peak traffic periods.

Landscape Assessment – Streetscape

The N. Charter streetscape (Figure 71 N. Charter Street Focus Area Boundary) north of University Avenue is characterized by sidewalks with hardscape terraces adjacent to 5-6 story buildings. The facades create an imposing wall along this stretch and set the scale of the space (Figure 69). The T-intersection at the far north is a weak start/end point for this important axis and provides no implied or deliberate connection to the lakefront.

South of University Avenue, the density of development tapers off as one travels south and the terraces become mostly lawn. Much like the remainder of campus streetscapes, N. Charter Street lacks a robust urban tree canopy. Understory planting is absent and site amenities are limited (Figure 70).



Figure 69 Typical N. Charter Streetscape North of University Avenue



Figure 70 Typical N. Charter Street Streetscape South of University Avenue

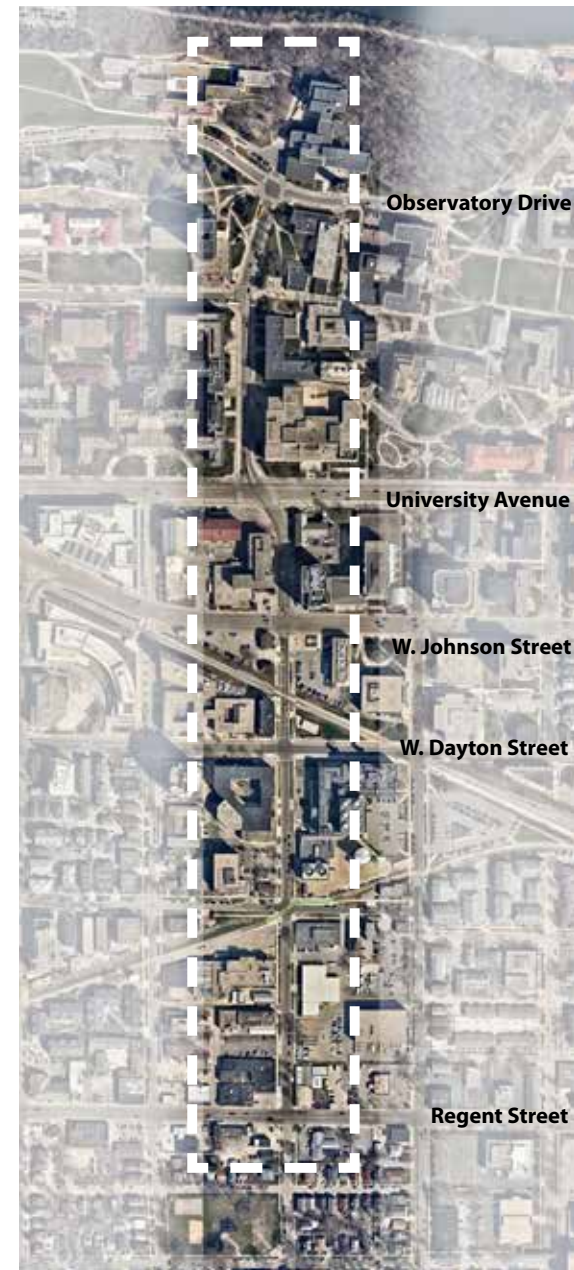


Figure 71 N. Charter Street Focus Area Boundary

Recommendations – Streetscape

- Develop N. Charter Street as a Green Street pilot project to create a unified landscape identity along the entire street corridor, from Regent Street to Observatory Drive (Figure 72 right). Integrate drought tolerant understory planting for stormwater management.
- Introduce a diverse, robust and contiguous urban tree canopy. Create typologies for the appropriate trees along each distinct section of the transect. Introduce variability while maintaining consistent forms.
- Provide a unified palette of street furnishings in accordance with the Landscape Development Standards. As part of the pilot project develop a full array of furnishings that can be used in different pairings for the appropriate location and level of use.
- Declutter the views along N. Charter Street by burying the overhead utilities. Moving the utility lines below grade increases the opportunity for tree canopy. Clearing the views also reinforces the importance of this space.
- The University Avenue and N. Charter Street intersection provide an opportunity to reinforce the arrival on campus through the use of street trees and plantings.

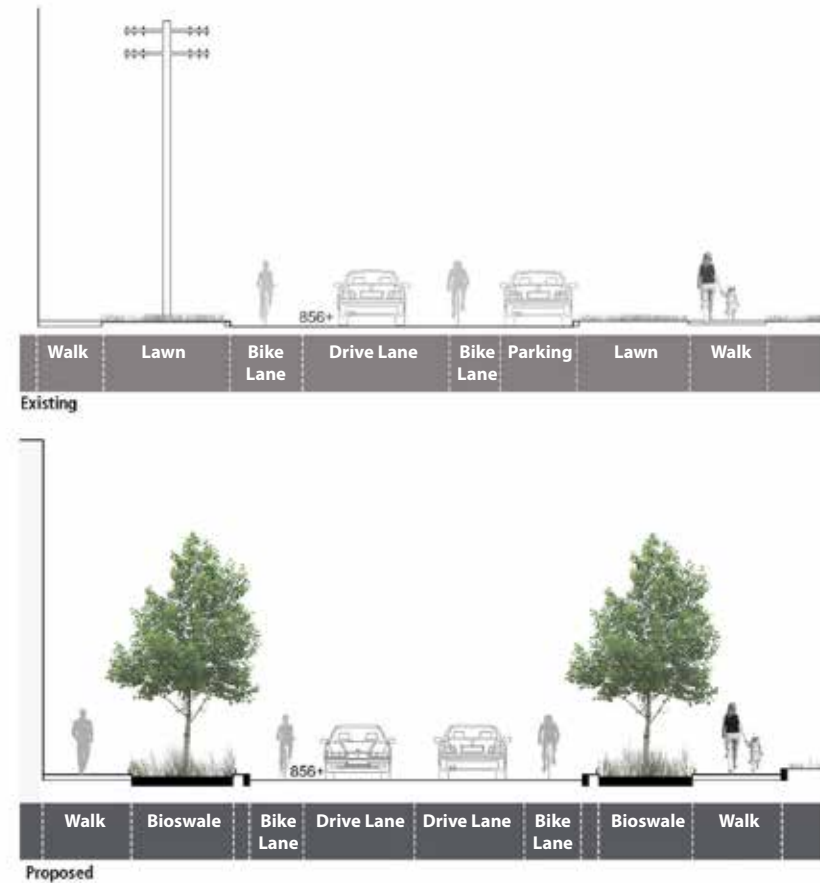


Figure 72 N. Charter Street Existing and Proposed Streetscape Sections

Landscape Assessment – N. Charter St. Terminus

N. Charter Street transects a variety of conditions on campus. At its north end, the roadway terminates into the service and loading docks serving the Sewell Social Sciences Building and Elizabeth Waters Residence Hall. Large areas of pavement are required to accommodate large semi-trailer truck maneuvers that deliver food to Liz Waters' Dining Hall.

Students crossing this expanse of pavement and parking are often in conflict with cars and maintenance vehicles. In addition, the parking lot diminishes the trail head down to the lakefront reducing the visibility and use of this pathway (see Figure 73 View of Sewell Social Sciences West Entrance and Loading).

This pathway to the lakefront has great potential, the walk within the forested canopy is serene and provides a sense of mystery on the trip down to the water. However, due to the slope and pavement condition the path is steep and dangerous, especially in the winter (Figure 74 N. Charter Street Pathway Down to the Lakefront). It also channels stormwater flowing from the parking area, resulting in soil erosion along the slopes.

Bike parking is provided at the bottom of the hill and is used by bicyclists as an access point to the Howard Temin Lakeshore Path. The Grounds Department also uses it as a maintenance access point from N. Charter Street above. Due to the steep incline, attempts to make the pathway accessible for people with disabilities would require significant grading, resulting in the loss of woodland and landscape character.



Figure 73 View of Sewell Social Sciences West Entrance and Loading Area



Figure 74 N. Charter Street Pathway Down to the Lakefront

Recommendations – N. Charter Street Terminus

- Demarcate the pedestrian spaces and reinforce the crossings with painted crosswalks (Figure 76 right). Visually connect N. Charter Street with the trail head to the lakefront path. Clearly mark signage to make crossings easier and safer for pedestrians.
- Construct a boardwalk that navigates the steep slopes safely, without further disturbing the ecosystem (Figure 75). Re-route stormwater from the upper slope to avoid rill and gully erosion.
- Use materials of long-lasting durability and low-maintenance, such as steel with slip-resistant metal gratings.
- Create a new overlook that terminates the axis with secluded views of Lake Mendota. Link the vernacular of the boardwalks and overlooks to create a seamless experience.
- The creation of the boardwalk would result in reduced bike accessibility to the Howard Temin Lakeshore Pathway, forcing cyclists to enter further west at the Lakeshore Residence Halls or east at N. Park Street.
- Activate the Social Science west plaza with site amenities to create a more desirable outdoor space.



Figure 75 N. Charter Street Boardwalk Section

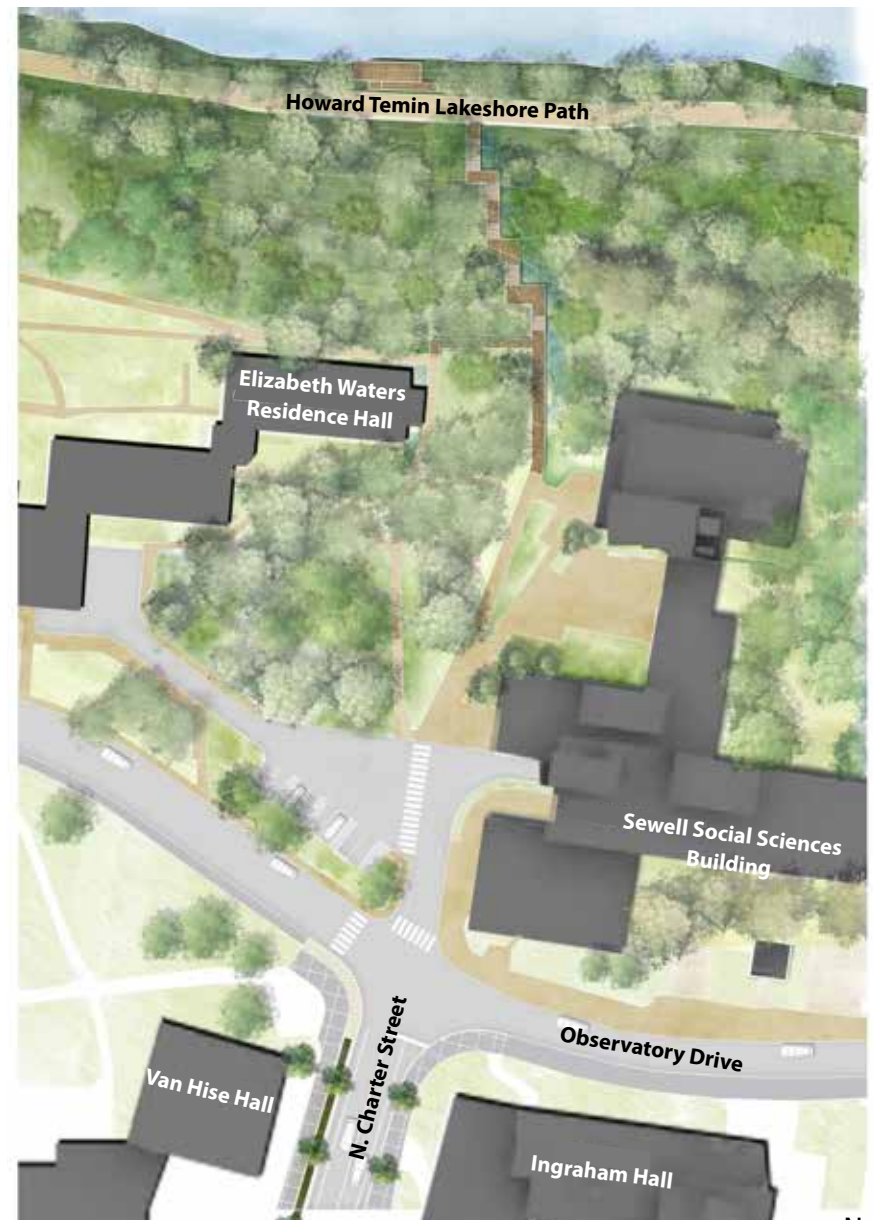


Figure 76 N. Charter Terminus Proposed Plan

Landscape Assessment – N. Charter-Linden Intersection

The N. Charter Street/Linden Drive intersection is infamous on campus for its congestion. People, mopeds, buses, bikes and cars all converge at this intersection. During class change, pedestrian volumes of up to 2,200 pedestrians during a 15 minute interval are common, equaling pedestrian traffic levels experienced in New York City. This causes delays in the transit system, which ripple through the remaining day’s schedule. Coupled with steep topography from Bascom Hill and Observatory Hill, this intersection creates extremely challenging conditions (Figures 77 & 78 right).

Recommendations – N. Charter-Linden Intersection

The plan for the Charter-Linden intersection (Figure 79 opposing and Figures 80 & 81 following page) proposes the following improvements:

- Build a pedestrian land bridge that establishes a new primary pedestrian level connecting from Van Vleck to Van Hise. To be successful, the bridge must feel like the natural choice for students. Using the unique topography, the bridge crossing will reduce the amount of climbing. Separating pedestrians from vehicular traffic will alleviate traffic congestion, mitigate multi-modal conflicts, and improve pedestrian experience.
- Build an iconic bridge. The bridge will be at the eastern terminus of the Linden “Greater Mall” and provides a tremendous opportunity to create an architectural icon. Unlike a particular building that only a small portion of the campus may use, this bridge will be used by a large campus cross section.
- Create a destination through the incorporation of planting and seating. The bridge creates a new opportunity that currently does not exist, to create space that accommodates the traffic flow while providing flex space for people to congregate. The bridge will conceptually extend the Linden Mall up toward Bascom Hill connecting two spaces that were previously divided. The bridge design should be flexible as not to hinder both anticipated and unanticipated programming.
- Provide an open and airy structure. The bridge should incorporate large openings to provide adequate daylight to travelers below. Lighting should be incorporated for safety and to highlight architectural features.

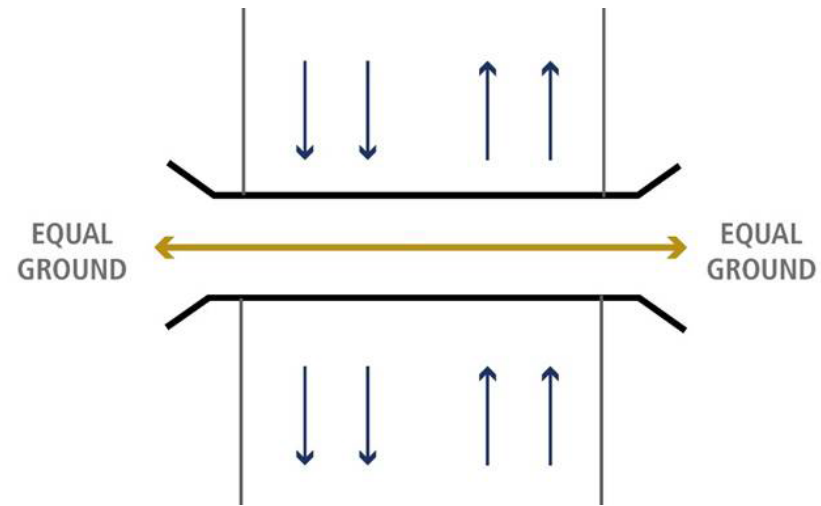


Figure 77 Concept Diagram – Traditional Bridging Situation

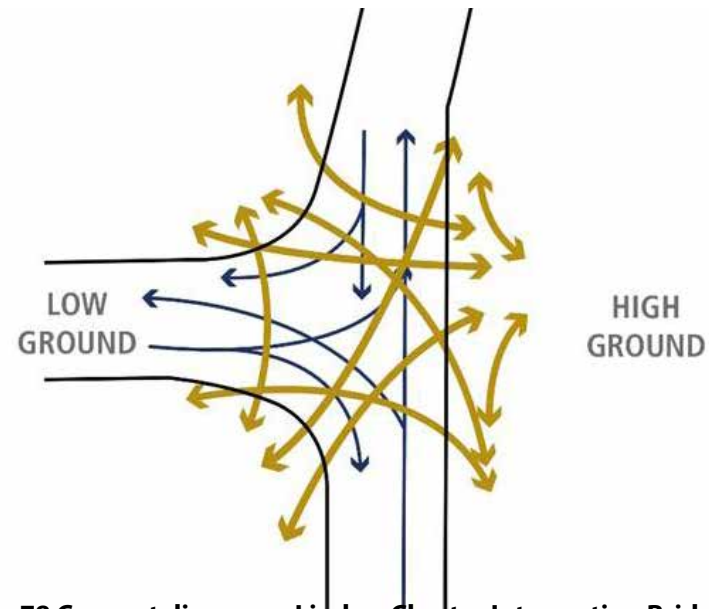


Figure 78 Concept diagram – Linden-Charter Intersection Bridging Situation

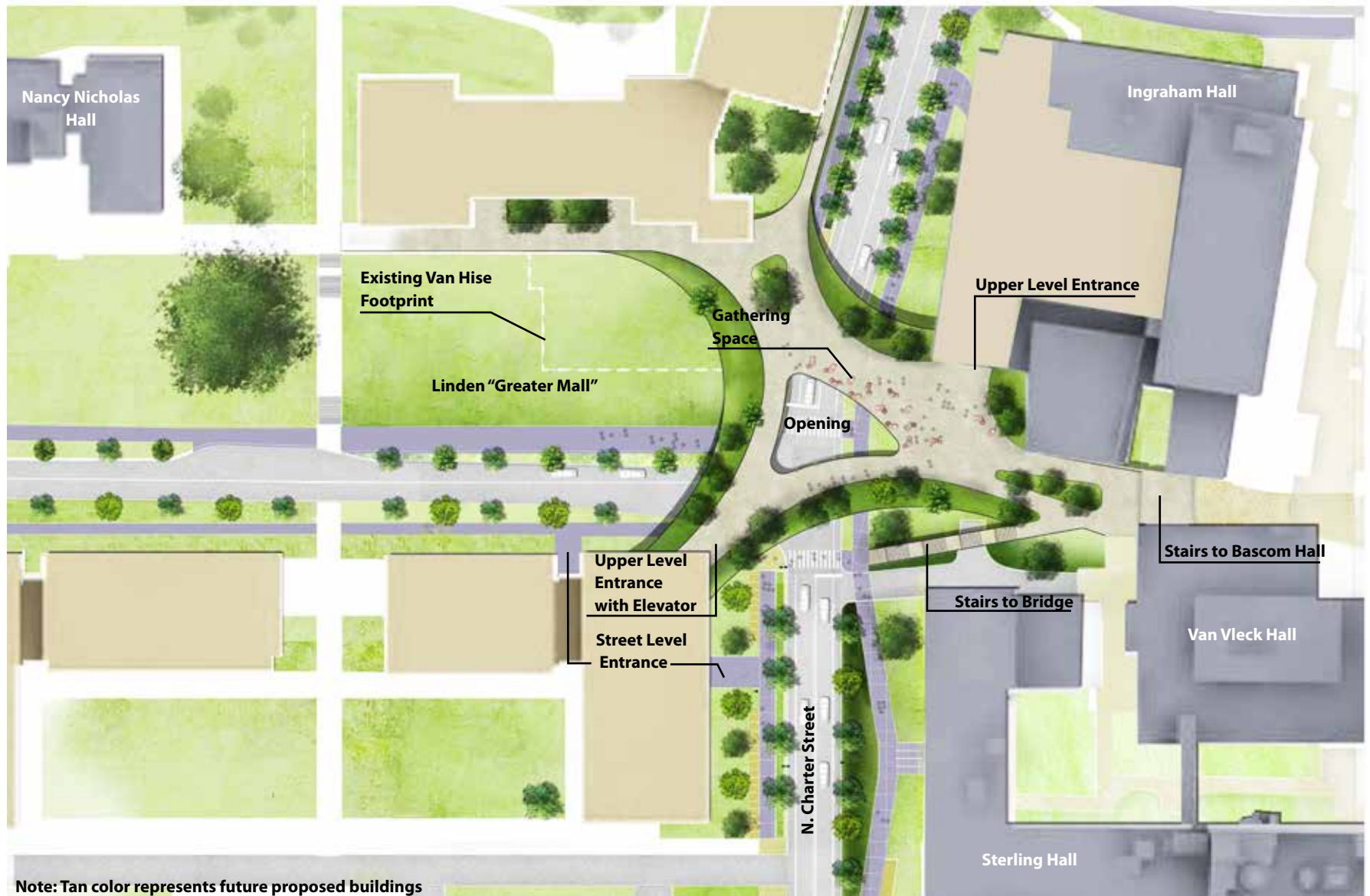


Figure 79 Charter-Linden Intersection Proposed Plan

5. KEY PROJECTS AND FOCUS AREAS



Figure 80 Existing Conditions – Looking North on N. Charter Street from University Avenue



Figure 81 Proposed – N. Charter Street Streetscape and Linden-Charter Pedestrian Bridge



Figure 82 View Looking West at the Intersection of University Avenue and N. Park Street

University Avenue

University Avenue is one of the major front doors to the UW–Madison campus. Approximately 32,000 (ADT) cars travel westbound through campus via this route daily. With three travel lanes, a bus lane, bike lane and protected contraflow bike lane, its expanse is intimidating (see Figure 82 View Looking West at the Intersection of University Avenue and N. Park Street). The avenue has grown over the decades to improve the connection across the isthmus, but it has also had a tremendous affect on the campus. The wide open street acts as a wall effectively dividing an otherwise unified campus. Yet because of its traffic, width and volume, University Avenue represents a tremendous opportunity to make visitors' first impression of the campus inspiring; presenting a welcoming, positive image of a world-class university.

Though the landscape assessment presented in this section pertains to the particular site conditions of University Avenue, many of the recommendations may be extrapolated to the improvement of other gateway streets throughout the UW–Madison campus. Streets such as W. Johnson Street, N. Park Street, and Highland Avenue represent opportunities to project the UW–Madison brand through landscape. Continuous urban tree canopies, robust understory planting and available site amenities are universal approaches to improving gateway streetscapes across campus.

Landscape Assessment

The study area includes the length of University Avenue from N. Frances Street to the east and N. Breese Terrace to the west (see Figure 83 Aerial Map Showing the Extent of the University Avenue Focus Area). The avenue has three distinct sections: the east gateway at N. Lake Street, main campus and Henry Mall. Each section presents unique challenges based on the type of development, surrounding topography, available space, and type of crossings; yet common landscape challenges are present along its entirety. University Avenue has been designed to facilitate vehicles and bike traffic first, and pedestrians second.

By the Numbers

A visual analysis of University Avenue revealed the following statistics. These conditions are indicative of other gateway streetscapes throughout the UW–Madison campus:

- 10 city blocks in length
- 24 street trees (within the ROW)
- 1 street bench
- No pedestrian lighting
- 5 bus shelters
- 12 trash receptacles

Tree Canopy

Urban street trees provide a multitude of benefits: they reduce travel speeds, reduce the heat-island effect, decrease stormwater runoff, reduce air pollution and buffer pedestrians from cars. Yet University Avenue has a dearth of street trees and inadequate soil conditions for those that are there to thrive (Figure 84 right). This results in an incredibly harsh urban condition not in keeping with the campus identity and unwelcoming to visitors.

Understory Planting

There is limited understory planting along the corridor. Understory plantings provide visual interest, ecosystem services and contribute to stormwater management, while buffering pedestrians from street traffic and enclosing the space physically and visually. The current result is an uninviting roadway corridor for visitors. Recent developments at the Wisconsin Institute of Discovery and University Square have introduced understory planting with success.

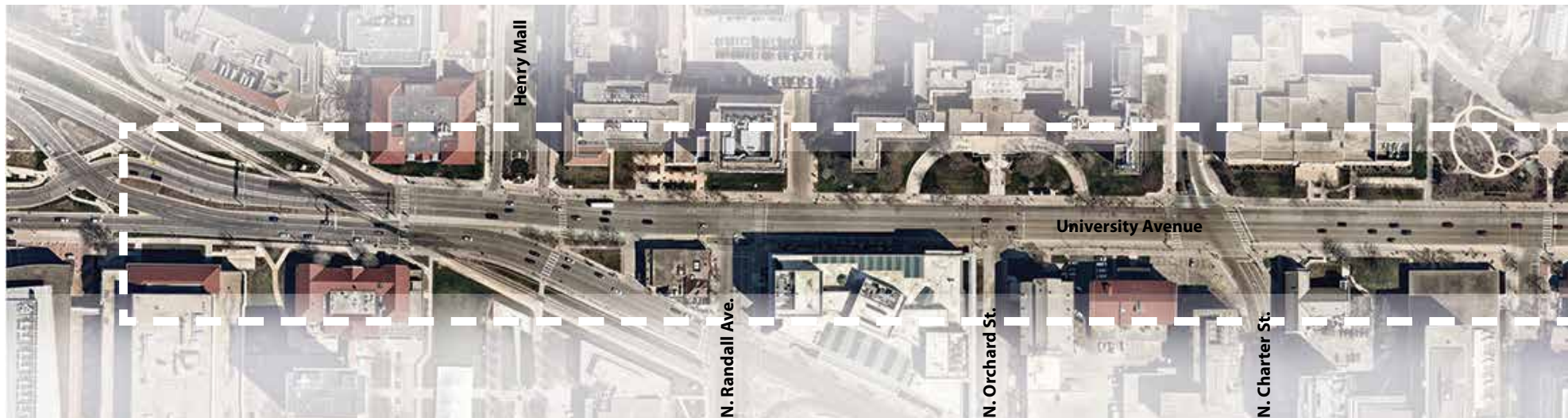


Figure 83 Aerial Map Showing the Extent of the University Avenue Focus Area



Figure 84 Typical Streetscape Condition, University Avenue

Site Amenities

A visual survey of University Avenue revealed a lack of street amenities such as benches, pedestrian lighting and signage. Bus shelters with trash receptacles were the limit of furnishings along University Avenue. Additionally, the staple-like guardrails, while functioning well to deter crossing University Avenue mid-block, are deteriorating and should be replaced with a more integrated design approach that enhances the streetscape experience, maintains safety, and suggests a stronger corridor identity.

Gateways

Despite being a major thoroughfare on campus, there are limited visual cues announcing campus. Currently, planting beds, site amenities and signage do not reinforce the campus brand and announcement to campus. N. Lake Street and N. Park Street are prime locations for westbound entry gateways while the Lorch Street triangle is a latent gateway opportunity for eastbound traffic entering W. Johnson Street off Campus Drive.



Recommendations

The following recommendations were developed through inter-disciplinary collaboration with UW–Madison FP&M and city staff. They are synergistic solutions to improving the landscape, traffic and stormwater challenges along University Avenue today.

Combined Cycle track

Combine the existing bike lanes into a two-way cycle track on the south side. This will consolidate cyclists protecting them from vehicular traffic (see Figure 85 Protected Combined Cycle Track, Downtown Vancouver Canada). For an in-depth analysis and review of the benefits of the combined cycle track and its relationship to the greater Madison regional bike path network, refer to the Long Range Transportation Plan.

Combining the bike lanes together on the south side creates efficiencies in the road cross section, allowing for the addition of a median planter between the cycle track and vehicular traffic (see Figure 86 right). This planter will be up to 12 feet in width, but will vary in size depending upon the width of the right-



Figure 85 Protected Combined Cycle Track, Downtown Vancouver Canada

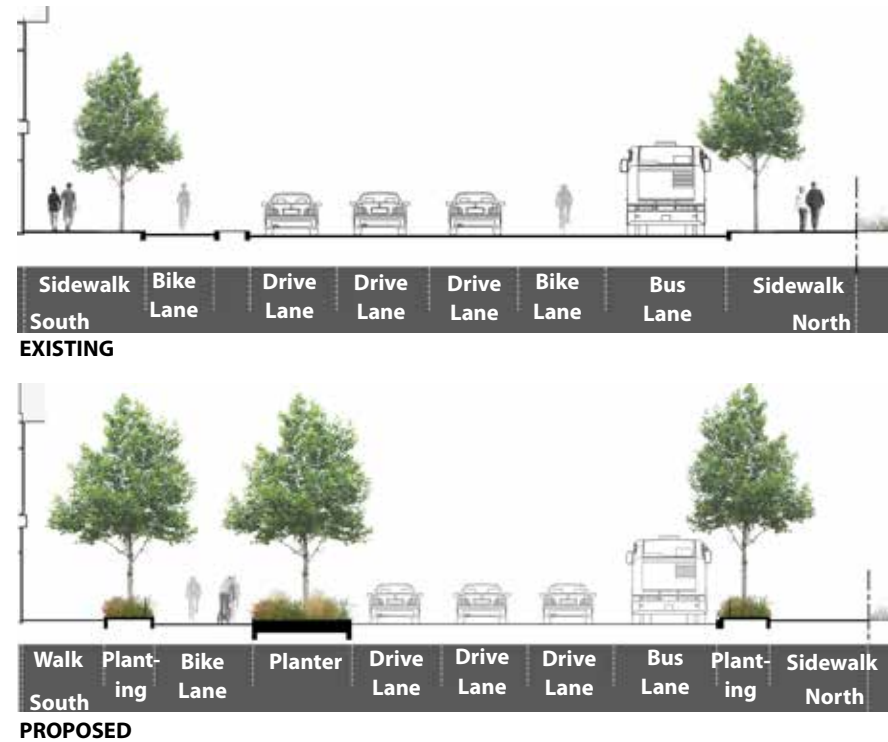


Figure 86 Typical Section, University Avenue

of-way and will taper to accommodate left turn maneuvers at N. Lake Street, N. Park Street, N. Charter Street, and N. Randall Avenue. It should be raised 6-18 inches in height to provide visual buffering of cars while mitigating the accumulation of roadway salt in the planter.

The addition of the planter will be transformative to University Avenue and provide numerous benefits. It protects cyclists and breaks up the roadway profile, thus slowing traffic and improving the aesthetic appearance of campus; it will form a barrier discouraging non-designated pedestrian crossing, negating the need for the “staple” guardrails; and the reduction of hardscape combined with the addition of shade trees will reduce the heat-island effect and mitigate stormwater while improving pedestrian comfort.

Planting

- Plant shade trees 30 feet on center to provide a contiguous urban tree canopy (see Figure 87 Typical intersection, University Avenue). This tree canopy will form the landscape structure unifying the University Avenue corridor while binding the central and south campuses.
- Plant large caliper shade trees that respond to the scale of University Avenue to provide immediate impact. Refer to the streetscape typologies for guidelines on tree diversity and soil volumes. Always strive for continuous soil volumes via soil trenches and combined street grates where space is not available for planters.

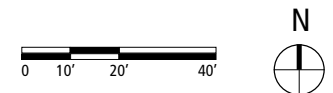
- Gateway understory planting should be simple yet robust massing of understory shrub and perennial plantings that will read well even at vehicular speeds.

Site Amenities

Provide a cohesive suite of campus standard site furnishings to unify the visual experience and enhance the walkability of the University Avenue corridor. Add campus banners along the corridor to announce the arrival to campus.



Figure 87 Typical intersection, University Avenue



Landscape Assessment – Henry Mall Crossing

The Henry Mall quadrangle is a classic collegiate space that is defined by its architectural surroundings. The buildings defining the western border quickly followed the opening of Agricultural Hall, while the eastern half wouldn't resemble its current form for another 50 years. Much like Bascom Hill, the mall cascades down from the first and most prominent building. The mall became known as the “Lesser Mall” which intersected with the “Greater Mall” at Agricultural Hall and Linden Drive. From O.C. Simonds to Arthur Peabody, most university plans included these two formal malls as organizing elements of the agricultural campus.

Primary Viewshed

The view to and from Agricultural Hall is a primary viewshed connecting the agricultural campus with the engineering campus and Camp Randall Memorial Park beyond (see Figure 88). As outlined in the landscape typology design guidelines, visual clutter should be removed from the viewshed, including the bus shelter atop Henry Mall.

A Difficult Pedestrian Crossing

The current pedestrian crossing at University Avenue is complicated by multiple signals and indirect routes; wayfinding is unclear (see Figure 89 right). Consequently, pedestrians often take non-designated routes compromising their safety. The crossing at University Avenue should be coordinated with Campus Drive to provide a safe, clear and comfortable crossing for pedestrians.



Figure 88 Henry Mall Looking North from University Avenue



Figure 89 University Avenue Pedestrian Crossing at Henry Mall

Recommendations – Henry Mall Crossing

- Preserve the view from Agricultural Hall through the engineering campus and terminating on Camp Randall Memorial Park. Trees located within the viewshed should frame and enhance the view while site furnishings should be sited along the perimeter to avoid interfering with the primary view.
- Establish a campus gateway at the Lorch Street triangle. A gateway will announce the formal entry into campus from the west
- Improve the pedestrian crossing at Henry Mall. An enlarged crossing from Henry Mall to the engineering campus is vital. An island refuge in the center enhances pedestrian safety.
- Provide a vertical barrier in the landscape median to prevent non-designated crossing between the Deluca Biochemistry Building and Materials Science Building. Design the vertical barrier in accordance with the landscape development standards for iron fencing on campus. The barrier should not extend into the Henry Mall viewshed.
- Where the landscape median becomes limited in width, provide simple masses of grasses and perennials that tie visual to the landscape treatment further west at the intersection of University Avenue and Campus Drive. Do not plant tall grasses or vegetation within the Henry Mall viewshed.

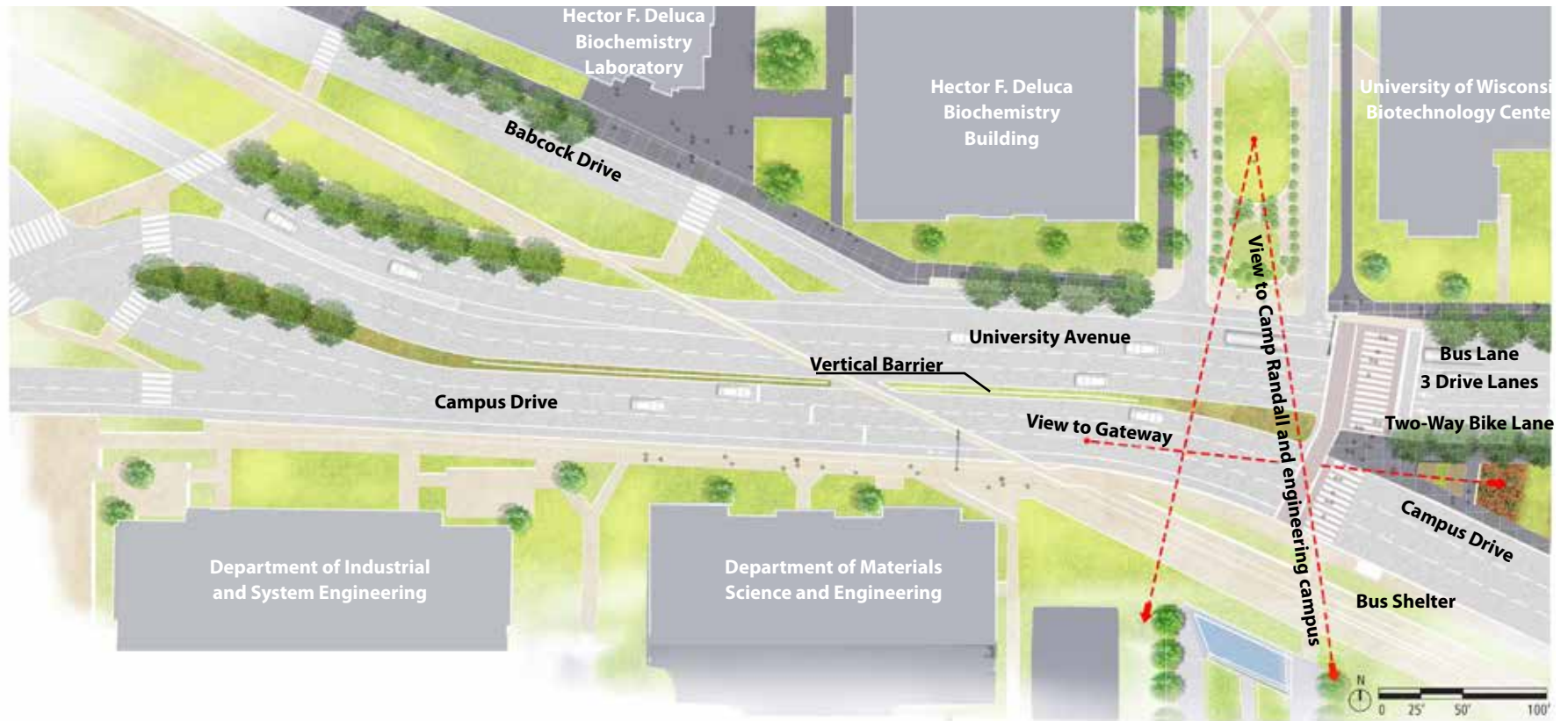


Figure 90 Proposed Henry Mall Crossing



Figure 91 Looking North on W. Dayton Street

The 2015 Campus Master Plan Update proposes the creation of a new quadrangle open space on south campus. The space lies between N. Park Street and N. Mills Street, and is bordered by W. Johnson Street and W. Dayton Street to the south.

This new quad addresses the vital need for open space in the south campus. Beyond general use space it provides an outdoor room that will help define a sense of place for this district. The quad opens up to the south, which will warm the space in spring and fall, and help block the winter winds.

The quad will be enclosed by Education Sciences and a new academic program building to the east. With the closure of N. Brooks Street between W. Johnson Street and W. Dayton Street, the space will be reinforced as a pedestrian corridor.

The plaza will be a key node along the W. Dayton Street athletics corridor that links Camp Randall with the Kohl Center. The flexible space will provide additional game day programming for students and alumni alike.

Landscape Assessment

Today, the area is a mix of university programs and non-university private housing. The Educational Sciences and Teacher Education Buildings are located west of N. Brooks Street while the remainder of properties are a collection of multi-family housing units. This mixture of university and private housing contributes to the perception of this area of campus as a “no man’s land” (see Figures 91 & 92).

The landscape quality reflects this mixed land use: grassy parkways and shade trees project a residential quality while parking lots and hardscape plazas surround masonry institutional buildings with little engagement to the outdoors. There is an overall lack of quality outdoor gathering space.

The topography slopes consistently to the south, falling roughly one building story toward W. Dayton Street. A low point exists at the intersection of N. Brooks Street and W. Dayton Street.



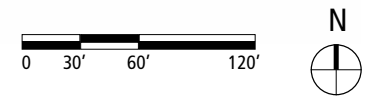
Figure 92 Existing Housing Units along N. Brooks Street South of Grainger Hall

Recommendations

- Create a ‘quad’ of civic scale and character. The simple design will withstand heavy pedestrian traffic. The layout makes programming the space flexible for large and small events. Large lawn panels lined with trees will be reminiscent of larger campus malls and provide a soft, collegiate feel for informal social gatherings. Diagonal paths cut through the space along desire lines between entries and exits. Trees wrap the space and define the rooms, providing a human scale to the surrounding architecture (see Figure 93 Proposed South Quad Plan).
- Reinforce north-south pedestrian movement by creating a tree-lined pedestrian mall. The axis will create a pleasant corridor defining the rooms within the quad, while terminating the viewshed on the historic campus to the north.
- Introduce green infrastructure to manage stormwater on site. The site coincides with a low point in the terrain and intercepts the existing storm sewer line in the N. Brooks Street right-of-way, making it an ideal location for an urban stormwater feature to illustrate green infrastructure on campus. The rain garden ponds replace traditional fountains, providing the noise mitigation and calming effects while treating and managing the site’s stormwater.
- A terrace connecting to the west facade of the new academic building provides space to have outdoor classes, socialize or study. This corner gathering space is off the main axis to avoid blocking traffic, while engaging the building and providing a space for groups to congregate.
- Redevelop W. Dayton Street as a “green street” pilot project. As with N. Charter Street, implement the design guidelines outlined in the streetscape typologies to give W. Dayton Street a clear landscape identity linking Camp Randall Memorial Park, Union South, the South Quad and the Kohl Center along one unified “athletic” streetscape experience (see Figures 94 & 95 following page).
- Provide pedestrian scale lighting to illuminate the area at all times of the day, particularly during the short days of the winter months.
- Design the quadrangle lawn such that it can endure significant usage, for example through the incorporation of fiber reinforced soils and irrigation.



Figure 93 Proposed South Quad Plan



5. KEY PROJECTS AND FOCUS AREAS



Figure 94 Looking East on W. Dayton Street at N. Brooks Street



Figure 9: Proposed South Campus Quad and Re-Vitalized W. Dayton Street

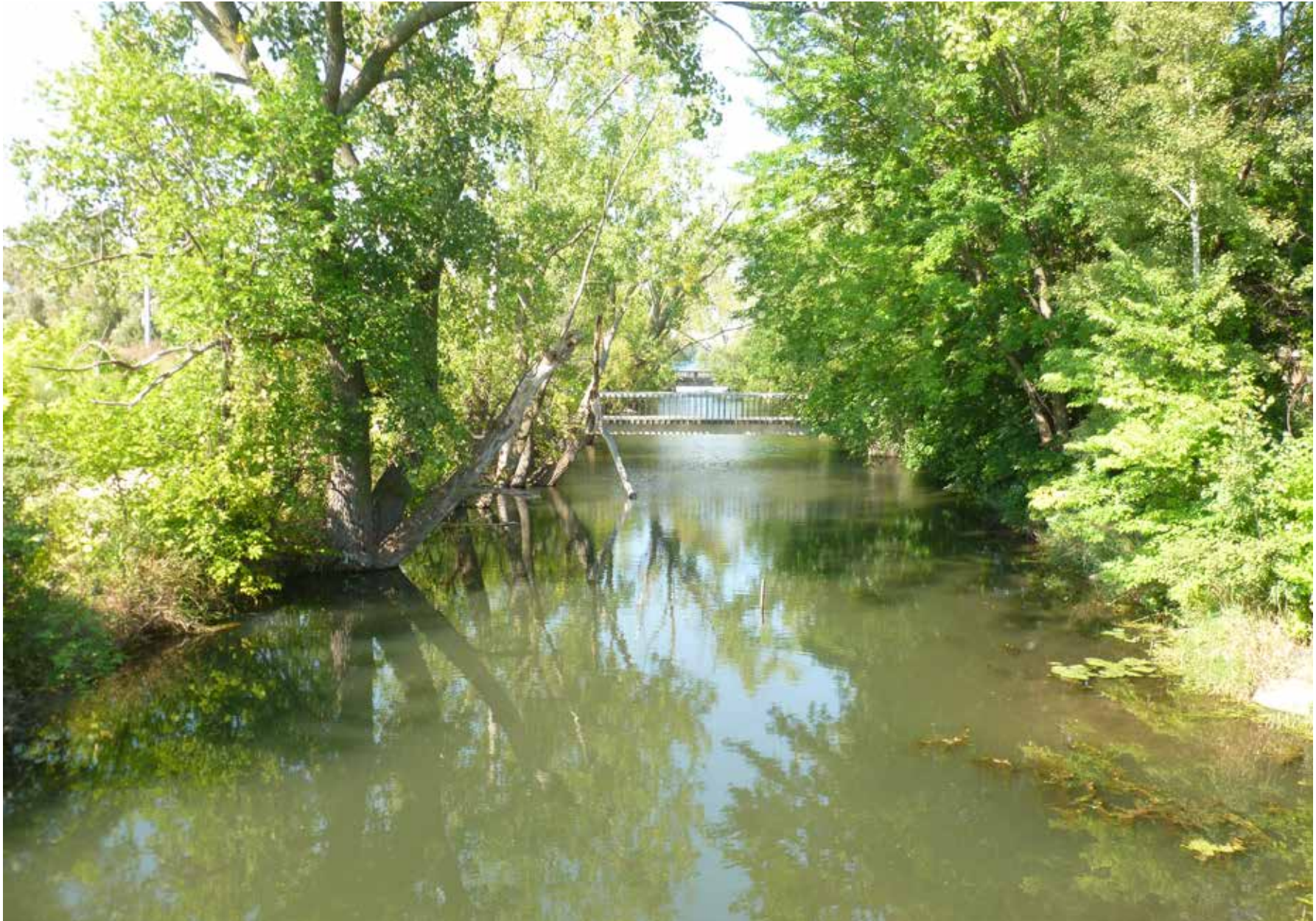


Figure 10 Campus Cultural Landscapes



Willow Creek & Linden Drive

The agricultural campus started as a series of experimental farming plots and open spaces. Today, it has expanded, matured, and developed into a modern research campus, losing much of its original agrarian character. It has turned its back on Willow Creek (see Figure 10 Campus Cultural Landscapes), an urban creek that is the only tributary to Lake Mendota on campus.

The character of Willow Creek has changed substantially since the establishment of the agricultural campus. What once was a meandering creek with natural hydrologic flows, it is now channelized and receives stormwater discharge from nearly 1,400 acres of urban development upstream. The creek is at the level of Lake Mendota, experiences extreme fluctuations in flow and is depositing significant amounts of sediment into University Bay, creating sand bars and further altering the hydrologic conditions and lake limnology.

As this district of campus is poised for redevelopment, incredible opportunity exists to create a new campus vernacular of working landscapes and a revitalized creek, rooted in the agricultural and natural history of the area.

Landscape Assessment – Willow Creek

- The Willow Creek corridor has been subject to high stormwater discharge from upstream in the urbanized watershed, resulting in sedimentation and stream bank erosion. Exacerbating the degradation, minimal vegetative buffers have been retained increasing the non-point source pollution from adjacent land uses (see Figures 97 & 98).
- The existing vegetation is in decline due to stream bank erosion and encroachment by development. This has resulted in reduced shade and habitat for fish and wildlife.
- Despite these challenging conditions, the creek is an active wildlife corridor. Reptiles such as turtles, amphibians, fish, birds and predators such as red fox and omnivores such as raccoons use the creek as an urban wildlife corridor.
- There are five bridge crossings along the creek, although none engage the users with the corridor. Beyond the necessary circulation, these bridges have the opportunity to connect people with the creek and provide access points down to the water's edge. A unified bridge design would create a series of bridges associated with Willow Creek and this area of campus.
- A disconnection exists between the Campus Drive Bike Path to the south and the Howard Temin Lakeshore Path to the north (see Figure 99). Bicyclists currently use pedestrian sidewalks to make this connection.



Figure 97 Willow Creek Existing Condition Visual Analysis

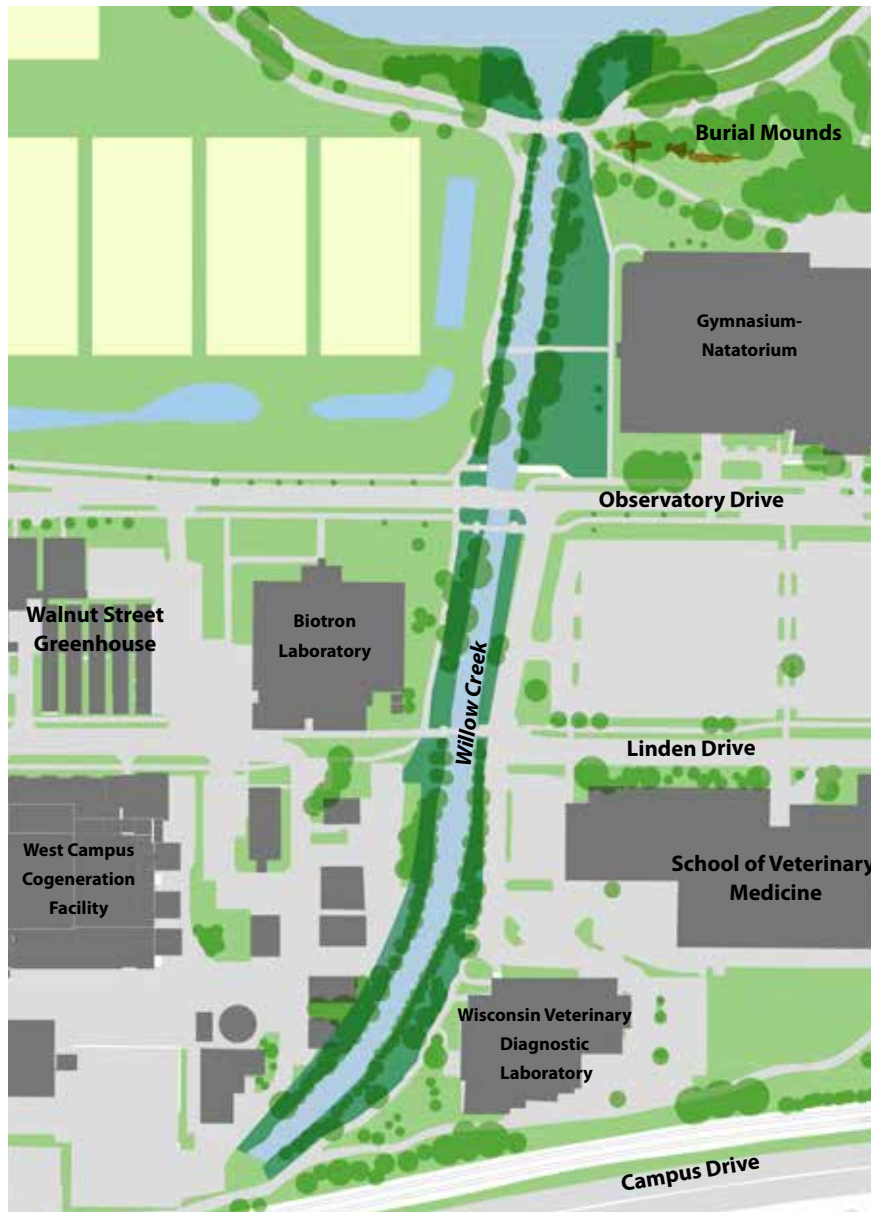


Figure 98 Willow Creek Corridor Tree Canopy and Vegetative Buffer

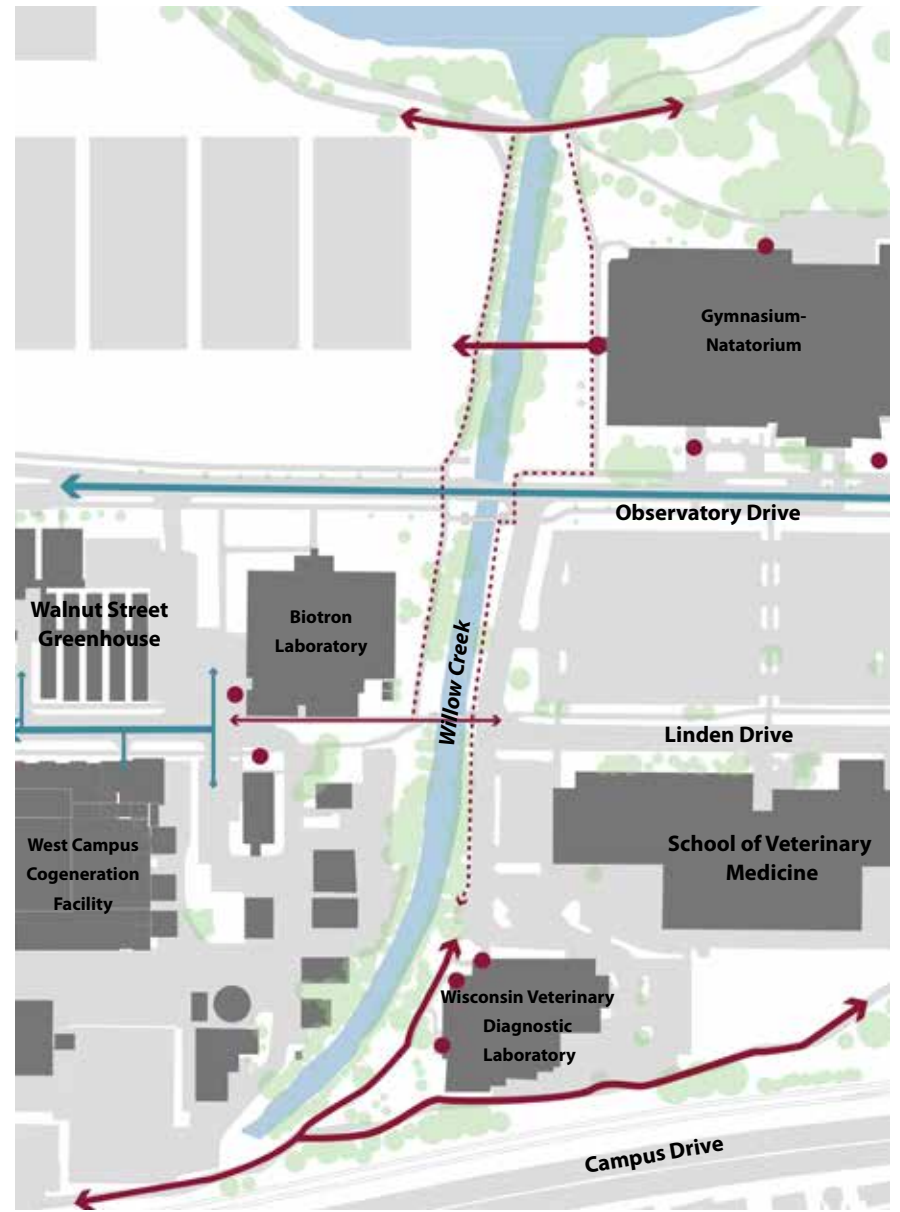


Figure 99 Willow Creek Corridor Existing Circulation



Landscape Assessment – Linden Drive

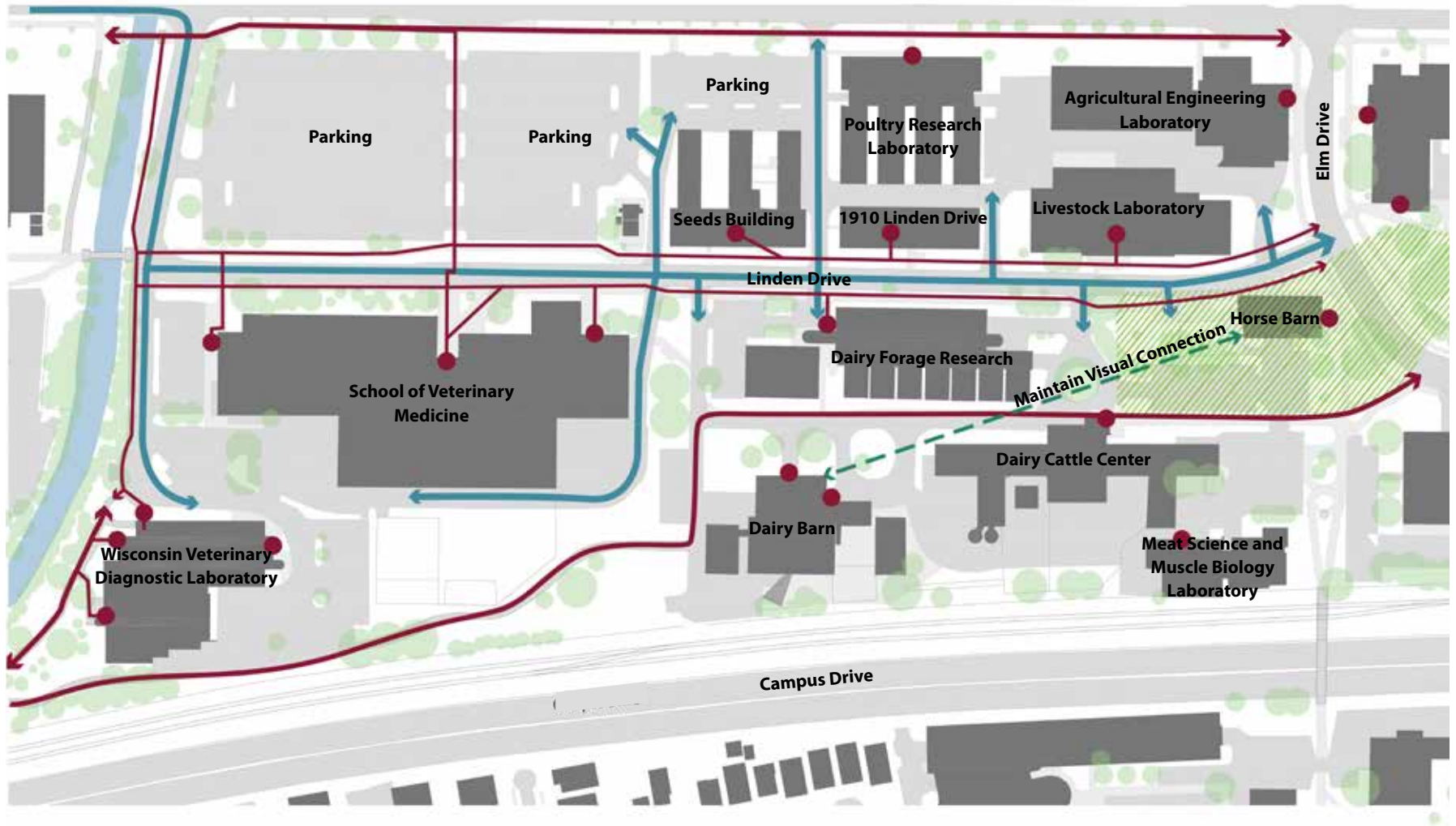
- The original landscape character of the agricultural campus has been replaced with turf grass street terraces, street trees and foundation planting characteristic of auto-centric development. Buildings are located with little consideration of natural landscape features, such as the proximity to Willow Creek. Landscape is treated as an after thought, with little attention given to design function or aesthetics (see Figure 100 right).
- The area has become utilitarian in function: service-oriented facilities that have little engagement with the outdoors. With the exception of the Veterinary School of Medicine's north entry plaza, communal outdoor gathering space is non-existent.
- Surface parking lots and service access roads cover a significant portion of the site, fragmenting the landscape. The lots are poorly screened and designed for maximum capacity.
- However, there remains the remnants of the historic farm west of the Horse Barn. The historic farm was the western terminus of the agricultural campus and included the Stock Pavilion building and surrounding site. This area once was the terminus of the Linden Greater Mall before the expansion of Russell Laboratories and other encroachments on the Mall. Today, the Horse Barn and paddock are used by the Physical Plant for storage (see Figure 101 right). The visual connection between the Horse Barn and the Dairy Barn, obstructed by the Dairy Cattle Center and vegetation, should be opened up and restored (see Figure 102).



Figure 100 Linden Drive Looking East from the School of Veterinary Medicine



Figure 101 Historic Location of the Paddock West of the Horse Barn



- Primary Vehicular Route
- Pedestrian Route
- Bicycle Route
- Building Entrances

Figure 102 Linden Drive Existing Tree Canopy and Circulation



Recommendations – Willow Creek

- Restore the riparian zone by providing an expanded vegetative buffer to manage non-point source pollution and stabilize the slopes. The removal of Easterday Lane will provide much needed green space for rain gardens to manage stormwater from major development to the east, cleansing and slowly releasing it to Willow Creek.
- Construct wetlands to manage to stormwater and provide habitat. Perched wetlands along the west side of the creek will intercept stormwater runoff from the Grounds service yard prior to it entering the creek. Provide boardwalks with interpretive signage to educate visitors.
- Provide a multi-use pathway connecting the Campus Drive Path to the Howard Temin Lakeshore Path.
- Activate Willow Creek with linear terraces stepping down to the water's edge, allowing campus users to engage with and access the creek. Create outdoor plazas providing direct access from the Veterinary Medicine north building expansion and the new Natatorium (see Figures 104 & 105 following page).

Recommendations – Linden Drive

- Create working landscapes such as rain gardens throughout the agricultural campus to sustainably manage stormwater and develop the Near West Campus as the “Green District”. Link the features hydrologically conveying rain water west toward Willow Creek.
- Create a dedicated School of Veterinary Medicine entry sequence along Linden Drive, converting Easterday Lane to green space.
- Create a Near West Commons at the Horse Barn, restoring the historic open space that was the western terminus of the Linden Greater Mall. Adaptively re-purpose the Horse Barn, providing programming to activate the anchor building of the new space. Provide a terrace west of the Horse Barn that reinterprets the footprint of the original paddock. Maintain the visual connection to the Dairy Barn.
- There is a significant amount of large equipment, maintenance vehicle traffic and pedestrian use through this area. Use design strategies such as different pavements, separation, etc. to reduce conflicts between the various users in this area.

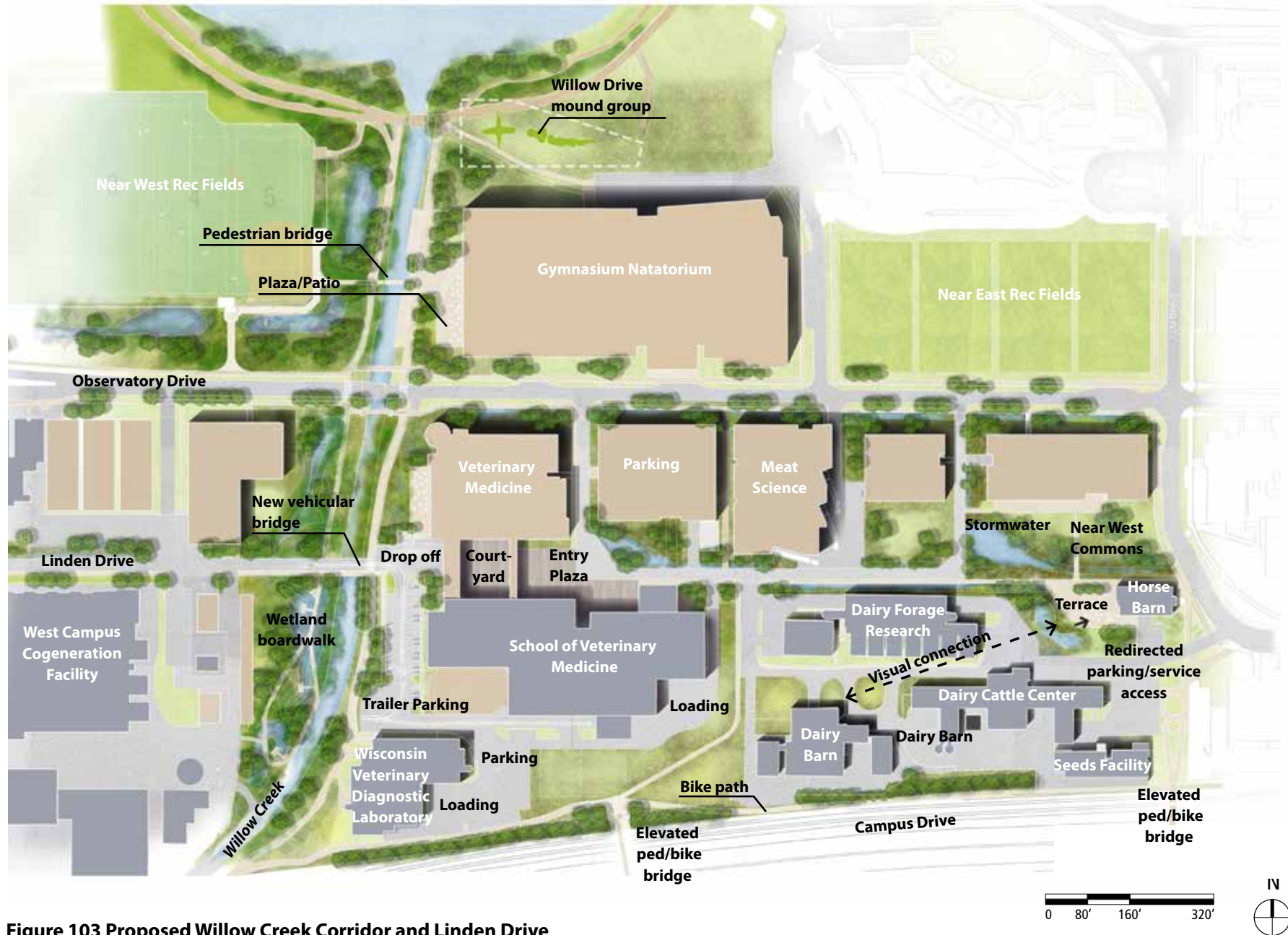


Figure 103 Proposed Willow Creek Corridor and Linden Drive

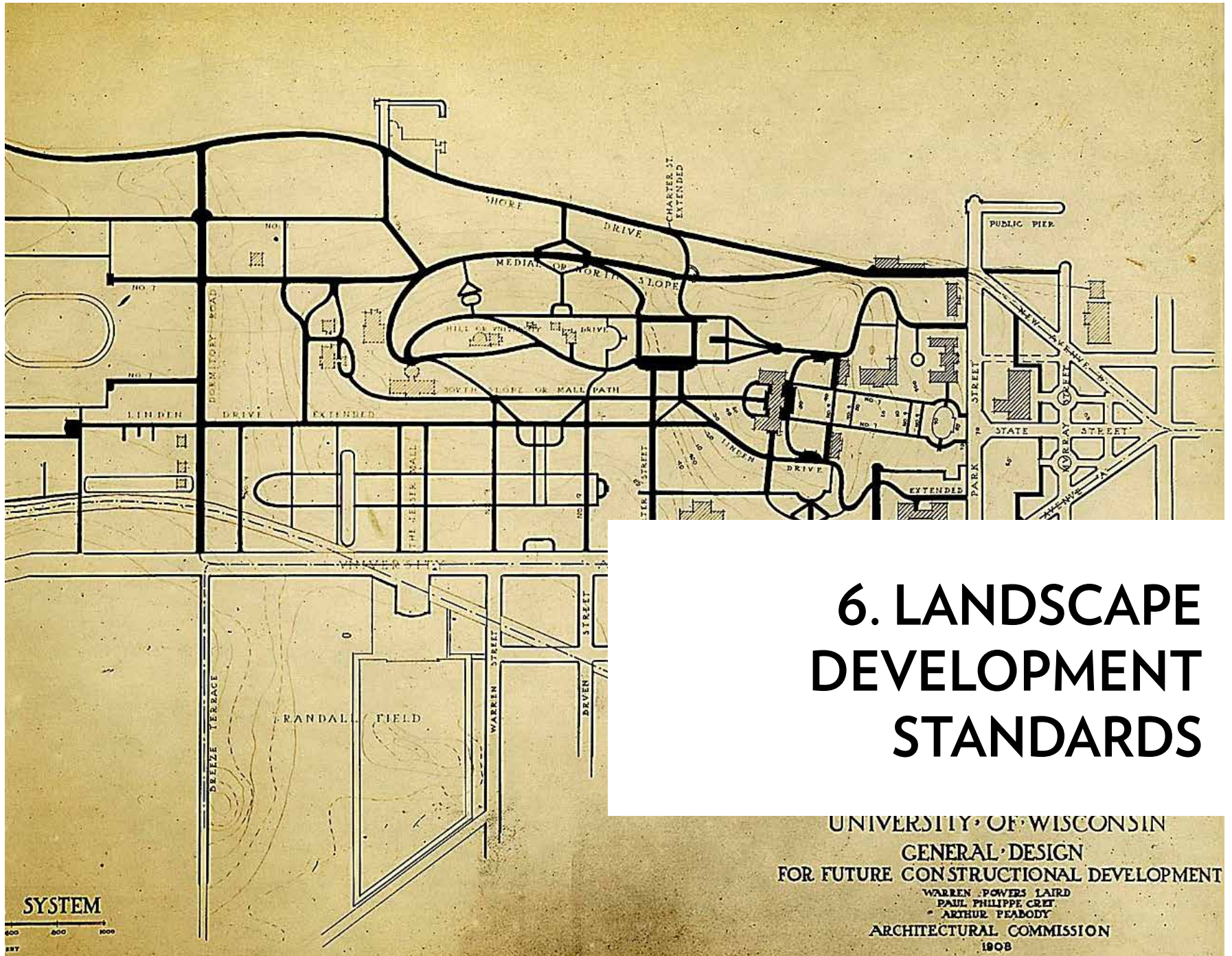
5. KEY PROJECTS AND FOCUS AREAS



Figure 104 Existing – Looking North on Observatory Drive



Figure 105 Proposed – Revitalized Willow Creek Corridor



6. LANDSCAPE DEVELOPMENT STANDARDS

UNIVERSITY OF WISCONSIN
GENERAL DESIGN
FOR FUTURE CONSTRUCTIONAL DEVELOPMENT
WARREN POWERS LAIRD
PAUL PHILIPPE CRET
ARTHUR PEABODY
ARCHITECTURAL COMMISSION
1908

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Development Standards Matrix

Landscape Development Standards

Introduction

The various elements that populate the campus landscape and open spaces make sites functional, increase their use and contribute to the university's strong sense of place (Figure 106). These pieces reinforce the campus character, but also affect the short and long-term maintenance.

This section establishes campus standards for furniture and other site amenities. The goal is to build a consistent palette of site elements without constraining designers on future projects. Examples have been given of where it is appropriate or beneficial to deviate from the campus standard. Areas primarily associated with a specific building may have a sub-set of elements unique to that site without affecting the overall legibility of the campus aesthetic.

The elements have been primarily selected to match the campus aesthetic character. Each element has also been evaluated for durability, maintenance, sustainability, and functionality.

This document serves as a guideline for the landscape standards on campus. These standards are to be used in conjunction with UW–Madison FP&M Technical Guidelines. For more detailed information regarding their implementation and execution, see the UW–Madison FP&M Technical Guidelines.

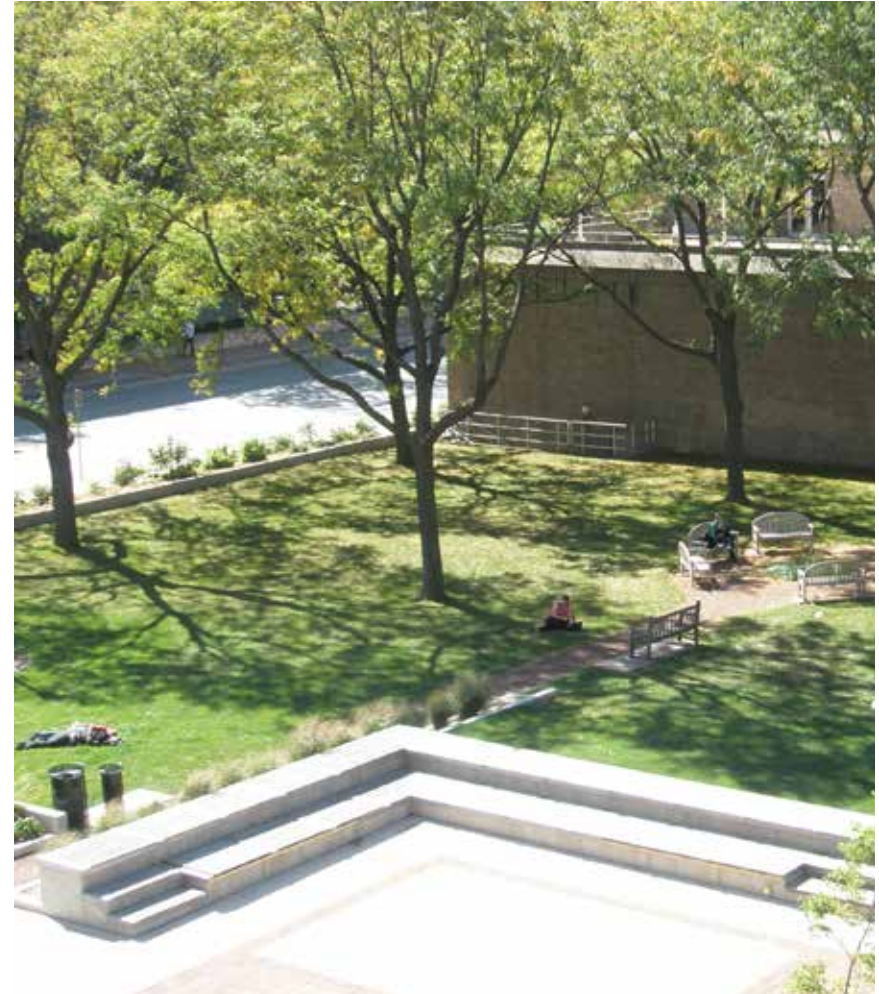


Figure 106 Standard Landscape Elements on Campus Visually Unify Campus

Paving

Rigid Pavement

The campus employs a wide variety of paving materials for pedestrian areas. Specific paving types should be used in appropriate locations based on amount of traffic, slope, context, and maintenance.

Design Considerations:

- Finishes and design should be simple and match the surrounding context.
- Patterning should match the scale, amount of traffic, and speed of traffic.
- Pedestrian paving should be designed for periodic maintenance vehicles, unless otherwise noted.
- Widths of paths should be at least 8 feet and be designed for the expected modes of traffic.
- Consider pervious concrete where site allows.

Recommendations:

The majority of campus walks are composed of cast-in-place concrete with broom finish perpendicular to the direction travel with sawcut joints. These paths are the most durable and are easily replaced in the future for repairs. New and existing concrete paving should match thicknesses specified by the UW–Madison technical guidelines.

When repairing concrete walks or plazas, contractors should match the finish and jointing and extend repair areas to logical joints. Color should be matched as closely as possible. Other finishes like exposed aggregate, acid etching, or integral color should be used to match existing paving or in courtyards and plazas associated with a specific building. The speciality finishes should be used to reinforce the scale or enhance the character of the space for example at: building entrances, patios, plazas and courtyards.

Pervious concrete is encouraged in appropriate areas (Figure 108). Applications include low traffic areas where infiltration of stormwater would be beneficial to reduce loading to the storm sewer system, such as bike parking bays, patios, plazas, courtyards, pedestrian malls, etc. Factors to consider include subsurface soil conditions, maintenance implications, traffic loading, and cost effectiveness versus other stormwater management methods.

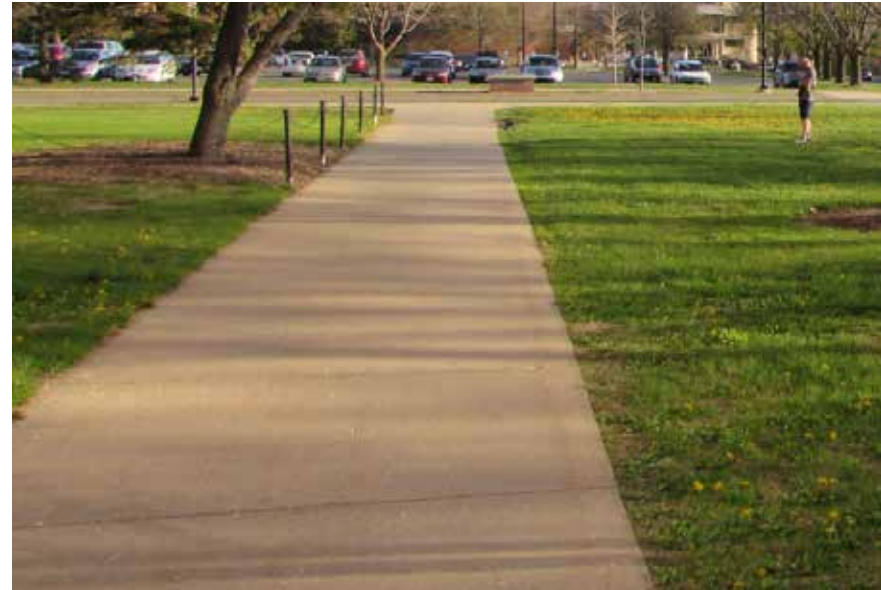


Figure 107 Standard Concrete Paving on Campus



Figure 108 Pervious Concrete is Encouraged in Low Traffic Pedestrian Areas.

Flexible Pavement

Recommendations:

Asphalt paving is used predominantly for vehicular street use areas. Exceptions to this include multiuse pathways for bicyclists and pedestrians (Figure 109). All current Division of Facilities Development (DFD)/civil design guidelines shall be followed in design asphalt paving. Refer to the UW–Madison Technical Guidelines for more information.

Asphalt paving should be replaced in sections similar to concrete. Avoid small patches. Pervious, colored, and patterned asphalt do not perform well in the campus environment and are not encouraged.

Aggregate Paving

Informal aggregate paving is used in a variety of locations. This paving is generally used on informal pathways, low volume seating areas, paths in natural areas, and in high traffic street terraces that do not support mid and low level planting.

Design Considerations:

- Paths in naturalized areas should be composed of crushed limestone screenings (Figure 110). Granite gravels are suitable for urban terraces and small seating areas (Figure 111). For durable and permeable surface crushed stones or decomposed granite could be blended with stabilizing binder (i.e. Kafka granite, Stabilized Pathway Mix).
- Provide proper base material, surface and under drainage including at the edges.
- Aggregate paved areas should be enclosed by proper edging material (concrete curb, steel edging, stone block, etc., except in natural areas).
- Maintenance should focus on compacting paths and repairing low spots or erosion.
- All aggregate mixes should meet ADA requirements.

Recommendations:

Use locally available crushed limestone screenings for pathways along the lakeshore and in natural areas that are not periodically inundated. Screenings should be compacted and top dressed as needed. Where project conditions are appropriate, pervious pavement is preferred. Factors to consider include subsurface soil conditions, maintenance implications, traffic loading and cost effectiveness versus other stormwater management methods.



Figure 109 Multi-Use Pathway of Standard Asphalt Paving



Figure 110 Pathway of Crushed Limestone Screenings



Figure 111 Tree Grove with Compacted Aggregate Paving

Unit Paving

Pavers may be used for emphasis in the landscape. They add complexity, a human scale, color, and a sense of quality to paving signifying a higher level of importance.

Design Considerations:

- Pavers should be encapsulated by a high quality edging material.
- Material selection and color should respond to the campus context and building architecture.
- Patterning should respond the scale of space.

Recommendations:

Concrete pavers are preferred in high traffic areas (see Figure 113). Clay pavers and stone paving should be used minimally in intimate pedestrian areas to emphasize special character (Figure 112).

Pervious unit paving is encouraged on sites that are appropriate and can be easily maintained. Plazas, terraces, bike parking, and courtyards are ideal spaces to incorporate pervious paving (Figure 114).



Figure 113 Concrete Unit Pavers are Preferred in High Traffic Areas



Figure 112 Clay and Stone Pavers Emphasize Special Character



Figure 114 Pervious Pavers are Encouraged in Low Pedestrian Traffic Areas

Natural Stone Paving

Natural stone is a quality paving material that is harmonious with the natural environment. Natural stone paving is recognized for its high quality and is associated with areas of importance (Figure 115).

Design Considerations:

- Unit pavers design considerations apply.
- Consists primarily of flagstone set on a compacted aggregate base (Figure 116 bottom right).
- Other stone paving patterns should be review with FP&M staff for approval.
- Located in special campus areas consistent with Campus Greens, Courtyards, Plazas, Terraces & Gardens, and Naturalized Landscapes typologies.



Figure 115 Natural Stone Paving



Figure 116 Flagstone Paving at Picnic Point

Site Amenities

Landscape Walls

Design Considerations:

- Finishes and design cues should be taken from adjacent architecture including: caps, columns, reveals, jointing, profiles, and materials.
- Avoid impeding important viewsheds and sight triangles.
- Preference is for walls to be less than 24” high which do not require a railing; walls over 24” should include a minimum 3’ of planting deterring walking along the top of the wall.
- Walls along pathways should be designed for seating height (18”-21”)
- Skateboard deterrents should be integral to the design profile, and not employ additional hardware installed after completion.
- All exposed surfaces shall be a smooth architectural concrete or precast/ stone veneer finish.

Landscape Walls – Architectural

Architectural landscape walls must have a clean refined finish of cast-in-place or precast concrete (Figures 117 & 118).

Design Considerations:

- All exposed surfaces shall be a smooth architectural concrete or precast.
- Walls should include an integral or additional cap with a reveal.
- Wall surfaces should extend to or below finished grade.
- Concrete walls should have a finished look that including: form liners, exposed aggregate, parged, trowel, etc... Color should complement adjacent architecture and materials.

Recommendations:

Architectural landscape walls can be used in urban areas of campus and adjacent to architecture to provide a refined look and feel.



Figure 117 Architectural Concrete Wall Finish



Figure 118 Precast Concrete Wall Finish

Landscape Walls – Stone Walls

Natural stone walls are important site elements for reinforcing the campus aesthetic. Locally sourced limestone connects the campus to the surrounding state.

Design Considerations:

- Finishes and design cues should be taken from adjacent architecture including: caps, columns, reveals, jointing, profiles, and materials.
- Scale of units and patterning should be determined based on the height and length of the wall.
- Limestone should be evaluated for hardness to avoid premature deterioration.
- Larger format cap stones are preferred.
- Running bond is the traditional pattern, other patterns or types of stone should be reviewed by FP&M staff (Figures 119 & 121).
- Walls should extend at least one course below grade.

Recommendations:

Natural limestone is the standard for retaining walls and raised planting beds on campus (Figure 120). Limestone block shall be split face with offset coursing.



Figure 119 Mortar Set Stone Wall



Figure 120 Natural Limestone Retaining Wall



Figure 121 Entry Gate Wall of Irregular Glacial Boulders.

Landscape Walls – Alternatives

There are numerous alternative materials for both freestanding and retaining walls that can add both utility and aesthetics. Each material provides different opportunities and challenges. Living and planted walls can be used in place of traditional walls, but require significant maintenance.

Design Considerations:

- Walls materials should be evaluated for their individual location and use.
- Timber walls are well suited for natural areas. Timber and wood walls are relatively short lived compared to other materials.
- Metal walls and facades are generally durable. Rust and staining should be considered when choosing a finish. All ferrous metals should be galvanized prior to other finishing. Heavy duty exterior paint is recommended for ease of maintenance.
- Living walls are a strong design feature that draws a lot of attention. But, like all highly ornamental plantings, living walls require regular maintenance, permanent irrigation, and occasional replacement (Figure 122).
- Gabion walls consist of baskets filled with smaller stones. The size, color and pattern of stone in the basket can vary greatly. Gabions are preferred in natural areas and locations that are partially or intermittently submerged (Figure 123).

Recommendations:

Alternate material walls are best suited in natural areas or in association with corresponding architecture. Walls should be chosen for their utility and aesthetics.



Figure 122 Living Wall



Figure 123 Gabion Stone Wall

Vertical Edges

Planting areas and areas that are adjacent to high traffic paths shall be delineated with a vertical edge for protection from salt and snow removal equipment. Aggregate paving also requires edging to keep the material from migrating.

Design Considerations:

- Planting beds in areas with high pedestrian use, or signature landscape beds shall be delineated with a vertical edge. Bed edges shall be straight lines or simple curves sympathetic with the context. Elaborate or overly curving planting bed shapes should not be used.
- Edging should be durable and low maintenance.
- Steel edging should be 3/16" for gravel maintenance strips and 1/4" for paths.
- Maintenance strips should be used at the base of buildings, walls and other architectural elements to reduce the need for edging and create clean delineations.
- Maintenance strip aggregate should be at least 9" wide and no more than 18". Aggregate should be 1/2"-1 1/2" pea gravel, or any approved material by the Campus Landscape Architect.

Recommendations:

The typical campus standard is a cast-in-place concrete curb with chamfered edges; however, the use of stone or steel edging may be considered based upon campus context (Figures 124, 125 & 126).



Figure 124 Stone Curbing, Bascom Hill



Figure 125 Standard CIP Concrete Curb with Chamfer



Figure 126 Vertical Steel Edge, Chazen Art Museum

Maintenance Strips

Maintenance strips should be provided where planting and lawn areas abut a building or other structure/construction. These strips provide a defined edge allowing for ease of mowing, provide ready building access, and prevent soil from accumulating on the building foundation (Figure 128 right).

Design Considerations:

- Strips shall be straight lines or simple curves sympathetic with the architecture. Elaborate or overly curving maintenance strips should not be used.
- Edging should be durable and low maintenance.
- 1/4" thick steel edging should be used to contain maintenance strips.
- Maintenance strips should be used at the base of buildings, walls, or other architectural elements to reduce the need for maintenance and damage to architectural materials (Figure 129 bottom right).
- Aggregate should be washed and of a size and material comparable to American Heritage Pebbles provided by Kafka Granite.
- Maintenance strips should be a minimum of 18 inches wide and should not exceed 48 inches in width.

Recommendations:

Consider maintenance edge materials such as natural stone or unit pavers if the area functions as a 'desire' path or maintenance walk (Figure 127 below).



Figure 127 Stone Maintenance Edge



Figure 128 Standard Aggregate Maintenance Strip with Steel Edging



Figure 129 Aggregate Maintenance Strip between a Stone Retaining Wall and Lawn

Bench

Design Considerations:

- Benches should be located in areas for potential gathering, periodically along long continuous paths, and at key viewsheds.
- Locations should be comfortable in a protected microclimate.
- Backless benches are appropriate in areas with multiple points of access, but whenever possible provide benches with backs and arm rests to assure use by people with disabilities..
- Furniture should complement adjacent architecture.
- Anchor all benches to concrete pavement or footing, 12” min. from lawn areas.
- Companion seating space shall be provided immediately adjacent for users in wheelchairs.
- Size/length and location of benches should follow Crime Prevention Through Environmental Design (CPTED) guidelines.

Recommendations:

Standard Bench:

Product: Preferred MF2207(5) or MF2204(6)

Manufacturer: Wausau Tile

Color: Black metal armor coating, textured

Mounting: Surface mount, tamper-proof bolt and expansion sleeve

Memorial Bench:

See Standard Bench above.

All memorial benches require FP&M approval per the Campus Memorial Policy.



Figure 130 Benches should be located at Natural Congregation Points



Figure 131 Standard UW–Madison Bench

Bench – Alternatives

Benches of wood or other unique construction may be considered in response to the physical context. Alternative seat mountings, such as wall mounted seating, may also be considered to integrate seating into walls or other constructions. See Figures 132, 133 & 134.

Design Considerations:

- Standard bench design considerations apply.
- Material choice should respond to the immediate architectural context and landscape surroundings.
- Materials should be vetted for durability and ease of maintenance.
- Consider unique seating options in courtyards, plazas and terraces which respond to the building architecture. Consult with FP+M staff for acceptable options.
- Locations should correspond with the unique design and not interfere with the overall campus aesthetic.
- Size/length and location of benches should follow Crime Prevention Through Environmental Design (CPTED) guidelines.



Figure 132 Wall Mounted Bench



Figure 133 Custom Table Top Bench with Wood Slats



Figure 134 Wood Bench

Cluster Seating

Cluster seating is defined as an attached table and seat allowing the opportunity for more than two people to gather at one time. These elements are typically provided in areas in addition to benches and may or may not include shading elements (Figures 135 & 136).

Design Considerations:

- Table locations should be coordinated with Grounds staff to accommodate snow removal. Do not locate too close to pathways and walks to avoid impeding pedestrian traffic.
- Designs should complement existing suite of furniture and/ or adjacent architecture.
- Provide trash and recycling receptacles in close proximity.
- Locate near dining options.
- Locate on hard paved surfaces, aggregate surfaces, surface mounted with tamper-proof hardware.
- Locations shall be meet ADA requirements for pathways and turning space. Refer to current ADA standards for the required quantity of accessible seat locations.

Recommendations:

The campus standard is “Carousel by Landscape Forms”. Backed and backless seat options are available. Configurations, quantities, and locations should be approved by the Campus Landscape Architect.

Product: Carousel

Manufacturer: Landscape Forms

Color: Matte black or as otherwise approved by the Campus Landscape Architect.

Mounting: Surface mounted with anchor bolt and expansion sleeve, freestanding options approved by Campus Landscape Architect.

Configuration: 2-6 seats, back or backless, provide a variety unless otherwise noted. 3 and 5 seat options must be provided as accessible options (refer to ADA requirements for number of accessible tables).

General Notes:

Campus standard benches and cluster seating shall be used in the majority of areas around campus. Where benches and tables are not prominently visible from roadways, deviations with approval from the standard are acceptable.



Figure 135 Standard Cluster Seating



Figure 136 Standard Cluster Seating, Biochemistry Building

Cluster Seating – Alternatives

Flexible seating options may be considered in consultation with UW–Madison FP&M CPLA staff in appropriate locations (Figure 137).

Design Considerations:

- Flexible and freestanding furniture is preferred in isolated spaces and unique plazas, courtyards, gardens, and terraces that can be secured.
- Locations should be selected to facilitate gathering and social interaction, without impeding pedestrian traffic.
- Locate in areas with appropriate microclimate.
- Selection should complement adjacent architecture and campus furniture standards.
- Stackable and easily stored options are preferred.
- Green roof seating must meet wind load requirements for uplift. Table umbrellas are not recommended on raised green roof patios due to wind safety issues.
- The ability for replacing furniture lost to theft is required by departments and or divisions where the furnishing is proposed.

Recommendations:

Freestanding and flexible seating are preferred in dining areas and other spaces that are unique, and have the proper staffing or security to maintain the furniture. (All selections to be approved by the Campus Landscape Architect.)

UW–Madison Housing standard:

Product: Parc Centre Chair

Manufacturer: Landscape Forms

Color: Bronze, matte black or as approved by the Campus Landscape Architect.

Configuration: Armed and armless

Product: Cafe Tables

Manufacturer: Landscape Forms

Size: 36 inch or 42 inch diameter rod base cafe table.

Color: Black or as otherwise approved by Campus Landscape Architect.

Configuration: Freestanding, Steelhead perforated metal top.



Figure 137 Cluster Seating Alternatives: Flexible (top & bottom) and Stepped Wall Seating (middle).

Trash, Recycling, and Ash Receptacles

Receptacles are important for keeping the campus clean and free of litter. Locating them properly is the determining factor for their success.

Design Considerations:

- Receptacles should be compatible with other furniture selections on campus and in the immediate area.
- Group together and with other furniture to minimize their visual impact (Figure 138).
- Locate in high traffic and frequently visited areas: building entrances, bus stops, seating areas, dining areas. Located minimum of 25 feet from entrances, air intakes and operable windows.
- Provide removal inserts for pickup.
- Receptacles should be located on hard paved surfaces, adjacent to, but not within pathways and walks.

Recommendations:

Product: MF 3200 trash, MF 3252 recycling receptacle (Figure 139)

Manufacturer: Wausau Tile

Color: Metal Armor textured black. Blue powder coated recycling cover.

Size: 34 gallons

Mounting: Surface mount, anchor bolt and expansion sleeve

Product: MF 4005 Flat steel ash urn

Manufacturer: Wausau Tile

Color: Metal Armor textured black

Size: 18 inch diameter x 32 inch

Mounting: Surface mount, anchor bolt and expansion sleeve



Figure 138 Trash Receptacle Clustered Together with Seating and Light Elements



Figure 139 Campus Standard Trash and Recycling Combination

Bicycle Racks

Biking is an important mode of transportation on campus. Providing adequate parking, conveniently located near entrances can be a challenge.

Design Considerations:

- Designs should be simple, use space efficiently and be easily maintained. The use of bike rack styles may vary on user demand and location within campus. Consult with Transportation Services for determination.
- Bike parking areas should be sited to avoid conflicts with pedestrian routes. Locate racks under overhangs or sheltered areas when possible.
- Locate bike parking along major bike routes and near trails.
- Bike parking areas should be well lit.
- Contact UW–Madison FP&M to confirm appropriate quantities for each building or site.
- Racks should be placed so that the edge of racks are 6" apart. The front of the rack should be offset a minimum of 6' from the edge of sidewalk. A minimum 5' wide access aisle is required. See UW Technical Standards for additional information.
- Integrate into landscape and plantings; Avoid cluttering building entrances and egress routes. Ensure user visibility.

Recommendations:

Product: Duckbill rack (Figure 140)

Manufacturer: UW–Madison Machine Shop or MadRax

Color: Galvanized steel

Mounting: Surface mount with anchor bolt and expansion sleeves

Configuration: Double or single-loaded, 10' standard length, custom lengths as needed.

Product: Regent rack (Figure 141)

Manufacturer: MadRax

Color: Galvanized steel

Mounting: Surface mount with anchor bolt and expansion sleeves

Configuration: Double or single-loaded, 10' standard single length, 5' or 10' standard double-sided lengths. Other lengths available as needed.



Figure 140 Standard Duckbill Rack



Figure 141 Standard Regent Rack

Tree Grates and Pit Covers

Tree grates protect tree roots from compaction without sacrificing pedestrian space. They also allow air and water into the tree pit to help maintain tree health.

Design Considerations:

- Cast iron tree grates, with expandable rings to accommodate growth.
- Grates should be sub-divided in pieces that can be easily removed for maintenance.
- Aggregate mulch should be used below grates to deter rodents.
- Custom tree grates are acceptable with UW Campus landscape architect approval.
- Best used in highly urban areas with heavy pedestrian use and limited terrace space.

Recommendations:

Product: Metropolitan Series, R-8707, R-8707-A, R8784, R-8809, R-8815, R-8815-B, others by approval of FP&M. (Figure 142)

Manufacturer: Neenah Foundry

Color: Natural Finish

Size: Varies per project specification

Mounting: Per Manufacturer



Figure 142 Standard Tree Grate

Tree Pavers

Design Considerations:

- Tree paver areas to be bounded on all sides by a flush concrete header. (Figure 143)
- Set pavers initially 'high' to accommodate subsurface soil settling.
- Maintain minimum 18 inch 'hole' (top dressed with rotten granite) centered around tree trunk.

Recommendations:

Product: Granite, clay, concrete segmental units

Manufacturer: Varies

Color: Relate to identified

Campus Design Neighborhood.

Size: 4 inch x 4 inch x 4 inch standard size.



Figure 143 Granite Tree Pavers

Tree Pits and Soil Volume

All tree locations should strive to provide as much uncompacted soil volume as possible. Soil quantity directly affects the trees health and longevity.

Design Considerations:

- Urban tree pits should be continuous when possible.
- Sub-surface drainage should be provided, unless soils are noted to be free draining.
- Tree pits should have 1,200 cubic feet of uncompacted soil volume.
- Tree pits should be mulched to increase water retention.

Recommendations:

Silva cells (or approved equal) should be used to maintain uncompacted soil volumes under pedestrian surfaces. In certain cases, structural soils may be also considered. Oversized or continuous tree grates as well as structural concrete slabs, planters with curbing, and lawn terraces are other options to provide additional soil volume.

Lighting – Pedestrian

Design Considerations:

- Establish a consistent theme and suite of fixtures.
- Develop a hierarchy of lighting for spaces.
- Create a standard for parking lighting that meets safety requirements and matches pedestrian and street lighting
- Maintain consistent standards within neighborhoods.
- Install uniform fixtures to reinforce campus identity and make maintenance easier.
- Accent lighting should only be used to emphasize public art, statues, important landscapes, and facades.
- All lighting equipment should be tamper-proof, weather-proof, and resist vandalism.
- Accent and up lighting should be shielded to avoid glare for vehicles and pedestrians.
- Fixtures should always to be dark sky compliant.
- Light bases should be set above the finish grade, refer to UW Technical Guidelines.
- All LED lights should follow AMA recommendations for color (3000K CCT) to reduce glare and health issues.
- Use consistent spacing to create rhythm and avoid dark areas.

Recommendations:

Product: Archetype, model SAR (Figure 144)

Manufacturer: Kim Lighting

Color: Black

Size: 12 foot height pole to be 4 inch diameter, straight, smooth, round pole. Round base and escutcheon.

Lamp: LED, dark sky compliant

Additional information is available in UW–Madison Technical Guidelines



Figure 144 Standard Pedestrian Light, N. Charter St

Lighting – Historic

Historic light fixtures give a strong sense of place and reinforce the character of the neighborhood.

Design Considerations:

- Use only in historic neighborhoods and adjacent to historic buildings. Coordinate with Campus Planning regarding these locations.
- Poles should be aligned and laid out in formal pattern, with emphasis on symmetry.

Recommendations:

Product: Main Street, Model MS805A (with decorative spikes). See Figure 145.

Manufacturer: Sternberg

Color: Black

Size: Williamsburg Series, 12 foot height pole to be 4 inch diameter, tapered, fluted pole.

Lamp: LED, dark sky compliant

Note: Variations are specific to campus locality, selections should match existing fixtures and specifications of the Campus Design Guidelines & Standards. Refer to existing fixtures.



Figure 145 Standard Historic Pedestrian Light, Chazen Art Museum

Lighting – Parking and Street

Lighting on streets and parking areas is extremely important to maintain safety and legibility for all vehicles. Parking areas are used at all times of day and night requiring adequate lighting for safety, without producing glare and hot spots.

Design Considerations:

- Space lights to provide adequate lighting for safety in accordance with Crime Prevention Through Environmental Design (CPTED) recommendations.
- Street lighting photometrics should comply with Department of Transportation standards.
- Full cutoff fixtures should always be used, especially in areas near hospitals and residence.
- All vehicular street lights should follow current AMA guidelines for color temperature (3000K CCT)
- Top of base to be set 36” above finish grade.

Recommendations:

Product: Archetype, Model AR, see Figure 146.

Manufacturer: Kim Lighting

Color: Black

Size: 25 foot pole, straight, round, smooth, 6” diameter. Round base and escutcheon.

Lamp: LED, dark sky compliant

Additional information is available in UW–Madison Technical Guidelines.



Figure 146 Standard 25 Foot Parking Light

Lighting – Alternatives

Accent lighting adds drama to space and focuses users' attention on key architectural or landscape elements. In prominent locations the lights can also be an architectural focal point.

Design Considerations:

- All custom lighting design elements should be reviewed by the Campus Landscape Architect and UW–Madison FP&M staff for design and maintenance considerations.
- Landscape accent lighting should be used in key areas to light trees, fountains, sculptures, or other important features to create emphasis.
- Indirect lighting is preferred in courtyards, terraces, gardens, and other intimate spaces to provide adequate lighting without visual hot spots that are a hinderance to the users who inhabit these spaces in the evening.
- All lights should follow current AMA guidelines for color temperature (3000K CCT). Color exceptions will be considered on an individual basis by the Campus Landscape Architect.
- LED fixtures are preferred for all fixtures of these types to reduce replacements.
- Dark Sky compliant fixtures are preferred.

Recommendations:

Additional information is available in UW–Madison Technical Guidelines.



Figure 147 Alternative Lighting – Light Pylon

Ornamental Fencing & Piers

Fences are commonly used on campus as both safety and security devices and also to help delineate the boundaries of the campus.

Design Considerations:

- Designs should match local architectural character.
- Fences for safety should be a minimum of 42” high from finished grade.
- Ornamental fences should have a decorative characteristics that match the surrounding architecture.
- Fences should be minimally used along major corridors to avoid creating bottlenecks.
- Security fencing should be minimum 6 ft. high with a top treatment discourage climbing.
- Fences and pier masonry should match the architecture and the aesthetic of the corresponding Campus Design Neighborhood. Pickets shall be black iron or aluminum and reflect the spacing/heights/ aesthetic of other installations on campus (Figure 148).
- Fence pier cap and base shall be similar in design to the existing pillars on campus.

Recommendations:

Aluminum or steel fencing, powder coated black with vertical pickets. Fencing can be surface mounted with anchor bolts and expansion sleeves or set in dedicated footings, based on height. All fencing should be located on concrete or within a maintenance strip. Fencing style and size may vary to support Campus Design Neighborhood aesthetics, security concerns, or architectural incorporation with approval from FP&M staff. See Figure 149.

Product: Montage II Industrial Steel, Majestic Style

Manufacturer: Ameristar

Color: Black

Size: 8 foot panel length, 3 rail panels, height per project and as noted above

Mounting: Surface mount on concrete footings. Piers on concrete bases, match existing style.



Figure 148 Typical Campus Black Ornamental Fence and Pier Masonry

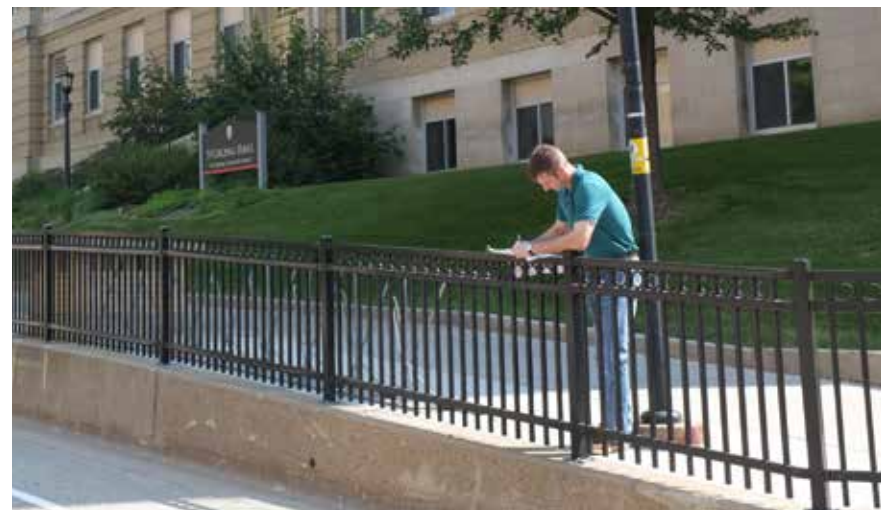


Figure 149 Standard Black Ornamental Fencing

Chain Link Fencing

Chain link fencing is an economical and utilitarian fencing solution used on campus to control access. It is used primarily for temporary installations, but may be used for permanent fencing solutions in certain cases.

Design Considerations:

- 4 feet, 6 feet, or 8 feet height. Taller heights for sports facilities are acceptable and should be reviewed by the Campus Landscape Architect.
- All permanent chain link fencing shall be vinyl coated black. Plastic or vinyl inserts for screening are not acceptable for permanent fences as they tend to fade, become brittle and breakdown in the sunlight.
- Pipe posts minimum 2-3/8 inch OD line pots with 2-7/8 inch OD corner and pull posts.
- Galvanized, powder coated black.
- 1-5/8 inch top rail and 0.177 inch bottom tension wire.
- Temporary fence mesh to be galvanized or zinc-coated.

Recommendations:

Recommended for temporary control measures or areas of less visual prominence. Chain link fences are perceived to be of a lower quality security/access solution and should be used sparingly.



Figure 150 Standard Powder Coated Black Chain Link Fencing

Post & Chain Fencing

Post and chain fencing is designed to keep pedestrian traffic out of a certain area. It is preferable to use landscape plantings or walk configurations changes to direct pedestrians out of sensitive areas. Post and chain fencing may also be used to signify areas of greater importance.

Design Considerations:

- Use single chain black chain with black posts with acorn caps for pedestrian applications.
- Post and chains should be used sparingly to avoid cutting off areas that would be otherwise utilized.
- Posts should be set without footings to allow for easy removal for events as needed.
- Posts shall be set 6" off adjacent pavement and/or surfacing.

Recommendations:

Galvanized steel posts painted black and set directly into soil. Black single chain attached at each post (see Figures 151 & 152).

Product: Galvanized steel posts, galvanized acorn caps, vinyl coated chain.

Manufacturer: UW Physical Plant

Color: Polyester powder coated posts and caps, color to be black. Black vinyl coated chain.

Size: 1-3/4" OD post with 1" diameter hole set 1" from top of post (both sides), 1/8" diameter double loop chain or 3/16" steel grade 30 Dayton chain if a more robust chain is needed.

Mounting: 60" post set with 36" above grade.

Spacing: Approximately 10'-0" or as site constraints dictate.



Figure 151 Post & Chain Fencing, Camp Randall Memorial Park



Figure 152 Post & Chain Fencing, Genetics-Biotechnology Center Building Grounds

Bollards & Delineation

There are countless areas on campus that require separation between vehicular and pedestrian traffic. Bollards provide separation and safety, but should be visually unobtrusive.

Design Considerations:

- Bollards tend to create issues for snow removal equipment in the winter months and should only be used in consultation with FP&M staff and upon approval of the Campus Landscape Architect.
- Bollard designs should directly reflect the adjacent architecture and reflect campus style.
- Bollards should be spaced no wider than six feet on center to avoid being ineffective and have 36" clear between minimum.
- It is recommended that illuminated bollards be avoided due to high maintenance requirements and glare production.
- Metal bollards should not have sharp corners or protrusions.
- The preferred finish for new metal exterior bollards on the campus is galvanized steel that is primed and then powder coated black. Stainless steel is another acceptable finish for metal bollards (Figure 153). Anything different shall be approved by the Campus Landscape Architect.
- Where walkways and service drives requiring temporary admission of authorized vehicular traffic, bollards may be removable. Where admission of authorized vehicular traffic is not required, bollards may be permanently embedded.
- Masonry bollards are also acceptable. Provide details and material samples at the 35% plan review.
- Any bollards used in loading dock areas shall be the color red or black with two or three horizontal reflective white stripes at the top.

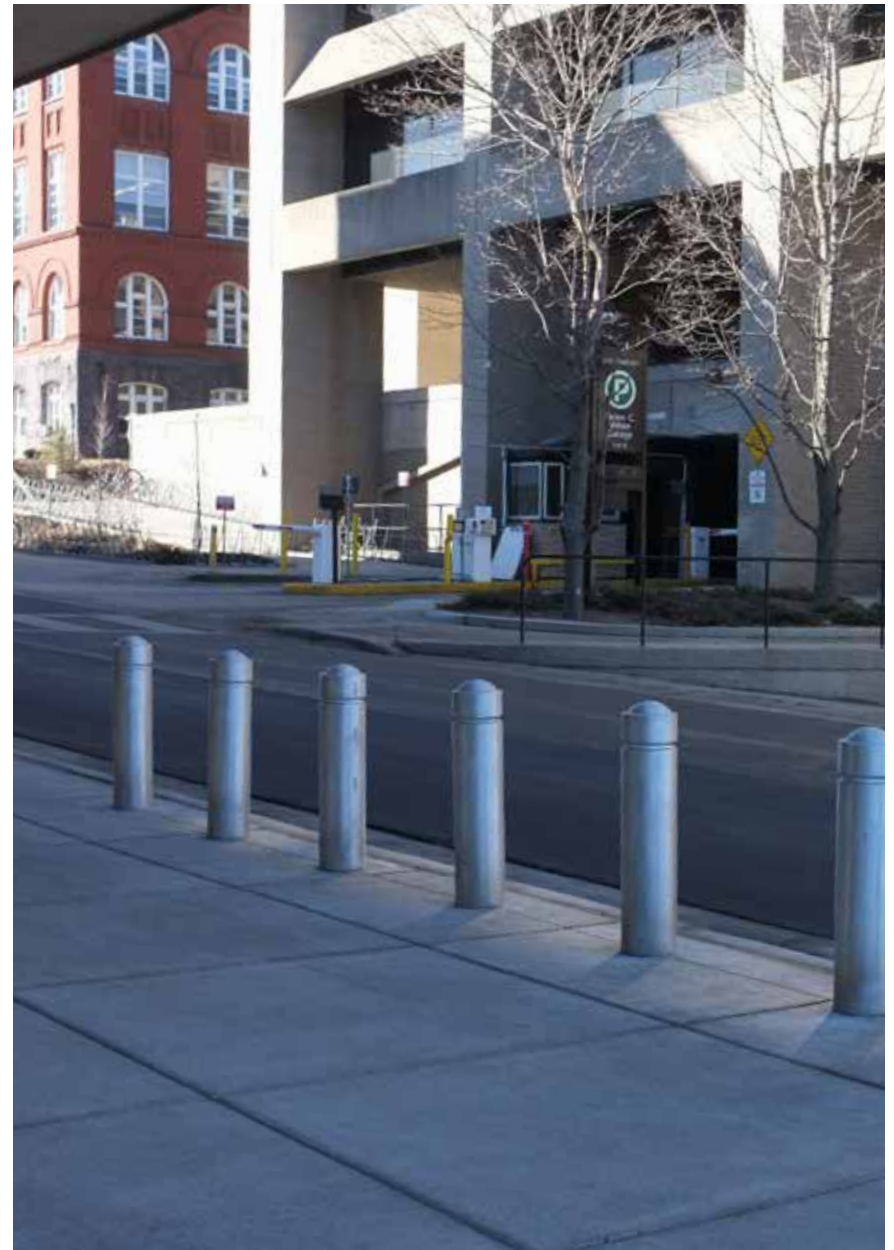


Figure 153 Stainless Steel Bollard Application

Stairs and Ramps

Stairs and ramps are strong architectural and organizing elements that are repeated across campus. They provide the most direct opportunity to connect the architecture with the surrounding topography. Stairs shall comply with all ADA requirements.

Design Considerations:

- Stair materials shall be compatible with adjacent architectural and landscape materials.
- Stairs shall be constructed in proportions appropriate to their site context, with a preferred tread to riser relationship of 14" x 6". This creates a more gracious approach to campus buildings.
- Accessible ramps shall conform to the American Disabilities Act (ADA) (<http://www.access-board.gov/guidelines-and-standards/buildingsand-sites>) standards.
- All sites should be designed with universal design aspects, stairs should only be used when universal design is not possible.

Recommendations:

- Stairs shall typically be cast-in-place concrete (Figure 154). Precast steps are at the discretion of FP&M staff.
- Landings, where applicable, shall be located at a maximum of 5'-0" grade change to ensure visual coherence and psychological invitation between levels.



Figure 154 Standard CIP Concrete Stair

Handrails & Guardrails

Design Considerations:

- Handrails shall be metal with an easily maintained finish such as stainless steel or powder coated paint finish.
- Color shall be anodized (matte silver), black, stainless or champagne (golden). See Figure 155.
- The standard for handrails shall be a rectangular, square or circular cross section and shall comply with ADA standards and meet other applicable design standards for handrails.
- Intermediate posts and rails, where required, shall meet structural requirements and applicable standards, but should be kept to a minimum to create a simple profile.
- Guardrails shall be stainless or powder coated paint finish, shall meet applicable codes and be designed to be compatible with the materials and design of associated or adjacent handrails (see Figure 156).
- Guardrails shall be simple in design and devoid of excessive ornamentation and material use. Elements shall be cohesive within the campus environment and support a singular design expression.
- When a walk requires both a handrail and a guardrail, elements should be merged together into a single unit.

Recommendations:

- Per direction and approval by FP&M staff.
- All rails should be surface mounted using stainless steel hardware with tamper proof attachments.
- Ensure rails do not protrude into walkways where they may be damaged by snow removal equipment or reduce the usable area of the adjacent walkway.
- Rails may require skateboard deterrents. Coordinate with Campus Landscape Architect on requirements and standard detail.



Figure 155 Standard Metal Handrail



Figure 156 Unified Guardrail and Handrail Design

Organic Mulch

Most planting beds require mulch especially during establishment periods. Mulch serves many different functions: weed suppression, water retention, promotes soil fertility, prevents compaction, reduces erosion, moderates soil temperature. In addition to the horticultural and mechanical benefits, mulch gives a finished appearance and shows that the landscape is being maintained.

Design Considerations:

- Use double shredded aged hardwood mulch, sourced locally, natural color (Figure 157).
- Mulch should not exceed 3” depth in any bed.
- Avoid placing mulch directly in contact with the collar of trees and large shrubs.
- In sloped areas, a spade edge is recommended to control washout.
- Other organic mulch options may include; pine straw, leaf compost, pine bark fines, etc. (Figure 158)
- Avoid placing organic compost/mulch in areas that contribute to stormwater runoff thereby reducing phosphorus loading potential.
- Consider the practice of mulching perennial and grass plant debris in situ as an alternative to shredded hardwood bark mulch.

Recommendations:

Use organic mulch in all perennial and shrub beds. Mulch rings should be used when establishing trees. For additional mulch information refer to the maintenance guidelines and UW Technical Guidelines.



Figure 157 Standard Double Shredded Aged Hardwood Mulch



Figure 158 Pine Straw Organic Mulch

Mineral Mulch & Rip-Rap

Mineral and other inorganic mulches can provide a low maintenance option and high contrast in the right location.

Design Considerations:

- Stone and other inorganic mulches should be avoided and only used with the approval of the Campus Landscape Architect.
- Sizing, color, and texture should be determined in conjunction with adjacent materials (Figure 159). Locally sourced options are preferred.
- All stone mulch should be separated from adjacent planting or paving areas by a rigid barrier, like a curb or steel edge.
- Riprap should be used on steep slopes that experience washout, rill or gully erosion.
- Riprap should be used in conjunction with landscape fabrics that extends back into the slope to avoid undercutting.
- Riprap areas should be seeded or plugged with native vegetation to help permanently stabilize over time.

Recommendations:

Use organic mulch in all perennial and shrub beds. Mulch rings should be used when establishing trees. For additional mulch information refer to the maintenance guidelines and UW Technical Guidelines.

Local fieldstone or granite cobbles are preferred for riprap (Figure 160). An engineer should be consulted for specific sizing and depth based on the angle of repose and soils.



Figure 159 Stone Mulch Used as a Maintenance Strip



Figure 160 Granite Cobble Rip-Rap

Planters and Containers

Planters are a valuable way to emphasize a specific entry or facade. Planters provide additional color and seasonal interest (Figure 161).

Design Considerations:

- Containers should be made of durable materials that are resistant to sun, salt, and freezing.
- Integrated water reservoirs are preferred to reduce maintenance.
- Planters should be located in high visibility areas
- Finishes and colors should match site materials and architectural character with natural tones/colors preferred.
- Drainage locations should be coordinated to avoid staining surrounding pavement.
- Planters should include a sand and gravel base to filter excess water.
- Seasonal planting rotations, microclimate, size, weight and viewsheds should be considered when locating planters.
- Planters with trees or shrubs should be insulated and have appropriate soil volume to support successful growth.

Recommendations:

Precast concrete planters are preferred in most locations (Figure 162). Simple designs are preferred, that match the surrounding architectural character or Campus Design Neighborhood.

All planters are to be used and recommended upon consultation with FP&M staff and with approval by the Campus Landscape Architect.



Figure 161 School Spirit Container Planting



Figure 162 Precast Concrete Planter

Landscape Decorative Boulders

Boulders and landscape stones are an important feature that can be used in a variety of ways. But, boulders and stones should not be used overtly as traffic control or edging. Instead, boulders should mimic the natural character of the glacial landscape.

Design Considerations:

- Boulders should be used as accents to highlight key areas.
- Boulders can be employed to retain slopes and terminate walls.
- Boulders should not be substituted for bollards, fences, curbs or railings.
- Boulders should be grouped and ‘seated’ to look natural and mimic local stone erratics (Figure 163).
- Landscape boulders and cut stones should be seated and graded into the soil to avoid the appearance of being “plopped” onto a site.

Recommendations:

To look natural and avoid tampering, boulder sizes should be large (Figure 164). Groupings should be carefully placed and ‘seated’ in the soil to work with grades and appear natural. Locally sourced stone and boulders are preferred ensuring the stone Mohs hardness scale is sufficient to prevent cracking, popping, crumbling or deteriorating over time.



Figure 163 Decorative Boulders at Wall Terminus



Figure 164 Decorative Boulder, Wisconsin Institute for Discovery Streetscape

Signage

This section introduces the standard family of campus signage and how to use them appropriately. Signage is one of the most obvious and visible forms of identity on campus (Figure 165).

Whether permanent, seasonal or temporary, signage brings legibility to the campus while reinforcing the overall character of the place. Although signage may seem unnecessary to a student familiar with campus, thousands of visitors arrive on campus every year and need easily understood information to move around campus.

Location of signs is equally as important as text. Sign locations should be reviewed to maximize visibility and make wayfinding on campus as easy as possible.



Figure 165 Gateway Column, Chazen Art Museum

Signage – Campus Gateway

Campus entry signs are monuments that reaffirm the sense of place at each gateway into campus. These signs announce arrival.

Design Considerations:

- Signs should be civic in scale and match the overall gateway sequence.
- Location of signs should maximize visibility from multiple angles.
- Grading should be elevated around the sign to increase visibility and prominence. Berms should be smooth and natural.
- Monuments should match the surrounding architectural and neighborhood character for each entry.
- Planting should be used to frame and focus the eye on the sign.
- Signs shall be lit indirectly so they are visible at night.

Recommendations:

Stone, precast concrete, or brick are preferred materials with large three dimensional lettering. Signs should be scaled to be read from long distances and designed based on roadway speeds (Figure 166 right).

Refer to University Exterior Graphics, Wayfinding and Signage Policies and Design Guidelines.



Figure 166 Campus Gateway Sign, Walnut Street at Observatory Drive.

Signage – Wayfinding and Directional

Wayfinding and directional signage should conform to university exterior graphics and signage guidelines. Signs should be carefully located to improve pedestrian and vehicular legibility. See Figures 167 & 168.

Design Considerations:

- Locate signs at key intersections entrances.
- Avoid blocking visual corridors and sight triangles. Landscape plantings should be located to ground signage without blocking information.
- Basal planting should be perennial or shrubs that do not require regular mechanical maintenance.
- All wayfinding and directional signs should be angled to be perpendicular to the primary direction of travel. In some cases, signs can be rotated up to 45 degrees depending on walk and roadway configurations.
- Place sign appropriately to avoid string trimmer damage in lawn areas. This may include a bark mulch bed or integrated into a site landscape bed.

Recommendations:

Refer to University Exterior Graphics, Wayfinding and Signage Policies and Design Guidelines.



Figure 167 Standard UW–Madison Directional Sign

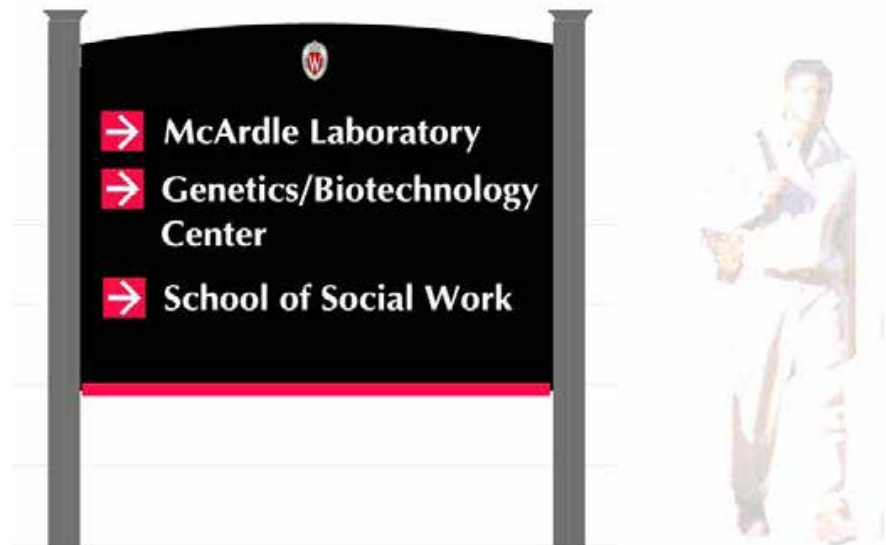


Figure 168 Standard UW–Madison Directional Sign Drawing

Signage – Building Identification

Identifying signs are important markers for visitors and students. They also function as address markers for mail, deliveries, and emergency vehicles/personnel (see Figures 169 & 170).

Design Considerations:

- Signs are placed immediately adjacent to main entries or along main walk to the building.
- Sign can be mounted on the building facade or on posts in the landscape and should be parallel to the street on which the building is addressed.
- Mounting style should be determined based on visibility from main points of entry.
- Coordinate with FP&M to avoid mounting signs to facades of ‘historic’ buildings. Mount signs in mortar joints as to building material proper.
- Place sign appropriately to avoid string trimmer damage in lawn areas. This may include a bark mulch bed or integrated into a site landscape bed.
- Avoid blocking visual corridors and sight triangles. Planting should be located to ground signage without blocking information.
- Basal plantings should be perennial or shrubs that do not require regular mechanical maintenance.

Recommendations:

Refer to University Exterior Graphics, Wayfinding and Signage Policies and Design Guidelines.

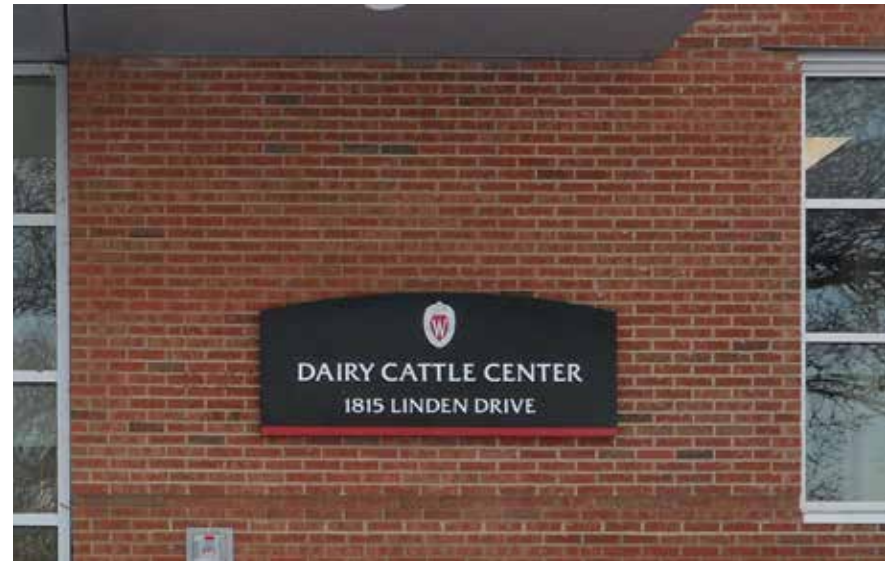


Figure 169 Standard Wall Mounted Sign, Dairy Cattle Center



Figure 170 Standard Freestanding Building Sign, Gordon Dining and Event Center

Signage – Banners & Hardware

Banners are temporary signs that are erected to announce special information or signal a special time of year. For example, banners may be installed during the week of graduation or for centennial events at a specific building (Figures 172 & 173).

Design Considerations:

- Banners are generally made of a durable fabrics that are attached to temporary or permanent structures (Figure 171).
- Structures include: light posts, building facades, bridges, or columns.

Recommendations:

For specific banner implementation guidelines refer to the University Banner Guidelines on the CPLA website.

For graphics refer to University Exterior Graphics, Wayfinding and Signage Policies and Design Guidelines.



Figure 172 Event Banner



Figure 171 Banner Post Mounting Connection



Figure 173 Event Banner

Signage – Heritage Plaques

These plaques around campus are important historical markers reminding us of notable places, events, and achievements throughout time. Heritage plaques are interpretive signage that brings campus to life for visitors that do not know the rich history of the university (Figures 174 & 175).

Design Considerations:

- Plaques should be located to be read from standing or seated positions.
- The nature of these signs require they be located in areas with less pedestrian traffic, at overlooks, or other areas where users feel comfortable stopping to read the entire text.

Recommendations:

Signs are cast bronze. For specific requirements refer to University Heritage Plaque policy.

Refer to University Exterior Graphics, Wayfinding and Signage Policies and Design Guidelines.

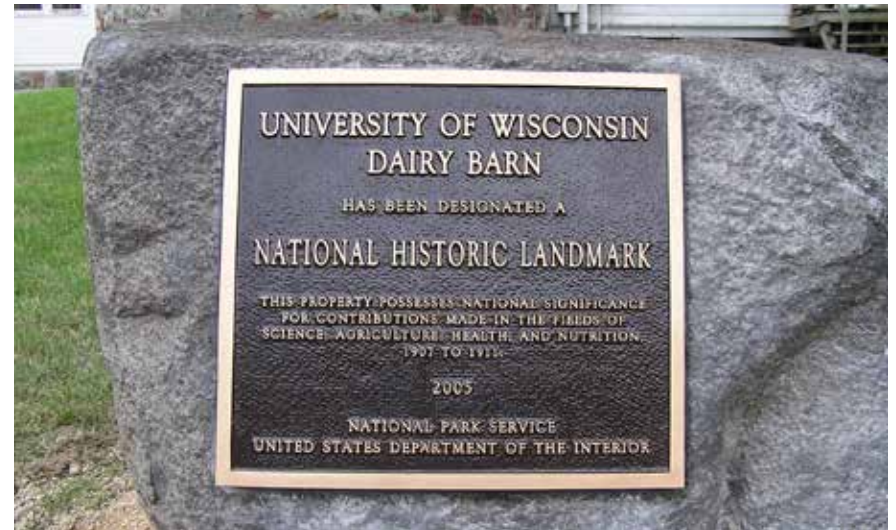


Figure 174 UW–Madison Dairy Barn National Historic Landmark Plaque



Figure 175 Bascom Hill Historic District Plaque

Signage – Memorials

Campus memorials are a way for individuals or groups to give back to the university by enhancing the story of UW–Madison (Figures 176 & 177).

Design Considerations:

- All memorial designs should be reviewed by FP&M in accordance with the Campus Memorial Policy.
- Campus Memorials should reflect the historic nature of the site as well as fitting into the architectural character of the Campus Design Neighborhood and immediate surroundings.
- Campus Memorial Benches – refer to campus policy and standard details.

Recommendations:

Refer to Campus Memorial Policy.



Figure 176 The Henry (Mall) Quadrangle Plaque



Figure 177 Harman Bridge Memorial Plaque

Introduction

Students, faculty, staff, and visitors experience campus in a prominent way through their engagement with physical space, and their experience traveling between key destinations. The public realm is comprised of streetscapes, public spaces, and multimodal travel ways, and it permeates throughout all reaches of campus. Cohesive and intelligent design of the public realm is critical to a high level of campus connectedness and quality of life. This section presents an integrated set of design guidelines and development standards related to transportation systems.

The guidelines and standards recommended in this section represent current best practices in the area of transportation design, form and function. These guidelines should be incorporated into standard practice internally within the university and externally working with outside partners in planning for, designing, and maintaining campus landscapes, public spaces, and transportation systems. Doing so will help to ensure consistency of form and function across campus.

Transportation – Crosswalks and Crossings*

Walking is the primary and most basic mode of travel for those on the UW–Madison campus. Marked pedestrian crossings should be provided at all intersection and mid-block locations where pedestrians cross the street (Figures 178 & 179).

Placement and Design

- Marked crosswalks should be placed at intersections and mid-block crossings areas where pedestrians are frequent or where traffic speeds and volumes are higher (generally over 20 miles per hour and greater than 3,000 vehicles per day of volume).
- Marked crosswalks should be placed on all intersection legs pedestrians are permitted to use in order facilitate connections to adjacent pedestrian routes.
- ADA-compliant curb ramps and detectable warnings should be provided at crosswalk entrances.
- Mid-block crossings are discouraged where nearby controlled intersection crossings are available, but should be placed where there is significant pedestrian demand. Engineering warrants need to be established prior to adding mid-block marked crossings.
- Flashing beacons should be considered at mid-block crossings to increase vehicle compliance to crossing pedestrians. The Rectangular Rapid Flash Beacon (RRFB) is the preferred beacon for optimal compliance.
- To limit pedestrian exposure to motor vehicle traffic, curb bump outs and pedestrian median refuge islands should be added where appropriate.
- Median refuge islands of at least 6 feet in width should be added where pedestrians must cross three or more lanes of traffic.



Figure 178 Rectangular Rapid Flash Beacon Assembly, Location Unknown



Figure 179 Park Street and University Avenue

* National Association of City Transportation Officials (NACTO), Urban Street Design Guide, 2013. U.S. Department of Transportation Federal Highway Administration, Manual on Traffic Control Devices (MUTCD).

Guidance on Marking

- A minimum 6' wide (wider if in an area with higher pedestrian traffic) white painted or thermoplastic high visibility continental crosswalk atop road pavement should be the standard crosswalk type applied to campus pedestrian crossings. Crossings should be maintained to avoid significant wear and ensure maximum visual contrast.
- Bricks and/or colored pavement markings should be avoided as the colored markings may actually serve to decrease the contrast and effectiveness of the standard white marking on road pavement.
- A vehicle stop bar should be added at least 8 feet in advance of marked intersection crosswalks and at least 20 feet for marked mid-block crossings for oncoming motor vehicle traffic.

Signalization

- If crosswalk is signalized in sync with oncoming motor vehicle traffic in the stop phase, a pedestrian countdown timer should be provided (Figure 180).



Figure 180 Crossing Campus Drive with a Pedestrian Countdown Timer.

Transportation – Sidewalks and Pedestrian Circulation*

Sidewalks are the critical conduit which carries thousands of pedestrians around the UW–Madison campus on a daily basis. In addition, sidewalks add vitality and life to the street environment. Sidewalks should be incorporated in all street cross-sections, and sidewalk improvements and enhancements in line with best practices should be made during street re-construction projects.

Design Best Practices

Three distinct zones should be maintained where possible in sidewalk environments (Figures 181 & 182):

- Frontage Zone: This zone includes the area immediately fronting adjacent buildings, and often contains sidewalk cafes, signs, and building features.
- Pedestrian Through Zone: This zone is critical to the sidewalk serving its primary purpose of moving pedestrians. It should be a minimum 8' width on campus, with 10-12' provided in areas with high pedestrian volumes.
- Street Furniture/Curb Zone: This is the zone between the pedestrian through zone and the sidewalk curb, and contains features such as lighting, street furniture, waste receptacles, and bicycle parking. This zone provides a buffer between pedestrians and moving bicycle or vehicle traffic.



Figure 181 University Avenue

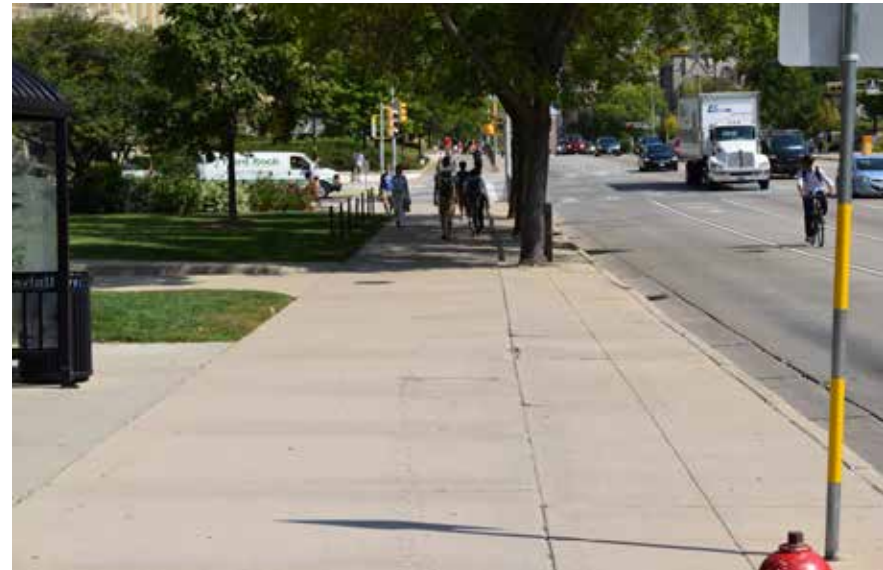


Figure 182 University Avenue

* National Association of City Transportation Officials (NACTO), Urban Street Design Guide, 2013.

Transportation – Shared-Use Paths*

Off-street shared-use paths increase campus connectivity, promoting connections between campus destinations that are further apart (Figures 183 & 184). The Campus Drive shared-use path connecting to the west campus, and the Southwest Path in south campus provide critical connections across campus and between campus and outlying neighborhoods.

Design Guidance

- Shared-use pedestrian and bicycle paths should be a minimum 10 feet wide with a 2 foot shoulder clear zone. Wider paths are recommended where significant bicycle volumes are expected.
- Paths should be paved and lit where possible and feasible. A key exception to this is in natural or secluded areas where significant pedestrian and bicycle traffic is not desirable during nighttime hours, such as along the Lakeshore Path.
- Colored pavement markings and flashing beacons should be added where appropriate at shared-use path mid-block street crossings. Bicycle specific signals can be provided in areas with significant bicycling volumes to allow bicycles protected or permissive movement through the crossing while motor vehicles are stopped.
- Pedestrians and bicyclists using parallel side path often come into conflict with turning motor vehicles, especially pedestrians and bicyclists coming from behind vehicles in their blind spot. Signage warning vehicles and pedestrians and bicyclists, as well as green pavement markings to denote conflict zones can be added to increase visibility.
- Additionally, motor vehicles turning out of intersecting streets often block pedestrians and bicyclists crossing the street on a side path. If possible, provide adequate vehicle clearance beyond the side path crossing to provide space for a queuing vehicle without blocking the crossing.
- Shared-use paths should be maintained year-round to facilitate four season use.
- The university should work closely with the City of Madison in planning, constructing, and maintaining shared-use path facilities on campus.

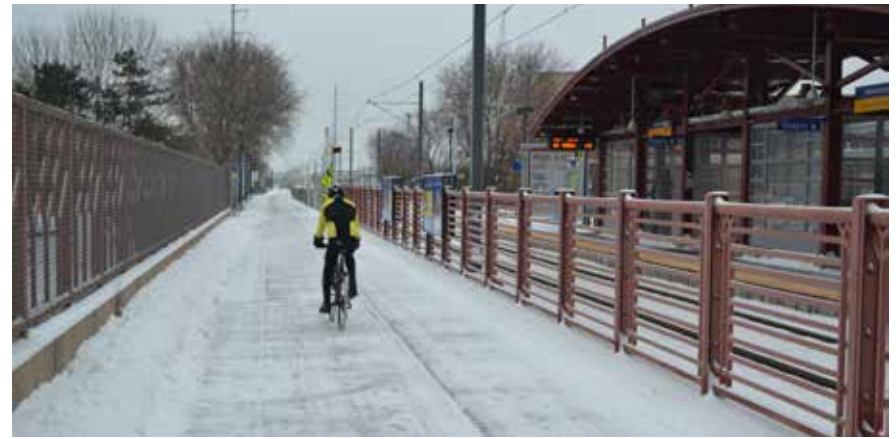


Figure 183 Minneapolis, MN



Figure 184 East Campus Pedestrian Mall

* American Association of State Highway and Transportation Officials (AASHTO), Guide for the Development of Bicycle Facilities, 2012, Fourth Edition.

Transportation – Bicycle Parking

Abundant and conveniently-placed bicycle parking is critical to encouraging and supporting bicycling.

Best Practices

- The university should continue its plan to increase the number of campus bicycle parking spaces to 14,500 by summer 2017, especially in areas where high activity and demand uses exist or are being programmed.
- Incorporate convenient bicycle parking adjacent to primary building entrances in all new campus building construction and remodeling projects, without blocking the accessibility of building entrances.
- Establish covered bicycle parking where possible and appropriate.
- Screen bicycle parking with landscaping where possible to reduce visual clutter.
- New building projects should provide an adequate level of convenient bicycle parking meeting or exceeding City of Madison standards.
- Building redevelopment projects should provide bicycle parking spaces that matches or exceeds the number bicycle parking spaces removed.
- Continue placement of duckbill bicycle racks as the university standard (Figure 185 top right).
- Place high-capacity bicycle racks, such as those at Union South where space is limited and does not allow for duckbill racks (Figure 186 bottom right).
- Bicycle parking should be kept clear of pedestrian areas and adequate clearance maintained around racks to provide space for bicycle loading and unloading.



Figure 185 Duckbill Racks at Charter Street and Linden Drive



Figure 186 High-Capacity Racks at Union South





Transportation – On-Street Bicycle Accommodations*

Marked and barrier-separated facilities provide connections for bicyclists through intersections and across campus. The university should work with the City of Madison in planning for, designing, operating, and maintaining on-street bicycle accommodations.

Routes

Various on-street bicycle facilities are summarized in Figure 187 below. They are organized based on increasing degrees of exclusivity and comfort.

Figure 187 On-Street Bicycle Facilities

Bicycle Facility	Example Location	Best Practices
Sharrows 	Linden Drive	<ul style="list-style-type: none"> • Not considered a replacement for a bicycle-specific on-street accommodation • Most appropriate for low speed (typically less than or equal to 25 mph and low volume [typically less than 3,000 vehicles per day]) streets • Markings should be placed in the center of the travel lane
Bicycle lane 	Dayton Street, east of Randall Avenue	<ul style="list-style-type: none"> • Should be 5' minimum width on campus streets (6' minimum on higher volume streets), exclusive of the gutter pan • Appropriate for streets with traffic speeds greater than or equal to 25 mph or volumes greater than or equal to 3,000 vehicles per day
Buffered bicycle lane 	Portland Avenue, Minneapolis, MN	<ul style="list-style-type: none"> • Should be considered on streets with speeds greater than 35 mph and/or higher traffic volumes where a greater degree of separation between bicyclists and motor vehicles is desired • Minimum bicycle way width of 5' • Buffered area should be marked with at minimum two solid white lines and should be a minimum 18 inches wide
Protected cycle track 	University Avenue is a one-way contraflow barrier-separated cycle track	<ul style="list-style-type: none"> • Consider on streets where motor vehicle speeds and volumes are higher, or where a greater degree of separation for bicyclists is desired • Minimum bicycle way width should be 5' for a one-way cycle track • Cycle tracks should consist of a buffered pavement marking areas and a physical immovable barrier such as vertical bollards, planters, or a raised curb to separate bicyclists from motor vehicle traffic

* National Association of City Transportation Officials (NACTO), Urban Bikeway Design Guide, Second Edition, 2014.

Intersections

- Green bicycle intersection markings should be added in busy intersections to designate potential conflict zones for turning motor vehicles, and to provide a clear path for bicyclists moving through the intersection (Figure 188 top right).
- At busy intersections with high volumes of motor vehicles and bicyclists, and/or intersections with a high number of bicycle left turns or vehicle left turns, green marked bicycle boxes should be added where feasible. Bicycle boxes should be 10-16 feet deep and the width of the entire drive lane. Bicycle boxes clearly designate space for bicyclists, and allow bicyclists to get out in front of motor vehicles before moving through the intersection.
- Green marked queuing boxes should be used where feasible to facilitate bicycle turning movements across intersections and/or where queuing bicycles need to be removed from the path of through bicyclists (Figures 189 & 190). Queuing boxes should be placed in a protected area free of mode conflicts, such as in the space created by a parking lane or between the bicycle way and pedestrian crossing.

Maintenance

- On-street bicycle accommodations should be maintained year round and kept free of snow and ice. Special care should be taken when plowing in the winter as snow from plows often collects in standard shoulder bicycle lanes.



Figure 188 Charter Street and University Avenue



Figure 189 Dayton Street and Park Street



Figure 190 Randall Avenue and University Avenue

Transportation – Parking Lots and Structures

Thoughtful design of parking lots and structures facilitates efficient parking management and operations, and efficient use of constrained space resources.

Design Best Practices

- Parking lots and structures should be designed to satisfy Crime Prevention Through Environmental Design (CPTED), including adequate lighting, maintenance of landscaping to ensure an adequate field of vision, and controlled access.
- 8.5' x 18' stalls should be used in all parking lots and structures to maximize space efficiency.
- For surface parking lots, focus on principles of good design:
 - Use landscape to break up large expanses of cars and asphalt and reduce the amount of impervious surface.
 - Provide groups of shade trees to reduce heat-island effect.
 - Use earthworks and vegetation to visually screen parking areas.
 - Plan adequate space for snow storage.
- Parking ingress and egress should be placed with proper vehicular access lanes and in locations that do not negatively impact pedestrian and bicycle, transit, and motor vehicle through movements (Figure 191).
- Incorporate a best practices horizontal and vertical spatial layout, pavement markings, and signage re: safe vehicular circulation.
- Where possible, parking structures and surface parking lots should be screened from the sidewalk and street with decorative elements, fencing, and landscaping.
- Consideration should be given to features that activate the streetscape along parking structures such as glass, design details, and ground floor uses other than parking.
- Parking structures should be designed with flat floor construction to allow for future structure conversion to other uses.



Figure 191 Nancy Nicholas Hall Garage.

Transportation – Transit Stops and Shelters *

With a significant number of transit riders on campus, bus stops provide critical information and a safe refuge for riders to wait, board, and alight from Metro Transit buses.

Design Best Practices

- For in-lane sidewalk bus stops (the predominant stop type on campus), maintain at least a 10 foot clear distance from nearby pedestrian crosswalks and a clear zone of at least the length of the bus itself for boarding and alighting (Figure 192).
- Current bus shelter design should be continued.
- Bus shelters and associate supporting posts and signage should be located on separate concrete pads at the back of sidewalk completely free of sidewalk pedestrian through zones (Figure 193).
- Bus shelters should be 4 feet deep and should have ADA-compliant clear zone for adequate wheelchair access.
- Seats and leaning rails should be provided where appropriate.
- Provide campus and Metro Transit route maps, as well as emergency information and emergency calling capabilities in transit stops for the benefit of riders.
- Place real-time arrival/departure boards where appropriate.



Figure 192 Linden Drive



Figure 193 Park Street

* National Association of City Transportation Officials (NACTO), Transit Street Design Guide, 2016.

Development Standards Matrix

Figure 194 Landscape Development Standards Matrix

Development Standard	Ref. pg.	Typology Location							
		Campus Greens	Campus Malls	Courtyards, Plazas, Terraces, & Gardens	Supportive Landscapes	Naturalized Landscapes	Athletics & Recreation	Streetscapes	Parking & Service
1 Rigid Pavement	Pg.158	•	•	•	•	•	•	•	•
2 Flexible Pavement	Pg.159			•	•	•	•	•	•
3 Aggregate Pavement	Pg.159			•	•	•	•	•	•
4 Unit Paving	Pg.160	•	•	•	•	•	•	•	
5 Natural Stone Paving	Pg.161	•		•	•	•			
6 Landscape Walls - Architectural	Pg.162			•	•	•			•
7 Landscape Walls - Stone	Pg.163	•	•	•	•	•	•	•	•
8 Landscape Walls - Alternatives	Pg.164			•	•	•	•	•	•
9 Vertical Edges	Pg.165	•	•	•	•	•	•	•	•
10 Maintenance Stripes	Pg.166	•	•	•	•	•	•	•	
11 Bench	Pg.167	•	•	•	•	•	•	•	
12 Bench - Alternatives	Pg.168			•	•	•	•	•	
13 Cluster Seating	Pg.169	•		•	•	•	•	•	
14 Cluster Seating - Alternatives	Pg.170			•	•	•	•	•	
15 Trash, Recycle, Ash Receptacles	Pg.171	•	•	•	•	•	•	•	•
16 Bicycle Rack	Pg.172	•	•	•	•	•	•	•	•
17 Tree Grates & Pit Covers	Pg.173	•	•	•	•	•	•	•	•
18 Tree Pavers	Pg.173	•	•	•	•	•	•	•	•
19 Tree Pit and Soil Volume	Pg.173	•	•	•	•	•	•	•	•
20 Lighting - Pedestrian	Pg.174	•	•	•	•	•	•	•	•
21 Lighting - Historic	Pg.175	•	•	•	•	•	•	•	•
22 Lighting - Parking & Street	Pg.176					•	•	•	
23 Lighting - Alternatives	Pg.177		•	•		•	•	•	

While the development standards presented above are campuswide standards, their application across campus is not equal. Certain paving materials or site amenities may or may not be appropriate for given areas of campus. The development standards matrix presented in Figure 194 provides a guideline for their uniform application across campus by landscape typology.

Development Standard	Ref. pg.	Typology Location							
		Campus Greens	Campus Malls	Courtyards, Plazas, Terraces, & Gardens	Supportive Landscapes	Naturalized Landscapes	Athletics & Recreation	Streetscapes	Parking & Service
24 Ornamental Fencing & Piers	Pg.178	•	•	•	•	•	•	•	•
25 Chain Link Fencing	Pg.179			•	•	•	•	•	•
26 Post & Chain Fencing	Pg.180	•	•	•	•	•	•	•	•
27 Bollards & Delineation	Pg.181	•	•	•	•	•	•	•	•
28 Stairs and Ramps	Pg.182	•	•	•	•	•	•	•	•
29 Handrails and Guardrails	Pg.183	•	•	•	•	•	•	•	•
30 Organic Mulch	Pg.184	•	•	•	•	•	•	•	•
31 Mineral Mulch & Rip-Rap	Pg.185	•	•	•	•	•	•	•	•
32 Planters & Containers	Pg.186	•	•	•	•	•	•	•	•
33 Landscape Decorative Boulders	Pg.187	•	•	•	•	•	•	•	•
34 Signage - Campus Gateway	Pg.189							•	
35 Signage - Wayfinding & Directional	Pg.190	•	•	•	•	•	•	•	•
36 Signage - Building Identification	Pg.191	•	•	•	•	•	•	•	•
37 Signage - Banners & Hardware	Pg.192	•	•	•	•	•	•	•	•
38 Signage - Heritage Plaques	Pg.193	•	•	•	•	•	•	•	•
39 Signage - Memorials	Pg.194	•	•	•	•	•	•	•	•
40 Transportation - Crosswalks & Crossings	Pg.196	•	•	•	•	•	•	•	•
41 Transportation - Sidewalks & Pedestrian Circulation	Pg.198	•	•	•	•	•	•	•	•
42 Transportation - Shared-Use Paths	Pg.199		•	•	•	•	•	•	
43 Transportation - Bicycle Parking	Pg.200		•	•	•	•	•	•	
44 Transportation - On-Street Bicycle Accomodations	Pg.201							•	•
45 Transportation - Parking Lots & Structures	Pg.203							•	
46 Transportation - Transit Stops & Shelters	Pg.204							•	•

6. LANDSCAPE DEVELOPMENT STANDARDS



7. APPENDICES

Appendix A: Campus Viewsheds

1. View of Lake Mendota and Picnic Point from Memorial Union Terrace
2. View of Science Hall from Langdon Street
3. View of Lake Mendota from Lake Street
4. View of Lake, Library Mall, and Alumni Park from East Campus Mall
5. View of Lake Mendota from Park Street
6. View of Bascom Hill, State Street, and Wisconsin State Capitol. View of Bascom Hall from North Park Street
7. View of Lake Mendota from Bascom Hill
8. View of Lake Mendota from 3rd Floor Education Building green roof
9. View of Lake Mendota from Bascom Hill
10. View of Lake Mendota from Bascom Hill
11. View of Lake Mendota from Education Building green roof above parking structure (at grade)
12. View of Lake Mendota from Robert E. Gard Storyteller's Circle
13. View of Law Building south entrance and view of south campus along North Brooks Street
14. View of Botany Garden and open space to north and south campus
15. View of Camp Randall Memorial Arch from West Dayton Street
16. View of MSC south entrance and south campus along limit access streets and Union South pedestrian mall.
17. View of Wisconsin Institutes for Discovery from Middleton Building Plaza
18. View of First Congregational Church
19. Views north and south along Henry Mall. Agricultural Hall to north, Engineering Hall and Mall to south.
20. View west from Van Vleck roof deck
21. View west from Van Hise roof deck
22. Views east and west of the Greater Mall (Linden Drive)
23. Views from Nicholas Hall green roof. Potential to open up limited views toward Lake Mendota
24. Views of Lake Mendota and Picnic Point from Observatory Hill and Observatory Hill overlook
25. Views of Lake Mendota from Elizabeth Waters Residence Hall terrace
26. Views from observation deck off Lakeshore Path
27. View west toward Dejepe Residence Hall from two-tailed water spirit effigy mound behind Agricultural Hall
28. View of Lake from Observatory Drive
29. Views of Lake Mendota and Picnic Point from behind Tripp and Adams Residence Halls
30. View of Lake Mendota from Leopold Hall
31. View of Lake Mendota and Picnic Point from Kronshage Residence Hall
32. View of Lake Mendota from Lakeshore Residence Halls
33. View of Lake Mendota from Elm Drive
34. View of Lake Mendota from Dejepe Residence Hall, patio, and lawn.
35. View of Lake Mendota from Lakeshore Residence Halls
36. View of Lake Mendota and Picnic Point from Willow Beach
37. View of Lake Mendota, Picnic Point, and Willow Creek from bridge
38. View of Lake Mendota and Picnic Point from Lakeshore Path
39. Protected viewshed for WARF Office Building
40. Protected viewshed for UW Hospital and its patients
41. View of Lakeshore Nature Preserve from WIMR green roof
42. View of Lake Mendota and Picnic Point from Lakeshore Path
43. View of Class of 1918 Marsh
44. View of recreation fields, Class of 1918 Marsh, and Wisconsin State Capitol
45. Views east from Big Woods, Lakeshore Nature Preserve
46. View of University Bay, Lake Mendota, UW-Madison campus, and Wisconsin State Capitol from Picnic Point
47. View of University Bay, Lake Mendota, UW-Madison campus, and Wisconsin State Capitol from Picnic Point
48. View of University Bay, Lake Mendota, UW-Madison campus, and Wisconsin State Capitol from Picnic Point
49. Views N, E, W of Lake Mendota, UW-Madison campus, Wisconsin State Capitol, and Middleton from Picnic Point
50. View of Wisconsin State Capitol from Southwest Commuter Path
51. View of Mechanical Engineering Building

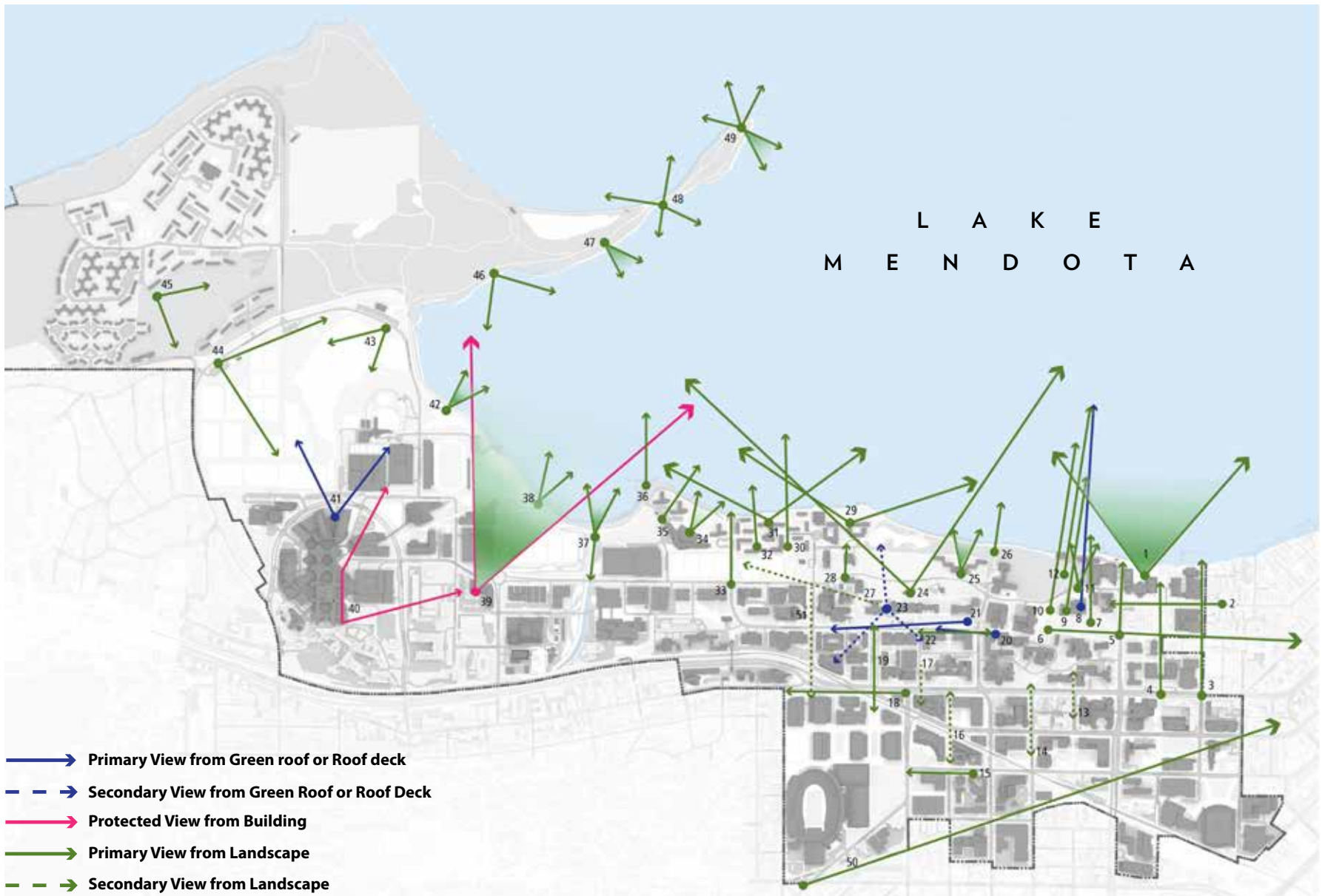


Figure 195 Documented Campus Viewshed Map



Appendix B: APPA Standard Levels

Each landscape typology has been assigned a corresponding APPA maintenance level. The APPA grounds maintenance levels are provided in this appendix for reference. Figure 196 below provides an overview of the landscape typologies and their corresponding APPA maintenance level.

Figure 196 APPA Maintenance Level by Landscape Typology

Landscape Typology	APPA Maintenance Level
Campus Greens	Level 2
Campus Malls	Level 2
Courtyards, Plazas, Terraces & Gardens	Level 2
Campus Supportive Landscapes	Level 3
Naturalized Landscapes	Level 4
Athletics & Recreation	Level 2-3
Streetscapes:	
Gateway Streets	Level 2
Primary Streets	Level 3
Secondary Streets	Level 4
Green Streets	Level 3
Parking & Service	Level 3

Level 1

State-of-the-art maintenance applied to a high-quality diverse landscape. Associated with high-traffic urban areas, such as public squares, malls, government grounds, or college/university campuses.

Turf Care

Grass height maintained according to species and variety of grass. Mowed at least once every five working days but may be as often as once every three working days. Aeration as required but not less than four times per year. Reseeding or sodding as needed. Weed control to be practiced so that no more than 1 percent of the surface has weeds present.

Fertilizer

Adequate fertilization applied to plant species according to their optimum requirements. Application rates and times should ensure an even supply of nutrients for the entire year. Nitrogen, phosphorus, and potassium percentages should follow local recommendations. Trees, shrubs, and flowers should be fertilized according to their individual requirements of nutrients for optimum growth. Unusually long or short growing seasons may modify the chart slightly.

Irrigation

Sprinkler irrigated-electric automatic commonly used. Some manual systems could be considered adequate under plentiful rainfall circumstances and with adequate staffing. Frequency of use follows rainfall, temperature, season length, and demands of plant material.

Litter Control

Minimum of once per day, seven days per week. Extremely high visitation may increase the frequency. Receptacles should be plentiful enough to hold all trash usually generated between servicing without overflowing.

Pruning

Frequency dictated primarily by species and variety of trees and shrubs. Length of growing season and design concept also a controlling factor i.e., clipped vs. natural-style hedges. Timing scheduled to coincide with low demand periods or to take advantage of special growing characteristics.

Disease and Insect Control

At this maintenance level, the controlling objective is to avoid public awareness of any problems. It is anticipated at Level 1, that problems will either be prevented or observed at a very early stage and corrected immediately.

Snow Removal

Snow removal starts the same day that accumulations of .5 inch are present. At no time will now be permitted to cover transportation or parking surfaces longer than noon of the day after the snow stops. Application of snowmelting compound and/or gravel is appropriate to reduce the danger of injury due to falls.

Surfaces

Sweeping, cleaning, and washing of surfaces should be done so that at no time does an accumulation of sand, dirt, or leaves distract from the looks or safety of the area.

Repairs

Repairs to all elements of the design should be done immediately when problems are discovered, provided replacement parts and technicians are available to accomplish the job. When disruption to the public might be major and the repair is not critical, repairs may be postponed to a time period that is least disruptive.

Inspections

A staff member should conduct inspection daily.

Floral Plantings

Normally, extensive or unusual floral plantings are part of the design. These may include ground level beds, planters, or hanging baskets. Often, multiple plantings are scheduled, usually for at least two blooming cycles per year. Some designs may call for a more frequent rotation of bloom. Maximum care, including watering, fertilizing, disease control, disbudding, and weeding, is necessary. Weeding flowers and shrubs is done a minimum of once per week. The desired standard is essentially weeded free.

Level 2

High-level maintenance. Associated with well-developed public areas, malls, government grounds, or college/university campuses. Recommended level for most organizations.

Turf Care

Grass cut once every five working days. Aeration as required but not less than two times per year. Reseeding or sodding when bare spots are present. Weed control practiced when weeds present a visible problem or when weeds represent 5 percent of the turf surface. Some pre-emergent products may be used at this level.

Fertilizer

Adequate fertilizer level to ensure that all plant materials are healthy and growing vigorously. Amounts depend on species, length of growing season, soils, and rainfall. Rates should correspond to at least the lowest recommended rates. Distribution should ensure an even supply of nutrients for the entire year. Nitrogen, phosphorus, and potassium percentages should follow local recommendations. Trees, shrubs, and flowers should receive fertilizer levels to ensure optimum growth.

Irrigation

Sprinkler irrigated--electric automatic commonly used. Some manual systems could be considered adequate under plentiful rainfall circumstances and with adequate staffing. Frequency of use follows rainfall, temperature, season length, and demands of plant material.

Litter Control

Minimum of once per day, five days per week. Off site movement of trash depends on size of containers and use by the public. High use may dictate daily or more frequent leaning.

Pruning

Usually done at least once per season unless species planted dictate more frequent attention. Sculpted hedges or high-growth species may dictate a more frequent requirement than most trees and shrubs in natural-growth plantings.

Disease and Insect Control

Usually done when disease or insects are inflicting noticeable damage, are reducing vigor of plant material, or could be considered a bother to the public. Some preventive measures may be used, such as systemic chemical treatments. Cultural prevention of disease problems can reduce time spent in this category. Some minor problems may be tolerated at this level.

Snow Removal

Snow removed by noon the day following snowfall. Gravel or snowmelt may be used to reduce ice accumulation.

Surfaces

Should be cleaned, repaired, repainted, or replaced when their appearances have noticeably deteriorated.

Repairs

Should be done whenever safety, function, or appearance is in question.

Inspections

Inspection should be conducted by some staff member at least once a day when regular staff is scheduled.

Floral Plantings

Normally, no more complex than two rotations of bloom per year. Care cycle is usually at least once per week, but watering may be more frequent. Health and vigor dictate cycle of fertilization and disease control. Beds essentially kept weed free.

Level 3

Moderate-level maintenance. Associated with locations that have Moderate to low levels of development or visitation, or with operations that, because of budget restrictions, cannot afford a higher level of maintenance.

Turf Care

Grass cut once every ten working days. Normally not aerated unless turf quality indicates a need or in anticipation of an application of fertilizer. Reseeding or resodding done only when major bare spots appear. Weed control measures normally used when 50 percent of small areas are weed infested or when 15 percent of the general turf is infested with weeds.

Fertilizer

Applied only when turf vigor seems to be low. Low-level application done once per year. Rate suggested is one-half the level recommended.

Irrigation

Dependent on climate. Locations that receive more than 25 inches of rainfall a year usually rely on natural rainfall with the possible addition of portable irrigation during periods of drought. Dry climates that receive less than 25 inches of rainfall usually have some form of supplemental irrigation. When irrigation is automatic, a demand schedule is programmed. Where manual servicing is required, the norm would be two to three times per week.

Litter Control

Minimum service of two to three times per week. High use may dictate higher levels during the warm season.

Pruning

When required for health or reasonable appearance. With most tree and shrub species, pruning would be performed once every two to three years.

Disease and Insect Control

Done only to address epidemics or serious complaints. Control measures may be put into effect when the health or survival of the plant material is threatened or when public comfort is an issue.

Snow Removal

Snow removal done based on local law requirements but generally accomplished by the day following snowfall. Some crosswalks or surfaces may not be cleared at all.

Surfaces

Cleaned on a complaint basis. Repaired or replaced as budget allows.

Repairs

Should be done whenever safety or function is in question.

Inspections

Inspections are conducted once per week.

Floral Plantings

Only perennials or flowering trees or shrubs.

Level 4

Moderately low-level maintenance. Associated with locations affected by budget restrictions that cannot afford a high level of maintenance.

Turf Care

Low-frequency mowing scheduled based on species. Low growing grasses may not be mowed. High grasses may receive periodic mowing. Weed control limited to legal requirements for noxious weeds.

Fertilizer

Not fertilized.

Irrigation

No irrigation.

Litter Control

Once per week or less. Complaints may increase level above one servicing.

Pruning

No regular trimming. Safety or damage from weather may dictate actual work schedule.

Disease and Insect Control

None except where the problem is epidemic and the epidemic condition threatens resources or the public.

Snow Removal

Snow removal done based on local law requirements but generally accomplished by the day following snowfall. Some crosswalks or surfaces may not be cleared at all.

Surfaces

Replaced or repaired when safety is a concern and when budget is available.

Repairs

Should be done whenever safety or function is in question.

Inspections

Inspections are conducted once per month.

Floral Plantings

None. May have wildflowers, perennials, flowering trees, or shrubs in place.

Level 5

Minimum-level maintenance. Associated with locations that have severe budget restrictions.

Turf Care

Low-frequency mowing scheduled based on species. Low growing grasses may not be mowed. High grasses may receive periodic mowing. Weed control limited to legal requirements for noxious weeds.

Fertilizer

Not fertilized.

Irrigation

No irrigation.

Litter Control

On demand or complaint basis.

Pruning

No pruning unless safety is involved.

Disease and Insect Control

No control except in epidemic or safety situations.

Snow Removal

Snow removal done based on local law requirements but generally accomplished by the day following snowfall. Some crosswalks or surfaces may not be cleared at all.

Surfaces

Serviced only when safety is a consideration.

Repairs

Should be done whenever safety or function is in question.

Inspections

Inspections are conducted once per month.

Floral Plantings

None. May have wildflowers, perennials, flowering trees, or shrubs in place.

Acknowledgements

Landscape Work Group Technical Coordinating Committee

Work Group Lead:

- Gary Brown, Director, FP&M Campus Planning

Work Group Members:

- Kris Ackerbauer, Director, FP&M Physical Plant Services
- Ellen Agnew, Superintendent, FP&M Environmental Services-Grounds
- Jonathan Bronk, Landscape Architect, FP&M Campus Planning
- Sam Dennis, Associate Professor, UW Department of Landscape Architecture
- Julie Grove, Project Manager, FP&M Capital Planning & Development
- John Harrington, Professor, UW Department of Landscape Architecture
- Rhonda James, Landscape Architect, FP&M Campus Planning
- Jeanette Kowalik, Director, University Health Services Wellness Program
- Harmony Makovec, Landscape Architect, FP&M Grounds
- Daniel Okoli, Director/University Architect, FP&M Capital Planning & Development
- Aaron Williams, Asst. Campus Planner, FP&M

UW–Madison Design Review Board

- Dan Okoli, University Architect & Chair
- Pete Anderson, Architect
- Annette Wilkus, Landscape Architect
- Phil Certain, Emeritus Professor & Emeritus Dean of Letters and Science

Consultants

Hoerr Schaudt – Landscape Master Plan

- Peter Schaudt
- Stan Szwalek
- Michael Skowlund
- Shuangshuang Wu
- Eli Lechter
- Nadia Yablonskaya

SmithGroupJJR – Master Plan Lead Consultant

- Jon Hoffman
- Mary Jukuri
- Neal Kessler
- Bill Patek
- Eric Schuchardt



In Memoriam of Peter L. Schaudt, FASLA (1959-2015)

Peter's dedication, generosity, integrity, and kindness were evident in everything he touched, and he held himself – and the profession of landscape architecture – to the highest ideals. He was master of his craft; a leader, a visionary, and a giant within our profession. But, most importantly, Peter was a loving husband, a proud father, and a wonderful friend.

Peter's nearly three-decade long career was filled with accolades, accomplishments, and successes. With principles of restraint, elegance, and simplicity, Peter strove to achieve a timeless design quality for every project. Volunteering his time generously, Peter served on the University of Wisconsin–Madison Design Review Board where he fell in love with the landscape and topography. Peter led the Landscape Master Planning team in early working sessions with the university prior to his untimely passing. His enthusiasm for the campus was contagious. Peter will be best remembered for his compassion for others and his legacy will continue to live on through his work here at UW–Madison, around the world, and within the firm he leaves behind.



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